

Refrigerant - R414b

ENVIRO Refrigerants

R414b

R414b utilizes 4 refrigerant components which when blended together, result in low and high pressure readings similar to pressure, normally seen in a R12 system. R414b is a drop-in replacement not requiring system adjustments, oil changes, or retrofit procedures. Just complete your repair and replace the R12 with R414b (adjusting the amount of charge). It's that simple.



R414b

Features

- The Environment Friendly R-12 Drop-In Replacement.
- ASHRAE Designated.
- No Expensive Retrofits.
- ASHRAE Rated A1. Non Toxic - Non Flammable.
- Cooler - Safer - More Efficient At All Temperature Ranges.
- Completely Compatible with Most System's Components.

Performance Specs:

Normal boiling point	-33°C (-28°F)
Critical temperature	131°C (268°F)
Density, liquid at 24°C (75°F).	72.42lb/ 3'

Quality Specs:

Max. moisture, ppm (wt)	10
Max. non-absorbable gasses (vol)	1.5%
Max. high boiling impurities (vol)	0.01%

Safety Specs:

Recommended maximum exposure limits in air	1000 ppm
Flammability: Non-flammable as formulated, & in worst case fractionation.	

Refrigerant - R414b

Part #	Description	Weight
57-R414B	R12 drop-in replacement.	21.8kg (48lb)

R12 Drop-in Replacement

Advantages

- **Compatible with Mineral, Alkylbenzene and Polyol Ester oils, therefore no oil change required.**
- Works in low, medium, and high temperature systems, therefore the service truck carries One Tank to replace all R12 applications.
- R414b increases capacity of:
 - R12 system by 8%.
 - R134a system up to 15 to 20%.
 - R500 system - no capacity change.
- Operating systems will have pressures and temperature very similar to R12 pressures and temperatures ± 1 to 5%.
- Reduce ozone depletion to 0.034 or 97% less than R12.
- ASHRAE listed - R414b.
- ASHRAE listed A1 completely Non Toxic/Non Flammable.
- CSA recognized.
- Charging systems is easier than ever. Refrigerant must leave the container as a liquid. If charging by weigh scales, reduce the amount to 80% of name plate. If charging by charging cylinder, use the R12 scale and charge as if it was R12 (same volume). That volume will weigh 20% less. R414b should not be mixed with other refrigerants.
- TXV systems charged with R414b may require a super heat adjustment after system stabilizes. If charging by sight glass, a clear sight glass will probably be over charged, a trace bubble is normal.
- Recovery/ recycling procedure is the same as any other blended refrigerant. Do not mix in your cylinders.

Temperature/ Pressures Chart

Temperature		PSIG R12	Mean Average	Bubble Point PSIG Sat Liquid	Dew Point PSIG Sat Vapour
°F	°C				
-40	-40	-11.0	-11.5	-7.7	-15.3
-35	-37	-8.4	-8.9	-4.7	-13.2
-30	-34	-5.5	-6.0	-1.4	-10.7
-25	-32	-2.3	-3.5	1.1	-8.1
-20	-29	0.6	-1.0	3.1	-5.1
-15	-26	2.5	1.4	4.9	-2.0
-10	-23	4.5	4.2	7.6	0.8
-5	-20	6.8	6.4	10.2	2.7
0	-18	9.2	8.9	13.0	4.9
5	-15	11.8	11.7	16.1	7.3
10	-12	14.6	14.7	19.5	9.9
15	-9	17.7	17.9	23.1	12.7
20	-7	21.0	21.3	26.9	15.8
25	-4	24.6	25.1	31.1	19.1
30	-1	28.5	29.3	35.6	23.1
35	2	32.6	33.6	40.6	26.7
40	4	37.0	38.2	45.6	30.9
45	7	41.7	43.3	51.2	35.5
50	10	46.7	48.6	57.0	40.3
55	13	52.0	54.4	63.3	45.6
60	16	57.0	60.6	70.0	51.2
65	18	63.8	67.5	77.8	57.2
70	21	70.2	74.1	84.6	63.6
75	24	77.0	81.6	92.7	70.5
80	27	84.2	89.4	101.1	77.8
85	29	91.8	97.8	110.0	85.6
90	32	99.8	106.6	119.5	93.8
95	35	108.3	115.9	129.4	102.5
100	38	117.2	125.8	139.9	111.8
105	40	126.6	136.2	150.9	121.6
110	43	136.4	147.2	162.5	132.0
115	46	146.8	158.7	174.6	142.9
120	49	157.7	170.9	187.4	154.5
125	52	169.1	183.7	200.7	166.7
130	54	181.0	197.1	214.7	179.5
135	57	193.5	211.1	229.3	193.0
140	60	206.6	225.9	244.6	207.2

Refrigerant - R34+

ENVIRO Refrigerants

ENVIRO COOL R34+

2 lb Refrigerant Cylinders - R34+

Designed for use in close coupled systems. When replacing R12 with R34+, ENVIRO COOLs enhanced formulation carries the systems existing mineral oil and provides cooling similar to R134a.

FEATURES:

- High performance.
- Non-Flammable.
- Zero ozone depletion.
- Drop-in replacement for R12 and R134a
- No retrofit required
- Enhanced for superior oil carrying characteristics.
- Compatible with Mineral, PAG, POE, Alkylbenzene oils.
- Reduce R12 charge 10%
- R134a equal 98% HFC

Refrigerant For Professionals!
R12 & R134a Drop-in Replacement



57-EC2
Illustrated



57-R34
Illustrated

Refrigeration

Enviro Cool Refrigerant - R34+

Part #	Description	Weight
57-EC2*	R12 & R134a drop-in replacement.	0.91kg (2 lb)
57-R34+	R12 & R134a drop-in replacement.	11.34kg (25 lb)
57-1000	Reusable brass, non-piercing actuator valve for 2 lb canisters of refrigerant.	55g (1.9oz)

* Reusable actuator valve (57-1000) sold separately.

R34+ Applications

- Automotive AC, vending equipment, refrigerators, freezers, dehumidifiers, smaller R12 and R134a systems.



57-1000
Illustrated

Advantages

When replacing R134a, ENVIRO COOLs enhanced formulation:

- Increases cooling capacities of a retrofitted system by eliminating oil logging.
- Stops mineral oil from insulating the heat transfer of the evaporator and condenser.
- When used in place of pure R134a, the increased oil carrying capacity will improve compressor performance with better lubricity.

Refrigerant - R134a

ENVIRO Refrigerants

ENVIRO COOL R134a

2 lb Refrigerant Cylinders - R134a

Designed for use in all R134a systems

FEATURES:

- ASHRAE Designated.
- High performance.
- Non-Flammable.
- 2 lb cylinders - cost effective!
- Refrigerant for professionals.

Refrigerant For Professionals!
R134a



57-R134A-2
Illustrated



57-R134A
Illustrated

Enviro Cool Refrigerant - R134a

Part #	Description	Weight
57-R134A-2*	R12 drop-in replacement.	0.91kg (2lb)
57-R134A	R12 drop-in replacement.	11.34kg (25 lb)
57-1000	Reusable brass, non-piercing actuator valve for 2 lb canisters of refrigerant.	55g (1.9oz)

* Reusable actuator valve (57-1000) sold separately.

R134a Applications

- Automotive AC, vending equipment, small appliances



57-1000
Illustrated

Advantages

R134a was developed as an environmentally acceptable, long term replacement for R12 in new equipment or retrofitting medium temperature R12 systems.

NOTE - 2 lb Cylinders

NOT AVAILABLE FOR SALE IN SASK. OR P.E.I.

DEPOSITS

The Federal and Provincial Governments require a deposit on all refrigerant containers to ensure proper recycling and refilling of containers.

WARNING

Purchaser and installer must have a current Ozone Depletion Prevention Card or a Provincial Environmental Awareness Certificate.

Refrigerant - NU22

ENVIRO Refrigerants

NU22 (R417A)

NU22 is quickly becoming the most practically accepted solution to the phasing out challenge of HCFC-22. Availability ensured, this product has been designed as a blend consisting of three separate pure HFC/ HC refrigerants (R125/ 134a/ 600) all mass-produced by a variety of companies worldwide. With R22 similar operating characteristics, NU22 is ideal for new or existing R22 systems. A direct drop-in replacement, this product does not require any expensive system modifications, oil changes, product specific charging tools, instruments or retrofit equipment. Ideal for use in low, medium and high temperature systems, NU22 is the serviceman's single source when it comes to replacing all your R22 equipment applications. Used both as an OEM and service replacement, NU-22 will dramatically assist in the removal of HCFCs from the industry cycle.

Performance Specs:

Boiling point	-41.8°C (-43.2°F)
Critical temperature	90.5°C (194.9°F)
Critical pressure	559 psia
Density (saturated vapor) @ boiling point temp.	0.2447 lb/cf
Density liquid @ 25°C (77°F)	72.85 lb/cf
Heat of vaporization @ boiling point temp.	89.42 BTU/lb

Quality Specs:

Max. moisture	0.001%vol
Max. non-condensable	1.5%vol
High boiling impurities	0.01%vol

Safety Specs:

ASHRAE designation	R417A
ASHRAE safety classification	A1
Max recommended exposure limits	1000 ppm



NU-22

Features

- Compatible with all standard refrigerant oils.
- ASHRAE Designated.
- R22 like operating characteristics.
- Exceptionally Low TEWI.
10% Energy Reduction Over R22.
- Zero Ozone Depletion.
- No Expensive Retrofits.
- Can Be Topped Off Repeatedly.
- ASHRAE Rated A1.
Non Toxic - Non Flammable

Temperature/ Pressures Chart

Temperature		PSIG R22	Mean Average	Bubble Point PSIG Sat Liquid	Dew Point PSIG Sat Vapour
°F	°C				
-40	-40	0.56			4.17
-36	-38	2.2	1.89	1.99	1.47
-30	-34	4.92	3.66	4.51	1.54
-26	-32	6.92	5.48	6.35	3.18
-20	-29	10.21	8.50	9.37	5.93
-16	-27	12.61	10.70	11.57	7.92
-10	-23	16.53	14.30	15.16	11.22
-6	-21	19.38	16.92	17.76	13.61
0	-18	24.03	21.19	22.00	17.55
6	-14	29.15	25.91	26.66	21.92
10	-12	32.84	29.30	30.01	25.05
16	-9	38.81	34.80	35.41	30.19
20	-7	43.09	38.76	39.32	33.86
26	-3	50.01	45.16	45.58	39.88
30	-1	54.98	51.97	56.76	44.16
36	2	62.89	57.08	57.25	51.10
40	4	68.56	62.33	62.37	56.05
46	8	77.62	70.75	70.57	64.05
50	10	84.06	76.74	76.40	69.77
56	13	94.3	87.38	88.95	78.88
60	16	116.3	99.11	95.67	85.36
66	19	113.2	105.11	106.40	95.72
70	21	121.4	112.81	113.96	103.06
76	24	134.5	125.09	125.99	114.78
80	27	143.6	133.69	134.46	123.00
86	30	158.2	147.36	147.88	136.00
90	32	168.4	157.02	157.30	145.37
96	35	184.6	172.23	172.17	159.93
100	38	195.9	182.93	182.60	170.30
106	41	213.8	199.75	199.05	186.40
110	43	226.4	211.62	210.56	197.91
116	47	246.1	230.01	228.65	215.29
120	49	260.0	242.93	241.29	227.49
126	52	281.7	263.36	261.14	247.25
130	54	296.9	277.49	274.97	260.61
136	58	320.7	299.82	296.64	282.12
140	60	337.4	315.48	311.73	297.32

Refrigerant - NU22 (R417A)

Part #	Description	Weight
57-NU22	R22 drop-in direct replacement.	21.8kg (48lb)

R22 Drop-in Direct Replacement

Advantages

- **The only HFC based R-22 replacement that is compatible with both synthetic and mineral oils (MO,AB,POE).**
- Proven compatibility with all standard equipment components and materials used in R-22 manufactured systems.
- Suitable for use in scroll, screw, rotary and reciprocating compressors.
- Closely matches R-22's operational pressures.
- Can be used in a wide range of traditional R-22 temperature applications, and beyond, while providing adequate oil return and system capacity.
- Avoids the need for unnecessary oil changes and only requires minor system adjustments or modifications.
- Zero ODP (ozone depletion potential) HFC refrigerant.
- Improved COP (coefficient of performance), NU-22 has a lower global warming impact compared to R22, as indicated by NU-22's TEWI (total equivalent warming impact) measurement.
- Non-toxic and non-flammable (ASHRAE classification A1).
- Compatible with all standard refrigerant oils, NU-22 can drastically reduce the level of waste oil handling and disposal normally associated with using refrigerants requiring an oil change.

Refrigerant Tags

**Automotive,
HVAC/R &
Appliance**



57-ERT-100
Tags Illustrated



57-ERH-100
Holder Illustrated

Refrigerant Tag System

- Updated to meet the new ODS requirements.
- Numbered for easy record keeping.
- 4 Copies to meet record keeping requirements.
- Available from stock.

Refrigerant Tags

Part #	Description	Package
57-ERT-100	Refrigerant tags approximately 4" x 8".	100

Refrigerant Tag Holders

Part #	Description	Package
57-ERH-100	Tough clear plastic luggage style refrigerant tag holders for attaching refrigerant tags to system.	100

Refrigeration

Refrigerant Tag System

№ 108301

This tag is for the purpose of labelling a refrigeration system as either a "P", "FL" or "E".

P: System is identified as having passed a leak test by the certified person identified below. A pass indicates that the system is free of any leaks on the date of the test and can be charged with refrigerant.

FL: System is found to be leaking. No refrigerant can be added to system until necessary repairs are completed and system is tagged leak free.

E: The system or container has had all refrigerant removed by the certified person identified below. The system, when tagged "E", can be dismantled or destroyed.

Attention: It is illegal for anyone to remove the label of this notice from the equipment it has been affixed to, unless it is for the purpose of replacing the tag with a new tag.

System Owner: _____

Owner's Address: _____

Operator's Name: _____

Technician Name: _____

ODP Card #: _____

Service Company: _____

Refrigerant Recovered? YES NO Type: _____

Approximate Amount (if recovered): _____

Date: _____

Refrigerant Type: _____

Quantity Installed: _____

Ref. to Invoice #: _____

System Make & Model: _____

Year (if applicable): _____

Type (circle applicable type): P FL E

If system is tagged as "FL" then fill out the following:

Location of Leaks Found: _____

Leaks Repaired: _____

"P": System pass. No leaks found, can be charged w/refrigerant.

"FL": System is leaking. Replace leaking components then recharge.

"E": System has had all refrigerant removed.

Attention: It is illegal for anyone to remove the label of this notice from the equipment it has been affixed to, unless it is for the purpose of replacing the tag with a new tag.

Enclose White Copy in Plastic Tag

57-ERT-100
Tag Details

R12 & R414b Refrigeration Compressors



120 & 208/230 Volt Technical Specifications

Refrigeration



30-FF8.5BKW
Illustrated

Embraco Part #	Nominal Motor HP	BTU Capacity		Volts	Replacement Guide			Oil Coolers
		L/M BP	HBP		Danfoss	Matsushita	Tecumseh	
30-EM20	1/16	203	-	120	TL2A	-	AZ	No
30-EM30	1/12	310	-	120	TL3A	-	AZ1335D	No
30-EM40	1/8	426	-	120	TFS4A	-	AE1336A AE1343A	No
30-PW4.5K9	1/8	377	-	120	PW4.5A PW4.5K9	FN43F67R	AE1336A	No
30-EM55	1/6	565	-	120	TFS5A	-	AZ	No
30-FF6BKW	1/5	655	2110	120	-	FN66F11R MA16-634A [□]	AE1336A, AE1360A AE1343A, AE3414A AE3417A	Yes
30-FF8.5BKW	1/4	854	2651	120	FFS8A FF8.5A	FN91F17R MA14-889A [□]	AE1380A	Yes
30-FF10BKW	1/4+	913	3244	120	FFS9A FF10A	-	AE3430A AE1410A	Yes
30-FF10BX*	1/4+	862	3200	120	-	-	AE2410A AE4430A	No
30-FF10SV*	1/4+	900	3048	120	c/w Service Valve		AE2410A AE4430A	No
59-NE6170SV	1/4+	-	3276	120	c/w Service Valve		AE2410A	No
30-E3121A	1/3	1112	-	120	-	-	AE2410A	No
30-FF11.5BKW	1/3	1150	3650	120	-	FN110F22S FN110Q22S MA13-1050 [□]	AE1410A AE1411A	Yes
30-FFI12BKW	1/3+	1300	4000	120	SC12A SC15A	-	AE1413A AE3440A	Yes
30-FFI12BX*	1/3+	1350	4150	120	SC128	-	AE2413A, AE2415A AE4440A, AE4448A	No
30-FFI12SV*	1/3+	1350	4150	120	c/w Service Valve		AE2413A, AE2415A AE4440A, AE4448A	No
30-NE6187SV*	1/3+	-	4371	120	c/w Service Valve		AE4448A	No
30-NE3130A	1/3+	1517	-	120	-	-	AE2415A	No
59-J2152A*	1/2	2380 (LBP)	-	120	c/w Service Valve		AJ2425A	No
59-T6213A*	1/2	-	5360	120	c/w Service Valve		AJ4461A	No
59-T6213SV*	1/2	-	5360	120	c/w Service Valve		AJ4461A	No
59-T6215A*	1/2	3820 (MBP) +20°F	6670	120	c/w Service Valve		AJ4461A, AJ6435A, AJ7441A, AJ7465A, AK9434A, AK9441A	No
59-T6215SV*	1/2	3820 (MBP) +20°F	6670	120	c/w Service Valve		AJ4461A, AJ6435A, AJ7441A, AJ7465A, AK9434A, AK9441A	No
59-J6220A115*‡	3/4	-	9100	120	c/w Service Valve		AJ4492A	No
59-J6220A230*‡	3/4	-	9100	208/230	c/w Service Valve		AJ4492A, AH7480A	No
59-J6226A*‡	1	-	12200	208/230	c/w Service Valve		AJ4512A, AH7511B	No

[□] Camco/Matsushita

* These are high starting torque compressors that come complete with capacitor and are direct suction.

‡ Also approved for use with R502 in LBP Applications. Specifications available on request.

The 30-FFI12BKW is direct suction also. You May Not Reverse Process And Suction On These Compressors.



59-T6213SV
Service Valve



59-J6226A
Service Valve

R12 & R414b Refrigeration Compressors



Refrigeration

120 Volt Electrical Assemblies



30-FF8.5BKW
Illustrated

BTU Rating Conditions

Temperature	LBP	HBP
Evaporator	-10°F	45°F
Condenser	130°F	130°F
Ambient	90°F	90°F
Liquid (entering expansion valve)	90°F	90°F
Return Gas	90°F	90°F

Embraco Part #	Old Style Relay & Overload (One Piece)	Hard Start Kit (Old Style)	New Style Relay & Overload (Two Piece)	Start Capacitor
30-EM20	30-EM20-402	30-HS7	30-1350422	35-145A125
30-EM30	30-EM30-400	30-HS7	30-1350414	35-145A125
30-EM40	30-EM40-404	30-HS7	30-1350410	35-145A125
30-PW4.5K9	30-PWK9-154	30-HS3	30-1350339	35-324D125
30-EM55	30-EM55-406	30-HS6	30-1350424	35-216A125
30-FF6BKW	30-FF6-178	30-HS5	30-1350038	35-233A125
30-FF8.5BKW	30-FF8.5-180	30-HS4	30-1350365	35-270B125
30-FF10BKW	30-FF10-181	30-HS1	30-1350132	35-460D125
30-FF10BX	-	30-HS16*	30-1350338	35-270B125
30-FF10SV	-	30-HS16*	30-1350338	35-270B125
59-NE6170SV*	9660A-166	MTRP55	59-4TM771PFB	35-145B165
30-E3121A	9660B-172	-	59-MRT26AKN	-
30-FF11.5BKW	30-FF11-182	30-HS1	30-1350367	35-460D125
30-FF112BKW	30-FF11-182	30-HS1	30-1350130	35-460D125
30-FF112BX*	30-FF112-006	30-HS2*	30-1350131	35-378D125
30-FF112SV*	30-FF112-006	30-HS2*	30-1350131	35-378D125
30-NE6187SV*	9660A-182	MTRPH63	59-4TM798PFB	35-145B165
30-NE3130A	9660B-172	-	59-MRT24AJN	-

* Mandatory - included with compressor.

Hard start kit includes capacitor, cap bracket, cap clip, cap end caps and leads. Start capacitors are not normally required. However, if one is desired, it must be connected between terminals 11 and 13. The copper wire between the two terminals must be removed.



59-T6213SV
Service Valve

120 & 208/ 230 Volt Electrical Assemblies

Aspera Part #	Relay	Overload	Start Capacitor
59-J2152A*	59-3ARR3B2L3	59-CSP00GJ	35-243G250
59-T6213A*	59-9660180	59-MST16AFN	35-189D165
59-T6213SV*	59-9660180	59-MST16AFN	35-189D165
59-T6215A*	59-9660189	59-MRT18RW	35-189D165
59-T6125SV*	59-9660189	59-MRT18RW	35-189D165
59-J6220A115*‡	59-3ARR3B2L3	59-CRA993	35-340D125
59-J6220A230*‡	59-3CR702289	59-MRA6981	35-88F330
59-J6226A*‡	59-3AR3B10AA3	59-MST20AGN	35-72E330
59-J6226A*‡	Run capacitor - 36-17R3744 - included		

**Refrigeration & Air Conditioning Compressors
For All Your Cooling Solutions**



- Reliability
- Efficient
- Silent Operating
- 30 Month Warranty



R134a & R414b - Refrigeration Compressors



Refrigeration

120 & 208/230 Volt Technical Specifications

Embraco Part #	Nominal Motor HP	BTU Capacity		Volts	Replacement Guide
		LBP/ MBP	HBP.		
30-EM20HHR	1/16	200	906	120	AZA1316
30-EM30HHR	1/10	310	1390	120	AZA1335
30-EM45HHR	1/8	420	1775	120	AZA1340YXA
30-EMI50HER	1/6	500	-	120	-
30-EM55HNR	1/6	510	-	120	-
30-EMI60HER	1/5	585	-	120	-
30-EM65HHR*	1/5	-	2600	120	-
30-NB1116Z	1/5	611	-	120	AEB1360YXA
30-FF7.5HBK	1/5	650	2760	120	AE3425YXA
30-FF8.5HBK	1/4	740	3135	120	AE3430YXA
30-NB1118Z	1/4	800	-	120	AEA1380YXA
30-FF10HBK	1/4+	840	3530	120	AE4430YXA
30-FF10HBX*	1/4+	840	3530	120	AE4430YXA
30-FF10HSV*	1/4+	840	3530	120	AEA4430YXA
30-NE1121Z	1/3	1000	-	120	AEA4430YXA
30-NE1130Z	1/3+	1252	-	120	AEA4445YXA
30-FF112HBX*	1/3+	1170	4300	120	AE4440YXA
30-FF112HSV*	1/3+	1170	4300	120	AEA4440YXA
59-NE6187ZSV*	1/3+	-	4371	120	AE4448YXA
59-NE6210Z*	1/3+	-	4600	120	AE4448YXA
59-T6213Z*	1/2	-	5900	120	AK4460YXA
59-T6215Z*	1/2+	-	7200	120	AK4476YXA
59-J6220Z*	3/4	-	9700	208/230	c/w Service Valve AJ4492Y
59-J6226Z*	1	-	13200	208/230	c/w Service Valve AJ4512

*Note: These are high starting torque compressors that come complete with capacitor and are direct suction. You may NOT reverse process and suction on these compressors.



30-FF112HBX
Illustrated

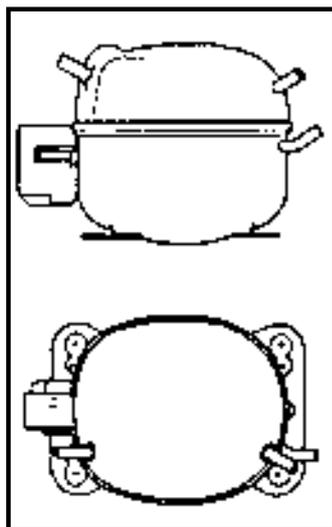
BTU Rating Conditions

Temperature	LBP	HBP
Evaporator	-10°F	45°F
Condenser	130°F	130°F
Ambient	90°F	90°F
Liquid (entering expansion valve)	90°F	90°F
Return Gas	90°F	90°F

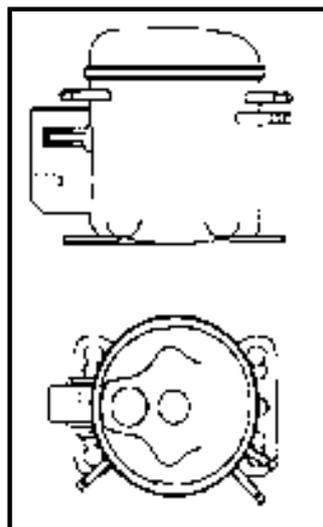
Embraco Style



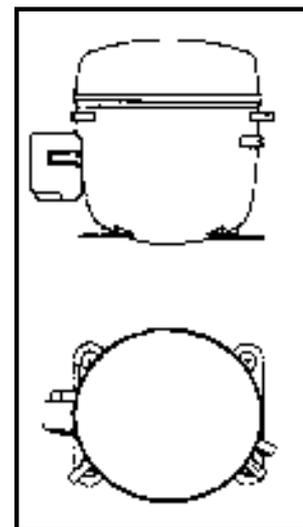
"EM" Series



"PW" Series



"FF" Series



R134a & R414b - Refrigeration Compressors



120 & 208/230 Volt Electrical Assemblies



30-FF112HBX
Illustrated

Aspera Part #	Relay	Overload	Start Capacitor
30-EM20HHR	59-213514024	59-4TM730KFB	35-124A125
30-EM30HHR	59-213514105	59-4TM757MFB	35-108A125
30-EM45HHR	59-213514105	59-4TM757MFB	35-145A125
30-EMI50HER	59-213514105	59-4TM757KFB	-
30-EM55HNR	59-213514067	59-4TM762KFB	35-161A125
30-EMI60HER	59-213514083	59-4TM762MDB	35-161A125
30-EM65HHR	59-213514121	59-4TM771RFB	-
30-NB1116Z	59-MTRP0036	59-T0567	-
30-FF7.5HBK	59-213516094	59-4TM771NFB	35-270A125
30-FF8.5HBK	59-213516167	59-MRT2262	35-270A125
30-NB1118Z	23-7001	59-MRP30AKN	-
30-FF10HBK	59-213516183	59-MST22AIN	35-460D125
30-FF10HBX*	59-213516191	59-MRT20AGK	35-270B165
30-FF10HSV*	59-213516191	59-MRT20AGK	35-270B165
30-NE1121Z	59-MTRP55	59-MRP20APK	-
30-NE1130Z	59-MTRP0019	59-MRT20JK	-
30-FF112HBX*	59-213516051	59-MRT22AFZ	35-378D125
30-FF112HSV*	59-213516051	59-MRT22AFZ	35-378D125
59-NE6187ZSV	59-MTRPH63	59-MRT22AIN	35-145B165
59-NE6210Z*	59-9660183	59-MST20AGN	35-189D165
59-T6213Z*	59-9660180	59-MST16AFN	35-189D165
59-T6215Z*	59-9660189	59-MST18RW	35-189D165
59-J6220Z*	59-3CR702289	59-MRT16AGN	35-88F330
59-J6226Z*	59-3ARR10AA3	59-MST16AGN	35-72E330
59-J6226Z	Run capacitor - 36-17R3744 - included		

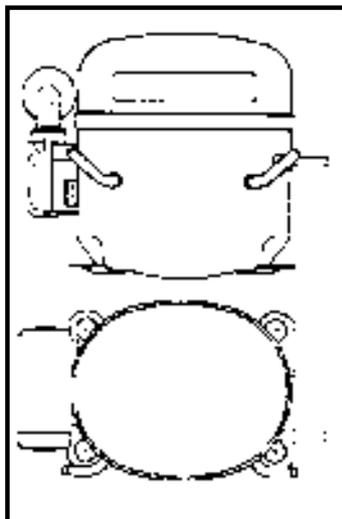
Refrigeration

Aspera Style



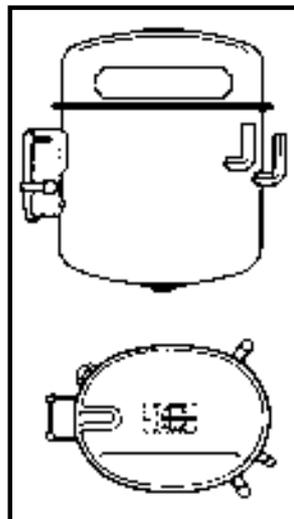
Note: The following cans are exact in design and size

"B" & "E" Series



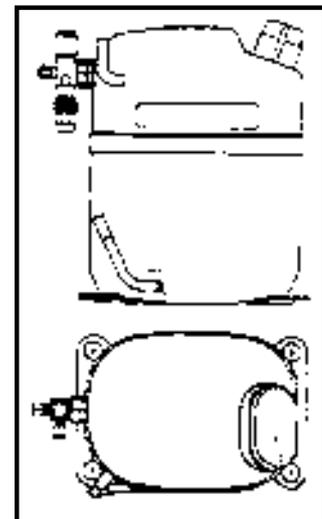
Tecumseh "AE" -
Aspera "B" and "E".

"T" Series



Tecumseh "AK"
Aspera "T".

"J" Series



Tecumseh "AJ"
Aspera "J".

R22 Refrigeration Compressors

aspera

Refrigeration



59-NE Series
Illustrated

120 Volt Technical Specifications

Aspera Part #	Nominal Motor HP	BTU Capacity HBP.	Volts	Replacement Guide
59-NB6152E*	1/5+	2640	120	AE9415E
59-NE6195E*	1/4+	4150	120	AE9423E
59-NE6210E*	1/3+	4585	120	AE9422E, AK9428E
59-NE9213E*	1/2	6237	120	MBP/HBP Applications (3509 BTU @ 20°F) AK9442E

*Note: Above compressors are all high starting torque and come complete with capacitor.

BTU Rating Conditions

Temperature	HBP
Evaporator	45°F
Condenser	130°F
Ambient	90°F
Liquid (entering expansion valve)	90°F
Return Gas	90°F

120 Volt Electrical Assemblies

Aspera Part #	Relay	Overload	Start Capacitor
59-B6152E	59-9660172	59-MRP26LK	35-145B165
59-E6195E	59-9660182	59-MRT22AIN	35-145A125
59-E6210E	59-9660182	59-MRT22AIN	35-145B165
59-E9213E*	59-3ARR3B25U	59-MTT00JH	35-72D250

*59-E9213E may also run PSC for A/C applications.
Use 36-20K440(R) run capacitor.

R22 Air Conditioning Compressors

aspera



59-J7238E

120 & 208/230 Volt Technical Specifications

Aspera Part #	Nominal Motor HP	BTU Capacity HBP.	Volts	Replacement Guide
59-E7210F	1/2	5000	120	AE5450E
59-E7213E	1/2	6400	120	AE5460E, AK5470E
59-T7220G	3/4	9200	120	AJ5483E, AJ5494E, AK5483E, RK5490E
59-J7225E	3/4+	9821	230	AJ4492E
59-T7223G115	1	11000	120	AK5510E, AK5511E, AK5512E, RK5512E
59-T7223G230	1	11000	208/230	
59-J7231E	1 1/4	14800	208/230	AJ5514E, AJ5515F, AJ5517E, RK5515E
59-J7238E	1 1/2	18300	208/230	AJ5518E, RK5518E
59-J7240E	1 3/4	19400	208/230	AJ5519G, AW5519E

BTU Rating Conditions

Temperature	HBP
Evaporator	45°F
Condenser	130°F
Ambient	90°F
Liquid (entering expansion valve)	90°F
Return Gas	90°F

120 & 208/230 Volt Electrical Assemblies

Aspera Part #	Overload	Run Capacitor
59-E7210F	59-MST24AIN69	36-15R3744
59-E7213E	59-MRT00AIRH	36-15R3744
59-T7220G	59-MRTAGN3090	36-20R3744
59-J7225E	59-MST16AHN59	36-15R3744
59-T7223G115	59-CST00AGSF	36-25R3744
59-T7223G230	59-3ARR3B6V3	36-20R3744
59-J7231E	59-CR99243031	36-20R3744
59-J7238E	59-CR17183031	36-25R3744
59-J7240E	59-CR99313031	36-25R3744

R22 Rotary Air Conditioning Compressors



Rotary Compressors

- PSC
- Evaporator Temperature Rating Range;
 - High 14°F to 59°F
- Starting Torque - Normal

Applications:

- Beer Coolers
- Beverage Vendors (Ice)
- Drinking Water Coolers
- Dehumidifiers
- Ice Machines
- PTAC
- Reach-in Refrigerators
- Split Systems
- Salad Cabinets
- Window A/C

120 & 208/230 Volt Technical & Performance Specifications

Part #	HP	Volt	BTUH	Amps	LRA	Watts	Performance					Weight	Cross Reference	
							32°F	+41°F	+45°F	+50°F	+59°F		Tecumseh	Mitsubishi
59-ER7093E	3/4	120	9300	8.1	42	920	6746	8532	9404	10516	12302	29.1lbs	RK-5490-E	RH-135W
59-ER7093E2	3/4	208/230	9300	4.15	21.5	905	6746	8532	9364	10516	12302	29.1lbs	RK-5490-E	RH-135N
59-ER7119E	1	120	12000	10.8	50	1180	8730	10714	11864	12897	15397	32.2lbs	RK-5512-E	RH-167W
59-ER7119E2	1	208/230	12000	5.2	29	1100	8730	10714	11980	12897	15397	33.3lbs	RK-5512-E	RH-167N
59-ER7132E	1 1/4	120	13500	11.8	51	1330	9920	12300	13570	14640	19324	32.3lbs	RK-5513-E	RH-189W
59-ER7132E2	1 1/4	208/230	13500	6.0	35	1270	9920	12300	13570	14640	19324	33.3lbs	RK-5513-E	RH-189N
59-ER7149E2	1 1/2	208/230	15000	6.7	35	1410	10910	12900	14960	16270	19325	33.3lbs	RK-5515-E	RH-207N
59-ER7178E2	1 1/2	208/230	18000	7.9	38	1680	12900	15870	17820	18850	22810	33.3lbs	RK-5518E	RH-247N
59-ER7242E2	2	208/230	24200	11.1	64	2280	18250	21825	24200	25790	-	49.1lbs	-	PH-33N
59-ER7279E2	2 1/4	208/230	28000	12.9	66	2630	20800	25800	27930	30750	-	49.8lbs	-	PH-39N

BTU Rating Conditions

Temperature	HBP
Evaporator	45°F
Condenser	130°F
Ambient	90°F
Liquid (entering expansion valve)	115°F
Return Gas	90°F

120 & 208/230 Volt Electrical Assemblies

Aspera Part #	Overload	Run Capacitor
59-ER7093E	Internal	36-70R3744
59-ER7093E2	MRA98885-9027	36-25R3744
59-ER7119E	MRA98885-9026	36-30R3744
59-ER7119E2	Internal	36-25R3744
59-ER7132E	Internal	36-80R3744
59-ER7132E2	Internal	36-30R3744
59-ER7149E2	Internal	36-30R3744
59-ER7178E2	Internal	36-35R3744
59-ER7242E2	Internal	36-35R3744
59-ER7279E2	Internal	36-35R3744

COMPRESSOR MODEL NUMBER SYSTEM

• 2 3 1 13 1 B C A

Maximum Feet Per Day: 4 - 7.5 x 2.5 B 4.8 x 3.0 C - 4.4 x 3.75 D - 3.12 x 3.0 E - 5.5 x 3.5
 F - 10.5 x 10.5 H - 7.5 x 7.5 I - 7.5 x 7.5 J - Tripout Special

Example (Manufacture):
 A - 115 1 60 M 220/200 3 50
 B - 230 1 60 N 380/415 1 50
 C 230/200 1 60 P - 228 1 50
 D - 230/200 1 60 or 220/200 3 50 U 220/280 3 60
 E - 460 3 60 or 240/415 3 50 V - 460/280 1 60 (130/415 3 50)
 F - 575 3 60 or 500 1 50 W - 380/460 3 60
 G - 220 1 60 X - 340 3 60
 H - 715 1 60 Y 220/220 3 60 (36 50 hp)
 J - 220/220 1 50
 K - 220/220 1 50
 L - 220/200 3 60 or 220/200 3 50

Motor Protection:
 C - External P - PSC Only - Solid State
 D - Internal Line Input C - Internal Core Break (1 Year) only
 H - External - Resistor F - Motor Burn - Solid State (2nd Generation)
 J - Motor Only Internal Thermal and fan running elements

Motor Type:
 A - PSC Permanent Split Capacitor 1 - PSC 3 Phase Fan Running Start
 B - 230 Capacitor Start/Run G - 3 Phase 2/4 Pole (15 Speed)
 C - 460 Capacitor Start/Run J - 1 Phase 2/4 Pole (12 Speed)
 D - 2/3 Phase 4/2 Pole Low K - 3 Phase Dual Voltage
 E - 575 Low Start/Run 2/3 L - 3 Phase HPFDI, 78

Capacity:
 193 - 19 000 BTU/hr, 244 - 240 000 BTU/hr (When 5.7 degree rise systems)
 *90 - 18 x 3.0's in "Dual Voltage" - 15,000 BTU/hr "Output"

Frame Size:
 A - Model A F - Model B C - Small (x 42K)
 B - Dual G - Model G H - Small (x 42K)

Special Features:
 G - Dual Compressor Application C - High Efficiency
 H - Abrasive Pressure Relief Valve K - No Previous Field Voltage
 Q - Basic Standard Model P - Second Generation Base Standard Model (50/550 PSC HPFDI 147)

Energy Efficiency:
 F - Second Generation - High Efficiency E - Second Generation - No Previous Field Voltage
 G - Second Generation - Basic Standard Model F - Third Generation - Basic Standard Model
 J - Fourth Generation - Basic Standard Model G - Basic Standard Model - Improved Sound
 S - Inertio Series Standard Model H - Inertio Series - Hi Efficiency Model
 T - Inertio Series 2nd Generation Hi Efficiency Model I - Inertio Series - 2nd Generation Hi Efficiency Model
 U - Basic Standard Model Upgrade

Type of Refrigerant:
 1 - R17 2 - R22 4 - R134A
 5 - R502 (or R91) as liquid temp. 420K
 6 - R404A 7 - R407C 8 - R410A

Refrigeration Application:
 H - High Temperature U - Medium Temperature I - Low Temperature



Family

A, B and G Series Serial Number System
 C and R Series Serial Number System

Example: S3795K000001
 S - Scroll Technologies
 37 - Production Week
 95 - Year
 K - State (Arkansas)
 000001 - Sequence # of Units Built During the Week

Day of the Year: 108
 Year of Manufacture: 92
 Where Built: 0
 Daily Unit of Manufacture: 000000
 000001 = 1st unit of the day
 009999 = 999th unit of the day

92 = 1992
 93 = 1993
 94 = 1994

059 = February 20th
 090 = March 31th
 108 = April 18th

Rules Of Thumb

- 1 HP = 12,000 BTU (±100)
- 1 HP = 1 Ton (A/C only)
- Replacement BTU's should not exceed ±10% of OEM specifications.
- Model "G" compressors include crankcase heaters (ie. H2BG, H2NG, H25G)

* Requires Motor Protection

Part Numbers Ending In "R" = Rotolock

Unless Otherwise Indicated All Compressors Are Sweat

R22 Scroll Compressors - Single Speed

Air Conditioning 

Single Phase - 208/230 Volt (R22)

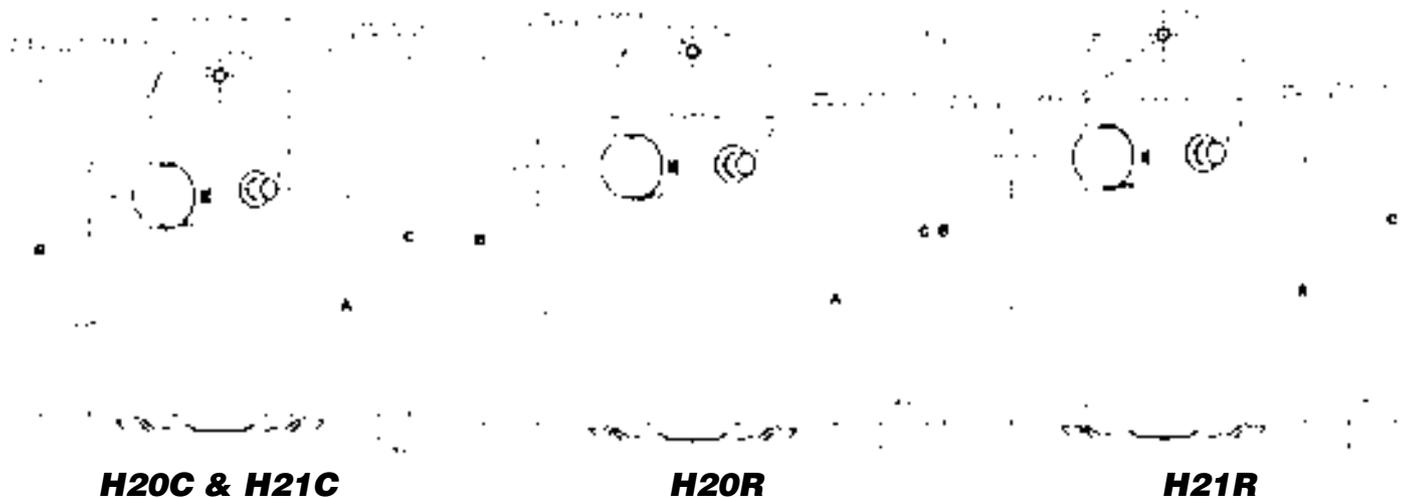
Part #	@45°F/130°F Evap		@45°F/110°F Evap		HZ	RLA	LRA	MCC	Dis	Suc	Oil Chrg (oz)	Dimensions (")			Weight (Lbs.)
	BTUH	EER	BTUH	EER								A	B	C	
H20C233ABCA	22800	10.9	25700	15.1	50/60	11.5	64	18.0	1/2 S	3/4 S	36	9.4	14.3	15.8	60.1
H21C293ABCA	28700	11.0	32022	15.9	50/60	14.1	78	22.0	1/2 S	3/4 S	36	9.4	14.3	15.8	60.1
H21C343ABCA	33400	10.9	37579	15.9	50/60	16.7	97	26.0	1/2 S	3/4 S	36	10.2	15.2	16.7	68.0
H21C383ABCA	37500	10.9	42292	16.1	50/60	19.2	105	30.0	1/2 S	3/4 S	36	10.2	15.2	16.7	68.3
H21C403ABCA	39700	11.1	44573	16.0	50/60	18.3	115	28.5	1/2 S	3/4 S	36	10.2	15.2	16.7	68.3
H21C423ABCA	41400	11.0	46678	16.1	50/60	20.5	115	32.0	1/2 S	3/4 S	36	10.2	15.2	16.7	68.3
H21R453ABCA	44800	11.3	50169	16.1	50/60	23.4	126	36.5	1/2 S	7/8 S	65	12.2	17.2	18.8	88.8
H21R483ABCA	48500	11.4	54088	16.3	50/60	24.4	150	38.0	1/2 S	7/8 S	65	12.2	17.2	18.2	85.8
H21R543ABCA	54100	11.3	60521	16.3	50/60	26.9	175	42.0	1/2 S	7/8 S	65	12.2	17.2	18.8	93.0
H21R583ABCA	57900	11.3	65099	15.8	50/60	28.9	175	45.0	1/2 S	7/8 S	65	12.2	17.5	19.1	91.3
H21R603ABCA	60670	11.3	67979	16.1	50/60	28.9	175	45.0	1/2 S	7/8 S	65	12.2	17.5	19.1	93.0

Three Phase - 208/230 Volt (R22)

Part #	@45°F/130°F Evap		@45°F/110°F Evap		HZ	RLA	LRA	MCC	Dis	Suc	Oil Chrg (oz)	Dimensions (")			Weight (Lbs.)
	BTUH	EER	BTUH	EER								A	B	C	
H20C403DBYA	39600	11.1	44300	13.9	60	12.4	90	19.4	1/2 S	3/4 S	36	10.2	15.2	16.7	66.8
H21C423DBYA	41400	11.0	44169	13.5	60	14.1	90	22.0	1/2 S	3/4 S	36	10.2	15.2	16.7	68.3
H21R453DBYA	44100	11.2	49580	16.2	60	13.0	93	20.0	1/2 S	7/8 S	70	12.2	17.2	18.8	74.7
H21R583DBYA	56500	11.3	63614	16.6	60	15.5	125	26.5	1/2 S	7/8 S	76	12.2	17.5	19.1	80.3
H20R603DBYA	59400	11.4	66434	15.7	60	16.0	125	25.0	1/2 S	7/8 S	76	12.2	17.5	19.1	87.8
H20R753DBYA	74800	11.4	83900	15.8	60	18.9	146	29.5	1/2 S	7/8 S	80	11.7	16.6	18.2	97.8

Three Phase - 460 Volt (R22)

H21C383DBEA	33200	10.9	37503	15.8	50/60	5.5	37.5	8.5	1/2 S	3/4 S	36	10.2	15.2	16.7	37.7
H21C343DBEA	33400	10.9	37579	15.9	50/60	16.7	96.7	26.0	1/2 S	3/4 S	36	10.2	15.2	16.7	67.7
H20C403DBEA	39700	11.1	44600	15.6	50/60	6.2	45	9.7	1/2 S	3/4 S	36	10.2	15.2	16.7	66.8
H21R453DBEA	44000	11.2	49580	16.2	50/60	6.4	46.5	10.0	1/2 S	7/8 S	70	12.2	17.2	18.8	81.0
H21R583DBEA	56600	11.2	63880	16.4	50/60	8.9	67	13.9	1/2 S	7/8 S	76	12.2	17.5	19.1	81.3
H21R603DBEA	58400	11.2	65607	16.4	50/60	9.1	67	14.2	1/2 S	7/8 S	76	12.2	17.5	19.1	81.3
H20R753DBEA	75300	11.6	83500	16.1	50/60	9.5	73	14.8	1/2 S	7/8 S	80	12.2	17.5	19.1	97.8



H20C & H21C

H20R

H21R

* Requires Motor Protection

Part Numbers Ending In "R" = Rotolock

Unless Otherwise Indicated All Compressors Are Sweat

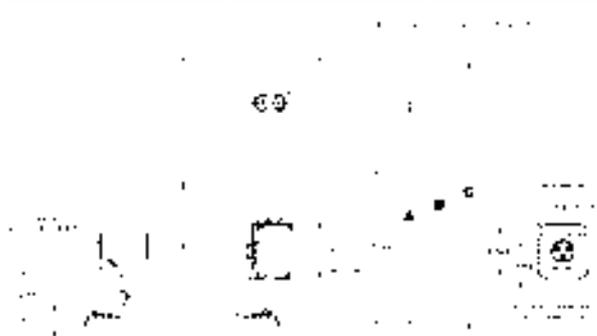
R22 Reciprocating Compressors - Single Speed



Single Phase - 208/230 Volt (R22)

Air Conditioning

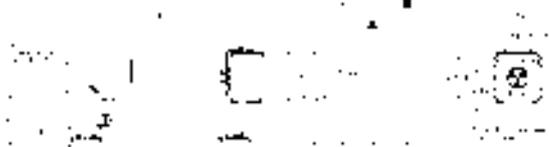
Part #	@45°F/130°F Evap		@45°F/110°F Evap		HZ	RLA	LRA	MCC	Dis	Suc	Oil Chrg (oz)	Dimensions (")			Weight (Lbs.)
	BTUH	EER	BTUH	EER								A	B	C	
H24B13QABCA	12600	8.0	15476	11.1	50/60	8.6	40	13.0	5/16 E	1/2 E	40	10.5	12.2	12.5	53.5
H24B13QABCB	12600	8.0	15476	11.1	50/60	8.6	40	13.0	5/16 E	1/2 E	40	10.5	12.2	12.5	53.5
H23B15QABCB	14900	9.8	18117	13.4	50/60	6.7	45	14.0	3/8 E	5/8 E	40	12.2	12.6	12.9	62.0
H29B15UABCA	15700	10.6	19602	14.8	50/60	6.7	48	12.0	3/8 E	5/8 S	35	11.2	13.2	13.5	64.0
H23B17QABCB	16600	9.8	19994	13.4	50/60	7.6	54	15.0	3/8 E	5/8 E	40	12.2	12.6	12.9	63.5
H29B17UABCA	17200	10.7	21455	14.9	50/60	7.2	48	14.0	3/8 E	5/8 S	35	11.2	13.2	13.5	64.0
H23B19QABCB	17900	9.8	21711	13.6	50/60	8.2	57	16.0	3/8 E	5/8 E	40	12.8	13.2	13.5	65.0
H29B18UABCA	18100	10.8	22336	15.0	50/60	7.4	48	14.0	3/8 E	5/8 S	35	11.2	13.2	13.5	64.0
H29B20UABCA	20400	10.7	24757	14.6	50/60	8.6	60	17.0	3/8 E	5/8 S	35	11.2	13.2	13.5	64.0
H23B22QABCB	21800	9.8	26542	13.4	50/60	9.7	57	18.8	3/8 E	5/8 E	40	12.8	13.2	13.5	65.5
H29B22UABCA	22500	10.7	27381	14.7	50/60	9.6	60	18.0	3/8 E	5/8 S	35	11.2	13.2	13.5	66.0
H23B24QABCB	24000	9.8	28059	13.1	50/60	10.9	66	20.2	3/8 E	5/8 E	40	12.8	13.2	13.5	66.0
H29B24UABCA	24200	10.9	29080	15.1	50/60	9.6	61	19.0	1/2 E	3/4 S	35	11.7	13.8	14.0	68.5
H29B26UABCA	26500	10.9	31542	15.1	50/60	10.9	68	20.0	1/2 E	3/4 S	35	11.7	13.8	14.0	68.5
H23B28QABCB	27800	9.7	32706	12.9	50/60	12.8	76	23.0	3/8 E	5/8 E	40	12.8	13.2	13.5	67.5
H29B28UABCA	28200	10.9	33579	14.9	50/60	11.8	73	22.0	1/2 E	3/4 S	35	11.7	13.8	14.0	68.5
H29B30UABCA	29800	11.0	35420	15.0	50/60	12.4	82	23.0	1/2 E	3/4 S	35	12.2	14.2	14.5	73.0
H29B32UABCA	31800	10.9	37984	15.0	50/60	13.0	82	23.5	1/2 E	3/4 S	35	12.2	14.2	14.5	73.0
H29B35UABCA	35300	10.9	41718	14.9	50/60	14.4	86	26.0	1/2 E	3/4 S	40	12.2	14.2	14.5	75.0
H23A383ABCA	37900	10.3	45130	14.0	50/60	17.0	97	30.0	3/8 E	3/4 E	50	12.0	14.6	14.9	82.5
H23A423ABCA	42100	10.4	49820	14.0	50/60	18.7	110	31.2	1/2 E	7/8 E	50	12.5	14.6	14.9	82.5
H23A463ABCA	46300	10.3	54570	13.4	50/60	21.6	118	36.4	1/2 E	7/8 E	55	12.5	14.6	14.9	85.5
H23A503ABCA	49000	10.0	59189	13.7	50/60	22.3	138	40.0	1/2 E	7/8 E	55	14.0	16.1	16.4	92.0
H23A543ABCA	53400	10.0	63061	13.0	50/60	24.4	138	45.5	1/2 E	7/8 E	55	14.0	16.1	16.4	95.5
H23A563ABCA	55600	10.1	66028	13.2	50/60	24.6	142	45.0	1/2 E	7/8 E	55	14.0	16.1	16.4	95.5
H23A623ABCA	60800	10.0	71127	13.0	50/60	28.2	78	47.0	1/2 E	7/8 E	55	14.0	16.1	16.4	97.5



H23A & H23B



H24B



H29B

* Requires Motor Protection Part Numbers Ending In "R" = Rotolock Unless Otherwise Indicated All Compressors Are Sweat

R22 Reciprocating Compressors - Single Speed



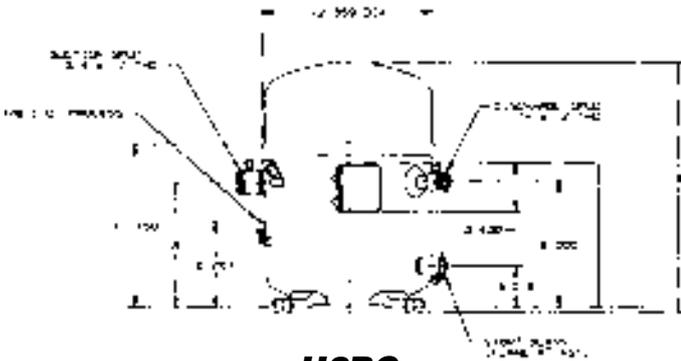
Air Conditioning

Three Phase - 200/208 Volt (R22)

Part #	@45°F/130°F Evap		@45°F/110°F Evap		HZ	RLA	LRA	MCC	Dis	Suc	Oil Chrg (oz)	Dimensions (")			Weight (Lbs.)
	BTUH	EER	BTUH	EER								A	B	C	
H29B32UDBLA	32200	10.9	38336	15.0	50/60	9.0	78	16.0	1/2 E	3/4 S	35	12.2	14.2	14.5	71.0
H29B35UDBLA	35100	10.8	41405	14.6	50/60	9.6	78	16.0	1/2 E	3/4 S	40	12.2	14.2	14.5	71.0
H23A383DBLA	37900	10.4	45130	14.2	50/60	10.4	78	20.0	3/8 E	3/4 E	50	12.5	14.6	14.9	78.5
H23A423DBLA	42100	10.4	49820	14.1	50/60	11.7	78	20.0	1/2 E	7/8 E	50	12.5	14.6	14.9	78.5
H23A463DBLA	46300	10.5	54570	13.6	50/60	12.6	90	24.0	1/2 E	7/8 E	55	12.5	14.6	14.9	78.5
H23A543DBLA	53400	10.1	63061	13.3	50/60	14.5	106	27.0	1/2 E	7/8 E	55	14.0	16.1	16.4	84.0
H23A563DBLA	55600	10.3	66029	13.4	50/60	15.3	124	30.0	1/2 E	7/8 E	55	14.0	16.1	16.4	87.5
H23A623DBLA	60800	10.2	71127	13.3	50/60	17.0	124	32.0	1/2 E	7/8 E	55	14.0	16.1	16.4	87.5

Three Phase - 208/230 Volt (R22)

H2BG094DBDER	88700	10.3	108684	14.5	50/60	24.0	145	40.0	1-1/4 x 12	1-3/4 x 12	96	9.0	17.6	17.9	138.0
H2BG094DBDE	88700	10.3	108684	14.5	50/60	24.0	145	40.0	7/8 S	1-1/8 S	96	9.0	17.6	17.9	138.0
H2BG104DBDER	103900	10.4	121853	13.9	50/60	29.3	166	45.0	1-1/4 x 12	1-3/4 x 12	96	9.0	18.3	18.7	153.0
H2BG104DBDE	103900	10.4	121853	13.9	50/60	29.3	166	45.0	7/8 S	1-1/8 S	96	9.0	18.3	18.7	153.0
H2BG124DBDER	121500	10.1	144193	13.5	50/60	36.0	205	56.0	1-1/4 x 12	1-3/4 x 12	96	9.0	18.3	18.7	155.0
H2BG124DBDE	121500	10.1	144193	13.5	50/60	36.0	205	56.0	7/8 S	1-1/8 S	96	9.0	18.3	18.7	155.0
H25G144DBDER	140000	10.1	167854	13.7	50/60	43.1	252	69.0	1-1/4 x 12	1-3/4 x 12	96	9.0	20.6	20.9	176.0
H25G144DBDE	140000	10.1	167854	13.7	50/60	43.1	252	69.0	7/8 S	1-1/8 S	96	9.0	20.6	20.9	176.0
H2NG184DPDFR*	183200	10.3	224544	14.4	50/60	20.5	100	35.2	1-1/4 x 12	1-3/4 x 12	256	11.8	21.8	22.4	253.0
H2NG184DPDF*	183200	10.3	224544	14.4	50/60	20.5	100	35.2	1-1/8 S	1-1/8 S	256	11.8	21.8	22.4	253.0
H2NG204FRDFR*	212400	10.2	255610	13.8	50/60	60.0	282	98.0	1-1/4 x 12	1-3/4 x 12	224	11.8	21.8	22.4	259.0
H2NG244FRDFR*	252900	10.0	298669	13.3	50/60	73.1	360	112.0	1-1/4 x 12	1-3/4 x 12	224	11.8	21.8	22.4	279.0
H2NG244FRDF*	252900	10.0	298669	13.3	50/60	36.6	180	56.0	1-1/8 S	1-1/8 S	224	11.8	21.8	22.4	279.0
H2NG294FPDFR*	287300	9.5	341781	12.6	50/60	87.7	400	138.0	1-1/4 x 12	1-3/4 x 12	224	11.8	21.8	22.4	279.0
H2NG294FPDF*	287300	9.5	341781	12.6	50/60	87.7	400	138.0	1-1/8 S	1-1/8 S	224	11.8	21.8	22.4	279.0



H2BG



H2NG

* Requires Motor Protection

Part Numbers Ending In "R" = Rotolock

Unless Otherwise Indicated All Compressors Are Sweat

R22 Reciprocating Compressors - Single Speed



Three Phase - 460 Volt (R22)

Air Conditioning

Part #	@45°F/130°F Evap		@45°F/110°F Evap		HZ	RLA	LRA	MCC	Dis	Suc	Oil Chrg (oz)	Dimensions (")			Weight (Lbs.)
	BTUH	EER	BTUH	EER								A	B	C	
H29B32UDBEA	31900	10.8	38089	14.8	50/60	4.5	40	8.1	1/2 E	3/4 S	35	12.2	14.2	14.5	71.0
H29B35UDBEA	34900	10.7	41396	14.6	50/60	4.9	40	8.6	1/2 E	3/4 S	40	12.0	14.2	14.5	71.0
H23A383DBEA	37900	10.4	45130	14.2	50/60	5.5	39	9.5	3/8 E	3/4 E	50	12.5	14.6	14.9	78.5
H23A423DBEA	42100	10.4	49820	14.1	50/60	5.7	39	9.5	1/2 E	7/8 E	50	12.5	14.0	14.9	78.5
H23A463DBEA	46300	10.5	54570	13.8	50/60	6.3	45	13.0	1/2 E	7/8 E	55	12.5	14.6	14.9	78.5
H23A543DBEA	53400	10.0	63061	13.3	50/60	7.5	53	14.0	1/2 E	7/8 E	55	14.0	16.1	16.4	84.0
H23A563DBEA	55600	10.3	66029	13.4	50/60	8.0	62	15.0	1/2 E	7/8 E	55	14.0	16.1	16.4	87.5
H23A623DBEA	60800	10.2	71127	13.3	50/60	8.8	62	16.0	1/2 E	7/8 E	55	14.0	16.1	16.4	87.5
H2BG094DBEER	88700	10.3	108684	14.5	50/60	12.3	72	19.0	1-1/4 x 12	1-3/4 x 12	96	9.0	17.6	17.9	138.0
H2BG094DBEE	88700	10.3	108684	14.5	50/60	12.3	72	19.0	7/8 S	1-1/8 S	96	9.0	17.6	17.9	138.0
H2BG104DBEER	103900	10.4	121853	13.9	50/60	14.6	87	22.0	1-1/4 x 12	1-3/4 x 12	96	9.0	18.3	18.7	153.0
H2BG104DBEE	103900	10.4	121853	13.9	50/60	14.6	87	22.0	7/8 S	1-1/8 S	96	9.0	18.3	18.7	153.0
H2BG124DBEER	119000	9.9	108273	14.2	50/60	17.0	85	25.0	1-1/4 x 12	1-3/4 x 12	96	9.0	18.3	18.7	155.0
H2BG124DBEE	119000	9.9	108273	14.2	50/60	17.0	85	25.0	7/8 S	1-1/8 S	96	9.0	18.3	18.7	155.0
H25G144DBEER	140000	10.1	167854	13.7	50/60	21.6	138	34.5	1-1/4 x 12	1-3/4 x 12	96	9.0	20.6	20.9	176.0
H25G144DBEE	140000	10.1	167854	13.7	50/60	21.6	138	34.5	7/8 S	1-1/8 S	96	9.0	20.6	20.9	176.0
H2NG184DPEFR*	183200	10.3	221942	14.3	50/60	25.9	117	40.0	1-1/4 x 12	1-3/4 x 12	224	11.8	21.8	22.4	259.0
H2NG184DPEF*	183200	10.3	221942	14.3	50/60	25.9	117	40.0	1-1/8 S	1-1/8 S	224	11.8	21.8	22.4	259.0
H2NG204DREFR*	212400	10.2	255610	13.8	50/60	30.0	141	49.0	1-1/4 x 12	1-3/4 x 12	224	11.8	21.8	22.4	259.0
H2NG244DREFR*	252900	10.0	298669	13.3	50/60	36.6	180	56.0	1-1/4 x 12	1-3/4 x 12	224	11.8	21.8	22.4	279.0
H2NG244DREF*	252900	10.0	298669	13.3	50/60	36.6	180	56.0	1-1/8 S	1-1/8 S	224	11.8	21.8	22.4	279.0
H2NG294DPEFR*	287300	9.5	341775	12.6	50/60	43.9	200	69.0	1-1/4 x 12	1-3/4 x 12	224	11.8	21.8	22.4	279.0

Three Phase - 575 Volt (R22)

H23A423DBFA	42100	10.4	49820	14.1	50/60	4.6	36	8.0	1/2 E	7/8 E	50	12.5	14.6	14.9	78.5
H23A463DBFA	46300	10.5	54570	13.6	50/60	5.0	36	10.0	1/2 E	7/8 E	55	12.5	14.6	14.9	78.5
H23A543DBFA	53400	10.1	63061	13.3	50/60	5.8	43	10.0	1/2 E	7/8 E	55	14.0	16.1	16.4	84.0
H23A563DBFA	55600	10.3	66029	13.4	50/60	6.1	50	12.0	1/2 E	7/8 E	55	14.0	6.1	16.4	87.5
H23A623DBFA	60800	10.2	71127	13.3	50/60	6.8	50	13.0	1/2 E	7/8 E	55	14.0	16.1	16.4	87.5
H2BG094DBFER	88200	10.3	108273	14.2	50/60	10.0	60	14.5	1-1/4 x 12	1-3/4 x 12	96	9.0	17.6	17.9	128.0
H2BG124DBFER	119000	9.9	143055	13.4	50/60	13.4	66	20.0	1-1/4 x 12	1-3/4 x 12	96	9.0	17.6	17.9	146.0
H2NG184DPFER	183200	10.3	221942	14.3	50/60	20.7	94	32.0	1-1/4 x 12	1-3/4 x 12	224	11.8	21.8	22.4	253.0

H23A & H23B

H24B

* Requires Motor Protection

Part Numbers Ending In "R" = Rotolock

Unless Otherwise Indicated All Compressors Are Sweat

R22 Reciprocating Compressors - Two Speed



Three Phase - 200/208 Volt 50/60 Hz (R22)

Air Conditioning

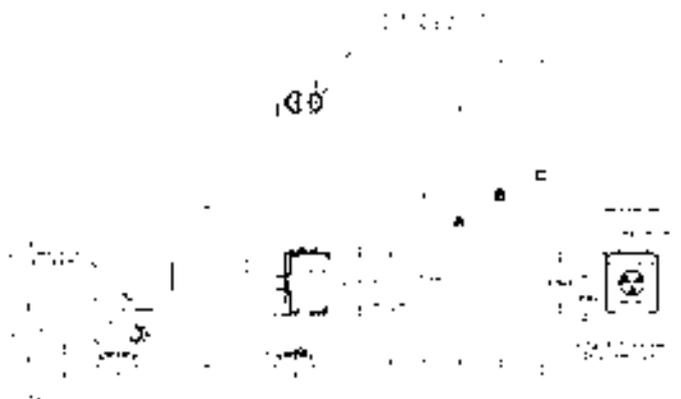
Part #	@45°F/130°F Evap		@45°F/110°F Evap		RLA	LRA	MCC	Dis	Suc	Oil Chrg (oz)	Dimensions (")			Weight (Lbs.)
	BTUH	EER	BTUH	EER							A	B	C	
H2NG094GPDER*	87700/38900	10.1/9.2	106700/51200	14.1/13.9	25.3/12.7	140/50	38.0	1-1/4 x 12	1-3/4 x 12	96	11.8	21.8	22.4	162.0
H2NG104GPDER*	101800/45200	9.9/9.1	122600/58900	13.6/13.4	30.0/15.0	160/58	48.0	1-1/4 x 12	1-3/4 x 12	96	11.8	21.8	22.4	166.0
H2NG124GPDER*	119400/54600	9.6/9.0	141800/ 68100	13.0/12.9	35.2/17.6	185/67	56.3	1-1/4 x 12	1-3/4 x 12	96	11.8	21.8	22.4	174.0
H2NG184GPDFR*	183200/80200	10.3/9.3	224500/104900	14.4/14.2	51.3/25.6	248/89	88.0	1-1/4 x 12	1-3/4 x 12	256	11.8	21.8	22.4	252.0
H2NG204GPDFR*	212400/97200	10.2/9.6	256100/123000	13.8/14.2	60.0/30.0	300/108	98.0	1-1/4 x 12	1-3/4 x 12	256	11.8	21.8	22.4	272.0
H2NG244GPDFR*	252900/114500	10/9.7	301700/145300	13.3/14.2	73.1/36.5	362/124	124.0	1-1/4 x 12	1-3/4 x 12	256	11.8	21.8	22.4	272

Three Phase - 460 Volt (R22)

H2NG094GPEER*	87700/38900	10.1/9.2	106700/51200	14.1/13.9	12.7/7.8	70/31	19.0	1-1/4 x 12	1-3/4 x 12	96	11.8	21.8	22.4	162.0
H2NG104GPEER*	101800/45200	9.9/9.1	122600/58900	13.6/13.4	15.0/9.3	80/36	24.0	1-1/4 x 12	1-3/4 x 12	96	11.8	21.8	22.4	166.0
H2NG124GPEER*	119400/54600	9.6/9.0	141800/ 68100	13.0/12.9	17.6/10.9	93/42	28.2	1-1/4 x 12	1-3/4 x 12	96	11.8	21.8	22.4	174.0
H2NG184GPEFR*	183200/80240	10.3/9.3	224544/105000	14.4/14.2	20.5/12.8	100/45	20.4	1-1/4 x 12	1-3/4 x 12	265	11.8	21.8	22.4	253.0
H2NG204GPEFR*	212400/97200	10.2/9.6	256100/123200	13.8/14.2	24.0/15.0	120/54	39.2	1-1/4 x 12	1-3/4 x 12	256	11.8	21.8	22.4	272.0
H2NG244GPEFR*	252900/114500	10/9.7	301700/145300	13.3/14.2	29.3/18.3	145/62	54.2	1-1/4 x 12	1-3/4 x 12	256	11.8	21.8	22.4	272

Three Phase - 575 Volt (R22)

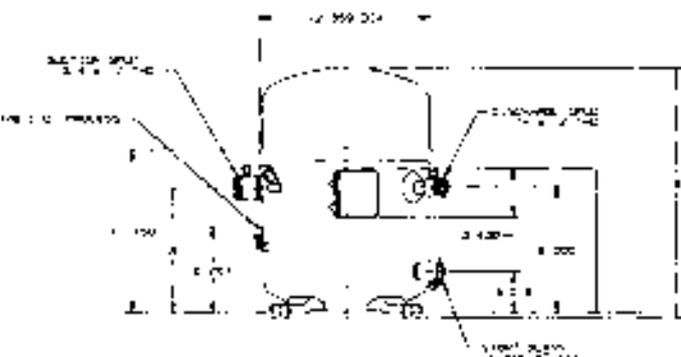
H2NG094GPFER*	87700/38900	10.1/9.2	106700/49100	14.1/13.9	10.1/5.1	56/20	15.2	1-1/4 x 12	1-3/4 x 12	96	11.8	21.8	22.4	162.0
H2NG104GPFER*	101800/45200	9.9/9.1	122600/56400	13.6/13.4	12.0/6.0	64/23	19.2	1-1/4 x 12	1-3/4 x 12	96	11.8	21.8	22.4	166.0
H2NG124GPFER*	119400/54600	9.6/9.0	141800/65200	13.0/12.9	14.1/7.1	74/27	22.3	1-1/4 x 12	1-3/4 x 12	96	11.8	21.8	22.4	174.0
H2NG184GPFER*	183200/80200	10.3/9.3	224500/105000	14.4/14.2	20.5/10.3	100/36	35.2	1-1/4 x 12	1-3/4 x 12	265	11.8	21.8	22.4	253.0
H2NG184GPFFR*	183200/80200	10.3/9.3	224500/105000	14.4/14.2	20.5/10.3	100/36	35.2	1-1/4 x 12	1-3/4 x 12	265	11.8	21.8	22.4	253.0



H29B



H25G



H2BG



H2NG

* Requires Motor Protection

Part Numbers Ending In "R" = Rotolock

Unless Otherwise Indicated All Compressors Are Sweat

Compressor Parts & Accessories

Air Conditioning



Crankcase Heaters - Scroll

Part #	Description
H2228491	240V 70 WATT
H2228492	460V 70 WATT
H2228493	575V 70 WATT

Crankcase Heaters - Recip.

Part #	Description
H2241430	23" 30 WATT
H2241431	8" 30 WATT
H2241541	23" 40 WATT
H2241711	120V (094-144 Series)
H2241708	120V (184-294 Series)
H2241712	230V (094-144 Series)
H2241707	230V (184-294 Series)
H2241713	460V (094-144 Series)
H2241706	460V (184-294 Series)
H2241714	575V (094-144 Series)
H2241710	575V (184-294 Series)

Mounting Hardware

Part #	Description
H2236201	Grommet (H23A & B Series)
H2236400	Sleeve (H23A & B Series)

Compressor Modules

Part #	Description
H2241731	24V (144-294 Series)
H2241732	24V (094-124 Series)
H2241733	120V (094-124 Series)
H2241734	230V (094-124 Series)
H2241745	120/230V (144-294 Series)

Adapters & Valves

Part #	Description
H2250507	7/8" Dis. Valve (094-144 Series)
H2250508	1 1/8" Suc. Valve (094-144 Series)
H2250509	7/8" Dis. Adapter (094-144 Series)
H2250510	1 1/8" Suc. Adapter (094-124 Series)
H2250511	Dis. Seal (094-294 Series)
H2250512	Suc. Seal (094-294 Series)
H2250525	1 3/8" Suc. Valve (144 Series)
H2250526	1 5/8" Suc. Valve (184-294 Series) - Thread 1 3/4" x 12
H2250527	1 1/8" Dis. Valve (184-294 Series) - Thread 1 1/4" x 12
H2250534	1 1/8" Dis. Adapter (184-294 Series)

Start/ Run Capacitor & Relay Reference

Air Conditioning



Scroll Compressors

Single Phase - 208/230 Volt

Part #	Run Cap	Start Cap	Relay
H20C233ABCA	36-35R3744	35-88D250	3ARR3*9P*
H21C293ABCA	36-35R3744	35-88D250	3ARR3*10S*
H21C343ABCA	36-50R3744	35-88D250	3ARR3*3L*
H21C383ABCA	36-35R3744	35-88D250	3ARR3*6S*
H21C403ABCA	36-40R3744	35-88D250	3ARR3*6S*
H21C423ABCA	36-40R3744	35-88D250	3ARR3*6S*
H21R453ABCA	36-70R3744	35-88D250	3ARR3*3L*
H21R483ABCA	36-60R3744	35-161D250	3ARR3*3L*
H21R543ABCA	36-80R3744	35-145H330	3ARR3*3P*
H21R583ABCA	36-80R3744	35-145H330	3ARR3*3P*
H21R603ABCA	36-80R3744	35-145H330	3ARR3*3P*

Reciprocating Compressors

Single Phase - 208/230 Volt

Part #	Run Cap	Start Cap	Relay
H24B13QABCA	36-15R3744	35-88D250	3ARR3*3U*
H24B13QABCB	36-15R3744	35-88D250	3ARR3*3U*
H23B15QABCB	36-25R3744	35-88D250	3ARR3*3T*
H29B15UABCA	36-30R3744	35-161D250	3ARR3*3V*
H23B17QABCB	36-25R3744	35-88D250	3ARR3*3P*
H29B17UABCA	36-30R3744	35-161D250	3ARR3*3V*
H23B19QABCB	36-25R3744	35-88D250	3ARR3*10S*
H29B18UABCA	36-30R3744	35-161D250	3ARR3*3U*
H29B20UABCA	36-30R3744	35-145F250	3ARR3*3U*
H23B22QABCB	36-30R3744	35-88D250	3ARR3*10S*
H29B22UABCA	36-30R3744	35-145F250	3ARR3*3U*
H23B24QABCB	36-35R3744	35-88D250	3ARR3*24P*
H29B24UABCA	36-35R3744	35-145F250	3ARR3*3N*
H29B26UABCA	36-35R3744	35-145F250	3ARR3*3T*
H23B28QABCB	36-35R3744	35-88D250	3ARR3*10S*
H29B28UABCA	36-35R3744	35-145F250	3ARR3*3T*
H29B30UABCA	36-40R3744	35-145F250	3ARR3*3P*
H29B32UABCA	36-40R3744	35-145F250	3ARR3*3P*
H29B35UABCA	36-45R3744	35-145F250	3ARR3*3N*
H23A383ABCA	36-35R3744	35-145F250	3ARR3*4A*
H23A423ABCA	36-40R3744	35-145F250	3ARR3*4A*
H23A463ABCA	36-40R3744	35-135H330	3ARR3*4A*
H23A503ABCA	36-40R3744	35-135H330	3ARR3*4A*
H23A543ABCA	36-55R3744	35-135H330	3ARR3*6U*
H23A563ABCA	36-55R3744	35-135H330	3ARR3*6U*
H23A623ABCA	36-55R3744	35-135H330	3ARR3*4A*

Bristol

compressors



Module & Crankcase Heater Reference

Air Conditioning



Reciprocating Compressors Single Phase - 208/230 Volt

Part #	24V Module	120V Module	230V Module	230/120V Module	CCH
H23A383ABCA	-	-	-	-	H2241430
H23A423ABCA	-	-	-	-	H2241430
H23A463ABCA	-	-	-	-	H2241430
H23A503ABCA	-	-	-	-	H2241430
H23A543ABCA	-	-	-	-	H2241430
H23A563ABCA	-	-	-	-	H2241430
H23A623ABCA	-	-	-	-	H2241430

Three Phase - 200/208 Volt

Part #	24V Module	120V Module	230V Module	230/120V Module	CCH
H23A383DBLA	-	-	-	-	H2241430
H23A423DBLA	-	-	-	-	H2241430
H23A463DBLA	-	-	-	-	H2241430
H23A543DBLA	-	-	-	-	H2241430
H23A563DBLA	-	-	-	-	H2241430
H23A623DBLA	-	-	-	-	H2241430

Three Phase - 208/230 Volt

H2BG094DBDER	-	-	-	-	H2241712
H2BG094DBDE	-	-	-	-	H2241712
H2BG104DBDER	-	-	-	-	H2241712
H2BG104DBDE	-	-	-	-	H2241712
H2BG124DBDER	-	-	-	-	H2241712
H2BG124DBDE	-	-	-	-	H2241712
H25G144DBDER	-	-	-	-	H2241712
H25G144DBDE	-	-	-	-	H2241712
H2NG184DPDFR*	H2241731	-	-	H2241745	H2241707
H2NG184DPDF*	H2241731	-	-	H2241745	H2241707
H2NG204FRDFR*	H2241731	-	-	H2241745	H2241707
H2NG244FRDFR*	H2241731	-	-	H2241745	H2241707
H2NG244FRDF*	H2241731	-	-	H2241745	H2241707
H2NG294FPDFR*	H2241731	-	-	H2241745	H2241707
H2NG294FPDF*	H2241731	-	-	H2241745	H2241707

Continues Top Of Page

2 Spd - Reciprocating Compressors Three Phase - 200/208 Volt

Part #	24V Module	120V Module	230V Module	230/120V Module	CCH
H2NG094GPDER*	H2241732	H2241733	H2241734	-	H2241712
H2NG104GPDER*	H2241732	H2241733	H2241734	-	H2241712
H2NG124GPDER*	H2241732	H2241733	H2241734	-	H2241712
H2NG184GPDFR*	H2241731	-	-	H2241745	H2241707
H2NG204GPDFR*	H2241731	-	-	H2241745	H2241707
H2NG244GPDFR*	H2241731	-	-	H2241745	H2241707

Reciprocating Compressors (Continued) Three Phase - 460 Volt

Part #	24V Module	120V Module	230V Module	230/120V Module	CCH
H23A383DBEA	-	-	-	-	H2241430
H23A423DBEA	-	-	-	-	H2241430
H23A463DBEA	-	-	-	-	H2241430
H23A543DBEA	-	-	-	-	H2241430
H23A563DBEA	-	-	-	-	H2241430
H23A623DBEA	-	-	-	-	H2241430
H2BG094DBEER	-	-	-	-	H2241713
H2BG094DBEE	-	-	-	-	H2241713
H2BG104DBEER	-	-	-	-	H2241713
H2BG104DBEE	-	-	-	-	H2241713
H2BG124DBEER	-	-	-	-	H2241713
H2BG124DBEE	-	-	-	-	H2241713
H25G144DBEER	-	-	-	-	H2241713
H25G144DBEE	-	-	-	-	H2241713
H2NG184DPEFR*	H2241731	-	-	H2241745	H2241706
H2NG184DPEF*	H2241731	-	-	H2241745	H2241706
H2NG204DREFR*	H2241731	-	-	H2241745	H2241706
H2NG244DREFR*	H2241731	-	-	H2241745	H2241706
H2NG244DREF*	H2241731	-	-	H2241745	H2241706
H2NG294DPEFR*	H2241731	-	-	H2241745	H2241706

Three Phase - 575 Volt

H23A423DBFA	-	-	-	-	H2241430
H23A463DBFA	-	-	-	-	H2241430
H23A543DBFA	-	-	-	-	H2241430
H23A563DBFA	-	-	-	-	H2241430
H23A623DBFA	-	-	-	-	H2241430
H2BG094DBFER	-	-	-	-	H2241714
H2BG124DBFER	-	-	-	-	H2241714
H2NG184DPFER	H2241731	-	-	H2241745	H2241710

Three Phase - 460 Volt

H2NG094GPEER*	H2241732	H2241733	H2241734	-	H2241713
H2NG104GPEER*	H2241732	H2241733	H2241734	-	H2241713
H2NG124GPEER*	H2241732	H2241733	H2241734	-	H2241713
H2NG184GPEFR*	H2241731	-	-	H2241745	-
H2NG204GPEFR*	H2241731	-	-	H2241745	H2241706
H2NG244GPEFR*	H2241731	-	-	H2241745	H2241706

Three Phase - 575 Volt

H2NG094GPFER*	H2241732	H2241733	H2241734	-	-
H2NG104GPFER*	H2241732	H2241733	H2241734	-	-
H2NG124GPFER*	H2241732	H2241733	H2241734	-	-
H2NG184GPFER*	H2241731	-	-	H2241745	-
H2NG184GPFR*	H2241732	-	-	H2241745	-

R404A Reciprocating Compressors - Single Speed



Refrigeration



L63A113BBCA
Low Temp Compressor

Low Temp Single & Three Phase - 120, 208/230 & 460 Volt (R404A)

Part #	HP	BTUH	Watt	BTUH	Watt	Volt	Ph	HZ	Dis	Suc	Pro.	Dimensions (")		
L63B562BBAB	1	5350	1568	3425	1003	120	1	60	3/8	5/8	3/8	12.91	9.75	7.25
L63B562BBCB	1	5350	1568	3425	1003	208/230	1	60	3/8	5/8	3/8	12.91	9.75	7.25
L63B562DBD	1	5350	1568	3425	1003	208/230	3	60	3/8	5/8	3/8	12.91	9.75	7.25
L63B562DBEB	1	5350	1568	3425	1003	460	3	60	3/8	5/8	3/8	12.91	9.75	7.25
L63B652BBCB	1¼	6200	1817	3970	1163	208/230	1	60	3/8	5/8	3/8	13.53	9.75	7.25
L63B652DBDB	1¼	6200	1817	3970	1163	208/230	3	60	3/8	5/8	3/8	12.91	9.75	7.25
L63B652DBEB	1¼	6200	1817	3970	1163	460	3	60	3/8	5/8	3/8	12.91	9.75	7.25
L63B752BBCB	1½	7600	2227	4850	1421	208/230	1	60	3/8	5/8	3/8	13.53	9.75	7.25
L63B752DBDB	1½	7600	2227	4850	1421	208/230	3	60	3/8	5/8	3/8	12.91	9.75	7.25
L63B752DBEB	1½	7600	2227	4850	1421	460	3	60	3/8	5/8	3/8	12.91	9.75	7.25
L63A113BBCA	2	10700	3135	7698	2256	208/230	1	60	1/2	3/4	3/8	14.91	10.25	8.125
L63A113DBLA	2	10800	3165	7310	2142	208/230	3	60	1/2	3/4	3/8	14.91	10.25	8.125
L63A113DBEA	2	10800	3165	7310	2142	460	3	60	1/2	3/4	3/8	14.91	10.25	8.125
L63A183BBCA	3	18100	5304	13316	3902	208/230	1	60	1/2	3/4	3/8	14.91	10.25	8.125
L63A183DBDA	3	18000	5274	13647	3999	208/230	3	60	1/2	3/4	3/8	14.91	10.25	8.125
L63A183DBEA	3	18000	5274	13647	3999	460	3	60	1/2	3/4	3/8	14.91	10.25	8.125

Rating Conditions

LBP	ASHRAE	ARI
Evaporator	-10°F	-10°F
Condenser	130°F	120°F
Ambient	90°F	95°F
Liquid	90°F	120°F
Return Gas	90°F	40°F



M63B153BBCA
Medium Temp Compressor

Medium Temp Single & Three Phase - 208/230, 460 & 575 Volt (R404A)

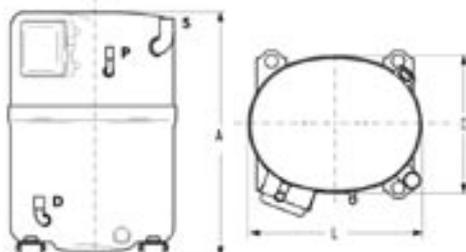
Part #	HP	BTUH	Watt	BTUH	Watt	Volts	Ph	HZ	Dis	Suc	Pro.	Dimensions (")		
M63B872BBCB	1	8700	2549	7350	2174	208/230	1	60	3/8	5/8	3/8	12.91	9.75	7.25
M63B982BBCB	1	9500	2783	7716	2261	208/230	1	60	3/8	5/8	3/8	12.91	9.75	7.25
M63B123DBDB	1½	12000	3516	10200	2989	208/230	3	60	3/8	5/8	3/8	12.91	9.75	7.25
M63B123BBCB	1½	12000	3516	10200	2989	208/230	1	60	3/8	5/8	3/8	13.53	9.75	7.25
M63B153BBCB	2	15000	4395	12700	3721	208/230	1	60	3/8	5/8	3/8	13.53	9.75	7.25
M63B153DBEB	2	15000	4395	12700	3721	460	3	60	3/8	5/8	3/8	13.53	9.75	7.25
M63B153DBLB	2	15000	4395	12700	3721	208/230	3	60	3/8	5/8	3/8	13.53	9.75	7.25
M63B203BBCB	2¼	19600	5743	15903	4660	208/230	1	60	3/8	5/8	3/8	13.53	9.75	7.25
M63B203DBDB	2¼	19200	5626	15991	4686	208/230	3	60	3/8	5/8	3/8	13.53	9.75	7.25
M63A243BBCA	2½	24000	7033	20375	5970	208/230	1	60	1/2	3/4	3/8	14.91	10.25	8.125
M63A243DBDA	2½	24000	7033	20375	5970	208/230	3	60	1/2	3/4	3/8	14.91	10.25	8.125
M63A243DBEA	2½	24000	7033	20375	5970	460	3	60	1/2	3/4	3/8	14.91	10.25	8.125
M63A273BBCA	3	27000	7912	22900	6710	208/230	1	60	1/2	3/4	3/8	14.91	10.25	8.125
M63A273DBDA	3	27000	7912	22900	6710	208/230	3	60	1/2	3/4	3/8	14.91	10.25	8.125
M63A273DBEA	3	27000	7912	22900	6710	460	3	60	1/2	3/4	3/8	14.91	10.25	8.125
M63A273DBFA	3	27000	7912	22900	6710	575	3	60	1/2	3/4	3/8	14.91	10.25	8.125
M63A323BBCA	3½	32000	9377	27150	7956	208/230	1	60	1/2	3/4	3/8	16.41	10.25	8.125
M63A323DBDA	3½	32000	9377	27150	7956	208/230	3	60	1/2	3/4	3/8	16.41	10.25	8.125
M63A323DBEA	3½	32000	9377	27150	7656	460	3	60	1/2	3/4	3/8	16.41	10.25	8.125

Rating Conditions

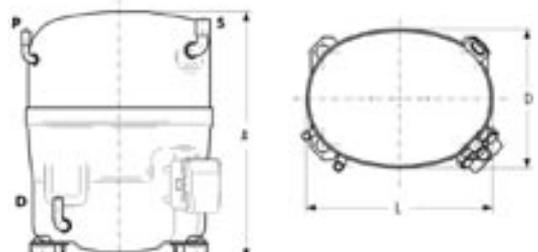
MBP	ASHRAE	ARI
Evaporator	20°F	20°F
Condenser	130°F	120°F
Ambient	95°F	95°F
Liquid	115°F	120°F
Return Gas	95°F	40°F

Commercial Refrigeration Applications

A Series



B Series



Note:
Series type is determined by last letter in Part #.

R404A Refrigeration Compressors

aspera



59-J2168GK
Illustrated

120 & 208/230 Volt Technical Specifications

Aspera Part #	Nominal Motor HP	BTU Capacity LBP	Volts
59-NE2125GK*	1/4+	1354	120
59-NE2134GK*	1/3+	2048	120
59-T2155GK*	1/2	2341	120
59-T2168GK*	3/4	3135	120
59-T2178GK1*	3/4+	3659	120
59-T2178GK2*	3/4+	3659	208/230
59-J2192GK* ^o	1	4548	208/230
59-J2212GK* ^o	1 1/4	5960	208/230

^o Complete with Service Valve

*Above compressors are all high starting torque and come complete with capacitor.

Refrigeration

BTU Rating Conditions

Back Pressure	
Low	
130°F	Condensing Temperature
-10°F	Evaporator Temperature
90°F	Return Gas Temperature
90°F	Ambient Temperature
90°F	Liquid Temperature Entering Expansion Valve

Electrical Assemblies

Aspera Part #	Relay	Overload	Start Capacitor	Run Capacitor
59-E2125GK	59-9660182	59-MRT22AIN	35-145B165	-
59-E2134GK	59-9660183	59-MRT20JZ	35-189D165	-
59-T2155GK	59-9660191	59-MST16RN	35-145B165	-
59-T2168GK	59-3ARR188S	59-CST3031	35-145B165	-
59-T2178GK1	59-3ARR10A3	Internal	35-88F330	36-15R3744
59-T2178GK2	59-3ARR3B10A3	Internal	35-88F330	36-15R3744
59-J2192GK	59-3ARR3AB3	Internal	35-88F330	36-20R3744
59-J2212GK	59-ARR3AV3	Internal	35-88F330	36-20R3744

Refrigeration & Air Conditioning Compressors For All Your Cooling Solutions



- Reliability
- Efficient
- Silent Operating
- 30 Month Warranty



75-CCH1
Illustrated

Crankcase Heaters

"Compressor Burnout Protection!"

- When a refrigeration compressor shuts down or enters a long-off cycle, liquid refrigerant migrates into its crankcase oil. Lubrication decreases and crankcase burnout can occur when operation resumes.
- Energy efficient, self-regulating design automatically varies output to maintain adequate oil temperature while permitting wrapping and crossover without burnout.
- Handles compressors up to 5 Hp, 120 or 240 volt applications.
- Fits all crankcases with circumferences smaller than 49".

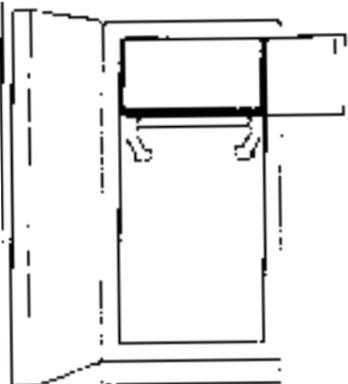
Self Regulating!

Part #	Volts	Output @ -18°C (0°F)	Output @ 16°C (60°F)
75-CCH1	120	60W	35W
75-CCH2	240		

Single Door Refrigerator Compressor Selection



Refrigeration



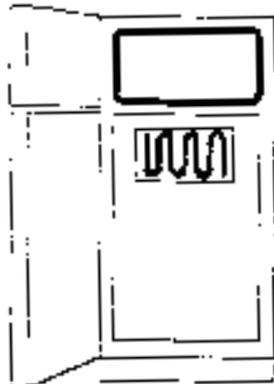
Foam Insulation

Conventional - Gravity flow from freezer.

- Foam Insulation.
- Conventional - Single Door (sometimes 2 doors)
- Frozen food space is closed by interior door
- Refrigerator space is cooled by gravity air flow from the evaporator coil.

Embraco Part #	Reference
30-PW4.5K9	Up to 13 cubic feet.
30-FF6BKW	13 to 15 cubic feet.
30-FF8.5BKW	Over 15 cubic feet.

Two Door Refrigerator Compressor Selection

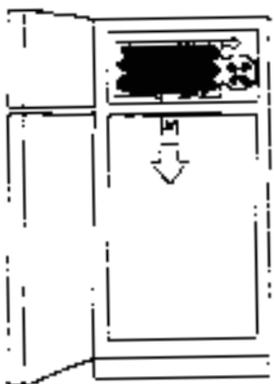


Foam Insulation

Two Temperature

- Foam Insulation.
- Two doors with separate evaporator coils (plates) in the freezer and in the refrigerator compartments.
- Freezer space separated by solid partition from refrigerator space.
- Semi-automatic (manual start, automatic stop) defrost or fully automatic.

Embraco Part #	Reference
30-PW4.5K9	Up to 13 cubic feet.
30-FF6BKW	13 to 15 cubic feet.
30-FF8.5BKW	Over 15 cubic feet.

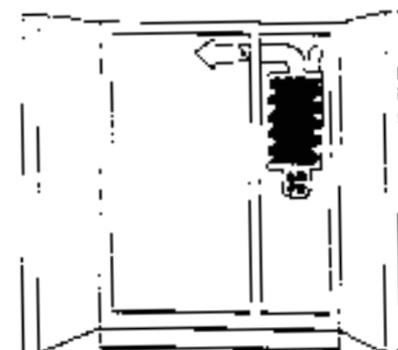


Foam Insulation - Automatic Defrost

No Frost Top Mount - Coil and blower are hidden.

- Foam Insulation.
- Automatic defrost.

Embraco Part #	Reference
30-FF6BKW	Up to 14 cubic feet.
30-FF8.5BKW	14 to 17 cubic feet.
30-FF8.5BKW	17 to 20 cubic feet.
30-FF11.5BKW	Over 20 cubic feet.



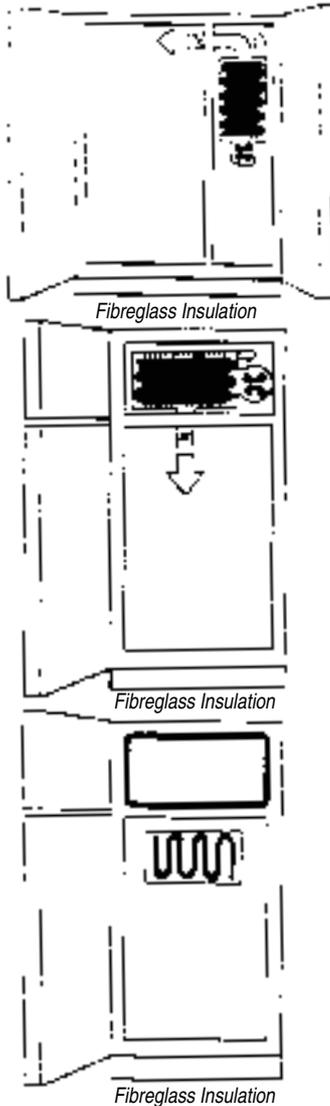
Foam Insulation - Automatic Defrost

No Frost Side By Side - Coil and blower are hidden.

- Foam Insulation.
- Automatic defrost.

Embraco Part #	Reference
30-FF8.5BKW	Up to 18 cubic feet.
30-FF11.5BKW	18 to 25 cubic feet.
30-FF112BKW	Over 25 cubic feet.

Two Door Refrigerator Compressor Selection



No Frost Side By Side - Coil and blower are hidden.

- Fibreglass insulation.

Embraco Part #	Reference
30-FF11.5BKW	Up to 20 cubic feet.
30-FF112BKW	20 to 25 cubic feet.

No Frost Top Mount - Coil and blower are hidden.

- Fibreglass insulation.

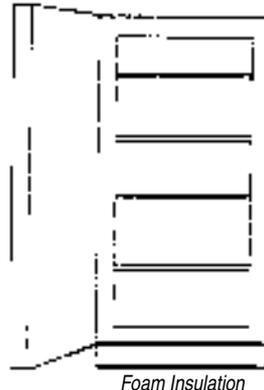
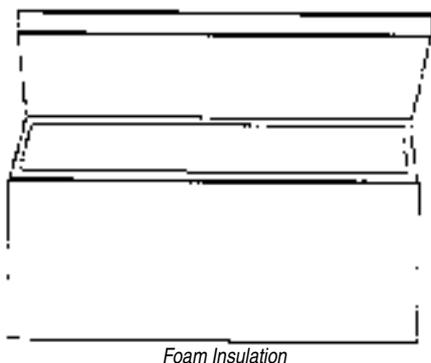
Embraco Part #	Reference
30-FF6BK or FF8.5BKW	Up to 14 cubic feet.
30-FF8.5BKW	14 to 17 cubic feet.
30-FF11.5BKW	Over 17 cubic feet.

No Frost Top Mount

- Fibreglass insulation.
- Two doors with separate evaporator coils (plates) in the freezer and in the refrigerator compartments.
- Freezer space separated by solid partition from refrigerator space.
- Semi-automatic (manual start, automatic stop) defrost or fully automatic.

Embraco Part #	Reference
30-FF6BKW	Up to 12 cubic feet.
30-FF8.5BKW	12 to 14 cubic feet.
30-FF8.5BKW	14 to 16 cubic feet.
30-FF11.5BKW	Over 16 cubic feet.

Freezer Compressor Selection



Freezers

Embraco Part #	Reference
30-PW4.5K9	Up to 10 cubic feet.
30-FF6BKW	10 to 13 cubic feet.
30-FF6BK or FF8.5BKW	13 to 16 cubic feet.
30-FF11.5BKW	Over 17 cubic feet.

Freezers - Vertical Visible Frost

Embraco Part #	Reference
30-PW4.5K9	Up to 10 cubic feet.
30-FF6BKW	10 to 13 cubic feet.
30-FF8.5BKW	13 to 16 cubic feet.
30-FF11.5BKW	Over 17 cubic feet.
30-FF8.5BKW	Up to 16 cubic feet.
30-FF11.5BKW	Over 16 cubic feet.

Compressor Nomenclature



Embraco Nomenclature

Refrigeration

F Series Compressor Nomenclature

30 - F	G	S	60	H	A	K	W	
30 Product Category	F Basic Type	Electrical System F - Relay / external proctor. - Relay / external proctor / start capacitor (optional). G - PTC / external proctor. - PTC / external proctor / start cap / run cap (optional). T - PTC / external proctor / run capacitor (mandatory).	Efficiency Level NIHIL - Standard Efficiency. E - Improved 1st generation. I - Improved 2nd generation. V - Improved 3rd generation. S - Improved 4th generation. T - Improved 5th generation.	Approx. Compressor Displacement (For FG compressors approximate capacity in BTUH - 60Hz - check point divided by 10).	Refrigerant H - R134a NIHIL - R12	Application A - LBP B - HBP LBP/HD H - HBP	Starting Characteristics NIHIL - LST Improved Efficiency. K - LST. X - HST.	Compressor Cooling NIHIL - Without Oil Cooler. W - With Oil Cooler.

PW Series Compressor Nomenclature

30 - PW	5.5	H	K	14	W	
30 Product Category	PW Basic Type	Compressor Rated Displacement	Refrigerant H - R134a NIHIL - R12	Motor Type K - Standard efficiency. A - High efficiency	Maximum Rated Motor Torque	Compressor Cooling NIHIL - Without Oil Cooler. W - With Oil Cooler.

EM Series Compressor Nomenclature

30 - EM	I	60	H	N	R	
30 Product Category	Basic Type EM Embraco mini compressor	Valve System I - New NIHIL - Standard	Compressor Capacity Capacity in BTUH - 60Hz - check point divided by 10.	Refrigerant H - R134a C - R600a NIHIL - R12.	Efficiency Level & Application N - Standard LBP. J - Intermediate LBP. E - Improved 1st generation LBP. S - Improved 2nd generation LBP. H - L/M/HBP applications. D - HBP applications. B - M/HBP applications. (L/M/ HBP for R12 compressors)	Electrical Equipment P - PTC + run cap (optional). R - Relay. C - PTC + run cap (mandatory). S - PTC + run & start cap. V - PTC + run & start cap (optional).

EM Series Compressor Nomenclature

30 - EM	S	36	H	L	P	
30 Product Category	Basic Type EM Embraco mini compressor	Efficiency Level S - Standard. T - 1st generation. U - 2nd generation. Y - 3rd generation. Z - 4th generation.	Compressor Capacity Rated cooling capacity divided by 10 expressed in BTUH (subcooled liquid conditions) and referred to the frequency listed on the compressor nameplate.	Refrigerant Blank - R12. H - R134a C - R600a	Application L - LBP. H - HBP.	Electrical Equipment P - PTC + run cap (optional). R - Relay. C - PTC + run cap (mandatory). X - Relay + mandatory start cap.

Compressor Nomenclature



Aspera Nomenclature

NB, NE, T & J Series Compressor Nomenclature

59 - NB

59 Compressor
Product Series
Category NB, NET & J.

E

Efficiency Level
M - 1st generation.
K - 2nd generation.
T - 3rd generation.
U - 4th generation.
E - New improved standard efficiency level (replaces both old standard and first generation levels).

1

Application Code
1 - LBP-LST.
2 - LBP-HST.
3 - LBP-LST oil cooler.
4 - LBP-HST oil cooler.
5 - MBP or HBP-LST.
6 - MBP or HBP-HST.
7 - AC.
9 - MBP/ HBP-HST.

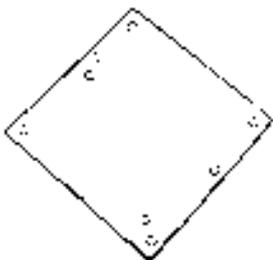
058

Refrigerant Capacity
The first digit indicates the number of zeros to be added to the 2 following digits to get the rated capacity at 50Hz. (in the indicated example the capacity is 58 Kcal/h).

Y

Refrigerant Type Code & Possible design Alternatives
A,B,C,D - R12 single phase.
E,F,G - R22 single phase.
K,J,I,F - R502 single phase.
M,N - R12 three phase.
P,R - R22 three phase.
S,T - R502 three phase.
U - R290 single phase.
V - R290/ R600a single phase.
Y - R600a single phase.
Z,ZH,H - R134a single phase.
ZX - R134a three phase.
GE,GF,GG - R407C single phase.
GJ,GK - R404A single phase.
GS - R404A three phase.
GP - R407C three phase.

Compressor Mounting Adapters



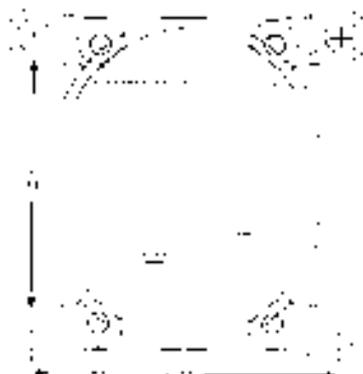
59-AB1

Part #	Description
59-AB1	This flat mount plate is made from 16 gauge galvanized steel 8" square with 8 holes to fit the following compressor series and mounting centres shown in table.

59-AB1

Dimensions	MFG	Series
6 1/2" x 4"	Aspera	Series A and E
	Tecumseh	Series AE
	Necchi	Series A and M
	Danfoss	Series PW
7" x 4 1/2"	Americold	Series M
	Aspera	Series T
8" x 4 13/16"	Tecumseh	Series AT & CAT
	Copeland	Series J
	Kelvinator	Series AO

More holes can be drilled for other replacement requirement.



59-AB8

Part #	Description
59-AB8	Adapter Base Instructions Aspera Model E To Replace Tecumseh Model At And Kelvinator Model Ao. This Aspera model E compressor should be assembled with the four adapter mounting brackets as shown in this sketch. This will duplicate the 7" x 7" base mounting dimensions of the original.

R12 & R414b Air Cooled Condensing Units



Refrigeration



59-UJ6226A
Illustrated

BTU Rating Conditions

Temperature	LBP	HBP
Ambient	90°F	90°F
Sub Cooling	5°F	5°F
Return Gas	40°F	65°F

Performance Capacity

High & Low Temperature Units 120 & 208/230V / 60Hz / 1 Ph

Condensing Unit Part #	HP	Volt	Appl.	BTU / Hour								
				-20°F	-10°F	0°F	+5°F	+10°F	+20°F	+30°F	+45°F	+50°F
59-UP016MASA	1/8	120	L/HBP	260	402	550	635	693	912	1147	1575	1699
59-UP020MASA	1/6	120	L/HBP	361	539	689	810	896	1160	1457	2004	2163
59-UF031MASA	1/4	120	L/HBP	630	915	1115	1267	1395	1756	2190	2978	3206
59-UF031MAMB	1/4	120	L/HBP	630	915	1115	1267	1427	1795	2260	3271	3524
59-UF042MAMA	1/3	120	L/HBP	1010	1350	1604	1787	2040	2410	2970	3981	4237
59-UF042MAMB	1/3	120	L/HBP	1010	1350	1604	1787	2040	2410	2970	3981	4237
59-UT6213A	1/2	120	M/HBP	-	-	-	-	3000	3600	4275	5400	5675
59-UT6215A	1/2+	120	M/HBP	-	-	-	-	3050	3750	4700	5800	6258
59-UJ6220A1	3/4	120	M/HBP	-	-	-	-	4750	5900	7100	10177	10019
59-UJ6220A	3/4	208/230	M/HBP	-	-	-	-	4750	5900	7100	10177	10019
59-UJ6226A	1	208/230	M/HBP	-	-	-	-	6000	7250	8800	11500	13812

Technical Specifications

High & Low Temperature Units 120 & 208/230V / 60Hz / 1 Ph

Condensing Unit Part #	HP	Volt	Appl.	LBP Amps (-10°F)	HBP Amps (+45°F)	LRA	Connections		Dimensions			Weight
							Liq.	Suct.	L	W	H	
59-UP016MASA	1/8	120	L/HBP	2.20	2.93	20	3/8"	3/8"	13.24"	10.88"	9.70"	31.0 lbs.
59-UP020MASA	1/6	120	L/HBP	2.25	4.13	35	3/8"	3/8"	12.59"	10.49"	9.41"	32.0 lbs.
59-UF031MASA	1/4	120	L/HBP	4.10	5.70	32	3/8"	3/8"	12.75"	10.49"	9.49"	36.0 lbs.
59-UF031MAMB	1/4	120	L/HBP	4.10	5.70	32	1/4"	3/8"	17.10"	10.75"	9.43"	40.0 lbs.
59-UF042MAMA	1/3	120	L/HBP	4.60	6.90	48	1/4"	3/8"	17.10"	10.75"	9.43"	40.0 lbs.
59-UF042MAMB	1/3	120	L/HBP	4.60	6.90	48	1/4"	3/8"	17.10"	10.75"	9.43"	41.0 lbs.
59-UT6213A	1/2	120	M/HBP	-	9.05	36	1/4"	3/8"	19.10"	14.06"	12.37"	55.1 lbs.
59-UT6215A	1/2+	120	M/HBP	-	9.05	45	1/4"	1/2"	19.10"	14.06"	12.37"	56.2 lbs.
59-UJ6220A1	3/4	120	M/HBP	-	13.67	72	1/4"	1/2"	18.78"	16.30"	12.76"	73.6 lbs.
59-UJ6220A	3/4	208/230	M/HBP	-	13.67	72	3/8"	1/2"	19.47"	16.90"	13.22"	73.8 lbs.
59-UJ6226A	1	208/230	M/HBP	-	17.13	40	3/8"	5/8"	19.47"	16.90"	13.22"	78.2 lbs.

R134a & R414b Air Cooled Condensing Units



59-UF042MHMB
Illustrated

BTU Rating Conditions

Temperature	LBP	HBP
Ambient	90°F	90°F
Sub Cooling	5°F	5°F
Return Gas	40°F	65°F

Rating conditions for R134a & R404A air cooled condensing units.

Performance Capacity

High & Low Temperature Units 120V & 208/230V / 60Hz / 1 Ph

Condensing Unit Part #	HP	Volt	Appl.	BTU / Hour								
				-20°F	-10°F	0°F	+5°F	+10°F	+20°F	+30°F	+45°F	+50°F
59-UP016HHSA	1/8	120	HBP	-	-	-	-	646	850	1150	1630	2110
59-UP020HHSA	1/6	120	HBP	-	-	-	-	813	1070	1445	1963	2377
59-UM025MHSA	1/5	120	L/HBP	490	640	885	980	1160	1605	1960	2550	3000
59-UF031MHSA	1/4	120	L/HBP	620	816	1115	1252	1430	1874	2300	3098	3360
59-UF031MHMB	1/4	120	L/HBP	630	839	1140	1377	1470	2000	2397	3240	3670
59-UF042MHMA	1/3	120	L/HBP	725	1053	1351	1501	1715	2038	2834	4185	4345
59-UF042MHMB	1/3	120	L/HBP	725	1053	1351	1501	1715	2038	2834	4185	434
59-UNE6187Z ^a	1/3	120	HBP	-	-	-	-	2100	2994	3584	4501	4876
59-UNE6210Z	1/3+	120	HBP	-	-	-	-	2250	3100	3670	4675	-
59-UT2134Z	1/3+	120	LBP	1136	1581	2191	2558	2966	3907	-	-	-
59-UT6213Z1 ^a	1/2	120	HBP	-	-	-	-	3000	3600	4275	5400	6544
59-UT6213Z2	1/2	120	HBP	-	-	-	-	3000	3600	4275	5400	6544
59-UT6215Z	1/2+	120	HBP	-	-	-	-	3050	3750	4700	6700	7217
59-UJ6220Z1	3/4	120	HBP	-	-	-	-	4750	5900	7100	9000	-
59-UJ6220Z2	3/4	208/230	HBP	-	-	-	-	4750	5900	7100	9000	-
59-UJ6226Z	1	208/230	HBP	-	-	-	-	5900	7250	8800	11900	13137

^a Does not include receiver or fan guard.

Technical Specifications

High & Low Temperature Units 120V & 208/230V / 60Hz / 1 Ph

Condensing Unit Part #	HP	Volt	Appl.	LBP Amps (-10°F)	HBP Amps (+45°F)	LRA	Connections		Dimensions			Weight
							Liq.	Suct.	L	W	H	
59-UP016HHSA	1/8	120	HBP	-	2.83	23	3/8"	3/8"	13.24"	10.88"	9.70"	31.0 lbs.
59-UP020HHSA	1/6	120	HBP	-	3.94	35	3/8"	3/8"	12.59"	10.49"	9.41"	32.0 lbs.
59-UM025MHSA	1/5	120	L/HBP	2.53	3.66	27	3/8"	3/8"	12.75"	10.49"	9.49"	28.0 lbs.
59-UF031MHSA	1/4	120	L/HBP	4.18	5.40	35	3/8"	3/8"	12.75"	10.49"	9.49"	36.0 lbs.
59-UF031MHMB	1/4	120	L/HBP	4.20	5.42	32	1/4"	3/8"	17.30"	13.10"	10.70"	39.0 lbs.
59-UF042MHMA	1/3	120	L/HBP	5.00	6.90	43	1/4"	3/8"	17.30"	13.10"	10.70"	39.0 lbs.
59-UF042MHMB	1/3	120	L/HBP	5.00	6.90	43	1/4"	3/8"	17.30"	13.10"	10.70"	40.0 lbs.
59-UNE6187Z ^a	1/3	120	HBP	-	7.80	29	1/4"	3/8"	18.4	13.6	11.9	41.0 lbs.
59-UNE6210Z	1/3+	120	HBP	-	8.70	38	1/4"	3/8"	18.4	13.6	11.9	42.0 lbs.
59-UT2134Z	1/3+	120	LBP	4.83	-	30	1/4"	3/8"	18.08"	12.65"	10.73"	44.7 lbs.
59-UT6213Z1 ^a	1/2	120	HBP	-	10.30	36	1/4"	3/8"	18.4	13.6	11.9	53.0 lbs.
59-UT6213Z2	1/2	120	HBP	-	9.33	36	1/4"	3/8"	19.10"	14.06"	12.37"	54.4 lbs.
59-UT6215Z	1/2+	120	HBP	-	11.38	45	3/8"	1/2"	19.10"	14.06"	12.37"	56.0 lbs.
59-UJ6220Z1	3/4	120	HBP	-	14.68	72	1/4"	3/8"	18.8	16.3	12.8	70.0 lbs.
59-UJ6220Z2	3/4	208/230	HBP	-	13.35	72	3/8"	1/2"	19.47"	16.90"	13.22"	70.0 lbs.
59-UJ6226Z	1	208/230	HBP	-	14.71	42	3/8"	5/8"	19.47"	16.90"	13.22"	74.0 lbs.

^a Does not include receiver or fan guard.

R22 Air Cooled Condensing Units

Commercial Refrigeration 

Refrigeration



BTU Rating Conditions

Temperature	LBP	HBP
Ambient	90°F	90°F
Sub Cooling	5°F	5°F
Return Gas	40°F	65°F

Performance Capacity

High/ Medium Temperature Units 120 & 208/230V / 60Hz / 1 Ph

Condensing Unit Part #	HP	Volt	Appl.	BTU / Hour								
				-20°F	-10°F	0°F	+5°F	+10°F	+20°F	+30°F	+45°F	+50°F
59-UNE6181E ^a	1/4+	120	M/HBP	-	-	-	-	1400	1790	2328	3378	3589
59-UNE6195E	1/3	120	M/HBP	-	-	-	-	1558	2000	2515	3743	3956
59-UNE6195EC ^a	1/3	120	M/HBP	-	-	-	-	1558	2000	2515	3743	3956
59-UT6217E1 ^a	1/2+	120	M/HBP	-	-	-	-	2200	3100	4550	6449	7162
59-UT6217E2	1/2+	208/230	M/HBP	-	-	-	-	2200	3100	4550	6449	7162
59-UT6220E1	3/4	120	M/HBP	-	-	-	-	4250	5500	6938	8889	9609
59-UT6220E2	3/4	208/230	M/HBP	-	-	-	-	4250	5500	6938	8889	9609
59-UJ9226E2	1	208/230	M/HBP	-	-	-	-	4500	5800	7494	10322	11465

^a Does not include receiver or fan guard.

Technical Specifications

High/ Medium Temperature Units 120 & 208/230V / 60Hz / 1 Ph

Condensing Unit Part #	HP	Volt	Appl.	LBP Amps (-10°F)	HBP Amps (+45°F)	LRA	Connections		Dimensions			Weight
							Liq.	Suct.	L	W	H	
59-UNE6181E ^a	1/4+	120	M/HBP	-	7.05	38	1/4"	3/8"	18.5"	13.4"	11.9"	46 lbs
59-UNE6195E	1/3	120	M/HBP	-	7.56	46	1/4"	3/8"	18.5"	13.4"	11.9"	46 lbs
59-UNE6195EC ^a	1/3	120	M/HBP	-	7.56	46	1/4"	3/8"	18.5"	13.4"	11.9"	46 lbs
59-UT6217E1 ^a	1/2+	120	M/HBP	-	12.77	55	1/4"	3/8"	19.4"	16.3"	12.8"	68 lbs
59-UT6217E2	1/2+	208/230	M/HBP	-	12.77	55	1/4"	3/8"	19.4"	16.3"	12.8"	68 lbs
59-UT6220E1	3/4	120	M/HBP	-	14.20	65	1/2"	1/4"	19.4"	16.3"	12.8"	70 lbs
59-UT6220E2	3/4	208/230	M/HBP	-	14.20	65	1/2"	1/4"	19.4"	16.3"	12.8"	70 lbs
59-UJ9226E2	1	208/230	M/HBP	-	16.50	72	1/4"	3/8"	20.1"	16.3"	15.4"	83 lbs

^a Does not include receiver or fan guard.

R404A Air Cooled Condensing Units

Commercial Refrigeration  Embraco



59-UJ9226GK
Illustrated

Refrigeration

Performance Capacity Medium-High & Low Temperature Units 120V & 208/230V / 60Hz / 1 Ph

Condensing Unit Part #	HP	Volt	Appl.	BTU / Hour (°F)										
				-30°F	-20°F	-10°F	-5°F	0°F	+5°F	+10°F	+20°F	+30°F	+45°F	+50°F
59-UNB6165GK	1/5	120	M/HBP	-	-	-	-	-	-	1380	1500	2070	2808	3081
59-UNE2125GK	1/4	120	LBP	717	1243	1610	2159	2330	-	-	-	-	-	-
59-UNE6181GK	1/4+	120	M/HBP	-	-	-	-	-	-	1500	2000	2550	3644	4703
59-UNE9213GK	1/2	120	M/HBP	-	-	-	-	-	2324	2624	3300	4311	5910	-
59-UNE2134GK	1/2	120	LBP	900	1144	2003	2924	-	-	-	-	-	-	-
59-UT2155GK	1/2	120	LBP	980	1200	2064	3340	-	-	-	-	-	-	-
59-UT2168GK	1/2+	120	LBP	1150	1516	2648	3250	3590	-	-	-	-	-	-
59-UT6217GK1	1/2+	120	M/HBP	-	-	-	-	-	3716	4150	5000	6150	7688	8216
59-UT6217GK2	1/2+	208/230	M/HBP	-	-	-	-	-	3716	4150	5000	6150	7688	8216
59-UT6220GK1	3/4	120	M/HBP	-	-	-	-	-	4415	4915	5942	7361	9155	9783
59-UT2178GK1	3/4	120	LBP	1450	2036	3204	4820	3811	4311	-	-	-	-	-
59-UT6220GK2	3/4	208/230	M/HBP	-	-	-	-	-	4415	4915	5942	7361	9155	9783
59-UT2178GK2	3/4	208/230	LBP	1450	2036	3204	3811	4311	-	-	-	-	-	-
59-UJ2192GK	1	208/230	LBP	3230	4493	5084	6905	7274	-	-	-	-	-	-
59-UT6222GK1	1	120	M/HBP	-	-	-	-	-	4084	5000	6100	7581	10711	10967
59-UT6222GK2	1	208/230	M/HBP	-	-	-	-	-	4084	5000	6100	7581	10711	10967
59-UJ9226GK	1	208/230	M/HBP	-	-	-	-	-	4896	5600	7524	9681	11117	14311
59-UJ9232GK	1	208/230	M/HBP	-	-	-	-	-	6330	6900	8263	9842	11482	11765
59-UJ2212GK	1 1/4	208/230	LBP	4105	5899	6586	9096	9423	-	-	-	-	-	-

Technical Specifications

Medium-High & Low Temperature Units 120V & 208/230V / 60Hz / 1 Ph

Condensing Unit Part #	HP	Volt	Appl.	LBP Amps (-10°F)	HBP Amps (+45°F)	LRA	Connections		Dimensions			Weight
							Liq.	Suct.	L	W	H	
59-UNB6165GK	1/5	120	M/HBP	-	7.66	30.0	1/4"	3/8"	17.3"	12.1"	11.1"	40.0 lbs.
59-UNE2125GK	1/4	120	LBP	5.34	-	29.00	1/4"	3/8"	16.33"	12.24"	10.73"	39.7 lbs.
59-UNE6181GK	1/4+	120	M/HBP	-	7.20	35.0	1/4"	3/8"	18.5"	13.4"	11.9"	41.0 lbs.
59-UNE9213GK	1/2	120	M/HBP	-	9.66	33.6	1/4"	3/8"	18.5"	13.4"	11.9"	44.0 lbs.
59-UNE2134GK	1/2	120	LBP	5.91	-	33.00	1/4"	3/8"	19.10"	14.06"	12.37"	39.7 lbs.
59-UT2155GK	1/2	120	LBP	7.79	-	49.00	1/4"	3/8"	19.47"	14.39"	12.37"	59.3 lbs.
59-UT2168GK	1/2+	120	LBP	10.0	-	55.0	1/4"	3/8"	18.8"	13.9"	11.9"	58.0 lbs.
59-UT6217GK1	1/2+	120	M/HBP	-	14.34	57.0	1/2"	1/4"	19.4"	16.3"	12.8"	56.0 lbs.
59-UT6217GK2	1/2+	208/230	M/HBP	-	14.34	57.0	1/2"	1/4"	19.4"	16.3"	12.8"	55.0 lbs.
59-UT6220GK1	3/4	120	M/HBP	-	16.5	57.0	1/2"	1/4"	19.4"	16.3"	12.8"	70.0 lbs.
59-UT2178GK1	3/4	120	LBP	13.31	-	65.0	1/4"	3/8"	18.8"	13.9"	11.9"	58.0 lbs.
59-UT6220GK2	3/4	208/230	M/HBP	-	16.5	57.0	1/2"	1/4"	19.4"	16.3"	12.8"	70.0 lbs.
59-UT2178GK2	3/4	208/230	LBP	13.31	-	65.0	1/4"	3/8"	18.8"	13.9"	11.9"	58.0 lbs.
59-UJ2192GK	1	208/230	LBP	4.90	-	40.00	3/8"	1/2"	19.47"	16.90"	13.22"	74.5 lbs.
59-UT6222GK1	1	120	M/HBP	-	17.12	71.0	1/2"	1/4"	19.4"	16.3"	12.8"	74.0 lbs.
59-UT6222GK2	1	208/230	M/HBP	-	17.12	71.0	1/2"	1/4"	19.4"	16.3"	12.8"	74.0 lbs.
59-UJ9226GK	1	208/230	M/HBP	-	19.73	34.0	1/4"	3/8"	20.1"	16.3"	15.4"	75.0 lbs.
59-UJ9232GK	1	208/230	M/HBP	-	17.80	40.0	1/4"	3/8"	20.1"	16.3"	15.6"	77.0 lbs.
59-UJ2212GK	1 1/4	208/230	LBP	5.42	-	45.00	3/8"	1/2"	19.47"	16.90"	13.22"	74.0 lbs.

Parts Breakdown - Air Cooled Condensing Units

R12 Condensing Units Parts Breakdown

Condensing Unit Part #	Compressor	Relay	Overload	Start Cap.	Base	Cond.	Motor *	Fan Blade	Receiver	Cord
59-UP016MASA	30-PW4.5K11	59-1351005	59-MRP59AMN	35-324D125	59-B13201P	59-C01601S	59-M05601B	93-A7037	-	59-101495
59-UP020MASA	30-PW5.5K14	59-1351007	59-MRT28AFK	35-460D125	59-B13101P	59-C02001C	59-M05601B	93-A7033	-	59-101495
59-UF031MASA	30-FF10BX	59-1351645	59-MRT16AHK	35-270B125	59-B13101P	59-C03301C	59-M06601B	93-A7034	-	59-101495
59-UF031MAMB	30-FF10BX	59-1351645	59-MRT16AHK	35-270B125	59-B13201P	59-C03301C	59-M06601B	93-A7034	59-R30061R	59-101495
59-UF042MAMA	30-FF112BX	59-1351066	59-MRT16AFZ	35-324D125	59-B13201P	59-C03301C	59-M09601B	93-A7034	-	59-101495
59-UF042MAMB	30-FF112BX	59-1351066	59-MRT16AFZ	35-324D125	59-B13201P	59-C03301C	59-M09601B	93-A7034	59-R30061R	59-101495
59-UT6213A	59-T6213A	9660A-180	MST16AFN	35-189D165	2450025	2451130	1458043	2455003	2457034	None
59-UT6215A	59-T6215A	9660A-189	MRT18RW	35-189D165	2450025	2451130	1458040	2455003	2457043	None
59-UJ6220A1	59-J6220A	3CR-702-289	MRA6981	35-88F330	2450004	2451118	1458046	2455010	2450036	None
59-UJ6220A	59-J6220A	3ARR3B2L3	MRA6981	35-88F330	2450004	2451118	1450054	2455010	2457036	None
59-UJ6226A	59-J6226A	3ARR3B10AA3	MST20AGN	35-72E330 (Run 36-17.5R3744)	2450004	2451118	1458049	2455010	2450036	None

* C/W Bracket

R134a Condensing Units Parts Breakdown

Condensing Unit Part #	Compressor	Relay	Overload	Start Cap.	Base	Cond.	Motor *	Fan Blade	Receiver	Cord
59-UP016HHSA	30-PW4.5HK11	59-1351005	59-MRP56AMN	35-88D250	59-B13201P	59-C01601St	59-M05601B	93-A7037	-	59-101495
59-UP020HHSA	30-PW5.5HK14	59-1351007	59-MRT30AIK	-	59-B13201P	59-C02001C	59-M05601B	93-A7033	-	59-101495
59-UM025HHSA	30-EM65HHC	59-PTC8EA103	59-4TM427NFB	-	59-B13201P	59-C02001C	59-M05601B	93-A7033	-	59-101495
59-UF031MHSA	30-FF10HBX	59-1351619	59-MRT20AGK	35-270B125	59-B13101P	59-C02501C	59-M06601B	93-A7034	-	59-101495
59-UF031MHMB	30-FF10HBX	59-1351619	59-MRT20AGK	35-270B125	59-B13201P	59-C03301C	59-M06601B	93-A7034	59-R30061R	59-101495
59-UF042MHMA	30-FF112HBX	59-1351605	59-MRT22AFZ	35-378E165	59-B13201P	59-C03301C	59-M09601B	93-A7034	-	59-101495
59-UF042MHMB	30-FF112HBX	59-1351605	59-MRT22AFZ	35-378E165	59-B13201P	59-C03301C	59-M09601B	93-A7034	59-R30061R	59-101495
59-UNE6187Z ^a	59-NE6187Z	9660A-041-182	T0558/G9	35-145B165	2450025	2451130	1450073	2455003	-	None
59-UNE6210Z	59-NE6210Z	9660A-41-183	T0809/G9	35-189D165	2450025	2451130	1450073	2455003	2457034	None
59-UT2134Z	59-T2134Z	9660-041-185	59-MSP22AGN	35-189D165	2250057	2451129	1450057	2455009	2457041	None
59-UT6213Z1 ^a	59-T6213Z	9660A-***-180	59-MST16AFN	35-189D165	2450025	2451130	1458043	2455003	2457034	None
59-UT6213Z2	59-T6213Z	9660A-041-180	59-MST16AFN	35-189D165	2450025	2451130	1450073	2455003	2457034	None
59-UT6215Z	59-T6215Z	9660A-***-189	59-MRT18RW	35-189D165	2450025	2451130	1458040	2455003	2457035	None
59-UJ6220Z1	59-J6220Z	3ARR3B2L3	MRA06981-3074	35-88F330	2450004	2451118	1450054	2455010	2457036	None
59-UJ6220Z2	59-J6220Z	59-3CR702289	59-MRT16AGN	35-88F330	2450004	2451118	1458046	2455010	2457036	None
59-UJ6226Z	59-J6226Z	3ARR3B10AA3	59-MST16AGN	35-72E330 (Run 36-17R3744)	2450004	2451118	1458049	2455010	2457036	None

* C/W Bracket

R22 Condensing Units Parts Breakdown

Condensing Unit Part #	Compressor	Relay	Overload	Start Cap.	Run Cap.	Base	Cond.	Motor *	Fan Blade	Receiver	Cord
59-UNE6181E ^a	59-NE6181E	9660A-041-171	T0625/G8	35-145B165	-	-	2451130	1450073	2455003	-	None
59-UNE6195E	59-NE9195E	9660A-041-182	T0558/G9	35-145B165	-	-	2451130	1450073	2455003	2457034	None
59-UNE6195EC ^a	59-NE9195E	9660A-041-182	T0558/G9	145-175Mfd/165V	-	-	2451130	1450073	2455003	-	None
59-UT6217E1 ^a	59-T6217E	-	CST00 GK-3031	72-88Mfd/330V	36-15R3744	2450025	2451117	1450054	2455010	-	None
59-UT6217E2	59-UT6217E	9660A-044-179	MRT20AIN3001	72-88Mfd/440V	36-15R3744	2450025	2451117	1450054	245590	2457036	None
59-UT6220E1	59-T6220E	59-3ARR3B23P3	CRA39010-3031	35-145F250	-	2450004	2451117	1450054	2455010	2457036	None
59-UT6220E2	59-T6220E	59-3ARR3B6V3	T0748/C9	35-145F250	-	2450004	2451117	1450054	2455010	2457036	None
59-UJ9226E2	59-UJ9226E	59-3ARR3B6V3	MRA38110-3248	35-88F330	36-20R3744	2450004	2451116	1450054	2455011	2457036	None

* C/W Bracket

Parts Breakdown - Air Cooled Condensing Units Embraco

R404A Condensing Units Parts Breakdown

Condensing Unit Part #	Compressor	Relay	Overload	Start Cap.	Run Cap.	Base	Cond.	Motor *	Fan Blade	Receiver
59-UNB6165GK	59-NB6165GK	9660A-041-182	MST18AJN-6261	35-145B165	-	-	2451129	1450057	2455009	2457034
59-UNE2125GK	59-NE2125GK	9660A- -182	MRT22AIN	35-145B165	-	2450024	2451129	1458042	2455009	2457034
59-UNE6181GK	59-NE6181GK	MTRP-0029/59	MRP30APK-6259	35-53D330	-	-	2451130	1450073	2455003	2457034
59-UNE9213GK	59-NE9213GK	3ARR3B6AC3	MRP28GK-3261	35-56D330	36-15R3744	-	2451130	1450073	2455003	2457035
59-UNE2134GK	59-NE2134GK	9660A- -183	MRT20JZ	35-189D165	-	2450025	2451130	1458043	2455003	2457034
59-UT2155GK	59-T2155GK	9660A- -191	MST18RN	35-145F250	-	2450025	2451131	1458043	2455003	2457035
59-UT2168GK	59-T2168GK	3CR-702-188	CST00HK	35-145F250	-	2450026	2451131	1458043	2455003	2457038
59-UT6217GK1	59-T6217GK	3CR702193	CTS00 GK-3031	35-145F250	-	-	2451117	1450054	2455010	2457036
59-UT6217GK2	59-T6217GK	9660A-041-179	T0060/20	35-72E330	36-15R3744	-	2451117	1450054	2455010	-
59-UT6220GK1	59-T6220GK	3CR702193	CRA39010-3031	35-145F250	-	-	2451117	1450054	2455010	2457036
59-UT2178GK1	59-T2178GK	3ARR3B3P3	-	35-145B165	-	-	2451131	1450073	2455003	2457042
59-UT6220GK2	59-T6220GK	3ARR3B6V3	T0748/C9	35-145F250	-	-	2451117	1450054	2455010	2457036
59-UT2178GK2	59-T2178GK	3ARR3B10A3	-	35-88F330	36-15R3744	-	2451131	1450073	2455003	2457042
59-UJ2192GK	59-J2192GK	3ARR3B3AV3	-	35-88F330	36-20R3744	2450004	2451117	1458049	2455010	2457036
59-UT6222GK1	59-T6222GK	3ARR3B3S3	CRA39007-3031	35-145F250	-	-	2451117	1450054	2455010	2457036
59-UT6222GK2	59-T6222GK	3ARR3B6V3	T0808/C9	35-145F250	-	-	2451117	1450054	2455010	2457036
59-UJ9226GK	59-J9226GK	3ARR3B6W3	T0736/C9	35-88F330	36-20R3744	-	2451116	1450054	2455011	2457036
59-UJ9232GK	59-J9232GK	3ARR3B3AA3	-	35-130G330	36-15R3744	-	2451109	1450054	2455011	2457045
59-UJ2212GK	59-J2212GK	3ARR3B3AV3	-	35-88F330	36-20R3744	2450004	2451118	1458049	2455010	2457036

* C/W Bracket
No Cord On Above Models



59-UJ6226A
R12



59-UT6217E
R22



59-UF042MHMB
R134a



59-UJ9226GK
R404A

Air Cooled Condensing Unit Nomenclature

59	U	F	042	M	H	M	C	1	C
59 Product Category	U Condensing Unit Boxed	Compressor Family Name F - FF M - EM G - EG W - PW B - NB E - NE T - T J - J	BTU Capacity (### /100)	Application L - LBP H - HBP M - MBP	Refrigerant/ Oil H - 134a/POE. G - R404a/POE. M - Mineral, R12, R22, blends. A - AB/R12, R22, blends.	Base Size S - Small M - Medium L - Large	Unit Type A - Less receiver/ with power cord. B - With receiver/ with power cord. C - With receiver/ field wired (BX) with fan guard.	Voltage 1 - 115/60 2 - 208-230/60 3 - 220-240/50 4 - 265-277/60	Motor Type C - CSIR R - RSIR P - PSC S - CSR

Water Cooled Condensing Units

ALLTEMP

Refrigeration



Alltemp Water Cooled Condensing Units

- cUL Listed
- Compact Size
- High Quality Design
- 30 Month Warranty

Performance Capacity

R134a Condensing Units

Part #	-20°F	-10°F	5°F	15°F	20°F	30°F	45°F	50°F
59-WC33134	970	1350	1920	2190	2380	3480	4950	5100
59-WC50134	-	-	-	-	4250	5560	8280	9330
59-WC75134	-	-	-	-	6330	8140	11190	12280
59-WC10134	-	-	-	-	8240	10610	15190	17720

R22 Condensing Units

Part #	-10°F	5°F	10°F	20°F	25°F	30°F	45°F	50°F
59-WC3322	-	-	2230	2850	3290	3720	5270	-
59-WC5022	-	-	3140	4040	4600	5150	7170	-
59-WC7522	-	-	4710	6290	7200	8110	11400	-
59-WC1022	-	-	6810	9200	10500	11900	16900	-

R404a Condensing Units

Part #	-20°F	-10°F	5°F	15°F	20°F	30°F	45°F	50°F
59-WC50404	1840	2690	4370	5590	-	-	-	-
59-WC75404	3040	4210	6340	7970	-	-	-	-
59-WC10404	3770	5230	8010	10130	-	-	-	-
59-WC125404	4820	6850	10550	13340	-	-	-	-

All Units Rated At 105°F Condensing Temp

Specifications

R134a Condensing Units

Part #	HP	Voltage	Application	BTUH	Compressor	Copeland	Tecumseh
59-WC33134	1/3	115/1/60	LBP/HBP	2930	30-FFI12HBX	M2WH-AO33	AEA4440YXAXW
59-WC50134	1/2	115/1/60	HBP	4900	59-T6215Z	M2WH-0050	AKA4475YXAXW
59-WC75134	3/4	230/1/60	HBP	7230	59-J6220Z	FTWH-AO74	AKA4490YXDXW
59-WC10134	1	230/1/60	HBP	9420	59-J6226Z	FPWN-A150	AJA4514YXDXW

R22 Condensing Units

Part #	HP	Voltage	Application	BTUH	Compressor	Copeland	Tecumseh
59-WC3322	1/3	115/1/60	HBP	3290	59-E6210E	MCWH-0036	AEA9423EXAXW
59-WC5022	1/2	115/1/60	HBP	4600	59-E9213E	MCWH-0049	AKA9457EXAXW
59-WC7522	3/4	230/1/60	HBP	7200	RS47C21AV	F3WH-AO78	AKA9479EXDXW
59-WC1022	1	230/1/60	HBP	10500	RS70C1PFV	F3WH-A100	AJA9511EXDXW

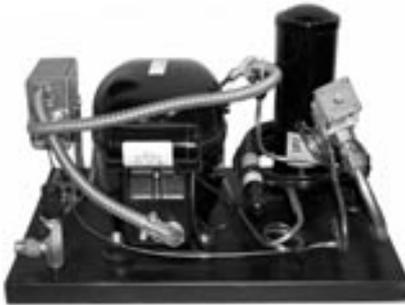
R404a Condensing Units

Part #	HP	Voltage	Application	BTUH	Compressor	Copeland	Tecumseh
59-WC50404	1/2	115/1/60	LBP	2690	59-T2155GK	M4WL-0051	AJA2424ZDXW
59-WC75404	3/4	230/1/60	LBP	4210	59-T2178GK2	FJWL-AO75	-
59-WC10404	1	230/1/60	LBP	5230	59-J2192GK	FJWL-A101	-
59-WC125404	1 1/4	230/1/60	LBP	6850	59-J2212GK	-	-

R134a & R22 Units Rated At +25°F Suction Temp / 105°F Condensing Temp

R404a Units Rated At -10°F Suction Temp / 105°F Condensing Temp

Water Cooled Condensing Units



Technical Specifications

R134a Condensing Units

Part #	LBP Amps (-10°F)	HBP Amps (+45°F)	LRA	Dimensions			Connections		Weight (lbs)
				L	W	H	Liq.	Suct.	
59-WC33134	4.6	5.8	43.0	17.5"	12.5"	9.0"	1/4"	5/16"	41 lbs
59-WC50134	-	5.8	45.0	17.5"	12.5"	9.0"	1/4"	3/8"	53 lbs
59-WC75134	-	7.4	42.0	17.5"	12.5"	10.0"	1/4"	1/2"	66 lbs
59-WC10134	-	7.4	40.0	20.0"	12.5"	10.0"	3/8"	5/8"	69 lbs

R22 Condensing Units

Part #	LBP Amps (-10°F)	HBP Amps (+45°F)	LRA	Dimensions			Connections		Weight (lbs)
				L	W	H	Liq.	Suct.	
59-WC3322	-	7.2	29.0	17.5"	12.5"	9.0"	1/4"	5/16"	40 lbs
59-WC5022	-	8.0	36.0	17.5"	12.5"	9.0"	1/4"	5/16"	46 lbs
59-WC7522	-	7.2	35.5	17.5"	12.5"	10.0"	1/4"	1/2"	66 lbs
59-WC1022	-	7.0	34.2	20.0"	12.5"	10.0"	3/8"	1/2"	76 lbs

R404a Condensing Units

Part #	LBP Amps (-10°F)	HBP Amps (+45°F)	LRA	Dimensions			Connections		Weight (lbs)
				L	W	H	Liq.	Suct.	
59-WC50404	7.9	-	48.0	17.5"	12.5"	10.0"	1/4"	1/2"	50 lbs
59-WC75404	7.7	-	32.2	17.5"	12.5"	10.0"	1/4"	3/8"	53 lbs
59-WC10404	5.4	-	40.0	20.0"	12.5"	10.0"	1/4"	5/8"	66 lbs
59-WC125404	6.2	-	40.0	20.0"	12.5"	10.0"	3/8"	5/8"	72 lbs

Water Cooled Replacement Parts Breakdown

R134a Condensing Units

Part #	Relay	Overload	Start Cap	Run Cap	Water Valve	Compressor	Condenser	Hi Pressure	Receiver
59-WC33134	59-1351605	59-MRT22AFZ	35-378D125	-	3/8"	30-FFI12HBX	47-5027-S	PS1X5K	48-5774
59-WC50134	59-9660189	59-MST18RW	35-189D165	-	3/8"	59-T6215Z	47-5028-S	PS1X5K	48-5774
59-WC75134	59-3CR702289	59-MRT16AGN	35-88F230	-	3/8"	59-J6220Z	47-5022-S	PS1X5K	48-5774
59-WC10134	59-3ARR10AA3	59-MST16AGN	35-72E330	36-17-370440	3/8"	59-J6226Z	47-5023-S	Dual Pressure	48-5315

R22 Condensing Units

Part #	Relay	Overload	Start Cap	Run Cap	Water Valve	Compressor	Condenser	Hi Pressure	Receiver
59-WC3322	59-9660182	MRT22AA1N	35-145B165	-	3/8"	59-E6210E	47-5027-S	PS1X5K	48-5774
59-WC5022	59-3ARR3B25U	MRT00JJH	35-72D250	36-20R3744	3/8"	59-E9213E	47-5028-S	PS1X5K	48-5774
59-WC7522	940-0001-62	071-0370-29	35-108D250	-	3/8"	RS47C21AV	47-5022-S	PS1X5K	48-5774
59-WC1022	940-0001-60	Internal	35-108D250	-	3/8"	RS70C1PFV	47-5023-S	Dual Pressure	48-5315

R404a Condensing Units

Part #	Relay	Overload	Start Cap	Run Cap	Water Valve	Compressor	Condenser	Hi Pressure	Receiver
59-WC50404	59-9660191	59-MST16RN	35-145B165	-	3/8"	59-T2155GK	47-5028-S	PS1X5K	48-5774
59-WC75404	59-3ARR10A3	Internal	35-88F330	36-15R3744	3/8"	59-T2178GK2	47-5028-S	PS1X5K	48-5774
59-WC10404	59-3ARR3AB3	Internal	35-88F330	36-20R3744	3/8"	59-J2192GK	47-5022-S	Dual Pressure	48-5774
59-WC125404	59-ARR3AV3	Internal	35-88F330	36-20R3744	3/8"	59-J2212GK	47-5023-S	Dual Pressure	48-5315

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Suction Accumulators

QUESTION:

Can two suction accumulators be compared or cross-referenced by nipple size and external dimensions only?

ANSWER:

NOT AT ALL! - Internal design can be of even greater importance!!

After a compressor slugs, oil must be returned to the crankcase at a fast enough rate to prevent bearing damage, and at the same time liquid refrigerant must be metered back slowly enough to prevent valve or other compressor damage. Therefore, orifice and internal tube design is very important and there must be a sufficient number of model choices for EXACT SELECTION.

1. Liquid flood back can break valves, pistons, and damage compressors severely. However, a PROPERLY DESIGNED inlet deflector can increase EFFECTIVE HOLDING CAPACITY by as much as 20%, thereby decreasing flood back. *Some manufacturers do not provide inlet deflectors at all!*
2. To maintain compressor capacity, pressure drop through the accumulator must be at a minimum. Therefore, the evaporator temperature (a measure of load) must be considered along with the capacity of the condensing unit. See Application Tables for correct sizing information.
3. But to accomplish the above, proper internal design and a sufficient number of model choices must be available. Refrigeration Research offers over 50 models for EXACT SELECTION. - TO FORCE A SQUARE PEG INTO A ROUND HOLE CAN BE VERY COSTLY. - Don't take a chance. Use only suction accumulators made by REFRIGERATION RESEARCH.

SELECTION OF A SUCTION ACCUMULATOR:

The suction accumulator should not necessarily be selected to have the same size inlet and outlet as the compressor suction line. It is more important to select the suction accumulator well within the limits of (1) pressure drop and (2) oil return as shown on the following page. Total amount of charge to be held (3) is also important.

The actual refrigerant holding capacity needed for a suction accumulator is governed by the requirements of the particular application. There is a great variation in refrigeration systems and this must be considered. Where possible, the capacity selected should be checked by actual test. Normally the accumulator should not be sized for less than 50% of the total system capacity. If in doubt, consult the compressor manufacturer. Steel nipples are available on special order.

**THE LARGEST SELECTION OF
SUCTION ACCUMULATORS IN
THE INDUSTRY!**



**Refrigeration
Research, Inc.**

Suction Accumulators

Refrigeration Research, Inc.

Refrigeration

The Complete Line For Exact Selection!

Air conditioning, heat pump and many other applications require intermittent operation of the refrigeration compressor. Especially in remote applications, the suction line may trap or hold large quantities of liquid which are suddenly dumped into the compressor upon start-up. This is frequently the cause of broken valves, pistons, snapped or bent connecting rods, blown gaskets and bearing washout.

Installation of a Suction Accumulator in the suction line just before the compressor eliminates damage from a sudden surge of refrigerant and/or oil during the start-up process.

Features

- Inlet deflector permits tangential entry of fluid.
- Inlet marked with metal plate to prevent error in hook-up.
- 4" to 6" diameters are complete with fusible plug and installed to comply with UL & cUL.
- Copper nipples are standard on vertical UL and cUL models
- Controlled hydrogen copper brazing process provides ultimate in cleanliness and uniform strength.



Mounting Brackets

Mounting brackets designed to hold horizontal accumulators securely in position.

Part #	Description
48-RR7187	8 5/8" diameter
48-RR7188	10 3/4" diameter

- Vertical**
- 48-3680 48-3816 48-3670
 - 48-3684 48-3817 48-3732
 - 48-3685 48-3701 48-3734
 - 48-3689 48-3702 48-3827
 - 48-3690 48-3703 48-3732
 - 48-3691 48-3738 48-3736
 - 48-3698 48-3700 48-3837
 - 48-3731 48-3706 48-3737
 - 48-3733 48-3704 48-3743
 - 48-3707 48-3832 48-3708



- Vertical**
- 48-3639
 - 48-3641
 - 48-3640



- Horizontal**
- 48-3826 48-3810
 - 48-3831 48-3838
 - 48-3836 48-3839



- Horizontal**
- 48-3841 48-3873
 - 48-3840 48-3874

Heat Exchanger-Suction Accumulators



Refrigeration

Designed To Do The Complete Job!

Makes practical new design possibilities in refrigeration systems. All Heat Exchanger-Suction Accumulators are complete with "Leak Pruf" fusible plug installed complying with latest UL & cUL requirements (except those built to ASME code). These accumulators bear the same part number as the corresponding suction accumulator except that "HX" has been added to indicate the presence of the heat exchanger coil. Copper nipples are available on vertical UL and cUL models.

Vertical
48-HX3700
48-HX3701
48-HX3702
48-HX3703
48-HX3704
48-HX3706
48-HX3738



48-HX3738
Illustrated

Vertical
48-HX3639
48-HX3641
48-HX3640



48-HX3639
Illustrated



Horizontal
48-HX3836
48-HX3810
48-HX3839

48-HX3810
Illustrated



Horizontal
48-HX3841
48-HX3840

48-HX3841
Illustrated

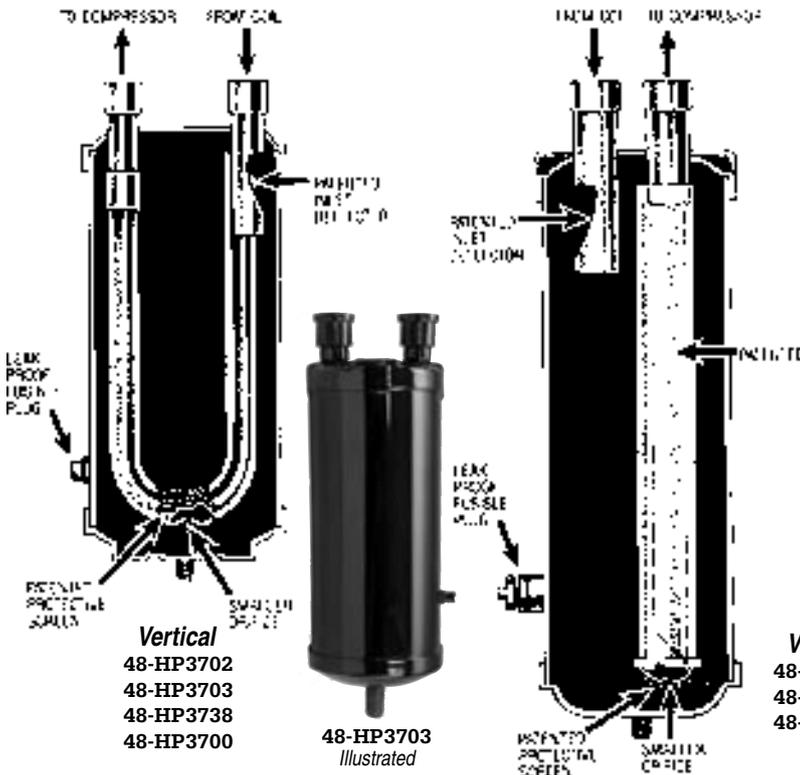
Heat Pump Suction Accumulators



Specifically Designed For Heat Pumps

All Heat Pump Suction Accumulators are complete with a fusible plug to comply with UL and cUL requirements. The inlet deflector tube baffle, smaller metering orifices and protective screens have proven to be a value. In addition, accumulators for heat pumps may usually be designed for less pressure drop. All accumulators are sold complete with a fusible plug to comply with UL and cUL requirements. Copper nipples are available on all UL and cUL models.

NOTE: In a heat pump system the suction accumulator must be installed between the compressor and the reversing valve



Vertical
48-HP3702
48-HP3703
48-HP3738
48-HP3700

48-HP3703
Illustrated

Vertical
48-HP3701
48-HP3706
48-HP3704

Suction Accumulator Selection Chart



- HX prefix = Heat exchanger type. • Models in shaded areas are available only on special order or production quantities.
- HP prefix = Heat pump model.

Suction Acc. #	Heat Exchanger #	Heat Pump #	Horz. or Vert.	Dia.	Length Includes Nipples	Maximum Refrigerant Holding Capacity (lbs.)							Suction Inlet I.D. Size	Liquid @ Inlet Outlet I.D. Size	Weight (lbs.)
						R12	R22	R134a	R401a	R402a	R404a	R502			
48-3680			V	3"	8.13"	1.7	1.5	1.5	1.5	1.5	1.3	1.5	1/2"	-	2.3
48-3816			V	4"	6.50"	2.4	2.1	2.2	2.2	2.1	1.9	2.2			3.0
48-3817			V	4"	10.50"	4.6	4.2	4.2	4.2	4.0	3.7	4.3			4.6
48-3815			H	3"	7.88"	1.7	1.5	1.5	1.5	1.5	1.4	1.6			2.1
48-3673			H	3"	10.88"	2.4	2.2	2.2	2.2	2.1	1.9	2.2			2.7
48-3684			V	3"	7.69"	1.7	1.6	1.6	1.6	1.5	1.4	1.6	5/8"	3/8"	2.2
48-3701	48-HX3701	48-HP3701	V	4"	6.63"	2.4	2.1	2.2	2.2	2.1	1.9	2.2			3.0
48-3689			V	3"	10.75"	2.4	2.2	2.2	2.2	2.1	1.9	2.2			2.8
48-3685			V	3"	12.00"	3.0	2.7	2.7	2.7	2.6	2.4	2.8			3.1
48-3690			V	3"	15.13"	3.7	3.3	3.3	3.4	3.2	3.0	3.4			3.9
48-3702	48-HX3702	48-HP3702	V	4"	10.63"	4.5	4.1	4.2	4.1	4.0	3.6	4.2	4.6		
48-3820			H	3"	7.88"	1.7	1.5	1.5	0.9	0.9	1.4	0.9	2.4		
48-3821			H	3"	11.63"	2.6	2.4	2.4	2.4	2.3	2.1	2.4	3.0		
48-3691			V	3"	15.13"	3.7	3.3	3.3	3.4	3.2	3.0	3.4	3/4"	3/8"	3.9
48-3703	48-HX3703	48-HP3703	V	4"	10.63"	4.5	4.0	4.1	4.1	3.9	3.7	4.1			5.2
48-3731			V	5"	10.00"	6.6	6.1	6.2	6.0	5.8	5.3	6.1			6.0
48-3733			V	5"	13.00"	8.6	7.9	8.0	7.8	7.5	6.9	7.9			7.7
48-3670			V	4"	11.00"	4.4	4.0	4.0	4.0	3.9	3.5	4.1	7/8"	1/2"	5.2
48-3732			V	5"	10.00"	6.6	6.1	6.2	6.0	5.8	5.3	6.1			6.0
48-3738	48-HX3738	48-HP3738	V	5"	13.00"	8.6	7.9	8.0	7.9	7.6	6.9	8.0			7.7
48-3734			V	5"	14.75"	9.7	8.9	9.0	8.8	8.5	7.8	8.9			8.7
48-3710			V	5"	18.00"	11.0	10.1	10.2	10.0	9.6	8.8	10.1			11.0
48-3827			V	6"	13.00"	12.2	11.1	11.3	11.1	10.7	9.8	11.3			11.3
48-3825			H	6"	10.00"	10.5	9.6	9.7	9.6	9.2	8.4	9.8			8.9
48-3826			H	6"	13.50"	14.5	13.1	13.3	13.2	12.7	11.6	13.4			12.0
48-3832			V	6"	11.00"	9.3	8.5	8.6	8.5	8.2	7.5	8.6			10.0
48-3735			V	5"	14.75"	9.7	8.9	9.0	8.8	8.5	7.8	8.9			8.7
48-3736			V	5"	18.50"	12.2	11.1	11.3	11.1	10.7	9.8	11.3	10.5		
48-3700	48-HX3700	48-HP3700	V	6"	15.00"	14.2	12.9	13.1	13.0	12.5	11.4	13.2	13.0		
48-3707			V	6"	18.00"	17.7	16.1	16.3	16.1	15.5	14.2	16.4	14.5		
48-3830			H	6"	13.50"	16.3	14.8	15.0	14.8	14.3	13.0	15.1	11.3		
48-3831			H	6"	16.50"	19.6	17.9	18.1	17.9	17.8	15.7	18.2	13.2		
48-3837			V	6"	13.50"	11.6	10.6	10.7	10.6	10.2	9.3	10.8	11.8		
48-3737			V	5"	18.50"	12.2	11.7	11.3	11.1	10.7	9.8	11.3	10.5		
48-3708			V	6"	15.00"	14.2	12.9	13.1	12.9	12.5	11.4	13.5	13.0		
48-3706	48-HX3706	48-HP3706	V	6"	20.25"	19.3	17.5	17.8	17.6	17.0	15.4	17.9	17.0		
48-3743			V	6"	24.75"	24.8	22.6	22.9	22.6	21.8	19.9	23.0	18.0		
48-3835			H	6"	13.50"	16.3	14.8	15.0	14.8	14.3	13.0	15.1	11.5		
48-3836	48-HX3836		H	6"	22.50"	18.8	17.1	17.3	17.1	16.5	15.1	17.5	17.1		
48-3698			V	6"	17.13"	15.7	14.2	14.4	14.3	13.8	12.5	14.5	14.4		
48-3704	48-HX3704	48-HP3704	V	6"	24.75"	24.8	22.6	22.9	22.6	21.8	19.9	23.0	20.5		
48-3809			H	6"	18.00"	14.0	12.7	12.9	12.7	12.3	11.2	13.0	15.6		
48-3810	48-HX3810		H	6"	30.00"	23.5	21.3	21.6	21.4	20.7	18.8	21.8	23.1		
48-3639	48-HX3639		V	8-5/8"	20.00"	34.0	30.9	31.3	31.0	29.9	27.2	31.5	2 1/8"	7/8"	44.0
48-3838			H	6"	36.00"	34.0	30.9	31.3	31.0	29.9	27.2	31.5			28.0
48-3839	48-HX3839		H	6"	48.00"	45.5	41.3	41.8	41.4	40.0	36.4	42.2			35.5
48-3641	48-HX3641		V	10-3/4"	20.00"	55.8	50.7	51.4	50.8	49.1	44.7	51.8	2 5/8"	1 3/8"	57.0
48-3841	48-HX3841		H	8-5/8"	24.00"	49.1	44.6	45.2	44.7	43.1	39.3	45.5			48.0
48-3640	48-HX3640		V	10-3/4"	26.00"	79.8	72.5	72.7	72.7	70.1	63.9	74.1	3 1/8"	1 3/8"	75.0
48-3840	48-HX3840		H	10-3/4"	24.00"	77.5	70.4	71.3	70.6	68.1	62.0	71.9			63.0
48-3873			H	10-3/4"	48.00"	164.6	149.5	151.5	149.9	144.7	131.7	152.7			114.0
48-3874			H	10-3/4"	60.00"	208.1	189.1	191.6	189.5	182.9	166.5	193.1			120.0

†Maximum recommended tons based on pressure drop through Suction Accumulator equivalent to 1/2°F.

‡Maximum recommended tons based on oil return thru Suction Accumulator.

Suction Accumulator Selection Chart



- HX prefix = Heat exchanger type. • Models in shaded areas are available only on special order or production quantities.
- HP prefix = Heat pump model.

Suction Acc. #	Heat Exchanger #	Heat Pump #	Evap Temp. °F	Recommended Tons of Refrigeration													
				R12		R22		R134a		R401a		R402a		R404a		R502	
				Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
48-3680			+40	0.50	0.11	0.90	0.16	0.45	0.11	0.55	0.12	0.77	0.12	0.80	0.13	0.80	0.13
48-3816			+20	0.35	0.09	0.62	0.14	0.31	0.09	0.38	0.10	0.56	0.10	0.58	0.10	0.58	0.10
48-3817			0	0.22	0.08	0.45	0.11	0.20	0.08	0.24	0.09	0.38	0.08	0.40	0.08	0.40	0.08
48-3815			-20	0.15	0.06	0.30	0.09	0.13	0.06	0.16	0.07	0.24	0.06	0.25	0.06	0.25	0.06
48-3673			-40	0.09	0.04	0.18	0.07	0.08	0.04	0.10	0.04	0.13	0.05	0.14	0.05	0.14	0.05
48-3684			+40	1.00	0.13	2.00	0.18	0.90	0.13	1.10	0.14	1.49	0.14	1.55	0.15	1.55	0.15
48-3701	48-HX3701	48-HP3701	+20	0.6	0.11	1.25	0.16	0.54	0.11	0.66	0.12	0.96	0.12	1.00	0.12	1.00	0.12
48-3689			0	0.40	0.10	0.85	0.13	0.36	0.10	0.44	0.11	0.67	0.10	0.70	0.10	0.70	0.10
48-3685			-20	0.11	0.08	0.55	0.11	0.22	0.08	0.30	0.09	0.43	0.08	0.45	0.08	0.45	0.08
48-3690			-40	0.15	0.06	0.35	0.09	0.13	0.06	0.17	0.07	0.24	0.07	0.25	0.07	0.25	0.07
48-3702	48-HX3702	48-HP3702															
48-3820																	
48-3821																	
48-3691			+40	1.80	0.15	3.00	0.22	1.62	0.14	1.98	0.16	2.69	0.21	2.80	0.22	2.80	0.22
48-3703	48-HX3703	48-HP3703	+20	1.15	0.12	2.10	0.18	1.03	0.11	1.26	0.13	1.92	0.17	2.00	0.18	2.00	0.18
48-3731			0	0.70	0.11	1.50	0.16	0.63	0.10	0.77	0.12	1.34	0.15	1.40	0.16	1.40	0.16
48-3733			-20	0.48	0.09	1.10	0.13	0.43	0.09	0.53	0.10	0.77	0.12	0.80	0.13	0.80	0.13
			-40	0.28	0.06	0.60	0.10	0.25	0.06	0.30	0.07	0.48	0.10	0.50	0.10	0.50	0.10
48-3670			+40	2.50	0.36	4.00	0.53	2.25	0.35	2.75	0.39	3.84	0.51	4.00	0.53	4.00	0.53
48-3732			+20	1.80	0.31	3.00	0.45	1.62	0.30	1.96	0.34	2.88	0.43	3.00	0.45	3.00	0.45
48-3738	48-HX3738	48-HP3738	0	1.00	0.26	2.30	0.39	0.87	0.25	1.10	0.29	1.92	0.37	2.00	0.39	2.00	0.39
48-3734			-20	0.70	0.21	1.50	0.33	0.63	0.20	0.77	0.23	1.25	0.32	1.30	0.33	1.30	0.33
48-3710			-40	0.40	0.17	0.90	0.27	0.36	0.16	0.44	0.19	0.67	0.26	0.70	0.27	0.70	0.27
48-3827																	
48-3825																	
48-3826																	
48-3832			+40	5.00	0.50	9.00	0.76	4.35	0.48	5.50	0.55	8.64	0.73	9.00	0.76	9.00	0.76
48-3735			+20	3.20	0.44	6.20	0.65	2.88	0.43	3.52	0.48	5.76	0.62	6.00	0.65	6.00	0.65
48-3736			0	2.10	0.37	4.30	0.56	1.83	0.36	2.31	0.41	3.84	0.54	4.00	0.56	4.00	0.56
48-3700	48-HX3700	48-HP3700	-20	1.40	0.30	2.80	0.47	1.21	0.29	1.54	0.33	2.40	0.45	2.50	0.47	2.50	0.47
48-3707			-40	0.90	0.16	1.80	0.38	0.78	0.15	1.00	0.18	1.34	0.36	1.40	0.38	1.40	0.38
48-3830																	
48-3831																	
48-3837			+40	8.00	1.40	17.0	2.00	7.20	1.35	8.80	1.54	14.40	1.92	15.00	2.00	15.0	2.00
48-3737			+20	6.00	1.20	11.0	1.90	5.40	1.16	6.60	1.32	9.60	1.82	10.00	1.90	10.0	1.90
48-3708			0	3.80	1.00	7.70	1.60	3.42	0.97	4.18	1.10	6.72	1.54	7.00	1.60	7.00	1.60
48-3706	48-HX3706	48-HP3706	-20	2.40	0.90	5.00	1.30	2.16	0.87	2.64	0.95	4.32	1.25	4.50	1.30	4.50	1.30
48-3743			-40	1.40	0.70	3.00	1.10	1.26	0.68	1.54	0.77	2.40	1.06	2.50	1.10	2.50	1.10
48-3835																	
48-3836	48-HX3836																
48-3698			+40	13.0	1.40	28.0	2.00	11.70	1.35	14.3	1.54	24.0	1.92	25.0	2.00	25.0	2.00
48-3704	48-HX3704	48-HP3704	+20	9.00	1.20	19.0	1.90	8.10	1.16	9.90	1.32	17.3	1.82	18.0	1.90	18.0	1.90
48-3809			0	6.00	1.00	13.0	1.60	5.40	0.97	6.60	1.10	11.5	1.54	12.0	1.60	12.0	1.60
48-3810	48-HX3810		-20	4.00	0.90	8.00	1.30	3.60	0.87	4.40	0.99	6.7	1.25	7.00	1.30	7.00	1.30
			-40	2.00	0.70	5.00	1.10	1.80	0.68	2.20	0.77	3.8	1.06	4.00	1.10	4.00	1.10
48-3639	48-HX3639		+40	32.0	3.70	59.0	5.80	28.8	3.57	35.2	4.07	52.8	5.57	55.0	5.80	55.0	5.80
48-3838			+20	21.0	3.20	41.0	5.20	18.9	3.09	23.1	3.52	37.4	4.99	39.0	5.20	39.0	5.20
48-3839	48-HX3839		0	14.0	2.60	27.0	4.30	12.6	2.51	15.4	2.86	25.0	4.13	26.0	4.30	26.0	4.30
			-20	8.00	2.10	18.0	3.70	7.20	2.03	8.80	2.31	15.4	3.55	16.00	3.70	16.0	3.70
			-40	5.00	1.70	12.0	2.70	4.50	1.64	5.50	1.87	9.60	2.59	10.00	2.70	10.0	2.70
48-3641	48-HX3641		+40	50.0	5.90	90.0	9.50	45.0	5.70	55.0	6.49	81.6	9.12	85.0	9.50	85.0	9.50
48-3841	48-HX3841		+20	33.0	5.20	62.0	8.40	29.7	5.02	36.3	5.72	57.6	8.06	60.0	8.40	60.0	8.40
			0	22.0	4.20	42.0	7.00	19.8	4.06	24.2	4.62	38.4	6.72	40.0	7.00	40.0	7.00
			-20	13.0	3.40	28.0	6.00	11.7	3.28	14.3	3.74	24.0	5.76	25.0	6.00	25.0	6.00
			-40	8.00	2.80	18.0	4.20	7.20	2.70	8.80	3.08	14.4	4.03	15.0	4.20	15.0	4.20
48-3640	48-HX3640		+40	70.0	10.0	130.0	15.0	63.0	9.66	77.0	11.0	120.0	14.4	125.0	15.0	125.0	15.0
48-3840	48-HX3840		+20	54.0	8.70	90.0	13.0	48.6	8.40	59.4	9.57	86.4	12.5	90.0	13.0	90.0	13.0
48-3873			0	37.0	6.80	60.0	11.0	33.3	6.57	40.7	7.48	57.6	10.6	60.0	11.0	60.0	11.0
48-3874			-20	23.0	6.10	40.0	9.30	20.7	5.89	25.3	6.71	38.4	8.93	40.0	9.30	40.0	9.30
			-40	13.0	4.80	28.0	7.50	11.7	4.64	14.3	5.28	24.0	4.32	25.0	4.50	25.0	4.50

Suction Accumulators of 6" diameter or smaller are Hydrogen copper brazed construction and UL / cUL listed (File # SA2400).

Suction Accumulators larger than 6" diameter are made to ASME Code (Shielded arc welded construction).

Suction Accumulators



With Electric Float

These accumulators have a built in electric float switch to provide a warning, or shut down the compressor in case of a major flood back exceeding the holding capacity of the accumulator. Float switch contacts may be easily replaced externally without disturbing the refrigerant charge.

Suction Accumulators - Electric Float

Part #	Vert.	Dia.	Length	Maximum Refrigerant Holding Capacity (lbs)				Inlet Outlet I.D. Line Size	Weight (lbs.)	Evap Temp. °F	† Recommended Tons of Refrigeration											
				R12		R22					R134a		R502		R12		R22		R134a		R502	
				Max	Min	Max	Min				Max	Min	Max	Min	Max	Min	Max	Min	Max	Min		
48-3700F	V	6"	15"	12.8	11.4	11.7	12.1	1 1/8"	14.5	+40	5.0	0.50	9.0	0.75	4.35	0.48	9.0	0.76				
										+20	3.2	0.44	6.2	0.65	2.88	0.43	6.0	0.65				
										0	2.1	0.37	4.3	0.56	1.83	0.36	4.0	0.56				
										-20	1.4	0.20	2.8	0.47	1.21	0.29	2.5	0.47				
										-40	0.9	0.16	1.8	0.38	0.78	0.15	1.4	0.38				
48-3706F	V	6"	20 1/4"	17.6	16.0	16.4	16.6	1 3/8"	21.1	+40	8.0	1.4	17.0	2.0	7.20	1.35	15.0	2.0				
										+20	6.0	1.2	11.0	1.9	5.40	1.16	10.0	1.9				
										0	3.8	1.0	7.7	1.6	3.42	0.97	7.0	1.6				
										-20	2.4	0.9	5.0	1.3	2.16	0.87	4.5	1.3				
										-40	1.4	0.7	3.0	1.1	1.26	0.68	2.5	1.1				

Suction Accumulators 6" or smaller are UL & cUL listed (File # SA2400) • (Hydrogen copper brazed construction)

† Maximum recommended tons based on pressure drop thru Suction Accumulator equivalent to 1/2°F.

‡ Minimum recommended tons based on oil return thru Suction Accumulator.

Heat Exchanger-Suction Accumulator Combinations



For Ice Making Heat Pumps, A.C.E.S. Or Maximum Heat Transfer

These suction accumulators have been especially designed to provide a maximum amount of heat exchange surface for use in special applications. It may eliminate the need for a separate heat exchanger.

Heat Exchanger-Suction Accumulators Combinations

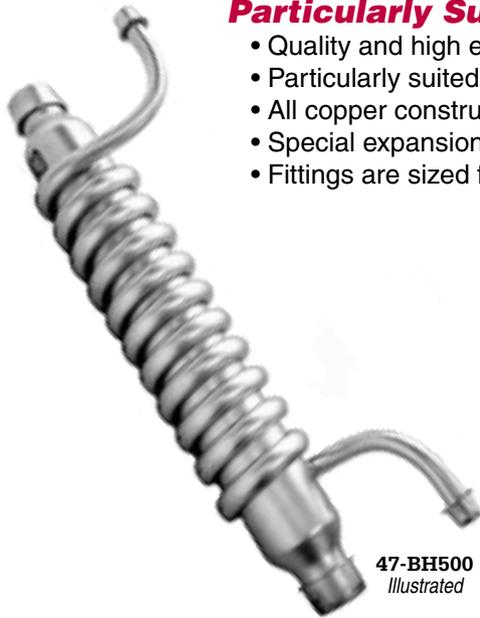
Part #	Vert.	Dia.	Length	Maximum Refrigerant Holding Capacity (lbs)				Suction Line I.D.	Liquid Line I.D.	Weight (lbs.)	Evap Temp. °F	† Recommended Tons of Refrigeration											
				R12		R22						R134a		R502		R12		R22		R134a		R502	
				Max	Min	Max	Min					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min		
48-AC3703	V	4"	10 5/8"	4.4	4.0	4.1	4.2	3/4	3/8	5.3	+60	2.39	0.17	3.78	0.25	2.20	0.16	3.56	0.24				
											+50	2.15	0.16	3.40	0.24	2.00	0.15	3.20	0.23				
											+40	1.80	0.15	3.00	0.22	1.62	0.14	2.80	0.22				
											+20	1.15	0.12	2.10	0.18	1.03	0.11	2.00	0.18				
											0	0.70	0.11	1.50	0.16	0.63	0.10	1.40	0.16				
48-AC3738	V	5"	13"	7.7	7.0	7.2	7.3	7/8	1/2	9.0	+60	3.11	0.40	5.00	0.60	2.70	0.39	5.00	0.60				
											+50	2.80	0.38	4.50	0.57	2.50	0.37	4.50	0.57				
											+40	2.50	0.36	4.00	0.53	2.25	0.35	4.00	0.53				
											+20	1.80	0.31	3.00	0.45	1.62	0.30	3.00	0.45				
											0	1.00	0.26	2.30	0.39	0.87	0.25	2.00	0.39				
48-AC3700	V	6"	15"	12.8	11.4	11.7	12.1	1 1/8"	1/2	16.5	+60	6.39	0.58	11.9	0.84	5.50	0.56	11.5	0.84				
											+50	5.75	0.55	10.75	0.80	5.00	0.53	10.4	0.80				
											+40	5.00	0.50	9.00	0.76	4.35	0.48	9.00	0.76				
											+20	3.20	0.44	6.20	0.65	2.88	0.43	6.00	0.65				
											0	2.10	0.37	4.30	0.56	1.83	0.36	4.00	0.56				

Suction Accumulators 6" or smaller are UL & cUL listed (File # SA2400) • (Hydrogen copper brazed construction)

† Maximum recommended tons based on pressure drop thru Suction Accumulator equivalent to 1/2°F.

‡ Minimum recommended tons based on oil return thru Suction Accumulator.

Sub-Cooling Heat Exchangers - Standard



47-BH500
Illustrated

Particularly Suited For Suction Cooled Compressor Applications!

- Quality and high efficiency at low competitive prices.
- Particularly suited for suction cooled compressor applications
- All copper construction
- Special expansion process provides positive contact between tube & body
- Fittings are sized for standard units from 1/4 to 10 HP eliminating the need for adapter fittings

Standard Sub-Cooling Heat Exchangers

Part #	HP	Overall Length	Shell O.D.	Liquid Line Opening	Suction Line Opening	Weight (lbs.)
47-BH33	1/4 & 1/3	8"	7/8"	1/4"	3/8"	0.6
47-BH50	1/2	11"			1/2"	0.8
47-BH75	3/4	14"			5/8"	1.0
47-BH100	1	15"	1 3/8"	3/8"	7/8"	1.5
47-BH150	1 1/2	11"			2.0	
47-BH200	2	13"	2"	1/2"	1 1/8"	2.0
47-BH300	3	15"				2.1
47-BH500	5					2.3
47-BH750	7 1/2	18"	5/8"	1 5/8"	2.5	
47-BH1000	10				2.7	

UL & cUL Listed (File # SA6300)

Sub-Cooling Heat Exchangers - Deluxe



47-H200
Illustrated

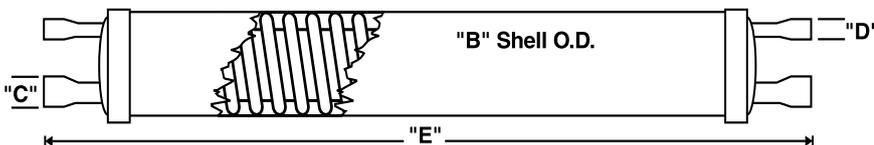
Maximum Heat Transfer Efficiency

- Designed to provide a maximum of heat transfer efficiency with a minimum of pressure drop.
- These models are conservatively rated in horsepower and therefore easy to select for a particular application.
- Brass and copper construction through 3 HP (larger models are heavy gauge steel)
- Easy installation - connection sizes match liquid and suction lines of standard units - fittings are in the end caps and lines remain parallel
- 100% leak tested under high pressure

Deluxe Sub-Cooling Heat Exchangers

Part #	HP	"B" Shell O.D.	"E" Overall Length	"C" Suction Line Opening	"D" Liquid Line Opening	Weight (lbs.)
47-H33	1/4 & 1/3	1 1/4"	8 5/8"	3/8"	1/4"	0.8
47-H50	1/2	2"	10"	1/2"		1.3
47-H75	3/4		12 1/8"	5/8"		1.7
47-H100	1		13 1/8"		1.9	
47-H150	1 1/2	3"	17 3/8"	7/8"	3/8"	2.5
47-H200	2		13 1/4"			3.1
47-H300	3	5"	15 1/4"	1 1/8"	1/2"	3.8
47-H500	5		14 3/8"			7.0
47-H750	7 1/2		15 5/8"			9.0
47-H1000	10	18 5/8"	1 5/8"	5/8"	11.0	

UL & cUL Listed (File # SA6300)



Desuperheating Heat Exchangers



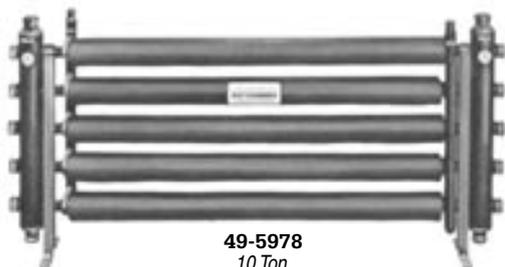
Refrigeration

Double Wall Cleanable

These practical double wall desuperheating heat exchangers are of non-ferrous construction and provide a new standard of flexibility and convenience. These units are used where local codes call for double wall type heat exchangers. The entire inner surface is quickly cleaned of water deposits with a wire brush by simply removing screw caps and standard washers. There are no bolts and gaskets to remove.



49-5969
1 & 2 Ton



49-5978
10 Ton

Double Wall Cleanable

Part #	System	Max BTU/ Hr. Heated	Max Gal. to be Heated 100°F	Horizontal Tubes	Height	Length	Weight (lbs.)
49-5969	1 ton	2400	2.9	1	4.5"	37.0"	4.0
	2 ton	4800	5.8				4.0
49-5975	3 ton	7200	8.7	2	10.5"		9.0
49-5976	5 ton	12000	14.4	3	14.5"		14.0
49-5977	7½ ton	18000	21.5	4	18.5"		19.0
49-5978	10 ton	24000	29.0	5	22.5"		24.0

Superheated Refrigerant Gas To Water

- Commercial refrigeration compressors can be used to provide an abundance of water at 150° (or even 180°) while at the same time doing its intended refrigeration job and at a saving of perhaps 8 to 10% of the electrical power it would normally require. This is accomplished by installing a heat exchanger designed for interchange of heat between super-heated refrigerant gas and water. Such a system provides significant energy savings at a comparatively low investment cost.
- This type of exchanger is installed in the discharge line between the commercial refrigeration compressor and the condenser, whether it be water or air cooled style.
- In an ordinary commercial refrigeration system almost 30% of the condensers work is spent reducing the superheated gas temperature to the condensing temperature. The balance of the condensers job is condensing the gas to liquid and sub-cooling it.
- Therefore, if the above mentioned heat exchanger is designed to pick up only the heat of the superheat it is assured that only high temperature water will be provided. At the same time if the existing water or air cooled condenser does not have to handle the heat of superheat, it has additional capacity and the condensing temperature and pressure will drop causing the compressor to require less power.
- Over sizing the heat exchanger would cause it to act somewhat as a water cooled condenser and the temperature of the water to be heated would be much lower.
- With the addition of this type of heat exchanger it is also advisable to add an insulated hot water storage tank of ample capacity.
- Usually these heat exchangers should be installed on commercial systems using automatic or thermostatic expansion valves. Installation must always be made by a qualified refrigeration service engineer. If installation is made on a capillary fed system it should be under the direction of a refrigeration engineer having knowledge of capillaries.

Superheated Refrigerant Gas To Water

Part #	Refrigeration Tons	Water Line Opening	Refrig. Gas Line Opening	Max BTU/Hr. Water Heated	Max Gal. to be Heated 50°F to 50°F/ Hr.	Shell Dia.	Length	Weight (lbs.)
49-5836	3	5/8"	5/8"	7200	8.7	5.0"	9.0"	11.0
49-5837	5		7/8"	12000	14.4		13.0"	15.0
49-5838	7½		1 1/8"	18000	21.5		18.0"	20.0
49-5839	10		1 3/8"	24000	29.0		23.0"	25.0

Desuperheating heat exchangers of smaller sizes are available on special request

Applications

- Commercial refrigeration
- Heat pumps
- Milk coolers
- Air conditioning, etc.

Standard Receivers



Backed By A Reputation For Quality & Service!

Used widely by OEM's throughout the industry, these receivers are available in a broad range of types and sizes. These receivers are hydrogen brazed for cleanliness and pressure tested for reliability. A 430° fusible plug is installed on all receivers except the 48-2030 & 48-9028.



Fig.	Part #	*Pump Down Capacity	Diameter & Length Over End Cap	Inlet Size	Outlet Size	Mount	Fusible Plug	Weight (lbs.)
A	48-2030	2 lb.	3 x 10	1/4 ID Sweat	1/4 ID Sweat	Vert.	N/R	2.4
B	48-1947	3 lb.	3 1/2 x 9	3/8 ID Sweat	3/8 SAE Valve	Horz.	R	3.3
C	48-5774	2 lb.	3 x 10	1/4 SAE Fitting	1/4 SAE Valve	Vert.	P	3.0
	48-1911	10 lb.	6 x 12	3/8 SAE Fitting	3/8 SAE Valve			10.9
	48-1917	3 lb.	3 1/2 x 10	1/4 SAE Fitting	1/4 SAE Valve			3.5
	48-1918	6 lb.	5 x 10					7.2
	48-1920	2 lb.	3 1/2 x 7 1/2	1/2 SAE Fitting	1/2 SAE Valve			2.9
	48-1921	4 lb.	4 x 10					4.5
	48-3212	16 lb.	6 x 18	3/8 SAE Fitting	3/8 SAE Valve			15.6
	48-5315	6 lb.	5 x 10	1/4 ID Sweat	1/4 ID Sweat Valve			7.3
	48-9017	3 lb.	3 1/2 x 10					3.5
	48-9021	4 lb.	4 x 10	1/2 ID Sweat	1/2 ID Sweat Valve			4.5
	48-9027	16 lb.	6 x 18	1/4 ID Sweat	1/4 ID Sweat Valve			15.6
	D	48-9028	2 lb.	3 x 10	1/4 ID Sweat			1/4 ID Sweat Valve
48-6801		10 lb.	6 x 12	3/8 ID Sweat	3/8 ID Sweat Valve	3.0		
48-6848		6 lb.	5 x 10			10.9		
48-1915		12 lb.	5 x 18	1/4 Sweat	3/8 SAE Valve	7.5		
E	48-1916	8 lb.	4 x 19	3/8 Sweat	3/8 SAE Valve	16.6		
	48-1919	19 lb.	5 x 28			14.5		
	48-1922	15 lb.	5 x 23	1/2 Sweat	1/2 SAE Valve	15.0		

* 90% at 90° for R22, R134a and R502 • For R12, multiply by 1.1 • For R402b, R404a and R406a, multiply by 0.9
 UL & cUL listed (File # SA2400) • 500 psi Working pressure • P - Permanent R - Removable

Shell & Coil Type Condenser - Receivers



Shell & Coil Type Condenser - Receivers

- These horizontal condenser - receivers are processed to insure cleanliness & reliability
- Water circulates through finned copper tubes.
- Capacities conservatively rated.
- UL and cUL listed (File # SA2400)

Shell & Coil Type Condenser - Receivers

Part #	Length Over End Caps	Dia.	Tons †	Refrig. Inlet	Refrig. Outlet	Leak Pruf Fusible Plug	Water Connections	*Pump Down Capacity	Weight (lbs.)
49-5803	14	5	1/2	3/8 Flare	3/8 Valve	R	1/2 SAE Fem. flare	7 lbs.	18.0
49-5806			3/4					11 lbs.	22.0
49-5802	16 1/4	6	1	1 1/4 - 12 Rotalock	1 1/4 - 12 Rotalock	R	3/4 OD	14 lbs.	26.0
49-5804	24		1 1/2					19 lbs.	30.0
49-5808	36		3					30 lbs.	49.0
49-5809	40	5	36 lbs.	59.0					

* 90% at 90° for R22, R134a and R502 • For R12, multiply by 1.1 • For R402b, R404a and R406a, multiply by 0.9
 † Tons rating for 105°F water delivery • UL & cUL listed (File # 2400) • P - Permanent R - Removable

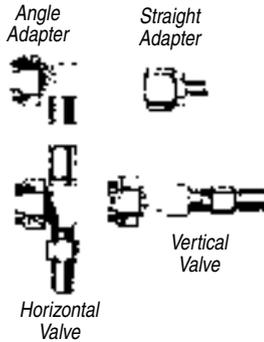
Rotalock Fitting Receivers

Refrigeration Research, Inc.

Refrigeration



48-3390 Illustrated



Receivers

- Hydrogen copper brazed construction insuring maximum cleanliness and strength.
- Horizontal or vertical mounting

Part #	*Pump Down Capacity	Diameter & Length Over End Cap	Inlet Size	Outlet Size	Mount	Leak Pruf Fusible Plug	Weight (lbs.)
48-3392	4 lb.	4 x 10	1"	Rotalock Fitting	Horz. or Vert.	R	4.7
48-3388	6 lb.	5 x 10					7.3
48-3390	13 lb.	5 x 20					12.3
48-3389	10 lb.	6 x 12					11.1
48-3413	16 lb.	6 x 18					14.5
48-3391	22 lb.	6 x 24					18.3
48-3387	28 lb.	6 x 30					22.0

* 90% at 90° for R22, R134a and R502 • For R12, multiply by 1.1 • For R402b, R404a and R406a, multiply by 0.9
 UL & cUL listed (File # SA2400) • 500 psi Working pressure • P - Permanent R - Removable

NOTE: Rotalock receivers do not include valves or fittings, but are supplied with Teflon gasket installed.

Available valves and fittings for above receivers

Primore Valve Numbers (horizontal)		Primore Valve Numbers (vertical)		Primore Angle Adapter		Primore Straight Adapter Numbers	
49-27718	3/8 SAE flare	49-27742	3/8 SAE flare	49-24957	3/8 SAE flare	49-24246	3/8 ID Sweat
49-27689	1/2 SAE flare	49-27035	1/2 SAE flare	49-24958	1/2 SAE flare	49-24247	1/2 ID Sweat
49-27691	5/8 SAE flare	49-27036	5/8 SAE flare	49-24959	5/8 SAE flare	49-24248	5/8 ID Sweat
49-23075	3/8 ID Sweat	49-24606	3/8 ID Sweat	49-24252	3/8 ID Sweat	Primore Teflon Gasket	
49-24601	1/2 ID Sweat	49-24490	1/2 ID Sweat	49-24253	1/2 ID Sweat		
49-24602	5/8 ID Sweat	49-24491	5/8 ID Sweat	49-24254	5/8 ID Sweat		
						49-24591	-

Water Chiller Evaporators

Refrigeration Research, Inc.

Vertical (for capillary systems)

- Designed for heat pump applications with capillary systems.
- Water flows through integral finned copper tubing and the liquid refrigerant boils on the outside of the coil.
- May be used in parallel
- Built-in suction accumulator protects the compressor against flood back and prevents oil trapping

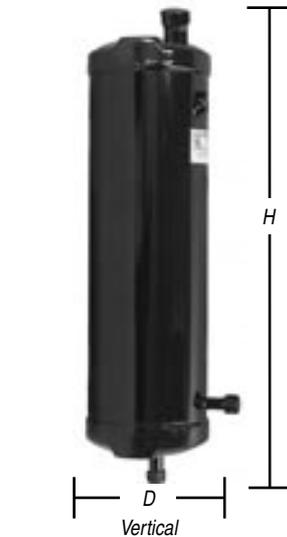
Part #	Size (Tons) †	Depth	Height	Refrigerant Connections		Water Connections	Weight (lbs.)
				In	Out		
49-5829	1	6"	13 1/2"	1/2" ID	3/4" ID	5/8" OD	27.5
49-5830	1 1/2	6"	18"	1/2" ID	3/4" ID	5/8" OD	35.5
49-5971	3	6"	30"	1/2" ID	3/4" ID	7/8" OD	43.0

Horizontal (for Expansion Valves)

- Designed for use with thermostatic or automatic expansion valves.
- Water flows through integral finned copper tubing and the liquid refrigerant boils on the outside of the coil.

Part #	Size (Tons) †	Depth	Length	Refrigerant Connections		Water Connections	Weight (lbs.)
				In	Out		
48-5011	3	6"	26"	5/8" ID	1 1/8" ID	5/8" ID	30.0
48-5012	5	6"	35"	7/8" ID	1 3/8" ID	1 1/8" ID	43.0

† Tons rating for 105°F water delivery. • UL & cUL listed (File # SA2400)



48-5011 Horizontal

Suction Mufflers



Reduce System Noise!

- Reduces system noise by smoothing out suction pulsations when installed at the compressor on the suction side.
- Made from hydrogen copper brazed steel ensuring maximum strength & complete cleanliness.
- Copper nipples for ease of installation.

Suction Mufflers

Part #	Tons	Fitting Size	Overall Length	Fitting Size	Weight (lbs.)
48-1677	4 ½ to 5	7/8" ID (in)	6 1/8"	7/8"	1.0
		7/8" OD(out)			
48-1678	6 to 10	1 1/8" ID (in)		1 1/8"	1.0
		1 1/8" OD (out)			
48-1679	7 ½ to 12 ½	1 3/8" ID (in)		1 3/8"	1.0
		1 3/8" OD (out)			
48-1676	7 ½ to 10	1 1/8" ID (in)		1 1/8"	1.0
		1 3/8" OD (out)			

All mufflers are in accordance with UL & cUL requirements.



Adjustable Mufflers

Features

- Popular and exclusive technology.
- Allows the changing of muffler characteristics without installing a different muffler or breaking into the system.
- Muffler is adjustable without losing charge and while the system is in operation.
- Provides a variable range of muffler characteristics so that the best performance with a particular system can be attained.
- Horizontal or vertical mounting.



48-AM10
Illustrated

Permits "Tuning" Muffler To The system.

The adjustable muffler is provided with a stem which may be turned to "tune" the muffler to the system. It is a well known fact that two systems made up of the same components do not always sound the same when installed in different locations. One may be noisy while the other is relatively quiet. Individual compressor characteristics, length and diameters of lines and other factors may make the difference.

Adjustable Mufflers

Part #	Tons	O.D.	Overall Length	Fitting Size	Weight (lbs.)
48-AM5	2 to 5	4"	10"	5/8"	5.5
48-AM10	5 to 10		11"	7/8"	6.0
48-AM25	10 to 25		14 1/4"	1 1/8"	7.5

Notes: All mufflers above 3" are furnished with "Leak Pruf" fusible plugs installed.

- UL & cUL requirements (File # SA3089)

Discharge Muffler



- Reduces noise due to vibration & pulsation of gas through the discharge line.
- Made from hydrogen copper brazed steel ensuring maximum strength & complete cleanliness
- Horizontal or vertical mounting.



48-M3
Illustrated

Discharge Muffler

Part #	Tons	O.D.	Overall Length	Fitting Size	Removable Fusible Plug	Weight (lbs.)		
48-M2	2	2"	7 7/16"	3/8"	Not required	1.0		
48-M3	3			1/2"		1.0		
48-M5	5			5/8"		1.0		
48-M10	7 1/2 to 10	3"	9"	7/8"	Not required	2.6		
48-M15	10 to 15		9 1/4"	1 1/8"		2.8		
48-M20	15 to 25		13 3/4"	1 3/8"		3.3		
48-M30	25 to 50	4"	16"	1 5/8"	Installed	6.5		
48-M60	50 to 75					26 1/2"	2 1/8"	26
48-M80	75 to 100					28"	2 5/8"	27
48-M110	100 to 125	6"	36"	3 1/8"	Installed	32.5		

Notes: All mufflers above 3" are furnished with "Leak Pruf" fusible plugs installed.

- UL & cUL requirements

Universal Drier - Deluxe

ALTEMP



47-2933
Illustrated

Driers

- XH-9 desiccant - recommended by desiccant manufacturers for all refrigerants and lubricants.
- Hermetically sealed to stay dry indefinitely - No plastic caps.
- For 5/16", 1/4" or 3/16" OD tubing cut the connector attached to the drier at the correct place as indicated.
- For 3/8" ID simply unsolder & remove the adapter from the drier.
- For capillary sizes cut the 3/16 ID tube where indicated, then pinch tube down to fit the particular size of capillary.
- For sizes up through 1 HP - Drier is 1" OD and has overall length of 9".

Part #	Description
47-2933	<ul style="list-style-type: none"> • For systems through 1 Hp. • 3/16", 1/4", 5/16", 3/8" connections.

Universal Drier - Exclusive

ALTEMP



47-3068
Illustrated

Driers

- XH-9 desiccant - recommended by desiccant manufacturers for all refrigerants and lubricants.
- Contains high capacity molecular sieve desiccant.
- Economic drier solution.
- Hermetically sealed to stay dry indefinitely - No plastic caps.
- One piece copper design.
- Cut tube for 3/8" or 1/4" diameter, form capillary sizes with pliers.
- Basket outlet provides large area resulting in smaller pressure drop.

Part #	Description
47-3068	<ul style="list-style-type: none"> • For systems through 1 Hp. • 3/8", 1/4" & capillary connections.

Filter - Driers

ALTEMP

Driers

A large cylindrical inlet screen held by a strong spring keeps the desiccant securely in place. The inlet screens design allows some dirt particles through to become trapped in the maze of tightly held desiccant. This enables the drier to collect considerably more dirt than one which collects dirt only on a surface. All of the volume of desiccant in this drier is used efficiently to dry and clean the system since no binder is used as in the case of a molded block drier. These driers are exceptionally high in acid removal capacity.



47-T-083
Illustrated

- The advantages of a mixed desiccant drier without the usual disadvantages of either a molded block drier or a loose desiccant drier.
- In-depth filtration.
- XH-9 desiccant - recommended by desiccant manufacturers for all refrigerants and lubricants.
- Provide interchange ability with other driers for convenience.

Part # Std Fittings	Part # Sweat Fittings	Flare Fittings	Nominal Tons	Shell O.D.	Overall Length	Weight (lbs.)
47-T-032	47-T-032S	1/4"	1/4 to 1	2"	4 7/16"	0.8
47-T-033	47-T-033S	3/8"	1/4 to 1	2"	4 5/8"	0.8
47-T-052	47-T-052S	1/4"	1/3 to 2	2"	5"	1.0
47-T-053	47-T-053S	3/8"	1/3 to 2	2"	5 1/8"	1.0
47-T-083	47-T-083S	3/8"	1 to 4	2"	5 7/8"	1.2
47-T-084	47-T-084S	1/2"	1 to 4	2"	6 1/4"	1.21
47-T-163	47-T-163S	3/8"	2 to 5	2 1/2"	6 1/2"	1.57
47-T-164	47-T-164S	1/2"	2 to 5	2 1/2"	6 7/8"	1.58
47-T-304	47-T-304S	1/2"	3 to 7 1/2	2 1/2"	9 7/8"	2.3
47-T-305	47-T-305S	5/8"	3 to 7 1/2	2 1/2"	10"	2.31
47-T-414	47-T-414S	1/2"	5 to 10	3"	10"	3.2
47-T-415	47-T-415S	5/8"	5 to 10	3"	10 1/8"	3.2

Note: For driers with sweat fitting connections simply add "S" to the standard catalogue part number. • UL & cUL listed (File # 2401)

Filter - "Junior" Driers



47-2948
Illustrated

Driers

- XH-9 desiccant - recommended by desiccant manufacturers for all refrigerants and lubricants.
- Permanently sealed against moisture for storage.
- Diameter is one inch and over length is nine inches.
- 1/4" tube at each end may be cut off, formed or sized as required.
- Large basket type outlet strainer is provided.

Part #	Description
47-2948	<ul style="list-style-type: none"> • For systems through 3/4 Hp. • 1/4" - cut & form to fit design.

Coaxial Condensers



Superior Performance At An Optimum Cost

Coaxial water cooled condensers of various configurations are available. These counter flow condensers provide good performance at a minimum cost. Also available in copper and cupro-nickel. All coaxial condensers come complete with brackets.



47-5024-S
Illustrated

UL & cUL listed (File # SA6300)



47-8267-S
Illustrated

Tecumseh Replacements

47-8267-S (Tecumseh 50812)
47-8238-S (Tecumseh 50827)

Part #	Tons	Refrig. Connections		Water Connections		Overall Dimensions			Weight (lbs.)
		In	Out	In	Out	H	L	W	
47-5027-S	1/3	3/8" ID	3/8" ID	1/2" ID	1/2" ID	3"	9 1/4"	6 1/2"	3.0
47-5027-N									3.0
47-5028-S	1/2					5.0			
47-5028-N									5.0
47-5022-S	3/4					10.0			
47-5022-N									10.0
47-5023-S	1			12.0					
47-5023-N					12.0				
47-5024-S	1 1/2			14.0					
47-5024-N					14.0				
47-5025-S	2	17.0							
47-5025-N			17.0						
47-5026-S	3	27.0							
47-5026-N			27.0						
47-6209-S	5	54.0							
47-6209-N			54.0						
47-8267-S	1	1/4" SAE Flare	1/4" SAE Flare	1/2" ID	3/8" NPT	8"	11"	7 3/4"	11
47-8238-S	2					9.75"			16

Dimensions subject to change without notice. • Copper outer tube available on special order.
S - Steel outer tube and copper inner tube. • N - Steel outer tube and 90-10 cupronickel inner tube.

Refrigeration

Accumulators & Accumulator-Driers



Accumulators & Accumulator-Driers

All of the accumulators shown have 1 5/8" diameter copper shells. Shell dimensions of the accumulator-driers are the same as the accumulators, the only difference being that the accumulator-driers contain our monel wire cloth desiccant bag of 22 grams of silica gel.

Accumulators and accumulator-driers may be mounted slightly inclined, horizontally or vertically.

Accumulators & Accumulator-Driers

Accumulator Part #	Accumulator-Drier Part #	"A" ID	"B" ID	"C" Length	Weight (lbs.)
49-620A	49-620	3/8"	3/8"	12"	0.8
49-621A	49-621		1/2"		0.8
49-622A	49-622	1/2"	5/8"		0.8
49-623A	49-623	3/8"	3/8"	9"	0.8
49-624A	49-624		1/2"		0.6
49-625A	49-625	1/2"	1/2"		0.6
46-626A	46-626				0.6

Sight Glasses



49-1523
Not Exactly As Illustrated

Bull's Eye Sight Glasses

Regular and moisture-indicating sight glasses provide a full view of the refrigerant level at all times. The sight glasses are plated steel with 5/16" diameter polyethylene floating ball. Sight glasses must be sealed with Loctite refrigerant sealer around the 1/2"- 14 NPT thread.

Sight Glasses

Part #	Description
49-1523	Regular sight glass
49-1536	Moisture indicating sight glass.
49-7690	Prism sight glass (eliminates need for polyethylene floating ball)

Oil Separators



For increased efficiency and... Energy savings

Two types of oil separators, for either single or multiple (parallel) compressor systems. All of these separators are hydrogen copper brazed and pressure tested to assure cleanliness and reliability.

Refrigeration



Mechanical Float Oil Separator Illustrated

Mechanical Float Oil Separators

The oil separators listed below contain an internal mechanical float to provide the return of oil to the crankcase of the compressor or the oil reservoir.

Part #	Nominal Tons	Dimensions		Line Size		Capacity in Tons of Refrigerant								
		D	L	Discharge Lines	Oil Return Lines	R12			R22			R502		
						-40°F	0°F	+40°F	-40°F	0°F	+40°F	-40°F	0°F	+40°F
48-8399	1	4"	7 3/4"	3/8"	3/8"	0.8	0.9	1.0	1.0	1.3	1.5	1.1	1.3	1.5
48-8408	2		9 3/4"	1/2"		1.0	1.25	1.5	1.5	1.75	2.0	1.5	1.75	2.0
48-8409	4		14"	5/8"		3.0	3.5	4.0	4.5	5.0	5.5	4.8	5.0	5.8
48-8410	5		17"	3/4"		4	4.5	5.0	5.5	6.0	6.5	6.5	7.0	7.5
48-8411	8	6"	12"	7/8"		6.0	7.0	8.0	9.0	9.5	10.0	9.0	10.0	11.0
48-8412	11		13 1/2"	1 1/8"		8.0	9.0	10.0	11.0	11.5	12.0	12.0	13.0	14.0
48-8413	14		15 1/2"	1 3/8"		9.0	10.5	12.0	13.0	13.5	14.0	15.0	17.5	20.0
48-8414	17		18"	1 5/8"		11.0	12.5	14.0	16.0	17.0	18.0	20.0	22.0	24.0
48-8415	20		19"	2 1/8"		17.0	19.5	22.0	25.0	27.5	30.0	30.0	32.5	35.0

Note: Before installing the oil separator add an initial charge of at least 48 oz. of the same type of oil as in the compressor to allow for the amount of oil it will hold in the sump.

Electric Float Oil Separators

The oil separators listed below contain an internal electric float switch to provide the direct return of oil to the crankcase of single compressor systems or the oil reservoir. The float activates a solenoid in the line through a relay (*Solenoid & relay kit 48-8310 available separately, see below*). Because of the completely open or closed position of the solenoid, the separator provides positive return of oil, unlike needle valves which clog if the oil is dirty or thick.



Electric Float Oil Separator Illustrated

Part #	Nominal Tons	Dimensions		Line Size		Capacity in Tons of Refrigerant								
		D	L	Discharge Lines	Oil Return Lines	R12			R22			R502		
						-40°F	0°F	+40°F	-40°F	0°F	+40°F	-40°F	0°F	+40°F
48-8300	1	4"	9 3/4"	3/8"	1/4"	0.8	0.9	1.0	1.0	1.3	1.5	1.1	1.3	1.5
48-8301	4		14"	5/8"		3.0	3.5	4.0	4.5	5.0	5.5	4.8	5.0	5.8
48-8302	5		17"	3/4"		4.0	4.5	5.0	5.5	6.0	6.5	6.5	7.0	7.5
48-8401	8	6"	12"	7/8"	3/8"	6.0	7.0	8.0	9.0	9.5	10.0	9.0	10.0	11.0
48-8402	11		13 1/2"	1 1/8"		8.0	9.0	10.0	11.0	11.5	12.0	12.0	13.0	14.0
48-8403	14		1 1/3"	9.0		10.5	12.0	13.0	13.5	14.0	15.0	17.5	20	
48-8404	17		18"	1 5/8"		11.0	12.5	14.0	16.0	17.0	18.0	20.0	22.0	24.0

Note: Before installing the oil separator add an initial charge of at least 21.3 oz. of the same type of oil as in the compressor to allow for the amount of oil it will hold in the sump.

Note: Solenoid & relay not Included

Oil Separators Solenoid & Relay Kit



Oil Separator Solenoid & Relay Component Kit

The oil separator with an electric float requires a solenoid with a maximum operating pressure of 300 psi & 120 volt SPDT latching relay with a minimum amperage of 2 amps to complete the oil separation system. For easier selection & installation, this package supplies the proper solenoid & relay combination with instructions and schematic.

Oil Separator Solenoid & Relay Kit

Part #	Description
48-8310	Oil separator solenoid & relay kit.

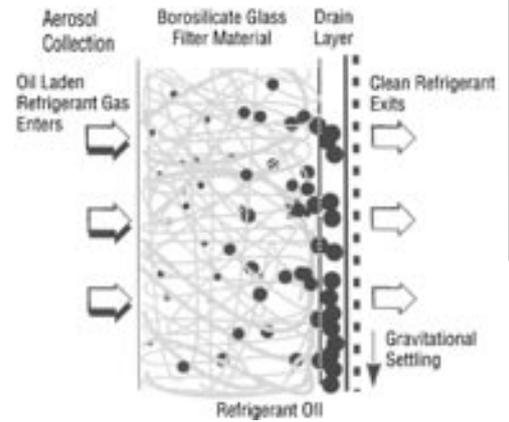
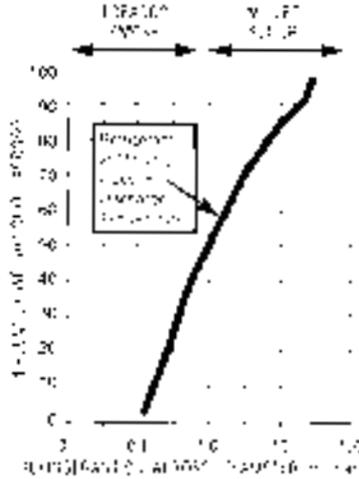
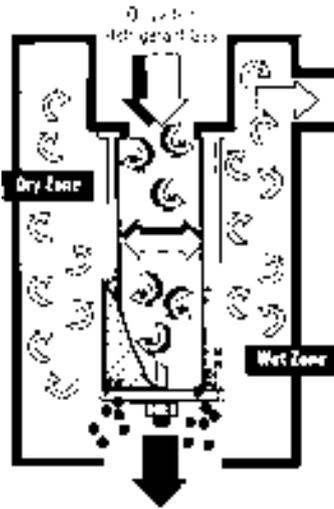
Oil Separators

Temprite

Temprite Oil Separators

- Temprite's quality oil separators are the most efficient refrigeration components available worldwide.
- UL, cUL, CSA & A.S.M.E.

Why Coalescent Oil Separators?



Oil Separator Cross Section

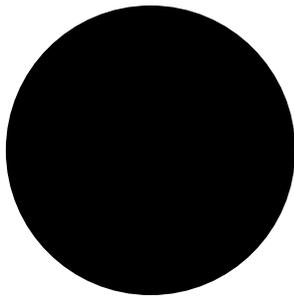
Atomized oil present in the discharge gas enters the interior of the filter flowing from the inside of the filter to the outside. Droplet sized oil of 100µm (microns) are generally separated here by expansion of gases.

Typical Aerosol Distribution

This graph illustrates micron particle sizes from 0.01 to 100. Refrigerant oils in aerosol form typically range from less than 0.1 to 40 microns in size. The majority of aerosols in the discharge gas are in the 0.4 to 10 micron range with greater than 50% of the aerosols less than 1 micron in size.

Filter Cross Section

As aerosol sized gas enters the borosilicate glass matrix, it vibrates from side to side colliding with other molecules and agglomerating. Large oil droplets are moved to the outside of the filter and enter the gravitational drain layer.



Beach Sand 1,000µm.	Human Hair 100µm.	Pollens 10µm.	Tobacco Smoke 1µm.	Oil Smoke 0.1µm.	Oil Smoke 0.01µm.
Settling Chambers / Separators					
Conventional / Centrifugal / Impingement Separators					
Electro Mechanical Separators					
Coalescing Separators					

Micronic Order of Magnitude

Coalescent matrix filters are able to capture solid contaminants above 0.3 microns and aerosols in liquid form to 0.001 microns. Conventional, centrifugal and impingement screen separators only work to 100 microns, missing approximately 50% of the aerosols in the mass flow.

Oil Separators Specifications

Temprite

Hermetic Separators - 300 & 900 Series

Part #	Type	Maximum Working Pressure	Oil Connector Size	Diameter	Connection Size "A"	CFM	Dimensions				Oil Charge Amount		Weight					
							"A"	"B"	"C"	"D"								
58-320	Hermetic Coalescent	500 PSIG	3/8" ODS	2 1/2"	3/8" ODS	4.71	3/8" ODS	2 1/16"	4 1/4"	-	-	-	1L					
58-321			1/8" FPT		1/8" FPT		3 1/2"		-	-	-							
58-322			1/4" SAE		1/4" SAE		4"		-	-	-							
58-340			3/8" ODS		3/8" ODS	9.42	3 9/16"	4 7/8"	-	-	-	2L						
58-341			1/8" FPT		1/8" FPT		4 1/2"	-	-	-								
58-342			1/4" SAE		1/4" SAE		4 3/4"	-	-	-								
58-900	Hermetic Coalescent	450 PSIG	1/4" ODS	4"	3/8"	6.33	3/8" ODS	8 1/4"	-	15oz	445ml	5L						
58-900-1			1/4" 90° ODS		3/8"		-		6L									
58-901			1/4" ODS		1/2"	11.78	1/2" ODS	8 3/8"	3/4"	-	5L							
58-902					5/8"	16.94	5/8" ODS	10 9/16"	-	6L								
58-903					7/8"	23.56	7/8" ODS	10 7/8"	-									
58-904					2 1/8"	42.40	1 1/8" ODS	15 1/8"	18 3/8"	-	16oz	475ml	9L					
58-905					1 3/8"	64.47	1 3/8" ODS			-								
58-922					Accessible Coalescent	1/4" SAE	4"	5/8"	16.94	5/8" ODS	12"	12 3/4"	-	15oz	445ml	11L		
58-923			7/8"					23.56		7/8" ODS		13"	-					
58-922R			5/8"					16.94	5/8" ODS	17 3/4"	18 1/2"	-	77oz	2.27L	13L			
58-923R			7/8"					23.56	7/8" ODS		18 3/4"	-						
58-924			1 1/8"					42.40	1 1/8" ODS	15 1/4"	20 1/4"	-	20oz	590ml	16L			
58-925			1 3/8"					64.47	1 3/8" ODS	16 1/4"	21 1/2"	-						
58-924R			1 1/8"					42.40	1 1/8" ODS	8 1/8"	3/4"	-	15oz	445ml	21L			
58-925R			1 3/8"					64.47	1 3/8" ODS	10 1/4"		-	12oz	355ml				
58-926			Accessible Coalescent					3/8" SAE	6"	1 5/8"	110.35	1 5/8" ODS	31"	34 3/4"	30 1/2"	34oz	1L	34L
58-927										2 1/8"	150.42	2 1/8" ODS						
58-926R										1 5/8"	110.35	1 5/8" ODS	33 7/8"	39 3/8"	16 5/8"	1.8gal	6.7L	41L
58-927R	2 1/8"	150.42		2 1/8" ODS														
58-928	Accessible Coalescent	8 5/8"		2 5/8"	251.33	2 5/8" ODS	33 5/8"			40 1/4"	12"	34oz	1L	150L				
58-928R							38 7/8"			45 1/2"	18"	3.5gal	13.25L	166L				
58-930			35 3/4"				43 3/8"	13 3/4"	85oz	2.5L	300L							
58-930R	12 3/4"	3 1/8"	427.26	3 1/8" ODS	37 1/8"	44 3/4"	15 1/8"	5.7gal	21.25L	310L								

Impingement Screen Separators - 500 & 600 Series

Part #	Type	Maximum Working Pressure	Oil Connector Size	Diameter	Connection Size "A"	CFM	Dimensions			Oil Change Amount		Weight		
							"A"	"B"	"C"					
58-501	Accessible Impingement	450 PSIG	1/4" SAE	4"	1/2"	-	1/2" ODS	10 1/4"	3/4"	16oz	475ml	10lbs.		
58-502					5/8"		5/8" ODS	12 7/8"				11lbs.		
58-503					7/8"		7/8" ODS	14 5/8"				12lbs.		
58-504					1 1/8"		1 1/8" ODS	15 1/2"				13lbs.		
58-505					1 3/8"		1 3/8" ODS	18 7/8"				21lbs.		
58-506					6"		1 5/8"	1 5/8" ODS				15 1/4"	20 1/4"	20oz
58-507	2 1/8"	2 1/8" ODS	16 1/4"	21 1/2"		24lbs.								
58-600	Hermetic Impingement	450 PSIG	1/4" SAE	4"	3/8"	-	3/8" ODS	8 1/8"	3/4"	15oz	445ml	6lbs.		
58-601					1/2"		1/2" ODS	10 1/4"						
58-602					5/8"		5/8" ODS	12 7/8"						
58-603					7/8"		7/8" ODS	14 5/8"		12oz	355ml	8lbs.		
58-604					1 7/8"		1 1/8" ODS	15 1/2"						
58-605					1 3/8"		1 3/8" ODS	18 7/8"						
58-606					6"		1 5/8"	1 5/8" ODS		13 1/2"	18 3/8"	29oz	850ml	15lbs.
58-607							2 1/8"	2 1/8" ODS		14 1/2"	19 3/8"			16lbs.

NOTE 1. CFM = Actual CFM of refrigerant circulated, not compressor displacement or swept CFM which can change efficiency as the compression ratio changes.

NOTE 2. Select oil separator with connection size not less than discharge line size.

NOTE 3. For applications other than reciprocating compressors (scroll, screw type, 2-stage) please contact Alltemp Products Company Limited

Oil Separators Sizing Chart

Temprite

Hermetic Separators - 300 & 900 Series

Part #	R-12		R-22		R-502		R-134A		R-404A		R-507		R-717	
	+40 Tons	-10 Tons	+40 Tons	-40 Tons	+40 Tons	-40 Tons	+40 Tons	-10 Tons	+40 Tons	-40 Tons	+40 Tons	-40 Tons	+40 Tons	-20 Tons
58-320	1.53	0.54	2.47	0.45	2.42	0.41	1.58	0.49	2.42	0.37	2.60	0.41	2.77	0.72
58-321	1.53	.54	2.47	0.45	2.42	0.41	1.58	0.49	2.42	0.37	2.60	0.41	2.77	0.72
58-322	1.53	0.54	2.47	0.45	2.42	0.41	1.58	0.49	2.42	0.37	2.60	0.41	2.77	0.72
58-340	3.06	1.08	4.93	.089	4.83	0.82	3.15	0.98	4.84	0.74	5.19	0.82	5.54	1.44
58-341	3.06	1.08	4.93	0.89	4.83	0.82	3.15	0.98	4.84	0.74	5.19	0.82	5.54	1.44
58-342	3.06	1.08	4.93	0.89	4.83	0.82	3.15	0.98	4.84	0.74	5.19	0.82	5.54	1.44
58-900	2.06	0.72	3.32	0.60	6.25	0.55	2.12	0.66	3.25	0.50	3.49	0.55	3.72	0.97
58-900-1	20.6	0.72	3.32	0.60	3.25	0.55	2.12	0.66	3.25	0.50	3.49	0.55	3.72	0.97
58-901	3.83	1.35	6.17	1.12	6.04	1.02	3.94	1.23	6.05	0.93	6.50	1.03	6.92	1.80
58-902	5.51	1.94	8.87	1.61	8.69	1.47	5.67	1.77	8.70	1.34	9.35	1.48	9.96	2.59
58-903	7.67	2.69	12.34	2.24	12.08	2.05	7.88	2.46	12.10	1.86	13.01	2.06	13.84	3.60
58-904	13.79	4.85	22.21	4.02	21.75	3.68	14.18	4.43	21.76	3.34	23.39	3.70	24.91	6.48
58-905	20.98	7.37	33.37	6.12	33.07	5.60	21.56	6.74	33.09	5.08	35.57	5.63	37.88	9.85
58-922	5.51	1.94	8.87	1.61	8.69	1.47	5.67	1.77	8.70	1.34	9.35	1.48	9.96	2.59
58-923	7.67	2.69	12.34	2.24	12.08	2.05	7.88	2.46	12.10	1.86	13.01	2.06	13.84	3.60
58-922R	5.51	1.94	8.87	1.61	8.69	1.47	5.67	1.77	8.70	1.34	9.35	1.48	9.96	2.59
58-923R	7.67	2.69	12.34	2.24	12.08	2.05	7.88	2.46	12.10	1.86	13.01	2.06	13.84	3.60
58-924	13.79	4.85	22.21	4.02	21.75	3.68	14.18	4.43	21.76	3.34	23.39	3.70	27.91	6.48
58-925	20.98	7.37	33.37	6.12	33.07	5.60	21.56	6.74	33.09	5.08	35.57	5.63	37.88	9.85
58-924R	13.79	4.85	22.21	4.02	21.75	3.68	14.18	4.43	21.76	3.34	23.39	3.70	27.91	6.48
58-925R	20.98	7.37	33.37	6.12	33.07	5.60	21.56	6.74	33.09	5.08	35.57	5.63	37.88	9.85
58-926	35.90	12.61	57.80	10.47	56.60	9.59	36.91	11.53	56.63	8.70	60.88	9.64	64.83	16.86
58-927	48.94	17.19	78.79	14.27	77.15	13.07	50.30	15.72	77.20	11.86	82.99	13.13	88.36	22.98
58-926R	35.90	12.61	57.80	10.47	56.60	9.59	36.91	11.53	56.63	8.70	60.88	9.64	64.83	16.86
58-927R	48.94	17.19	78.79	14.27	77.15	13.07	50.30	15.72	77.20	11.86	82.99	13.13	88.36	22.98
58-928	81.77	28.72	131.65	23.84	128.91	21.84	84.04	26.27	128.99	19.81	138.67	21.95	147.64	38.40
58-928R	81.77	28.72	131.65	23.84	128.91	21.84	84.04	26.27	128.99	19.81	138.67	21.95	147.64	38.40
58-930	139.01	48.82	223.81	40.53	219.15	37.13	142.87	44.66	219.28	33.68	235.74	37.32	250.99	65.28
58-930R	139.01	48.82	223.81	40.53	219.15	37.13	142.87	44.66	219.28	33.68	235.74	37.32	250.99	65.28

Impingement Screen Separators - 500 & 600 Series

Part #	R-12		R-22		R-502		R-134A		R-404A		R-507		R-717	
	+40 Tons	-10 Tons	+40 Tons	-40 Tons	+40 Tons	-40 Tons	+40 Tons	-10 Tons	+40 Tons	-40 Tons	+40 Tons	-40 Tons	+40 Tons	-20 Tons
58-501	1.83	1.51	2.8	2.38	2.8	2.38	1.83	1.51	2.8	2.38	2.8	2.38	3.32	3.07
58-502	3.66	3.02	5.6	4.76	5.6	4.76	3.66	3.02	5.6	4.76	5.6	4.76	6.65	6.13
58-503	5.49	4.49	8.4	7.14	8.4	7.14	5.49	4.49	8.4	7.14	8.4	7.14	9.97	9.20
58-504	7.32	6.04	11.2	9.52	11.2	9.52	7.32	6.04	11.2	9.52	11.2	9.52	13.27	12.24
58-505	9.16	7.55	14.0	11.9	14.0	11.9	9.16	7.55	14.0	11.9	14.0	11.9	15.64	14.43
58-506	13.0	10.7	23.6	19.9	23.6	19.9	13.0	10.7	23.6	19.9	23.6	19.9	26.66	24.59
58-507	23.0	19.0	40.0	34.0	40.0	34.0	23.0	19.0	40.0	34.0	40.0	34.0	45.2	41.69
58-600	1.22	1.01	1.87	1.59	1.87	1.59	1.22	1.01	1.87	1.59	1.87	1.59	2.21	2.05
58-601	1.83	1.51	2.8	2.38	2.8	2.38	1.83	1.51	2.8	2.38	2.8	2.38	3.32	3.07
58-602	3.66	3.02	5.6	4.76	5.6	4.76	3.66	3.02	5.6	4.76	5.6	4.76	6.65	6.13
58-603	5.49	4.49	8.4	7.14	8.4	7.14	5.49	4.49	8.4	7.14	8.4	7.14	9.97	9.20
58-604	7.32	6.04	11.2	9.52	11.2	9.52	7.32	6.04	11.2	9.52	11.2	9.52	13.27	12.24
58-605	9.16	7.55	14.0	11.9	14.0	11.9	9.16	7.55	14.0	11.9	14.0	11.9	15.64	14.43
58-606	13.0	10.7	23.6	19.9	23.6	19.9	13.0	10.7	23.6	19.9	23.6	19.9	26.66	24.59
58-607	23.0	19.0	40.0	34.0	40.0	34.0	23.0	19.0	40.0	34.0	40.0	34.0	45.2	41.69

NOTE 4. TONS = Capacity in evaporator (12,000 BTU/Hr/Ton), based on +10°F Condenser Temperature, -0°F Sub-Cooling, +10°F Super heat.

NOTE 5. Capacity in tons and pounds per minute based on 140°F superheated discharge gas and the refrigerant entering the expansion valve at 110°F condensing temperature.

Oil Separators - Hermetic Coalescent

Temprite

The Temprite 58-320 & 58-340 Series

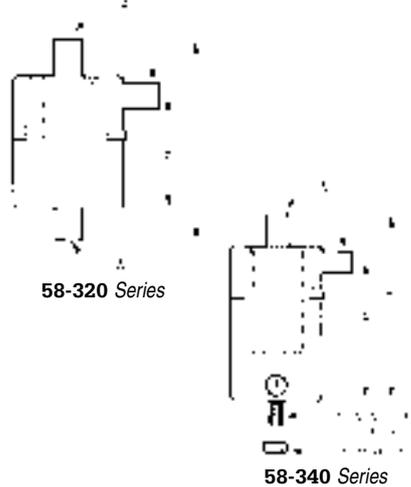
These are the first oil separators specifically designed for refrigerant recovery/reclaim systems and are 99.9999% effective in removing oil from the mass flow. The elimination of the float ball and internal oil reservoir maximizes efficiency by minimizing oil carryover. It also has the advantage of being one of the smallest oil separators available for its capacity. Metering the oil return back to the compressor may be done by a variety of methods including a capillary tube, a metered orifice or a timed solenoid.

Oil Separator - Hermetic Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-320	500 PSIG	3/8" ODS	2 1/2"	3/8" ODS	2 1/16"	4 1/4"	-	-	1lbs.
58-321	500 PSIG	1/8" FPT	2 1/2"	1/8" FPT	2 1/16"	3 1/2"	-	-	1lbs.
58-322	500 PSIG	1/4" SAE	2 1/2"	1/4" SAE	2 1/16"	4"	-	-	1lbs.

Oil Separator - Hermetic Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-340	500 PSIG	3/8" ODS	2 1/2"	3/8" ODS	3 9/16"	4 7/8"	-	-	2lbs.
58-341	500 PSIG	1/8" FPT	2 1/2"	1/8" FPT	3 9/16"	4 1/2"	-	-	2lbs.
58-342	500 PSIG	1/4" SAE	2 1/2"	1/4" SAE	3 9/16"	4 3/4"	-	-	2lbs.



The Temprite 58-500 & 58-600 Series

These are impingement screen type oil separators. They work by having the compressed mass flow enter into a larger separator chamber which lowers the velocity and then the atomized oil droplets collect on the impingement screen surfaces. As the oil droplets agglomerate into large particles, they fall to the bottom of the separator oil reservoir. The 58-600 Series is designed for the OEM who needs oil separation, but does not require the accessibility of the 58-500 Series. Models 58-508, 509 and 510 are built to ASME Certified Pressure Vessels codes. See your local HVAC/R Wholesaler for replacement parts for the 58-500 Series.

Oil Separator - Accessible Impingement

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-501	450 PSIG	1/4" SAE	4"	1/2" ODS	10 1/4"	3/4"	16oz	475ml	10lbs.
58-502	450 PSIG	1/4" SAE	4"	5/8" ODS	12 7/8"	3/4"	16oz	475ml	11lbs.
58-503	450 PSIG	1/4" SAE	4"	7/8" ODS	14 5/8"	3/4"	16oz	475ml	12lbs.
58-504	450 PSIG	1/4" SAE	4"	1 1/8" ODS	15 1/2"	3/4"	16oz	475ml	12lbs.
58-505	450 PSIG	1/4" SAE	4"	1 3/8" ODS	18 7/8"	3/4"	16oz	475ml	13lbs.

Oil Separator - Accessible Impingement

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-506	450 PSIG	1/4" SAE	6"	1 5/8" ODS	15 1/4"	20 1/4"	20oz	590ml	21lbs.
58-507	450 PSIG	1/4" SAE	6"	2 1/8" ODS	16 1/4"	21 1/2"	20oz	590ml	24lbs.



Oil Separators - Hermetic Coalescent

Temprite



Oil Separator - Hermetic Impingement

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-600	450 PSIG	1/4" SAE	4"	3/8" ODS	8 1/8"	3/4"	15oz	445ml	6lbs.
58-601	450 PSIG	1/4" SAE	4"	1/2" ODS	10 1/4"	3/4"	12oz	355ml	6lbs.
58-602	450 PSIG	1/4" SAE	4"	5/8" ODS	12 7/8"	3/4"	12oz	355ml	8lbs.
58-603	450 PSIG	1/4" SAE	4"	7/8" ODS	14 5/8"	3/4"	12oz	355ml	8lbs.
58-604	450 PSIG	1/4" SAE	4"	1 1/8" ODS	15 1/2"	3/4"	12oz	355ml	8lbs.
58-605	450 PSIG	1/4" SAE	4"	1 3/8" ODS	18 7/8"	3/4"	12oz	355ml	10lbs.

Oil Separator - Hermetic Impingement

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-606	450 PSIG	3/8" SAE	6"	1 5/8" ODS	13 1/2"	18 3/8"	29oz	850ml	15lbs.
58-607	450 PSIG	3/8" SAE	6"	2 1/8" ODS	14 1/2"	19 3/8"	29oz	850ml	16lbs.
58-606R	450 PSIG	3/8" SAE	6"	1 5/8" ODS	18 1/2"	23 3/8"	128oz	3.78L	-
58-607R	450 PSIG	3/8" SAE	6"	2 1/8" ODS	19 1/2"	24 3/8"	128oz	3.78L	-

The Temprite 58-900 / 58-920 Series

Unquestionably, these are the standard in ultra low temperature applications by virtue of its extreme performance range. When it is advantageous to minimize cycle times or to downsize a compressor, higher temperature applications may be performed. The 58-900 and 58-920 Series also enhance the performance of other components (filter/dryers) by eliminating the thin film of oil that prevents moisture from being absorbed by the desiccant. These Series work so well by employing a matrix type borosilicate coalescent filter to do the work formerly done by the impingement screens. These exceptionally pure, extremely fine glass fibres matrices excite the oil molecules to collide thus agglomerating them into bigger droplets until they are forced to the outer drain layer of the filter. These droplets fall to the bottom of the separator reservoir and the oil is then returned to the compressor. Because this filter is finer than a filter/drier, it will pick up any and all effluent and dirt circulating in the system down to 0.3 microns. Normally, on short, self contained applications, the amount of effluent is minute, but on large parallel rack/multiplex systems with long lines, cleanliness problems can be overcome by using the 58-920 Series of accessible coalescent separators which can be opened up after 24 to 48 hours of initial run time to change the filter and thereby clean up the system. Solid contaminants in your system are harmful to TXV valves, sensors and other delicate instrumentation, and with the new refrigerant's enhanced solvent effect, more solid contaminants than ever are circulating in your system.

The filter will not function at its optimum performance level if dirty, so you merely have to isolate the separator and change out the filter without unbrazing it. The 58-920 Series has another advantage - in the event of a compressor burnout, all effluent is localized to the oil separator thus sparing delicate metering devices from a rush of carbonized particles. Temprite coalescent separators are not velocity dependant. With conventional or centrifugal oil separators, when the compressor unloads, velocity drops and so does the separator's efficiency. Coalescent separators work at all mass flows, giving you efficiency across the compressor's pumping range. The most accurate way to size a 58-900/ 920 series oil separator for your application is to determine the actual cubic feet per minute that your compressor will be pumping and select the correct separator from the sizing chart.

58-900 / 58-920 Series
Continued On Next Page

Oil Separators - Hermetic Coalescent

Temprite

58-900 / 58-920 Series
Continued From Previous Page

Refrigeration

Oil Separator - Hermetic Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-900	450 PSIG	1/4" ODS	4"	3/8" ODS	8 1/4"	3/4"	15oz	445ml	5lbs.
58-900-1	450 PSIG	1/4" 90° ODS	4"	3/8" ODS	8 1/4"	3/4"	15oz	445ml	6lbs.
58-901	450 PSIG	1/4" ODS	4"	1/2" ODS	8 3/8"	3/4"	15oz	445ml	5lbs.



58-900 Illustrated



58-900 to 58-901 Series



58-903 Illustrated



58-902 to 58-903 Series

Oil Separator - Hermetic Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-902	450 PSIG	1/4" ODS	4"	5/8" ODS	10 9/16"	3/4"	15oz	445ml	6lbs.
58-903	450 PSIG	1/4" ODS	4"	7/8" ODS	10 7/8"	3/4"	15oz	445ml	6lbs.

Oil Separator - Hermetic Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-904	450 PSIG	1/4" ODS	4"	1 1/8" ODS	15 1/8"	18 3/8"	16oz	475ml	9lbs.
58-905	450 PSIG	1/4" ODS	4"	1 3/8" ODS	15 1/8"	18 3/8"	16oz	475ml	9lbs.



58-905 Illustrated



58-904 to 58-905 Series

Oil Separators - Accessible Coalescent

Temprite

Oil Separator - Accessible Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-922	450 PSIG	1/4" SAE	4"	5/8" ODS	12"	12 3/4"	15oz	445ml	11lbs.
58-923	450 PSIG	1/4" SAE	4"	7/8" ODS	12"	13"	15oz	445ml	11lbs.
58-922R	450 PSIG	1/4" SAE	4"	5/8" ODS	17 3/4"	18 1/2"	77oz	2.27lit	13lbs.
58-923R	450 PSIG	1/4" SAE	4"	7/8" ODS	17 3/4"	18 3/4"	77oz	2.27lit	13lbs.



58-922 Illustrated

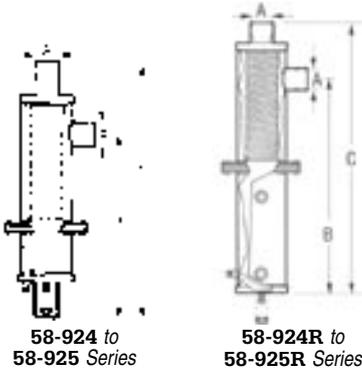


58-904 to 58-905 Series

Oil Separators - Accessible Coalescent

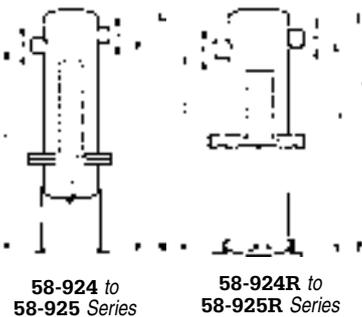
Temprite

Refrigeration



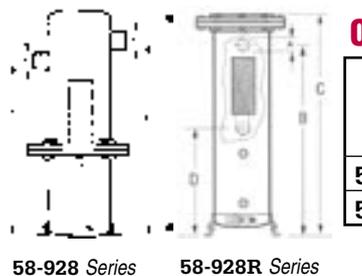
Oil Separator - Accessible Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Oil Change Amount		Weight
				"A"	"B"	"C"			
58-924	450 PSIG	1/4" SAE	4"	1 1/8" ODS	15 5/16"	18 5/8"	16oz	475ml	16lbs.
58-925	450 PSIG	1/4" SAE	4"	1 3/8" ODS	15 5/16"	18 5/8"	16oz	475ml	16lbs.
58-924R	450 PSIG	1/4" SAE	4"	1 1/8" ODS	25 1/16"	28 3/8"	109oz	3.22lit	21lbs.
58-925R	450 PSIG	1/4" SAE	4"	1 3/8" ODS	25 1/16"	28 3/8"	109oz	3.22lit	21lbs.



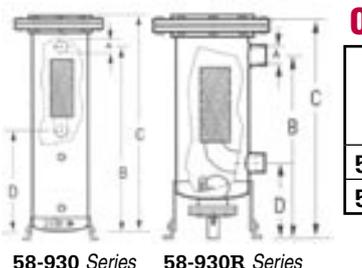
Oil Separator - Accessible Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions				Oil Change Amount		Weight
				"A"	"B"	"C"	"D"			
58-926	450 PSIG	1/4" SAE	6"	1 5/8" ODS	31"	34 3/4"	30 1/2"	34oz	1L	34lbs.
58-927	450 PSIG	1/4" SAE	6"	2 1/8" ODS	31"	34 3/4"	30 1/2"	34oz	1L	34lbs.
58-926R	450 PSIG	3/8" SAE	6"	1 5/8" ODS	33 7/8"	39 3/8"	16 5/8"	1.8gal	6.7L	41lbs.
58-927R	450 PSIG	3/8" SAE	6"	2 1/8" ODS	33 7/8"	39 3/8"	16 5/8"	1.8gal	6.7L	41lbs.



Oil Separator - Accessible Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions				Oil Change Amount		Weight
				"A"	"B"	"C"	"D"			
58-928	450 PSIG	3/8" SAE	8 5/8"	2 5/8" ODS	33 5/8"	40 1/4"	12"	34oz	1L	150lbs.
58-928R	450 PSIG	3/8" SAE	8 5/8"	2 5/8" ODS	38 7/8"	45 1/2"	18"	3.5gal	13.25L	166lbs.



Oil Separator - Accessible Coalescent

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions				Oil Change Amount		Weight
				"A"	"B"	"C"	"D"			
58-930	450 PSIG	3/8" SAE	12 3/4"	3 1/8" ODS	35 3/4"	43 3/8"	13 3/4"	85oz	2.5L	300lbs.
58-930R	450 PSIG	3/8" SAE	12 3/4"	3 1/8" ODS	37 1/8"	44 3/4"	15 1/8"	5.7gal	21.25L	310lbs.

58-930 Series 58-930R Series

Oil Reservoirs

Temprite

Temprite Oil Reservoirs

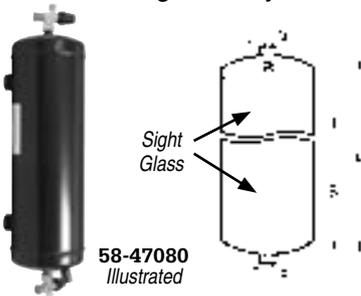
Both conventional, stand alone oil reservoirs and reservoirs attached to a high efficiency oil separator have been designed to provide more usable internal area than any other reservoir available. With an attached reservoir bottom on the 58-926R, 58-927R and 58-928, you can maximize space and eliminate attendant check valves and leak causing equalization lines. The 58-920 Series is so efficient, you may size your Oil Reservoir to be smaller because there is less oil circulating in the system from startup.

Sizing for average parallel rack utilizing 4 to 5 compressors of equal size!

Horsepower per compressor	Reservoir
Up to 7.5	58-47058
7.5 to 15	58-47058*
20 to 30	58-47080*
Over 30	58-47115

*If using impingement screen separator, go up one size.

Refrigeration



Oil Reservoirs

Part #	Maximum Working Pressure	Oil Connector Size	Diameter	Dimensions			Fluid Volume When filled to:			
				"A"	"B"	"C"	"A" Height	"B" Height		
58-47115	450 PSIG	3/8" SAE	6"	27 1/4"	23 1/2"	30 1/4"	11.5L	3gal	10L	2.6gal
58-47080	450 PSIG	3/8" SAE	6"	19 1/4"	15 1/2"	22 1/4"	8L	2.1gal	6.5L	1.7gal
58-47058	450 PSIG	3/8" SAE	6"	13 1/2"	9 3/4"	16 1/2"	5.8L	1.6gal	4.3L	1.2gal

Oil Reservoirs

Refrigeration Research, Inc.

Refrigeration Research Oil Reservoirs

These reservoirs may be used with the oil separator and an oil level regulator to return oil to the compressor.

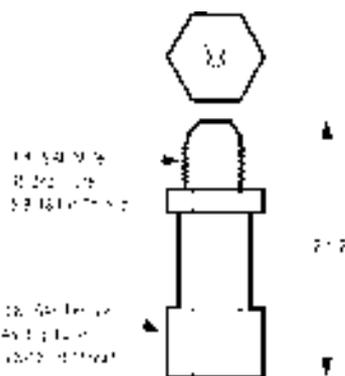
Oil Reservoirs



Part #	A Capacity	B Capacity	Total Capacity	Length
58-5014	0.75 gallon.	0.75 gallon.	2 gallon.	18"
58-5014-1	0.75 gallon.	3 gallon.	4 gallon.	36"

Oil Differential Check Valve

Temprite



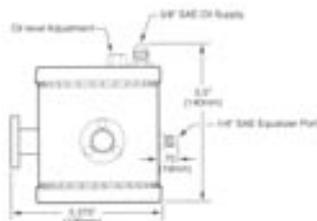
The use of an oil differential check valve is recommended with a stand alone oil reservoir feeding a mechanical oil pressure regulator. The check valve keeps pressure in the reservoir higher than in the compressor crankcase which allows the oil to be fed from the reservoir to the oil regulator. Use a 5 PSIG Check Valve (58-67050000) for conventional float type oil regulators. The TempLogic® Oil Regulator utilizes a 20 PSIG Check Valve (58-41482) when used with a stand alone reservoir. This should also be used on some parallel compressor and satellite compressor systems that maintain higher or fluctuating suction pressures. Temprite uses a bubbletight check valve design which, when shut off, does not allow any pressure to escape from the high side to the low side, causing a false bypass to the compressors.

Temprite Check Valves

Part #	Operating Spring Pressure	Weight
58-67050000	5" Hg - 90psi	1 lbs.
58-41482	20 psi	1 lbs.

Mechanical Oil Regulators

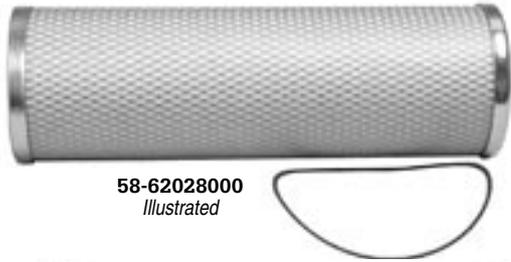
Temprite



Mechanical Oil Regulators

Part #	Operating Pressure	Weight
58-25-030	Non Adjustable: 5 to 30 psi.	5 lbs.
58-20-030	Adjustable: 5 to 30 psi.	5 lbs.
58-20-090	Adjustable: 5 to 90 psi.	5 lbs.
58-25-090	Non Adjustable: 5 to 90 psi.	5 lbs.

Oil Separators - Replacement Parts & Accessories *Temprite*



58-62028000
Illustrated



58-922 Illustrated With
Filter & Gasket



58-41507
Illustrated



58-41429
Illustrated



58-48416
Illustrated



58-224
Illustrated

58-920/ 930 Series Filter Kits

Part #	For Model(s)	Weight
58-62034000	922-923, 922R-923R	1 lbs.
58-62037000	924-925, 924R-925R	1 lbs.
58-62028000	926-927, 926R-927R	3 lbs.
58-62051000	928, 928R	1 lbs.
58-62085000	930, 930R	9 lbs.

Note: Gasket included in all kits

58-920/ 930 Series Pleated Clean-Up Filters

Part #	For Model(s)	Weight
58-62024000	922-923, 922R-923R	1 lbs.
58-62047000	924-925, 924R-925R<	1 lbs.
58-62030000	926-927, 926R-927R	3 lbs.
58-62092802	928, 928R	5 lbs.
58-62086000	930, 930R	9 lbs.

58-500 Series Screens

Part #	For Model(s)	Weight
58-60001000	501*	1 lbs.
58-60002000	502*	1 lbs.
58-60003000	503*	1 lbs.
58-60004000	504*	1 lbs.
58-60005000	505*	1 lbs.
58-41498	506	1 lbs.
58-41507	507	1 lbs.
58-60008000	508	1 lbs.

* 2 included

58-500/ 920 & 930 Series Bottom Plate Gaskets

Part #	For Model(s)	Weight
58-41429	501-510, 922-925, 922R-925R, 928, 930	1 lbs.
58-55100010	926-927, 926R-927R	1 lbs.

58-920/ 930 Series Top Plate O-Rings

Part #	For Model(s)	Weight
58-55928000	928, 928R	1 lbs.
58-55930000	930, 930R	1 lbs.

Float & Plate Assembly

- Bottom Plate, Float, Needle & Seat Assembly

Part #	For Model(s)	Weight
58-49664	Fit/Ndl Assy 501-505, 922-923	1 lbs.
58-49667	Fit/Ndl Assy 506-507	1 lbs.
58-48416	FitBIIAssy W/ Btom Plt 506-507	4 lbs.
58-52300000	FitBIIAssy W/ Btom Plt 508-510, 928, 930	5 lbs.
58-5926000	Btm Assy 926-927	5 lbs.

Pressure Differential Indicator

Part #	Description	Weight
58-224	Tells you when to change the filter.	1 lbs.

Access & Service Valve Features

ALLTAP

Refrigeration

Access & Service Valves

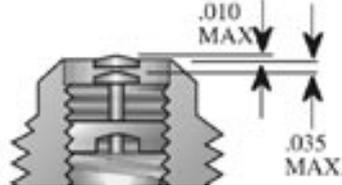


Features

- Valves are machined according to strict specifications of the ARI - Your assurance of proper sealing of valve and core surfaces.
- Generous counter bore permits removal of core if flare becomes damaged.
- All tees and crosses are tapped to receive an access core in all 1/4" SAE flare ends.
- All pipe connections have internal braze cups for dip tube application.
- Furnished with cap and one valve core (solder type loosely assembled).

Specifications

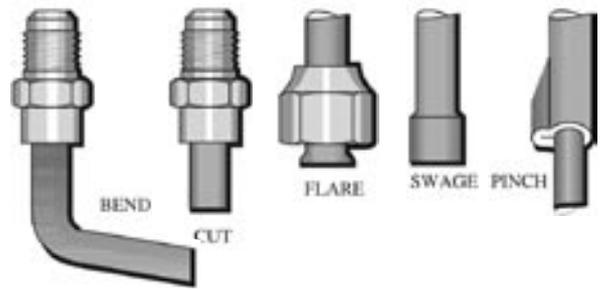
ARI Standard: 720 to 97
Temp. Range: -40°F to 400°F
Pressure: 800 psig.
Valve Bodies: Brass.
Valve Core: Stainless steel and brass for use with all refrigerants such as R12, R22, R134a and R502. Resistant to oils, alkalis and dilute mineral acids. ARI torque 1.5 to 3.0 in/lb.



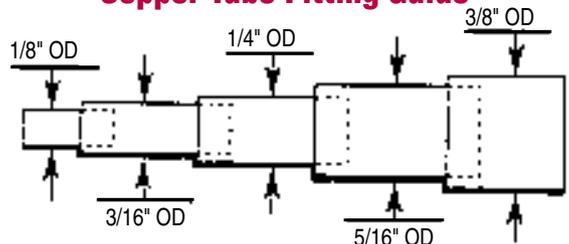
Valve Core Pin Location

After valve installation, replace valve core with valve core remover. Torque 2.8 in/lbs.

Copper Tube Ends



Air Conditioning & Refrigeration Copper Tube Fitting Guide



Connecting Line Size

OD Tube Size	ODF International Tub Fit	ODF External Tube Fit	Swage Fit
1/8"	-	3/16"	-
3/16"	1/8"	1/4"	3/16"
1/4"	3/16"	5/16"	1/4"
5/16"	1/4"	3/8"	5/16"
3/8"	5/16"	-	3/8"

1/4" Access

ALLTAP



Copper Tube Extensions

- Extension length approximately 2".
- Use with copper fitting.
- Install through side of larger line.

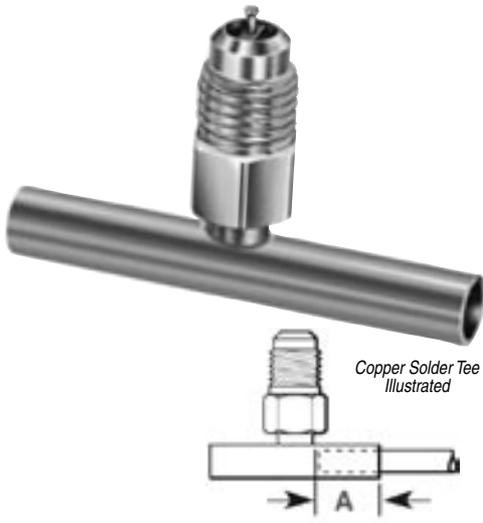
Part #	Description	Package
02-C31002	1/8" OD	5/pk
02-C31003	3/16" OD x 1/8" ID	5/pk
02-C31004	1/4" OD x 3/16" ID	5/pk
02-C31005	5/16" OD x 1/4" ID	5/pk
02-C31006	3/8" OD x 5/16" ID	5/pk
02-C31008	1/2" OD	3/pk

Multi-Step

02-C31009	1/8" Ext.; 3/16", 1/4" and 5/16" Body Steps	5/pk
02-C31011	3/16" Ext.; 1/4" and 3/8" Body Steps	5/pk

Use flux free phos-copper solder. • Note: OD x ID sizes are for copper tube extensions.

1/4" Access



Copper Solder Tees

- Extra depth slip fit solder cups.
- Bend, cut, flare, swage or pinch.
- Simple installation anywhere along line.

Part #	Slip Fit	OAL Over-all Length	Length "A"	Package
02-C31134	1/4" OD	2 1/8"	1"	3/pk
02-C31135	5/16" OD	2 1/8"	1"	3/pk
02-C31136	3/8" OD	2 1/8"	1"	3/pk
02-C31138	1/2" OD	2 1/8"	1"	3/pk
02-C31140	5/8" OD	2 1/2"	1"	1/pk
02-C31142	3/4" OD	3"	1 1/4"	1/pk
02-C31144	7/8" OD	3 1/2"	1 1/2"	1/pk
02-C31148	1 1/8" OD	3 13/16"	1 5/8"	1/pk
02-C31154	3/16" OD	4"	1 15/16"	2/pk
02-C31155	1/4" OD	4"	1 15/16"	2/pk
02-C31156	5/16" OD	4"	1 15/16"	2/pk

Note: Use flux free phos-copper solder.

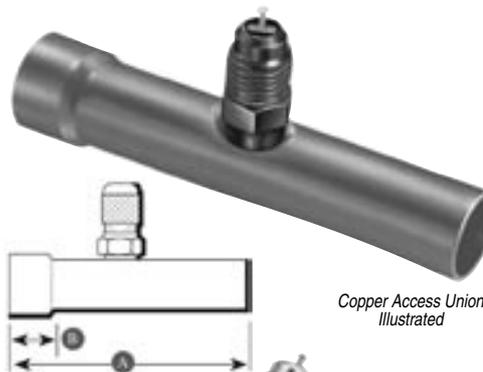


Copper Solder Tees - Swaged

- Solder cup ends.
- Simple installation anywhere along line.

Part #	Slip Fit	OAL Over-all Length	Package
02-C31334	1/4" OD	2 1/8"	3/pk
02-C31335	5/16" OD	2 1/8"	3/pk
02-C31336	3/8" OD	2 1/8"	3/pk
02-C31338	1/2" OD	2 1/8"	3/pk
02-C31340	5/8" OD	2 1/2"	1/pk
02-C31342	3/4" OD	3"	1/pk
02-C31344	7/8" OD	3 1/2"	1/pk
02-C31348	1 1/8" OD	3 13/16"	1/pk

Note: Use flux free phos-copper solder.

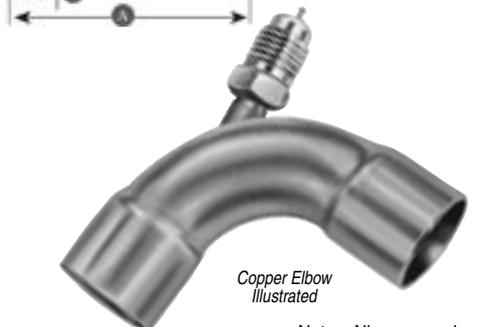


Copper Access Union

- Retrofit any existing ball.
- Install valve in any position.

Part #	Connecting Line Size	"A" (OAL)	"B" (min.)	Package
02-C31199	1/4" OD	2 3/4"	5/16"	2/pk
02-C31200	3/8" OD	2 3/4"	5/16"	2/pk
02-C31201	1/2" OD	3"	3/8"	2/pk
02-C31202	5/8" OD	3 1/4"	1/2"	2/pk
02-C31204	7/8" OD	3 3/4"	3/4"	2/pk

Note: Use flux free phos-copper solder.



Copper 45° Elbow

Part #	Connecting Line Size	Package
02-C31160	5/8"	1/pk
02-C31162	3/4"	1/pk
02-C31164	7/8"	1/pk
02-C31168	1 1/8"	1/pk

Note - All access valves are available in bulk packaging of 100 pieces, by adding suffix "-B" to part number.

Swivel Flare Connections

ALLTAP

Refrigeration



02-C31851
02-C31864
Illustrated



02-C31852
02-C31854
Illustrated



02-C31853
Illustrated



02-C31856
Illustrated



02-C31520
Illustrated

Swivel Flare Connection

- Tee with depressor.

Part #	Description	Package
02-C31851	1/4" female SAE swivel nut on run.	3/pk
02-C31852	1/4" female SAE swivel nut on branch.	3/pk

Swivel Flare Connection

- Tee without depressor.

Part #	Description	Package
02-C31854	1/4" female SAE swivel nut on branch.	3/pk
02-C31864	1/4" female SAE swivel nut on run.	3/pk

Swivel Flare Connection - 3/8" SAE Tee

Part #	Description	Package
02-C31853	3/8" SAE x 3/8" female SAE swivel nut x access.	1/pk
02-C31856	3/8" SAE x access x 3/8" female SAE swivel nut.	1/pk

Swivel Flare Connection - Cross

- Cross with depressor.

Part #	Description	Package
02-C31520	1/4" female SAE swivel nut x access.	1/pk

Torque flare nuts 8 to 10/lbs
*Core pre-torqued at 2.9 to 2.95 "/lbs

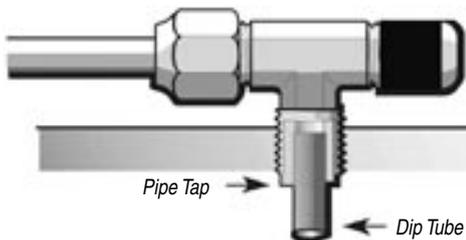
Swivel Flare Connections

Add Multiple Ports With Just One Fitting!

- All flare ends are tapped to receive access core.
- Various end configurations provide greater flexibility.
- One core and cap packaged with each valve.
- Safe, simple installation with no brazing.

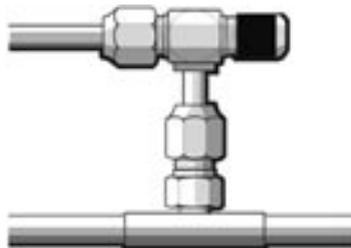
Typical MPT Installation

All MPT connections have internal solder cup for dip tube installation.

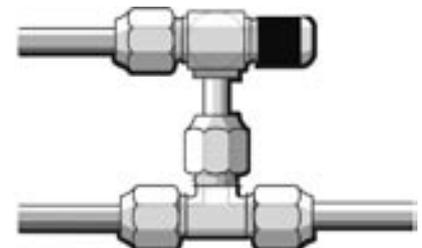


Typical Swivel Flare Installation

After installation, rotate valve for best hook-up position.



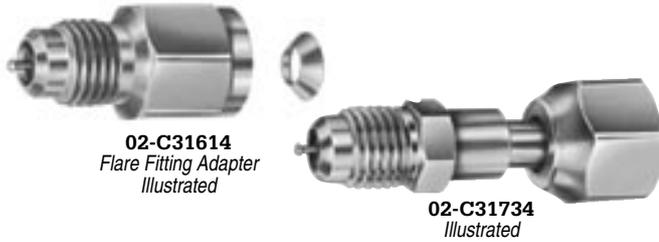
Swivel flare with core depressor installed on existing access valve. Add a new line or control. No refrigerant loss during installation on charged system.



Valve without depressor installed on flare fitting. Multiple ports provide additional line or controls and access site.

Note - All access valves are available in bulk packaging of 100 pieces, by adding suffix "-B" to part number.

Flare Connections



02-C31614
Flare Fitting Adapter
Illustrated

02-C31734
Illustrated

Flare Connection

Part #	Description	Package
02-C31614*	1/4" female SAE flare union w/copper gasket.	5/pk
02-C31734*	1/4" female SAE swivel nut w/depressor.	5/pk

Torque flare nuts 8 to 10'/lbs
*Core pre-torqued at 2.9 to 2.95 "/lbs

Flare Tube Connections



02-C31424
Illustrated

02-C31444
Illustrated

Flared Tube Connection

Part #	Description	Package
02-C31424	1/4" SAE union w/flare nut.	3/pk
02-C31444	1/4" SAE tee w/nuts.	3/pk

MPT Connections



02-C31482
02-C31484
Illustrated

02-C31492
02-C31494
Illustrated

MPT Connections

Part #	Description	Package
02-C31482*	1/8" MPT half union.	5/pk
02-C31484*	1/4" MPT half union.	5/pk
02-C31492	1/8" MPT elbow.	3/pk
02-C31494	1/4" MPT elbow.	3/pk

*Core pre-torqued at 2.9 to 2.95 "/lbs

Bulkhead Connections



02-C31434
Illustrated

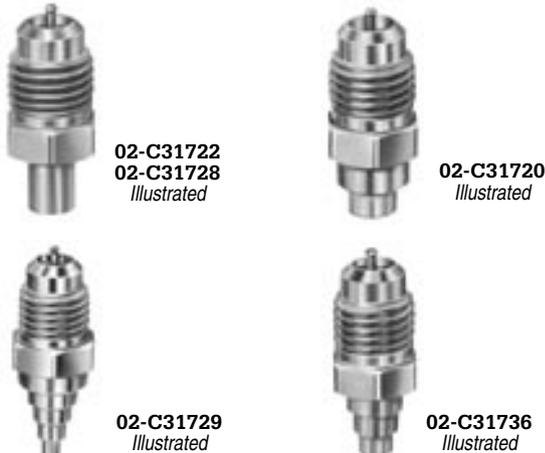
02-C31727
Illustrated

Bulkhead Mounting

Part #	Description	Package
02-C31434*	Access x 1/4" SAE w/nut.	1/pk
02-C31727	Access x 3/16" and 1/4".	1/pk

*Core pre-torqued at 2.9 to 2.95 "/lbs

Brass Bodies



02-C31722
02-C31728
Illustrated

02-C31720
Illustrated

02-C31729
Illustrated

02-C31736
Illustrated

Brass Bodies - Straight

Part #	Description	Package
02-C31722	1/8" OD	5/pk
02-C31723	3/16" OD	5/pk
02-C31724	1/4" OD	5/pk
02-C31725	5/16" OD	5/pk
02-C31726	3/8" OD	5/pk
02-C31728	1/2" OD	3/pk

Brass Bodies - Multi-Step

Part #	Description	Package
02-C31720	3/16" x 1/4" or 3/8" steps	5/pk
02-C31729	3/16", 1/4", 5/16" or 1/2" steps	5/pk
02-C31736	1/8" x 3/16", 1/4" or 5/16" steps	3/pk

Note - All access valves are available in bulk packaging of 100 pieces. by adding suffix "-B" to part number.

MPT Connections

ALLTAP

Refrigeration



02-C31452
02-C31454
Illustrated



02-C31512
02-C31514
Illustrated



02-C31522
Illustrated

MPT Connections - Tee

Part #	Description	Package
02-C31452	1/8" MPT branch.	3/pk
02-C31454	1/4" MPT branch.	3/pk
02-C31512	1/8" MPT run.	3/pk
02-C31514	1/4" MPT run.	3/pk

MPT Connections - Cross

Part #	Description	Package
02-C31522	Three access ports 1/8" MPT cross.	1/pk

Solder Tees

ALLTAP



02-C31234
Illustrated



02-C31544
Illustrated

Solder Tee

- Forged brass.

Part #	Description	Package
02-C31234	1/4" OD	3/pk
02-C31235	5/16" OD	3/pk
02-C31236	3/8" OD	3/pk
02-C31238	1/2" OD	3/pk

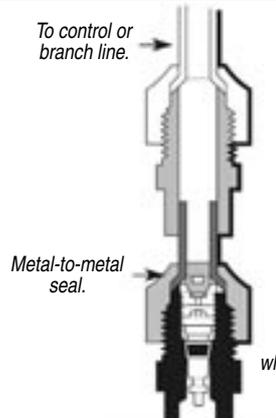
Part #	Description	Package
02-C31544	1/4" OD	3/pk

Access Valve Coupler

ALLTAP



02-C33004
Illustrated



Access Valve Coupler

- With depressor.
- Coupler with core depressor quickly adds control or branch line to service valve. Valve core depressed when coupler is tightened.

Part #	Description
02-C33004	1/4" SAE swivel flare x 1/4" male flare

Note - All access valves are available in bulk packaging of 100 pieces, by adding suffix "-B" to part number.

1/2" ACME Thread Half Union Service Valves



02-AF13450
Illustrated



02-AF13455
Illustrated

1/2" ACME Thread Half Union

Part #	Description
02-AF13450	1/8" NPTF.
02-AF13451	1/4" NPTF.
02-AF13452	3/8" NPTF.
02-AF13455	1/4" female SAE.
02-AF13457	3/8" female SAE.

Adapters & Couplers

These parts simply make connections between equipment with unlike threads. The couplers start with a 1/4" female flare swivel and end with different flare sizes, pipe threads and Acme threads. The adapters made from hex stock are for permanent installations.



02-CD2014
Illustrated



02-CD2018
Illustrated



02-CD2005
Illustrated

Adapters & Couplers

Part #	Description
02-CD2014	1/4" female flare swivel x 1/4" male pipe thread. Depressor tip and seal.
02-CD2018	1/4" female flare swivel x 1/8" male pipe thread. Depressor tip and seal.
02-CD2005	1/4" female flare swivel x 1/4" female flare swivel. Seals but no depressor tips.



02-CD5016
Illustrated



02-CD5013
Illustrated



02-CD5014
Illustrated



02-CD5036
Illustrated

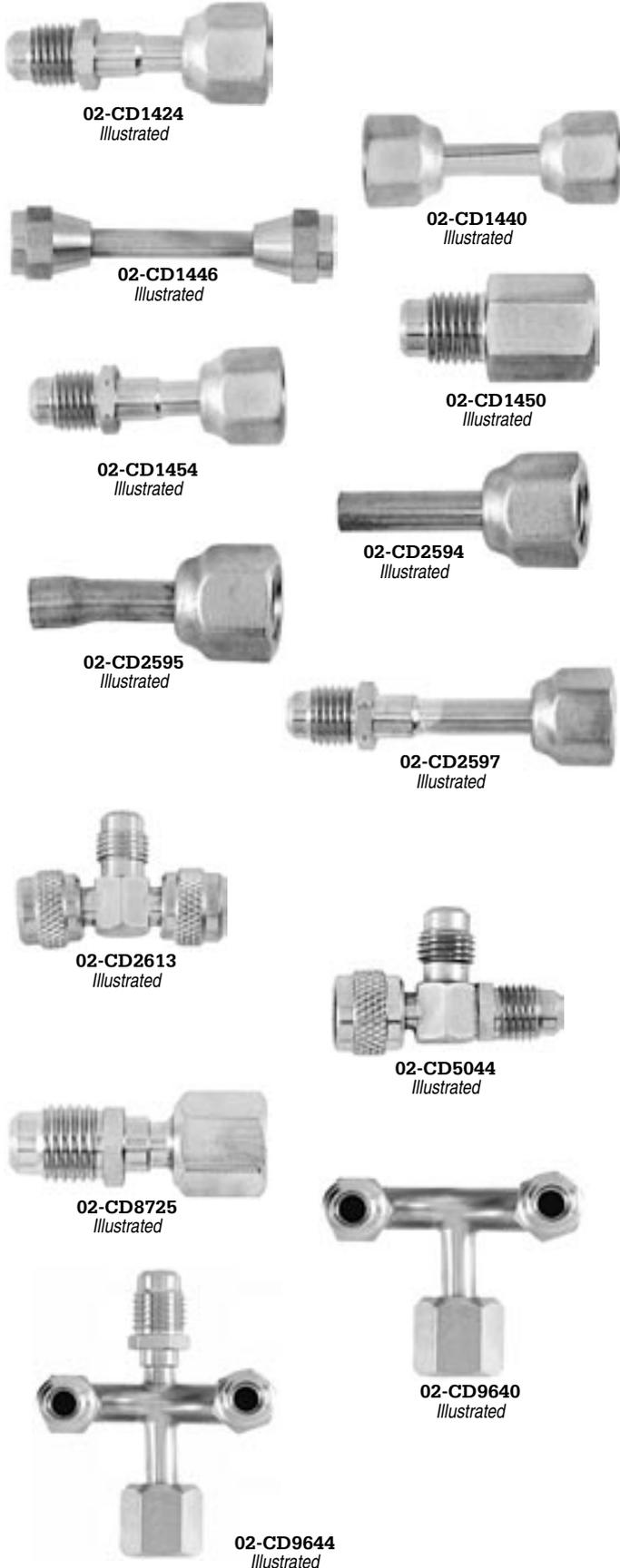
Automotive Adapters

Part #	Description
02-CD5013	R134a retrofit adapter, straight low side stem (13mm) 1/4" female flare, blue cap.
02-CD5016	R134a retrofit adapter, straight high side stem (16mm) x 1/4" female flare, red cap.
02-CD5036	1/4" adapter to 3/16" fittings (ex. GM cars). Contains depressor pin.
02-CD5014	Same as 02-CD5014 except for 1/4" male flare.

Miscellaneous Connectors

ALLTAP

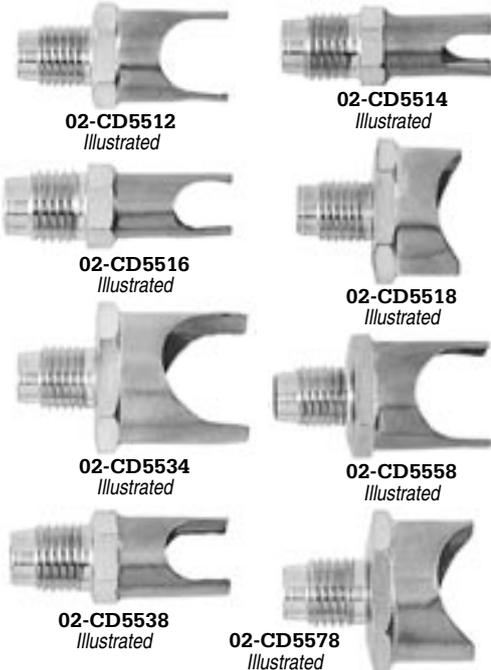
Refrigeration



Miscellaneous Connectors

Part #	Description	Package
02-CD1424	1/4" male flare (with core) × 1/4" FPT.	1/pk
02-CD1440	One end is 1/8 female pipe thread, other end is 1/4" female double flare with depressor tip.	1/pk
02-CD1446	1/4" female swivel flare x 1/4" female swivel flare. No depressor tips.	1/pk
02-CD1450	1/4" flare access × 1/4" female flare adapter, with one valve core and copper gasket.	2/pk
02-CD1454	1/4" flare swivel nut × 1/4" access with installed valve core, all brass tube has depressor tip.	2/pk
02-CD2594	1 1/4" piece of 1/4" copper tubing, double flared on one end with a 1/4" female flare nut and a depressor tip.	2/pk
02-CD2595	Same as 02-CD2594, only the end of copper tube opposite female flare is swaged to allow 1/4" copper tube to enter for brazing.	2/pk
02-CD2597	Same as 02-CD2594, but 1/4" male flare fitting has been brazed on. A core may be inserted in the 1/4" male flare, but not provided. Copper tubing may be extended to any length for special OEM needs.	2/pk
02-CD2613	Two 1/4" female connections with O-ring seals and 1/4" male flare (no core) at right angles for connecting needs.	1/pk
02-CD5044	1/4" male flare (no core) on branch. 1/4" male flare one end (no core). 1/4" female flare swivel other end (with O-ring seal)	1/pk
02-CD8725	1/4" hex nut with gasket. Valve body is stationary. Use when threads of existing system are stripped. Core, but no depressor tip.	2/pk
02-CD9640	Two 1/4" male flares one with core and cap (in a U shape). At side, 1/4" female flare with depressor tip.	1/pk
02-CD9644	Same as 02-CD9640 with addition of 1/4" male flare opposite the 1/4" female flare.	1/pk

Braze-on Line Piercing Service Valves



Saddle Valves - Copper to Copper Braze-on Service Valves - M Series

Widely used and easily installed on a charged line. Once brazing the saddle portion onto the line, the steel pin with valve core penetrates the line and is locked into place by simply tightening the cap.

- Quick, clean access to systems under pressure
- Available from 1/4" to 1 1/8".
- Hardened steel self-piercing needle
- Furnished with cap

Saddle Valves - Copper to Copper

Part #	Description	Package
02-CD5514	Saddle for 1/4" line	5/pk
02-CD5516	Saddle for 5/16" line	5/pk
02-CD5538	Saddle for 3/8" line	5/pk
02-CD5512	Saddle for 1/2" line	5/pk
02-CD5558	Saddle for 5/8" line	5/pk
02-CD5534	Saddle for 3/4" line	5/pk
02-CD5578	Saddle for 7/8" line	5/pk
02-CD5518	Saddle for 1 1/8" line	5/pk

Note: For single pack, use P/N CD1514, etc.

Refrigeration



Braze-on Line Piercing Service Valves

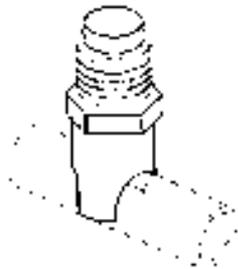


Saddle Valves - Brass to Copper Braze-on Service Valves - Bot Stinger

Simple press saddle into place, apply flux & braze to line. Once cool screw body with core into saddle, evacuate and charge system.



Steel pin with core, penetrates line and is locked into valve body in one operation, simply by tightening cap.



- Valve core & cap included.
- Plated steel body, CDA 360 brass saddle.
- Four-way seal between body and saddle.

Saddle Valves - Brass to Copper

Part #	Description	Package
02-CD2814	Saddle for 1/4" line	6/pk
02-CD2816	Saddle for 5/16" line	6/pk
02-CD2938	Saddle for 3/8" line	6/pk
02-CD2812	Saddle for 1/2" line	4/pk
02-CD2858	Saddle for 5/8" line	3/pk
02-CD2834	Saddle for 3/4" line	2/pk
02-CD2878	Saddle for 7/8" line	2/pk
02-CD2818	Saddle for 1 1/8" line	2/pk

Braze-on Line Piercing Service Valves



Special Braze-on Service Valves V Series

- Copper saddle valve for special use with 02-CD3090 TPA and any CRT.
- Fits nine sizes of copper tubing
- Internally threaded to house a valve core
- Include 02-CD2245 cap

Designed for use with TPA (Tube Piercing Attachment) 02-CD3090

Braze-on Service Valves

Part #	Tubing Size	Package
02-CD3036	3/16"	6/pk
02-CD3094	1/4"	6/pk
02-CD3096	5/16"	6/pk
02-CD3098	3/8"	6/pk
02-CD3092	1/2"	4/pk
02-CD3095	5/8"	3/pk
02-CD3034	3/4"	2/pk
02-CD3078	7/8"	2/pk
02-CD3018	1 1/8"	2/pk

Tube Piercing Attachment



Refrigeration



Tube Piercing Attachment

Punches a hole in copper tubing through a V-Series fitting for the installation of a core without loss of refrigerant.

Tube Piercing Attachment

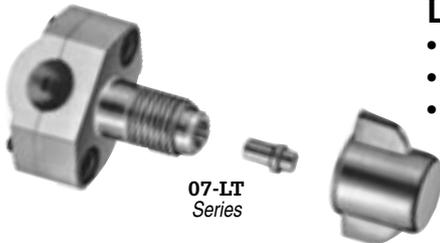
Part #	Description
02-CD3090	<ul style="list-style-type: none"> • Optional tool for CRT • With any CRT and special access V-Series fitting, lines can be pierced & core inserted into V fitting.

CRT - Core Removal Tool

Installation Instructions

1. Braze V-Series fitting onto line
2. Attach main body of CRT to fitting
3. Attach TPA to the CRT body, screw down needle to pierce hole in tubing until it bottoms out. It will not go through the other side of the tube.
4. Pull back TPA handle. Shut off system with CRT shut-off valve. Remove TPA from the CRT. Attach regular CRT rod with core. Open shut-off valve. Screw core into V fitting. Remove CRT.

Clamp-on Line Piercing Service Valves



Line Piercing Valve - O-Ring Seal

- Spring loaded needle automatically back-seats forming a leak proof seal.
- 100% restriction free.
- Simple installation.

Clamp-On Service Valves

Part #	Description
07-LT-456	1/4" to 3/8" Line Piercing Valve
07-LT-810	1/2" and 5/8" Line Piercing Valve

Clamp-on Service Valves



B Series

A line tap valve that is easy to use! Five individual sizes for special access jobs. Viton gasket for heat extremes.



Clamp-On Service Valves

Part #	Tubing Size
02-CD2140	1/4"
02-CD2160	5/16"
02-CD2380	3/8"
02-CD2120	1/2"
02-CD2580	5/8"

Installation Instructions

1. Place aluminum channel on line. Insert aluminum slide into grooves on channel.
2. Grip slide and channel with pliers. Place steel pin in steel body and screw into place.
3. Holding grip on channel and slides, tighten steel housing. Unique torque action provides permanent clamp.
4. Continue to tighten steel housing. Neoprene gasket on pin gives long-life seal.

V Series Line Tap Valve

A complete line tap valve. Each assembly fits four sizes: 1/4", 5/16", 3/8" & 1/2" lines. Easy to install.



V Series Line Tap Valve

Part #	Description
02-CD4321	Fits 1/4", 5/16", 3/8" & 1/2" tubes.

Clamp On Service Valve



07-40288
Illustrated

E-Z Taper Valve

- Use on water & refrigerant lines
- eliminate line restriction by back-seating stem
- close valve & remove valve core to add branch connection
- stainless steel piercing needle

Features

- Fits 3/16" thru 3/8" and metric equivalent OD tube sizes
- self aligns on tube
- valve core for built-in flow check
- simple installation
- comes with cap

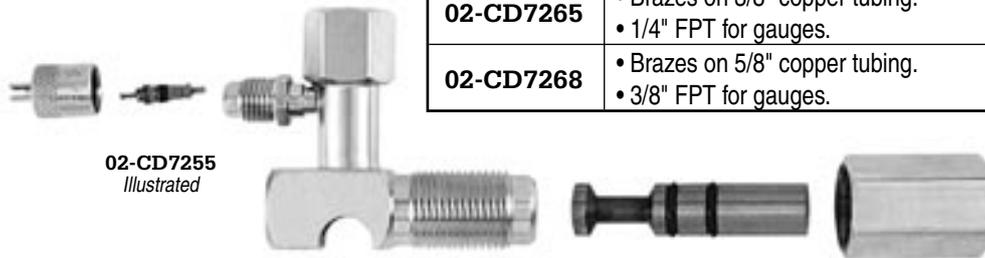
E-Z Line

Part #	Description
07-40288	E-Z Taper Valve
07-40288-126	Replacement Gaskets (5/pk)

Gauge Access Line Installation Valves

For Gauge Installation On A Charged Line!

Gauge Access Line Installation Valves



02-CD7255
Illustrated

Part #	Description
02-CD7255	<ul style="list-style-type: none"> • Brazes on 1/2" copper tubing. • 1/4" FPT for gauges.
02-CD7265	<ul style="list-style-type: none"> • Brazes on 3/8" copper tubing. • 1/4" FPT for gauges.
02-CD7268	<ul style="list-style-type: none"> • Brazes on 5/8" copper tubing. • 3/8" FPT for gauges.

Hi-Side Valve



02-CD3700
Illustrated

02-CD3710
Illustrated

Hi-Side Shut-Off Valves

The 02-CD3700 and 02-CD3710 are different configurations of the same shut-off valve.

- Metal to metal (steel to brass) seat.
- 1/4" male flare without core for hose attachment.
- 1/4" female swivel with depressor tip and gasket.

Hi-Side Shut-Off Valves

Part #	Description
02-CD3700	Large easy to use valve knob.
02-CD3710	Small design makes shut-off ideal in small quarters.

Access & Service Valves

ALLTAP

Refrigeration



02-C33113
Illustrated



02-C33112
Illustrated

Shut-Off Fitting - Quick Couplers

- Use with existing charging hose.
- Immediately traps refrigerant discharge from hose when disconnected from access fitting.
- 3/16" and 1/4" coupler with valve core depressor, safety channels and rubber gasket seal
- 3/8" couplers with patented O-ring seal for deep vacuum.
- No depressor.

Shut-Off Fitting - Quick Couplers

Part #	Description
02-C33112	1/4" quick connect x 1/4" SAE
02-C33113	1/4" quick connect x 90° 1/4" SAE

Replacement o-rings (02-P90022)

Access & Service Valve Tap

ALLTAP

Refrigerant Control Valves - Back Seating

- Ideal for use on pre-charged line sets.
- Eliminates spraying of leak detection dye and refrigerant.
- Compact brass body for long service.
- Swivel coupler with double safety grooves.

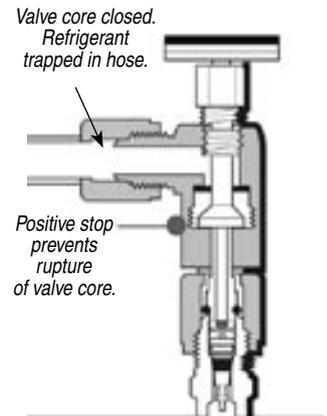
Refrigerant Control Valves - Back Seating

Part #	Description
02-C33000	1/4" SAE x 1/4" o-ring quick coupler

VAC 1,500 psi (-40°F to 275°F)
Replacement o-rings (02-P90009)



02-C33000
Illustrated



Mini-Manifold Service Valves

ALLTAP

Mr. Jr. Charger!

All brass construction. The 1/4" female coupler can be attached to a flare fitting. Opposite the coupler is the knob for the built-in core depressor. Other connections are the 1/8" MPT for attaching a gauge and two 1/4" male flares. One flare fitting has a standard valve core compatible with all refrigerant gases. Both flare fittings are covered by 02-CD2250 heavy duty brass caps with neoprene seals and core wrench on top.

Mini-Manifold "Mr. Jr. Charger"

Part #	Description
02-CD1777	Uniquely designed to fit any manufacturers gauge, and swivel 350° out of the way.



02-CD1777
Illustrated

Quick Coupler Access & Service Valves

Quick Couplers

- 3/16" and 1/4" coupler with valve core depressor, safety channels and rubber gasket seal
- 3/8" couplers with patented O-ring seal for deep vacuum. No depressor



02-QC-E3
Illustrated



02-QC-S3
Illustrated



02-QC-S4A
Illustrated



02-A34000
Illustrated



02-CV-20004
Illustrated



02-QCS4A-134
Illustrated

02-13445-134
Illustrated

45° Elbow Quick Couplers

Part #	Description
02-COC-E3	3/16" QC x 1/4" SAE elbow
02-COC-E4	1/4" QC x 1/4" SAE elbow
02-COC-E64*	3/8" QC x 1/4" SAE elbow

*no depressor

Straight Quick Couplers

Part #	Description
02-COC-S3	3/16" QC x 1/4" SAE straight
02-COC-S4	1/4" QC x 1/4" SAE straight
02-COC-S46	1/4" QC x 3/8" SAE straight
02-COC-S64*	3/8" QC x 1/4" SAE straight

*no depressor

FPT Thread Quick Couplers

- Use 02-QC-S4A with M2-250 and M2-500 gauges.

Part #	Description
02-COC-S4A	1/4" QC x 1/8" FPT straight
02-COC-S4B	1/4" QC x 1/4" FPT straight

Quick Coupler Access Tee

- O-ring seal quick coupler.
- Furnished with cap and one valve core.
- Use with 04-SH31 residential air conditioning gauge for charging hook-up.

Part #	Description
04-A34000	1/4" QC x 1/4" access fitting.

Swivel Cylinder Valves

- Finger tight seal.
- Includes gasket.

Part #	Description
02-CV-20004	3/4" NPS x 1/4" male flare.
02-CV-20006	3/4" NPS x 3/8" male flare.

134a Automotive Quick Couplers

- Retrofit existing SAE flare fitting for 134a auto service.

Part #	Description
02-QCS4A-134	1/4" QC x 1/2" male Acme thread
02-13445-134	1/2" Acme QC x 1/4" male flare

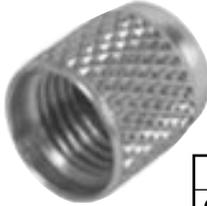
Access & Service Valve Caps

ALLTAP

Refrigeration

O-ring Quick Seal Caps

- Finger tight sealing for all male SAE connections.
- No wrench or pliers required.
- Suitable for refrigeration or deep vacuum service.



Part #	Description	Package
02-NFT5-4	1/4" SAE Cap	10/pk
02-NFT5-4-B	1/4" SAE Cap	100/pk
02-NFT5-6	3/8" SAE Cap	1/pk
02-NFT5-8	1/2" SAE Cap	3/pk

02-P90010 - 1/4" replacement o-ring.
 02-P90012 - 3/8" replacement o-ring.
 02-P90014 - 1/2" replacement o-ring.

Quick Seal Gasket Caps

- Designed for A/C & refrigeration service.
- Finger tight sealing for all male SAE connections.
- No wrench or pliers required.

Part #	Description	Package
02-C31985	1/4" SAE Cap	10/pk
02-C31985-B	1/4" SAE Cap	100/pk

02-P509 - Replacement gaskets.

Wrench Style Seal Caps

- Designed for A/C & refrigeration service.
- Permanent installation.
- Brass to brass positive seal.



Part #	Description	Package
02-C31986	1/4" SAE Cap	5/pk

Specialty Caps

- Plastic seal caps with plastic retainer strap.



Part #	Description	Package
02-C31992	1/4" SAE Cap	5/pk
02-C31992-B	1/4" SAE Cap	100/pk

02-P90010 - 1/4" replacement gaskets.

1/2-16 Acme Caps

Part #	Description	Package
02-13493	Plastic cap with retainer strap.	2/pk
02-13494	Plastic cap.	1/pk

Access & Service Valve Core Remover Caps

ALLTAP



02-C31997
Illustrated



02-CD2250
Illustrated



02-C31998
Illustrated

Core Remover Caps

Part #	Description	Package
02-C31997	1/4" SAE gasket seal cap with core remover.	5/pk
02-CD2250	1/4" flare heavy-duty brass cap with core remover tool and neoprene o-ring seal.	6/pk
02-C31998	1/4" Standard core remover.	5/pk

Access & Service Valve Cores

ALLTAP

1/4" Valve Cores

- Teflon/ neoprene seal replacement valve cores.



02-C31999
Illustrated

Part #	Description	Package
02-C31999	1/4" valve core	5/pk
02-C31999-B	1/4" valve core	100/pk

3/8" Valve Cores

Part #	Description	Package
02-C32999	3/8" valve core	5/pk



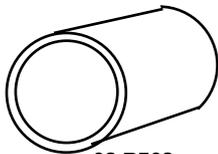
Access Fitting Depressors, Gaskets & O-Rings



02-P90513
Depressor Illustrated

Depressor

Part #	Description	Package
02-P90513	Depressor for 1/4" hoses and couplers.	5/pk
02-P90513-B	Depressor for 1/4" hoses and couplers.	100/pk



02-P509
Gasket Illustrated

Gaskets

Part #	Description	Package
02-P509	Gasket for 1/4" quick couplers and gasket seal caps.	6/pk
02-P509-B	Gasket for 1/4" quick couplers and gasket seal caps.	100/pk
02-P510	Gasket for 1/2" 134a CLA series hose.	6/pk



02-P90012
O-ring Illustrated

O-rings

Part #	Description	Package
04-MR-509	O-ring for 1/4" pistons and 3/8" seal caps.	1/pk
02-P90009	O-ring for 3/16" and 1/4" quick couplers.	5/pk
02-P90010	O-ring for 02-NFT5-4 caps.	5/pk
02-P90012	O-ring for 3/8" quick couplers.	5/pk
02-P90013	O-ring for 3/8" pistons and 1/4" filters.	5/pk
02-P90015	O-ring for DV-3, DV-5, DV-85C and 3/8" filter.	5/pk
02-P90016	O-ring for 1/4" piston bonnet, 1/2" to 5/8" valve piston and 1/4" comp. filter.	5/pk
02-P90018	O-ring for D10053 and 3/8" piston bonnet.	5/pk
02-P90019	Piston o-ring for 134a manifold.	5/pk
02-P90020	O-ring for 134a CLA series.	5/pk
02-P90021	O-ring for 02-C33112 & 02-C33113.	5/pk
02-P90022	O-ring for 02-C33112N & 02-C3313N	5/pk

Oil Tap

Oil Tap

The oil tap is installed on a semi-hermetic compressor for changing oil and testing procedures. The internal pressure helps discharge the oil from the crankcase so acid tests can be made while the compressor is running. It allows the addition by vacuum or removal by pressure of oil while compressor is running. Hazardous refrigerant can be detected pooling in the crankcase before start-up and removal can be controlled using a compound gauge. The oil tap can be permanently installed.

Oil Tap

Part #	Description
02-CD1808	Compressor oil tap.



02-CD1808
Illustrated

Core Depressors



Refrigeration



02-CD2060 & 02-CD2050
Illustrated



02-CD2070
Illustrated



02-CD5050
Illustrated

Core Depressors

These thumbscrew core depressors are designed to be used on the end of a charging hose. When attached to an access fitting, they can depress the valve core and control the flow of gas. This also means the core can be shut off before disconnecting, thus avoiding a split back on your hand. The seals in each part have broad compatibility with the newer refrigerants. The 02-CD2070 is unique in that it has an internal shut-off that also holds gas in the hose when disconnected.

Core Depressors

Part #	Description
02-CD2060	For 1/4" male flares.
02-CD2050	For 3/16" male flares.
02-CD2070	For 1/4" male flares. Depresses valve core and controls flow. Back seats and retains gas in the hose.
02-CD5050	For 1/4" male flares. Small design makes this service tool ideal in small quarters.

Core Depressors - Ball Valve Hose End



02-CD4040
Illustrated

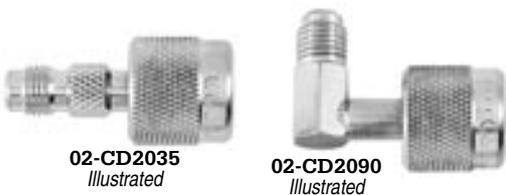
Ball Valve Hose-End

Reliable and easy to use. The body of this valve is constructed with the same durable design as the BV series service tools (CRT). Install the 02-CD4040 on the end of a charging hose and minimize refrigerant loss during service. A quarter turn of the handle makes quick work of shutting on or off the valve. Straight flow through design offers maximum flow rate. The brass depressor tip fully engages valve core.

Ball Valve Hose -End

Part #	Description
02-CD4040	1/4" female flare swivel, depressor tip x 1/4" male flare.

Core Depressors - Retaining Couplers - "Sure Seal"

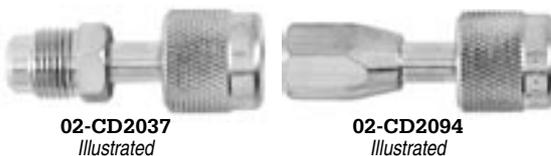


02-CD2035
Illustrated

02-CD2090
Illustrated

Sure Seal - Retaining Couplers

When attached to an access fitting, the "Sure Seal" retaining coupler automatically open and depresses the valve core all in one action. When disconnected, it traps refrigerant in the charging hose. Leave it permanently installed on the end of the hose. The seals are compatible with newer refrigerants, and if internal parts need replacing, a parts kit (02-CD5171) is available.

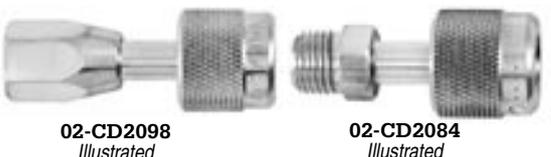


02-CD2037
Illustrated

02-CD2094
Illustrated

"Sure Seal" - Retaining Couplers

Part #	Description
02-CD2035	1/4" female flare retainer x 1/4" male flare.
02-CD2090	90° 1/4" female flare retainer x 1/4" male flare.
02-CD2037	1/4" female flare retainer x 3/8" male flare.
02-CD2094	1/4" female flare retainer x 1/4" FPT.
02-CD2098	1/4" female flare retainer x 1/8" FPT.
02-CD2084	1/4" female flare retainer x 1/4" MPT.



02-CD2098
Illustrated

02-CD2084
Illustrated

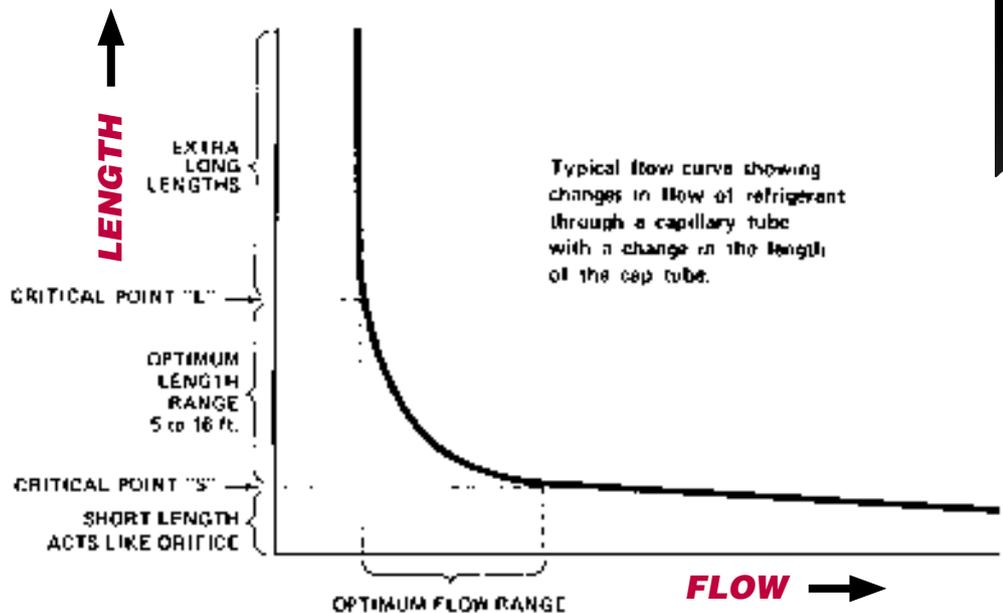
Repair Kit (02-CD5171 - includes seals, depressor & spring)

Capillary Tubing

Capillary Tubing - Factors Affecting Refrigerant Flow (Diameter & Length)

The size of the cap tube is fairly critical. Unlike orifices, such as expansion valve seats, capillary tubes depend on their length as well as their diameter to determine their total restriction. The relationship between these two factors are shown in the following charts. A change in diameter on a percentage basis can change the flow more than an equal change in length. To illustrate, changing the diameter by .005" as between .026" I.D. and .031" I.D. can double the flow. Restriction can also be changed by lengthening or shortening the cap tube. The longer the tube, the slower the flow; the shorter the tube, the faster the flow. The general flow curve graph (right) shows what happens to the flow of refrigerant through a cap tube as the length is changed. This curve is not meant to give specific flows but to simply illustrate what happens with all cap tubes so that the general flow pattern can be understood.

By following the flow curve from left to right it can be seen that for the very longest length the flow is the smallest. Then as the cap tube length is decreased, the flow increases slowly until critical point "L" is reached. At this point the flow increases more rapidly with each reduction in length until critical point "S" is reached. From this point on, further decrease in length causes ever increasing flow. From the study of this typical curve, certain pertinent conclusions can be reached that directly affect the field application of capillary tubes.



On the graph, the section above the critical point "L" is marked as extra long lengths. Attempting to increase restriction (i.e. reduce flow) by increasing length into this region is not only uneconomical but frequently hopeless. In addition, tubes in this range may not be responsive enough to changes in head pressures during operation. All in all, tube lengths in this range should be avoided where possible.

Continuing down the graph, the section below critical point "S" should be avoided like the plague. In this range, the tube is so short that even small changes in length will cause very large increases in flow. This is caused by the fact that the length no longer affects the flow and the tube now begins to act more like an orifice than a capillary tube. But, without the other components necessary to control an orifice, such as are present in an expansion valve or high side float, a very short cap tube will give wildly erratic operation under varying ambient and loads.

All of this would be meaningless without some definite way to use this information. Although the critical points will vary depending on the I.D. of the cap tubing being used, a very safe operating rule-of-thumb can be offered.

RULE OF THUMB

Keep the cap tube no shorter than 5' and no longer than 16'. As in all general rules there are of course exceptions, but for day to day operation, keeping a cap tube within the 5' to 16' range will eliminate many problems.

An easy way to avoid these problems is to use the R-Line application charts and R-Line capillary tubing. These charts offer recommendations for almost all cap tube systems from 1/20 HP to 5 HP, plus any air conditioner from small window units to large central systems using multiple cap tubes.

Capillary Tubing



Capillary Tubing - Length Conversion Chart

This conversion chart enables the user to translate the recommended length of tube diameter into sizes stocked by J/B. In using the chart it is recommended that conversions be made using factors within the unshaded area.

Refrigeration

Part#	TC-26	TC-31	TC-36	TC-42	TC-44	TC-49	TC-50	TC-54	TC-55	TC-59	TC-64	TC-70	TC-75	TC-80	TC-85	TC-90	TC-100	
Tube ID	.026	.031	.036	.042	.044	.049	.050	.054	.055	.059	.064	.070	.075	.080	.085	.090	.100	
.024	1.44																	
.025	1.20																	
.026	1.00	2.24																
.028	.72	1.59																
.030	.52	1.16																
.031	.45	1.00	2.00															
.032		.86	1.75															
.033		.75	1.54															
.034		.65	1.35															
.035		.58	1.16	2.31														
.036		.50	1.00	2.10														
.037		.45	.90	1.79	2.22													
.038		.39	.80	1.59	1.92													
.039		.35	.71	1.41	1.75													
.040		.31	.62	1.25	1.55	2.51												
.041		.28	.56	1.12	1.38	2.26	2.50											
.042		.25	.50	1.00	1.24	2.03	2.23											
.043		.23	.45	.87	1.11	1.83	1.98											
.044		.20	.39	.81	1.00	1.62	1.79											
.045			.35	.73	.90	1.47	1.60	2.32										
.046			.32	.67	.82	1.34	1.47	2.08	2.27									
.047				.59	.74	1.20	1.31	1.89	2.06									
.048				.54	.67	1.10	1.20	1.72	1.87									
.049				.49	.61	1.00	1.09	1.55	1.69									
.050				.45	.56	.91	1.00	1.43	1.56	2.14								
.051				.41	.51	.84	.93	1.31	1.44	1.96								
.052					.47	.76	.85	1.19	1.32	1.78								
.053					.43	.69	.78	1.09	1.20	1.64								
.054					.39	.65	.70	1.00	1.09	1.52	2.18							
.055					.36	.59	.64	.92	1.00	1.38	2.00							
.056						.54	.60	.85	.94	1.27	1.85							
.057						.50	.55	.79	.87	1.17	1.72							
.058						.46	.51	.73	.80	1.07	1.56							
.059						.42	.47	.67	.73	1.00	1.44	2.18						
.060						.39	.43	.62	.67	.93	1.33	2.04						
.064							.32	.47	.50	.69	1.00	1.50	2.07					
.070								.30	.33	.46	.67	1.00	1.37	1.84				
.075											.48	.73	1.00	1.37	1.75			
.080												.54	.74	1.00	1.32	1.71		
.085													.57	.76	1.00	1.29		
.090														.43	.62	.76	1.00	1.62
.095															.46	.60	.79	1.27
.100																.48	.62	1.00
.105																	.49	.80
.110																		.65
.115																		.53
.120																		.43

To Use Chart

1. Locate recommended cap tube I.D. in left hand column.
2. Read across and find conversion factor under copper cap tube size.
3. Multiply the given length of the recommended cap tube by the conversion factor.
4. The resultant length (Min. 5' Max. 16') of copper cap tube will give the same flow characteristics as the original recommended cap tube.

Example

Recommended cap tube: 9'-.040 I.D.
Locate .040 in left hand column and reading across gives the following conversion factor: No. TC-36 (.62) and TC-42 (1.25).

Multiplying the recommended cap tube length of 9' by the conversion factor gives the following results: 5½"-TC-36 and 11¼"-TC-42. Either of these two cap tubes will give the same results as the original cap tube of 9'-.040 I.D.

Conversion Chart - Purpose

The "Capillary Tube Length Conversion Chart" was developed to enable users of capillary tubing to use the standard tubing sizes which are available through Refrigeration Jobbers everywhere.

While many original equipment manufacturers and condensing unit manufacturers recommend specific lengths and diameters of capillary tubing for their units, these tube sizes are not always readily available except of special order.

This conversion chart enables the user to translate the recommended length into that of a tube diameter that can be quickly obtained. In using the chart, it is recommended that conversions be made using factors within the unshaded area. In addition, it is highly recommended that the minimum length of capillary used be 5 feet.

Capillary Tubing

Refrigeration Application Chart (R12 & R22)*

HP	Ref.	Condenser Type	Normal Evaporating Temperature (°F)							
			-10 to +5		+5 to +20		+20 to +35		+35 to +50	
1/20	R12	Static/ Fan	16"	TC-26	10"	TC-26				
1/12	R12	Static/ Fan	12"	TC-26	12"	TC-31				
1/9	R12	Static	12"	TC-26	12"	TC-31				
1/9	R12	Fan	10"	TC-26	10"	TC-31				
1/8	R12	Static/ Fan	10"	TC-26	10"	TC-31				
1/6	R12	Static	12"	TC-31	12"	TC-36				
1/6	R12	Fan	10"	TC-31	10"	TC-36	8"	TC-36	10"	TC-42
1/5	R12	Static	10"	TC-31	10"	TC-36				
1/5	R12	Fan	8"	TC-31	8"	TC-36	7½"	TC-42	7½"	TC-49
1/4	R22	Static/ Fan	12"	TC-36	6"	TC-36	10"	TC-42	6"	TC-42
1/4	R12	Fan	10"	TC-36	6"	TC-36	8½"	TC-42	6"	TC-49
1/3	R22	Fan	10"	TC-36	6"	TC-36	8"	TC-42	6"	TC-49
1/3	R12	Fan	12"	TC-42	13"	TC-36	11"	TC-49		
1/2	R22	Fan	6"	TC-36	9"	TC-42	9"	TC-49	6"	TC-54
1/2	R12	Fan	11"	TC-54	9"	TC-49	7½"	TC-54	10"	TC-64
3/4	R22	Fan	11"	TC-54	9"	TC-54				
3/4	R12	Fan	7½"	TC-54	12"	TC-70	10"	TC-80		
1	R22	Fan	10"	TC-64	12"	TC-70				
1	R12	Fan	10"	TC-70	11"	TC-54	7½"	TC-54 (2 pcs)		
1½	R22	Fan			7½"	TC-54 (2 pcs)	8"	TC-64 (2 pcs)		
1½	R12	Fan	7½"	TC-54 (2 pcs)	9"	TC-64 (2 pcs)	10"	TC-80 (2 pcs)		
2	R22	Fan			10"	TC-70 (2 pcs)	9"	TC-75 (2 pcs)		
2	R12	Fan	10"	TC-70 (2 pcs)	9"	TC-75 (2 pcs)	10"	TC-85 (2 pcs)		
3	R22	Fan			10"	TC-70 (3 pcs)	9"	TC-75 (3 pcs)		
3	R12	Fan	10"	TC-70 (3 pcs)	8"	TC-64 (4 pcs)	10"	TC-80 (4 pcs)		
4	R22	Fan			10"	TC-70 (4 pcs)	9"	TC-75 (4 pcs)		
4	R12	Fan			10"	TC-70 (5 pcs)	9"	TC-75 (5 pcs)		
5	R12	Fan			10"	TC-80 (5 pcs)	9"	TC-85 (5 pcs)		

* R134a - It is suggested to add 10% to length!

Air-Conditioning Application Chart (R22)*

BTU/ Circuit	Cap Tube		BTU/ Circuit	Cap Tube	
	Length	Size		Length	Size
4000	69"	TC-49	8750	78"	TC-75
4250	63"	TC-49	9000	72"	TC-75
4500	90"	TC-54	9250	67"	TC-75
4750	81"	TC-54	9500	84"	TC-80
5000	72"	TC-54	9750	80"	TC-80
5250	63"	TC-54	10000	76"	TC-80
5500	101"	TC-64	10250	72"	TC-80
5750	94"	TC-64	10500	68"	TC-80
6000	87"	TC-64	10750	64"	TC-80
6250	79"	TC-64	11000	90"	TC-80
6500	72"	TC-64	11250	87"	TC-85
6750	64"	TC-64	11500	84"	TC-85
7000	90"	TC-70	11750	78"	TC-85
7250	84"	TC-70	12000	72"	TC-85
7500	78"	TC-70	12500	82"	TC-90
8000	69"	TC-70	13500	66"	TC-90
8250	64"	TC-70	14000	60"	TC-90
8500	84"	TC-75	-	-	-

* R134a - It is suggested to add 10% to length!

Recommended capillary tube lengths for each circuit in an air conditioner evaporator where R-22 is the refrigerant. All recommendations must be considered approximate, and variations may arise in actual field applications.

Window air-conditioners normally have one circuit and the recommended cap tube can be read directly from the chart. Larger air-conditioners normally have two or more circuits in the evaporator. Where this is the case, simply divide the total BTU rating of the unit by the number of cap tube circuits to obtain the BTU/circuit rating of each individual cap tube. For BTU amounts not on the chart, use the closest number, i.e. for 7900 BTU, use cap tube for 8000 BTU.

The length and I.D. of any cap tube may be adjusted to a more readily available size by using the R-Line conversion chart in your R-Line catalogue and on every box of capillary tubing.

Example

Air conditioner is rated at 27,000 BTU and has 3 cap tubes connected to the evaporator. Divide 27,000 by 3 = 9,000 BTU/Circuit. From the chart, this would call for .075 I.D. (TC-75) 72" long. The length and I.D. of any cap tube may be adjusted to a more readily available size by using the conversion chart. Figure after the dash in size listed above designate I.D. of tube (i.e. TC-75 = .075).

Capillary Tubing

ALLTAP

Refrigeration



09-TC-36-12
Short Coil
Illustrated



09-TC-36-100
100' Coil
Illustrated

Copper Capillary Tubing

- Plug-drawn, sealed and dehydrated soft copper tubing.
- Commercial tolerance of ± 0.001 ".
- Manufactured to ASTM B360-88.
- Short Coils - Packaged in clear plastic bags.
- 100' Coils - Individually boxed with conversion and application charts enclosed.

Short Coils		100' Rolls		Specifications		
Part #	Length	Part #	Length	I.D.	O.D.	Description
09-TC-26-16	16'	09-TC-26-100	100'	0.026" ID	0.072" OD	BC-5, GC-5
09-TC-31-12	12'	09-TC-31-100	100'	0.031" ID	0.083" OD	BC-1, GC-1
09-TC-36-12	12'	09-TC-36-100	100'	0.036" ID	0.087" OD	GC-6
09-TC-42-12	12'	09-TC-42-100	100'	0.042" ID	0.093" OD	BC-2, GC-2
09-TC-44-10	10'	09-TC-44-100	100'	0.044" ID	0.109" OD	
09-TC-49-11	11'	09-TC-49-100	100'	0.049" ID	0.099" OD	BC-3, GC-3, GC-7
09-TC-50-10	10'	09-TC-50-100	100'	0.050" ID	0.114" OD	
09-TC-54-11	11'	09-TC-54-100	100'	0.054" ID	0.106" OD	GC-8
09-TC-55-10	10'	09-TC-55-100	100'	0.055" ID	0.125" OD	
09-TC-59-10	10'	09-TC-59-100	100'	0.059" ID	0.112" OD	
09-TC-64-10	10'	09-TC-64-100	100'	0.064" ID	0.125" OD	BC-4, GC-4
09-TC-70-12	12'	09-TC-70-100	100'	0.070" ID	0.125" OD	GC-9
09-TC-75-9	9'	09-TC-75-100	100'	0.075" ID	0.125" OD	GC-10
09-TC-80-10	10'	09-TC-80-100	100'	0.080" ID	0.145" OD	GC-11
09-TC-85-9	9'	09-TC-85-100	100'	0.085" ID	0.145" OD	GC-12
09-TC-90-7	7'	09-TC-90-100	100'	0.090" ID	0.145" OD	
09-TC-100-10	10'	09-TC-100-100	100'	0.100" ID	0.156" OD	

Capillary Tubing & Connections

ALLTAP



02-CD2540
Illustrated

Copper Capillary Tubing & Connections

- Factory made double flare connections, used in such ways as an external equalizer tube on an expansion valve.
- 36" capillary tube with 1/4" swivel female connections

Part #	Description
02-CD2540	No depressor tips.
02-CD2541	Depressor tip at one end.
02-CD2542	Depressor tip at both ends.

Stainless Steel Lines



03-SD4-30-30
Illustrated

Construction Features:

The SD4 series is made from the best high molecular weight, low crystallinity, modified PTFE resin. This means that the SD4 series has approximately **60 Times** the resistance to flex fatigue than other hoses. The SD4 is also able to withstand far greater impulse pressure loading, vibration at any frequency or amplitude, hot-cold cycling and continuous high temperatures. Plus it has a greater dielectric strength and lower permeability.

Service Recommendations:

The SD4 series performs without surprises or disappointments even in the most severe conditions in the medium pressure range. Accelerated aging tests and extensive field experience show that SD4 series hoses may be safely regarded as virtually permanent flexible connections when properly applied. If you're looking for maximum freedom from needless hose failure, look no further.

SD4 Hose Construction

Tube: Heavy wall, high molecular weight, low crystallinity, modified PTFE with exceptional concentricity.

Reinforcement: Double braided stainless steel wire.

Available only as factory made and tested assemblies.

Type SD Stainless Steel Lines

- Extruded core "smooth bore".
- Medium pressure.
- Heavy duty.
- The only line used and approved by major commercial refrigeration manufacturers.
- Eliminates refrigerant loss from broken capillary.

Stainless Steel Lines

Part #	Description
03-SD4-30-12	1/4" x 12"
03-SD4-30-24	1/4" x 24"
03-SD4-30-30	1/4" x 30"
03-SD4-30-36	1/4" x 36"
03-SD4-30-48	1/4" x 48"
03-SD6-32-12	3/8" x 12"
03-SD6-32-18	3/8" x 18"
03-SD6-32-27	3/8" x 27"
03-SD6-32-30	3/8" x 30"
03-SD6-32-36	3/8" x 36"
03-SD6-32-60	3/8" x 60"

Special lengths and sizes available upon request

Hose Specifications

- Pressure ratings in PSI at 70°F (20°C).
- Maximum continuous operating temperature for long life, 500°F (260°C).
- Additional details on request.

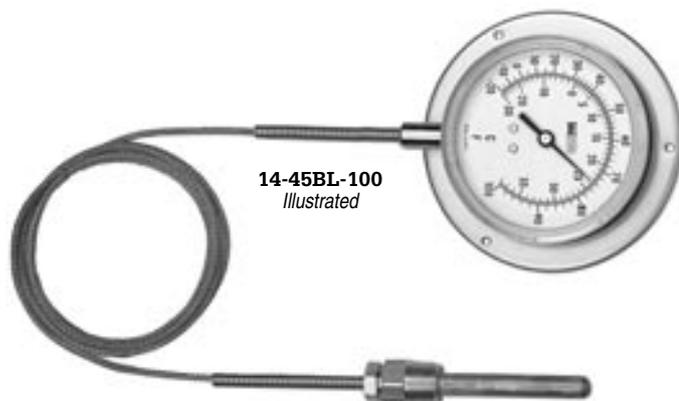
Connection	Nominal ID	Pressure	
		Burst	Operating
1/4" flare female	3/16"	12,000	4,000
3/8" flare female	5/16"	10,000	3,300

Union Connected Dial Thermometers



Union Connected Dial Thermometers

Offered in 3 1/2" and 4 1/2" dial sizes the BL series is furnished with braided copper capillary and a 1/2" NPT brass union connection. Sensor bulb insertion is 2 5/8" below the mounting thread. Case configuration is stainless steel back flange type for wall or surface mounting, capillary outlet at case bottom*. The BL series construction is well suited to applications such as hot and chilled pipeline systems, tanks, coolers and air ducts.



14-45BL-100
Illustrated

Union Connected Dial Thermometers

Part #	Dial Size	Range	Capillary
14-35BL-060	3 1/2"	-40 to 0 to 60°F & °C	5'
14-35BL-110	3 1/2"	-40 to 0 to 110°F & °C	5'
14-35BL-100	3 1/2"	-20 to 0 to 100°F & °C	5'
14-35BL-180	3 1/2"	0 to 180°F & °C	5'
14-35BL-240	3 1/2"	40 to 240°F & °C	5'
14-45BL-060	4 1/2"	-40 to 0 to 60°F & °C	5'
14-45BL-110	4 1/2"	-40 to 0 to 110°F & °C	5'
14-45BL-100	4 1/2"	-20 to 0 to 100°F & °C	5'
14-45BL-180	4 1/2"	0 to 180°F & °C	5'
14-45BL-240	4 1/2"	40 to 240°F & °C	5'

* Also available with back outlet, specify 14-35BB or 14-45BB

Digital Thermometer - Remote Reading



Refrigeration

Digital Thermometers

Weiss Instruments is the leader in Solar Powered technology as we now offer ten different versions of our Digital thermometers. Available in super low light versions 56SD, 72SD and 25SD (8 Lux) and low light series 20SD (18 Lux). These "self powered" thermometers operate without any batteries and offer an attractive and modern update to existing refrigeration equipment. Each thermometer has adjustable calibration, a ten second update time and wide ambient temperature specifications for both indoor and outdoor installations.

Where customers prefer LED, Weiss offers our 2" retrofit unit, the 14-20DT complete with a UL listed transformer and 1/2" high intensity red read-out. All digital thermometers are NSF listed.



14-25SD-160
Illustrated



14-20SD-HL
Illustrated



14-56SD-230
Illustrated



14-20SD-FS
Illustrated



14-72SD-F
Illustrated



14-20DT-F
Illustrated



14-LC58
Illustrated

LCD - SD Series

- Solar Powered.
- 5' Standard Sensor Length (longer line lengths available).
- Equivalent °C models available, consult factory.

Part #	Case	Range
14-20SD-BS	Back Flange	-40/0/160°F
14-20SD-HL	Hanging	-40/0/160°F
14-20SD-FS	Front Flange	-40/0/160°F
14-20SD-FSC	Front Flange	-5/0/70°C
14-25SD-160	Horizontal Wall Mount (white or black models)	-40/0/160°F
14-25SD-70C	Horizontal Wall Mount (white or black models)	-5/0/70°C
14-56SD-230	Front Flange (°F/ °C switch)	-50/0/230°F
14-72SD-F-160	Front Flange	-40/0/160°F
14-72SD-U-160	U-Clamp	-40/0/160°F

LED - DT Series

Part #	Case	Range
14-20DT-F	Front Flange	-40/0/230°F
14-20DT-U	U-Clamp	-40/0/230°F

Economy Battery Type Panel Meter

Part #	Case	Range
14-LC58	Panel Mount With Clips	-40/0/230°F

Remote Reading Dial Thermometers



NSF Approved Remote Reading Dial Thermometers

The Weiss line of remote reading dial thermometers offers a wide variety of dial sizes and case configurations to match any installation. All items are furnished in attractive stainless steel cases and all models are NSF listed. Additional features include smart colour zoned dual scales and tin plated thermal systems.

Refrigeration

2" Dial Size

FB Series

- Front flange back connection.

Part #	Range	Capillary
14-20FB-060	-40 to 0 to 60°F & °C	48"
14-20FB-960	-40 to 0 to 60°F & °C	9"
14-20FB-260	-40 to 0 to 60°F & °C	20"
14-20FB-110	-40 to 0 to 110°F & °C	48"
14-20FB-240	40 to 240°F & °C	48"

BB Series

- Back flange back connection.

Part #	Range	Capillary
14-20BB-060	-40 to 0 to 60°F & °C	48"
14-20BB-110	-40 to 0 to 110°F & °C	48"
14-20BB-240	40 to 240°F & °C	48"

HL Series

- Hanging bracket lower connection.

Part #	Range	Capillary
14-20HL-060	-40 to 0 to 60°F & °C	48"
14-20HL-240	40 to 240°F & °C	48"

FL Series

- Front flange lower connection.

Part #	Range	Capillary
14-20FL-240	40 to 240°F & °C	48"

UB Series

- "U" clamp back connection.

Part #	Range	Capillary
14-20UB-060	-40 to 0 to 60°F & °C	48"
14-20UB-220	-100 to 220°F & °C	48"
14-20UB-240	40 to 240°F & °C	48"

2½" Dial Size

FB Series

- Front flange back connection.

Part #	Range	Capillary
14-25FB-060	-40 to 0 to 60°F & °C	48"
14-25FB-110	-40 to 0 to 110°F & °C	48"
14-25FB-240	40 to 240°F & °C	48"

BB Series

- Back flange back connection.

Part #	Range	Capillary
14-25BB-110	-40 to 0 to 110°F & °C	48"

HL Series

- Hanging bracket lower connection.

Part #	Range	Capillary
14-25HL-060	-40 to 0 to 60°F & °C	48"

PB Series

- Plain w/lock nut back connection.

Part #	Range	Capillary
14-25PB-060	-40 to 0 to 60°F & °C	48"

4½" Dial Size

RB Series

- Front flange back connection.

Part #	Range	Capillary
14-45RB-060	-40 to 0 to 60°F & °C	48"
14-45RB-260	-40 to 0 to 60°F & °C	20"
14-45RB-110	-40 to 0 to 110°F & °C	48"
14-45RB-240	40 to 240°F & °C	48"

BB Series

- Back flange back connection.

Part #	Range	Capillary
14-45BB-060	-40 to 0 to 60°F & °C	48"
14-45BB-260	-40 to 0 to 60°F & °C	20"
14-45BB-110	-40 to 0 to 110°F & °C	48"
14-45BB-240	40 to 240°F & °C	48"



14-25FB-060
2½" Dial Illustrated



14-20BB-060
2" Dial Illustrated



14-20HL-060
2" Dial Illustrated



14-25HL-060
2½" Dial Illustrated



14-20UB-240
4½" Dial Illustrated



14-20FB-110
4" Dial Illustrated



14-45RB-060
4½" Dial Illustrated

Refrigeration Gauges



Refrigeration Gauges

These gauges are designed for the pressure measurement of refrigeration systems. All dials are furnished with corresponding temperature scales for the various refrigerants shown below. Standard connections are 1/8" NPT bottom for manifold gauges and 1/4" NPT for all other versions.

Refrigeration

2 1/2" Dial Manifold

Part #	Range (in. hg)	Refrigerant Scale	Case	Accuracy
14-RG25-120	-30 to 0 to 120 PSI	R12, R22, R502	ABS	ANSI Grade B
14-RG25-500	0 to 500 PSI		- Colour	2% Mid Scale

2 1/2" Dial Manifold Liquid Filled

Part #	Range (in. hg)	Refrigerant Scale	Case	Accuracy
14-RGLF-120	-30 to 0 to 120 PSI	R12, R22, R502	ABS	ANSI Grade B
14-RGFL-500	0 to 500 PSI		- Colour	2% Mid Scale

2 1/2" Dial Liquid Filled Front Flange

Part #	Range (in. hg)	Refrigerant Scale	Case	Accuracy
14-LF25-V150	-30 to 0 to 150 PSI	-	Stainless Steel	ANSI Grade B 2% Mid Scale
14-LF25-V300	-30 to 0 to 300 PSI			
14-LF25-0300	0 to 300 PSI			
14-LF25-0600	0 to 600 PSI			

2 1/2" Dial Liquid Filled Lower Mount

Part #	Range (in. hg)	Refrigerant Scale	Case	Accuracy
14-LF25LMV60	-30 to 0 to 60 PSI	-	Stainless Steel	ANSI Grade B 2% Mid Scale
14-LF25LMV100	-30 to 0 to 100 PSI			
14-LF25LMV150	-30 to 0 to 150 PSI			
14-LF25LM150	0 to 150 PSI			
14-LF25LM160	0 to 160 PSI			
14-LF25LM200	0 to 200 PSI			
14-LF25LM300	0 to 300 PSI			
14-LF25LM600	0 to 600 PSI			

3 1/2" Dial Back Flange

Part #	Range (in. hg)	Refrigerant Scale	Case	Accuracy
14-RG35-V150	-30 to 0 to 150 PSI	R12, R22, R502	Stainless Steel	ANSI Grade A 1% Mid Scale
14-RG35-V300	-30 to 0 to 300 PSI			
14-RG35-0300	0 to 300 PSI			
14-RG35-0500	0 to 500 PSI			

4 1/2" Dial Turret

Part #	Range (in. hg)	Refrigerant Scale	Case	Accuracy
14-4RG-150	-30 to 0 to 150 PSI	R12, R22, R502	Phenolic	ANSI Grade A 1% Mid Scale
14-4RG-300	-30 to 0 to 300 PSI			



14-RGLF-500
Illustrated (Red)



14-RGLF-120
Illustrated (Blue)



14-LF25-V150
Front Flange



14-RG35-0500
Lower Mount



14-4RG-300
Illustrated

Ammonia Gauges



Ammonia Gauges

These gauges are designed for the pressure measurement of any system or equipment charged with ammonia. All dials are furnished with corresponding temperature scales. Black inner arc indicates pressure. Red outer arc indicates corresponding temperature. All gauges are equipped with restrictors to protect the gauges against pulsating pressure.



14-LF25S2-150
Illustrated



14-MG25-150
Illustrated



14-MG35-150
Illustrated

2 1/2" Dial Liquid Filled

Part #	Range (in. hg)	Tube & Socket	Case	Accuracy
14-LF25S2150	-30 to 0 to 150 PSI	316 S.S.	Stainless Steel	ANSI Grade B 2% Mid Scale
14-LF25S2300	-30 to 0 to 300 PSI			

2 1/2" Dial

Part #	Range (in. hg)	Tube & Socket	Case	Accuracy
14-MG25-150	-30 to 0 to 150 PSI	316 S.S. Tube Steel Socket	Black Steel	ANSI Grade B 2% Mid Scale
14-MG25-300	-30 to 0 to 300 PSI			

3 1/2" Dial

Part #	Range (in. hg)	Tube & Socket	Case	Accuracy
14-MG35-150	-30 to 0 to 150 PSI	316 S.S. Tube Steel Socket	Black Steel	ANSI Grade B 2% Mid Scale
14-MG35-300	-30 to 0 to 300 PSI			

4 1/2" Dial

Part #	Range (in. hg)	Tube & Socket	Case	Accuracy
14-4MG-150*	-30 to 0 to 150 PSI	316 S.S.	Phenolic	ANSI Grade A 1% Mid Scale
14-4MG-300*	-30 to 0 to 300 PSI			

* Heavy Duty Internals on 4 1/2" Gauges

Diaphragm Gauges



Diaphragm Gauges

The Weiss DG series gauges are used in the measurement of pressures below 10 psi. This line of diaphragm gauges offers an instrument highly sensitive yet durably constructed. Utilizing a thin walled copper-alloy, the diaphragm senses slight pressure or vacuum and expands or contracts. The action of the element is quickly and accurately indicated within 1.5% of full scale range. Some of the uses are filter monitoring, leak testers and LP gas.

Series Description

Case - Black drawn steel, with twist lock polycarbonate window.

Diaphragm - Copper alloy.

Socket - Brass, 1/4" NPT lower or centre back connection.

Movement - Brass

Dial - White coated metal lithographed with black graduations lines and numbers.

Pointer - Balanced design, aluminum black finish.

Diaphragm Gauges - How to specify part #.

Series	Dial Size	Range Type	Case Style	NPT	Mount	Range
14-DG	2 1/2" 25	P3 - Pressure	U - "U" Clamp	1/4"	LM* CBM°	-
		V3 - Vacuum				-
		C3 - Combination				-

Example: 14-DG25P3 1/4" LM 0 to 10 PSI. * LM - Lower Mount °CBM - Centre Back Mount

Combustion (C3)		Pressure Range (P3)
In. Water Outer Scale	Oz. Water Inner Scale	
0 to 35	0 to 20	0 to 3 PSI*
0 to 15	0 to 9	0 to 5 PSI
0 to 60	0 to 35	0 to 10 PSI
		Inch/Water
		0 to 15
		0 to 30
		0 to 60
		0 to 100
		Oz.-Sq. In.
		0 to 10
		0 to 15*
		0 to 30
		0 to 100

* Lower Connection Only



Mineral Refrigeration Oil



Refrigeration



BVA3 (GS3), BVA4 (GS4) & BVA5 (GS5) Series Mineral Oils

Manufactured from premium quality, naphthenic base stocks that are specifically refined for conventional type lubrication required by refrigeration, air-conditioning and heat pump applications. These refrigeration oils offer excellent chemical stability when in the presence of refrigerant and other compressor materials. BVA oils deliver good thermal stability to ensure good performance at high temperatures as well as excellent low temperature properties to prevent congealing in the evaporator. The oils are wax free to prevent floc problems in the evaporator and expansion valve and are compatible with all petroleum oils regardless of type resulting in remarkable refrigerant solubility properties.

BVA TR300 & TR2200 Series Mineral Oils

TR300 was developed to meet or exceed Trane code 1 oil 15 specs. Special care is taken to ensure that the aniline point exceeds 90°C (195°F). BVA2200 was designed to meet Trane 22 oil specifications.

Features

- OEM Approved
- Long trouble-free service life
- Useful for original fill or service refill applications
- Full range of viscosity grades are available in convenient container sizes
- All packages are colour coded to prevent misapplication.

Mineral Refrigeration Oils

150 Viscosity* Blue Colour Code	300 Viscosity* Red Colour Code	500 Viscosity* Green Colour Code	300 Viscosity* TR300 Series	300 Viscosity* TR2200 Series	Unit Volume	Package
10-BVA3-Q	10-BVA4-Q	10-BVA5-Q	10-TR300Q	10-TR2200Q	32 oz	12/ carton
10-BVA3-G	10-BVA4-G	10-BVA5-G	10-TR300G	10-TR2200G	1 gal	6/ carton
10-BVA3-P	10-BVA4-P	10-BVA5-P	10-TR300P	10-TR2200P	5 gal	1 pail
10-BVA3-D	10-BVA4-D	10-BVA5-D	10-TR300D	10-TR2200D	55 gal	1 drum

*Viscosity SUS@100°F

Condensed Specifications

Mineral Oils	BVA3	BVA4	BVA5	TR300	TR2200
Viscosity @40°C cSt	29.55	64.94	96.8	58.0	56.5
@100°C cSt	4.43	6.76	9.0	6.3	6.36
@100°F SUS	154	330	515	315	300
Floc Point	-60°F	-55°F	-35°F	-55°F	-35°F
Pour Point	-50°F	-35°F	-20°F	-35°F	-25°F
Flash Point	345°F	385°F	400°F	385°F	405°F
Colour	<1	<1.5	<2.0	L1.5	30
Di-electric Strength	25KV	25KV	25KV	25KV	25KV
Specific Gravity 60°F/60°F	0.911	0.911	0.916	0.911	0.888
Aniline Point	175°F	185°F	197°F	201°F	-

Values not intended for use in preparing specifications.

46-VPXOP
Pint (12)

46-VPXOQ
Quart (12)

46-VPXOG
Gallon (6)

10-VAC235Q
32 oz (12)

10-VAC235Q
1 Gal (6)

10-DVO-6
Pint (24)

10-DVO-12
Quart (12)

10-DVO-24
Gallon (6)

Vacuum Pump Oil - Page 229

Alkylbenzene Refrigeration Oil



Features

- Superior low temperature properties
- Excellent chemical and thermal stability
- Safe to handle and use in all applications
- Wax-free! Does not contain paraffin chains
- Compatibility with mineral oil!

ALKYL150 & ALKYL300 Series Alkylbenzene Oils

Alkylbenzene refrigeration oils are the highest quality, 100% Alkylbenzene, synthetic type refrigeration compressor lubricating oils. Although derived from petroleum stocks, they are superior to conventional petroleum refrigeration oils due to their unvarying composition, freedom from wax and improved stability. BVA ALKYL series also offers excellent thermal stability and chemical stability. Due to its compatibility with mineral oil it can be used in its place or added to mineral oil.

ALKYL 100E Alkylbenzene Oils

Developed and specially formulated for use in Bitzer screws using R22.

ALKYL 200ca Alkylbenzene Oils

Designed and formulated with a non-intrusive additive package for retrofit applications using new interim refrigerants such as MP39.

Specifications (ALKYL Series)

Alkylbenzene Oils	150	200ca	300	500	100E
Viscosity @40°C cSt	28.2	46.0	53.0	90.0	98.0
@100°C cSt	4.1	4.92	5.6	7.35	8.15
@100°F SUS	150	210	280	480	500
Floc Point	<-75°C	<-75°C	<-75°C	<-75°C	<-75°C
Pour Point	-45°C	-42°C	-40°C	-30°C	-33°C
Flash Point	185°C	185°C	200°C	205°C	367°C
Colour	1	1	<1	1	1
Di-electric Strength	40KV	40KV	40KV	40KV	40KV
Specific Gravity 60°F/60°F	0.87	0.87	0.87	0.87	0.87
Acid #	0.01	0.01	0.01	0.01	0.01

Values not intended for use in preparing specifications.

Alkylbenzene Refrigeration Oils

150 Viscosity* 150 Series	200ca Viscosity* 200ca Series	300 Viscosity* 300 Series	480 Viscosity* 500 Series	500 Viscosity* 100E Series	Unit Volume	Package
10-ALKYL150G	10-ALKYL200G	10-ALKYL300G	10-ALKYL500G	10-ALKYL100G	1 gal	6/ carton
10-ALKYL150P	10-ALKYL200P	10-ALKYL300P	10-ALKYL500P	10-ALKYL100P	5 gal	1 pail
10-ALKYL150D	10-ALKYL200D	10-ALKYL300D	10-ALKYL500D	10-ALKYL100D	55 gal	1 drum

*Viscosity SUS@100°F

Quarts Available Upon Special Request.

ALKYL Series Application Guide

Current Refrigerant	R502	R11	R12, R114	R12	R12, R500	R502	R502
Replacement Refrigerant	R22	R123	R124, R414b	MP39, R414b	MP66, R414b	HP80	HP81
Recommended Lubricant	ALKYL 150 ALKYL300	ALKYL 150 ALKYL300	ALKYL 150 ALKYL300	ALKYL 150 ALKYL200ca ALKYL300	ALKYL 150 ALKYL200ca ALKYL300	ALKYL 150 ALKYL200ca ALKYL300	ALKYL 150 ALKYL200ca ALKYL300

Polyol Ester Refrigeration Oil



Refrigeration



Features

- Good miscibility with refrigerant 134A
- Good lubricity on metals
- Excellent stability
- Available from 100 up to a 1700 viscosity

OEM Approved By:
Copeland - Solest 32LC
Tecumseh - Solest 32TC
Bitzer Screw - Solest 170

Polyol Ester Refrigeration Oils

Polyol Ester Oils

BVA Solest series is miscible with all HFC, HCFC, CFC and blends. The series was specifically developed for HFC refrigerants.

Solest Featured Oils

Solest 31HE - A good all purpose ISO 32 developed for use in medium temperature applications.

Solest 32TC

Developed for use in Tecumseh compressors and is OEM approved by Tecumseh compressors.

Solest® 32 LC

Approved for use in Copeland compressors using HFC refrigerants.

Solest LT32

Specifically designed for low temperature. Excellent miscibility with R23 and Suva 95 (R508B). Also good miscibility with R404A eliminates the need for using two lubricants in a cascade system. Multiple OEM approvals domestically and internationally.

Solest 68

Specifically engineered to work with alternate refrigerants such as

134a and HFC refrigerants. Solest 68 offers good lubricity on metals, including aluminium, good viscosity with 134a and excellent chemical and thermal stability. Designed for use in refrigeration and air conditioning applications requiring an ISO 68 viscosity. Multiple OEM approvals domestically and internationally.

Solest 120

Designed for applications requiring an ISO 100. Good miscibility will ensure good oil return in screw applications. This product is patented and has several domestic and international OEM approvals.

Solest 170

Approved for use in Bitzer screw compressors. This product offers excellent lubricity at high temperatures and ensures good oil return. OEM approved by Bitzer.

Solest 220

A highly specialized POE developed for applications where high dilution is needed. Primarily used in large screw applications using R134a.

22 Viscosity* 22 Series	32 Viscosity* 31HE Series	32 Viscosity* 32LCQ Series	32 Viscosity* 32TC Series	32 Viscosity* LT32 Series	Unit Volume	Package
10-SOLES22Q	10-SOLES31Q	10-SOLES32Q	10-SOL32TCQ	10-SOLLT32Q	32 oz	12/ carton
10-SOLES22G	10-SOLES31G	10-SOLES32G	10-SOL32TCG	10-SOLLT32G	1 gal	4/ carton
10-SOLES22P	10-SOLES31HE	10-SOLES32P	10-SOL32TCP	10-SOLLT32P	5 gal	1 pail
10-SOLES22D	10-SOLES31D	10-SOLES32D	10-SOL32TCD	10-SOLLT32D	55 gal	1 drum
36 Viscosity* 35 Series	46 Viscosity* 46 Series	68 Viscosity* 68 Series	100 Viscosity* 100 Series	120 Viscosity* 120 Series	Unit Volume	Package
10-SOLES35Q	10-SOLES46Q	10-SOLES68Q	10-SOL100Q	10-SOLES120Q	32 oz	12/ carton
10-SOLES35G	10-SOLES46G	10-SOLES68G	10-SOL100G	10-SOLES120G	1 gal	4/ carton
10-SOLES35P	10-SOLES46P	10-SOLES68P	10-SOL100P	10-SOLES120P	5 gal	1 pail
10-SOLES35D	10-SOLES46D	10-SOLES68D	10-SOL100D	10-SOLES120D	55 gal	1 drum
150 Viscosity* 150 Series	170 Viscosity* 170 Series	220 Viscosity* 220 Series	320 Viscosity* 320 Series	370 Viscosity* 370 Series	Unit Volume	Package
10-SOLES150G	10-SOLES170G	10-SOLES220G	10-SOLES320G	10-SOLES370G	1 gal	4/ carton
10-SOLES150P	10-SOLES170P	10-SOLES220P	10-SOLES320P	10-SOLES370P	5 gal	1 pail
10-SOLES150D	10-SOLES170D	10-SOLES220D	10-SOLES320D	10-SOLES370D	55 gal	1 drum

Polyol Ester Refrigeration Oil - Continued



Specifications



Mineral Oils	22	31HE	LT32	35	46	68	85	100	120	150	170	220	320	370
Viscosity @40°C cSt	22.55	31.96	29.15	36.7	50.50	64.00	92.40	97.11	131.00	149.15	175.20	215.90	31.96	385.96
@100°C cSt	4.95	5.63	5.91	5.96	7.00	8.90	10.60	10.95	14.53	15.62	16.50	20.80	5.63	29.23
Viscosity @100°F SUS	116.70	164.00	149.10	188	261.00	329.00	482.00	506.60	607.00	691	883.00	1033.00	5.76	2052.00
@210°F SUS	42.50	45.91	46.00	45.9	49.40	55.80	62.10	63.50	77.70	81.7	85.30	117.20	35.08	142.50
Viscosity Index	149	106	153	106	94	114	97	97	111	100	93	113	116	105
Density (lb/ gal)	8.23	7.79	8.04	7.77	7.71	7.88	7.87	7.87	7.83	7.83	7.85	7.92	7.95	7.96
Pour Point	-48°F	-49°F	-62°F	-49°F	-49°F	-45°F	-38°F	-30°F	-33°F	-16°F	-17°F	-13°F	-21°F	-6°F
Flash Point	450°F	455°F	470°F	455°F	480°F	511°F	520°F	490°F	490°F	510°F	520°F	520°F	540°F	575°F
Fire Point	500°F	500°F	490°F	500°F	530°F	565°F	575°F	520°F	550°F	535°F	575°F	605°F	510°F	670°F
Density g/ ml) @20°C	0.987	0.942	0.965	0.932	0.937	0.957	0.945	0.945	0.951	0.94	0.953	0.955	0.955	0.961

Refrigeration

Polyol Ester Refrigeration Oil - 4214 Series



BVA 4214 Series

BVA 4214 series was one of the first POE's developed for use in refrigeration applications. 10-4214150 was developed in 1984 for use with R12 refrigerant. It offers high miscibility and yet the viscosity is high enough that lubricity will not suffer. The 10-4214320 is a replacement for Hitachi SR 30.

Polyol Ester Refrigeration Oils - BVA 4214 Series

150 Viscosity* 4214 Series	320 Viscosity* 4214 Series	Unit Volume	Package
10-4214150Q	10-4214320Q	32 oz	12/ carton
10-4214150G	10-4214320G	1 gal	4/ carton
10-4214150P	10-4214320P	5 gal	1 pail
10-4214150D	10-4214320D	55 gal	1 drum

*Viscosity SUS@100°F

Specifications

POE Oils	4214-150	4214-320
Viscosity @40°C cSt	168	298
@100°C cSt	20.2	32
@100°F SUS	830	1536
Viscosity Index	98.6	155
Pour Point	-43°F	-35°F
Flash Point	555°F	520°F
Density	8.41	8.75
Critical Solution Temp R22	90°F	90°F

Values not intended for use in preparing specifications.

Bitzer Approved

Ammonia Refrigeration Oil



Ammonia Refrigeration Oil

10-BVA68P is designed for use in Ammonia Refrigeration systems. It is a highly stable oil, specially formulated to be non-reactive with ammonia and to give long, satisfactory service life in all types of compressors.



Ammonia Refrigeration Oil

- ASHRAE designation for ammonia 717.

300 Viscosity* 68P Series	Unit Volume	Package
10-BVA71768PP	5 gal	1 pail
10-BVA71768PD	55 gal	1 drum

Features

- Non-reactive with Ammonia.
- Non sludging & oxidation resistant.
- Superior chemical and thermal stability in Ammonia systems.
- Non-foaming.
- High viscosity & film strength at operating temperatures.
- Fast separation from Ammonia.
- Excellent demulsibility.
- Non-toxic. Safe to handle and use.

Specifications

Ammonia Oils	68P
Viscosity @40°C cSt	58.0
@100°C cSt	5.85
@100°F SUS	300.0
Viscosity Index	104
Pour Point	-36°C
Flash Point	450°C
Colour	L0.5
Di-electric Strength	35KV
Specific Gravity 20°C/20°C	0.86

Values not intended for use in preparing specifications.

Automotive Air Conditioning Oil



Refrigeration

PAG

With the change over from CFC R-12 to HFC 134a there are a lot of choices to make when it comes to the type of lubricant to use. It is recommended that systems using R12 continue to use mineral oil as a lubricant. When retrofitting to R134a either PAGs or POEs may be used. BVA offers the largest selection of Automotive air conditioning lubricants available on the market. All products listed below are available in quantities from 8 oz containers up to bulk railcars.

PAG - 46 (Low Viscosity)

Polyalkylene glycol developed for use in automotive systems using a low viscosity PAG in the presence of R134a. Not for use in General Motors compressors.

PAG - 100 (Medium Viscosity)

Polyalkylene glycol developed for use as a universal PAG for auto systems using R134a. This PAG is compatible with most other PAG available on the market.

PAG-150 (High Viscosity)

Polyalkylene glycol developed for use in automotive compressors requiring a high viscosity polyalkylene glycol lubricant when HFC R134a is used. Specifically developed for use in General Motors compressors.



Features

- For use in specific applications.
- Improves wear resistance for a long trouble-free service life.
- Provides excellent lubrication.
- OEM approved.

RPAG - Automotive Air Conditioning Oils

PAG46	PAG100	PAG150	Unit Volume	Standard Package
10-PAG46C	10-PAG100C	10-PAG150C	8 oz	12/ carton
10-PAG46Q	10-PAG100Q	10-PAG150Q	32 oz	12/ carton
10-PAG46G	10-PAG100G	10-PAG150G	1 gal	6/ carton

Sold Individually.

BVA Ester Tester



Oil Testing Instrument

The BVA Ester Tester is a simple and safe way of determining the percentage of mineral oils in a compressor when changing over to a polyol ester. It is ideal for field testing when you are looking for immediate results.



10-BVA-ET
Illustrated

Features

- Accurate to within $\pm 1\%$.
- Will work on any ester.
- All you need is a good source of light and graph paper.

BVA Ester Tester

Part #	Description
10-BVA-ET	Ester Tester
10-BVA-ETGP	Graph Paper (100 pg pad)

Instructions, soft & hard padded case included with each 10-BVA-ET



Inner Seal Gaskets



NX Series Inner Seal Gaskets

- Sponge rubber cushion with reinforced rubber covered woven galvanized wire flange.
- Flange extends into cushion minimizing chance of cushion being torn away. Entire gasket coated in a protective polyurethane coating.



- Applications**
- Locker plants
 - Refrigerated trucks
 - Railroad
 - Marine
 - Industrial



NX Series Gaskets Illustrated

NX Inner Seal Gasket

- Polyurethane coated.

Part #	Length	Cushion Diameter	Flange Width	Overall Width
81-NX302-100	100'	3/8"	1/2"	7/8"
81-NX402-100	100'	3/8"	3/4"	1 1/8"
81-NX502-100	100'	1/2"	1/2"	1"
81-NX504-100	100'	1/2"	3/4"	1 1/4"

Gaskets



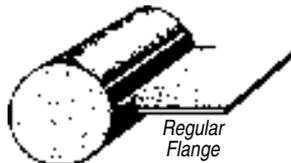
V Series V-Line Gaskets

- Closed cell sponge rubber interior with flexible vinyl flange & outer covering.
- Resists oils, greases, fats, detergents, water.
- Will not deteriorate in hot or cold weather.
- Won't crack, check or oxidize.

- Applications**
- Walk in coolers
 - Weather exposed freezer doors
 - Refrigerated trucks
 - Railroads



81-V1234-100 Illustrated



Regular Flange

Part #	Length	Cushion Diameter	Flange Width	Overall Width
81-V1212-25	25'	1/2"	1/2"	1"
81-V1212-100	100'			
81-V3812-25	25'	3/8"	1/2"	7/8"
81-V3812-100	100'			
81-V5858-25	25"	5/8"	5/8"	1 1/4"
81-V5858-100	100'			



Offset Flange

Part #	Length	Cushion Diameter	Flange Width	Overall Width
81-V1234-25	25'	1/2"	3/4"	1 3/16"
81-V1234-100	100'	1/2"	3/4"	1 3/16"

Foam-Edge Gaskets



81-5005-100 Illustrated

Description

- Soft flexible polyurethane foam core covered with a thin vinyl sheeting



Applications

- Insulating
- Sound proofing
- Shock absorber
- Light seal
- Dirt seal

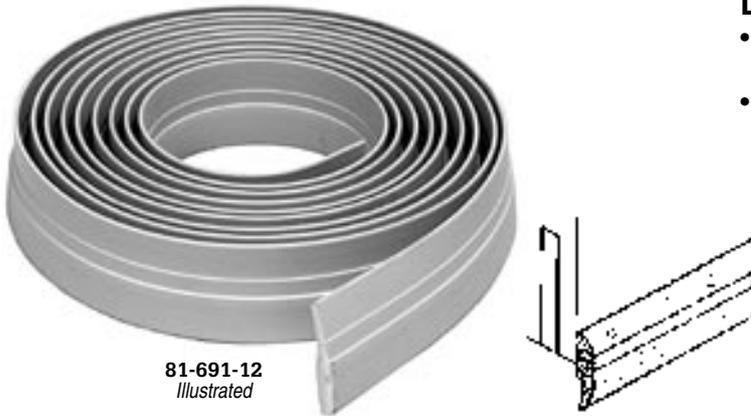
Foamedge Gaskets

Part #	Length	Cushion Diameter	Flange Width
81-3703-100	100'	3/8"	3/8"
81-5005-100	100'	1/2"	1/2"
81-6206-100	100'	5/8"	5/8"
81-7507-100	100'	3/4"	3/4"

Door Sill Gaskets



Refrigeration



81-691-12
Illustrated

Description

- Prevents loss of refrigeration at the bottom of walk-in cooler and freezer doors.
- Available in vinyl and in oil and grease resistant rubber.

Door Sill Gaskets

Part #	Description	Width	Length
81-691-100	Vinyl	1 1/2"	100'
81-691-12	Vinyl	1 1/2"	12'

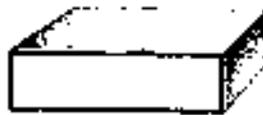
Rectangular Extruded Closed Cell Sealing Strips



81-1220-25
Illustrated

Description

For heavy duty sealing of cold storage and other commercial refrigerator door applications. Applies to door with any commercial adhesive.



Closed Cell Sealing Strips

Part #	Length	Thickness	Width
81-3810-25	25'	3/8"	1"
81-3810-100	100'	3/8"	1"
81-3820-25	25'	3/8"	2"
81-1210-25	25'	1/2"	1"
81-1210-100	100'	1/2"	1"
81-1220-25	25'	1/2"	2"

Rectangular Sponge Rubber Sealing Strips



81-5165-50
Illustrated

Description

- Complete with adhesive back.
- All purpose strip made from closed cell neoprene sponge rubber.
- Easily applied to wood, metal & glass.
- Apply side by side for additional width or in layers for additional thickness.



Sponge Rubber Sealing Strips

Part #	Length	Thickness	Width
81-5324-50	50'	3/16"	1/2"
81-5325-50	50'	3/16"	5/8"
81-5164-50	50'	5/16"	1/2"
81-5165-50	50'	5/16"	5/8"

Window Air Conditioner Strips



81-1144-1
Illustrated

Description

All purpose polyurethane space filler and air seal resists deterioration.

Window Air Conditioner Strips

Part #	Height	Width	Length	Pack
81-1144-1	1 1/4"	1 1/4"	42"	1 pc.

Weather Sealing Strips

ALLTEMP



70-WS2
Illustrated

Weather Sealing Strips

Part #	Description	Dimensions
70-WS2	Foam	72" x 1 1/2" x 3/4"

Sectional Cooler Sealing Strips

AllSEAL



81-P2490
Illustrated

Pressure Sensitive
Adhesive Backing



81-1812
Illustrated

Pressure Sensitive
Adhesive Backing

Description

- Designed for joining walk-in freezer and cooler sectional panels.
- Provides excellent thermal barrier.
- Can be used for a wide variety of other sealing and insulation applications.
- Easy to apply pressure sensitive adhesive on bottom side.

Sectional Cooler Sealing Strips

Part #	Description	Width	Height	Length
81-P2490	Extruded vinyl	1/2"	3/16"	540'
81-1812	Extruded rubber	1 5/8"	1/8"	750'

"Curvall" Gaskets

AllSEAL

Description

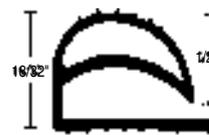
- Extruded rubber gasket specially designed to fit around curved corners without notching
- 14' lengths - also fit on straight sections.



81-CV1402
Illustrated



81-CV1402
15/32" Cushion Height



81-CV1410
18/32" Cushion Height

"Curvall" Gaskets

Part #	Description	Length
81-CV1402	Rubber	14'
81-CV1410	Rubber	14'

When determining the cushion height for your application, the gasket cushion should be compressed a minimum of 1/8" (0.3cm) to a maximum of 3/16" (0.5cm) to obtain the most efficient seal.

Direct Replacement Gasket - Anthony Glass Doors

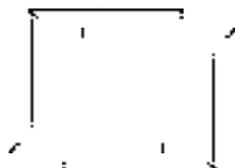
AllSEAL



81-4505
Illustrated

Description

Made from tooling designed for the original equipment manufacturer. Furnished in a set of four L-shaped sections with factory welded corners, with the magnet furnished in a coil inside box. The four L-shaped sections will accommodate the largest size door made in regular production.



Anthony Glass Door Gaskets

Part #	Description
81-4505	Maximum frame size 30" to 77" clearance.



Compression Gaskets

Refrigeration

Compression Gaskets

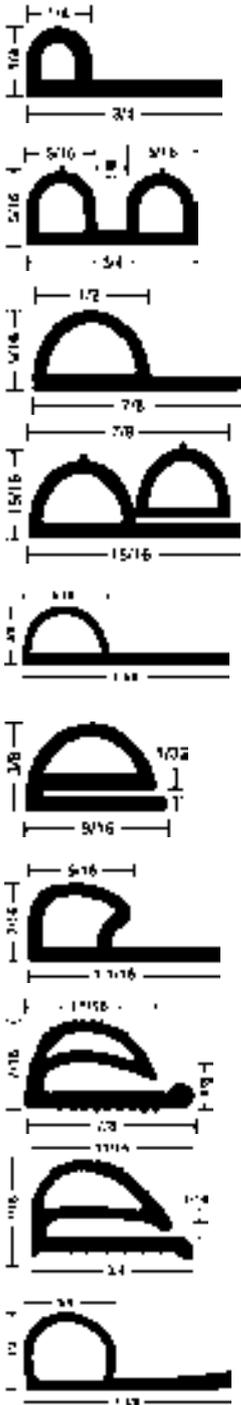
Widely used where an air-tight seal is needed to keep warm and cold temperatures separate.

Notice

- When determining the cushion height for your application, the gasket cushion should be compressed a minimum of 1/8" (0.3cm) to a maximum of 3/16" (0.5cm) to obtain the most efficient seal.

Applications

- Domestic & Commercial refrigeration doors
- Vending units
- Dispensers
- Reach-ins
- Food containers
- Sound barriers
- Bumper strips
- Dust seals
- Thermal insulation



1/4" Cushion Height

Part #	Material*	Length
81-311	Rubber	12'

5/16" Cushion Height

Part #	Material*	Length
81-419	Rubber	12'

5/16" Cushion Height

Part #	Material*	Length
81-1193	Rubber	12'

5/16" Cushion Height

Part #	Material*	Length
81-997	Rubber	12'

3/8" Cushion Height

Part #	Material*	Length
81-1788	Rubber	12'

3/8" Cushion Height

Part #	Material*	Length
81-4868	Vinyl	12'

7/16" Cushion Height

Part #	Material*	Length
81-2523	Rubber	12'

7/16" Cushion Height

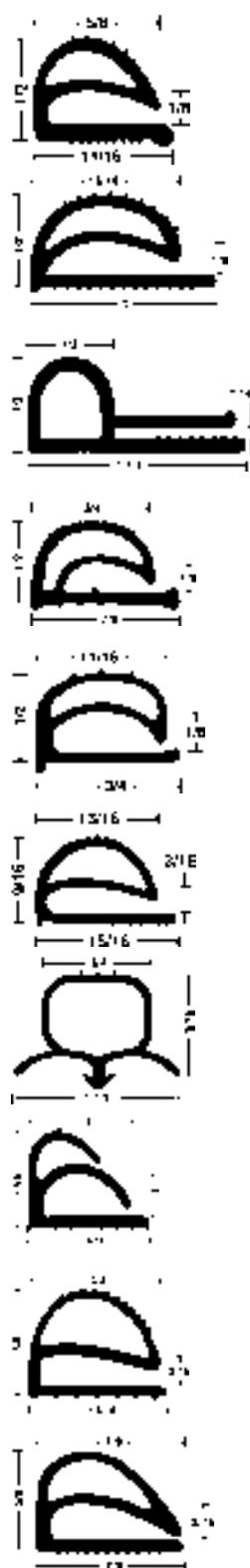
Part #	Material*	Length
81-A5451-12	Vinyl	12'
81-A5451-100	Vinyl	100'

7/16" Cushion Height

Part #	Material*	Length
81-P10431	Vinyl	14'
81-P10431-100	Vinyl	100'

1/2" Cushion Height

Part #	Material*	Length
81-2764	Vinyl	12'
81-2764-100	Vinyl	100'



1/2" Cushion Height

Part #	Material*	Length
81-A6387-12	Vinyl	12'
81-A6387-100	Vinyl	100'

1/2" Cushion Height

Part #	Material*	Length
81-A6662-12	Vinyl	12'
81-A6662-100	Vinyl	100'

1/2" Cushion Height

Part #	Material*	Length
81-6924	Rubber	12'

1/2" Cushion Height

Part #	Material*	Length
81-P10433	Vinyl	15'
81-P10433-100	Vinyl	100'

1/2" Cushion Height

Part #	Material*	Length
81-P10441	Vinyl	14'
81-P10441-100	Vinyl	100'

9/16" Cushion Height

Part #	Material*	Length
81-P1050	Vinyl	14'
81-P1050-100	Vinyl	100'

9/16" Cushion Height "Roll-In Gasket"

Part #	Material*	Length
81-P2152-8†‡	Vinyl	8'

5/8" Cushion Height

Part #	Material*	Length
81-P10246	Rubber	12'

5/8" Cushion Height

Part #	Material*	Length
81-P10338	Vinyl	14'
81-P10338-100	Vinyl	100'

5/8" Cushion Height

Part #	Material*	Length
81-P10427	Vinyl	14'
81-P10427-100	Vinyl	100'

* Extruded

† Note: Bottom flange straightens out to horizontal position when inserted in retainer strip. Width dimension shown is that when gasket is in assembled position on completed unit.

‡ Note: Cushion height dimension shown is that when gasket is in assembled position on completed unit.

Magnetic Gaskets Straight Lengths



Description

Commercial gaskets designed for use on those refrigerator doors having retainer strips imbedded in the foamed-in-place insulation. No fasteners needed. Easy replacement, special arrowhead on gasket underside holds gasket securely in place. No special tools required. Simply install gasket by rolling it into retainer strip opening. Just use an ordinary seam wallpaper roller to do the job.



Roll-In Flange

5/16" Magnet

Part #	Description	Length
81-P2208-8	9/16" to 3/4" clearance	8'

3/8" Magnet

Part #	Description	Length
81-P2778-8	5/16" to 1/2" clearance	8'

1/2" Magnet

Part #	Description	Length
81-P2209-8	7/16" to 5/8" clearance	8'

5/8" Magnet

Part #	Description	Length
81-P2421-8*	7/16" to 5/8" clearance	8'

* Note: Bottom flange straightens out to horizontal position when inserted in retainer strip. Width dimension shown is that when gasket is in assembled position on completed unit.

Magnetic Gaskets Straight Lengths



Description

- Gaskets designed for heavy duty (wide magnets) and medium to light duty (narrow gaskets) applications.



Conventional Flange

5/16" Magnet

Part #	Description	Length
81-P1943-8	7/16" to 5/8" clearance	8'

5/16" Magnet

Part #	Description	Length
81-P2099-8	11/16" to 7/8" clearance	8'

1/2" Magnet

Part #	Description	Length
81-P10698	1/2" to 9/16" clearance	14'

1/2" Magnet

Part #	Description	Length
81-P2319-8	11/16" to 1/8" clearance	8'

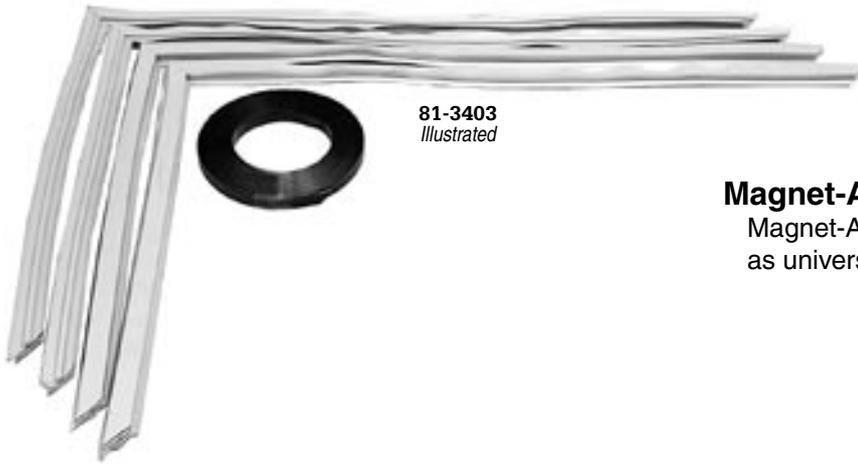
5/8" Magnet

Part #	Description	Length
81-P11026	9/16" to 3/4" clearance	14'

Magnet-All/ Compression-All Gaskets



Refrigeration



81-3403
Illustrated

Magnet-All/ Compression-All Gaskets

Magnet-All and Compression-All gaskets are designed as universal replacement door gaskets.

Conventional Flange - Narrow Magnet



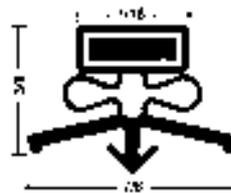
Part #	Description	Max Frame Size
81-2303	5/8" to 13/16"	32" x 56"
81-2304	clearance	37" x 87"



Part #	Description	Max Frame Size
81-2604	11/16" to 13/16" clearance	37" x 87"



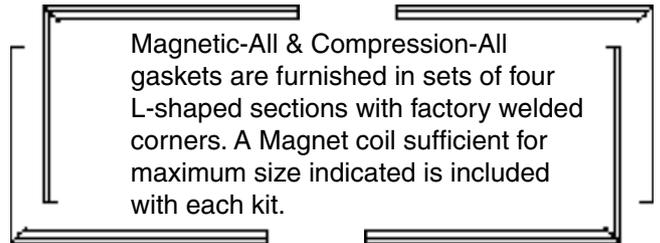
Part #	Description	Max Frame Size
81-2001	11/16" to 7/8" clearance	20" x 32"
81-2002		32" x 42"
81-2003		32" x 56"
81-2004		37" x 87"



Roll-In Flange - Narrow Magnet

Part #	Description	Max Frame Size
81-2703*	5/16" to 1/2"	32" x 56"
81-2704*	clearance	37" x 87"

* Note:
Bottom flange straightens out to horizontal position when inserted in retainer strip. Width dimension shown is that when gasket is in assembled position on completed unit.



Magnetic-All & Compression-All gaskets are furnished in sets of four L-shaped sections with factory welded corners. A Magnet coil sufficient for maximum size indicated is included with each kit.

Conventional Flange - Wide Magnet



Part #	Description	Max Frame Size
81-3103	1/2" to 9/16"	32" x 56"
81-3104	clearance	37" x 87"



Part #	Description	Max Frame Size
81-3003	9/16" to 3/4"	32" x 56"
81-3004	clearance	37" x 87"

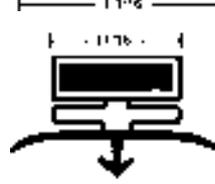


Part #	Description	Max Frame Size
81-3203	11/16" to 7/8"	20" x 32"
81-3204	clearance	32" x 42"



Roll-In Flange - Wide Magnet

Part #	Description	Max Frame Size
81-3303*	7/16" to 5/8"	32" x 56"
81-3304*	clearance	37" x 87"



Part #	Description	Max Frame Size
81-3403*	7/16" to 5/8"	32" x 56"
81-3404*	clearance	37" x 87"

* Note:
Bottom flange straightens out to horizontal position when inserted in retainer strip. Width dimension shown is that when gasket is in assembled position on completed unit.

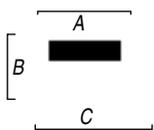
Magnetic Gasket Kits



AllSEAL Kits Include

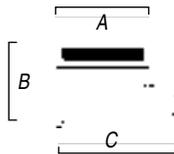
- 4 "L" shaped gasket sections with factory welded corners.
- Sufficient magnet for the maximum size.
- One tube of glue for centre welds.

Commercial Universal



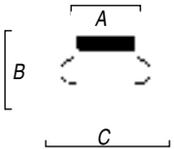
Part #	Maximum Frame Size
81-MK279G-9	50.8cm x 76.2cm (20" x 30")
81-MK279G-14	81.3cm x 121.9cm (32" x 48")
81-MK279G-18	81.3cm x 182.9cm (32" x 72")
A: 1.9cm (3/4") B: 1.3cm (1/2") C: 2.2cm (7/8")	

Commercial Universal



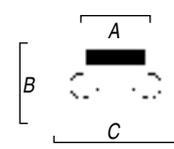
Part #	Maximum Frame Size
81-MK026B-9	50.8cm x 76.2cm (20" x 30")
81-MK026B-14	81.3cm x 121.9cm (32" x 48")
81-MK026B-18	81.3cm x 182.9cm (32" x 72")
A: 1.9cm (3/4") B: 1.6cm (5/8") C: 2.5cm (1")	

Glaze Port • Habco



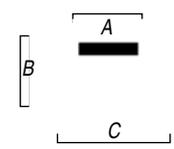
Part #	Maximum Frame Size
81-MK512B-9	50.8cm x 76.2cm (20" x 30")
81-MK512B-14	81.3cm x 121.9cm (32" x 48")
81-MK512B-18	81.3cm x 182.9cm (32" x 72")
A: 1.1cm (7/16") B: 1cm (3/8") C: 2.2cm (7/8")	

Glaze Port



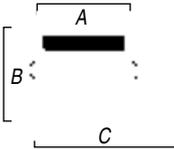
Part #	Maximum Frame Size
81-MK573B-9	50.8cm x 76.2cm (20" x 30")
81-MK573B-14	81.3cm x 121.9cm (32" x 48")
81-MK573B-18	81.3cm x 182.9cm (32" x 72")
A: 1.1cm (7/16") B: 1cm (3/8") C: 1.5cm (7/8")	

Q.B.D. • Habco • Cornelius



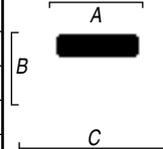
Part #	Maximum Frame Size
81-MK548B-9	50.8cm x 76.2cm (20" x 30")
81-MK548B-14	81.3cm x 121.9cm (32" x 48")
81-MK548B-18	81.3cm x 182.9cm (32" x 72")
A: 1.3cm (1/2") B: 1.7cm (11/16") C: 2.4cm (15/16")	

M.K.E.



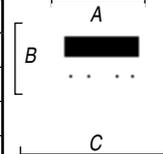
Part #	Maximum Frame Size
81-MK2209G-9	50.8cm x 76.2cm (20" x 30")
81-MK2209G-14	81.3cm x 121.9cm (32" x 48")
81-MK2209G-18	81.3cm x 182.9cm (32" x 72")
A: 1.7cm (11/16") B: 1.3cm (1/2") C: 3cm (1-1/16")	

Foster



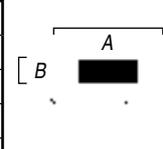
Part #	Maximum Frame Size
81-MK2421G-9	50.8cm x 76.2cm (20" x 30")
81-MK2421G-14	81.3cm x 121.9cm (32" x 48")
81-MK2421G-18	81.3cm x 182.9cm (32" x 72")
A: 1.7cm (11/16") B: 1.3cm (1/2") C: 3cm (1 3/16")	

Foster



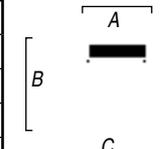
Part #	Maximum Frame Size
81-MK3265G-9	50.8cm x 76.2cm (20" x 30")
81-MK3265G-14	81.3cm x 121.9cm (32" x 48")
81-MK3265G-18	81.3cm x 182.9cm (32" x 72")
A: 1.7cm (11/16") B: 1.3cm (1/2") C: 3cm (1-3/16")	

Anthony • Hussmann



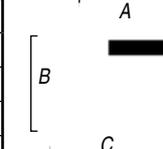
Part #	Maximum Frame Size
81-MK4505B-9	50.8cm x 76.2cm (20" x 30")
81-MK4505B-14	81.3cm x 121.9cm (32" x 48")
81-MK4505B-18	81.3cm x 182.9cm (32" x 72")
A: 1.7cm (11/16") B: 0.5cm (3/16")	

Universal



Part #	Maximum Frame Size
81-MK453W-9	50.8cm x 76.2cm (20" x 30")
81-MK453W-14	81.3cm x 106.7cm (32" x 42")
81-MK453W-16	81.3cm x 139.7cm (32" x 55")
A: 1.1cm (7/16") B: 1.7cm (11/16") C: 1.9cm (3/4")	

Frigidaire



Part #	Maximum Frame Size
81-MK514W-9	50.8cm x 76.2cm (20" x 30")
81-MK514W-14	81.3cm x 182.9cm (32" x 72")
81-MK514W-16	81.3cm x 139.7cm (32" x 55")
A: 1.5cm (9/16") B: 1.7cm (11/16") C: 1.9cm (3/4")	

Domestic Universal



Part #	Maximum Frame Size
81-MK808W-9	50.8cm x 76.2cm (20" x 30")
81-MK808W-14	81.3cm x 182.9cm (32" x 72")
81-MK808W-16	81.3cm x 139.7cm (32" x 55")
A: 1.1cm (7/16") B: 1.7cm (11/16") C: 1.9cm (3/4")	

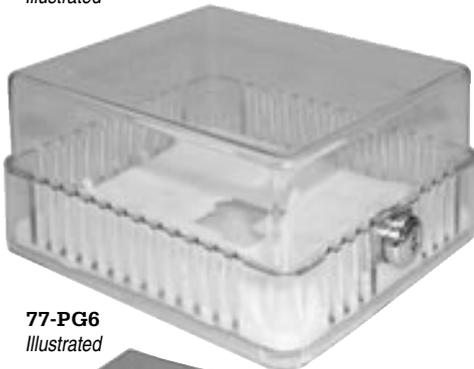
Plastic Thermostat Guards

Features

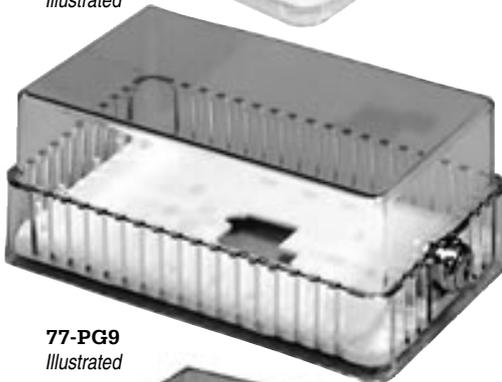
- Hi-impact plastic guards.
- Horizontal and vertical mounting.
- Heavy duty lock and key.
- Comes with complete mounting hardware.
- Each model includes a ring & solid base.
- Colour - clear cover with off white base.



77-PG3
Illustrated



77-PG6
Illustrated



77-PG9
Illustrated



77-PG12
Illustrated

Plastic Thermostat Guards

Part #	Base	Inside Dimensions			Cross Reference	
		L	W	D		
77-PG3	Ring	3.75"	3.50"	2.62"	BTG-EK	F29-0252
	Solid	4.00"	4.00"	2.50"	ECST	029-0178 029-0179
77-PG6	Ring	5.25"	4.62"	3.12"	BTG-K	F29-0251
	Solid	5.75"	5.00"	2.81"	KCBT	F29-0257
77-PG9	Ring	6.31"	3.62"	3.06"	BTG-RK	F29-0253
	Solid	6.62"	4.12"	2.75"	RCBT	029-0143
77-PG12	Ring	8.18"	4.62"	3.56"	BTG-UK	F29-0254
	Solid	8.50"	5.00"	3.87"	UCBT	029-0198

Cross Reference

Enerstat	Alltemp
DSP, DSL, SHC, SHP, SK, SMS Series	77-PG6
ET Series	77-PG9
Maple Chase	Alltemp
09500C, 09505C, 09600C, 09610C	77-PG6
09700C, 09710C	77-PG12
Robertshaw	Alltemp
275-404C	77-PG6
White Rodgers	Alltemp
IE30, IF30, IE31, IF31, IE50, IF51, IE56, IF56	77-PG6
IF72, IF90	77-PG9
Honeywell	Alltemp
T86, T87, TS86 Series, T651, T822, T834, T874, TS822, T6051, T6052	77-PG3
T8022, T8034 Series	77-PG6
T7200, T7400, T8132, T8600, T8601, T8602, T8611, T8621 Series	77-PG12

Mounting Base Types
All mounting bases are plastic.

Reduce Inventory!

Our thermostat guards come complete with hardware, ring and solid bases.



Replacement Parts

Part #	Description
77-F310	Replacement tumbler lock.
77-F339	Replacement Key.

Heating & A/C

Metal Thermostat Guards

Features

- Durable metal guards.
- Horizontal and vertical mounting.
- Heavy duty lock and key.
- Comes with complete mounting hardware.
- Each model includes a ring & solid base.*
- Colour - off white cover with off white base.



77-MG3
Illustrated



77-MG6
Illustrated



77-MG9
Illustrated



77-MG12R - Hinged
Illustrated

Metal Thermostat Guards

Part #	Base	Inside Dimensions			Cross Reference	
		L	W	D		
77-MG3	Ring	5.31"	4.31"	3.00"	BTG-KWM	KMRT
	Solid	5.62"	5.12"	2.87"	BTG-KM	KMST
77-MG6	Ring	6.31"	3.62"	3.18"	BTG-EM	EMST
	Solid	6.62"	4.12"	3.75"	BTG-RM BTG-RWM	RMRT
77-MG9	Ring	6.75"	4.50"	3.43"	BTG-UWM	UMRT
	Solid	7.18"	5.25"	3.43"	BTG-UM	UMST
77-MG12R*	Ring	6.12"	3.81"	3.12"	BTG-54VLW	F29-0256
77-MG12S*	Solid	6.37"	4.25"	3.00"	BTG-54VL	F29-0255

* Hinged metal guards do not come with both bases.

Cross Reference

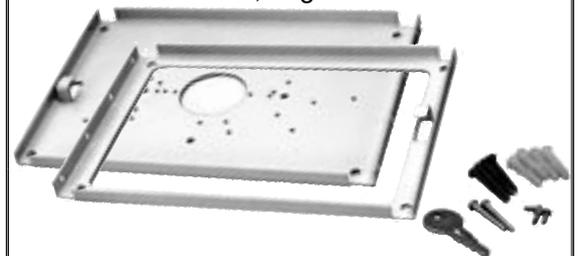
Enerstat	Alltemp
DSP, DSL, SHC, SHP, SK, SMS Series	77-MG3
ET Series	77-MG6
Maple Chase	Alltemp
09500C, 09505C, 09600C, 09610C, 09700C, 09710C	77-MG3
Robertshaw	Alltemp
275-404C	77-MG3
White Rodgers	Alltemp
IE30, IF30, IE31, IF31, IE50, IF51, IE56, IF56	77-MG3
IF72, IF90	77-MG6
Honeywell	Alltemp
T86, T87, TS86, T651, T822, T834, T874, TS822, T6051, T6052, T8022, T8034, T7200, T7400, T8132, T8600, T8601, T8602, T8611, T8621 Series.	77-MG3

Mounting Base Types

- 77-MG3** Plastic
- 77-MG6** Plastic
- 77-MG9** Metal
- 77-MG12R** Metal
- 77-MG12S** Metal

Reduce Inventory!

Our thermostat guards come complete with hardware, ring and solid bases.



Humidifier Pads

ALTEMP

Alltemp Humidifier Pads

- Available for furnace or portable type.
- Keep environment fresh and clean!
- Increase efficiency and life of humidifier!



Furnace Type Humidifier Pads



70-3890-ISN
Illustrated



Portable Type Humidifier Pads



70-3902-S
Illustrated

Furnace Type Humidifier

Part #	Make	Model
70-3802-1	• Carrier	- LB18
	• Lau	- VA2
	• Texaco	
70-3815-2S	• Homart-Sears	- 15
70-3817-2S	• Lau	- L17
70-3824-ISNC	• Acquaduct	- 100555
	• Essomatic	- 105
	• Metro-Vision	- 240
70-3831-IS	• Homart-Sears	- 931
70-3840-ISN	• Walton	- WL-140
70-3841-ISN	• Esso	- Ultramatic 1624
70-3845-ISN	• Montgomery-Ward	- 12
	• Wait-Skuttle	- 45, 45S
70-3850-1	• Electrohome	- FH450G
70-3867-ISN	• General	- 67
70-3890-ISN	• Brock- (Gibarco)	- Gurney-Aire
	• Lobb	- WA-1
	• Montgomery-Ward	- 24
	• Terry	- Exacta 801
	• Wait-Skuttle	- 90, 90S, H100S, 109
70-3897-ISN	• Autoflo	- 97
	• Lennox	- WD2-20

Portable Type Humidifier

Part #	Make	Model
70-3902-S	• Electrohome	- YH7S-301
70-3903-S	• Wait-Skuttle	- 1725-11
70-3906	• Air King	- 64-07901-001

Air Conditioner Filters

ALTEMP



70-AF1500
Illustrated

Air Conditioner Filters

Part #	Description	Dimensions
70-AF1500	Foam	15" x 24"
70-AF1501	Fiberglass	15" x 24"
70-AF1525	Foam	24" x 25"

Drain Tubing

Drain Tubing (Poly-Vinyl)

- Soft shell.
- Does not kink!
- Colour - clear.
- Individually boxed (c/w knock-out hole).



"CLEAR"
Soft Shell

08-2501-100
Illustrated

Part #	ID	OD	Wall	Length	Max. PSI at 70°F
08-2506-100	3/16"	5/16"	1/16	100'	55
08-2500-100	1/4"	3/8"	1/16		55
08-2501-100	3/8"	1/2"	1/16		45
08-2502-100	1/2"	5/8"	1/16		30
08-2503-100	5/8"	3/4"	1/16		30
08-2503-SPEC	1"	1 1/4"	1/8"		25
08-2505-SPEC	7/8"	1 1/8"	1/8"		30
08-2515-100	3/8"	5/8"	1/8"		55
08-2527-100	5/8"	7/8"	1/8"		40
08-2504-50	3/4"	29/32"	5/64"	50'	20
08-2505-50	7/8"	1 1/16"	3/32		20

Operating Temperatures 70°F (Ideal) to 150°F (Max)
Larger rolls or other wall thicknesses available upon request.

Humidifier Tubing



"OPAQUE"
Hard Shell

08-PT4X2X100
Illustrated

Humidifier Tubing (Polyethylene)

- Hard shell.
- Colour - opaque.

Part #	OD.	ID	Length	Working PSI
08-PT4X2X100	1/4"	1/8"	100'	400
08-PTX4X2X1000			1000'	
08-PT4X170-1C		1/6"	100'	
08-PT4X.170-2M			2000'	
08-PT5X3X100	5/16"	3/16"	100'	600
08-PT6X4X100	3/8"	1/4"	100'	400
08-PT8X6X100	1/2"	3/8"	100'	300
08-PT10X8X100	5/8"	1/2"	100'	240

Larger rolls available.

Gas Cock Valves

ALTEMP



**Brass (Indoor) or
Plated (Outdoor)
Applications**

06-FGV Series
Illustrated



FPT Forged Gas Ball Valves

- Brass or plated outdoor.
- Yellow lever handle.
- FNPT x FNPT400 WOG full port.

Brass Indoor Part #	Plated Outdoor Part #	Description
06-FGV38	06-FGV38P	3/8" x 3/8" threaded ball valve.
06-FGV12	06-FGV12P	1/2" x 1/2" threaded ball valve.
06-FGV34	06-FGV34P	3/4" x 3/4" threaded ball valve.
06-FGV1	06-FGV1P	1" x 1" threaded ball valve.
06-FGV114	06-FGV114P	1 1/4" x 1 1/4" threaded ball valve.
06-FGV112	06-FGV112P	1 1/2" x 1 1/2" threaded ball valve.
06-FGV2	06-FGV2P	2" x 2" threaded ball valve.



06-GWH Series
Illustrated



Appliance Forged Gas Ball Valves

- Brass ball valves.
- Yellow wing handle.
- FNPT x FNPT 600 WOG.

Part #	Description
06-GWH12	1/2" threaded ball valve, 3/8" port.
06-GWH34	3/4" threaded ball valve, 1/2" port.



06-FHG Series
Illustrated



Appliance Forged Gas Ball Valves

- Brass ball valves.
- Yellow flat head.
- FNPT x FNPT 600 WOG.

Part #	Description
06-FHGV12	1/2" threaded ball valve head, 3/8" port.
06-FHGV34	3/4" threaded ball valve head, 1/2" port.



06-FP Series
Illustrated



Fireplace Forged Gas Ball Valves

- Brass ball valves.
- Yellow wing handle.
- FNPT x flare 600 WOG.

Part #	Description
06-FP1238	1/2" FPT x 3/8" flare ball valve.
06-FP1212	1/2" FPT x 1/2" flare ball valve.
06-FP3458	3/4" FPT x 5/8" flare ball valve.

Heating & A/C

Water Valves

ALLTEMP



Brass Welded Ball Valves

- Full Port.
- Female sweat connection.
- 600 WOG.

Part #	Description
06-SWV12S	1/2" x 1/2" short handle.
06-SWV12	1/2" x 1/2" long handle.
06-SWV34S	3/4" x 3/4" short handle.
06-SWV34	3/4" x 3/4" long handle.

Boiler Gate Valves

ALLTEMP



Boiler Gate Valve

- Brass drain valve.

Part #	Description
06-BGV12	1/2" NPT x 1/2" hose.
06-BGV34	3/4" NPT x 3/4" hose.

Water Heater Drain Valve

HOTTEMP



Drain Valve

- Non-corrosive glass filled polymer construction.
- Unlike brass, will not deplete anode system.

Part #	Description
39-DV7575	3/4" NPT x 3/4" NPT male hose thread.

Heating & A/C

Teflon[®] Tapes - Standard, Water Line & Gas



Standard (White)

61-70190
Standard (White)
Teflon Tape

Standard Grade Teflon[®] Tape

Unlike those stringy, flimsy tapes that are stretched razor thin before you get them, our better quality white thread sealant tape is 16% thicker than the tapes made for those who are not up on the current standards.

- Thread Seal Tape TF20-1.

61-70190 1/2" x 260" roll

61-70200 1/2" x 520" roll



Water Line (Red)

61-70796
Water Line (RED)
Teflon Tape

Water Line Teflon[®] Tape

Our quality will not be confused with any thin, stringy white tape. It's three times thicker!. Three wraps ensures you of a leak free joint and no call-backs.

- Full Density Thread Seal Tape TF5-15.
- For plumber's and pipe fitters.

61-70796 1/2" x 260" roll.

61-70797 1/2" x 540" roll.



61-70820
Gas (Yellow) Teflon Tape

Gas Teflon[®] Tape (Yellow)

Yellow tape is 4 to 5 times heavier than common white thread seal tapes! Meets national standards and is approved by gas companies world-wide.

- Thread Seal Tape TF5-20.

61-70820 1/2" x 260" rolls

61-70822 1/2" x 260" 40pk.

61-70825 1/2" x 260" 10pk.

Vari-Angle Digital Thermometers - Solar Powered



Vari-Angle Thermometers

The Weiss patented, Digital Vari-angle® Thermometer maintains the strict requirements for thermometers in hydronic applications in that they are self-powered to within 1% accuracy. This reliable series of digital thermometers offers the added feature of stem assemblies for direct replacement of mercury-in-glass types where environmental concerns exist. Whether on new installations or replacements, the Vari-angle Digital Thermometers include the same level of quality that the industry associates with the Vari-angle trademark and all Weiss products.

Heating & A/C



14-DVU35
Illustrated

Pipe Mounted

- Replaces industrial glass "mercury" thermometers stem assembly.

Part #	Description
14-DVU35	3 1/2" Industrial Stem
14-DVU6	6" Industrial Stem

**Range: -45 to 150°C
(-50 to 300°F).**



14-DVD6
Illustrated

Duct Mounted

- Replaces bimetal dial thermometers stem assembly.

Part #	Description
14-DVBM25	2 1/2" x 1/2" NPT Stem
14-DVBM4	4" x 1/2" NPT Stem
14-DVBM6	6" x 1/2" NPT Stem
14-DVD6	6" Stem w/ Duct Mtg. Flange
14-DVD9	9" Stem w/ Duct Mtg. Flange



14-E35
Illustrated



14-DVC-4
Outdoor Cover

Specifications

(Pipe & Duct Vari-Angle Thermometer)

- Case: Hi-impact ABS.
- Range: -45 to 150°C (-50 to 300°F).
- Display: 1/2" LCD digits, wide ambient formula.
- Accuracy: 1% of reading or 1° whichever is greater.
- Resolution: 1/10° between -28 to 93°C (-19.9 to 199.9°F).
- Recalibration: Internal potentiometer.
- Lux Rating: 10 Lux (one foot-candle).
- Update: 10 seconds.
- Ambient Operating: -35 to 60°C (-30 to 140°F).
- Ambient Temp Error: Zero.
- Humidity: 100%.
- Sensor: Glass passivated thermistor.
- Stem Assemblies:

Industrial Glass

- Full Conformance with Fed Spec GG-T-321D.
- Fully interchangeable with Industrial Glass Thermometers.

Bimetallic

- Full conformance with ASME B40.3-1990.
- Fully interchangeable with Bimetallic Dial Thermometers.

Insert Well Stems Adapters

Part #	Description
14-E35*	3/4" NPT 3 1/2" Socket
14-ER6*	3/4" NPT 6" Socket
14-EN6*	3/4" NPT 6" Ext. Socket

* For use with DVU thermometers on new installations.

Accessories

Part #	Description
14-DVC-4	Outdoor Waterproof Cover

Industrial Glass Thermometers



Industrial Glass Thermometers

Weiss 9" Scale Variangle® Thermometers are the industry standard for HVAC applications. Union connection stem is offered for pipeline applications, for chilled and hot water installations with a 3½" stem. Perforated 6" stem with a mounting flange is for air duct use.



14-9VU-240
Illustrated



14-E35
Illustrated

Union Connection Stem

Part #	Range
14-9VU-110	-40 to 110°F
14-9VU-120	0 to 120°F
14-9VU-160	0 to 160°F
14-9VU-180	30 to 180°F
14-9VU-240	30 to 240°F
14-9VU-300	30 to 300°F

14-9VU6-110	-40 to 110°F
14-9VU6-120	0 to 120°F
14-9VU6-160	0 to 160°F
14-9VU6-180	30 to 180°F
14-9VU6-240	30 to 240°F

Air Duct Stems

Part #	Range
14-9VD-120	0 to 120°F
14-9VD-160	0 to 160°F
14-9VD-180	0 to 180°F

Sockets

Part #	Range
14-E35	3/4" NPT 31/2"
14-ER6*	3/4" NPT 6"
14-EN6*	3/4" NPT 6" Ext.

*For use with 9VU thermometer on new installations.

Trade Line Thermometers



Trade Line Thermometers

Weiss TL Thermometers are intended for small pipeline applications for chilled and hot water installations. The compact design is also suitable to limited space requirements. Units are furnished with 5" scale and 2" stem including a 1/2" NPT separable socket.



14-TL5A2-110
Angle Style
Illustrated



14-TL5S2-240
Straight Style
Illustrated

Straight Type

Part #	Range
14-TL5S2-110	-40 to 110°F & °C
14-TL5S2-120	20 to 120°F & °C
14-TL5S2-180	20 to 180°F & °C
14-TL5S2-240	30 to 240°F & °C
14-TL5S2-300	30 to 300°F & °C

Angle Type

Part #	Description
14-TL5A2-110	-40 to 0 to 110°F & °C
14-TL5A2-120	20 to 120°F & °C
14-TL5A2-180	20 to 180°F & °C
14-TL5A2-240	20 to 240°F & °C
14-TL5A2-300	20 to 300°F & °C

HVAC Gauges



HVAC Gauges

Weiss CTS/ CTA pressure gauges are designed to meet the standard specifications for heating, cooling and air conditioning applications. Two types are offered for either stem or surface mounting. Both versions conform with ANSI B40.1 accuracy grade A-1% mid scale.



14-4CTS-100
Illustrated

Stainless Steel Case

- Stem Mounted

Part #	Range
14-4CTS-015	0 to 15 PSI
14-4CTS-030	0 to 30 PSI
14-4CTS-060	0 to 60 PSI
14-4CTS-100	0 to 100 PSI
14-4CTS-160	0 to 160 PSI
14-4CTS-200	0 to 200 PSI
14-4CTS-300	0 to 300 PSI
14-4CTS-VAC	0 to 30" HG VAC
14-4CTS-V30	30 to 0 to 30 PSI
14-4CTS-V60	30 to 0 to 60 PSI



14-4CTA-030
Illustrated

Aluminum Case - Back Flange

- Surface Mounted

Part #	Range
14-4CTA-015	0 to 15 PSI
14-4CTA-030	0 to 30 PSI
14-4CTA-060	0 to 60 PSI
14-4CTA-100	0 to 100 PSI
14-4CTA-160	0 to 160 PSI
14-4CTA-200	0 to 200 PSI
14-4CTA-300	0 to 300 PSI
14-4CTA-VAC	0 to 30" HG VAC
14-4CTA-V30	30 to 0 to 30 PSI
14-4CTA-V60	30 to 0 to 60 PSI

Tri-O-Meters



TRI-O-METERS

The Weiss Tri-O-Meter is designed for use on all types of hot water heating systems. One instrument reads the water pressure, water temperature and system head in feet of H₂O. Available in 2 1/2" dial with 1/4" NPT rear connection and 3 1/2" dial with 1/2" NPT lower or rear connected.



14-CTP40L
Illustrated



14-CTP25R
Illustrated

Tri-O-Meters

Series C - 0 to 75 psi & Ft. of H₂O / 60 to 260°F & °C
Series H - 0 to 200 psi & kPa. / 80 to 320°F & °C

Part #	Description
14-CTP25R	1/4" NPT Rear
14-CTP25RX	1/4" NPT Rear x 2" Ext.
14-CTP40RSX	1/2" NPT Rear
14-CTP40L	1/2" NPT Lower
14-HTP40RSX	1/2" NPT Rear
14-HTP40L	1/2" NPT Lower

Trade Line Gauges



Trade Line Gauges

Weiss TL gauges are intended for general service conditions, for pressure or vacuum on air, oil, water, gas or other mediums that do not attack brass. TL gauges are furnished in drawn steel cases, finished in black. The 1 1/2" dials are supplied with 1/8" NPT and 2" dial versions are available with 1/4" or 1/8" NPT connections. All other dial sizes are 1/4" NPT. All gauges conform with ANSI B40.1 accuracy Grade B-2% mid scale.



14-TL20-100
Illustrated



14-TL45-200
Illustrated

1 1/2" Dial

- 1/8" NPT Lower Connection

Part #	Range
14-TL15-030	0 to 30 PSI
14-TL15-060	0 to 60 PSI
14-TL15-100	0 to 100 PSI
14-TL15-160	0 to 160 PSI
14-TL15-200	0 to 200 PSI

1 1/2" Dial

- 1/8" NPT Back Connection

Part #	Range
14-TL15B-030	0 to 30 PSI
14-TL15B-060	0 to 60 PSI
14-TL15B-100	0 to 100 PSI
14-TL15B-160	0 to 160 PSI
14-TL15B-200	0 to 200 PSI

2" Dial

- 1/4" NPT Lower Connection

Part #	Range
14-TL20-015	0 to 15 PSI
14-TL20-030	0 to 30 PSI
14-TL20-060	0 to 60 PSI
14-TL20-100	0 to 100 PSI
14-TL20-160	0 to 160 PSI
14-TL20-200	0 to 200 PSI
14-TL20-300	0 to 300 PSI
14-TL20-VAC	0 to 30" HG VAC
14-TL20-V30	30 to 0 to 30 PSI
14-TL20-V100	30 to 0 to 100 PSI

2" Dial

- 1/8" NPT Back Connection

Part #	Range
14-TL28-015	0 to 15 PSI
14-TL28-030	0 to 30 PSI
14-TL28-060	0 to 60 PSI
14-TL28-100	0 to 100 PSI
14-TL28-160	0 to 160 PSI
14-TL28-200	0 to 200 PSI
14-TL28-300	0 to 300 PSI
14-TL28-VAC	0 to 30" HG VAC
14-TL28-V60	30 to 0 to 60 PSI
14-TL28-V150	30 to 0 to 150 PSI

2 1/2" Dial

- 1/4" NPT Lower Connection

Part #	Range
14-TL25-015	0 to 15 PSI
14-TL25-030	0 to 30 PSI
14-TL25-060	0 to 60 PSI
14-TL25-100	0 to 100 PSI
14-TL25-160	0 to 160 PSI
14-TL25-200	0 to 200 PSI
14-TL25-300	0 to 300 PSI
14-TL25-VAC	0 to 30" HG VAC
14-TL25-V30	30 to 0 to 30 PSI
14-TL25-V60	30 to 0 to 60 PSI
14-TL25-V100	30 to 0 to 100 PSI
14-TL25-V150	30 to 0 to 150 PSI

3 1/2" Dial

- 1/4" NPT Lower Connection

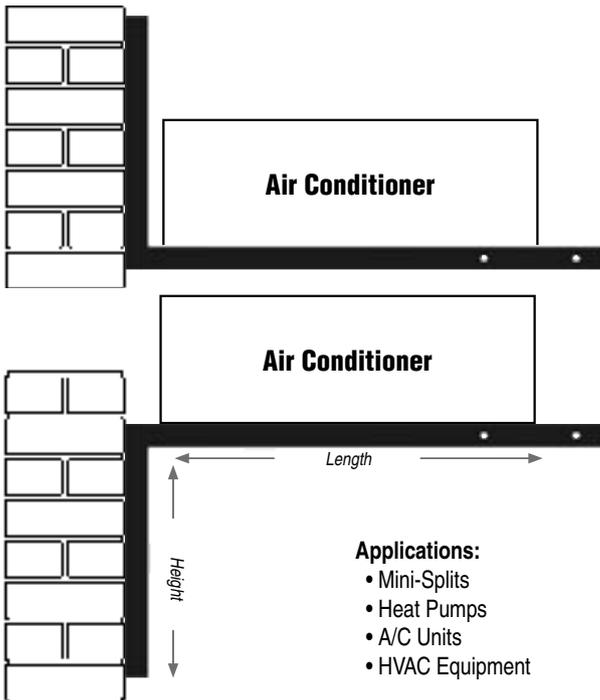
Part #	Range
14-TL35-015	0 to 15 PSI
14-TL35-030	0 to 30 PSI
14-TL35-060	0 to 60 PSI
14-TL35-100	0 to 100 PSI
14-TL35-160	0 to 160 PSI
14-TL35-200	0 to 200 PSI
14-TL35-300	0 to 300 PSI
14-TL35-400	0 to 400 PSI
14-TL35-VAC	0 to 30" HG VAC
14-TL35-V30	30 to 0 to 30 PSI
14-TL35-V60	30 to 0 to 60 PSI
14-TL35-V100	30 to 0 to 100 PSI
14-TL35-V150	30 to 0 to 150 PSI

4 1/2" Dial

- 1/4" NPT Lower Connection

Part #	Range	Part #	Range
14-TL45-015	0 to 15 PSI	14-TL45-300	0 to 300 PSI
14-TL45-030	0 to 30 PSI	14-TL45-VAC	0 to 30" HG VAC
14-TL45-060	0 to 60 PSI	14-TL45-V30	30 to 0 to 30 PSI
14-TL45-100	0 to 100 PSI	14-TL45-V60	30 to 0 to 60 PSI
14-TL45-160	0 to 160 PSI	14-TL45-V100	30 to 0 to 100 PSI
14-TL45-200	0 to 200 PSI	14-TL45-V150	30 to 0 to 150 PSI

A/C Brackets



A/C Wall Brackets

- Full range of sizes
- Reversible mounting
- Heavy-duty steel
- Elongated mounting holes
- Standard colour - Black
- Extra holes for fastening equipment

A/C Wall Brackets

Part #	Length	Height
79-WB2416BLK	24"	24"
79-WB2618BLK	26"	18"
79-WB3014BLK	30"	14"
79-WB3018BLK	30"	18"
79-WB3618BLK	36"	18"
79-WB3624BLK	36"	24"

Applications:

- Mini-Splits
- Heat Pumps
- A/C Units
- HVAC Equipment

Shafts



Shafts

- Sized to bearing manufacturers specifications.
- Slabbed on pulley end.
- Rust protected.
- Individually wrapped.
- Protective end caps.
- Part number and size listed on every shaft.



67-61610
Illustrated

Shafts

Part #	Diameter	Length	Reference
67-61100	3/4"	11"	Lennox, 2100157
67-61110		11 5/8"	Lennox
67-61212		12 3/4"	8-5-495C, 2100002
67-61400		14"	8-5-245C, 2100159
67-61550		15 5/16"	G9, G12-9, 2100160
67-61600		16"	8-6-23608, WW15X36, 2100162, 2100163, 2100198
67-61610		16 5/8"	8-5-240C, G10, G110, 2100011, 2100161
67-61800		18"	8-5-247C, 8-5-241C, 2100012
67-61920		19 1/8"	G12, 2100168
67-62000		20"	M90-256, RS620
67-62200		22"	2100013
67-62400		21"	8-5-243C
67-63600		36"	
67-82000		1"	20"
67-82400	25"		8-5-252C & 255C, M90-257, G15, 2100037, 55, 56, 2100166
67-83600	36"		P-S-209, M90-270, 2100168, 2100052, 210054

Bearings



67-4336-1
Illustrated



67-4036-2
Oil Type Illustrated



67-4136-2
Sealed Type Illustrated



67-4136-R
Illustrated

67-4136-B
Illustrated

67-4046-B
Illustrated



67-2165
Illustrated

Ball Bearings

Bearings complete with collar.

Part #	Bore	OD	Replaces
67-4336-1	3/4"	1 13/16"	LRCR
67-4336-2			(2) Bearings & (2) Collars
67-4346-1	1"	2 1/4"	RCR

Sleeve Bearing Paks

Kits include 2 bearings & 2 rubber sleeves.

Part #	Bore	OD	Type	Replaces
67-4036-2	3/4"	1 25/32"	Oil	Delhi
67-4046-2	1"	2 1/2"		Delhi
67-4135-2	5/8"	1 7/8"	Sealed	Lau
67-4136-2	3/4"	1 13/16"		Delhi
67-4137-2		1 7/8"		Lau & Lennox
67-4138-2	1"	2 1/2"		Torin
67-4146-2				Delhi
67-4147-2				Lau & Lennox
67-4148-2			Torin	

Bearings & Sleeves

Part #	Bore	Type
67-4136-R	3/4"	Rubber sleeve
67-4146-R	1"	Rubber sleeve
67-4136-B	3/4"	Sealed bearing
67-4146-B	1"	Sealed bearing
67-4036-B	3/4"	Oil bearing
67-4046-B	1"	Oil bearing

Thrust Collar Paks

Part #	Description
67-2164	(2) 5/8" collars & washers.
67-2165	(2) 3/4" collars & washers.
67-2166	(2) 1" collars & washers.

Ball Bearings

ALTEMP

Bearing Types Available

ZZ - Double metallic shield (removable).

2RS - Double Rubber (synthetic) shield.

C3 - Radial internal clearance before mounting.



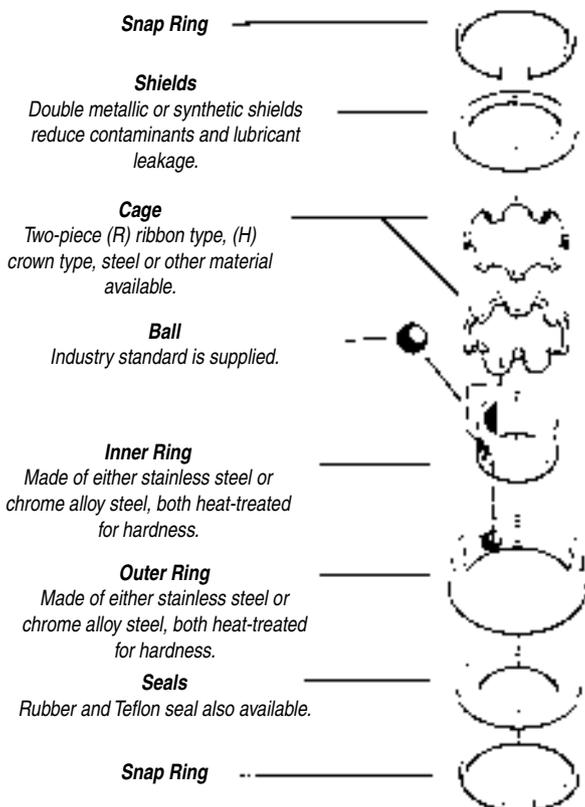
38-6000-2RS
Illustrated

68-6000 Series

Add "2RS", "ZZ" or "C3" to end of part # when ordering.

Part #	ID		OD		Width	
	mm	inches	mm	inches	mm	inches
68-6000	10	0.3937	26	1.0236	8	0.3150
68-6001	12	0.4724	28	1.1024	8	0.3150
68-6002	15	0.5906	32	1.2598	9	0.3543
68-6003	17	0.6693	35	1.3780	10	0.3937
68-6004	20	0.7874	42	1.6535	12	0.4724
68-6005	25	0.9843	47	1.8504	12	0.4724
68-6006	30	1.1811	55	2.1654	13	0.5118
68-6007	35	1.3780	62	2.4409	14	0.5512
68-6008	40	1.5748	68	2.6772	15	0.5906
68-6009	45	1.7717	75	2.9528	16	0.6299
68-6010	50	1.9685	80	3.1496	16	0.6299
68-6011	55	2.1654	90	3.5433	18	0.7087
68-6012	60	2.3622	95	3.7402	18	0.7087
68-6013	65	2.5591	100	3.9370	18	0.7087
68-6014	70	2.7559	110	4.3307	20	0.7874
68-6015	75	2.9528	115	4.5276	20	0.7874
68-6016	80	3.1500	125	4.9212	22	0.8661
68-6017	85	3.3464	130	5.1181	22	0.8661
68-6018	90	3.5433	140	5.5118	24	0.9449

Exploded View Of Ball Bearing



68-6200 Series

Add "2RS", "ZZ" or "C3" to end of part # when ordering.

Part #	ID		OD		Width	
	mm	inches	mm	inches	mm	inches
68-6200	10	0.3937	30	1.1811	9	0.3543
68-6201	12	0.4724	32	1.2598	10	0.3937
68-6202	15	0.5906	35	1.3780	11	0.4331
68-6203	17	0.6693	40	1.5748	12	0.4724
68-6204	20	0.7874	47	1.8504	14	0.5512
68-6205	25	0.9843	52	2.0472	15	0.5906
68-6206	30	1.1811	62	2.4409	16	0.6299
68-6207	35	1.3780	72	2.8346	17	0.6693
68-6208	40	1.5748	80	3.1496	18	0.7087
68-6209	45	1.7717	85	3.3465	19	0.7480
68-6210	50	1.9685	90	3.5433	20	0.7874
68-6211	55	2.1654	100	3.9370	21	0.8268
68-6212	60	2.3622	110	4.3307	22	0.8661
68-6213	65	2.5591	120	4.7244	23	0.9055
68-6214	70	2.7559	125	4.9213	24	0.9449
68-6215	75	2.9528	130	5.1181	25	0.9843
68-6216	80	3.1500	140	5.5118	26	1.0236
68-6217	85	3.3464	150	5.9055	28	1.1023

To convert inches to millimeters - multiply inches by 25.4
To convert millimeters to inches - divide millimeters by 25.4

Heating & A/C

Ball Bearings

Bearing Types Available

- ZZ - Double metallic shield (removable).
- 2RS - Double Rubber (synthetic) shield.
- C3 - Radial internal clearance before mounting.



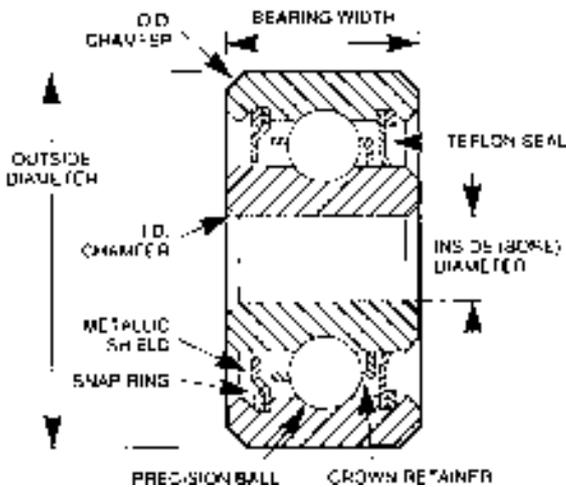
38-6300-2RS
Rubber Type Illustrated

68-6300 Series

Add "2RS", "ZZ" or "C3" to end of part # when ordering.

Part #	ID		OD		Width	
	mm	inches	mm	inches	mm	inches
68-6300	10	0.3937	35	1.3780	11	0.4331
68-6301	12	0.4724	37	1.4567	12	0.4724
68-6302	15	0.5906	42	1.6535	13	0.5118
68-6303	17	0.6693	47	1.8504	14	0.5512
68-6304	20	0.7874	52	2.0472	15	0.5906
68-6305	25	0.9843	62	2.4409	17	0.6693
68-6306	30	1.1811	72	2.8346	19	0.7480
68-6307	35	1.3780	80	3.1496	21	0.8268
68-6308	40	1.5748	90	3.5433	23	0.9055
68-6309	45	1.7717	100	3.9370	25	0.9843
68-6310	50	1.9685	110	4.3307	27	1.0630
68-6311	55	2.1654	120	4.7244	29	1.1417
68-6312	60	2.3622	130	5.1181	31	1.2205
68-6313	65	2.5591	140	5.5118	33	1.2992
68-6314	70	2.7559	150	5.9055	35	1.3780
68-6315	75	2.9528	160	6.2992	37	1.4567
68-6316	80	3.1500	170	6.6929	39	1.5354

Typical 2RS & ZZ Bearing



Add "2RS", "ZZ" or "C3" to end of part # when ordering.

Part #	ID		OD		Width	
	mm	inches	mm	inches	mm	inches
68-634	4	0.1575	16	0.6299	5	0.1969
68-625	5	0.1969	16	0.6299	5	0.1969
68-626	6	0.2362	19	0.7480	6	0.2362
68-607	7	0.2756	19	0.7480	6	0.2362
68-627	7	0.2756	22	0.8661	7	0.2756
68-608	8	0.3150	22	0.8661	7	0.2756
68-6201-500	13	0.5000	32	1.2598	10	0.3937
68-6201-13	13	0.5118	32	1.2598	10	0.3937
68-6202-500	13	0.5000	35	1.3780	11	0.4331
68-6202-625	16	0.6250	35	1.3780	11	0.4331
68-6202-16	16	0.6299	35	1.3780	11	0.4331
68-6203-625	16	0.6250	40	1.5748	12	0.4724
68-6203-16	16	0.6299	40	1.5748	12	0.4724
68-6203-2RSNR	17	0.6693	40	1.5748	12	0.4724
68-6203-750	19	0.7500	40	1.5748	12	0.4724
68-6204-875	22	0.8750	47	1.8504	14	0.5512
68-6205-1	25	1.0000	52	2.0472	15	0.5906

To convert inches to millimeters - multiply inches by 25.4
To convert millimeters to inches - divide millimeters by 25.4

Aluminum Pulleys



67-4325
Illustrated

Variable Speed Pulleys

Part #	Bore	Diameter
67-4325	1/2"	3 1/4"
67-4350		3 1/2"
67-4375		3 3/4"
67-4400		4"
67-5325	5/8"	3 1/4"
67-5350		3 1/2"
67-5375		3 3/4"
67-5400		4"

Cast aluminum pulley manufactured to OEM specifications

Blower pulleys

Part #	Bore	Diameter
67-650*	3/4"	5"
67-660		6"
67-670		7"
67-680		8"
67-690		9"
67-610		10"
67-612		12"
67-860		1"
67-870	7"	
67-880	8"	
67-890	9"	
67-810	10"	
67-812	12"	

* 5" pulley is solid



67-660
Illustrated

Plastic Pulleys



67-41250
Illustrated

Adjustable Plastic Pulleys

Easily adjusts to desired pitch diameter.

Part #	Bore	Diameter
67-41250	1/2"	3 1/4"
67-41252	5/8"	3 1/4"
67-41255	1/2"	4"

Individually shrink wrapped.

V Belt



67-212050
Illustrated

Lennox V-Belt

Part #	Description
67-212050	Replaces Lennox DV 1049.

Single Groove Sheaves - Type 67-AK



Type 67-AK

- Single Groove Sheaves for "4L" or "A" Belts.
- "3L" Belts may be used with these Sheaves as indicated in table below.
- Stock sizes.



Type 67-AK Single Groove Sheaves



67-AK27
Illustrated



Type 1

Type 2

Part #	Diameters			Type	Stock Bores Marked "X" (in.)											Dimensions (in.)				
	OD	DD "A"	Pitch "3L"		1/2	5/8	3/4	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 7/16	F	L	P	C	
67-AK17	1.75	1.50	1.16	1			-													
67-AK20	2.00	1.80	1.46																	
67-AK21	2.10	1.90	1.56		X	X	X	-	-	-	-	-	-	-	-	21/32	15/16	7/16	5/32	
67-AK22	2.20	2.00	1.66																	
67-AK23	2.30	2.10	1.76																	
67-AK25	2.50	2.30	1.96	2																
67-AK26	2.60	2.40	2.06																	
67-AK27	2.70	2.50	2.16																	
67-AK28	2.80	2.60	2.26		X	X	X	-	-	-	-	-	-	-	-	21/32	15/16	7/16	5/32	
67-AK30	3.05	2.80	2.46																	
67-AK32	3.25	3.00	2.66																	
67-AK34	3.45	3.20	2.86																	
67-AK39	3.75	3.50	3.16																	
67-AK41	3.95	3.70	3.36		X	X	X	-	X	X	X	X	X	X	X	3/4	1 5/32	15/32	1/16	

Single Groove Sheaves - Type 67-BK



Type 67-BK

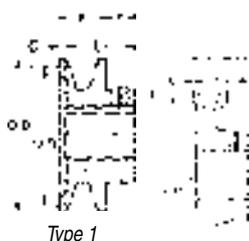
- Single Groove Sheaves - Combination Groove.
- For "4L" or "A" Belts and "5L" or "B" Belts.
- Stock sizes - finished bore.



Type 67-BK Single Groove Sheaves



67-BK27
Illustrated



Type 1

Type 2

Part #	Diameters (in.)			Type	Stock Bores Marked "X" (in.)											Dimensions (in.)				
	OD	DD "A"	DD "B"		1/2	5/8	3/4	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 7/16	F	L	P	C	
67-BK24	2.40	1.80	2.20	1				-												
67-BK25	2.50	1.90	2.30																	
67-BK26	2.60	2.00	2.40		X	X	X	X	-	-	-	-	-	-	-	13/16	1 1/16	13/32	5/32	
67-BK27	2.70	2.10	2.50																	
67-BK28	2.95	2.20	2.60		X	X	X	X	-	-	-	-	-	-	-	13/16	1 1/16	13/32	5/32	
67-BK30	3.15	2.40	2.80	2																
67-BK32	3.35	2.60	3.00																	
67-BK34	3.55	2.80	3.20																	
67-BK36	3.75	3.00	3.40																	
67-BK40	3.95	3.20	3.60		X	X	X	X	-	X	X	X	X	X	X	7/8	1 5/32	13/32	1/8	
67-BK45	4.25	3.50	3.90																	
67-BK47	4.45	3.70	4.10																	
67-BK50	4.75	4.00	4.40																	

Standard Keyseats

Bore Range	Keyseat
1/2"	None
5/8" to 7/8"	3/16"
15/16" to 1 1/4"	1/4"

Single Groove Sheaves - Type 67-AKH

ALTEMP

Type 67-AKH

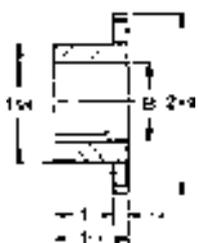
- Single Groove Sheaves for "4L" or "A" Belts .
- "3L" Belts may be used with these sheaves as indicated in table below.
- Stock sizes - With split taper bushings.

Type 67-AKH Single Groove Sheaves

Part #	Diameters			Type	Bush	Dimensions			Stock QH Bores
	Outside	DD "A"	Pitch "3L"			F	X	C	
67-AK30H	3.05	2.80	2.46	1	QH	3/4	-	1 13/16	3/8
67-AK32H	3.25	3.00	2.66						7/16
67-AK34H	3.45	3.20	2.86						1/2
67-AK39H	3.75	3.50	3.16						9/16
67-AK41H	3.95	3.70	3.36						5/8
67-AK44H	4.25	4.00	3.66						11/16
67-AK46H	4.45	4.20	3.86						3/4
67-AK49H	4.75	4.50	4.16						13/16
67-AK51H	4.95	4.70	4.36						7/8
67-AK54H	5.25	5.00	4.66						15/16
67-AK56H	5.45	5.20	4.86	1					
67-AK59H	5.75	5.50	5.16	3	QH	3/4	0	7/8	1 1/8
67-AK61H	5.95	5.70	5.36						1 3/16
67-AK64H	6.25	6.00	5.66						1 1/4
67-AK66H	6.45	6.20	5.86						
67-AK69H	6.75	6.50	6.16						
67-AK71H	6.95	6.70	6.36						
67-AK74H	7.25	7.00	6.66						
67-AK79H	7.75	7.50	7.16						
67-AK84H	8.25	8.00	7.66						



67-AK30H
Illustrated



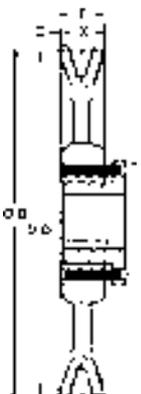
Stock "QG" Bushings



Type 1



Type 2



Type 3

Heating & A/C

Single Groove Sheaves - Type 67-BKH

ALTEMP

Type 67-BKH

- Single groove sheaves - combination groove for "4L" or "A" belts and "5L" or "B" belts stock sizes - with split taper bushings.

Type 67-BKH Single Groove Sheaves

Part #	Diameters			Type	Bush	Dimensions								
	Outside	DD "A"	Pitch "3L"			F	C	X						
67-BK30H	3.15	2.40	2.80	1	QH	7/8	-	1 5/16						
67-BK32H	3.35	2.60	3.00											
67-BK34H	3.55	2.80	3.20											
67-BK36H	3.75	3.00	3.40											
67-BK40H	3.95	3.20	3.60											
67-BK45H	4.25	3.50	3.90											
67-BK47H	4.45	3.70	4.10											
67-BK50H	4.75	4.00	4.40											
67-BK52H	4.95	4.20	4.60						2	QH	7/8	-	7/8	
67-BK55H	5.25	4.50	4.90											
67-BK57H	5.45	4.70	5.10											
67-BK60H	5.75	5.00	5.40											
67-BK62H	5.95	5.20	5.60											
67-BK65H	6.25	5.50	5.90											
67-BK67H	6.45	5.70	6.10											
67-BK70H	6.75	6.00	6.40											
67-BK72H	6.95	6.20	6.60											
67-BK75H	7.25	6.50	6.90	3	QH	7/8	1/16	7/8						
67-BK77H	7.45	6.70	7.10											
67-BK80H	7.75	7.00	7.40											
67-BK85H	8.25	7.50	7.90											
67-BK90H	8.75	8.00	8.40											
67-BK95H	9.25	8.50	8.90											
67-BK100H	9.75	9.00	9.40											
67-BK105H	10.25	9.50	9.90											



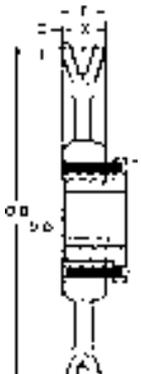
67-BK30H
Illustrated



Type 1



Type 2



Type 3

Two Groove Sheaves - Type 67-2AKH

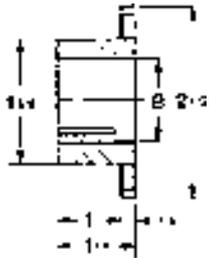
ALTEMP

Type 67-2AKH

- Two groove sheaves For "4L" Or "A" belts.
- "3L" belts may be used with these sheaves as indicated in table below.



67-2AK32H
Illustrated



Stock "QH" Bushings



Type 1



Type 2



Type 3

Type 67-2AKH Two Groove Sheaves

Part #	Diameters			Type	Bush	Dimensions			Stock QH Bores
	Outside	DD "A"	Pitch "3L"			F	X	C	
67-2AK30H	3.05	2.80	2.46	1	QH	1 3/8	15/32	3/16	3/8"
67-2AK32H	3.25	3.00	2.66						7/16
67-2AK34H	3.45	3.20	2.86						1/2
67-2AK39H	3.75	3.50	3.16	2	QH	1 3/8	15/32	1/2	9/16
67-2AK41H	3.95	3.70	3.36						5/8
67-2AK44H	4.25	4.00	3.66						11/16
67-2AK46H	4.45	4.20	3.86						3/4
67-2AK49H	4.75	4.50	4.16						13/16
67-2AK51H	4.95	4.70	4.36						7/8
67-2AK54H	5.25	5.00	4.66	3	QH	1 3/8	15/32	1/2	15/16
67-2AK56H	5.45	5.20	4.86						-
67-2AK59H	5.75	5.50	5.16						1
67-2AK61H	5.95	5.70	5.36						1 1/8
67-2AK64H	6.25	6.00	5.66						1 3/16
67-2AK74H	7.25	7.00	6.66						1 1/4
67-2AK84H	8.25	8.00	7.66		QH	1 3/8	11/32	1/8	1 3/8

Two Groove Sheaves - Type 67-2BKH

ALTEMP

Type 67-2BKH

- Two groove sheaves - combination groove for "4L" or "A" belts and "5L" or "B" belts.



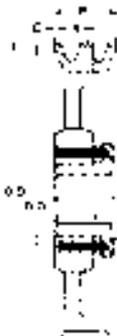
67-2BK32H
Illustrated



Type 1



Type 2



Type 3

Type 67-2BKH Two Groove Sheaves

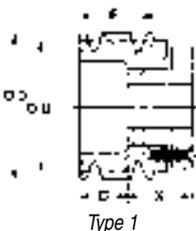
Part #	Diameters			Type	Bush	Dimensions			Stock QH Bores
	Outside	DD "A"	Pitch "3L"			F	X	C	
67-2BK32H	3.35	2.60	3.00	1	QH	1 3/4	7/8	1 5/16	3/8"
67-2BK34H	3.55	2.80	3.20						7/16
67-2BK36H	3.75	3.00	3.40						1/2
67-2BK40H	3.95	3.20	3.60	2	QH	1 3/4	7/8	7/8	9/16
67-2BK45H	4.25	3.50	3.90						5/8
67-2BK47H	4.45	3.70	4.10						11/16
67-2BK50H	4.75	4.00	4.40						3/4
67-2BK52H	4.95	4.20	4.60						13/16
67-2BK55H	5.25	4.50	4.90						7/8
67-2BK57H	5.45	4.70	5.10	3	QH	1 3/4	7/8	1/4	15/16
67-2BK60H	5.75	5.00	5.40						-
67-2BK62H	5.95	5.20	5.60						1
67-2BK65H	6.25	5.50	5.90						1 1/8
67-2BK67H	6.45	5.70	6.10						1 3/16
67-2BK70H	6.75	6.00	6.40						1 1/4
67-2BK80H	7.75	7.00	7.40		QH	1 3/4	7/8	1/4	1 3/8

1 & 2 Groove Cast Iron Sheaves

ALTEMP

1 & 2 Groove Cast Iron Sheaves 1 Grooves, F = 7/8" (67-1B34SH to 67-1B70SDS); F = 1" (67-1B74SDS to 67-1B184SK)

- "A" and "B" combination 1 to 4 groove Cast iron sheaves.
- For "QD" style taper bushings.



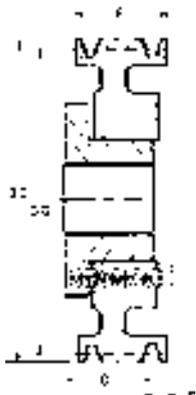
Type 1



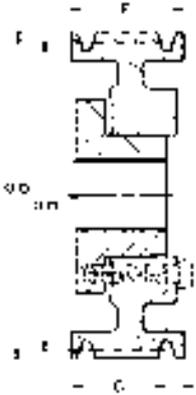
67-1B34SH
Illustrated



Type 2



Type 3



Type 4

Part #	Bushing	Bore Range	Type	D.D.		O.D.	X	C					
				"B" Belts	"A" Belts								
67-1B34SH	SH	1/2" to 1 11/16"	1	3.4	3.0	3.75	0.071"	0.165"					
67-1B36SH				3.6	3.2	3.95							
67-1B38SH				3.8	3.4	4.15							
67-1B40SH	SH	1/2" to 1 11/16"	2	4.0	3.6	4.35	0.062"	0.255"					
67-1B42SH				4.2	3.8	4.55							
67-1B44SH				4.4	4.0	4.75							
67-1B46SDS	SDS	5/8" to 2"	2	4.6	4.2	4.95							
67-1B48SDS				4.8	4.4	5.15							
67-1B50SDS				5.0	4.6	5.35							
67-1B52SDS				5.2	4.8	5.55							
67-1B54SDS				5.4	5.0	5.75							
67-1B56SDS				5.6	5.2	5.95							
67-1B58SDS	SDS	5/8" to 2"	3	5.8	5.4	6.15			0.062"	0.255"			
67-1B60SDS				6.0	5.6	6.35							
67-1B62SDS				6.2	5.8	6.55							
67-1B64SDS				6.4	6.0	6.75							
67-1B66SDS				6.6	6.2	6.95							
67-1B68SDS				6.8	6.4	7.15							
67-1B70SDS	SDS	5/8" to 2"	4	7.0	6.6	7.35	3/4"	0.069"					
67-1B74SDS				7.4	7.0	7.75							
67-1B80SDS				SDS	5/8" to 2"	4					8.0	7.6	8.35
67-1B86SDS											8.6	8.2	8.95
67-1B94SDS									9.4	9.0	9.75		
67-1B110SDS									11.0	10.6	11.35		
67-1B124SDS	SDS	5/8" to 2"	4	12.4	12.0	12.75	7/8"	0.134"					
67-1B136SDS				13.6	13.2	13.95							
67-1B154SK	SK	5/8" to 2 1/2"	15.4	15.4	15.0	15.75	0.069"	0.134"					
67-1B160SK				16.0	15.6	16.35							
67-1B184SK				18.4	18.0	18.75							

2 Grooves, F = 1 3/4"

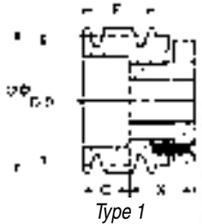
Part #	Bushing	Bore Range	Type	D.D.		O.D.	X	C
				"B" Belts	"A" Belts			
67-2B34SH	SH	1/2" to 1 11/16"	1	3.4	3.0	3.75	13/16"	15/16"
67-2B36SH				3.6	3.2	3.95		1 1/4"
67-2B38SH				3.8	3.4	4.15	0.631"	
67-2B40SH	SH	1/2" to 1 11/16"	2	4.0	3.6	4.35	13/16"	0.631"
67-2B42SH				4.2	3.8	4.55		
67-2B44SH				4.4	4.0	4.75		
67-2B46SDS	SDS	5/8" to 2"	2	4.6	4.2	4.95		
67-2B48SDS				4.8	4.4	5.15		
67-2B50SDS				5.0	4.6	5.35		
67-2B52SDS				5.2	4.8	5.55		
67-2B54SDS				5.4	5.0	5.75		
67-2B56SDS				5.6	5.2	5.95		
67-2B58SDS	SDS	5/8" to 2"	3	5.8	5.4	6.15		
67-2B60SDS				6.0	5.6	6.35		
67-2B62SDS				6.2	5.8	6.55		
67-2B64SDS				6.4	6.0	6.75		
67-2B66SDS				6.6	6.2	6.95		
67-2B68SDS				6.8	6.4	7.15		
67-2B70SK	SK	5/8" to 2 1/2"	4	7.0	6.6	7.35	1 1/4"	0.446"
67-2B74SK				7.4	7.0	7.75		
67-2B80SK				8.0	7.6	8.35		
67-2B86SK				8.6	8.2	8.95		
67-2B94SK	SK	5/8" to 2 1/2"	4	9.4	9.0	9.75	1 1/4"	0.446"
67-2B110SK				11.0	10.6	11.35		
67-2B124SK				12.4	12.0	12.75		
67-2B136SK				13.6	13.2	13.95		
67-2B154SK				15.4	15.0	15.75		
67-2B160SK				16.0	15.6	16.35		
67-2B184SK	18.4	18.0	18.75					

Heating & A/C

3 & 4 Groove Cast Iron Sheaves

3 & 4 Groove Cast Iron Sheaves 3 Grooves, F = 2-1/2"

- "A" and "B" combination 1 to 4 groove Cast iron sheaves.
- For "QD" style taper bushings.



Type 1



67-3B34SH
Illustrated



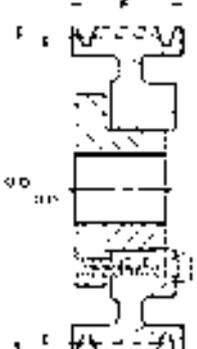
Type 2



Type 3



67-4B34SH
Illustrated



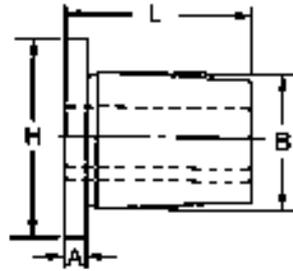
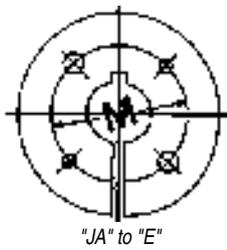
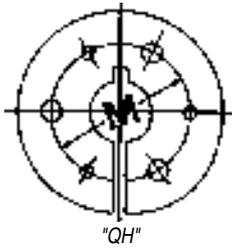
Type 4

Part #	Bushing	Bore Range	Type	D.D.		O.D.	X	C
				"B"Belts	"A"Belts			
67-3B34SH	SH	1/2" to 1 11/16"	1	3.4	3.0	3.75	13/16"	1 11/16"
67-3B36SH				3.6	3.2	3.95		1.819"
67-3B38SH				3.8	3.4	4.15	13/16"	1.006"
67-3B40SH	SH	1/2" to 1 11/16"	2	4.0	3.6	4.35		
67-3B42SH				4.2	3.8	4.55		
67-3B44SH				4.4	4.0	4.75		
67-3B46SD				4.6	4.2	4.95		
67-3B48SD	SD	3/4" to 1 15/16"	2	4.8	4.4	5.15		
67-3B50SD				5.0	4.6	5.35		
67-3B52SD				5.2	4.8	5.55		
67-3B54SD				5.4	5.0	5.75		
67-3B56SD				5.6	5.2	5.95		
67-3B58SD				5.8	5.4	6.15		
67-3B60SD	SD	3/4" to 1 15/16"	3	6.0	5.6	6.35		
67-3B62SD				6.2	5.8	6.55		
67-3B64SD				6.4	6.0	6.75		
67-3B66SD				6.6	6.2	6.95		
67-3B68SD	SK	5/8" to 2 1/2"	3	6.8	6.4	7.15		
67-3B70SK				7.0	6.6	7.35		
67-3B74SK	SK	5/8" to 2 1/2"	4	7.4	7.0	7.75		
67-3B80SK				8.0	7.6	8.35		
67-3B86SK				8.6	8.2	8.95		
67-3B94SK				9.4	9.0	9.75		
67-3B110SK				11.0	10.6	11.35		
67-3B124SK				12.4	12.0	12.75		
67-3B136SK				13.6	13.2	13.95		
67-3B154SK				15.4	15.0	15.75		
67-3B160SK	SK	5/8" to 2 1/2"	4	16.0	15.6	16.35		
67-3B184SK				18.4	18.0	18.75		

4 Grooves, F = 3-1/4"

Part #	Bushing	Bore Range	Type	D.D.		O.D.	X	C
				"B"Belts	"A"Belts			
67-4B34SD	SD	3/4" to 1 15/16"	1	3.4	3.0	3.75	1 1/4"	2.431"
67-4B36SD				3.6	3.2	3.95		
67-4B38SD				3.8	3.4	4.15	1 1/4"	1.256"
67-4B40SD				4.0	3.6	4.35		
67-4B42SD				4.2	3.8	4.55		
67-4B44SD				4.4	4.0	4.75		
67-4B46SD	SD	3/4" to 1 15/16"	2	4.6	4.2	4.95		
67-4B48SD				4.8	4.4	5.15		
67-4B50SD				5.0	4.6	5.35		
67-4B52SD				5.2	4.8	5.55		
67-4B54SD	SD	3/4" to 1 15/16"	2	5.4	5.0	5.75		
67-4B56SD				5.6	5.2	5.95		
67-4B58SD	SD	3/4" to 1 15/16"	3	5.8	5.4	6.15		
67-4B60SD				6.0	5.6	6.35		
67-4B62SD				6.2	5.8	6.55		
67-4B64SD				6.4	6.0	6.75		
67-4B66SD	SK	5/8" to 2 1/2"	3	6.6	6.2	6.95		
67-4B68SD				6.8	6.4	7.15		
67-4B70SK	SK	5/8" to 2 1/2"	4	7.0	6.6	7.35		
67-4B74SK				7.4	7.0	7.75		
67-4B80SK	SK	5/8" to 2 1/2"	4	8.0	7.6	8.35		
67-4B86SK				8.6	8.2	8.95		
67-4B94SK				9.4	9.0	9.75		
67-4B110SK				11.0	10.6	11.35		
67-4B124SK	SK	5/8" to 2 1/2"	4	12.4	12.0	12.75		
67-4B136SK				13.6	13.2	13.95		
67-4B154SF	SF	3/4" to 2 15/16"	4	15.4	15.0	15.75		
67-4B160SF				16.0	15.6	16.35		
67-4B184SF				18.4	18.0	18.75		

Machine Steel Tapered "QD" Type Bushings



Machine Steel Tapered "QD" Type Bushings

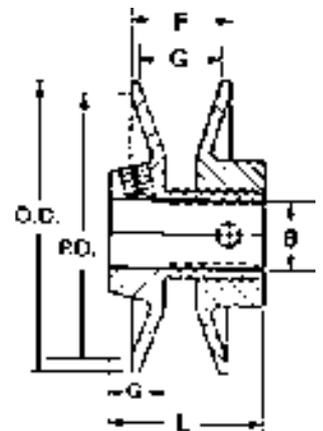
Bushing	Dimensions, Inches						Stock Bore Range			
	A	B	H	L	Bolt Circle M	Cap Screws Required	Minimum	Maximum		
							Standard Keyway	Standard Keyway	Shallow Keyway	No Keyway
67-QH	0.350	1.6250	2 1/2	1.350	2	2 = 1/4 x 3/4	1/2	1 1/4	1 1/2	-
67-JA	5/16	1.3750	2	1	1 21/32	3 = 10 x 1	1/2	1	1 1/4	-
67-SH	3/8	1.8710	2 11/16	1 1/4	2 1/4	3 = 1/4 x 1	1/2	1 3/8	1 5/8	1 11/16
67-SDS	7/16	2.1875	3 3/16	1 5/16	2 11/16	3 = 1/4 x 1 1/4	1/2	1 11/16	1 15/16	2
67-SD	7/16	2.1875	3 3/16	1 13/16	2 11/16	3 = 1/4 x 2	1/2	1 11/16	1 15/16	2
67-SK	1/2	2.1875	3 7/8	1 7/8	3 5/16	3 = 5/16 x 2	1/2	2 1/8	2 1/2	2 5/8
67-SF	1/2	3.1250	4 5/8	2	3 7/8	3 = 3/8 x 2	1/2	2 1/4	2 15/16	-
67-E	7/8	3.8437	6	2 3/4	5	3 = 1/2 x 2 3/4	7/8	2 3/4	3 7/16	3 1/2

Heating & A/C

Variable Pitch Cast Iron Sheaves



67-1VL25
Illustrated



Variable Pitch Cast Iron Sheaves - Light Duty

- Single groove.

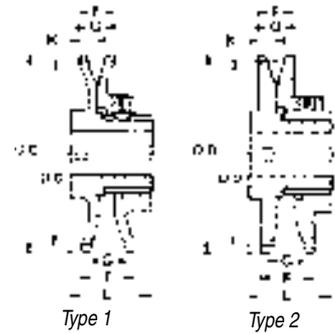
Part #	Diameter Range						Stock Bores Marked "X"				Dimensions						
	"3L" Belts		"4L" or "A" Belts		"5L" or "B" Belts		1/2	5/8	3/4	7/8	OD	F		G		L	X
	Min. Pitch	Max. Pitch	Min. Datum	Max. Datum	Min. Datum	Max. Datum						Max.	Min.	Max.	Min.		
67-1VL25	1.6	2.4	-	-	-	-	X	X	-	-	2.50	25/32	17/32	5/8	3/8	1 1/2	37/64
67-1VL30	1.8	2.7	-	-	-	-					2.87						
67-1VL34	1.7	2.5	1.9	2.9	2.4	3.2					3.15						
67-1VL40	2.3	3.1	2.4	3.4	2.7	3.7	X	X	X		3.75	1	5/8	7/8	1/2	1 11/16	37/64
67-1VL44	2.7	3.5	2.8	3.8	3.1	4.1					4.15						

Single Groove Variable Pitch Sheaves

ALTEMP



67-1VP50S
Illustrated



Single Groove Variable Pitch Sheaves - Heavy Duty

• For "3L", "4L", "5L", "A", "B" and "5V" Belts.

Part #	Type	Diameter Range								Stock Bores Marked "X"								Dimensions						
		"3L" Belts		"4L" or "A" Belts		"5L" or "B" Belts		"5V" Belts										OD	F		G		L	K
		Min. Pitch	Max. Pitch	Min. Datum	Max. Datum	Min. Datum	Max. Datum	Min. Pitch	Max. Pitch	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8		Max.	Min.	Max.	Min.		
67-1VP50S	1	3.3	4.1	3.4	4.4	3.7	4.7	-	-	X	X	X	-	-	-	-	-	4.75	1 1/16	11/16	7/8	1/2	2	25/32
67-1VP50L	2	3.3	4.1	3.4	4.4	3.7	4.7	-	-	-	-	-	X	X	X	-	-	4.75	1 1/8	3/4	7/8	1/2	1 7/8	11/16
67-1VP56S	1	3.9	4.7	4.0	5.0	4.3	5.3	-	-	X	X	X	-	-	-	-	-	5.35	1 1/16	11/16	7/8	1/2	1 7/8	21/32
67-1VP56L	2	3.9	4.7	4.0	5.0	4.3	5.3	-	-	-	-	-	X	X	X	-	-	5.35	1 1/8	3/4	7/8	1/2	1 7/8	11/16
67-1VP60	2	-	-	4.2	5.2	4.3	5.5	-	-	-	-	X	X	-	X	-	X	6.00	1 1/4	7/8	1 1/32	21/32	1 21/32	7/16
67-1VP62	2	4.5	5.3	4.6	5.6	4.9	5.9	5.3	6.3	-	X	X	X	X	X	X	X	5.95	1 1/8	3/4	7/8	1/2	1 29/32	21/32
67-1VP65	2	-	-	4.7	5.7	4.8	6.0	5.2	6.4	-	-	X	X	-	X	-	X	6.50	1 1/4	7/8	1 1/32	21/32	1 21/32	7/16
67-1VP68	2	5.1	5.9	5.2	6.2	5.5	6.5	5.9	6.9	-	X	X	X	X	X	X	X	6.55	1 1/8	3/4	7/8	1/2	1 29/32	21/32
67-1VP71	2	-	-	5.3	6.3	5.4	6.6	5.8	7.0	-	-	X	X	-	X	-	X	7.10	1 1/4	7/8	1 1/32	21/32	1 21/32	7/16
67-1VP75	2	-	-	5.7	6.7	5.8	7.0	6.2	7.4	-	-	X	X	-	X	-	X	7.50	1 1/4	7/8	1 1/32	21/32	1 21/32	7/16

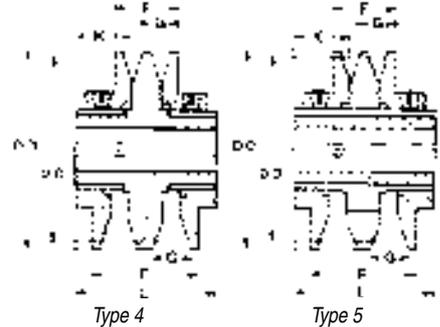
S= 1/2 - 5/8 - 3/4 Bores • L= 7/8 and larger

Two Groove Variable Pitch Sheaves

ALTEMP



67-2VP
Series



Two Groove Variable Pitch Sheaves - Heavy Duty

• For "3L", "4L", "5L", "A", "B" and "5V" Belts.

Part #	Type	Diameter Range								Stock Bores Marked "X"								Dimensions						
		"3L" Belts		"4L" or "A" Belts		"5L" or "B" Belts		"5V" Belts										OD	F		G		L	K
		Min. Pitch	Max. Pitch	Min. Datum	Max. Datum	Min. Datum	Max. Datum	Min. Pitch	Max. Pitch	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8		Max.	Min.	Max.	Min.		
67-2VP36	4	1.9	2.7	2.0	3.0	2.5	3.3	-	-	X	X	X	X	X	-	-	-	3.35	2	1 3/8	13/16	1/2	3	1 3/16
67-2VP42	4	2.5	3.3	2.6	3.6	2.9	3.9	-	-	-	X	X	X	X	X	-	-	3.95	2 1/8	1 3/8	7/8	1/2	3	1 3/16
67-2VP50	5	3.3	4.1	3.4	4.4	3.7	4.7	-	-	-	X	X	X	X	X	-	-	4.75	2 1/8	1 3/8	7/8	1/2	3	1 3/16
67-2VP56	5	3.9	4.7	4.0	5.0	4.3	5.3	-	-	-	X	X	X	X	X	-	-	5.35	2 1/8	1 3/8	7/8	1/2	3	1 3/16
67-2VP60	5	-	-	4.2	5.2	4.3	5.5	-	-	-	-	X	X	-	X	-	X	6.00	2 3/8	1 5/8	1 1/32	21/32	3 1/4	1 1/4
67-2VP62	5	4.5	5.3	4.6	5.6	4.9	5.9	5.3	6.3	-	-	X	X	X	X	X	X	5.95	2 1/8	1 3/8	7/8	1/2	3	1 3/16
67-2VP65	5	-	-	4.7	5.7	4.8	6.0	5.2	6.4	-	-	X	X	-	X	-	X	6.50	2 3/8	1 5/8	1 1/32	21/32	3 1/4	1 1/4
67-2VP68	5	5.1	5.9	5.2	6.2	5.5	6.5	5.9	6.9	-	-	-	X	X	X	X	X	6.55	2 1/8	1 3/8	7/8	1/2	3	1 3/16
67-2VP71	5	-	-	5.3	6.3	5.4	6.6	5.8	7.0	-	-	X	X	-	X	-	X	7.10	2 3/8	1 5/8	1 1/32	21/32	3 1/4	1 1/4
67-2VP75	5	-	-	5.7	6.7	5.8	7.0	6.2	7.4	-	-	X	X	-	X	-	X	7.50	2 3/8	1 5/8	1 1/32	21/32	3 1/4	1 1/4

Centrifugal Blower Wheels

ALTEMP



66-A8660
Illustrated

Applications

- Condensers
- Small Appliance
- Furnaces

Single Inlet Centrifugal Blower Wheels

- All single inlet blower wheels are galvanized steel.
- Rotation determined by viewing closed end.
- Wheel should be guarded.
- Tighten set screw securely.

Heating & A/C

Single Inlet Blower Wheels

Part #	Dia.	Width	Rot'n.	Bore	Max RPM
92-A8223	3 3/4"	2"	CW	1/4"	6500
92-A8222	3 3/4"	2"	CCW	1/4"	6500
66-A8650	3 13/16"	1 1/4"	CW	1/4"	7200
66-A8655	3 13/16"	1 1/4"	CCW	1/4"	7200
66-A8660	4"	1"	CW	1/4"	7200
66-A8665	4"	2"	CW	5/16"	7200
66-A8666	4"	2"	CW	3/8"	4500
66-A8667	4"	2"	CCW	3/8"	4500
66-A8610	4 1/4"	2"	CCW	5/16"	3000
66-A8640	4 1/4"	3"	CW	1/4"	3000
66-2-0542	4 3/4"	3"	CW	5/16"	3600
66-2-0328	4 3/4"	3"	CCW	5/16"	3600
66-2-0697	4 3/4"	3 1/2"	CW	5/16"	3600
66-2-0426	4 3/4"	3 1/2"	CCW	5/16"	3600
66-A508216	5"	2 1/2"	CCW	5/16"	3600
66-A8676	5 1/4"	1 1/4"	CCW	5/16"	2800
66-A508202	5 1/4"	2"	CCW	5/16"	3600
66-2-0253	5 1/4"	2 1/2"	CW	5/16"	3600
66-2-0047	5 1/4"	2 1/2"	CCW	5/16"	3600
66-2-0053	5 1/4"	3"	CW	5/16"	3600
66-2-0054	5 1/4"	3"	CCW	5/16"	3600
66-2-0281	5 3/4"	3"	CW	5/16"	3000
66-2-0350	5 3/4"	3"	CCW	5/16"	3000
66-2-1157	5 3/4"	3 1/2"	CW	5/16"	3000
66-2-0157	5 3/4"	3 1/2"	CCW	5/16"	3000
66-2-0353	5 3/4"	4"	CW	1/2"	2800
66-2-0338	5 3/4"	4"	CCW	1/2"	2800
66-A610215	6"	2 1/2"	CCW	5/16"	3600
66-A610220	6"	2 1/2"	CW	1/2"	3600
66-1-1548	6 5/32"	3 1/4"	CW	1/2"	2200

Table Continues

Single Inlet Blower Wheels - Table Continued

Part #	Dia.	Width	Rot'n.	Bore	Max RPM
66-1-4873	6 5/32"	3 1/4"	CCW	1/2"	2200
66-1-0098	6 5/32"	3 5/8"	CW	1/2"	2000
66-1-4952	6 5/32"	3 5/8"	CCW	1/2"	2000
66-1-9339	6 5/16"	3 7/8"	CW	1/2"	2000
66-1-9340	6 5/16"	3 7/8"	CCW	1/2"	2000
66-1-1077	6 5/16"	4"	CW	1/2"	2000
66-1-9341	6 5/16"	4"	CCW	1/2"	2000
66-A8652	6 5/8"	1 7/16"	CW	5/16"	4000
66-1-1074	7 1/8"	3 1/2"	CW	1/2"	1700
66-1-8350	7 1/8"	3 1/2"	CCW	1/2"	1700
66-1-5931	7 1/8"	3 3/4"	CW	1/2"	1500
66-1-9343	7 1/8"	3 3/4"	CCW	1/2"	1500
66-1-0166	7 1/8"	4"	CW	1/2"	1500
66-1-3978	7 1/8"	4"	CCW	1/2"	1500
66-1-4879	7 1/2"	3 1/2"	CW	1/2"	1800
66-1-6887-R	7 1/2"	9"	CCW	1/2"	1600
66-1-6071	8"	3 1/2"	CCW	1/2"	1850
66-1-0464	8"	3 1/2"	CW	1/2"	1850
66-1-0203	8"	3 1/2"	CCW	1/2"	1850
66-1-0206	8"	4"	CW	1/2"	1650
66-1-0207	8"	4"	CCW	1/2"	1650
66-1-3705	8 1/2"	3"	CW	1/2"	2050
66-1-9344	8 1/2"	3"	CCW	1/2"	2050
66-1-5266	9 1/8"	4 1/4"	CW	1/2"	1500
66-1-5693	9 1/8"	4 1/4"	CCW	1/2"	1500
66-1-4697	9 1/8"	5"	CW	1/2"	1350
66-1-0242	9 1/8"	5"	CCW	1/2"	1350
66-1-4620	9 7/8"	4"	CW	1/2"	1350
66-1-9342	9 7/8"	4"	CCW	1/2"	1350
66-1-2073	9 7/8"	6"	CW	1/2"	1100
66-1-2074	9 7/8"	6"	CCW	1/2"	1100

Centrifugal Blower Wheels

Double Inlet Centrifugal Blower Wheels

- Double inlet blower wheels are either galvanized steel or aluminum.
- Rotation determined by viewing hub extension.
- Wheel should be guarded.
- Tighten set screw securely.



66-A8675
Illustrated

Applications

- Condensers
- Small Appliance
- Furnaces

Double Inlet Blower Wheels

Part #	Dia.	Width	Rot'n.	Bore	Made	Max Rpm
66-A8675	3 3/4"	3 3/12	CCW	5/16	Galv.	5000
66-2-0414	4 3/4"	7"	CW	1/2"	Alum.	3600
66-2-0415	4 3/4"	7"	CCW	1/2"	Alum.	3600
66-2-0223	5 1/4"	7"	CW	1/2"	Galv.	3600
66-2-0891	5 1/4"	7"	CCW	1/2"	Galv.	3600
66-1-2657	5 1/2"	6 1/2"	CW	1/2"	Galv.	2800
66-1-2873	5 1/2"	6 1/2"	CCW	1/2"	Galv.	2800
66-2-0600	5 3/4"	7 5/8"	CW	1/2"	Galv.	3000
66-2-0678	5 3/4"	7 5/8"	CCW	1/2"	Galv.	3000
66-1-4721	5 3/4"	7 7/8"	CW	1/2"	Alum.	1800
66-1-0439	6 1/4"	7"	CW	1/2"	Galv.	2050
66-1-0438	6 1/4"	7"	CCW	1/2"	Galv.	2050
66-2-0549	6 1/4"	7 5/8"	CW	1/2"	Galv.	1800
66-2-0749	6 1/4"	7 5/8"	CCW	1/2"	Galv.	1800
66-1-0315	6 1/4"	7 7/8"	CW	1/2"	Alum.	1725
66-1-0336	7 1/2"	4"	CW	3/4"	Galv.	2700
66-1-0337	7 1/2"	4"	CCW	3/4"	Galv.	270
66-1-8677	7 1/2"	4 1/2"	CW	3/4"	Galv.	2500
66-1-8678	7 1/2"	4 1/2"	CCW	3/4"	Galv.	2500
66-1-0343	7 1/2"	6"	CW	3/4"	Galv.	1950
66-1-0344	7 1/2"	6"	CCW	3/4"	Galv.	1950
66-1-3226	7 1/2"	9"	CW	1/2"	Alum.	1550
66-1-9338	9 1/2"	4"	CW	1/2"	Galv.	2100
66-1-2204	9 1/2"	6"	CW	1/2"	Galv.	1750
66-1-3028	9 1/2"	7"	CW	1/2"	Galv.	1550
66-1-3184	9 1/2"	8"	CW	1/2"	Galv.	1400
66-1-2286	9 1/2"	9 1/4"	CW	1/2"	Galv.	1300
66-1-1532	10 3/4"	4 1/4"	CW	1/2"	Galv.	1750
66-1-1094	10 3/4"	6"	CW	1/2"	Galv.	1550
66-1-3101	10 3/4"	7"	CW	1/2"	Galv.	1350
66-1-2483	10 3/4"	7 3/4"	CW	1/2"	Galv.	1250
66-1-1266	10 3/4"	9 1/4"	CW	1/2"	Galv.	1200
66-1-2640	10 3/4"	10 1/2"	CW	1/2"	Galv.	1150

Fan Coil Blowers



Application

- Heating & Air Conditioning
- High Rise Apartment
- Condominium
- Hotel

Motors Sold Separately

Fan Coil Blowers

Part #	CFM	"A" Dim
66-RFC300	300	6.75"
66-RFC400	400	8.25"
66-RFC600	600	9.0"

Blower Wheel Puller

C&D
valve mfg. co



92-CD3570
Illustrated



Blower Wheel
Puller Assembled.



92-CD3505
1 1/4" Hub

92-CD3515
1 3/8" Hub

92-CD3525
1 1/2" Hub

92-CD3535
1 5/8" Hub

92-CD3560
Allen Wrench

92-CD3555
Set Screws

92-CD3540
Drive Bolt

92-CD3545
Drive Bolt &
Shank

Professional Tools!

A simple method of removing a blower wheel from a shaft. Fast and easy removal of blower wheels without damage to the blower wheel, motor or shaft.

Blower Wheel Puller Kits

Part #	Description
92-CD3570	Puller kit - includes drive bolt, shank, Allen wrench, 1 1/4" to 1 5/8" hubs, durable storage case & instructions.
92-CD3500	Drive bolt, shank & 1 1/4" hub.
92-CD3510	Drive bolt, shank & 1 3/8" hub.
92-CD3520	Drive bolt, shank & 1 1/2" hub.
92-CD3530	Drive bolt, shank & 1 5/8" hub.

Blower Wheel Puller Accessories

Part #	Description
92-CD3505	1 1/4" hub only.
92-CD3515	1 3/8" hub only.
92-CD3525	1 1/2" hub only.
92-CD3535	1 5/8" hub only.
92-CD3540	Drive bolt.
92-CD3545	Drive bolt & shank.
92-CD3555	Set screws (3/pk)
92-CD3560	5/32" Allen wrench.

Heating & A/C

Smoke Emitters



61-S210
Illustrated



61-HT102
Illustrated



61-HT105
Illustrated

Smoke Emitters

Smoke products provide an inexpensive method of generating swirling smoke. This is a great product for testing of all high, medium, and low pressure duct-work systems and also for air balancing. The smoke emitted does not contain oil nor zinc and will not leave any residue. It is non-toxic and has the same density as air, so that it is possible to observe true air movements without the complicating factor of having to allow for the natural rise or fall of the smoke. The particle size is 0.3 to 2.5 microns making it ideal to check HEPA filters. The smoke cartridges produce a generous amount of smoke, which is emitted at a constant rate to help with the identification of flow patterns.

**Check duct work,
filters, air balancing!**

Applications

- "DATAx" designed for super-clean areas like data processing rooms.
- Smoke emitted at constant rate.
- Leak test duct work, air balancing.
- Study make-up air systems.

Part #	Type	Burning Time (seconds)	Cartridge/ Pack	Smoke Emitted (Cu. ft.)
61-S210	Splintax	20	20 matches/ pk	20
61-HT102	Fumax	45	10	150
61-HT103	Fumax KS	90	10	600
61-HT104	Ventax	180	5	1,200
61-HT105	Datax	240	5	2,500
61-HT107	Brandax KS	480	1	18,000

Oil Burner Igniters



Each Igniter Kit Includes: One Igniter, One Base Plate, Mounting Hardware, Electrode Terminals, & Installation Instructions.

Universal Electronic Oil Burner Transformers

- Higher constant output voltage.
- More reliable ignition, especially with cold oil.
- Approximately 75% lower input amps.
- Long life electrodes require less adjustment.
- Smaller, lighter, & more compact than ever.
- Universal mounting bases for most makes & models.

Specifications:

- Input: 120 VAC/ 60 Hz/ 35 VA
- Output Voltage: 6kV RMS/ 20 kV PEAK
- Output Current: 35 mA RMS
- Secondary Mid-point Ground
- Ambient Operating Temperature: -20F° to 150°F
- Storage Temperature: -40°F to 150°F

Beckett Igniter Kits

Part #	Description
65-51838U	Igniter Only (no base plate)
65-51771U	Beckett "A"
65-51824U	Beckett "S"
65-51805U	Beckett AFII
65-51826U	Carlin 100
65-51840U	Carlin 200
65-51825U	Wayne "M"
65-51827U	Wayne "E"
65-51836U	Wayne "HS" (no base plate)
65-51837U	Weil McLain (no base plate)
65-51828U	Aero

Beckett Igniters Replacement Chart

France		Allanson		Carlin	Webster
Transformer	Electronic	Transformer	Electronic	Electronic	Transformer
-	10SAY-01	-	2275	41000-S	-
5LAY-04	10SAY-04	2721-628 (G)	2275-628 (G)	41000-SO-BK1	3-28AB-BAF
5LAY-05	10SAY-05	2721-605	2275-605	41000-SO-BK2	3-28AB-BS
-	10SAY L-70	2721-658	-	-	3-32AB-BAF
5LAY-15	10SAY-15	2721-630	2275-630	41000-SO-CAS	313-28AB85
5LAY-16	10SAY-16	2721-629	2275-629	41000-SO-SC	313-24AB81
5LAY-03	10SAY-03	2721-619	2275-619	41000-SO-WA3	313-28AB91
5LAY-30	10SAY-30	2721-620	2275-620	41000-SO-WA2	313-25AB78
5LAY-31	10SAY-31	2721-647	2275-647	41000-SO-WA1	313-28AB205W
N/A	10SAY-32	-	2275-653	41000-SO-WM	-
5LAY-56	10SAY-56	2721-456	2275-456	41000-SO-AR	3-24AB-AER

Oil Burner Igniter Base Plates



65-51842U Illustrated

Oil Burner Transformer Base Plates

Each base plate includes: one base plate, mounting hardware, electrode terminals, & installation instructions.

Part #	Description	Replaces (Allanson)
65-51830U	Beckett "A"	2607 (2604)
65-51831U	Beckett "S"	2601
65-51929U	Wayne "M"	2602
65-51833U	Wayne "E"	2603
65-51832U	Carlin 100	2605
65-51841U	Carlin 200	2609
65-51834U	Aero	2600
65-51842U	Igniter terminal kit (includes: mounting hardware, electrode terminals & installation instructions)	

Oil Burner Igniter Kit



Universal Electronic Oil Igniter Kit

Entire kit weighs less than one standard transformer. Equipped with two igniters, various terminals, detailed installation instructions and assorted mounting plates makes this one little kit capable of adapting to numerous furnace makes & models.

Universal Electronic Oil Igniter Kit

Part #	Description
65-51846	Kit Includes Igniters For: <ul style="list-style-type: none"> • Aero • Beckett (A, AF, AFG & S) • Carlin (100)



65-51846
Illustrated

Oil Burner Controls



Beckett Oil Burner Controls

Standard Features: (B1032)

- Interrupted Ignition
- Limited Recycle
- Limited Reset
- Communications Port
- Diagnostic LED
- Ambient Range (-40°F to 147°F)
- 15 Second Pre-Purge

R7184 Controls

Part #	Reference
65-7455U	R7184A-1075
65-7456U	R7184B-1032
65-7457U	R7184P-1064
65-7458U	R7184P-1072



65-7455U
Illustrated

Oil Burner Pump



Beckett CleanCut Pump

- Smoother, cleaner shut-downs & light-off.
- Fewer moving parts and troublesome oil fittings to cause problems.
- Reduced load on motor.
- Higher capacity - up to 4 gph at 150-200 psi.
- Same piston valve used in traditional pumps, to provide the same level of protection from leak-through in gravity feed situations.
- Beckett PD (precision delay timer) - a precise valve-on 4-second delay, virtually unaffected by temperature or voltage which eliminates the need for a pre-purge control.

Beckett's Clean-Cut Pump

Part #	Description
65-2184404	Oil pump with precision delay timer.



65-2184404
Illustrated

Oil Burner Motor



Beckett's High Efficiency PSC Motor

Based on proven durability of the AFII motor after 10 years of high reliability in the field.

- Lower amp draw
- Cooler operation
- Fewer failures
- Delivers more power
- Ball bearings for longer life
- 5 year warranty.

**Universal Replacement
For Emerson, GE, A.O
Smith & Marathon.**

Universal High Efficiency PSC Motor

Part #	HP	RPM	Volts	Rotation	Type
T4-R21805U	1/7	3450	120V	CCW	PSC.

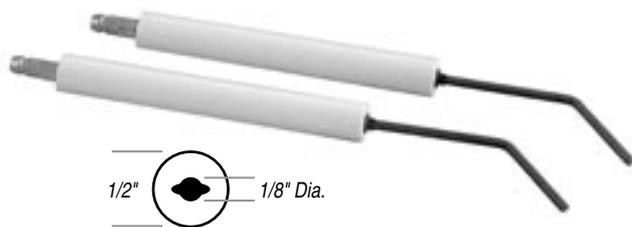
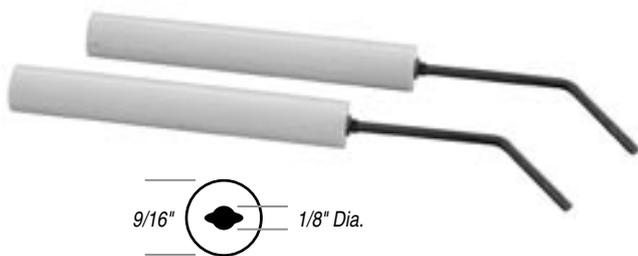
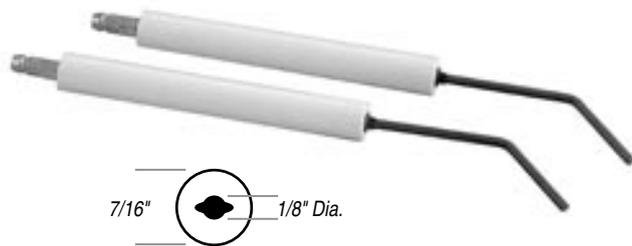


T4-R21805U
Illustrated





Standard Electrodes



Standard Electrodes

7/16" dia. insulator, 1/8" dia. electrode.

Electrode Part #	Insulator Only Part #	Insulator Length	Type of Tip
60-01033	60-11033	3¾"	Heavy 1/8" dia.
60-01040	60-11040	4"	
60-01041	60-11041	4¼"	
60-01042	60-11042	4½"	
60-01043	60-11043	4¾"	
60-01050	60-11050	5"	
60-01060	60-11060	6"	

Add an "S" after part # when ordering straight tip electrodes.

Standard Electrodes

9/16" dia. insulator, 1/8" dia. electrode.

Electrode Part #	Insulator Only Part #	Insulator Length	Type of Tip
60-02040	60-12040	4'	Heavy 1/8" dia.
60-02042	60-12042	4½'	
60-02050	60-12050	5'	
60-02052	60-12052	5½'	
60-02060	60-12060	6'	
60-02070	60-12070	7'	
60-02080	60-12080	8'	
60-02090	60-12090	9'	

Add an "S" after part # when ordering straight tip electrodes.

Standard Electrodes

9/16" dia. insulator, 1/8" dia. electrode.

Electrode Part #	Insulator Only Part #	Insulator Length	Type of Tip
60-03040	60-13040	4'	Heavy 1/8" dia.
60-03050	60-13050	5'	
60-03060	60-13060	6'	

Add an "S" after part # when ordering straight tip electrodes.

Standard Electrodes

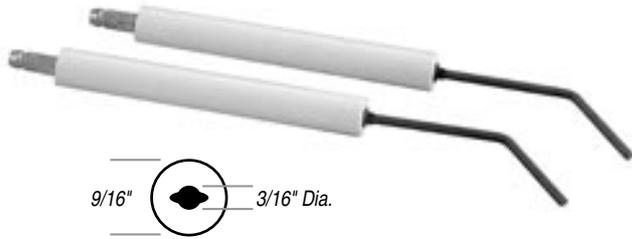
1/2" dia. insulator, 1/8" dia. electrode.

Electrode Part #	Insulator Only Part #	Insulator Length	Type of Tip
60-04040	60-14040	4'	Heavy 1/8" dia.
60-04042	60-14042	4½'	
60-04050	60-14050	5'	
60-04052	60-14052	5½'	
60-04063	60-14060	6'	

Add an "S" after part # when ordering straight tip electrodes.

For Assistance Replacing An OEM Specific Electrode - sales@alltemp.ca

Standard Electrodes



Standard Electrodes

9/16" dia. insulator, 3/16" dia. electrode.

Electrode Part #	Insulator Only Part #	Insulator Length	Type of Tip
60-05030	60-15030	3"	Light 3/32" dia.
60-05033	60-15033	3¾"	
60-05040	60-15040	4"	
60-05042	60-15042	4½"	
60-05050	60-15050	5"	
60-05052	60-15052	5½"	
60-05060	60-15060	6"	
60-05070	60-15070	7"	

Add an "S" after part # when ordering straight tip electrodes.

Standard Electrodes

9/16" dia. insulator, 3/16" dia. electrode.

Electrode Part #	Insulator Only Part #	Insulator Length	Type of Tip
60-06040	60-16040	4"	Light 3/32" dia.
60-06042	60-16042	4½"	
60-06050	60-16050	5"	
60-06060	60-16060	6"	
60-06070	60-16070	7"	

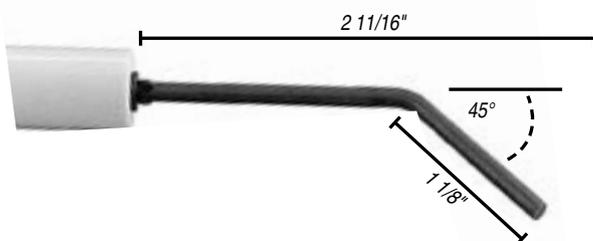
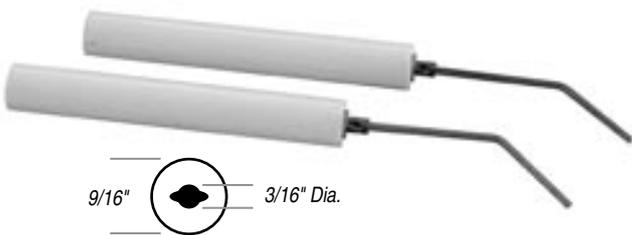
Add an "S" after part # when ordering straight tip electrodes.

Standard Electrodes

1/2" dia. insulator, 3/16" dia. electrode.

Electrode Part #	Insulator Only Part #	Insulator Length	Type of Tip
60-09940	60-19040	4"	Light 3/32" dia
60-09042	60-19042	4½"	
60-09050	60-19050	5"	
60-09060	60-19060	6"	
60-09070	60-19070	7"	
60-09080	60-19080	8"	

Add an "S" after part # when ordering straight tip electrodes.



Notes:

- Longer insulator lengths available upon request.
- Tips can be supplied straight and in standard length of 3".
- Longer lengths can be supplied upon request.
- Add the letter S, after the electrode part number, when ordering the straight electrode.
- Insulators packaged 2, 10 or 25 to a box. Add a — (dash) and the number 2, 10 or 25 to insulator part # when ordering insulators.

For Assistance Replacing An OEM Specific Electrode - sales@alltemp.ca

Electrode Ignition Repair Kit



"Pro" Ignition Repair Kit

This kit contains a variety of ignition terminals, standard electrodes, popular OEM electrodes and other necessary accessories to get burners up and running. Don't leave the shop without it!



60-40275
Illustrated

"Pro" Ignition Repair Kit

Part #	Description	
60-40275	<i>Kit Includes:</i>	
	Standard Electrodes	
	(4) 60-01041	Terminals & Hardware
	(2) 60-03050	(10) 64-50000 Cage terminals.
	(2) 60-04040	(10) 64-50100 Spring terminals.
	(4) 60-05040	(10) 64-50200 Ring terminals.
	(4) 60-05050	(10) 64-50450 Right angle cage terminals.
	(2) 60-05060	(10) 64-50600 Stud ferrule.
	(2) 60-06040	(10) 64-50760 Hex base stud 6-32 threads.
	(2) 60-06042	(10) 64-50700 Hex base stud 10-32 threads.
	(2) 60-06050	(10) 64-50860 Hollow stud 6-32 threads.
	(2) 60-06060	(10) 64-50800 Hollow stud 10-32 threads.
	OEM Electrodes	(10) 64-50900 Eyelets.
	(2) 60-20410 Beckett	(10) 64-60018 Flat hex nut 6-32 threads.
	(2) 60-20780 Carlin	(10) 64-60022 Flat hex nub 10-32 threads.
	(2) 60-28022 Wayne	Special Tools
	Buss Bars	(1) 12-40430 Igniter tip bending set.
	(2) 64-40315 12" round buss bar.	(1) 12-40445 Electrode setting gauge.
	(2) 64-40320 12" flat buss bar.	(1) 12-40630 Booted test leads set.
		(1) 5' length GTO-15 ignition cable.
		(1) Trouble shooting chart.

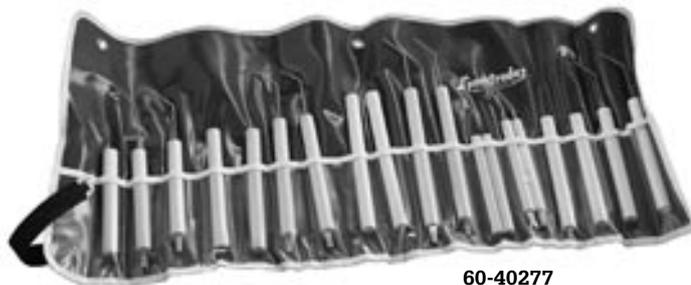
Heating & A/C

Electrode Roll-Up Repair Kits



"Mechanic" Electrode Roll-Up Kit

This kit contains 8 different standard and 2 popular OEM electrode assembly designs. It also comes with 10 of the most universal insulators in the oil heat industry to restore service due to electrode or insulator failure.



60-40277
Illustrated

"Mechanic" Electrode Roll-Up Kit

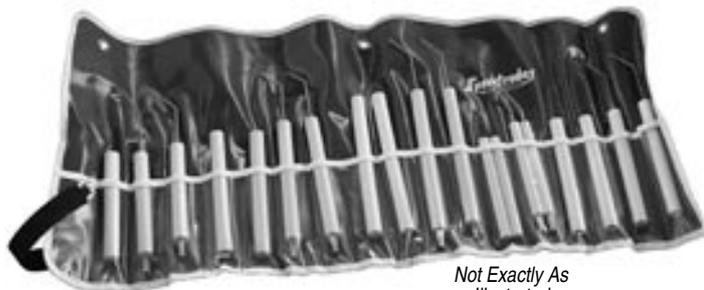
Part #	Description	
60-40277	<i>Kit Includes:</i>	
	Standard Electrodes	Insulators
	(2) 60-05040	60-11041
	(2) 60-05050	60-15040
	(2) 60-05060	60-15050
	(2) 60-06050	60-15060
	OEM Electrodes	60-16050
	(2) 60-27030 Quiet Heat	

Electrode Roll-Up Repair Kits



"Master" Electrode Roll-Up Kit

This kit contains 20 different standard electrodes to provide a variety of repair solutions allowing any master mechanic the ability to restore service due to electrode failure.



Not Exactly As Illustrated

"Master" Electrode Roll-Up Kit

Part #	Description
60-40278	<i>Kit Includes:</i>
	(2) 60-01041
	(2) 60-01060
	(2) 60-02040
	(2) 60-02050
	(2) 60-02060
	(2) 60-04040*
	(2) 60-04040
	(2) 60-05040
	(2) 60-05050
	(2) 60-05060

* With hex nut.

"Serviceman's" Electrode Kit

This kit contains 16 different standard electrodes, 4 OEM electrode assemblies and 20 of the most popular insulators in the industry.



69-40279 Illustrated

"Serviceman's" Electrode Kit

Part #	Description
60-40279	<i>Kit Includes:</i>
	Standard Electrodes
	(4) 60-05040
	(4) 60-05050
	(4) 60-05060
	(4) 60-06050
	OEM Electrodes
	(4) 60-27030 Quit Heat
	Insulators
	(4) 60-11041
	(4) 60-15040
	(4) 60-15050
	(4) 60-15060
	(4) 60-16050

Carlin Electrode Roll-Up Kit

This kit contains 22 of the most popular Carlin replacement electrodes in the field today. These OEM replacements make a perfect match every time!



69-40282 Illustrated

Carlin Electrode Roll-Up Kit

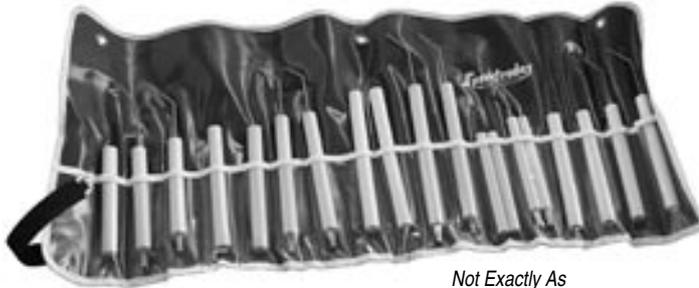
Part #	Description
60-40282	<i>Kit Includes:</i>
	(2) 60-20710
	(2) 60-20720
	(2) 60-20715
	(2) 60-20725
	(2) 60-20730
	(2) 60-20760
	(2) 60-20765
	(2) 60-20770
	(2) 60-20780



Electrode Roll-Up Repair Kits

Beckett Electrode Roll-Up Kit

This kit contains 18 of the most popular Beckett replacement electrodes. A perfect match every time!



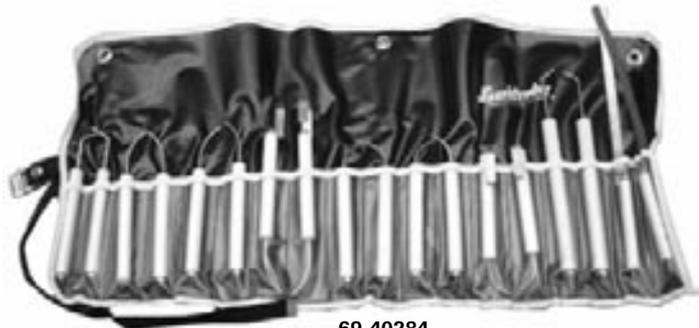
Not Exactly As Illustrated

Beckett Electrode Roll-Up Kit

Part #	Description
60-40283	Kit Includes:
	(2) 60-20410
	(2) 60-20411
	(2) 60-20413
	(2) 60-20414
	(2) 60-20437
	(2) 60-20441
	(2) 60-20415
	(2) 60-20420

Wayne Electrode Roll-Up Kit

This kit contains 18 of the most popular Wayne burner replacement home equipment electrodes. A perfect match every time!



69-40284 Illustrated

Wayne Electrode Roll-Up Kit

Part #	Description
60-40284	Kit Includes:
	(2) 60-28020
	(4) 60-28022
	(2) 60-28023
	(4) 60-28024
	(2) 60-28026
	(2) 60-28028
	(2) 60-28037

Electrode Repair Kit

This kit contains a variety of replacement insulators, rods and accessories to custom make your own electrodes for emergency and long term standard upgrades. A must for any no-heat service calls.



69-40290 Illustrated

Electrode Repair Kit

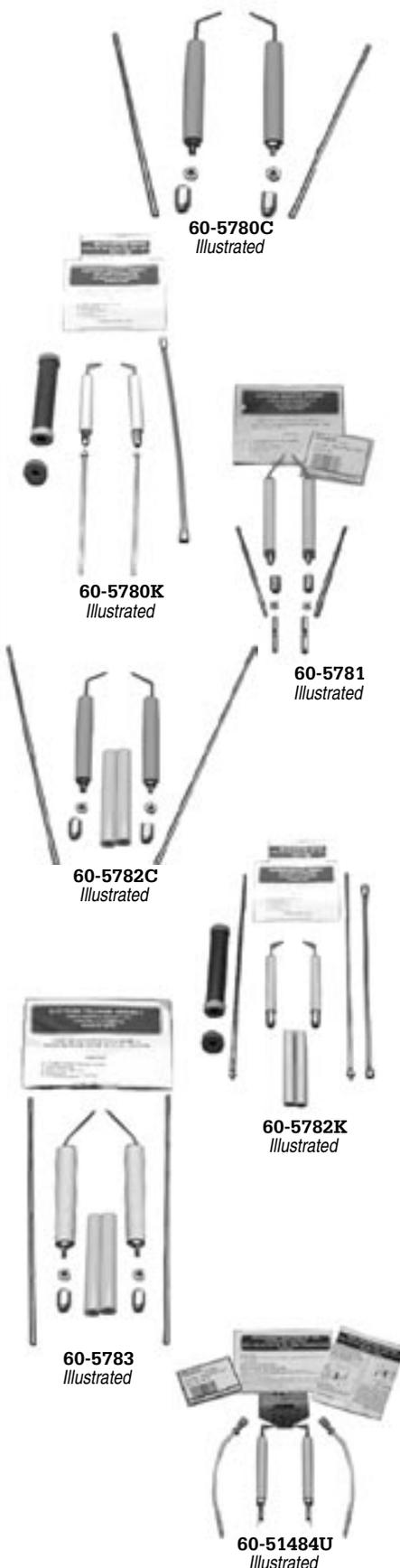
Part #	Description
60-40290	Kit Includes:
	(6) 60-11041 Glazed insulator 7/16" dia x 4 1/4".
	(6) 60-15050 Glazed insulator 9/16 dia x 5".
	(6) 60-16050 Glazed insulator 9/16" dia x 5" with counter bore.
	(3) Package of assorted fasteners, nuts and washers.
	(2) 60-40305 Electrode rod pack 10-32 threads.
	(1) 60-40300 Electrode rod pack 6-32 threads.
(1) 60-40400 Terminal crimping tool/ electrode rod cutter.	

Beckett Electrode Tune Up Kits



Heating & A/C

Beckett Electrode Tune Up Kit



Part #	Description	Models
60-5780C	<i>Kit Includes:</i> (2) Electrode assemblies. (2) Bullet connector studs. (2) Extension rods. (2) 10-32 hex nuts. (1) Instruction sheets.	AFG, AF, AR, SF & SR burners up to 9" air tube combinations.*
60-5780K	<i>Kit Includes:</i> (2) Electrode assemblies w/connector studs. (2) Extension rods. (2) 10-32 hex nuts. (1) Instruction sheets. (1) KK100 coupler w/ end caps. (1) 12" x 3/16" dia copper oil line.	AF, AR, SF & SR burners up to 9" air tube combinations.*
60-5781	<i>Kit Includes:</i> (2) Electrode assemblies. (2) Bullet connector studs. (2) Spring connectors (2) Extension rods. (2) 10-32 hex nuts. (1) Instruction sheets.	A & S burners up to 9" air tube combinations.
60-5782C	<i>Kit Includes:</i> (2) Electrode assemblies. (2) Secondary support insulators. (2) Bullet connector studs. (2) Extension rods. (2) 10-32 hex nuts. (1) Instruction sheets.	AFG, AF, AR, SF & SR burners over 9" air tube combinations.*
60-5782K	<i>Kit Includes:</i> (2) Electrode assemblies w/connector studs. (2) Secondary support insulators. (2) Extension rods. (2) 10-32 hex nuts. (1) Instruction sheets. (1) KK100 coupler w/ end caps. (1) 12" x 3/16" dia copper oil line.	AFG, AF, AR, SF & SR burners over 9" air tube combinations.*
60-5783	<i>Kit Includes:</i> (2) Electrode assemblies. (2) Secondary support insulators. (2) Bullet connector studs. (2) Spring connectors (2) Extension rods. (2) 10-32 hex nuts. (1) Instruction sheets.	A & S burners over 9" air tube combinations.
60-51484U	<i>Kit Includes:</i> (2) Electrode assemblies. (2) Transformer wires. (1) Multi-purpose setting gauge. (1) Instruction sheets.	AFII-85 & AFII-150 with air tube combination models HLX - HB, HC, HD & HE up to 9" air tube combinations.

*Setting gauge sold separately (60-40443).

Beckett Electrode Assemblies



60-5940
Illustrated



60-51345
Illustrated



60-51346
Illustrated



60-578707
Illustrated



60-578723
Illustrated

Beckett Electrode Assembly

Part #	Description	Models
60-5940	<i>Kit Includes:</i> (2) Electrode assemblies. (2) Female connector studs. (2) Extension rods.	MB & MD burners up to 9" air tube combinations.
60-51345	<i>Kit Includes:</i> (2) Electrode assemblies. (1) Instruction sheets.	CF800 & CF500 up to 8" air tube combinations.
60-51346	<i>Kit Includes:</i> (2) Electrode assemblies. (1) Instruction sheets.	CF800 & CF500 over 8" air tube combinations.
60-578707	<i>Kit Includes:</i> (2) Electrode assemblies (EA28406C). (1) Instruction sheets.	AFG, AF, SF & AF-90 series burners. Replaces a variety of private brand name burner models.
60-578723	<i>Kit Includes:</i> (2) Electrode assemblies (EA15802B). (1) Instruction sheets.	AF, AF-44 Series, SF & SM burners. Replaces a variety of private brand name burner models.

*Setting gauge sold separately (60-40443).

Heating & A/C

Carlin Electrode Tune Up Kits



60-40286K
Illustrated

Carlin Electrode Tune Up Kit

Part #	Description	Models
60-40286K	<i>Kit Includes:</i> (2) Electrode assemblies. (1) Yellow electrode setting gauge. (1) Red electrode setting gauge. (1) Instruction sheets. (1) KK100 coupler w/ end caps. (1) 12" x 3/16" dia copper oil line.	98 to 102, Elite, 201 & 301 CRD.

Weil-McLain Electrode Tune Up Kits



60-28091K
Illustrated

Weil-McLain Electrode Tune Up Kit

Part #	Description	Models
60-28091K	<i>Kit Includes:</i> (1) Electrode assembly (644-600-048). (2) Wire ignition leads (644-000-043). (1) Straight oil line 3/16" x 11" (40362B). (1) Coupler w/ end caps (677-700-186). (1) Instruction sheets.	QB-180 & 300.

Heating & A/C

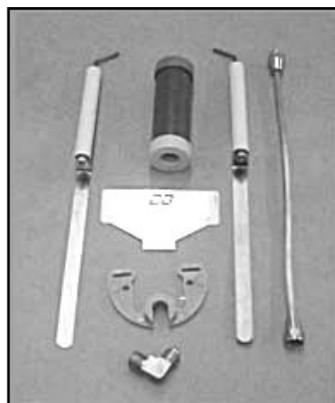
Wayne Electrode Tune Up Kits



60-31156K
Illustrated

Wayne Electrode Tune Up Kit

Part #	Description	Models
60-31156K	<i>Kit Includes:</i> (2) Electrode assemblies (13286). (2) Electrode stems (12550). (2) 8" Buss bars (10004-015). (2) Insulator bushings (12408). (1) Straight oil line 3/16" x 8" (14452). (1) Coupler w/ end caps (13279). (1) Setting gauge (14200). (1) Elbow (13494). (1) Buss bar support (13276). (1) Instruction sheets.	M, MSR, MH, MRA, EH, EHA, EHASR, OE & OEA.
60-31157K	<i>Kit Includes:</i> (1) Electrode assembly w/ buss bar (2166-013). (1) Electrode assembly w/ buss bar (21667-013). (1) Straight oil line 3/16" x 8" (14452). (1) Coupler w/ end caps (100386). (1) Setting gauge (14200). (1) Elbow (13494). (1) Buss bar support (13276). (1) Instruction sheets.	Blue Angle burner model HS.



60-31157K
Illustrated

Electrode Accessories

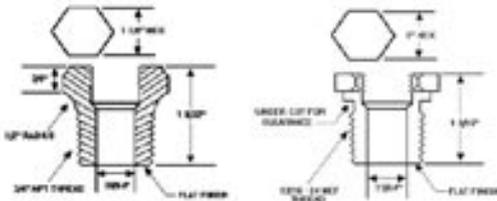


69-45180
Illustrated

69-45190
Illustrated

69-45191
Illustrated

69-45195 to 69-45199
Illustrated



69-45197
Illustrated

69-45198
Illustrated

Hardware & Accessories

Part #	Description
69-45180	Gland nut assembly 13/16"-24 threads.
69-45190	Shell body for 7/16" & 1/2" dia. insulators with 1/2"-14 NPT threads.
69-45191	Shell body for 9/16" dia. insulators with 1/2"-14 NPT threads.
69-45195	Gland nut assembly for 9/16" insulators with 1/2"-14 NPT threads
69-45197	Shell body for 7/16" & 1/2" dia. insulators with 13/16"-24 NEF threads.
69-45198	Shell body for 9/16" dia insulators with 3/4" NPT threads.
69-45199	Gland nut assembly for 1/2" insulators with 1/2"-14 NPT threads.

Electrode Tip Benders



12-40430
Illustrated

Electrode Tip Benders

Made of steel with a plated finish. Used for bending and adjusting electrode and igniter tips, this lightweight tool is pocket size and easy to use. A must to take on every service call.

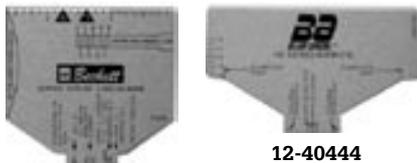
Electrode Tip Benders

Part #	Description
12-40430	One end accommodates 1/8" tips and the other accommodates 3/32" tips.

Electrode Setting Gauges



12-40445
Illustrated



12-40443
Illustrated

12-40444
Illustrated



12-40447
Illustrated

12-40448
Illustrated

Electrode Setting Gauges

Crown carries a full line of specialty setting gauges for Beckett, Carlin and Wayne burners so that you get a perfect spray pattern every time you set an electrode. Why chance an unnecessary call back? Set it right the first time with our original line of OEM electrode setting gauges. We also offer a universal electrode setting gauge in case a specialty gauge is not available.

Electrode Setting Gauges

Part #	OEM	Models
12-40445	Universal	electrode setting gauge.
12-40443	Beckett	AF, AFG, SR, SF.
12-40444	Wayne	Blue Angle HS.
12-40447	Carlin	99-102.
12-40448	Carlin	Elite.

Electrode Rod Packs



Rod Packs

Each pack comes in a plastic pouch containing four electrode rods designed to fit all Crown insulators up to 6" length. Use with Crown Electrode Rod Cutter (T1TR214) for perfect fit.

Electrode Rod Packs

Part #	Description	Replaces
64-40300	<ul style="list-style-type: none"> • 1/8" rod dia. • 6-32 threads. • Fits: 7/16", 1/2" & 9/16" with 1/8" key way bore. 	(ERP6) fits 101, 102, 103 and 104 Series insulators
64-40305	<ul style="list-style-type: none"> • 3/16" rod dia. • 10-32 threads. • Fits: 7/16", 1/2" & 9/16" with 3/16" key way bore. 	(ERP10) fits 105, 106 and 109 Series insulators

Heating & A/C

OEM Electrodes



OEM Electrodes

Direct replacement OEM. electrodes available on request for Auburn and all other oil fired boiler and burner manufacturers.

For Assistance Replacing An OEM Specific Electrode - sales@alltemp.ca

Oil Nozzle Lines



Oil Nozzle Lines

Made of genuine Mueller Streamline dehydrated and nitrogen purged sealed copper tubing. It is of a consistent dead soft temper, bright and thoroughly dried. A cleaning and drying process removes moisture and contaminants.



Oil Nozzle Lines

Part #	Dia	Length	Type
69-40449	3/16"	16"	Straight
69-40450	3/16"	5"	Straight
69-40451	3/16"	8"	Straight
69-40454	3/16"	12"	Straight
69-40455	3/16"	16"	Coiled
69-40456	1/4"	16"	Straight
69-40457	1/4"	16"	Coiled
69-40458	1/4"	12"	Straight
69-40461	1/4"	8"	Straight
69-40463	1/4"	5"	Straight
69-40459	3/16" x 1/4" male/ female reducer.		
69-63454	#41 - 3/16" standard flare nut.		
69-63456	#41 - 1/4" standard flare nut.		

Observation Ports



60-P-38
Illustrated

Observation Ports

Unsurpassed quality! These ports offer unitized cico-weld construction with non-organic gasket in four standard sizes: from 3/8" to 1" diameter. The one piece design is compact and leakproof at high temperatures and pressures. Maximum operating temperature is rated at 400°F.

Observation Ports

Include gaskets.

Part #	Hex Size	Threads	Viewing Area	Maximum Operating Pressure
60-P-38	3/4"	3/8"-18	7/16"	350 psi
60-P-50	7/8"	1/2"-14	5/8"	275 psi
60-P-75	1 1/8"	3/4"-14	3/4"	200 psi
60-P-100	1 3/8"	1"-11.5	1"	150 psi

Applications

- Burner face plates
- Boiler ports
- Magnetic separators
- Gas generators
- Hermetic compressors

Terminal Connectors



64-50000
Cage



64-50100
Spring



64-50200
Ring



64-50250
Hook



64-50400
Angle cage



64-50450
Right angle cage



64-50500
Angle spring



64-50600
Stud ferrule



64-50760 6 - 32
64-52266 8 - 32
64-50700 10 - 32
Hex base stud



64-50761 6 - 32
64-50751 10 - 32
Long hex base stud



64-50850 5 - 40
64-50860 6 - 32
64-50880 8 - 32
64-50800 10 - 32
Hollow thread stud



64-55001
Hex Base Stud/
Short Nylon



64-55011
Stud/angle nylon
cap



64-55021
Base stud/solderless
brass ferrule



64-55101
Solderless ring



64-55201
Solderless spring



64-55211
Spring/angle nylon cap



64-55221
Spring/solderless
brass ferrule

Terminal Connectors



Heating & A/C



64-55231
Spring/ extended
nylon cap



64-55301
Solderless angle
spring



64-55321
Angle spring/
solderless brass
ferrule



64-51550
Cage/cage



64-51560
Spring/spring



64-51650
5/16" Long stud
64-51630
3/8" Long stud
10 - 32 Cage/thread
stud



64-51711
6-32 Thread 1 1/8
long stud



64-51755
5/16 Long stud



64-51900
10-32 thread
64-51960
6-32 thread
Spring/hex base



64-52200
10 - 32 Terminal nut



64-52210
Cage buss bar clip



64-52220
Spring/ buss bar clip



64-52230
10-32 Hex base/
buss bar clip



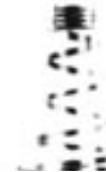
64-52235
10-32 Long hex
base/buss bar clip



64-52263 3-56
64-52266 6-32
64-52260 10-32
Short
Special hex base stud



64-52280
Spring adapter



64-52285
Spring adapter



64-52290
Spring adapter



64-52300
Spring adapter



64-52315
Binding post/ spring



64-52316
Binding post/ cage



64-52340
10-32 Spring contact



64-52350 10-32
Contact post



64-52355
10-32 Special
contact post



64-52356
Steel contact post



64-52365
Short "Y" spring



64-52366
Long "Y" spring



64-52440
Hook/hex base



64-52571
Spring/ drilled
ferrule 0.096 Hole



64-52581
Spring/ 6-32 female
stud

Terminal Connectors



64-52641
Angle spring/
drilled ferrule



64-52800
Cage/steel contact
post



64-52810
Cage/brass contact
post



64-52820
Cage/spring
connector



64-52830
Cage/extended
buss bar clip



64-52840
Cage/special hex
base stud



64-52850
Cage/short "A" spring



64-52860
Cage/adaptor spring



64-52880
Right angle cage/
cage



64-52891
Dpc hex base stud 6-32
thread



64-52900
Small insulated nut
10-32 thread



64-52915
Cage/large insulated
nut



64-52916
Spring/large
insulated nut



64-52920
Cage/Web



64-32849
Webster clip.



64-45000
7/16" ID x 9/16" OD
64-45010
7/16" ID x 1/2" OD
Adapter bushing.



64-45020
9/16" ID x 5/8" OD x 1"
Dravo bushing.



69-45030
9/16" ID x 3/4" OD x 7/16"
Brass bushing.



64-45031
1/2" ID x 3/4" OD x 7/16"
1/8" Grooved bushing.



64-45220
7/16" ID x 9/16" OD x 3/4"
Ray bushing.



64-45196
3/4" NPT to 1/2" NPT
Reducer bushing.



64-45150
9/16" ID x 23/32" OD x 1/16" TK
Cleaver Brooks retainer ring.



69-45160
Walter Kidde buss bar.



64-45170
10-32 threads.
64-45173
6-32 threads.
Threaded stud.



69-45171
ABC/ Sunray
Stud spring assembly
- OAL 6 1/4"



69-45172
ABC/ Sunray
Right angle/ stud spring assembly
- OAL 6 1/8".

Ignition Terminal Mini-Kit



64-41800
Illustrated

Ignition Terminal Mini Kit

An assortment of ignition terminals in a sturdy hinged plastic box.

Part #	Description
64-41800	Kit Includes: (20) 64-50000 cage. (12) 64-50100 spring. (20) 64-50200 ring. (10) 64-50400 angle cage. (12) 64-50600 stud ferrule.

Ignition Terminal Deluxe Kit



64-41810
Illustrated

Ignition Terminal Deluxe Kit

Part #	Description
64-41810	Kit includes: (1) 64-40400 terminal crimping tool electrode rod cutter. (1) 64-40436 1/4" x 5/16" combo ratchet set. (12) 64-50000 cage. (12) 64-50100 spring. (12) 64-50200 ring. (12) 64-50400 angle cage. (12) 64-50600 stud ferrule. (12) 64-50760 6-32 hex base stud. (12) 64-50700 10-32 hex base stud. (12) 64-50860 6-32 hollow thread stud. (24) 64-50800 10-32 hollow thread stud. (12) 64-51550 cage/cage. (12) 64-51630 cage/thread stud. (12) 64-52210 cage/buss bar clip. (12) 64-45580 transformer clip. (12) 64-52260 10-32 hex base stud. (12) 64-52340 10-32 spring contact.

Webster Terminal Adapter Kit



64-41812
Illustrated

Webster Terminal Adapter Kit

Part #	Description
64-41812	Kit Includes: (2) 64-51550 cage/cage. (2) 64-52316 binding post/cage. (2) 64-52800 cage/ steel contact post. (2) 64-52810 cage/ brass contact post. (2) 64-52840 cage/ hex base stud. (2) 64-52850 cage/ short "A" spring. (2) 64-52860 cage/ adapter spring. (2) 64-52920 cage/ web.

Ignition Terminal Tool Kit



64-41815
Illustrated

Ignition Terminal Tool Kit

Part #	Description
64-41815	Kit Includes:
	(24) 64-50000 cage.
	(24) 64-50100 spring.
	(24) 64-50200 ring.
	(24) 64-50300 split ring.
	(24) 64-50400 angle cage.
	(24) 64-50450 right angle cage.
	(24) 64-51000 ferrule.
	(100) 64-50900 eyelets.
	(1) crimping tool.

Transformer Kit



64-41805
Illustrated

Transformer Kit

Part #	Description
64-41805	Kit Includes:
	(6) 64-45580 transformer clip.
	(6) 64-50800 10-32 hollow thread stud.
	(6) 64-51550 cage/cage.
	(6) 64-52210 cage/buss bar clip.
	(6) 64-52230 hex/buss bar clip.
	(6) 64-52260 10-32 hex base stud.
	(6) 64-52290 spring adapter.
	(6) 64-52300 spring adapter.
	(4) 64-52315 binding post.
	(2) 64-52340 10-32 spring contact.
	(6) 64-52350 10-32 contact post.

Transformer Contact Kit



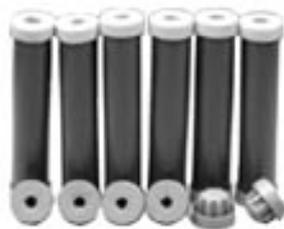
Transformer Contact Kit

Part #	Description
64-TCK1	Kit Includes:
	(2) 64-45580 contact buss bar clips.
	(2) 64-60010 #10 split lock washer.
	(2) 64-60999 #10 flat washer.
	(2) 64-60022 10-32 hex nut.
	(12) 64-50600 stud ferrule.
	(12) 64-50760 6-32 hex base stud.
	(12) 64-50700 10-32 hex base stud.
	(12) 64-50860 6-32 hollow thread stud.

Oil Burner Couplings - Pioneer



62-41200
Illustrated



62-41200-6
Illustrated

K100 Koupling King II

Part #	Description	Package
62-41200	<ul style="list-style-type: none"> • 5" coupler assembled. • 1/2" motor end cap. • 7/16" & 5/16" pump end caps. 	1/pk Carded
62-41200-6	<ul style="list-style-type: none"> • 5" coupler assembled. • 1/2" motor end cap. • 7/16" & 5/16" pump end caps. 	6/pk Poly bagged & tagged

K112 Koupling King II

Includes everything needed to replace almost any defective domestic burner coupler.

Part #	Description	Package
62-41210	<ul style="list-style-type: none"> • (12 ea) 6" x 1" O.D. assembled couplers with 1/2" & 5/16" end caps. • (4 ea) 1/2" motor end caps. • (3 ea) 5/16" pump end caps. • (8 ea) 7/16" pump end caps. 	12/pk Boxed



62-41210
Illustrated



62-41215
Illustrated

K120 Koupling King II

Part #	Description	Package
62-41215	<ul style="list-style-type: none"> • 5" coupler assembled. • Two 1/2" motor end caps. • 5/8", 7/16", 3/8" & 5/16" pump end caps. 	1/pk Carded

KK400 Ultra Pioneer Coupling Kit

The Ultra Coupling Kit provides everything the service technician needs for instant, on the job burner coupling repair and replacement.

Part #	Description	Package
62-41400	<ul style="list-style-type: none"> • (10) 12" length coupler shaft tubing. • (24) 1/2" end caps - gray. • (8) 7/16" end caps - orange. • (2) 3/8" end caps - yellow. • (16) 5/16" end caps - green. • (2) 5/8" end caps - blue. • Torrington adapter. • 10 pk repl. blades for Cutter. • Handi-Cutter tool. 	Flambeau utility box



62-41400
Illustrated



Oil Burner Couplings - Pioneer



62-KK500
Illustrated

Pioneer Ready Fit OEM Couplers

- Ready to use on the most popular burners.
- Strong and lightweight.
- Unaffected by humidity.
- No cutting or fitting necessary.
- 12 assembled couplers per box.
- Unaffected by oil and most chemicals.
- Reliable.

Pioneer Ready Fit OEM Couplers

Part #	OEM	Model
62-KK500B	Beckett	2454
62-KK500C	Carlin	201 to 301 CRD
62-KK500CA	Carlin	99RJE, 1020J, CRD 98 to 102.
62-KK500CA1	Carlin	1020 Mini Pump
62-KK500W	Wayne	13279
62-KK500WA	Wayne	100386
62-KK500WM	Weil-McLain	QB to 180 & 300

Custom lengths available upon request.

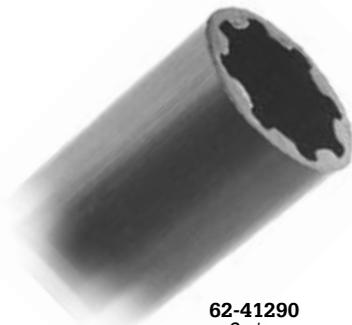


62-41280
Series

Pioneer Coupling End Caps

- Super strong and extremely tough plastic end caps.
- Built to take high torque, shock and stops.

Part #	Diameter	Colour
62-41280	5/16"	Green
62-41282	3/8"	Yellow
62-41283	7/16"	Orange
62-41284	1/2"	Gray
62-41285	5/8"	Blue



62-41290
Series

Pioneer Coupling Tubing

- Designed from the same ridged urethane tubing as the popular KK100 kits.
- Great for making your own customer lengths.

Part #	Diameter	Length
62-41293	1"	6"
62-41292	1"	12"
62-41291	1"	15"
62-41290	1"	36"

Flame Detectors



69-45610
Illustrated

Flame Detectors

Flame detectors are hand crafted and tested twice, once before assembly and once after. Flame detectors are made of a hermetic glass to metal seal and cadmium sulfide for sensing. You'll find these sensors to be the best of their kind.

C-10 Flame Detectors

Part #	Replaces
69-45610	Direct replacement for Honeywell model C554A (replacement cell part # 130367, 120320 & 124607)

Specifications

Maximum Voltage:	30 VAC
Max. Cell Surface Temp.:	180°F
Method of Sensing:	Cadmium Sulfide
Maximum Resistance:	Min. 300 Ohms
During Firing:	Max. 2000 Ohms



69-45620
Illustrated

C-20 Flame Detectors

Part #	Replaces
69-45620	Replaces cell in White Rodgers 956 and 956-1 assemblies (old style)

Heating & A/C

Buss Bar Connectors



Buss Bars

Three types of solid brass buss bars are available in standard lengths of 6", 8", 10" & 12". Longer lengths are available upon request.

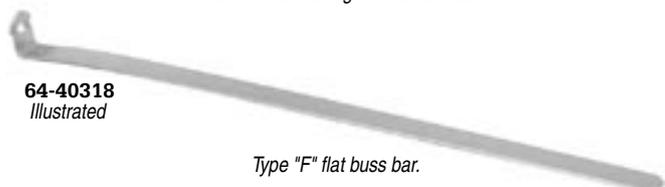
- "F" series flat buss bars feature 3/8" wide x 0.040 thick 260 brass alloy.
- The "E" and "S" series rounded buss bars feature annealed 1/8" diameter 303 stainless steel with 6-32 roll threads.



64-40322
Illustrated

Type "S" 1/8" diameter round straight buss bar threaded one end.

Type "E" 1/8" diameter round buss bar. Similar to type S except none threaded end is designed with a round hook.



64-40318
Illustrated

Type "F" flat buss bar.

Buss Bar Connectors

Type "E" Part #	Type "S" Part #	Type "F" Part #	Length
64-40309	64-40322	64-40316	6"
64-40311	64-40324	64-40318	8"
64-40313	64-40325	64-40319	10"
64-40315	64-40326	64-40320	12"

Silicone Ignition Wire and GTO Cable



80-41650
Illustrated

Applications

- Transformer cable leads
- Ignition leads
- Wire connections not to exceed specifications.



Not Exactly As
Illustrated

Applications

- Ovens
- Furnaces
- Air conditioning equipment
- Gas fired Appliances

7mm GTO - 15 Cable

- Made of solid thermoplastic elastomer.
- UL & CSA listed

7mm GTO-15 Cable

Part #	Description
80-41650	25' reel.
80-41652	100' reel.
80-41654	500' reel.
80-41656	1000' reel.

Specifications:

Wire Colour:	Black
Wire Gauge:	14 AWG
Stranding:	19 x 0.014" bare copper
Insulating Thickness:	0.098"
Temperature:	105°C
Voltage:	15 kVAC
O.D.:	0.270"± 0.002"
UL Style:	E135239
CSA. Style:	74278

7mm Silicone Cable

- Advanced silicone rubber insulated ignition wiring material.
- Acceptable in igniter devices tested by the American Gas Association Laboratories.

7mm Silicone Cable

Part #	Description
80-41660	25' reel.
80-41661	100' reel.
80-41662	500' reel.

Specifications:

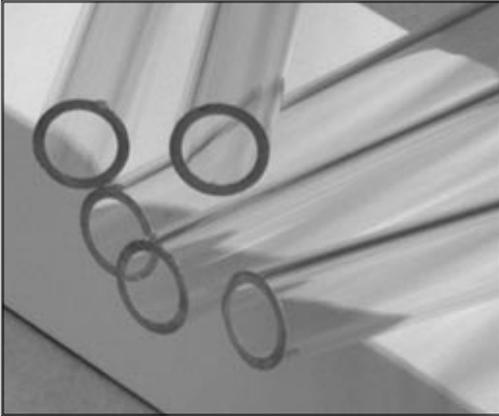
Wire Colour:	Red
Wire Gauge:	18 AWG
Stranding:	16/30 nickel plated copper
Insulating Thickness:	0.113"
Temperature:	250°C
Voltage:	25 kVDC/ 10KV/ 60 Hz
O.D.:	0.274"± 0.002"
UL Style:	E64787
CSA. Style:	Not Applicable

Gauge Glasses



Standard Gauge Glass

This glass is widely used in low pressure steam boiler applications. Easily cut to size using Crown's squeeze and pop cutter 12-40420. Sizes are standard but other lengths are available upon request.



Standard Glass

Part #	Dia.	Length	Maximum Recommended Working Pressure (psi)	
			Temp Up To 150°F	Steam Boiler Up To 425°F
69-40500	5/8"	8"	205	100 psi
69-40505		10"		
69-40510		12"		
69-40515		14"	190	
69-40525		18"		
69-40530		24"		
69-40532		36"	165	

* Maximum recommended length in this service is 24".

High Pressure Gauge Glass

These high pressure gauge glasses are made from Schott's heat resistant Borosilicate brand tubing. They are a very popular model in the industry for their super versatility.



High Pressure Gauge Glass

Part #	Dia.	Length	Maximum Recommended Working Pressure (psi)	
			Temp Up To 150°F	Steam Boiler Up To 425°F
69-40535	5/8"	8"	435	320
69-40540		10"	420	312
69-40545		12"	410	305
69-40550		14"	390	295
69-40555		18"	360	280
69-40560		24"	320	255
69-40566		36"	245	*

* Maximum recommended length in this service is 24".

High Pressure Red-Line Gauge Glass

Red stripe on a white background gives a special optical effect which makes liquid level stand out clearly. This feature allows for easy viewing of liquid levels from greater distances.



High Pressure Red-Line Gauge Glass

Part #	Dia.	Length	Maximum Recommended Working Pressure (psi)	
			Temp Up To 150°F	Steam Boiler Up To 425°F
69-40557	1/2"	24"	280	270
69-40565	5/8"	12"	335	280
69-40570		14"	325	275
69-40572		16"	315	270
69-40576		24"	265	255
69-40578		36"	205	*
69-40584	3/4"	12"	330	275

* Maximum recommended length in this service is 24".

Heating & A/C

Gauge Glass Washers



69-40593
Illustrated

69-40595
Illustrated

Standard Gauge Glass Washers

Part #	Dia.	Washer Specifications		Wall	Package
		I.D.	O.D.		
69-40593	5/8"	9/16"	11/16"	1/4"	12/pk
69-40595	3/4"	3/4"	15/16"	1/4"	12/pk



69-GGW
Series

Marvel Gauge Glass Washers

Part #	Dia	Outside Dia.	Outside Depth	Package
69-GGW1-12	1/2"	13/16"	9/32"	12/pk
69-GGW21-12		7/8"	3/8"	12/pk
69-GGW3-12	5/8"	7/8"	9/32"	12/pk
69-GGW31-12	3/4"	1"	3/8"	12/pk
69-GGW53-12		1 1/4"	1/2"	12/pk
69-GGW57-12		15/16"	3/8"	12/pk
69-GGW7-12		1 1/4"	13/32"	12/pk

Brass Friction Rings



Brass Friction Rings

Part #	Description	Dia.	Washer Specifications			Package
			I.D.	O.D.	Thickness	
69-58BW	Used with 69-40593 gauge glass washers.	5/8"	5/8"	27/32"	1/32"	12/pk
69-34BW	Used with 69-40595 gauge glass washers.	3/4"	3/4"	15/16"	1/32"	12/pk

Porcelain & Gauge Glass Cutter



12-40420
Illustrated

Porcelain & Gauge Glass Cutter

Designed for cutting insulators and gauge glass in the field. Simple to use, operate just like a pair of pliers. Plastic coated handles for a comfortable grip.

Porcelain & Gauge Glass Cutters

Part #	Description
12-40420	"Squeeze and pop" tool with cutting chain (12-40422). Poly bagged and tagged for display.

Oil Filters



"Quick Spin II"

Spin On Fuel Filter - Elements only

- Engineered and designed for high efficiency domestic fuel oil burners for superior filtration, 10 micron!
- Effectively removes rust, scale and other microscopic impurities that might hamper burner operation.
- Replaces Gar-Ber® R cartridge and mounts on existing heads or you can use our own (Part # 69-41437).

Quick Spin II Filters Replace or Fit:

- Gar Ber 11VF-OB.
- Mitco 264-91M.
- Wix 24100.
- Nozzle Guard NG3300-M.
- Essex.
- Sid Harvey 290-6M.
- Crown Quick Spin I.



69-41436
Illustrated

Features

- Designed for superior filtration - 10 microns!
- Contains 10% more filter media than traditional filters.
- Epoxy coated bottom won't rust from water.
- No internal metal parts.
- Flat bottom makes filters easily stackable.
- Spill proof with supplied plastic cover.

"Quick Spin II" Spin On Filter Elements only.

Part #	Specifications	Package
69-41436	Dimensions:	4 5/8" height x 3 7/16" diameter.
	Canister Type:	Triple corrosion resistant.
	Filtering Area:	550 ² ".
	Filtering Media:	Resin treated cellulose.
	Rated Work Temp.:	140°F.
	Melting Point:	1100°F.
	Rated Flow Rate:	25 gallons per hour.
	Max. Flow Rate:	120 gallons per hour.
	Rated Work PSI:	12 psi.
	Collapse PSI:	18 psi.
	Min. Burst PSI:	60 psi.
Micron Rating:	10.	
Certifications:	UL & cUL listed.	
		6 individual filter elements with O-ring post gaskets located under a molded plastic dirt shield.



69-41439
Illustrated



"Quick Spin II"

Spin On Filter Kit - Elements & Head

- Engineered and designed for high efficiency domestic fuel oil burners for superior filtration, 10 micron!
- Effectively removes rust, scale and other microscopic impurities that might hamper burner operation
- Replaces Gar-Ber® 11-VR cartridge and head mount. (Mounting brackets & vacuum gauges available - call for price & availability)

"Quick Spin II" Spin On Filter Kit

Elements with head.

Part #	Description	Package
69-41439	Kit includes 69-41436 filter with 69-41437 filter head mount.	6 individual filter elements with head mount and O-ring post gaskets.

"Quick Spin II"

Spin On Filter - Head Mount Only

- Manufactured from cast aluminum.
- Head includes two 3/8" NPT, inlet & outlet ports and a 1/8" NPT gauge port, loc-tight sealed and plugged (vacuum gauge not included).
- Also includes two 1/4" 20 x 1/2" depth mounting bracket holes.
- Triple sealing action rim provides sure seal every time.

"Quick Spin II" Spin On Filter Head

Head mount only.

Part #	Description	Package
69-41437	Filter head mount for 69-41436 filter.	1 filter head mount with plugged gauge port.



69-41437
Illustrated

Heating & A/C

Oil Filter Head Bracket



69-41403
Illustrated

"Quick Spin II" Spin On Filter Head Bracket

Part #	Description	Package
69-41403	Mounting bracket for "Quick Spin I or II spin on filter heads. Zinc plated to stand up to a variety of hostile environments and vibrations.	1 mounting bracket, individually bagged with hardware.

Oil Filters



69-41400
Series Filters Not Exactly As Illustrated

Oil Filtration Filters

Engineered and designed for domestic fuel oils. Rayon filter elements are individually poly bagged with gaskets. Rayon filter is a solid one piece construction... no felt fibers or strings to hamper the oil flow.

Specifications

• Colour:	White
• Surface Area:	52 ^{sq} in
• Volume:	12 ^{oz}
• Firing Rate:	10 gph
• Clean Pressure Drop:	0.4
• Dirt Capacity:	1.4 oz.
• Ending Pressure Drop:	10.0
• Filtration Depth:	Medium
• Micron Rating:	10

Filter Refills

Part #	Description	Per Case	Replaces
69-41411	2 3/4" OD x 3/4" ID x 3" Long	48	Autoflow F-300, Federal A77, General 1A25A, Sid Harvey XF-25/264, Unifilter 77, Westwood S-254.
69-41412	3 1/4" OD x 3/4" ID x 4" Long	24	Autoflow F-400, General 2A-700A, Sid Harvey XF-1, Unifilter 99, Westwood S-252.
69-41416	2 3/4" OD x 1" ID x 3 5/8" Long	48	Fulflo F-B4, AS-4, B-4.

All individually bagged with gaskets.

Pump Strainers



69-45676
Illustrated

Pump Strainers & Gaskets

Strainer and matching gasket. Made of stainless steel mesh, attached to sturdy nylon ends for long lasting support. Our ribbed design insures maximum filtration.

Pump Strainers

Part #	Part #	Description
Pump Strainer & Gasket Kits.	Gasket Only	
69-45676	69-40676 (6/pk)	Model J,H & S pump strainers. Used in Suntec models J and H pumps.
69-45678	69-40678 (6/pk)	Model "A" pump strainers. Used in Suntec model A70 pumps.

Fiberglass Tape



63-112FG18
Not Exactly As Illustrated

Fiberglass Tape

A knitted fiberglass tape manufactured from textured fiberglass yarn that has a temperature rating of 538°C (1000°F). Fiberglass tape contains no compounds, cement or wire. The knitting process includes a non-fraying edge.

Applications

- Sealing ovens
- Sealing furnaces
- Sealing boilers
- Pipe wrapping
- Gaskets
- Insulating

Fiberglass Tape

Part #	Thickness	Width	Length
63-1FG18	1/8"	1"	100'
63-112FG18	1/8"	1 1/2"	100'

Replacement Burner Gaskets



Original Replacement Gaskets - Beckett, Carlin & Wayne

The below gaskets are the original OEM gaskets for the below specified burners. Guaranteed to work in the application! For gasket specifications please contact the OEM directly.

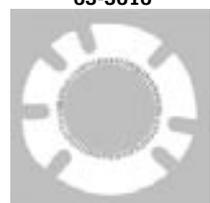
Part #	Description	Specifications	Models
63-3616	Beckett universal gasket.	8 1/2" OD x 3 15/16" ID	Universal
63-12484	Wayne flange gasket.	7 3/8" OD x 4 5/16" ID	EH, EASR & EHA.
63-100428	Wayne flange gasket.	7 1/2" OD x 4" ID	HS, HSR & HSG.
63-75016	Carlin flange gasket.	8" OD x 3 1/8" ID	99-101 CRD & EZ1.



63-3616



63-12484



63-100428



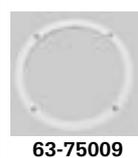
63-75016

General Replacement Burner Gaskets

These replacement burner gaskets are suitable for a wide variety of generic burners.

- 1/8" thick white non-asbestos material.
- Continuous operation temperature of 1260°C (2300°F).

Part #	Description	Specifications	Models
63-75009	Carlin flange gasket.	12" OD x 10" ID.	1150.
63-75010	Carlin flange gasket.	11" OD x 8 3/4" ID.	1050.
63-75011	Carlin flange gasket.	11" OD x 5 1/4" ID.	801 pressure fired.
63-75012	Carlin flange gasket.	10" OD x 4 1/8" ID.	301, 501, 601 & 701 pressure fired.
63-75013	Carlin flange gasket.	8 1/2" OD x 5 1/4" ID.	801 STD.
63-75014	Carlin flange gasket.	8 1/2" OD x 4 1/8" ID.	501, 601 & 701 STD.
63-75015	Carlin flange gasket.	8 1/4" OD x 4 1/8" ID.	201 & 301 STD.
63-75005	GE door gasket.	10" OD x 8" ID	Universal.
63-75006	Heil/ Bradford/ Olsen cover gasket.	3" OD x 2" ID,	Universal.
63-75000	Miller (large) plate gasket.	16" x 10 1/2"	CMF, MOC & MGC Miller # 301205000.
63-75001	Miller (small) pouch gasket.	13 5/8" x 10"	MMG82 Miller # 301181000.
63-75002	Miller burner flange gasket.	6 1/2" OD x 4 1/4" ID.	CMF & MOC Miller # 300001000.
63-75017	Miller flange gasket.	12 13/16" x 4 9/16".	MSH Miller # 689505
63-75018	Miller flue gasket.	7 1/8" OD x 5 1/8" ID.	CMF, MOC & MGC Miller # 301195000.
63-75019	Miller gasket kit.	(1) 63-75000. (1) 63-75001. (1) 63-75002. (1) 63-75018.	CMF, MOC & MGC.
63-75003	Riello air tube gasket.	5 1/4" x 5 1/4"	Universal.
63-75004	Thermo Pride cover gasket.	4" OD x 3/8" ID.	Universal.
63-75007	Universal gasket - no bolt holes.	8" OD x 4" ID.	Universal.
63-75008	Utility gasket roll.	25' x 1" roll.	Universal.



63-75009



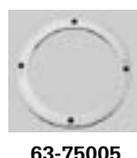
63-75015



63-75017



63-75010



63-75005



63-75018



63-75019



63-75011



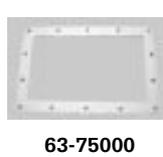
63-75006



63-75003



63-75012



63-75000



63-75004



63-75013



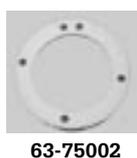
63-75001



63-75007



63-75014



63-75002



63-75008

Heating & A/C



Twisted Ceramic Rope



Ceramic High Temperature Twisted Rope

- Twisted three-ply rope made to meet tough industrial standards.
- Rated at 2300°F (1260°C).
- Asbestos free.
- Exhibits excellent chemical stability, resisting attack from most corrosive agents (exceptions included hydrofluoric & phosphoric acids and concentrated alkalis).
- Resist oxidation and reduction.
- Physical and thermal properties restored upon drying (if wet by water or steam) - no water hydration present

Applications

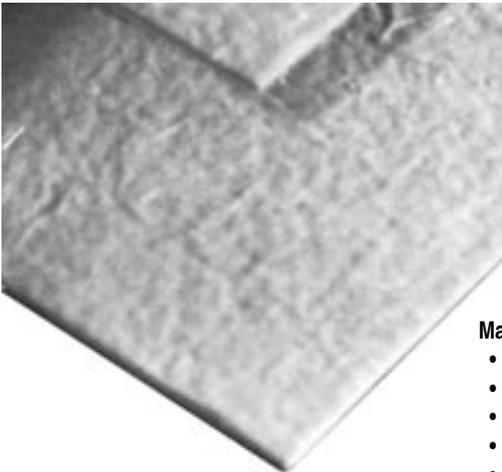
- Gasketing
- Packing
- Sealing

Fireplace & Wood Burning Stove Gaskets

Ceramic Rope

Part #	Diameter	Carton
63-48200	1/4"	45'
63-48201		90'
63-48204	3/8"	25'
63-48205		50'
63-48208	1/2"	15'
63-48209		30'
63-58FR	5/8"	per foot

Refractory Paper



Refractory Paper

- Commercial grade, low cost, high strength paper.
- Made from combination of ceramic fiber, inert fillers and fiberglass.
- For use up to 704°C (1300°F).
- Low shrinkage, good dielectric properties.
- Contains 6% organic binder for increased handling strength.
- Uniform structure assures equal thermal conductivity throughout and provides a smooth surface - ideal for gasketing applications.
- Easy to handle and can be cut, wrapped and rolled to fit nearly any configuration.

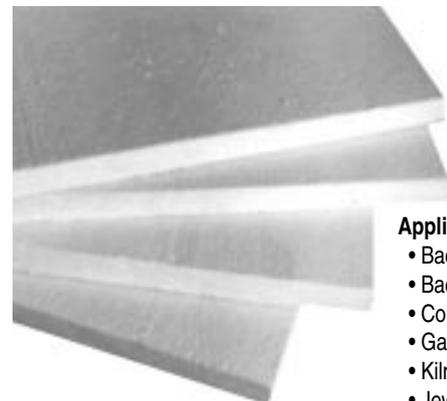
Make on the spot gaskets:

- Clean-outs
- Draft hoods
- Burner pouches
- Mounting flanges
- Cover gaskets and plates.

Refractory Paper

Part #	Description
63-48001	1/8" x 1' x 50' roll.
63-48002	1/8" x 2' x 50' roll.
63-48004	1/8" x 3' x 50' roll.
63-48006	1/8" x 4' x 50' roll.

Refractory Boards



Refractory Fiber Insulation Boards

Ceramic fiber or mineral wool formed into rigid boards. Refractory boards are famous for their low thermal conductivity and excellent handling strength. Boards are easily machined, drilled, sawed, and fabricated. Available in temperature 2300°F.

Refractory Fiber Insulation Boards

Part #	Thickness	Length	Height
63-52436	1/2"	24"	36"
63-12436	1"	24"	36"
63-152436	1 1/2"	24"	36"
63-22436	2"	24"	36"

Applications

- Backup Insulation for Fiber
- Back up for Bricks or Castables
- Combustion Chamber Linings
- Gaskets & Seals
- Kiln & Stack Linings
- Jewelry Soldering Boards

Combustion Chamber Liners



Features:

- Fast easy installation - less than 30 min.
- Low conductivity - high efficiency.
- High sound absorption.
- Lightweight: 5% of conventional firebrick.
- High heat resistance (up to 2300°F).
- Superior to steel brick or castable chambers.
- Individually sealed & packaged.
- Comes with instructions.
- Wall thickness 1/2" nominal.

Wet Paks

- Seamless design complete with a bottom.
- Pliable yet self supporting in a vertical position.

Wet Pak Sheets

Part #	G.P.H	Inside Diameter	Dimensions	Weight
63-1WETPAK	1.25	Flat Sheet Sizes	14" x 48" x 0.5"	9.0 lbs.
63-2WETPAK	2.50		1pc. 14" x 48" x 0.5" & 1pc. 16" x 16" x 0.5"	10.0 lbs.
63-3WETPAK	2.65		1pc. 16" x 48" x 0.5" & 1pc. 16" x 16" x 0.5"	10.25 lbs.

Preshaped Wet Paks

Part #	G.P.H	Inside Diameter	Outside Diameter	Height	Weight
63-09WETPAK	0.50 to 0.75	8"	9"	15.5"	4.0 lbs.
63-10WETPAK	0.75 to 1.00	9"	10"	15.5"	5.0 lbs.
63-11WETPAK	1.00 to 1.25	10"	11"	15.5"	6.0 lbs.
63-12WETPAK	1.25 to 1.50	11"	12"	15.5"	6.5 lbs.
63-13WETPAK	1.50 to 2.00	12"	13"	15.5"	7.0 lbs.
63-14WETPAK	2.00 to 2.50	13"	14"	15.5"	7.5 lbs.
63-16WETPAK	2.50 to 2.75	15"	16"	15.5"	8.5 lbs.

Pre Dried

- Formed to a uniform thickness & density while maintaining a hardness which has exceptional handling strength.
- Easy to cut means more versatility in nozzle opening placement.

Pre Dried

Part #	G.P.H.	Inside Diameter	Outside Diameter	Height	Weight
63-D09	0.50 to 0.75	8"	8"	12.25"	2.25 lbs.
63-D10	0.75 to 1.00	9"	10"	12"	3.0 lbs.
63-DP09	0.65 to 0.85	9"	10.5"	15"	5.0 lbs.
63-D11	1.00 to 1.25	10"	11"	12"	3.5 lbs.
63-DP11	1.00 to 1.25	11"	12.5"	15"	6.5 lbs.
63-D12	1.25 to 1.50	11"	12"	14"	4.0 lbs.
63-D13	1.50 to 2.00	12"	13"	14"	4.25 lbs.
63-D14	2.00 to 2.50	13"	14"	16"	5.0 lbs.
63-DP13	1.35 to 1.75	13"	14.5"	15"	8.25 lbs.
63-DP15	1.75 to 2.00	15"	16.5"	15"	9.5 lbs.
63-DP16	1.75 to 2.25	10.5" x 15"	13" x 17.5"	15"	16 lbs.
63-DP20	2.25 to 3.00	12" x 19.5"	14.5" x 22"	16"	17 lbs.

OEM Replacements

63-D20	Grimsby 97 - 77	10.5" x 10.5"	11.5" x 11.5"	12"	3 lbs.
63-D21	Grimsby 117 - 77	10.5" x 10.5"	11.5" x 11.5"	12"	3 lbs.
63-D22	Grimsby 140 - 79	12" x 12.25"	13" x 13.5"	13"	4.5 lbs.
63-D23	Grimsby 158 - 79	11.75" x 11.88"	13" x 13.88"	12"	4.5 lbs.
63-D24	Grimsby W - 196	9.125" x 9"	10.125" x 10"	10.25"	3 lbs.
63-D30	Esso #110	5 Component Set			12 lbs.
63-D31	Esso #150	5 Component Set			15 lbs.

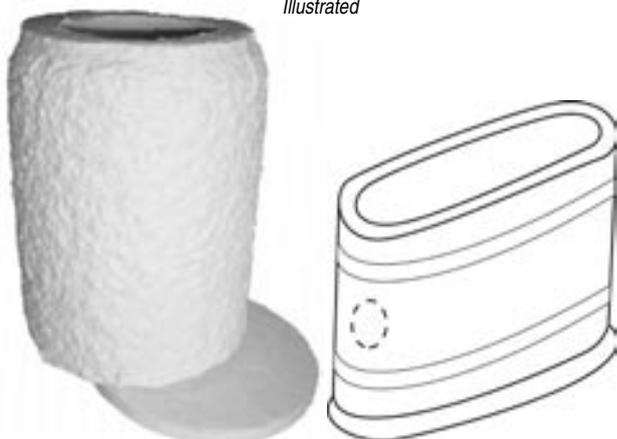


63-3WETPAK
Illustrated

63-10WETPAK
Illustrated



63-D11
Illustrated



63-DP9, DP11,
DP13 & DP15
Models

63-DP16 & DP20
Models

Marr Connectors

The Marrette® XTP® is a high quality, twist-on wire connector with a unique spring and cap grip design that sets it apart from the competition.



29-31
Illustrated

Marrette® XTP® Black - High Temperature Caps

External Cap

- High temperature: 150°C (302°F) rated.
- Made of rugged, phenolic material.
- Large, finely ribbed, "barrel-shaped" cap - makes it easier to grip even when hands are greasy or damp.
- Deep, wide throat ensures full insulation coverage.
- Threaded entry helps guide large wire bundles into the spring chamber.

Inner Spring

- Internal round spring design multiplies the "twist-on" torque applied by the leverage and wedge action, to firmly crush wires into a solid joint.
- Unique copper-coated spring helps resist corrosion.
- CSA (LR6591), UL (424H)



Part #	Description	Package	Wire Size		AWG Wire Range									
			Min	Max	22	20	18	16	14	12	10	8		
29-29	Black	100 pcs.	(1) #20 w/ (1) #22	(2) #16										
29-30	Black	100 pcs.	(3) #20	(3) #16										
29-31	Black	100 pcs.	(2) #18	(4) #16										
29-33	Black	100 pcs.	(6) #18 (1) #16 w/ (1) #18	(4) #14 w/ (1) #18 (300V) (4) #14 (600V)										
29-35	Black	100 pcs.	(1) #12 w/ (7) #18 (2) #14	(3) #10 (300V) (3# #12 w/ (1) #18 (600V)										

- Models 29-29 & 29-30 BlackTM are approved for circuit and fixture type connections up to 300V only.
- Models 29-31, 29-33 & 29-35 BlackTM are approved for circuits up to 600V, and lighting fixtures and signs up to 1000V.



29-331
Illustrated

Marrette® XTP® Coloured - Standard Caps

External Cap

- Made of tough, durable polypropylene and 105°C (221°F) rated to withstand high installation pressures.
- Posi-Grip™ surface combines a matte finish with closely-spaced, deep grooves for superior twisting power, even when hands are greasy or damp.
- Deep, wide throat ensures full insulation coverage.
- Threaded entry helps guide large wire bundles into the spring chamber.
- Colour-coded for quick and easy size selection.

Inner Spring

- Exclusive Live Action™ variable volume spring expands to accommodate more wires with less twisting effort, compared to other connectors with a "fixed spring" design.
- Unique copper-coated spring helps resist corrosion.
- CSA (LR6591), UL (424H)



Part #	Description	Package	Wire Size		AWG Wire Range									
			Min	Max	22	20	18	16	14	12	10	8		
29-331	Orange	100 pcs	(2) #18	(3) #14										
29-333	Yellow	100 pcs	(1) #14 w/ (2) #18	(1) #10 w/ (2) #14										
29-335	Red	100 pcs	(2) #16 w/ (2) #18	(3) #10										

Models 29-331, 29-333, 29-335 are approved for circuits up to 600V, and lighting fixtures and signs up to 1000V.

Air Conditioner Electrical Disconnect Switches



11-U065NA1
Switch

Metallic-Non Fusible A/C Disconnects Lift-Up Door (Switch & Pull-Out)

- Straight-in, straight-out wiring saves time & money.
- Lift-up removable door for easy wiring access.
- 12.7 × 18.4 × 6.9cm (5.0" × 7.25" × 2.75")
- compact NEMA 3R enclosure.
- Keyhole mounting slot for easy installation.
- Six (½" × ¾" × 1") knockouts reduce installation time.
- Heavy zinc coated steel with high quality electro-deposition paint finish for a maximum, corrosion resistant enclosure.
- Terminals approved for 60°C & 75°C (140°F & 167°F) wire.
- Padlock provisions to prevent unauthorized access.
- UL & cUL approved.

Non Automatic Switch

- On/Off Switch Mechanism...No More Pull-outs to Lose.

Part #	HP	Volts	Amps	Phase	AIC Rating	Weight
11-U065NA1	10	240	60	1	10,000	4.0 lbs.



11-U065P
Pull-Out

Pull-Out (Lift-Up Door)

- Pull-out & pocket! Now that's service security!

Part #	HP	Volts	Amps	Phase	AIC Rating	Weight
11-U065P	10	240	60	1	10,000	3.0 lbs.



11-U065
Series

Wire Range

- 14 to 8 gauge copper wire - solid
- 12 to 8 gauge aluminum wire - solid
- 14 to 3 gauge copper - stranded
- 14 to 3 gauge aluminum- stranded

Features

- Easy to install
- Easy wiring access
- Lightweight, compact, heavy-duty corrosion resistant finish

Electrical

Air Conditioner Electrical Disconnect Switches

ALTEMP



Metallic-Fusible & Non Fusible A/C Disconnects

Drop-Down Door (Fusible & Pull-Out)

- Drop-down, swing-out door with lockable latch.
- 240V / 60 Amp
- 19.84 × 13.18 × 8.10cm (7 13/16" × 5 3/16" × 3 3/16")
- Easy-off, easy-on disconnect pullout
- NEMA 3R rainproof enclosure for outdoor use
- For use with aluminum or copper conductors
- Powder coat finish on rugged steel construction
- Knockouts provided on back, bottom and side for multiple applications
- cUL listed

Fusible Pull-Out

- Pull-out & pocket! Now that's service security!

Part #	Volts	Amps	Phase	Weight
11-6300	240	60	1	3.7 lbs.

Pull-Out (Lift-Up Door)

- Pull-out & pocket! Now that's service security!

Part #	Volts	Amps	Phase	Weight
11-6200	240	60	1	3.6 lbs.

Air Conditioner Electrical Disconnect & GFCI

ALTEMP



Metallic-Non Fusible Air Conditioner Electrical Disconnect & GFCI Receptacle Combination

- Available with pullout or non-automatic switch.
- Lift-up removable door for easy wiring access.
- Single phase.
- 12.7 × 17.8 × 10.2cm (5" × 7" × 4")
- compact NEMA 3R rated.
- Six (1/2" × 3/4" × 1") knockouts reduce installation time.
- Heavy galvanized G90 steel with highest quality electro-deposition finish resists corrosion and fading.
- UL & cUL approved.

Non Automatic Switch

- Duplex 15 amp GFCI receptacle included.

Part #	HP	Volts	Amps	Phase	AIC Rating	Weight
11-U065NA1010	10	240	60	1	10,000	4.5 lbs.

Pull-Out

- Duplex 15 amp GFCI receptacle included.

Part #	HP	Volts	Amps	Phase	AIC Rating	Weight
11-U065P010	10	240	60	1	10,000	4.5 lbs.

Fittings - Two Piece

ALTEMP



Applications:

- Indoor or outdoor use
- OEM equipment
- Field installations

Liquid Tight Two Piece Non-Metal Connectors

- Installation - simply push conduit onto ferrule, then tighten the domed sealing nut. The completed assembly is then secured to the chassis using the locknut.
- Produced from UV rated material for long outdoor life.
- Conduit & connector system is completely reusable.
- Nylon construction.
- Standard colour - Gray.
- Resists salt water, weak acids, gasoline, alcohol, oil, grease & most common solvents.
- UL listed, CSA certified.

1/2" Two Piece Connectors

Part #	Size	Description	Package
11-88403	1/2"	Straight Connector	25
11-88418	1/2"	90° Connector	10

3/4" Two Piece Connectors

Part #	Size	Description	Package
11-88405	3/4"	Straight Connector	10
11-88420	3/4"	90° Connector	10

Fittings - One Piece

ALTEMP



Applications:

- Indoor or outdoor use
- OEM equipment
- Field installations

Liquid Tight One Piece Non-Metal Connectors

- Installation - no disassembly required, simply screw the connector onto the conduit.
- Design allows superior liquid tight seal and optimum pull strength.
- PVC construction.
- Produced from UV rated material for long outdoor life.
- Attractive one-piece design.
- Time and cost saving benefits over other brands.
- Reusable design.
- Ideal for conduit assemblies and installers.
- Resists salt water, weak acids, gasoline, alcohol, oil, grease & most common solvents.
- UL and cUL listed.

1/2" One Piece Connectors

Part #	Size	Description	Package
11-88503	1/2"	Straight Connector	25
11-88518	1/2"	90° Connector	10

3/4" One Piece Connectors

Part #	Size	Description	Package
11-88505	3/4"	Straight Connector	25
11-88520	3/4"	90° Connector	10

Whips



11-4500
Illustrated

Liquid Tight Installation Whips

- Pre-Assembled Whips Include:
- Non-Metallic Liquid Tight conduit (cUL listed).
 - 2 One-piece non-metal PVC fittings applied (cUL listed).
 - 1 straight Liquid Tight fitting.
 - 1 90° Liquid Tight fitting.
 - 2 reducing washers on 1/2" whips.
 - 11" wire exposure each end.

Whips

Part #	Size	Length	Gauge
11-4500	1/2"	4'	(3) #10
11-6500	1/2"	6'	(3) #10
11-6524*	1/2"	6'	(3) #10
11-4750	3/4"	4'	(2) #8 (1) #10
11-6750	3/4"	6'	(2) #8 (1) #10

* 11-6524 has 23" exposed wire each end - Rheem Ruud Special.
1/2" Whips rated up to 60 amps.
3/4" Whips rated up to 100 amps.

Conduit



11-8431
Illustrated

Applications:

- HVAC Equipment
- Refrigeration Units
- Pumps
- Machine Tools
- Marine Equipment
- Motors & Controls
- Printing Equipment

Liquid Tight Flexible Conduit

- Rigid coils combined with flexible PVC construction provide superior wire protection in a variety of extreme environmental & application conditions.
- Resilient to abuse, pulling or crushing.
- Smooth inside for easier wire feeding & pulling.
- Use with nylon or PVC straight or 90° Liquid Tight connectors.
- Metallic connectors can be used for Liquid Tight conduit.
- Temperature range: -18°C to 75°C.
- UL listed, CSA Certified.

Conduit

Part #	Size	Length
11-8431	1/2"	100'
11-8432	3/4"	100'

A/C Wall Brackets

Applications:

- Mini-Splits
- Heat Pumps
- A/C Units
- HVAC Equipment

A/C Wall Brackets

- Full range of sizes.
- Reversible mounting.
- Heavy-duty steel.
- Elongated mounting holes.
- Standard colour - Black.
- Extra holes for fastening equipment.

	L	W
79-WB2416BLK	24"	24"
79-WB2618BLK	26"	18"
79-WB3014BLK	30"	14"
79-WB3018BLK	30"	18"
79-WB3618BLK	36"	18"
79-WB3624BLK	36"	24"

Fan Switches

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19-FS2-110
Illustrated

Fan Switch Nomenclature

- F Fan - Close on rise
- S Switch
- 2 Number of terminals
- 110 Closing temperature



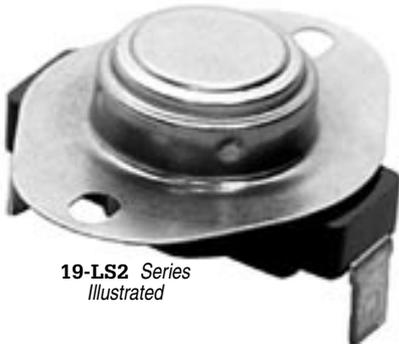
Two Terminal Fan Switches

Part #	Closing Temp.
19-SF2-115*	43°C (110°F)
19-FS2-110	43°C (110°F)
19-FS2-120	49°C (120°F)
19-FS2-130	54°C (130°F)
19-FS2-160	71°C (160°F)
19-FS2-200	93°C (200°F)
19-FS2-210	104°C (210°F)
19-FS2-225	107°C (225°F)

3/4" standard discs
* 1/2" disc

Limit Switches

ALLTEMP



19-LS2 Series
Illustrated

Limit Switch Nomenclature

- L Limit - Open on rise
- S Switch
- 2 Number of terminals
- 110 Opening temperature

Limit Switches

2 Terminal			3 Terminal		4 Terminal	5 Terminal
Part #	Part #	Part #	Part #	Part #	Part #	Part #
19-LS2-120	19-LS2-180	19-LS2-250	19-LS3-110	19-LS3-210	19-LS4-140	19-LS5-155
19-LS2-135	19-LS2-190	19-LS2-270	19-LS3-120	19-LS3-220	19-LS4-160	
19-LS2-140	19-LS2-200	19-LS2-275	19-LS3-130	19-LS3-225	19-LS4-220-8	
19-LS2-145	19-LS2-200F	19-LS2-290	19-LS3-135	19-LS3-275		
19-LS2-150	19-LS2-220	19-LS2-320	19-LS3-140	19-LS3-290		
19-LS2-160	19-LS2-225	19-LS2-325F	19-LS3-145	19-LS3-320		
19-LS2-165	19-LS2-240		19-LS3-150			

25 Amps, 240 Volt

Low Ambient Control

Part #	Description
19-20601	Opens 7.2°C (45°F) Closes 12.7°C (55°F)



19-20601
Illustrated

Thermostats

Pages 217 To 221

- Residential
- New Construction
- Light Commercial

Defrost Termination Thermostats

ALLTEMP

Defrost Termination Thermostats

- Bimetal disc temperature controls.
- Individually packaged.
- 24" leads.
- Moisture resistant sealed design.
- Mounting clips available if required.



18-DTS-45
Illustrated

Defrost Termination Switches

Part #	Opens	Closes
18-DTS-45	7.2°C (45°F)	-3.9°C (25°F)
18-DTS-50	10.0°C (50°F)	-1.1°C (30°F)
18-DTS-55	12.8°C (55°F)	1.7°C (35°F)
18-DTS-60	15.5°C (60°F)	4.4°C (40°F)
18-DTS-70	21.1°C (70°F)	10.0°C (50°F)
18-DTS-80	26.7°C (80°F)	-1.1°C (30°F)
18-DTS-90	32.2°C (90°F)	1.7°C (35°F)

10 Amps @ 120V
5 Amps @ 240V



18-AEIC-1
Illustrated

Evaporator Anti-Ice Control

Part #	Description
18-AEIC-1	Opens 2.8°C (37°F) Closes 15°C (59°F) 3/8" Cup



18-550
illustrated



18-551
Illustrated



18-552
illustrated

Mounting Clips

Part #	Description
18-550	Surface clip 25/pack
18-551	Push in clip 25/pack
18-552	Tube mounting clip 25/pack

Aqua Stats

ALLTEMP



18-DT3-85
Illustrated

Replace

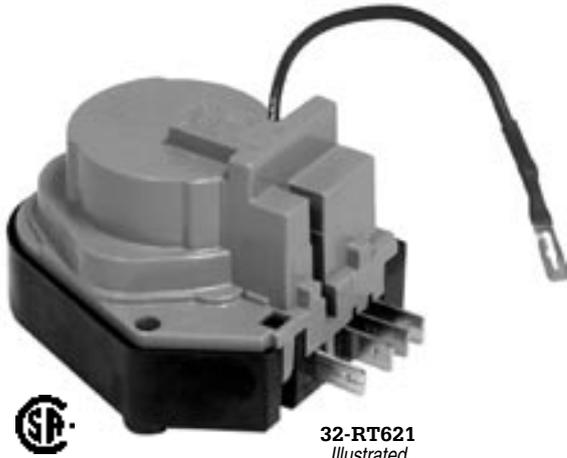
- Unilux
- Temspec
- Climetec
- Snyder-General

Thermo Aqua Stats

3 Wire Change Over Thermostats

Part #	Description	Wires	Cross Reference
18-DT2-85	Opens 83°	2 term. 54" x 5/8" mount.	37T31
18-DT3-85	Closes 65°	3 term. 54" x 5/8" mount.	37T33

Defrost Timers



Defrost Timer

- World class timer.
- Flying lead.
- Constant or compressor run.
- 100% factory tested & inspected.

Part #	Defrost Cycle	Amps	VAC	HP
32-RT621	6 hour 21 minute.	15A	125/250	1/3
32-RT825	8 hour 25 minute.	15A	125/250	1/3



Defrost Timer

- Universal defrost timer.
- Mounting plate allows Lux replacement.
- External motor leads.
- Constant or compressor run.
- Comes with ground wire twin leads (2) and insulating sleeves.
- 1-4 spade & 1-6 spade terminal strip.
- Removable mounting plate for use as standard timer.

Part #	Defrost Cycle	Amps	VAC	HP
32-718501	6 hour 25 minute.	15A	125/250	1/2

Speed Controls



Motor Speed Controls

Complete with control, knob, face plate & hardware.

Part #	Volts	Amps
92-A8301	120	3
92-A8303	120	6
92-A8305*	120	10
92-A8306*	120	15

* Heat Sink



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For Quality Motors!**

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Control Switches

ALTEMP

Control Switches

- 3 Amp, 125 Volt.
- 1 Amp, 250 Volt.



29-151-2 Illustrated



29-151-6 Illustrated



29-151-8 Illustrated

Push Button Switches

- 2 Position - On / Off.

Part #	Description
29-150	Phenolic knob 9/16" nipple
29-151-6	Metal knob 3/8" nipple

- 3 Position - Off / On / On.

Part #	Description
29-151-2	2 Speed switch metal knob 7/16" nipple

Rotary Switches

- 2 Position - On / Off.

Part #	Description
29-151-8	Phenolic knob 3/8" nipple

Toggle Switches

ALTEMP



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6

Part #	Circuit	Function	Amps	Terminals	Fig.
29-TSH11	SPST	2 - On / Off	20	2	1
29-TSH12	SPDT	2 - On / On	20	3	1
29-TS102	SPDT	3 - On / Off / On	15	3	2
29-TSM12	SPDT	3 - Off / On / On*)	15	4	3
29-TS21	DPST	2 - On / Off	15	4	3
29-TS22	DPDT	2 - On / On	15	6	6
29-TS202	DPDT	3 - On / Off / On	15	6	3
29-158-5	SPST	2 - On / Off white	20	2	4
29-158-6	SPST	2 - On / Off black	20	2	4
29-158-10	SPST	2 - On / Off black	3	2	5

(On*) - Momentary Contact

Rocker Switches • Snap-in Mount

ALTEMP



Fig. 1



Fig. 2



Fig. 3

Mini Rockers

Part #	Colour	Function	Amps	¼" Spades	Fig.
29-159-1	Black	2 - On / Off	15	3	1
29-159-3	Black	2 - On / Off	10	2	2
29-159-4	White	2 - On / Off	10	2	2
29-159-5	Black	3 - On / Off / On	10	3	2
29-159-6	White	3 - On / Off / On	10	3	2

‡ Lighted

Standard Rockers

Part #	Colour	Function	Amps	¼" Spades	Fig.
29-159-13	Black	2 - On / Off	6	4	3
29-159-15	Black	3 - On / Off / On	6	5	3

(On*) Momentary Contact

Mini Micro Switches

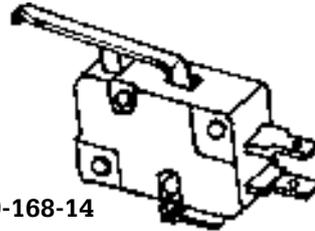
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29-168-2



29-168-11



29-168-14

Description

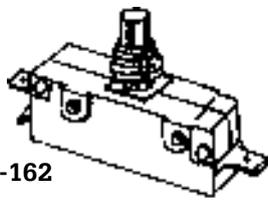
- 15 Amps
- 125/250 Volt
- SPDT
- Dimensions:
 - Length 1 3/32"
 - Width 13/32"
 - Height 5/8"

Micro Switches

ALLTEMP



29-161
SPST



29-162



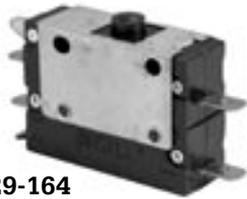
29-163



29-163-1

Description

- 20 Amps
- 125/250 Volt
- SPDT
- Dimensions:
 - Length 1 13/16"
 - Width 41/64"
 - Height 41/64"



29-164



29-164-1



29-164-3

Description

- 20 Amps
- 125/250 Volt
- SPDT
- Dimensions:
 - Length 1 13/16"
 - Width 43/64"
 - Height 1 21/64"

Fan & Light Switches

ALLTEMP



29-168-1
Dryer (2)SPST



29-181
Light NC. SPST



29-182
Fan NO. S.P.S.T



29-186
Light



29-188-1
Fan SPST



GP-18803
Fan/Light DPDT



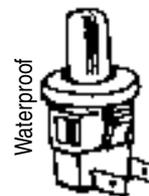
29-188-4
Fan/Light



29-188-5
Fan



29-188-6
Light



Waterproof
29-188-9
Fan SPST



Waterproof
29-188-10
Light SPST



29-188-14
Fan/Light DPDT

Mechanical Float Switches

ALTEMP



29-FS1-10
Illustrated

Features

Environmentally Safe

- Mercury Free.

Power Cord

- 10' SJOW 16 ga. 2 conductor with grounded molded piggyback plug. Swivel strap included!

Corrosion Resistant

- Housing molded from durable ABS material.

Reliable

- Compact float and proven mechanical switch quality.

Variable Pumping Range

- Tether length determines pumping range

Switch Position

- OMNI Directional (not affected by rotation. Designed to accommodate normally off, normally on or both positions.

Selection

- FS1 Series - pump down. (*sump pump, etc.*)
- FS2 Series - pump up. (*water trough, etc.*)

Approvals

- UL Listed & Recognized.
- CSA Approved.

Pump Down Switches

Part #	Volts	Amps	Description
29-FS1-10	120	15	Pump Down 10'.
29-FS1-20	120	15	Pump Down 20'.
29-FS1-30	120	15	Pump Down 30'.
29-FS1-20-2	230	15	Pump Down 20'

Pump Up Switches

Part #	Volts	Amps	Description
29-FS2-10	120	15	Pump Up 10'.
29-FS2-20	120	15	Pump Up 20'.

Other lead specifications, lengths and 230 volt models available upon request.

Low Voltage "Intrinsically Safe"

Features snap action micro switch with "gold plated" contacts to meet low contact resistance requirements of intrinsically safe circuits.

Part #	Volts	Amps	Description
29-FS1G-20	120	1	Pump Down 20'.
29-FS2G-20	120	1	Pump Up 20'.

Other lead specifications, lengths and 230 volt models available upon request.

Applications

- Sewage Lift Pumps
- Sump Pumps
- Alarm Systems
- Solenoid or relay controlled packages and other liquid level control applications.

Pilot Lights

ALTEMP



29-155-1
Illustrated



29-152-2
Illustrated

Rectangular

Part #	Colour	Volts	Lens	Leads
29-155-1	Red	125	Flush	1/4" Spade
29-155-2	Red	250	Flush	1/4" Spade
29-155-3	Green	125	Flush	1/4" Spade
29-155-4	Green	250	Flush	1/4" Spade
29-155-5	White	125	Raised	9" Leads
29-156-1	Amber	125	Flush	1/4" Spade
29-157-1	White	125	Flush	1/4" Spade
29-157-3	White	250	Flush	9" x 1/4" Fe Tabs
29-157-10	Amber & Red	125	Flush	(4) 1/4" Spade
29-158	Red	125	Flush	1/4" Spade

Round

Part #	Colour	Volt	Lens	Leads
29-152	Red	125	Raised	9"
29-152-1	Red	125	Flush	9"
29-152-2	Red	250	Flush	9"
29-152-3*	Red	125	Flush	3/16" tabs
29-152-4*	Red	125	Raised	9" tabs
29-152-10	Red	24	Flush	12" x 1/4" female tabs
29-152-11*	Red	250	Flush	6" x 1/4" female tabs
29-152-22	Red	250	Raised	9" high temp
29-152-6	White	250	Raised	12" x 1/4" female tabs
29-153-10*	Red	24	Flush	12"

* 5/16" Diameter Body

Automatic Reset Miniature Pressure Controls

ALLTEMP



Features:

- Automatic & manual reset*.
- Corrosion resistant.
- Environmentally sealed (water tight switched).
- Non-position-sensitive.
- Low/high pressure cycling.
- Condenser fan cycling.
- Variety of fixed pressure settings.
- Complete with 1/4 inch SAE female flare fitting with valve core depressor.
- 18 inch leads (longer lead lengths available).

*Note: Automatic reset controls may be used to replace manual reset controls.

Pressure Control Switches

Part #	Application	Setting (psig)		Cross Reference
		Cut Out	Cut In	
25-RML-520	Low Pressure Cut Out	5	20	33329, PS-LP05-20, PC002.
25-RML-1025		10	25	33330, PS-LP10-25, 3100-050.
25-RML-1535		15	35	33333.
25-RML-1555L		15	55	Long Lead (30").
25-RML-2045		20	45	
25-RML-2580		25	80	33362, 33363, 33336, PS-LP25-80, 3100-051.
25-RML-3560		35	60	PC001.
25-RML-4080		40	80	33364, PS-LP40-80, 3100-052.
25-RML-4560		45	60	33339.
25-RML-90120F		90	120	
25-RMF-75120	Condenser Fan Cycling	75	120	
25-RMF-110170		110	170	
25-RMF-150225		150	225	
25-RMF-190275		190	275	33341.
25-RMF-300400		300	400	
25-RMH-250180	High Pressure Cut Out	250	180	33350.
25-RMH-300200		300	200	33310, 33355, PS-HP300-200.
25-RMH-325225		325	225	33313.
25-RMH-350250		350	250	33316, 33356, PS-HP350-250, 3100-150, PC150.
25-RMH-375275		375	275	33319.
25-RMH-400300		400	300	33322, 33357, 33358, PS-HP400-300, 3100-151, PC151.
25-RMH-425325		425	325	33325, 33359, PC100.

Automatic Reset Pressure Controls

Miniature pressure controls are fixed setting controls used on refrigeration, air conditioning, or heat pump systems using R12, R22, or R502 refrigerants. Both low (suction) and high (discharge or head pressure) sensing controls are available.

These single function controls, single pole, single throw (SPST) switches may be used in a variety of applications: direct control of single speed fan motors or compressors; in conjunction with a contactor for pilot duty; or to control electronic management systems. The RMF Miniature Pressure control will cycle a single speed condenser fan when the predetermined head pressure (cut in) is reached. When the head pressure is reduced to a predetermined pressure (cut out), the fan will shut off. (Normally open switch). CSA & UL approved.

Electrical Connection

The miniature pressure controls are supplied with 12 inch, 18 AWG stranded leads, stripped 1/2 inch. RML and RMF are blue – RMH are black.

Pressure Connections

1/4 inch, SAE female flare fitting with valve core depressor.

Fittings

All RML, RMF and RMH controls are individually packaged and equipped with a 1/4" SAE female flare fitting. For application requiring a pressure connector other than 1/4" female flare, use an appropriate adapter or connector.

*Example: 02-C31004 – 1/4" SAE male flare to 1/4" tube adapter
02-C31482 – 1/4" SAE male flare to 1/8" MPT connector*

Settings

All RML, RMF and RMH controls will have pressures stamped on the control. Normally, the OEM's pressure is stamped on the control.

Manual Reset

Automatic reset controls may be used to replace manual resets.

Electrical Ratings

Electrical ratings must not be exceeded and all electrical connections must comply with local approval authorities.

Temperature

Operating Ambient -20° to 150°F (-28° to 65°C).
Refrigerant -35° to 275°F (-37° to 135°C).

VAC	FLA	LRA	PD VA
24	-	-	48
120	10	40	375
240	5	20	375
277	-	-	37

Manual Reset Miniature Pressure Controls

ALLTEMP



29-RMM-430
Illustrated



29-RMM-440
Illustrated

Manual Reset High Pressure Control Switches

Condenser fan cycling switches.

Part #	Cut Out	Description	Cross Reference
25-RMM-430	430	1/4" female flare fitting with 30" leads.	33352.
25-RMM-440	440	3/32 capillary tube fitting with 38" leads (panel mount).	33350.
25-RMM-410	410	1/4" female flare fitting with 18" leads.	33365.
25-RMM-350	350	1/4" solder fitting with 18" leads.	

Vacuum Switches

ALLTEMP



25-VS
Series Illustrated

Vacuum Switches

Part #	Cut Out	Cut In	Description	Cross Reference
25-VSF-014	0 psi	14" Hg	1/4" female flare.	33380
25-VSF-1023	10" Hg	23" Hg	1/4" female flare.	33381
25-VSC-014	0 psi	14" Hg	1/4" ID tube.	33382
25-VSC-1023	10" Hg	23" Hg	1/4" ID tube.	33383

Digital Superheat & Sub-Cooling Gauges



04-SH35N
Illustrated

1 & 24 Hour Memory!
Saves High, Low and Average Values
Instantly Displays

- Superheat
- Sub-cooling
- Temperature
- Pressure

Multi-Function A/C & Refrigeration Gauge

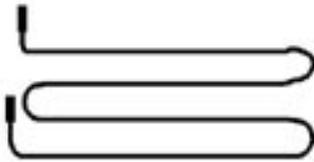
- 1 and 24 hour memory!
- Saves high, low and average values.
- Simple two button operation.
- Protected sealed touch buttons.
- R22 built-in, R410A key included.
- NIST traceable.
- Retracting hanging hook.
- Carrying case.
- Keys for all standard refrigerants.
- Low battery indicator.
- Auto shut-Off after 60 min inactivity.
- 100 hours on (1) 9V (not included).
- For low temperature applications use lithium battery.
- 800 psi (5512 kPa) maximum over pressure.

04-SH35N °F model & carrying case.

Detail On Page 296

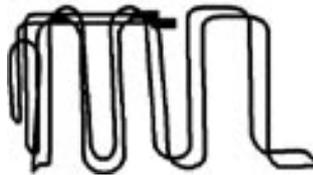
Tubular Evaporator Defrost Heaters

ALTEMP



Franklin, Gibson, Hupp, Kelvinator, Resco, Viking

Part #	Watts	Volts
26-401	400	120
25 3/4" x 6 3/16"		



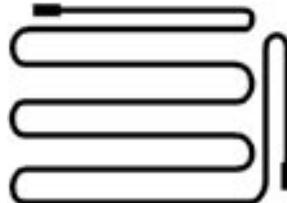
Inglis, R.C.A., Whirlpool, Coldspot

Part #	Watts	Volts
26-411	525	120 V
22 3/8" x 8 1/2" x 3 9/16"		



Frigidaire, Resco

Part #	Watts	Volts
26-403	500	120
24" x 13 5/8" x 2 1/4"		



Inglis, R.C.A., Whirlpool, Coldspot

Part #	Watts	Volts
26-412	770	120
25 7/8" x 18 1/2"		



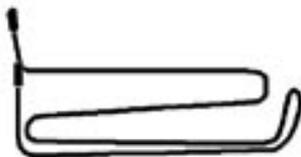
Frigidaire, Resco

Part #	Watts	Volts
26-404	650	120
24 7/8" x 13 3/4"		



Ice maker, Philco, Resco

Part #	Watts	Volts
26-416	165	120
10 1/4" x 2 3/4" (Mold Heater)		



Camco, G.E., Resco, Westinghouse

Part #	Watts	Volts
26-405	300	120
23 1/4" x 4 3/4" x 1 7/8"		



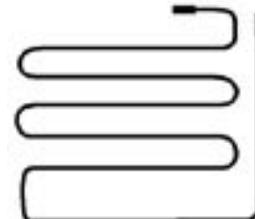
Gibson, Resco

Part #	Watts	Volts
26-420	770	120
24" x 14 1/2"		



Camco, Resco, Westinghouse

Part #	Watts	Volts
26-406	338	120 V
21 3/4" x 4 3/4"		



W.C. Woods 3-25723-002, DTA-20673-002

Part #	Watts	Volts
26-673	325	240
19 1/8" x 17 7/8"		



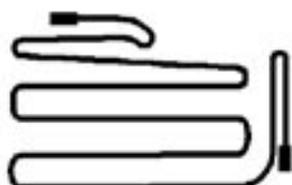
Inglis, R.C.A., Whirlpool, Coldspot

Part #	Watts	Volts
26-409	600	120 V
25 7/8" x 12 3/4"		



Belanger 1200256-101 & 104-111, DTA20674-001

Part #	Watts	Volts
26-674-1	450	110/120
42 3/4" x 6 1/4"		



Inglis, R.C.A., Whirlpool, Coldspot

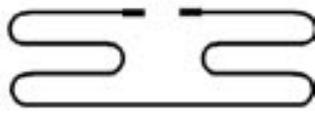
Part #	Watts	Volts
26-410	680	120 V
24 1/4" x 10 1/4"		



Belanger 1200256-102 & 104 112, DTA-20674-002

Part #	Watts	Volts
26-674-2	450	220/240
42 3/4" x 6 1/4"		

Tubular Evaporator Defrost Heaters



**Belanger 104-107,
DTA-20772-001**

Part #	Watts	Volts
26-772	450	120
44 1/4" x 6 1/4"		



**General - Tubular
Evaporator Defrost Heaters**

Part #	Watts	Volts
26-943	315	120
20 1/2" x 4"		



**Belanger 120042-104,
104-133, DTA-20145-004**

Part #	Watts	Volts
26-145-4	600	240
42 3/4" x 8 1/4"		



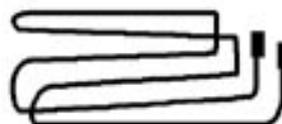
**General - Tubular
Evaporator Defrost Heaters**

Part #	Watts	Volts
26-944-1	385	120
24 1/2" x 15 1/2"		



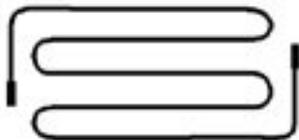
**Belanger 120042-105 &
104-131, DTA-20145-005**

Part #	Watts	Volts
26-145-5	600	120
42 3/4" x 8 1/4"		



**General - Tubular
Evaporator Defrost Heaters**

Part #	Watts	Volts
26-944-2	325	120
22 1/2" x 4 1/2"		



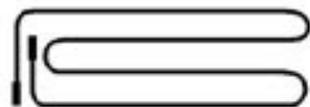
**Hupp 402404-101,
DTA-20461-001**

Part #	Watts	Volts
26-430	400	120
24 1/8" x 8 1/4"		



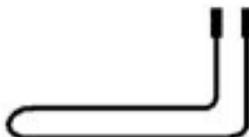
**General - Tubular
Evaporator Defrost Heaters**

Part #	Watts	Volts
26-958	420	120
18" x 6 1/2"		



**Hupp 402480-101,
DTA20460-001**

Part #	Watts	Volts
26-432	350	120
22 1/2" x 6 1/4"		



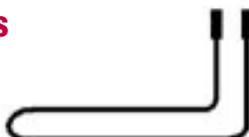
**General - Tubular
Evaporator Defrost Heaters**

Part #	Watts	Volts
26-971-1	475	120
17 1/4" x 6 1/2"		



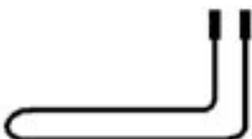
**General - Tubular
Evaporator Defrost Heaters**

Part #	Watts	Volts
26-035-1	400	120
17" x 6 1/2"		



**General - Tubular
Evaporator Defrost Heaters**

Part #	Watts	Volts
26-971-2	475	120
23" x 6 1/2"		



**General - Tubular
Evaporator Defrost Heaters**

Part #	Watts	Volts
26-035-2	475	120
21" x 6 1/2"		



**General - Tubular
Evaporator Defrost Heaters**

Part #	Watts	Volts
26-971-3	475	120
23" x 6 1/2"		

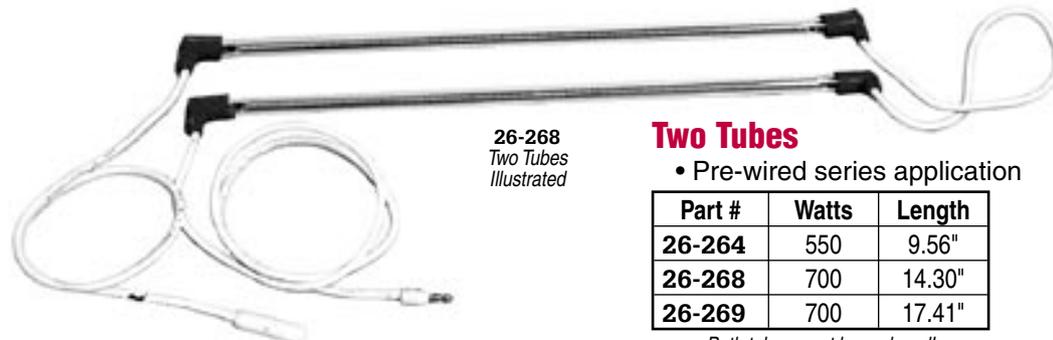
Radiant Defrost Heaters 120V

ALTEMP

Radiant Defrost Tube Heaters

- Constructed with vycor glass.
- Glass may be handled during installation

Tube Supports
Supplied for G.E.
Applications



26-268
Two Tubes
Illustrated

Two Tubes

- Pre-wired series application

Part #	Watts	Length
26-264	550	9.56"
26-268	700	14.30"
26-269	700	17.41"

Both tubes must be replaced!

Single Tube

Part #	Watts	Length
26-261*	550	21.56"
26-263*	630	22.38"
26-266	525	22.38"
26-267	500	23.59"
26-270	500	25.00"
26-277	440	23.59"

* Comes with tube supports

Two Tubes

- Separate series application

Part #	Watts	Length
26-271	665	8.75"
26-274	525	9.75"
26-275	525	10.75"
26-276	600	11.41"

* Comes with tube supports
Both tubes must be replaced!

Three Tubes

- Separate series application

Part #	Watts	Length
26-272*	760	11.41"

* Comes with tube supports
All tubes must be replaced!

Commercial Door Heaters

ALTEMP



26-281
Illustrated

Commercial Door Heaters

- Mullion and Dew-Point heaters prevent freeze-up around doors and gaskets.
- Standard 3 watts per linear foot.
- 72" leads.

Part #	Volts	Length
26-281	120	36.5'
26-282	120	18.0'

Flexible Braided Heaters

ALTEMP



26-202
Illustrated

Flexible Braided Heaters

- Braided aluminum sheath.
- Ideal for Drain Tube, Pans and Troughs.
- Complete range of lengths and wattages.
- Standard 24" Leads.

Part #	Volts	Watts	Length
26-201	120	15	20"
26-202	120	45	30"
26-205	120	65	56"
26-206	120	80	70"
26-207	120	800	88"

Aluminum Foil Heater

ALTEMP



26-222
Illustrated

Aluminum Foil Heaters

- All sizes with pressure sensitive backing.
- Suitable for a wide variety of applications.

Part #	Volts	Watts	Width	Length
26-222	120	10	1.25"	24.0"
26-223	120	10	5.5"	14.5"
26-224	120	65	5.5"	27.5"
26-225	120	15	10.5"	10.5"
26-226	120	40	10.5"	10.5"
26-229	120	65	4.0"	25.5"

Molded Epoxy Waterproof Heaters

ALTEMP



26-244
Illustrated

Molded Epoxy Waterproof Heaters

- Designed for domestic and commercial applications.
- Used for humid plate, spot & condensate heater.
- Molded male plug.

Part #	Volts	Watts	Length	Width	Height
26-244	120	18	3.0"	3.0"	0.5"

Used By

- Admiral
- Belanger
- B.T.F.
- Camco
- Franklin
- Gibson
- G.S.W.
- Hot Point
- Hupp
- Kelvinator
- Norge
- Resco

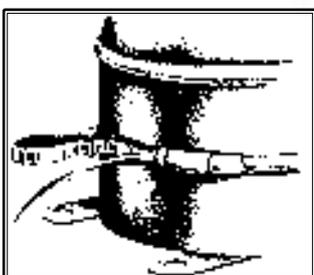
Crankcase Heaters

Raychem

Self Regulating!



75-CCH1
Illustrated



"Compressor Burnout Protection!"

- When a refrigeration compressor shuts down or enters a long-off cycle, liquid refrigerant migrates into its crankcase oil. Lubrication decreases and crankcase burnout can occur when operation resumes.
- Energy efficient, self-regulating design automatically varies output to maintain adequate oil temperature while permitting wrapping and crossover without burnout.
- Handles compressors up to 5 Hp, 120 or 240 volt applications.
- Fits all crankcases with circumferences smaller than 49".

Crankcase Compressor Heaters - FreezGard™

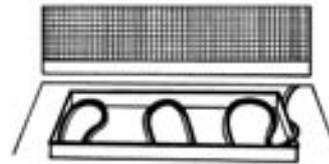
Part #	Volts	Output @ -18°C (0°F)	Output @ 16°C (60°F)	Weight
75-CCH1	120	60W	35W	0.5 lbs.
75-CCH2	240			0.5 lbs.

Self Regulating Heat Cable

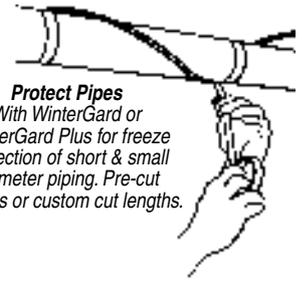
Raychem

"Self Regulating" Heating Tape

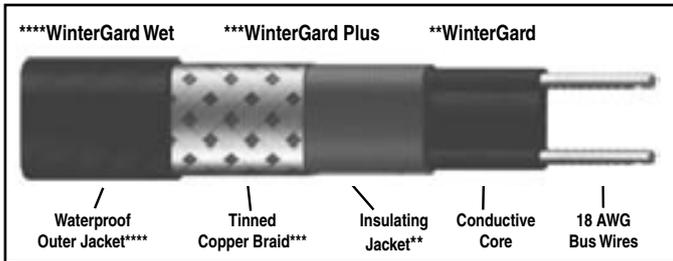
- Easy installation
- Won't burn out
- Won't overheat
- OK to overlap
- OK to insulate
- OK for plastic
- No thermostat required
- Cut to desired length
- Higher efficiency
- UL & CSA approved



Keep Wet Areas From Freezing
With WinterGard Wet for tracing air conditioner drain pans to prevent freezing or gut tracing freezer drain lines to prevent backup problems.



Protect Pipes
With WinterGard or WinterGard Plus for freeze protection of short & small diameter piping. Pre-cut lengths or custom cut lengths.



WinterGard Heating Cable

- Economical solution for residential/ commercial pipes up to 2" diameter and circuit length up to 250'.
- Dry applications only.
- Tough - steel braided.



WinterGard Plus Heating Cable

- Designed for more demanding residential/ commercial with larger plastic or metal pipes with diameters up to 8" and circuit lengths up to 250'.
- Dry applications only.
- Tough - steel braided.

Applications

- Ideal freeze protection for pipes in unheated attics, basements and garages.
- Use it for intake and drain lines, water meters, outside pipes and taps.



WinterGard Wet Heating Cable

- The answer for freeze protection in wet or high moisture residential/ commercial locations such as drain lines with larger plastic or metal pipes. Suitable for pipe diameters up to 8" and circuit lengths up to 1000'.
- Wet or dry applications.
- Tough - steel braided & waterproof outer jacket.

Applications

- Ideal for residential & commercial buildings.
- Use it to freeze protect water service & fire protection systems.
- Roof & gutter de-icing.

120V

- Blue Cable - Steel Braid

Part #	Watts/ft	Power	Length	Weight
75-H611050	6	120V	50' Box	3.0 lbs.
75-H611100*	6	120V	100' Truck Pack	9.0 lbs.
75-H611250	6	120V	250' Reel	17.0 lbs.



240V

- Red Cable - Steel Braid

75-H621050	6	240V	50' Box	3.0 lbs.
75-H621100*	6	240V	100' Truck Pack	9.0 lbs.
75-H621250	6	240V	250' Reel	17.0 lbs.

* 100' Truck Packs include (2) 75-H900, (1) 75-H903 & (1) 75-H910.



120V

- Blue Cable - Steel Braid - Black Jacket

Part #	Watts/ft	Power	Length	Weight
75-H612050	6	120V	50' Box	4.0 lbs.
75-H612100*	6	120V	100' Truck Pack	10.0 lbs.
75-H612250	6	120V	250' Reel	20.0 lbs.
75-H612500	6	120V	500' Reel	43.0 lbs.
75-H6121000	6	120V	1000' Reel	77.0 lbs.



240V

- Red Cable - Steel Braid - Black Jacket

75-H622050	6	240V	50' Box	4.0 lbs.
75-H622100*	6	240V	100' Truck Pack	10.0 lbs.
75-H622250	6	240V	250' Reel	20.0 lbs.
75-H622500	6	240V	500' Reel	43.0 lbs.
75-H6221000	6	240V	1000' Reel	77.0 lbs.

* 100' Truck Packs include (2) 75-H900, (1) 75-H903 & (1) 75-H910.



Self Regulating Heat Cable - Continued

Raychem

Standard Packaging

- Winter Guard.
- Winter Guard Plus.
- Winter Guard Wet.



75-H611050
50' Box Illustrated



75-H611100
100' Truck Pack Illustrated



75-H611250
250' Reel Illustrated

Self Regulating (Pre-assembled) Heat Cable

Raychem

Gardian Pre-assembled Heating Cable Kits

- Perfect for residential or commercial small applications with short pipe runs up to 100', 2" diameter.
- Rugged copper braid provides abrasion and damage protection.
- 120V (30' power cord & plug) 240V (hardwired).



75-W51-6P
Illustrated



Gardian Pre-assembled Heating Cable

120V

Part #	Watts/ft	Volts	Length	Weight
75-W51-6P	5	120V	6' Kit	1.0 lbs.
75-W51-12P	5	120V	12' Kit	1.3 lbs.
75-W51-18P	5	120V	18' Kit	1.6 lbs.
75-W51-24P	5	120V	24' Kit	2.0 lbs.
75-W51-50P	5	120V	50' Kit	3.3 lbs.
75-W51-75P	5	120V	75' Kit	5.4 lbs.
75-W51-100P	5	120V	100' Kit	6.9 lbs.

240V

Part #	Watts/ft	Volts	Length	Weight
75-W52-6L	5	240V	6' Kit	1.0 lbs.
75-W52-12L	5	240V	12' Kit	1.3 lbs.
75-W52-18L	5	240V	18' Kit	1.6 lbs.
75-W52-24L	5	240V	24' Kit	2.0 lbs.

Accessories - Self Regulating Heat Cable

Raychem

Accessories



75-FGK-P-RS
Termination Kit Illustrated

Part #	Description	Weight
75-H900	Power connection kit.	0.5 lbs.
75-H903	Fibreglass application tape & "Electric traced" labels.	0.3 lbs.
75-H908	Plug-in Power connection kit.	1.0 lbs.
75-H910	Splice & tee kit.	0.3 lbs.
75-FGK-P-RS	"Original" termination kit.	0.3 lbs.
75-H911*	Plug-in power connection kit.	0.5 lbs.
75-H912	Gel-filled end seal kit (2 ea.)	0.3 lbs.
75-H913	Roof clips (10 ea.)	1.0 lbs.
75-H914	Roof clips (50 ea.)	4.0 lbs.
75-H915	Downspout hanger bracket.	0.5 lbs.
75-H921	120V junction box with ELCI.	4.0 lbs.
75-H931	Plug-in GFCI adapter.	1.0 lbs.
75-AMC-F5	Fixed point thermostat 5°C (40°F).	1.5 lbs.
75-TC-3	2 receptacle thermo cube thermostatically controlled outlet (120V, 15 amp). - ON @ 2°C (35°F), OFF @ 7°C (45°F).	1.0 lbs.

*75-H911 connection kit is for use only with 75-H311 series heating cables. Plug includes GFI.

Definite Purpose Magnetic Contactors



Rotom Definite Purpose Magnetic Contactors

Contactors are designed to establish or interrupt a power circuit. Definite purpose contactors unlike general purpose contactors are non-rebuildable electronic controls designed for specific application with clearly defined operating conditions.

FEATURES:

- Compact size.
- Quieter than traditional designs.
- Far more efficient operation.
- Universal electrical connections.
- Quick connect terminals.
- Universal galvanized mounting plates.
- Protective Dust arc cover
- Snap on auxiliary contacts.
- Individually packaged.
- Easy to understand part numbers.
- Complete cross reference.
- UL, CE & cUL approved.
- Price competitive.

Typical Applications

- Heating
- Ventilation
- Air Conditioning
- Refrigeration
 - Compressors
 - Motors
- Agriculture
- Pool & Spa Controls
- Food Service Equipment
- Welding Equipment
- Business Machines

Contactor Nomenclature

HC - 1 30 24

HC = Product Code
1 = Poles (1, 2, 3 or 4)
30 = Full Load Amps. (30A, 40A...)
24 = Coil Voltage (24, 120 or 240)

Contactor Terminal Types

- **30 Amp.** = #10-32 Combination Screw Terminals
 - **40, 50 & 60 Amp.** = # 14-4 Compression Lug Terminals with 1/4"-20 Screws
- Custom Terminal Type Models Available Upon Request!*

One Pole Contactors

- One pole contactor with shunt
- UL cUL CE Approved
- 4 - 1/4" Brass Spade Terminals Per Power Connection
- #10-32 Combination Screw Terminals
- 50/ 60 Hz

Part #	Full Load Amps.	Coil Voltage 50/60	Resistive Amps.	Locked Rotor Amps.@240V	Height	Width	Depth
HC-13024	30	24	40	180	2.38"	2.00"	3.29"
HC-130120	30	120	40	180	2.38"	2.00"	3.29"
HC-130240	30	208/240	40	180	2.38"	2.00"	3.29"

Two Pole Contactors

- UL cUL CE Approved
- 30 Amp.= 4 - 1/4" Brass Spade Terminals Per Power Connection
- 40 Amp.= 4 - 1/4" Copper Spade Terminals Per Power Connection
- 50/ 60 Hz
- Dust/Arc Cover Over Contacts (40 Amp Models & Up)

Part #	Full Load Amps.	Coil Voltage 50/60	Resistive Amps.	Locked Rotor Amps.@240V	Height	Width	Depth
HC-23024	30	24	40	180	2.45"	2.06"	3.32"
HC-230120	30	120	40	180	2.45"	2.06"	3.32"
HC-230240	30	208/240	40	180	2.45"	2.06"	3.32"
HC-24024	40	24	50	240	2.63"	2.06"	3.32"
HC-240120	40	120	50	240	2.63"	2.06"	3.32"
HC-240240	40	208/240	50	240	2.63"	2.06"	3.32"



HC-13024
1 Pole Contactor With Shunt Illustrated



HC-23024
2 Pole Contactor Illustrated

Definite Purpose Magnetic Contactors



HC-33024
3 Pole Contactor Illustrated

Three Pole Contactors

- UL cUL CE Approved
- 30 Amp.= 4 - 1/4" Brass Spade Terminals Per Power Connection
- 40 Amp.= 4 - 1/4" Copper Spade Terminals Per Power Connection
- 50/ 60 Hz
- Dust/Arc Cover Over Contacts With Built-In Test Button

Part #	Full Load Amps.	Coil Voltage 50/60	Resistive Amps.	Locked Rotor Amps. @240V	Height	Width	Depth
HC-33024	30	24	40	180	2.99"	2.37"	3.75"
HC-330120	30	120	40	180	2.99"	2.37"	3.75"
HC-330240	30	208/240	40	180	2.99"	2.37"	3.75"
HC-34024	40	24	50	240	2.99"	2.37"	3.75"
HC-340120	40	120	50	240	2.99"	2.37"	3.75"
HC-340240	40	208/240	50	240	2.99"	2.37"	3.75"
HC-35024	50	24	65	300	3.12"	2.75"	3.75"
HC-350120	50	120	65	300	3.12"	2.75"	3.75"
HC-350240	50	208/240	65	300	3.12"	2.75"	3.75"
HC-36024	60	24	75	360	3.12"	2.75"	3.75"
HC-360120	60	120	75	360	3.12"	2.75"	3.75"
HC-360240	60	208/240	75	360	3.12"	2.75"	3.75"



HC-44024
4 Pole Contactor Illustrated

Four Pole Contactors

- UL cUL CE Approved
- 30 Amp.= 4 - 1/4" Brass Spade Terminals Per Power Connection
- 40 Amp.= 4 - 1/4" Copper Spade Terminals Per Power Connection
- 50/ 60 Hz
- Dust/Arc Cover Over Contacts With Built-In Test Button

Part #	Full Load Amps.	Coil Voltage 50/60	Resistive Amps.	Locked Rotor Amps. @240V	Height	Width	Depth
HC-43024	30	24	40	180	2.99"	2.37"	3.75"
HC-430120	30	120	40	180	2.99"	2.37"	3.75"
HC-430240	30	208/240	40	180	2.99"	2.37"	3.75"
HC-44024	40	24	50	240	2.99"	2.37"	3.75"
HC-440120	40	120	50	240	2.99"	2.37"	3.75"
HC-440240	40	208/240	50	240	2.99"	2.37"	3.75"



Auxiliary Switch.
HC-250 (One Switch)
HC-500 (Two Switches)

Auxiliary Switch.
HC-600

Auxiliary Contact Switches

- Clips Directly Onto Either End Of Any 3 or 4 Pole Rotom Contactor
- 1/4" Quick Connect Terminals
- Snap Fast Action Switch

Part #	Continuous Amps.	Voltage Rating	Description	Height	Width	Depth
HC-250	10	300	1 x SPDT, N.O. & N.C.	2.81"	2.61"	0.67"
HC-500	10	300	2 x SPDT, N.O. & N.C.	2.81"	2.61"	0.67"
HC-600*	10	600	2 Contacts x 1 Pole, N.O (make) or N.C. (break)	2.77"	3.13"	0.70"

* 6-32 Screw Terminal Model Available - Order Part # **HC-600S**

Definite Purpose Magnetic Contactors - Cross Reference



Poles	Amps	Volts	Arrow Hart	Cutler Hammer	Fasco	Fasco New	Furnas	Furnas Centurion	GE 353 Series	GE 453 Series	Rotom
1	25	24	C251U10	C25ANB125T	1S25A	-	-	-	CR353CB1AH1	-	HC-13024
		120	C251U20	C25ANB125A	1S25B	-	-	-	CR353CB1AA1	-	HC-130120
		208/240	C251U30	C25ANB125B	1S25C	-	-	-	CR353CB1AB1	-	HC130240
1	30	24	C301U10	C25ANB130T	1S30A	C1S30A	-	-	CR353CC1AH1	-	HC-13024
		120	C301U20	C25ANB130A	1S30B	C1S30B	-	-	CR353CC1AA1	-	HC-130120
		208/240	C301U30	C25ANB130B	1S30C	C1S30C	-	-	CR353CC1AB1	-	HC-130240
1	40	24	-	C25ANB140T	-	C1S40A	-	-	CR353CD1AH1	-	HC-24024
		120	-	C25ANB140A	-	C1S40B	-	-	CR353CD1AA1	-	HC-240120
		208/240	-	C25ANB140B	-	C1S40C	-	-	CR353CD1AB1	-	HC-240240
1.5	25	24	C251NU10	C25CNB125T	-	-	45DD10AJLL2	45DG10AJD8A	CR353CB3AH1	CR453CB3HAA	HC-23024
		120	C251NU20	C25CNB125A	-	-	45DD10AFLL2	45DG10AFD8A	CR353CB3AA1	CR453CB3AAA	HC-230120
		208/240	C251NU30	C25CNB125B	-	-	45DD10AGLL2	45DG10AGD8A	CR353CB3AB1	CR453CB3BAA	HC-230240
1.5	30	24	C301NU10	C25CNB130T	-	-	45ED10AJLL2	45EG10AJA	CR353CC3AH1	CR453CC3HAA	HC-23024
		120	C301NU20	C25CNB130A	-	-	45ED10AFLL2	45EG10AFA	CR353CC3AA1	CR453CC3AAA	HC-230120
		208/240	C301NU30	C25CNB130B	-	-	45ED10AGLL2	45EG10AGA	CR353CC3AB1	CR453CC3BAA	HC-230240
1.5	40	24	-	C25CNB140T	-	-	45GD10AJ	45GG10AJA	CR353CD3AH1	CR453CD3HAA	HC-24024
		120	-	C25CNB140A	-	-	45GD10AF	45GG10AFA	CR353CD3AA1	CR453CD3AAA	HC-240120
		208/240	-	C25CNB140B	-	-	45GD10AG	45GG10AGA	CR353CD3AB1	CR453CD3BAA	HC-240240
2	20	24	C202U10	C25BNB220T	2S20A	-	45CA20AJ	45CG20AJ	CR353CA2AH1	CR453CA2HAA	H2-23024
		120	C202U20	C25BNB220A	2S20B	-	45CA20AF	45CG20AF	CR353CA2AA1	CR453CA2AAA	HC-230120
		208/240	C202U30	C25BNB220B	2S20C	-	45CA20AG	45CG20AG	CR353CA2AB1	CR453CA2BAA	HC-230240
2	25	24	C252U10	C25BNB225T	2S25A	-	45DA20AJ	45DG20AJ	CR353CB2AH1	CR453CB2HAA	H2-23024
		120	C252U20	C25BNB225A	2S25B	-	45DA20AF	45DG20AF	CR353CB2AA1	CR453CB2AAA	HC-230120
		208/240	C252U30	C25BNB225B	2S25C	-	45DA20AG	45DG20AG	CR353CB2AB1	CR453CB2BAA	HC-230240
2	25	24	ACC220U10	C25DND225T	-	-	41NB20AJM	42AF15AJ	CR353AB2AH1	-	HC-23024
		120	ACC220U20	C25DND225A	-	-	41NB20AFM	42AF15AF	CR353AB2AA1	-	HC-230120
		208/240	ACC220U30	C25DND225B	-	-	41NB20AGM	42AF15AG	CR353AB2AB1	-	HC-230240
2	30	24	C302U10	C25BNB230T	2S30A	C2S30A	45EA20AJ	45EG20AJ	CR353CC2AH1	CR453CC2HAA	H2-23024
		120	C302U20	C25BNB230A	2S30B	C2S30B	45EA20AF	45EG20AF	CR353CC2AA1	CR453CC2AAA	HC-230120
		208/240	C302U30	C25BNB230B	2S30C	C2S30C	45EA20AG	45EG20AG	CR353CC2AB1	CR453CC2BAA	HC-230240
2	30	24	ACC320U10	C25DND230T	-	-	42BE15AJ106	42BF15AJ	CR353AC2AH1	-	HC-23024
		120	ACC320U20	C25DND230A	-	-	42BE15AF106	42BF15AF	CR353AC2AA1	-	HC-230120
		208/240	ACC320U30	C25DND230B	-	-	42BE15AG106	42BF15AG	CR353AC2AB1	-	HC-230240
2	40	24	C402U10	C25BNB240T	2M40A	C2S40A	45GA20AJ	45GG20AJ	CR353CE2BH1	CR453CE2HBB	HC-24024
		120	C402U20	C25BNB240A	2M40B	C2S40B	45GA20AF	45GG20AF	CR353CE2BA1	CR453CE2ABB	HC-240120
		208/240	C402U30	C25BNB240B	2M40C	C2S40C	45GA20AG	45GG20AG	CR353CE2BB1	CR453CE2BBB	HC-240240
2	40	24	ACC420U10	C25DNF240T	-	-	42CE15AJ106	42CF15AJ	CR353AD2AH1	-	HC-24024
		120	ACC420U20	C25DNF240A	-	-	42CE15AF106	42CF15AF	CR353AD2AA1	-	HC240120
		208/240	ACC420U30	C25DNF240B	-	-	42CE15AG106	42CF15AG	CR353AD2AB1	-	HC-240240
2	50	24	ACC520U10	C25FNF250T	-	-	42DE15AJ106	42DF15AJ	CR353FE2BH1	-	HC-35024
		120	ACC520U20	C25FNF250A	-	-	42DE15AF106	42DF15AF	CR353FE2BA1	-	HC-350120
		208/240	ACC520U30	C25FNF250B	-	-	42DE15AG106	42DF15AG	CR353FE2BB1	-	HC-350240
2	60	24	ACC620U10	C25FNF260T	-	-	42EE15AJ106	42EF15AJ	CR353FF2BH1	-	HC-36024
		120	ACC620U20	C25FNF260A	-	-	42EE15AF106	42EF15AF	CR353FF2BA1	-	HC-360120
		208/240	ACC620U30	C25FNF260B	-	-	42EE15AG106	42EF15AG	CR353FF2BB1	-	HC-360240
3	25	24	ACC230U10	C25DND325T	3M25A	-	41NB30AJM	42AF35AJ	CR353AB3AH1	CR453AB3HAA	HC-33024
		120	ACC230U20	C25DND325A	3M25B	-	41NB30AFM	42AF35AF	CR353AB3AA1	CR453AB3AAA	HC-330120
		208/240	ACC230U30	C25DND325B	3M25C	-	41NB30AGM	42AF35AG	CR353AB3AB1	CR453AB3BAA	HC-330240
3	30	24	ACC330U10	C25DND330T	3M30A	C3M30A	42BE35AJ106	42BF35AJ	CR353AC3AH1	CR453AC3HAA	HC-33024
		120	ACC330U20	C25DND330A	3M30B	C3M30B	42BE35AF106	42BF35AF	CR353AC3AA1	CR453AC3AAA	HC-330120
		208/240	ACC330U30	C25DND330B	3M30C	C3M30C	42BE35AG106	42BF35AG	CR353AC3AB1	CR453AC3BAA	HC-330240
3	40	24	ACC430U10	C25DNF340T	3M40A	C3M40A	42CE35AJ106	42CF35AJ	CR353AD3BH1	CR453AD3HBB	HC-34024
		120	ACC430U20	C25DNF340A	3M40B	C3M40B	42CE35AF106	42CF35AF	CR353AD3BA1	CR453AD3ABB	HC-340120
		208/240	ACC430U30	C25DNF340B	3M40C	C3M40C	42CE35AG106	42CF35AG	CR353AD3BB1	CR453AD3BBB	HC-340240
3	50	24	ACC530U10	C25FNF350T	3L50A	C3L50A	42DE35AJ106	42DF35AJ	CR353FE3BH1	-	HC-35024
		120	ACC530U20	C25FNF350A	3L50B	C3L50B	42DE35AF106	42DF35AF	CR353FE3BA1	-	HC-350120
		208/240	ACC530U30	C25FNF350B	3L50C	C3L50C	42DE35AG106	42DF35AG	CR353FE3BB1	-	HC-350240
3	60	24	ACC630U10	C25FNF360T	3L60A	C3L60A	42EE35AJ106	42EF35AJ	CR353FF3BH1	-	HC-36024
		120	ACC630U20	C25FNF360A	3L60B	C3L60B	42EE35AF106	42EF35AF	CR353FF3BA1	-	HC-360120
		208/240	ACC630U30	C25FNF360B	3L60C	C3L60C	42EE35AG106	42EF35AG	CR353FF3BB1	-	HC-360240
4	25	24	-	C25END425T	-	-	42AF25AJ	42AF25AJ	CR353AB4AH1	-	HC-43024
		120	-	C25END425A	-	-	42AF25AF	42AF25AF	CR353AB4AA1	-	HC-430120
		208/240	-	C25END425B	-	-	42AF25AG	42AF25AG	CR353AB4AB1	-	HC-430240
4	30	24	ACC34U10	C25END430T	-	C4L30A	42BE25AJ106	42BF25AJ	CR353AC4AH1	-	HC-43024
		120	ACC34U20	C25END430A	-	C4L30B	42BE25AF106	42BF25AF	CR353AC4AA1	-	HC-430120
		208/240	ACC34U30	C25END430B	-	C4L30C	42BE25AG106	42BF25AG	CR353AC4AB1	-	HC-430240
4	40	24	ACC440U10	C25ENF440T	-	C4L40A	42CE25AJ106	42CF25AJ	CR353AD4BH1	-	HC-44024
		120	ACC440U20	C25ENF440A	-	C4L40B	42CE25AF106	42CF25AF	CR353AD4BA1	-	HC-440120
		208/240	ACC440U30	C25ENF440B	-	C4L40C	42CE25AG106	42CF25AG	CR353AD4BB1	-	HC-440240

Contactor Nomenclature • HC - 1 30 24

HC = Product Code • 1 = Poles (1, 2, 3 or 4) • 30 = Full Load Amps. (30A, 40A...) • 24 = Coil Voltage (24, 120 or 240)

Definite Purpose Magnetic Contactors - Cross Reference



Poles	Amps	Volts	Honeywell	Honeywell Economy	Honeywell Obsolete	Joslyn Clark	Mars	Mars	Mars Private	Products Unlimited	Square D	WR Stevco	Rotom
1	25	24	DP1025A5005	-	R824A1289	A77306652A3	-	60010	-	3100Y10Q1350	-	94-385	HC-13024
		120	DP1025B5046	-	R4242A1148	A77306652A1	-	60011	-	3100Y10T1350	-	94-386	HC-130120
		208/240	DP1025C5045	-	R4242A1155	A77306652A2	-	60012	-	3100Y10U1350	-	94-387	HC130240
1	30	24	DP1030A5013	-	R8243A1361	A77306651A3	-	60025	91101	3100Y10Q2350	-	94-388	HC-13024
		120	DP103085020	-	R4243A1139	A77306651A1	-	60026	91102	3100Y10T2350	-	94-389	HC-130120
		208/240	DP1030C5029	-	R4243A1147	A77306651A2	-	60027	91103	3100Y10U2350	-	94-390	HC-130240
1	40	24	DP1040A5004	-	-	-	-	-	91301	3100Y10Q19350	-	94-394	HC-24024
		120	DP1040B5003	-	-	-	-	-	91302	3100Y10T19350	-	94-395	HC-240120
		208/240	DP1040C5002	-	-	-	-	-	91303	3100Y10U19350	-	94-396	HC-240240
1.5	25	24	-	-	-	A77306654A3	-	-	-	3100Y15Q1350	8910DP21V14	-	HC-23024
		120	-	-	-	A77306654A1	-	-	-	3100Y15T1350	8910DP21V02	-	HC-230120
		208/240	-	-	-	A77306654A2	-	-	-	3100Y15U1350	8910DP21V09	-	HC-230240
1.5	30	24	-	-	-	A77306653A3	-	-	91111	3100Y15Q2350	8910DP31V14	-	HC-23024
		120	-	-	-	A77306653A1	-	-	91112	3100Y15T2350	8910DP31V02	-	HC-230120
		208/240	-	-	-	A77306653A2	-	-	91113	3100Y15Y2350	8910DP31V09	-	HC-230240
1.5	40	24	-	-	-	-	-	-	91311	3100Y15Q19350	-	-	HC-24024
		120	-	-	-	-	-	-	91312	3100Y15T19350	-	-	HC-240120
		208/240	-	-	-	-	-	-	91313	3100Y15U19350	-	-	HC-240240
2	20	24	DP2020A5021	-	R8242B1006	A77306680A3	-	60000	91121	3100Y20Q3350CL	8910DP12V14	-	H2-23024
		120	DP2020B5038	-	R4242B1005	A77306680A1	14122	60001	91122	3100Y20T3350CL	8910DP12V02	-	HC-230120
		208/240	DP2020C5037	-	R4242B1013	A77306680A2	14123	60002	91123	3100Y20U3350CL	8910DP12V09	-	HC-230240
2	25	24	-	-	-	A77306660A3	-	60015	91221	3100Y20Q5350CL	8910DP22V14	-	H2-23024
		120	-	-	-	A77306660A1	14222	60016	91222	3100Y20T5350CL	8910DP22V02	-	HC-230120
		208/240	-	-	-	A77306660A2	-	60017	91223	3100Y20U5350CL	8910DP22V09	-	HC-230240
2	25	24	-	-	-	A77309039A3	13083	60110	-	3100Y20Q8350	8910DPA22V14	-	HC-23024
		120	-	-	-	A77309039A1	13084	60111	-	3100Y20T8350	8910DPA22V02	-	HC-230120
		208/240	-	-	-	A77309039A2	13085	60112	-	3100Y20U8350	8910DPA22V09	-	HC-230240
2	30	24	DP2030A5004	DP2030A1003	R8243B1005	A77306657A3	14321	60030	91321	3100Y20Q6350CL	8910DP32V14	90-244	H2-23024
		120	DP2030B5003	DP2030B1002	R4234B1004	A77306657A1	14322	60031	91322	3100Y20T6350CL	8910DP32V02	90-245	HC-230120
		208/240	DP2030C5002	DP2030C1001	R4243B1012	A77306657A2	14323	60032	91323	3100Y20U6350CL	8910DP32V09	90-246	HC-230240
2	30	24	DP2030A5012	-	-	A77309043A3	-	60130	-	3100Y20Q9350	8910DPA32V14	-	HC-23024
		120	DP2030B5011	-	-	A77309042A1	-	60131	-	3100Y20T9350	8910DPA32V02	-	HC-230120
		208/240	DP2030C5010	-	-	A77309042A2	-	60132	-	3100Y20U9350	8910DPA32V09	-	HC-230240
2	40	24	DP2040A5003	DP2040A1002	R8243B1020	-	14421	60045	91421	3100Y20Q18350CL	8910DPA42V14	90-247	HC-24024
		120	DP2040B5002	DP2040B1001	-	-	14422	60046	91422	3100Y20T18350CL	8910DPA42V02	90-248	HC-240120
		208/240	DP2040C5001	DP2040C1000	-	-	14423	60047	91423	3100Y20U18350CL	8910DPA42V09	90-249	HC-240240
2	40	24	-	-	-	A77309045A3	-	60140	-	3100Y20Q10350	8910DPA42V14	-	HC-24024
		120	-	-	-	A77309045A1	-	60141	-	3100Y20T10350	8910DPA42V02	-	HC240120
		208/240	-	-	-	A77309045A2	-	60142	-	3100Y20U10350	8910DPA42V09	-	HC-240240
2	50	24	-	-	-	DP5C5023	-	-	-	3100Y20Q16350	8910DPA52V14	-	HC-35024
		120	-	-	-	DP5C5021	-	-	-	3100Y20T16350	8910DPA52V02	-	HC-350120
		208/240	-	-	-	DP5C5020	-	-	-	3100Y20U16350	8910DPA52V09	-	HC-350240
2	60	24	-	-	-	DP5C6023	-	-	-	3100Y20Q17350	8910DPA62V14	-	HC-36024
		120	-	-	-	DP5C6021	-	-	-	3100Y20T17350	8910DPA62V02	-	HC-360120
		208/240	-	-	-	DP5C6022	-	-	-	3100Y20U17350	8910DPA62V09	-	HC-360240
3	25	24	DP3025A5003	DP3025A1002	-	A77309042A3	14231	60115	91231	3100Y30Q8350	8910DPA23V14	90-160	HC-33024
		120	DP3025B5002	DP3025B1001	-	A77309042A1	14232	60116	91232	3100Y30T8350	8910DPA23V03	90-161	HC-330120
		208/240	DP3025C5001	DP3025C1000	-	A77309042A2	14233	60119	91233	3100Y30U8350	8910DPA23V09	90-162	HC-330240
3	30	24	DP3030A5003	DP3020A1002	R8212G1209	A7730904A3	14331	60135	91331	3100Y30Q9350	8910DPA33V14	90-163	HC-33024
		120	DP3030B5002	DP3020B1001	R4212R1014	A7730904A1	14332	60136	91332	3100Y30T9350	8910DPA33V03	90-164	HC-330120
		208/240	DP3030C5001	DP3030C1000	-	A7730904A2	14333	60139	91333	3100Y30U9350	8910DPA33V09	90-165	HC-330240
3	40	24	DP3040A5002	DP3040A1001	R8214G1140	A77309046A3	14431	60145	91431	3100Y30Q10350	8910DPA43V14	90-170	HC-34024
		120	DP3040B5001	DP3040B1000	R4214G1347	A77309046A1	14432	60146	91432	3100Y30T10350	8910DPA43V03	90-171	HC-3402120
		208/240	DP3040C5000	DP3040C1009	-	A77309046A2	14433	60149	91433	3100Y30U10350	8910DPA43V09	90-172	HC-340240
3	50	24	DP3050A5001	DP3050A1000	R8220B1051	DP5C5033	14531	60200	91531	3100Y30Q16350	8910DPA53V14	92-459	HC-35024
		120	DP3050B5000	DP3050B1009	R4220B1009	DP5C5031	14532	60201	91532	3100Y30T16350	8910DPA53V03	92-460	HC-350120
		208/240	DP3050C5009	DP3050C1008	R4220B1100	DP5C5032	14533	60202	91533	3100Y30U16350	8910DPA53V09	92-461	HC-350240
3	60	24	DP3060A5000	DP3060A1009	R8234B1022	DP5C6033	14631	60205	91631	3100Y30Q17350	8910DPA63V14	92-463	HC-36024
		120	DP3060B5009	DP3060B1008	R4234B1054	DP5C6031	14632	60206	91632	3100Y30T17350	8910DPA63V03	92-464	HC-360120
		208/240	DP3060C5008	DP3060C1007	R4234B1062	DP5C6032	14633	60207	91633	3100Y30U17350	8910DPA63V09	92-465	HC-360240
4	25	24	-	-	-	A77309026A3	-	-	-	3100Y40Q8350	8910DPA24V14	-	HC-43024
		120	-	-	-	A77309026A1	-	-	-	3100Y40T8350	8910DPA24V03	-	HC-430120
		208/240	-	-	-	A77309026A2	-	-	-	3100Y40U8350	8910DPA24V09	-	HC-430240
4	30	24	-	-	-	A77309027A3	-	-	-	3100Y40Q9350	8910DPA34V14	-	HC-43024
		120	-	-	-	A77309027A1	-	-	-	3100Y40T9350	8910DPA34V03	-	HC-430120
		208/240	-	-	-	A77309027A2	-	-	-	3100Y40U9350	8910DPA34V09	-	HC-430240
4	40	24	-	DP4040A1000	-	A77309028A3	-	-	-	3100Y40Q10350	8910DPA44V14	-	HC-44024
		120	-	DP4040B1009	-	A77309028A1	-	-	-	3100Y40T10350	8910DPA44V03	-	HC-440120
		208/240	-	DP4040C1008	-	A77309028A2	-	-	-	3100Y40U10350	8910DPA44V09	-	HC-440240

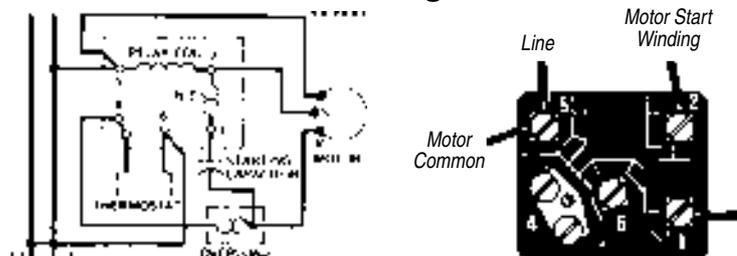
All reasonable effort has been made to accurately compose this contactor cross reference chart. However, product users are responsible to ensure actual product suitability & application use.

Potential Relays



22-19003
Illustrated

Wiring Diagram



Potential Relays

- Universal Replacements
- Dual Heavy Duty Contacts
- Universal Mounting Plate

Part #	Relay Type	Continuous Coil Voltage	Pick-up		Drop Out Range
			Min	Max	
22-19002	63	170	140	153	65
22-19003	64	395	245	275	140
22-19004	65	336	171	184	90
22-19005	66	395	208	239	130
22-19006	67	420	300	328	121
22-19007	68	495	323	352	135
22-19008	69	395	180	195	100
22-19009	70	256	278	306	77
22-19010	71	420	223	252	150

Potential Relay Selection Guide

- Ignore the numbers or letters represented by the asterisks *.
- The key numbers and letters are shown in bold black.
- Find these numbers and letters as shown above and then find your match from the chart.

Part #	Supco	ESSEX	GE, Form & Group
		R B M 1 2 8 * * 6 * * 6 * W	3 A R R - * 1 0 A U
22-19002	9063	11M, 21M, 22M, 62M	2J, 2K, 2L, 2M, 5N, 7J, 7K, 7L, 7M, 7N, 8L, 8M, 8N.
22-19003	9064	23-27A, 63-67A, 23-26B, 63-66B, 25C, 26C, 65C, 66C	3A, 3B, 3AV, 3AU, 4A, 4B, 6A, 6B, 6AV, 10A, 10B, 10AU, 10AV, 14A, 14B, 16A.
22-19004	9065	22-24P, 62-64P, 23R, 24R, 63R, 64R, 64S	3P, 3R, 3AP, 5P, 5R, 5S, 5T, 13P, 19N, 22S, 10AP.
22-19005	9066	26U, 66U, 25V, 26V, 65V, 66V, (66W)	3U, 3V, 3AT, 6U, 6V, 6W, 16U.
22-19006	9067	23C, 24C, 63C, 64C, 24-27D, 64-67D	3C, 3D, 3AA, 4C, 4D, 4BK, 6C, 6D, 6AA, 10C, 10D, 26A, 26B, 26C, 26D.
22-19007	9068	23E, 24E, 27E, 63E, 23-27F, 63F, 64F, 66F, 67F, 23G, 26G, 63G, 66G, 25H, 65H, 66H	3E, 3F, 3AB, 3AC, 4E, 4F, 4G, 6E, 6F, 6G, 10H, 10AB, 10AC, 26E, 26F, 26G, 26H, 27E, 27F, 27G.
22-19008	9069	26	3S, 3T, 10S, 10T, 10AS, 13S, 13T, 20S, 25S, 25T, 10AS.
22-19009	9070	23D, 63D	5B, 5C, 5D, 5AA, 8B, 8C, 8D, 27A, 27B, 27C.
22-19010	9071	71	6TV, 6TW, 10V, 16TV, 20V.

Klixon Hardstart Kit



25-32320
Illustrated

Features

- Non positional.
- Reduces starting current.
- Doubles or triples starting torque.
- Solves low voltage problems.
- Comes with mounting clip.

Klixon 8 EA Hard Start Kit

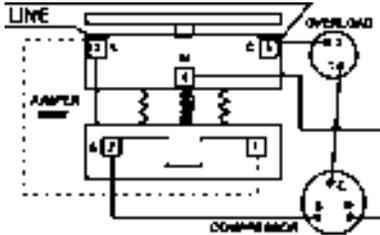
Part #	Amps	Voltage	Hp
25-32320	25	120/208/240	Effective to 7½ Hp.

Current Relays

3CR Type

Split Phase Motors

Connect jumper wire between terminals 1 & 3



Capacitor Start Motors

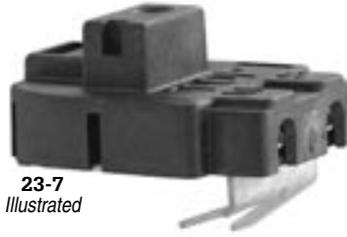
Connect capacitor between terminals 1 & 3.



23-1001
Illustrated

23-7

Solid State Relay

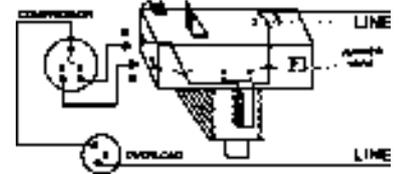


23-7
Illustrated

9660 Type

Split Phase Motors

Connect jumper wire between terminals 1 & 2.



Current Relay Selection

Step 1

Identify the last 3 digits of the Current Relay you are replacing.

Example

3CR-100-*** or 9660-041-***

Step 2

Using the Selection Chart below, determine what range the last three numbers fit into.

Example

The number 119 is in the 112 to 121 range.

Step 3

Select your replacement relay from the right hand column, for push-on mounting or the left hand column, for bracket mounting.

Capacitor Start Motors

Connect capacitor between terminals 1 & 2.



23-7001
Illustrated

Current Relays

Bracket Mounting	Pick-up & Drop out	Push-on Mounting
23-1008	*79	23-7472
	*92	23-7
	*93	23-7
23-1009	*97	
23-1010	*98	23-7
23-1009	*99	
23-1007	901	
23-1007	902	
23-1008	903	23-7472
23-7	904	23-7
23-7	905	23-7
23-1003	906	23-7
23-1007	907	
23-1005	908	23-7005
23-1003	910	23-7
	911	23-7
23-1003	913	23-7003
23-1002	921	23-7002
23-1004	923	23-7004
23-1005	925	23-7005
23-1005	927	23-7005
23-7	931	23-7
23-7	932	23-7

* = 1 or 2.

Selection Chart

Bracket Mounting	Selection Chart	Push-on Mounting
23-7	077 to 111 or 200 to 211	23-7
23-1001	112 to 121 or 212 to 221	23-7001
23-1002	122 to 135 or 222 to 235	23-7002
23-1003	136 to 145 or 236 to 245	23-7003
23-1004	146 to 155 or 246 to 255	23-7004
23-1005	156 to 165 or 256 to 265	23-7005
23-1007	171 to 175 or 271 to 275	
23-1008	176 to 178 or 276 to 278	
23-1009	179 to 184 or 279 to 284	
23-1010	185 to 189 or 285 to 289	
-	3CR-***-179 or 279	23-7472

This reference should be used as a guide only.

Current Relays

Bracket Mounting	Pick-up & Drop out	Push-on Mounting
23-7	900	23-7
23-1005	901	23-7005
23-1003	903	23-7003
23-1003	904	23-7003
23-1005	905	23-7005
23-1004	906	23-7003
23-7	907	23-7
23-1001	908	23-7001
23-7	909	23-7001
23-7	911	23-7
23-7	913	23-7
23-1002	914	23-7
23-1003	945	23-7003
23-1005	958	23-7005
23-1007	973	
23-1007	974	
23-1008	975	
23-1003	992	23-7003
23-1003	999	23-7003

Mag Line Relays



25-17002
Illustrated

Application

- Air conditioning
- 2 Speed fan motors
- Heat pumps
- Isolated relay

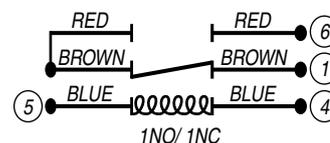
Features

- Replaces RBM91256.
- Incorporates all Type 128000 features except operating coils which are designed for standard commercial voltages.
- Screw or quick-connect terminals
- Variety of mounting configurations
- Mechanical Life (no load) - 500,000 operations, 60 operations/min.
- Electrical Life (rated load) - 100,000 operations, 6 operations/min.
- Coil Insulation Class B
- Coils continuous duty cycle
- Coil operates 85% of nominal coil voltage; 110% maximum safe operate
- 50/60 Hz
- UL (file # E12139) • CSA (file #LR13360)

Contact Rating

AC Voltage	Power		Pilot	
	Inductive	Resistive	Inductive	Resistive
120 VAC	10	60	-	-
125 VAC	-	-	-	1*
240 VAC	5	30	-	-
250 VAC	-	-	18	1½
277 VAC	Consult Factory		-	-
480 VAC	4	20	-	-

* Single phase for 1000 operations.

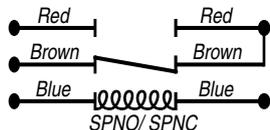


Part #	Coil Voltage	Type	LRA		Contacts		Coil Data				Weight
			NO	NC	Form	Rating	DC Resistance	MA	Nominal VA	Inrush VA	
25-17002	24	CA32	55	35	1 NO - 1 NC	Power	45.7	167	4	8	184.27g (6.5 oz)
25-17004	115/120	CA7			1 NO - 1 NC	Power	761	33			

Totally Enclosed Relays



25-17019
Illustrated



Features

- Mounting base complete with bushing, locknuts & position locking plate.
- Designed for installing in standard electrical box with ½" knock-out.
- Double break silver alloy contacts.
- Completely enclosed.
- Operates in any position.
- Mechanical Life (no load) - 500,000 operations, 60 operations/min.
- Electrical Life (rated load) - 100,000 operations, 6 operations/min.
- Coil Insulation Class B
- Coils continuous duty cycle
- Coil operates 85% of nominal coil voltage; 110% maximum safe operate
- 50/60 Hz
- UL (file # E12139) • CSA (file #LR13360)

Totally Enclosed Relays

Part #	Coil Voltage	Type	LRA		Coil Data				Contact Rating 250 VAC Max		Weight
			NO	NC	DC Resistance	MA	Nominal VA	Inrush VA	Inductive	Resistive	
25-17018	24	FB32	55	35	45.7	167	4	8	18 Amps Continuous 1 Hp - 120V 1½ Hp - 250V	18 Amps Continuous	184.27g (6.5 oz)
25-17019	115/120	FD7			761	33					
25-17020	208/230	FD5			3316	17					

SPDT relays may be used on SPST applications by eliminating use of red lead for normally open applications or eliminating use of brown lead for normally closed applications.

General Purpose Fan Relays - Standard Duty

ALTEMP



25-90290
Illustrated

Features

- Designed for switching single or two speed fan motor, relays, solenoids, resistive loads in cooling, heating or general purpose switching applications.
- Replace WR/ Essex/ RBM & Mars type 84 models
- Totally enclosed compact design.
- Quiet & reliable operations.
- UL & cUR (file E44211)
- SPST & SPDT models.
- Universal mounting bracket.

Specifications

- Temperature Range: -20°C (-4°F) to 40°C (104°F).
- Mechanical Life: 1,000,000 operations.
- Electrical Life: 100,000 operations (@ 16amp 240VAC Res.)
- Operate Time (typical): 25 ms at nominal coil voltage.
- Release Time (typical): 25 ms at nominal coil voltage.
- Dielectric Strength (at sea level for 1 min.):
 - 2500 Vrms coil to contact.
 - 1000 Vrms between open contacts.
- Coil Frequency: 50/60 Hz.
- Coil Insulation: Class A (105°C / 221°F).
- Coil Duty Cycle: Continuous.
- Terminals: 1/4" quick-connects.
- Contact Material: Silver cerium
- Enclosure: Phenolic.

2-Pole HVAC Standard Duty Relays

Coil Data

Coil Voltage	Part # SPST	Part # SPDT	Weight
24	25-90290	25-90293	75g (2.65oz.) (Approx.)
120	25-90291	25-90294	
240	25-90292	25-90295	

Coil Voltage	Coil Resistance DC OHMS ±10%	Nominal Current MA	Nominal VA Sealed	Inrush VA
24	90	146	3.5	4
120	2,000	29		
240	7,200	15		

Contact Rating - 125/250 VAC

FLA	LRA	Inductive Amps	Resistive Amps
8	18	8 Amp Continuous	16 Amp Continuous

Totally Enclosed Fan Relays - Heavy Duty

ALTEMP



25-90380
Illustrated

Features

- Designed for cooling, heating or general purpose switching equipment operating heavier loads.
- Replace WR/ Essex/ RBM & Mars type 184 models
- Totally enclosed compact design.
- Quiet & reliable operations.
- Universal mounting bracket
- UL & cUR (file E44211)
- SPST, SPDT & SPNO/SPNC models.

Specifications

- Temperature Range: -20°C (-4°F) to 40°C (104°F).
- Mechanical Life: 1,000,000 operations.
- Electrical Life: 100,000 operations (@ 25amp 277VAC Res.)
- Operate Time (typical): 25 ms at nominal coil voltage.
- Release Time (typical): 25 ms at nominal coil voltage.
- Dielectric Strength (at sea level for 1 min.):
 - 2500 Vrms coil to contact.
 - 1000 Vrms between open contacts.
- Coil Frequency: 50/60 Hz.
- Coil Insulation: Class A (105°C / 221°F).
- Coil Duty Cycle: Continuous.
- Terminals: 1/4" quick-connects.
- Contact Material: Silver cadmium oxide.
- Enclosure: Phenolic.

Heavy Duty Relays

Coil Voltage	SPST Part #	SPDT Part #	SPNO-SPNC* Part #	Weight
24	25-90360	25-90370	25-90380	85g (2.99 oz.) (Approx.)
120	25-90362	25-90372	25-90382	
240	25-90364	25-90374	25-90384	

*Isolated Contacts

Coil Data

Coil Voltage	Coil Resistance DC OHMS ±10%	Coil data Nominal Current MA	Coil Data Nominal VA Sealed	Inrush VA
24	77	167	4	4
120	2,000	33		
240	7,200	17		

Contact Rating

VAC	Amps	FLA	LRA	Inductive Amps	Resistive Amps
125VAC	25	14	84	14 Amp Continuous	25 Amp Continuous @ 277 VAC
250VAC		8	48	8 Amp Continuous	
277VAC		7	42	7 Amp Continuous	

Totally Enclosed Relay - 2 Pole HVAC Switching Relays



25-90340
Illustrated

Features

- Intended for many applications in air conditioning, refrigeration, heating and general purpose switching.
- Replaces Honeywell, White-Rodgers/RBM & Mars (cross reference in packaging)
- Semi-enclosed compact design.
- Quiet & reliable operations.
- Universal mounting bracket
- Molded terminal numbers and circuit diagram on top of relay.
- Dimensions 2.13" x 1.88" x 2.25".
- UL & cUR (file E44211).
- 2 Pole DT mode

Specifications

- Temperature Range: -40°C (-40°F) to 54°C (130°F).
- Mechanical Life: 750,000 operations.
- Electrical Life: 100,000 operations.
- Coil Frequency: 50/60 Hz.
- Coil Insulation: Class B.
- Coil Duty Cycle: Continuous.
- Terminals: ¼" quick-connects.
- Contact Material: Silver cadmium oxide.
- Enclosure: Phenolic.

Contact Rating

VAC	Amps General Use	HP	LRA	FLA
125V	15	3/4	82.8	13.8
208V			45.6	7.6
250V			41.4	6.9
277V		-	36.0	6.0

Heavy Duty Relays

Coil Voltage	DPDT Part #	Terminals 1,2,3.	Terminals 4,5,6.	Weight	Cross Reference		
					WR/RBM	Honeywell	Mars
24	25-90340	Power	Power	170.1 g (6 oz.) (Approx)	90-340	R4222B1082	90340
120	25-90341				90-341	R4222B1090	90341
240	25-90342				90-342	R4222D1013	90342

Coil Data

Coil Voltage	Coil Resistance DC OHMS ±10%	Inrush VA Max.	Nominal Current MA	Nominal VA Sealed Max.
24	15	21.5	334	8
120	400		66	
240	1415		38	

Fan Control Centre



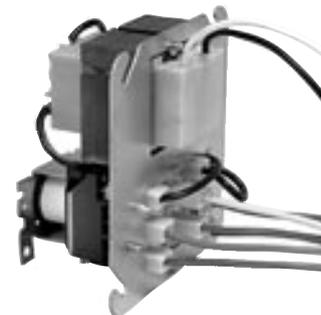
25-90113
Illustrated

Relay/Transformer Fan Centre Assembly

Fan centre controls provide convenient low voltage control of one and two speed fan motors and auxiliary circuits in heating, cooling or heating/cooling applications. Each fan centre control is a reliable, compact unit consisting of a 24 volt control transformer and a plug-in switching relay mounted on a 4" square electrical junction box cover. All line voltage connections are made inside the box with colour coded pre-stripped leads. Low voltage connections are made at a convenient terminal board mounted to the transformer.

Features

- DPDT or SPDT relay.
- 24V coil voltage, power and duty rated contacts.
- Colour coded pre-stripped leads.
- Low voltage terminal board.
- Input Voltage 120V or 208/240V, Output Voltage - 24V, 40 VA.
- Mounts directly to 4" electrical box.
- UL/CUR File E237660.



Fan Control Centre

Transformer

Relay Contact Ratings

Part #	Primary		Secondary		Full Relay	120 VAC (amps)		240 VAC (amps)		Resistive	Cross Reference
	Voltage	Connection	Voltage	Connection		LRA	FLA	LRA	FLA		
25-90113	120	Colour coded pre-stripped leads.	24 V	Terminal board with 5 screw terminals.	DPDT	13.8	82.8	6.9	39.6	15 Amps @ 277 VAC.	Honeywell: R8285 Series. Mars: 90113. White Rodgers: 8A05A-101.

3/4" Motor Overload Protectors



27-31226
Illustrated

3/4" Motor Overload Protectors

Product Code	Step 1	Step 2	Step 3	Step 4
27-	3	1	2	26
27-	3	1	4	64
27-	3	2	2	00
27-	3	2	2	20
27-	3	2	3	00
27-	3	2	3	30
27-	3	2	3	40
27-	3	2	4	16
27-	3	2	4	20
27-	3	3	2	16
27-	3	3	3	24
27-	3	3	3	30
27-	3	3	4	36
27-	3	3	4	60

STEP 1

If the first letter of the Klixon part number is an "M", the first number of the R-Line replacement part will be a "3". If the first Klixon letter is a "C", then see 1" Motor Overload Protectors. M = 3, C = 4

- K, L, V (105°) = 1
- N, X, Y, Z (120°) = 2
- M, R, S, U, W (135°) = 3
- P, O (150°) = 3

STEP 2

Determine the last letter of the Klixon part number. Locate the letter below. The number at the end of the line (next to the temperature) becomes the second number of the R-Line replacement part.

X-Reference Example:

Klixon Part # **MRP-26-AEK-34**
R-Line Part # **27-31226**

STEP 3

Referring back to the Klixon part number, determine the letter(s) that precede the letter chosen in Step "2" and locate below. The number opposite the letter(s) is the third number of the R-Line replacement part.

- A, S, T, AB, AD = 1
- B, I, R, AE, AF, AG = 2
- C, D, E, G, J, K, N, O, AH, AI, AJ, AK, AL = 3
- F, H, L, AM, AP = 4

STEP 4

Determine the first two numbers of the Klixon part number. They become the fourth and fifth numbers of the R-Line replacement part. Use the new number to obtain the closest R-Line replacement part number. If not exact use the closest smaller number.

1" Motor Overload Protectors



27-42871
Illustrated

1" Motor Overload Protectors

Product Code	Step 1	Step 2	Step 3	Step 4
27-	4	1	6	98
27-	4	1	8	73
27-	4	2	6	33
27-	4	2	7	00
27-	4	2	7	18
27-	4	2	7	35
27-	4	2	8	34
27-	4	2	8	71
27-	4	3	6	00
27-	4	3	6	16
27-	4	3	6	98
27-	4	4	6	98

STEP 1

If the first letter of the Klixon part number is a "C", the first number of the R-Line replacement part will be a "4". If the first Klixon letter is a "M", then see 3/4" Motor Overload Protectors. C = 4, M = 3

- K, L, V (105°) = 1
- N, X, Y, Z (120°) = 2
- M, R, S, U, W (135°) = 3
- P, O (150°) = 3

STEP 2

Determine the last letter of the Klixon part number. Locate the letter below. The number at the end of the line (next to the temperature) becomes the second number of the R-Line replacement part.

X-Reference Example:

Klixon Part # **CRP-00-AEL-34**
R-Line Part # **27-41600**

STEP 3

Referring back to the Klixon part number, determine the letter(s) that precede the letter chosen in Step "2" and locate below. The number opposite the letter(s) is the third number of the R-Line replacement part.

- C, F, S, W, AB = 5
- D, I, P, X, Y, AE, AF, AG = 6
- G, H, J, K, N, O, AH, AI, AJ, AK, AL = 7
- E, L, T, AM, AN = 8

STEP 4

Determine the first two numbers of the Klixon part number. They become the fourth and fifth numbers of the R-Line replacement part. Use the new number to obtain the closest R-Line replacement part number. If not exact use the closest smaller number.

Control Transformers

ALTEMP

Features

- Compact superior design.
- Individually boxed with instructions.
- Includes necessary mounting hardware.
- Complete cross-reference.
- UL, cUL & CSA Class 2 not wet, Class 3 wet.
- Class 2 UL listed per UL 1585.
- Class 2 CSA listed per CSA 22.2 No. 66.

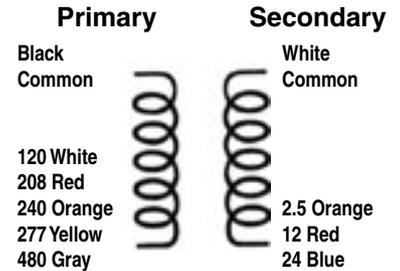
SPECIALLY DESIGNED FOR LOW VOLTAGE CONTROL APPLICATIONS IN THE INDUSTRIAL HEATING & COOLING INDUSTRY!

Control Transformers

Control transformers are designed for use in 2.5, 12 or 24 volt alternating current (AC) control systems, including air conditioning circuits, thermostats, gas valves, relays and or other applications that do not exceed the listed ratings. These contactors can be used to replace any transformers of the same primary voltage and equal or smaller VA ratings.

Lead Wire Colour Coding

Black Primary	Common Lead Voltage	White Secondary
	2.5	Orange
	12	Red
	24	Blue
White	120	
Red	208	
Orange	240	
Yellow	277	
Gray	480	



25-20241



25-40244
25-40245 Illustrated



25-40241 Illustrated
25-40242
25-40243



25-48003 Illustrated
25-50243



25-75241



25-75244 Illustrated
25-10244

Foot Mount

Part #	VA	Primary Voltage	Secondary	
			Voltage	Connections
25-20241	20	120	24	Wire
25-40244	40	120	24	Wire
25-40245	40	120/ 208/ 240	24	Wire

Multi Mount

- 25-52C6 mounting plate, (2) screws & (2) wire connectors included.

Part #	VA	Primary Voltage	Secondary	
			Voltage	Connections
25-40241	40	120	24	Screw
25-40242	40	208/ 240/ 277	24	Screw
25-40243	40	120/ 208/ 240	24	Screw
25-48003	48	120/ 208/ 240	2.5 / 12 / 24	Wire
25-50243	50	120/ 208/ 240	24	Wire

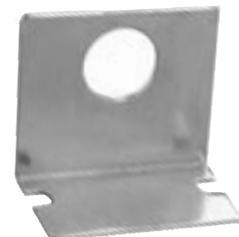
Foot Mount

Heavy Duty (c/w Circuit Breaker)

Part #	VA	Primary Voltage	Secondary	
			Voltage	Connections
25-75241	75	120	24	Wire
25-75244	75	120/ 208/ 240/ 480	24	Wire
25-10244	96	120/ 240/ 277/ 480	24	Wire



25-52C6
Mounting Plate & Hardware



25-FA112
Optional Mounting Plate

Electrical

Control Transformers



Cross-Reference

Foot Mount

Multi-Mount

Part #	25-20241	25-40244	25-40245	25-75241	25-75244	25-40241	25-40242	25-40243	25-48003	25-50243
VA	20	40	40	75	75	40	40	40	48	48
Primary Voltage	120	120	120/ 208/ 240	120	120/ 208/ 230/ 460	120	208/ 240	120/ 208/ 240	120/ 208/ 240	120/ 208/ 240
Secondary Voltage	24	24	24	24	24	24	24	24	24/ 12/ 25	24
Honeywell	AT10A1123 AT20B1056		AT140A1018	AT88A1005	AT88A1021 AT88A1047 AT175A1008	AT40A1121 AT72D1188 AT72D1725 AT72D1915 AT72D1956	AT72D1055 AT72D1063 AT72D1063 AT72D1069 AT72D1096 AT72D1196 AT72D1202 AT70D1733	AT87A1106	AT7201691 AT7201683 AT87A1007 AT87A1056	
White Rodgers Essex RBM	T40F1	T40F2 T40F3			T75C3	T40M1 T40S1 S81-125 S81-373 S84-11	T40M2 T40S2 S81-130 S81-374 S84G-11	T40M3 T40S3	S81-240 S81-288	T50F3 T50M2 T50S2
Penn				Y66AUD-1	Y66AUD-1 Y66SUD-1 Y66FUD	Y65AJ1 Y65AP1 Y65AR1 Y65AS1	Y61BR1 Y61SR1 Y65BJ1 Y65BS1 Y65BR1 Y65CJ1 Y65CS1 Y65SE1 Y65SP1 Y65SR1	Y63AJB1 Y63ALB2 Y63SJB1 Y63SLB2		Y63SJB1 Y63SLB2 Y65AJB1 Y65ALB2
Robert Shaw	620-205	620-405	620-206 620-406 620-482		620-752 620-758 620-775 620-779	620-403	620-404		620-402	620-501 620-502
Mars	50301 50351 50361	50352 50362	50353 50354 50363	50322	50320 50321 50324 50326	50302	50303	50304 50314	50333 50356 50357	
Gem	GT455	GT444	GT446		GT457 GT475	GT460	GT461	GT443	GT454 GT456	
U.E.	UET104 UET144	UET105	UET155	UET75 UET175	UET176 UET177 UET178	UET102 UET112	UET103 UET113	UET50 UET150 UET151 UET153	UET101 UET111	
Packard	PF12420		PF22440 PF42420 PF42440		PF52475	PF12440 PF42440	PM32440	PM42440 PM42440TM	PM43448 PM43450	PM42450 PM42450TB

Start Capacitors



Start Capacitors

110/125 Volt Round			MFD	165 Volt Round			220/250 Volt Round			330 Volt Round		
Part #	Dia.	Height		Part #	Dia.	Height	Part #	Dia.	Height	Part #	Dia.	Height
35-21A125	1.44"	2.75"	21-25			35-21A250	1.44"	2.75"	35-21B330	1.44"	3.38"	
35-25A125	1.44"	2.75"	25-30			35-25A250	1.44"	2.75"	35-25B330	1.44"	3.38"	
35-30A125	1.44"	2.75"	30-36			35-30A250	1.44"	2.75"	35-30D330	1.81"	3.38"	
35-36A125	1.44"	2.75"	36-43			35-36B250	1.44"	3.38"	35-36D330	1.81"	3.38"	
35-43A125	1.44"	2.75"	43-56			35-43B250	1.44"	3.38"	35-43D330	1.81"	3.38"	
			43-56			35-43F250	2.06"	3.38"				
			47-56			35-47B250	1.44"	3.38"				
35-53A125	1.44"	2.75"	53-64			35-53A250	1.44"	2.75"	35-53D330	1.81"	3.38"	
			53-64			35-53B250	1.44"	3.38"	35-56D330	1.81"	3.38"	
			56-72			35-56A250	1.44"	2.75"				
			56-72			35-56B250	1.44"	3.38"				
			59-71			35-59F250	2.06"	3.38"				
35-64A125	1.44"	2.75"	64-77			35-64A250	1.44"	2.75"	35-64D330	1.81"	3.38"	
			64-77			35-64D250	1.81"	3.38"				
35-72A125	1.44"	2.75"	72-88	35-72A165	1.44"	2.75"	35-72D250	1.81"	3.38"	35-72E330	1.81"	4.38"
35-88A125	1.44"	2.75"	88-108	35-88A165	1.44"	2.75"	35-88D250	1.81"	3.38"	35-88F330	2.06"	3.38"
			108-130	35-108B165	1.44"	3.38"	35-108D250	1.81"	3.38"	35-108D330	1.81"	3.38"
35-108A125	1.44"	2.75"	108-130	35-124B165	1.44"	3.38"	35-124D250	1.81"	3.38"	35-108G330	2.06"	4.38"
35-124A125	1.44"	2.75"	124-149	35-130B165	1.44"	3.38"	35-130D250	1.81"	3.38"	35-124G330	2.06"	4.38"
35-130A125	1.44"	2.75"	130-156	35-145B165	1.44"	3.38"	35-145F250	2.06"	3.38"	35-130G330	2.06"	4.38"
35-135A125	1.44"	2.75"	135-162	35-161D165	1.81"	3.38"	35-161D250	1.81"	3.38"	35-135H330	2.56"	4.38"
35-145A125	1.44"	2.75"	145-174	35-189D165	1.81"	3.38"	35-161E250	1.81"	4.38"	35-145H330	2.56"	4.38"
35-161A125	1.44"	2.75"	161-193			35-161F250	2.06"	3.38"	35-161H330	2.56"	4.38"	
			161-193			35-189G250	2.06"	4.38"				
			161-193						35-189G330	2.06"	4.38"	
35-189A125	1.44"	2.75"	189-227						35-189H330	2.56"	4.38"	
			189-227									
35-200A125	1.44"	2.75"	200-240	35-216D165	1.81"	3.38"	35-216F250	2.06"	3.38"	35-216H330	2.56"	4.38"
35-216A125	1.44"	2.75"	216-259	35-233D165	1.81"	3.38"	35-216G250	2.06"	4.38"			
			216-259	35-243D165	1.81"	3.38"	35-233G250	2.06"	4.38"			
35-233A125	1.44"	2.75"	233-280			35-243G250	2.06"	4.38"				
35-243A125	1.44"	2.75"	243-292									
35-243B125	1.44"	3.38"	243-292									
35-250A125	1.44"	2.75"	250-300									
35-250F125	2.06"	3.38"	250-300	35-270D165	1.81"	3.38"	35-270G250	2.06"	4.38"	35-270H330	2.56"	4.38"
35-270A125	1.44"	2.75"	270-324									
35-270B125	1.44"	3.38"	270-324									
35-295A125	1.44"	2.75"	295-354									
35-300A125	1.44"	2.75"	300-360									
35-300D125	1.81"	3.38"	300-360									
			320-384									
35-324A125	1.44"	2.75"	324-388									
35-324D125	1.81"	3.38"	324-388									
35-340D125	1.81"	3.38"	340-408	35-340E165	1.81"	4.38"	35-340G250	2.06"	4.38"			
35-378D125	1.81"	3.38"	378-440	35-378E165	1.81"	4.38"	35-378H250	2.56"	4.38"			
35-400B125	1.44"	3.38"	400-480	35-400E165	1.81"	4.38"	35-400H250	2.56"	4.38"			
35-400D125	1.81"	3.38"	400-480									



Continued Next Page

Start Capacitor



Start Capacitors - Continued

110/125 Volt Round			MFD	165 Volt Round		
Part #	Dia.	Height		Part #	Dia.	Height
35-430D125	1.81"	3.38"	430-515 430-516			
35-430F125	2.06"	3.38"				
35-460D125	1.81"	3.38"	460-552			
35-540D125	1.81"	3.38"	540-648 540-648	35-540G165	2.06"	4.38"
35-540E125	1.81"	4.38"				
35-590D125	1.81"	3.38"	590-708			
35-590E125	1.81"	4.38"	590-708			
35-645B125	1.81"	3.38"	645-774 645-774			
35-645E125	1.81"	4.38"				
35-708E125	1.81"	4.38"	708-850 708-850 708-850	35-708G165	2.06"	4.38"
35-708F125	2.06"	3.38"				
35-708G125	2.06"	4.38"				
35-800D125	1.81"	3.38"	800-960			
35-815D125	1.81"	3.38"	815-978 815-978	35-815G165	2.06"	4.38"
35-815E125	1.81"	4.38"				
35-829E125	1.81"	4.38"	829-995 829-995			
35-829G125	2.06"	4.38"				
35-850G125	2.06"	4.38"	850-1020 1000-1200	35-850G165	2.06"	4.38"
35-1000G125	2.06"	4.38"				
35-1175G125	2.06"	4.38"	1175-1410 1280-1536	35-1000G165	2.06"	4.38"
35-1280G125	2.06"	4.38"				



35-124A125
Illustrated

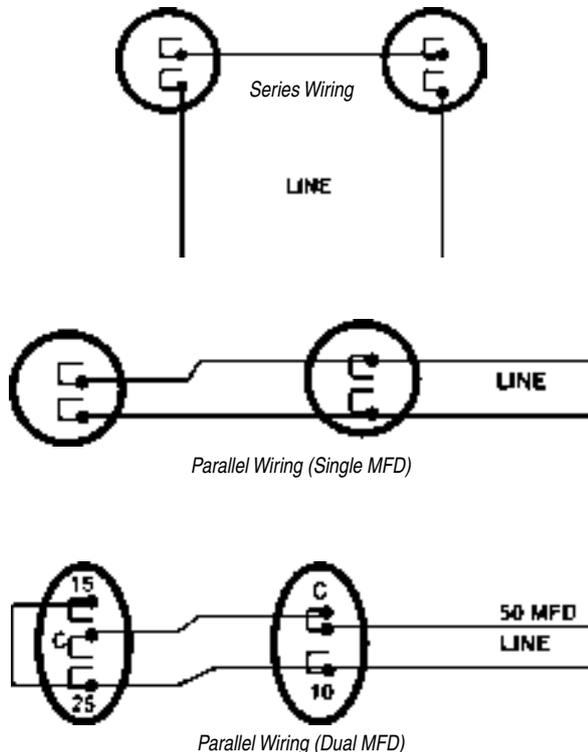
35-124G330
Illustrated

35 - (21) (A) (125)

Nomenclature

Size	Dimensions (cm)		Dimensions (")	
	Diameter	Height	Diameter	Height
A	3.66 cm	6.98 cm	1.44"	2.75"
B	3.66 cm	8.58 cm	1.44"	3.38"
C	3.66 cm	11.12 cm	1.44"	4.38"
D	4.60 cm	8.58 cm	1.81"	3.38"
E	4.60 cm	11.12 cm	1.81"	4.38"
F	5.23 cm	8.58 cm	2.06"	3.38"
G	5.23 cm	11.12 cm	2.06"	4.38"
H	5.23 cm	11.12 cm	2.56"	4.38"

Capacitor Wiring Diagrams



NOTE:
CAPACITORS IN SERIES
 • MFD rating decreases; Voltage increases.
 New MFD Rating = $\frac{MFD_1 \times MFD_2}{MFD_1 + MFD_2}$

CAPACITORS IN PARALLEL
 • MFD increases; Voltage rating stays constant.
 (ex. two 5 MFD 370 V capacitors wired in parallel is the equivalent of a 10 MFD 370 V Capacitor)
 New MFD Rating = $MFD_1 + MFD_2$

- When connected in either series or parallel it is recommended that capacitors with the same MFD ratings be used.
- Higher voltages may be substituted for lower voltages in the same MFD rating.

Run Capacitors



Dual Voltage - Oval & Round Capacitors

"One Capacitor That's Both 370 & 440 Volt"

"Optimize Your Inventory!"

ROTOM RUN CAPACITORS

- Three Styles To Choose From:
 1. Single Voltage / Single MFD
 2. Dual Voltage / Single MFD
 3. Dual Voltage / Dual MFD
- Heavy Duty, Compact Design
- UL & cUL Recognized
- Competitively Priced
- Built In Interrupter
- Largest Selection

Single Voltage 370V • Single MFD

370 Volt Oval						OVAL	MFD
Dimensions (Millimeters)			Dimensions (Inches)				
Width	Depth	Height	Width	Depth	Height		
51.5	31.5	40.0	2.03	1.24	1.58	36-5J370	5
51.5	31.5	60.0	2.03	1.24	2.36	36-7.5J370	7.5
51.5	31.5	70.0	2.03	1.24	2.76	36-10J370	10
51.5	31.5	70.0	2.03	1.24	2.76	36-15K370	15



Dual Voltage 370/440V • Single MFD

370/440 Volt Oval						OVAL	MFD	370/440 Volt Round				
Dimensions (Millimeters)			Dimensions (Inches)					ROUND	Dimensions (Inches)		Dimensions (Millimeters)	
Width	Depth	Height	Width	Depth	Height				Dia.	Height	Dia.	Height
51.5	31.5	40	2.03	1.24	1.58	36-2-370440	2					
51.5	31.5	40	2.03	1.24	1.58	36-3-370440	3	36-3R3744	1.65	1.58	42	40
51.5	31.5	60	2.03	1.24	2.36	36-4-370440	4					
51.5	31.5	60	2.03	1.24	2.36	36-5-370440	5	36-5R3744	1.65	2.37	42	60
51.5	31.5	60	2.03	1.24	2.36	36-6-370440	6	36-6R3744	1.65	2.37	42	60
51.5	31.5	60	2.03	1.24	2.36	36-7-370440	7.5	36-7R3744	1.65	2.37	42	60
51.5	31.5	80	2.03	1.24	3.15	36-10-370440	10	36-10R3744	1.65	2.78	42	70
51.5	31.5	80	2.03	1.24	3.15	36-12-370440	12.5	36-12R3744	1.65	2.78	42	70
51.5	31.5	80	2.03	1.24	3.15	36-15-370440	15	36-15R3744	1.65	3.15	42	80
71.0	45.0	80	2.80	1.77	3.15	36-17-370440	17.5	36-17R3744	1.65	3.15	42	80
71.0	45.0	80	2.80	1.77	3.15	36-20-370440	20	36-20R3744	1.78	3.15	45	80
71.0	45.0	80	2.80	1.77	3.15	36-25-370440	25	36-25R3744	1.78	3.54	45	90
71.0	45.0	90	2.80	1.77	3.55	36-30-370440	30	36-30R3744	2.00	3.94	50	100
71.0	45.0	90	2.80	1.77	3.55	36-35-370440	35	36-35R3744	2.00	3.94	50	100
71.0	45.0	90	2.80	1.77	3.55	36-40-370440	40	36-40R3744	2.00	4.33	50	110
71.0	45.0	110	2.80	1.77	4.33	36-45-370440	45	36-45R3744	2.00	4.33	50	110
71.0	45.0	110	2.80	1.77	4.33	36-50-370440	50	36-50R3744	2.00	4.33	50	110
71.0	45.0	110	2.80	1.77	4.33	36-55-370440	55	36-55R3744	2.17	5.12	55	130
71.0	45.0	130	2.80	1.77	5.12	36-60-370440	60	36-60R3744	2.17	5.12	55	130
							70	36-70R3744	2.36	4.72	60	120
							80	36-80R3744	2.36	5.12	60	130

Higher Voltage Capacitors Can Be Substituted For Lower Voltage Applications.

Electrical

Run Capacitors



Dual Voltage 370/440V • Dual MFD

370/440 Volt Oval						OVAL	MFD	370/440 Volt Round				
Dimensions (Millimeters)			Dimensions (Inches)					ROUND	Dimensions (Inches)		Dimensions (Millimeters)	
Width	Depth	Height	Width	Depth	Height				Dia.	Height	Dia.	Height
71.0	45.0	65	2.80	1.77	2.56	36-15-3-3744	10/5	36-105R3744	1.65	3.15	42	80
71.0	45.0	65	2.80	1.77	2.56	36-15-5-3744	15/3	36-153R3744	1.78	3.15	45	80
71.0	45.0	65	2.80	1.77	2.56	36-15-103744	15/5	36-155R3744	1.78	3.15	45	80
71.0	45.0	65	2.80	1.77	2.56	36-15-103744	15/10	36-1510R3744	1.97	3.54	50	90
71.0	45.0	80	2.80	1.77	3.15	36-20-5-3744	20/5	36-205R3744	1.97	3.54	50	90
71.0	45.0	90	2.80	1.77	3.55	36-20-153744	20/15	36-2015R3744	1.97	4.16	50	105
							25/3	36-253R3744	1.97	3.54	50	90
							25/4	36-254R3744	1.97	3.54	50	90
71.0	45.0	80	2.80	1.77	3.15	36-25-5-3744	25/5	36-255R3744	1.97	3.54	50	90
							25/7.5	36-257R3744	1.97	4.16	50	105
71.0	45.0	95	2.80	1.77	3.74	36-25-103744	25/10	36-2510R3744	1.97	4.16	50	105
71.0	45.0	100	2.80	1.77	3.94	36-30-5-3744	30/4	36-304R3744	1.97	4.16	50	105
							30/5	36-305R3744	1.97	4.16	50	105
							35/4	36-354R3744	1.97	4.33	50	110
71.0	45.0	100	2.80	1.77	3.94	36-35-5-3744	35/5	36-355R3744	2.17	4.33	55	110
							35/7.5	36-357R3744	2.17	4.33	55	110
							35/10	36-3510R3744	2.17	4.33	55	110
71.0	45.0	110	2.80	1.77	4.33	36-40-5-3744	40/5	36-405R3744	2.36	4.72	60	120
							40/7.5	36-407R3744	2.36	4.72	60	120
							40/10	36-4010R3744	2.36	4.72	60	120
							45/4	36-454R3744	2.36	4.72	60	120
71.0	45.0	110	2.80	1.77	4.33	36-45-5-3744	45/5	36-455R3744	2.36	4.72	60	120
							45/7.5	36-457R3744	2.36	4.71	60	120
							50/5	36-505R3744	2.36	5.12	60	130
							50/7.5	36-507R3744	2.36	5.12	60	130
							50/10	36-5010R3744	2.36	5.12	60	130
							55/5	36-555R3744	2.36	5.12	60	130
							55/7.5	36-557R3744	2.36	5.12	60	130
							55/10	36-5510R3744	2.36	5.12	60	130
							60/5	36-605R3744	2.36	5.12	60	130
							60/7.5	36-607R3744	2.36	5.12	60	130
							60/10	36-6010R3744	2.36	5.12	60	130
							80/5	36-805R3744	2.36	5.90	60	150



OVAL



ROUND

NOTE:
CAPACITORS IN SERIES
 • MFD rating decreases; Voltage increases.

$$\text{New MFD Rating} = \frac{\text{MFD}_1 \times \text{MFD}_2}{\text{MFD}_1 + \text{MFD}_2}$$

CAPACITORS IN PARALLEL
 • MFD increases; Voltage rating stays constant.
(ex. two 5 MFD 370 V capacitors wired in parallel is the equivalent of a 10 MFD 370 V Capacitor)

$$\text{New MFD Rating} = \text{MFD}_1 + \text{MFD}_2$$

- When connected in either series or parallel it is recommended that capacitors with the same MFD ratings be used.
- Higher voltages may be substituted for lower voltages in the same MFD rating.

Higher Voltage Capacitors Can Be Substituted For Lower Voltage Applications.

Electrical

Run Capacitor Accessories

Mounting Brackets



36-12204
Illustrated

Part #	Description
36-12204	5.16cm x 3.15cm (2.03" x 1.24") Bracket
36-12205	7.11cm x 4.49cm (2.80" x 1.77") Bracket



36-12211
Illustrated

Protective Rubber Caps

Part #	Description
36-12210	1 Hole Boot
36-12211	2 Hole Boot
36-12212	3 Hole Boot



36-11205
Illustrated

Wire Leads

Part #	Description
35-11205	15.24cm (6") Wire leads c/w push-on terminals. (10/pk)



36-11204
Illustrated

Push-On Adaptors

Part #	Description
35-11204	Converts spade terminals to screw. (25/pk)



35-11206
Illustrated

Mounting Brackets

Part #	Description
35-11206	6.9cm (2.75") Bracket
35-11207	8.6cm (3.38") Bracket
35-11208	11.1cm (4.38") Bracket



35-11211
Illustrated

Protective Plastic End Caps

- On motor end cap leads through bracket.

Part #	Description
35-11210	3.6cm (1 7/16")
35-11211	4.6cm (1 13/16")
35-11212	5.0cm (2 1/16")
35-11213	6.5cm (2 9/16")



35-11216
Illustrated

Protective Plastic End Caps

- On motor end cap top side leads.

Part #	Description
35-11215	3.6cm (1 7/16")
35-11216	4.6cm (1 13/16")
35-11217	5.0cm (2 1/16")
35-11218	6.5cm (2 9/16")



35-11205
Illustrated

Wire Leads

Part #	Description
35-11205	15.24cm (6") Wire leads c/w push-on terminals. (10/pk)



35-11201
Illustrated

Bleed Resistor

Part #	Description
35-11201	2 Watt, 15,000 OHM, c/w push-on terminals. (10/pk)



35-11204
Illustrated

Push-On Adaptors

Part #	Description
35-11204	Converts spade terminals to screw. (25/pk)



**Your Single Source For Quality
Motors, Components & Parts**

Motor Protection Controls



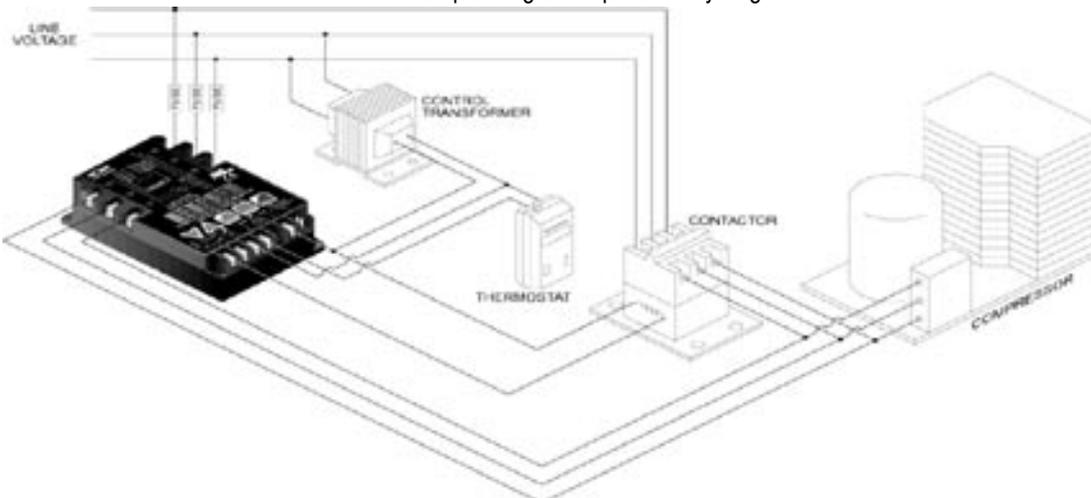
3-Phase Line Voltage Monitors - Full Performance

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM450</p>	<ul style="list-style-type: none"> • Fully Programmable - with LCD diagnostic display. • Easy to configure - simple 7-step push-button setup. • Easy to customize - set points, variables and features are fully adjustable and may be defined by the user while in control SETUP mode. • 25 - fault memory storage, non-volatile. • Independent high and low voltage settings - ideal for dual voltage compressor applications. • Monitors/ identifies front & back side faults. • Reset mode: choice of auto or manual. • Protects against: voltage unbalance, high/ low voltage, phase loss, reversal, faulty power, incorrect sequencing and rapid short cycling. • Reliable, high temperature LCD to 167°F. • Simultaneous voltage display - no scrolling. • Line voltage programmable. • Universal Voltage Operation: 190-630 VAC. 	<ul style="list-style-type: none"> • Voltage: 190-630 VAC. • Frequency: 50/ 60 Hz. • Voltage Unbalance: adjustable: 2-25%. • Control: 18-240 VAC. • Delay on break timer: (0.1-10 min.). • Output: relay, SPDT N.O.: 10 amps. N.C.: 6 amps. 	<ul style="list-style-type: none"> Diversified • AC-2020 • AC-301 • AC-302 Motorsaver • 455 SSAC • QLM/ QLV Time Mark • 265 Wagner • WPC-800 Watsco • EAC-800 • EAC-8000
 <p>24-ICM400</p>	<ul style="list-style-type: none"> • Lower cost, full performance version featuring bright LED indicators to display system faults. • Monitors "front" and "back" sides of system. • Universal Voltage Operation: 190-630 VAC. • Knob-adjustable features and system set points. • Reset mode: choice of auto or manual lockout. • Built-in anti short-cycle protection. • Protects against: voltage unbalance, high/ low voltage, phase loss, reversal, faulty power, incorrect sequencing and rapid short cycling. • 6.5" x 4.25" x 1.5". 	<ul style="list-style-type: none"> • Voltage: 190-630 VAC. • Frequency: 50/ 60 Hz. • Voltage Unbalance: adjustable: 2-25%. • Control: 18-240 VAC. • Delay on break timer: (0.1-10 min.). • Output: relay, SPDT N.O.: 10 amps. N.C.: 6 amps. 	<ul style="list-style-type: none"> Diversified • AC-2020 • AC-301 • AC-302 Motorsaver • 455 SSAC • QLM/ QLV Time Mark • 265 Wagner • WPC-800 Watsco • EAC-800 • EAC-8000

24-ICM450 Typical System Diagram

STOP MOTOR BURNOUTS!

- Monitor voltage unbalance, high/ low voltage, phase loss, reversal, incorrect sequencing and rapid short cycling.



Mode Of Operation

- Voltage monitors are specifically designed to protect compressor motors and other 3-phase loads from premature failure or damage due to common voltage faults. They offer complete system protection by monitoring both the source (front) and load (back) side of the system including the power, motor and contactor lines. In addition, an integral "delay on break timer" guards against rapid short-cycling at both the control circuit and the 3-phase lines. Compact and easy to install, the 24-ICM400 & 24-ICM450 provide highly reliable protection for your valuable equipment.

Motor Protection Controls



Phase Loss & Reversal Protection - Ultra Low Cost

Part #	Features & Applications	Specifications	Cross Reference
 24-ICM401	<ul style="list-style-type: none"> • Low cost 3-phase protection for single side. • Monitors for phase reversal, phase loss, unbalance % as a function of input voltage. • Bright LED indicators for ON and FAULT. • Universal 3-phase input: 190-600 VAC. • Highly reliable passive electronics. • IEEE587 transient-tested. • Epoxy coated for added protection. • Patented: U.S. Patent No. 5,337,206. • 24-ICM401 enclosed model (Open 24-ICM403). • 3.25" x 3" x 1.25". 	<ul style="list-style-type: none"> • Voltage: 190-600 VAC. • Frequency: 50/ 60 Hz. • Control: 18-30 VAC. • Output: relay, SPDT N.O.: 10 amps. 	N/A
 24-ICM402	<ul style="list-style-type: none"> • Low cost 3-phase protection for single side. • Monitors for phase reversal, phase loss, unbalance % as a function of input voltage. • Bright LED indicators for ON and FAULT. • Universal 3-phase input: 190-600 VAC. • Control voltage input: 190-240 VAC. • Highly reliable passive electronics. • IEEE587 transient-tested. • Epoxy coated for added protection. • Patented: U.S. Patent No. 5,337,206. • 24-ICM402 enclosed model (Open 24-ICM404). • 3.25" x 3" x 1.25". 	<ul style="list-style-type: none"> • Voltage: 190-600 VAC. • Frequency: 50/ 60 Hz. • Control: 115 or 208/ 240 VAC. • Output: relay, SPDT N.O.: 30 amps. 	N/A
 24-ICM408	<ul style="list-style-type: none"> • Reliable 3-phase protection for single side. • Monitors for phase reversal, phase loss, unbalance % and high/ low voltage. • Bright LED indicators for ON and FAULT. • High/ low voltage cut-out: high voltage cut-out set point +12%, low voltage cut-out set point -12%. • Highly reliable passive electronics. • Power/ phase loss detection: within 100ms. • User selectable unbalance voltage: 2 to 8%. • Phase reversal detection: detects on power up. • 8 pin plug-in mount. • 4" x 2.5" x 1.75". 	<ul style="list-style-type: none"> • Voltage: 190-480 VAC. • Frequency: 50/ 60 Hz. • Adjustable DOB: 0.1 to 5 min. • Adjustable DOM: 0.1 to 5 min. • Heavy duty SPDT relay output: NO/ NC - contacts: 10 amps. - resistive @ 250 VAC. 	N/A
 24-ICM409	<ul style="list-style-type: none"> • Reliable 3-phase protection for single side. • Monitors for phase reversal, phase loss, unbalance % and high/ low voltage. • Bright LED indicators for ON and FAULT. • High/ low voltage cut-out: high voltage cut-out set point +12%, low voltage cut-out set point -12%. • Highly reliable passive electronics. • Power/ phase loss detection: within 100ms. • User selectable unbalance voltage: 2 to 8%. • Phase reversal detection: detects on power up. • User selectable delay on make: 0.5 to 5 min. • DIN rail mount. • 4.25" x 3.5" x 2.375". 	<ul style="list-style-type: none"> • Voltage: 190-480 VAC. • Frequency: 50/ 60 Hz. • Adjustable DOB: 0.1 to 5 min. • Adjustable DOM: 0.1 to 5 min. • Heavy duty SPDT relay output: NO/ NC - contacts: 10 amps. - resistive @ 250 VAC. 	NA

Motor Protection Controls

Three Phase Line Voltage Monitors

Part #	Features & Applications	Specifications	Cross Reference		
 <p>24-ICM441</p>	<ul style="list-style-type: none"> Protects Against: under voltage, over temperature, power interruptions, rapid short cycling, shorted temperature sensor, open temperature sensor. Control Duty, SPST relay layout. 6 amp, 277 VAC relay contacts. Anti-Short-Cycle Time Delay, 4 minute (nominal). 1 second manual bypass. 3.25" x 3" x 1.25". 	<ul style="list-style-type: none"> Voltage: 120 or 208/230 VAC. Frequency: 50/ 60 Hz. Output: relay, SPDT N.O.: 6 amps. 	<table border="0"> <tr> <td> Copeland • 071-0376-01 • 071-0376-02 • 071-0397-00 • 071-0397-01 • 071-0424-00 • 071-0424-01 • 071-9800-00 • 071-9800-01 Bristol • 241680 </td> <td> T.I. • 15AA1600 B • 15AA1600 C • 15AA1603 C • 31AA1606 E • 31AA1600 E Mars • 37304 • 37306 • 37322 • 37300 • 37302 </td> </tr> </table>	Copeland • 071-0376-01 • 071-0376-02 • 071-0397-00 • 071-0397-01 • 071-0424-00 • 071-0424-01 • 071-9800-00 • 071-9800-01 Bristol • 241680	T.I. • 15AA1600 B • 15AA1600 C • 15AA1603 C • 31AA1606 E • 31AA1600 E Mars • 37304 • 37306 • 37322 • 37300 • 37302
Copeland • 071-0376-01 • 071-0376-02 • 071-0397-00 • 071-0397-01 • 071-0424-00 • 071-0424-01 • 071-9800-00 • 071-9800-01 Bristol • 241680	T.I. • 15AA1600 B • 15AA1600 C • 15AA1603 C • 31AA1606 E • 31AA1600 E Mars • 37304 • 37306 • 37322 • 37300 • 37302				

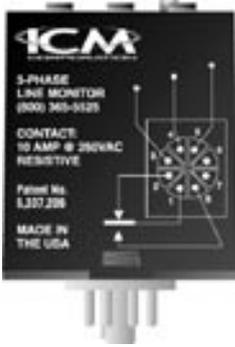
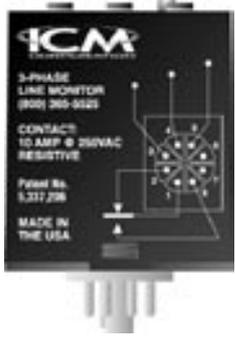
Single Phase Line Voltage Monitors

Part #	Features & Applications	Specifications	Cross Reference	
 <p>24-ICM491</p>	<ul style="list-style-type: none"> Low cost single phase motor protection. Built-in anti-short cycle protection. Detects high/ low voltage conditions. Helps prevent rapid system recycling. LED indicator: "green" for normal conditions, "red" for fault. Heavy duty SPDT, isolated relay output. Interrogation delay prevents nuisance trips. 3.25" x 3" x 1.25". 	<ul style="list-style-type: none"> Voltage: 95-270 VAC. Output: relay, SPDT N.C./ N.O.: 5 amps. Time Delay Range: adj. 6-600 sec. 	<table border="0"> <tr> <td> Diversified • CV-100-RS • CV-200-RS15 • CV-200-RS20 Watsco • EAC-401 • EAC-402 • EAC-403 • EAC-404 </td> </tr> </table>	Diversified • CV-100-RS • CV-200-RS15 • CV-200-RS20 Watsco • EAC-401 • EAC-402 • EAC-403 • EAC-404
Diversified • CV-100-RS • CV-200-RS15 • CV-200-RS20 Watsco • EAC-401 • EAC-402 • EAC-403 • EAC-404				
 <p>24-ICM515</p>	<ul style="list-style-type: none"> Easy Installation. Low cost, high performance. Weatherproof housing. Rugged, reliable. Protects against: <ul style="list-style-type: none"> Lightning power surges. Voltage surges from air conditioners, generators or motors. 1.75" x 1.62" x 0.75". 	<ul style="list-style-type: none"> Service Voltage: 120/ 240V single phase. Maximum Surge Current: 24000 amps. Maximum energy dissipation: 200 joules. Installation point: <ul style="list-style-type: none"> Electrical panel. Electrical disconnect. AC protection Modes: line-line, line-ground. 	<p>NA</p>	

Motor Protection Controls



3-Phase Line Voltage Monitors - Plug-in, Single Side Only

Part #	Features & Applications	Specifications	Cross Reference
<p>24-ICM410 24-ICM411 24-ICM412 24-ICM415 24-ICM416 24-ICM417</p> 	<ul style="list-style-type: none"> • Basic low cost, 3-phase motor protection. • Super-quick 100 ms. response time. • Voltage ranges: 200-480 VAC. • 410-412: fixed 8% Voltage Unbalance. • 415-417: adj. 4-8% Voltage Unbalance. • Monitors single side of system for: voltage unbalance, high/ low voltage, phase loss, incorrect sequence, reversal. • LED indicator: green for normal conditions. • Interrogation delay prevents nuisance trips. • Patented: U.S. Patent No. 5,337,206. • 2.5" x 1.75" x 4". 	<ul style="list-style-type: none"> • Line: 200-480 VAC determined by mode. • Control: 18-240 VAC/ VDC. • Frequency: switch selectable 50 or 60 Hz. • Output: relay SPDT, 8 amps resistive. 	<p>Diversified</p> <ul style="list-style-type: none"> • SLA Series • SVA Series
<p>24-ICM420 24-ICM421 24-ICM422</p> <p>24-ICM425 24-ICM426 24-ICM427</p> 	<ul style="list-style-type: none"> • Same features as Series 24-ICM410-417 plus built-in anti short cycle protection. • Voltage ranges: 200-480 VAC. • 420-422: fixed 8% Voltage Unbalance. • 425-427: adj. 4-8% Voltage Unbalance. • Monitors single side of system for: voltage unbalance, high/ low voltage, phase loss, incorrect sequence, reversal. • LED indicator: green for normal conditions. • Interrogation delay prevents nuisance trips. • Patented: U.S. Patent No. 5,337,206. • 2.5" x 1.75" x 4". 	<ul style="list-style-type: none"> • Voltage: 200-480 VAC determined by model. • Control: 18-240 VAC/ VDC. • Frequency: switch selectable 50 to 60 Hz. • Output: relay SPDT, 8 amps resistive. • ASC timer: range adj. 6-300 sec. 	<p>Diversified</p> <ul style="list-style-type: none"> • AC-410 • AC-411
<p>24-ACS-8</p> 	<ul style="list-style-type: none"> • Relay socket. • 8-pin octal plug-in base. • Locating key ensures proper orientation. • Order ACS-11 for 11-pin base. • For use with 24-ICM410-427, 500-505. • Rated for 480 VAC. 	<ul style="list-style-type: none"> • 10 amps up to 480 VAC. 	<p>Diversified</p> <ul style="list-style-type: none"> • RB-08

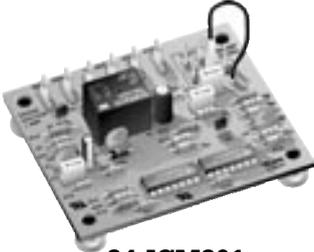
Motor Protection Controls - 24-ICM410 to 24-ICM427 Specifications

Part #	24-ICM410-415 Ultra Low Cost Protection	Part #	24-ICM420-427 With Built-in Anti Short-Cycle Protection
24-ICM410	User-adjustable input voltage: 200 to 240 VAC. Factory Fixed 8% voltage unbalance.	24-ICM420	User-adjustable input voltage: 200 to 240 VAC. Factory Fixed 8% voltage unbalance.
24-ICM411	User-adjustable input voltage: 360 to 430 VAC. Factory Fixed 8% voltage unbalance.	24-ICM421	User-adjustable input voltage: 360 to 430 VAC. Factory Fixed 8% voltage unbalance.
24-ICM412	User-adjustable input voltage: 400 to 480 VAC. Factory Fixed 8% voltage unbalance.	24-ICM422	User-adjustable input voltage: 400 to 480 VAC. Factory Fixed 8% voltage unbalance.
24-ICM415	User-adjustable input voltage: 200 to 240 VAC. User-adjustable voltage unbalance: 4% to 8%.	24-ICM425	User-adjustable input voltage: 200 to 240 VAC. User-adjustable voltage unbalance: 4% to 8%.
24-ICM416	User-adjustable input voltage: 360 to 430 VAC. User-adjustable voltage unbalance: 4% to 8%.	24-ICM426	User-adjustable input voltage: 360 to 430 VAC. User-adjustable voltage unbalance: 4% to 8%.
24-ICM417	User-adjustable input voltage: 400 to 480 VAC. User-adjustable voltage unbalance: 4% to 8%.	24-ICM427	User-adjustable input voltage: 400 to 480 VAC. User-adjustable voltage unbalance: 4% to 8%.

24-ICM420 to 24-ICM427 Feature an integral, user-adjustable anti short-cycle timer.

Defrost Controls

OEM & Replacement Parts

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM300</p>	<ul style="list-style-type: none"> • Direct replacement for OEM type 621. • Standard industry footprint • Low cost, time and temperature defrost. • HOLD input tracks compressor run times. • Time & temperature terminate. • 10 minute fixed defrost time. • Recycle function melts frost on coils. • Pin-selectable intervals: 30/ 60/ 90 min. • Test pins reduce test time by 256x. • Stable pin post construction. 	<ul style="list-style-type: none"> • Control: 18-30 VAC • Frequency: 50/ 60 Hz • Output: relay SPST N.O. 1 amp • Defrost time: 10 min. fixed • Interval times: pin-selectable 30/ 60/ 90 min. 	<p>Amana • C64301-1 •C6431001 Artesian • 10321-00 Arcoaire • 32312-00 Carrier • 621 Coleman • 3030A374 Goodman • B12260-06 Heil Quaker • HQ1052757 ICP • 1052757 ICM • DFOS24A2 Intertherm • 6208800 Lennox • 33G9501 Rheem • 47-21776-01 Snyder Gen • 1395-329 Honeywell • 1020 • 1038 • ST74A1004 White Rodgers • 90-621 Therm-o-Disc • 26E-10 Robertshaw • TD-10</p>
 <p>24-ICM301</p>	<ul style="list-style-type: none"> • Low cost, time and temperature defrost. • Sensor input for defrost terminate. • Time & temperature terminate. • 10 minute fixed defrost time. • Pin-selectable intervals: 30/ 60/ 90 min. • Test pins reduce test time by 256x. • HOLD input accumulates actual compressor run times, regardless of disc thermostat condition prior to defrost. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Frequency: 50/ 60 Hz. • Output: relay SPST N.O. 1 amp. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 60/ 90 min. 	<p>Rheem • 47-21776-06 ICM • DFOSP24A2</p>
 <p>24-ICM302</p>	<ul style="list-style-type: none"> • Low cost, time and temperature defrost. • Time & temperature terminate. • 10 minute fixed defrost time. • Pin-selectable intervals: 30/ 60/ 90 min. • Test pins reduce test time by 256x. • Strip heat, reversing valve outputs. • High power output (1 horsepower fan @ 240 VAC). • Integral short cycle protection. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Frequency: 50/ 60 Hz. • Output: relay SPST N.O. 1 amp. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 60/ 90 min. 	<p>Nordyne • 621301A • 621579B • 621579C ICM • DFORB-AB1004</p>
 <p>24-ICM303</p>	<ul style="list-style-type: none"> • Direct replacement for York 03101251000. • Time and temperature terminate. • Integral short cycle protection. • Lock-in defrost feature (10 minutes). • High/ low pressure switch monitoring. • High power, condenser relay output. • Strip heat, reversing valve outputs. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Output: relay 1 hp fan @ 240 VAC. • Strip heat, reversing valve outputs 24 VAC, 2 amps. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 60/ 90 min. 	<p>York • 9218-3741 • 03101251000 Evcon • 9218-374 ICM • DFORF</p>
 <p>24-ICM304</p>	<ul style="list-style-type: none"> • Direct replacement for ICP 1069364. • Sensor input for defrost terminate. • Time & temperature terminate. • 10 minute fixed defrost time. • Pin-selectable intervals: 30/ 60/ 90 min. • Integral short cycle protection. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Strip heat, reversing valve outputs 24 VAC, 1 amp. • Defrost time: 10 min. fixed • Interval times: pin-selectable 30/ 60/ 90 min. 	<p>ICP • 1069364</p>

Defrost Controls



OEM & Replacement Parts

Part #	Features & Applications	Specifications	Cross Reference
 24-ICM307	<ul style="list-style-type: none"> • 3 minute anti-short cycle protection. • Low cost, time/ temperature defrost. • Time & temperature terminate. • 10 minute fixed defrost time. • HOLD input tracks compressor run times. • Pin-selectable intervals: 30/ 60/ 90 min. • Test pins reduce test time by 256x. • Integral short cycle protection. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Frequency: 50/ 60 Hz. • Output: relay SPST N.O. 1 amp. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 60/ 90 min. 	Lennox • 86G16 Ranco • DT-2 Fast • 1093410
 24-ICM315	<ul style="list-style-type: none"> • Solid state replacement for Ranco E-15. • Reliable thermistor-type sensor is less susceptible to breakage & easier to mount. • Replaces faulty bulb-type sensors. • 10 minute fixed defrost time. • Pin-selectable intervals: 30/ 45/ 90 min. • Test pins reduce test time by 256x. • Stable pin post construction. • Recycle function melts frost on coils. 	<ul style="list-style-type: none"> • Control: 24, 120, 240 VAC. • Output: SPST. N.O. 20 amps. N.C. 10 amps. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 45/ 90 min. 	Ranco • E-15 Avion • DFT100
 24-ICM316	<ul style="list-style-type: none"> • Direct replacement for Trane 21C142827G01. • Low cost time/ temperature defrost. • Time & temperature terminate • Pin-selectable intervals: 50/ 70/ 90 min. • Test pins reduce test time by 256x. • High power output (1/2 horsepower fan @ 240 VAC) • Strip heat, reversing valve outputs (24 VAC, 1 amps) 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Output: relay 1/2 hp fan @ 240 VAC. • Strip heat, reversing valve outputs 24 VAC, 1 amp. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 50/ 70/ 90 min. 	Trane • CNT1642 • CNT1152 • 21C142827G01
 24-ICM318	<ul style="list-style-type: none"> • Direct replacement for Goodman B1226008. • Low cost time/ temperature defrost. • Time & temperature terminate • HOLD input tracks compressor run times. • Pin-selectable intervals: 30/ 60/ 80 min. • Test pins reduce test time by 256x. • High power output (1/2 horsepower fan @ 240 VAC) • Strip heat, reversing valve outputs (24 VAC, 1 amps) 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Outdoor Fan. relay outputs 1/2 hp fan @ 240 VAC. • Strip heat, reversing valve output: 24 VAC, 1 amp. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 60/ 80 min. 	Goodman • B1226008 ICM • W1001-4
 24-ICM319	<ul style="list-style-type: none"> • Direct replacement for Nordyne 624519A. • Low cost time/ temperature defrost. • Time & temperature terminate • 10 minute fixed defrost time. • Pin-selectable intervals: 30/ 60/ 90 min. • Test pins reduce test time by 256x. • Recycle function melts frost on coils. • Integral short cycle protection. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Outdoor Fan. relay outputs 1/2 hp fan @ 240 VAC. • Strip heat, reversing valve output: 24 VAC, 1 amp. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 60/ 90 min. 	Nordyne • 624519A ICM • DFORB24A2I300

Defrost Controls



OEM & Replacement Parts

Part #	Features & Applications	Specifications	Cross Reference
 24-ICM320	<ul style="list-style-type: none"> • Direct replacement for Carrier HK32FA006. • High performance, low cost, time/ temperature defrost. • Integral short cycle protection. • Time & temperature terminate. • 10 minute fixed defrost time. • Pin-selectable interval: 30/ 50/ 90 min. • Test pins reduce test time by 256x. • Recycle function melts frost on coils. • Stable pin post construction. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Outdoor Fan relay outputs; - 10 amps @ 240 VAC. • Form: SPST, N.O., 2 amps. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 50/ 90 min. 	Carrier • HK32FA006
 24-ICM321	<ul style="list-style-type: none"> • Low cost, time/ temperature defrost. • Integral short cycle protection. • Time & temperature terminate. • 10 minute fixed defrost time. • Pin-selectable interval: 30/ 50/ 90 min. • Test pins reduce test time by 256x. • High power output, outdoor fan (1/2 horsepower fan @ 240 VAC) • Strip heat, reversing valve outputs 24 VAC, 1 amp. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Output: relay SPST. • Outdoor Fan relay outputs; N.C.:10 amps. N.O. : 20 amps. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 50/ 90 min. 	Carrier • CES01130063-00 • CES01130063-01
 24-ICM322	<ul style="list-style-type: none"> • Low cost, time/ temperature defrost. • Time & temperature terminate. • 10 minute fixed defrost time. • Pin-selectable interval: 30/ 50/ 90 min. • Test pins reduce test time by 256x. • Defrost terminate output. • High power output, outdoor fan (1/2 horsepower fan @ 240 VAC) • Strip heat, reversing valve outputs 24 VAC, 1 amp. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Output: relay SPDT. N.O. 1 amp. • Defrost time: 10 min. fixed. • Interval times: pin-selectable 30/ 50/ 90 min. 	Carrier • CES0130024-00

Duty Cycle Timers



Ideal For Defrost Applications

Part #	Features & Applications	Specifications	Cross Reference
 24-ICM305 (Minutes) 24-ICM306 (Seconds)	<ul style="list-style-type: none"> • Reliable duty cycle timer ideally suited for defrost applications. • Suitable for process equipment or applications requiring intermittent delays. • Switch-settable time delays. • Digital timing accuracy. • Reliable solid state output. • Epoxy-encapsulated for greater reliability. • 24-ICM305: time delay in minutes. • 24-ICM306: time delay in seconds. • On time starts at power-up. • 2" x 3" package. 	<ul style="list-style-type: none"> • Control: 18-240 VAC. • 1 amp. • 10 amp inrush. • Time delay: 24-ICM305 switch settable from 1 to 1,023 min. in 1 min. intervals. • Time delay: 24-ICM306 switch settable from 1 to 1,023 sec. in 1 second intervals. 	N/A

Delay On Make Timers



Applications	Timing Diagram	Mode Of Operation
<ul style="list-style-type: none"> Ideal for compressor staging and stagger starting of multiple motor equipment. Helps reduce power surges. 		<ul style="list-style-type: none"> When power is applied to the input, the time delay begins. After the time delay is complete, the load energizes, remaining energized as long as power is applied. The control is reset by removing power during or after the time delay period.

Ideal For Compressor Staging

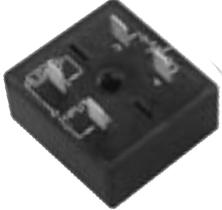
Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM100 24-ICM101 24-ICM100F 24-ICM101F</p>	<ul style="list-style-type: none"> Higher 1.5 amp power rating. Ideal for compressor staging/ delaying the start-up of motors and other devices. Works with anticipator-type thermostats. Simple 2-wire hook-up. 24-ICM100, 100F: 3 minute delay. 24-ICM101, 101F: 5 minute delay. "F" suffix denotes 6" wire leads. Compact 2" x 2" cube. 	<ul style="list-style-type: none"> Control: 18-30 VAC. 1.5 amps. 15 amp inrush. 40 mA holding current. 3 or 5 min. fixed time delays. Voltage drop: 2.5V @ 1.5 amps. 	<p>Diversified</p> <ul style="list-style-type: none"> ACS-600-3 ACS-601-3 <p>Watsco</p> <ul style="list-style-type: none"> EAC-700-A EAC-701-180-W EAC-701-300-W EAC-710-180 EAC-710-300
 <p>24-ICM102 24-ICM102F</p>	<ul style="list-style-type: none"> Universal voltage operation. Higher 1.5 amp power rating. Knob-adjustable time delays. Works with anticipator-type thermostats. One model replaces many in field. Ideal for compressor staging. Simple 2-wire hook-up. "F" suffix denotes 6" wire leads. Compact 2" x 2" cube. 	<ul style="list-style-type: none"> Control: 18-240 VAC. 1.5 amps. 15 amp inrush. 40 mA holding current. Adjustable delays 0.03 to 10 min. (1.8-600 sec.). Voltage drop: 2.5V @ 1.5 amps. 	<p>Diversified</p> <ul style="list-style-type: none"> AC-800 ASC-600, 601 <p>Gemline</p> <ul style="list-style-type: none"> 1C310, 1C213 <p>Mars</p> <ul style="list-style-type: none"> 32391, 32367 <p>Robertshaw</p> <ul style="list-style-type: none"> 3310-068 <p>Supco</p> <ul style="list-style-type: none"> TD-68, TD-69 <p>Watsco</p> <ul style="list-style-type: none"> EAC-701-ADJ EAC-700-A
 <p>24-ICM103</p>	<ul style="list-style-type: none"> Highly precise digital timing. Switch-settable time delays. Ideal for ice machine application. Universal voltage operation. Repeat accuracy 0.5% over voltage and temperature range. Precise digital timing. Compact 2" x 2" package. 	<ul style="list-style-type: none"> Control: 18-240 VAC 1 amp 10 amp inrush 40 mA holding current Switch-settable delays range 1 to 1,023 sec. Voltage drop: 2.5V @ 1 amp 	<p>Gemline</p> <ul style="list-style-type: none"> 1C213 <p>Mars</p> <ul style="list-style-type: none"> 32394 32396 <p>Robertshaw</p> <ul style="list-style-type: none"> 3310-068 <p>Supco</p> <ul style="list-style-type: none"> TMF-19 TMF-80 <p>Watsco</p> <ul style="list-style-type: none"> 7061
 <p>24-ICM104</p>	<ul style="list-style-type: none"> Highly precise digital circuitry. High power, SPDT relay output. Input to output isolation. Works with anticipator-type thermostats. Repeat accuracy 0.5% over voltage and temperature range. Rugged, compact package. 115 and 230 VAC models available. Compact 2" x 3" package. 	<ul style="list-style-type: none"> Control: 18-30 VAC. Output: <ul style="list-style-type: none"> N.O. 20 amps @ 240 VAC. N.C. 10 amps @ 240 VAC. SPDT, 1 form C. Knob-adjustable time delays 10 to 1,000 sec. 40 mA holding current. 	<p>Mars</p> <ul style="list-style-type: none"> 32394 32398

Electrical

Delay On Make Timers



Ideal For Compressor Staging

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM105</p>	<ul style="list-style-type: none"> • Low holding current. • Low cost version of the 24-ICM102 without the cooling anticipator circuitry. • Ideal for compressor staging. • Universal voltage operation. • Knob-adjustable time delays. • Simple 2-wire hook-up. • Compact 2" x 2" package. 	<ul style="list-style-type: none"> • Control: 18-240 VAC. • 1.5 amp. • 15 amp inrush. • 10 mA holding current. • Adjustable delays 0.03 to 10 min. (1.8 to 600 sec.) • Voltage drop: 2.5V @ 1 amp. 	<ul style="list-style-type: none"> Diversified • AC-800 • ASC-600, 601 Gemline • 1C310, IC213 Mars • 32391, 32367 Robertshaw • 3310-068 Supco • TD-68,TD-69 Watsco • 706
 <p>24-ATMVF</p>	<ul style="list-style-type: none"> • Complete with resistors for 5, 15, 20, 45, 60, 180, 300 & 420 sec. • One model replaces many in field. • Works with anticipator-type thermostats. • Universal voltage operation. • Compact 2" x 2" design. • Epoxy-encapsulated 	<ul style="list-style-type: none"> • Control: 18-30VAC/ VDC. • 1 amp. • 10 amp inrush. • SPST, N.O. • Adjustable time delays 5 to 420 sec. 	<ul style="list-style-type: none"> Mars • 32360
 <p>24-MMS Series</p>	<ul style="list-style-type: none"> • Low holding current. • Operates resistive or inductive loads such as relays, contactors, solenoids, thermostats, etc. • Factory selectable time delay ranges fixed or adjustable from 0.1 to 600 seconds. • Factory selectable input voltage: 24, 115, 230 VAC, 12, 24, 28, 32, 110 VDC. • Factory selectable time delay tolerance: fixed or adjustable + / - 5%, 10%, or 20%. • Consult Alltemp for ordering information. 	<ul style="list-style-type: none"> • 24-240 Volts. • Frequency: 50/ 60 Hz. • 1 amp. • 10 amp inrush. • 20 mA holding current. • Fixed delays: 0.1 to 600 seconds. • Voltage drop: 2.5V @ 1 amp. 	<ul style="list-style-type: none"> Trane • X13270263-04
 <p>24-MAR Series</p>	<ul style="list-style-type: none"> • High power delay on make timer. • Ideal to help prevent rapid short cycling of compressors in HVAC/R equipment. • Heavy duty 10 amp DPDT switching. • Exposed terminal base for easy, direct wiring to relay. • Factory selectable input voltage: 24, 115, 230 VAC, 24, 28, 110 VDC. • Factory selectable time delay tolerance: 5%, 10%, or 20%. • Consult Alltemp for ordering information. 	<ul style="list-style-type: none"> • Nominal Voltage: 24-240 volts • Frequency 50/ 60 Hz • Output: relay, DPDT 10 amps resistive @ 120 VAC. 1/6 Hp @ 120 VAC 1/3 Hp @ 240 VAC • Fixed or adjustable delays. 	<ul style="list-style-type: none"> Trane • X13270036-01 • X13270036-09

Solid State Impedance / Lockout Relay



Lockout Relay

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM220</p>	<ul style="list-style-type: none"> • UL 873 recognition as compressor controller. • Low cost lockout relay. • Helps eliminate nuisance lockouts typical of series 84 & 93 impedance relays. • Ideal for use with safety/ interlock switches. • Replaces impedance relays Series 84 & 93. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Frequency: 50/ 60 Hz. • Power Consumption: 2 watts max @ lockout. • Relay: 1 form C. • Contacts: 2 amps @ 30 VAC resistive. 	<ul style="list-style-type: none"> Essex • Impedance Relays Series 84 & 93

Delay On Break Timers



Applications	Timing Diagram	Mode Of Operation
<ul style="list-style-type: none"> • "Anti short-cycle" • "ON delay on break" • Helps to protect air conditioning, refrigeration and heat pump equipment from damage which may be caused by the rapid short cycling of compressors. 	<p>The diagram illustrates the timing of a delay on break timer. The top graph shows 'Input Voltage' which drops to 0v when the 'Switch Opens or Loss of Power' occurs. The bottom graph shows 'Load Voltage' which remains at 0v during the 'Time Delay' period after power is restored, before being energized again.</p>	<ul style="list-style-type: none"> • Upon application of power, the load is energized. When the thermostat opens or there is a loss of power, the load is de-energized and the delay period begins. The compressor will not start again until after the delay periods complete.

Anti-Short Cycle Protection

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM200 24-ICM201</p>	<ul style="list-style-type: none"> • Higher 1.5 amp power rating. • Compressor lockout/ anti-short cycle timer. • Helps to protect compressors from damage caused by rapid short cycling. • Simple, 2-wire hook-up. • Compact 2" x 2" package. • 24-ICM200: 3 minute delay. • 24-ICM201 (FDB5): 5 minute delay. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • 1.5 amps. • 15 amp inrush. • 3 or 5 min. fixed time delays. • Voltage Drop: 3.5V typical. 4.5V max. • 40 mA holding current. 	<p>Diversified</p> <ul style="list-style-type: none"> • ASC-500 • ASC-501 • ASC-502 • ASC-505-5 <p>Gemline</p> <ul style="list-style-type: none"> • IC321 • IC322 <p>Watsco</p> <ul style="list-style-type: none"> • EAC-500 • EAC-501-180-W • EAC-501-300-W
 <p>24-ICM203</p>	<ul style="list-style-type: none"> • Universal voltage operation. • Higher 1.5 amp power rating. • Compressor lockout/ anti-short cycle timer. • Helps to protect compressors from damage caused by rapid short cycling. • Simple, 2-wire hook-up. • 24-ICM203: (ATB) • Compact 2" x 2" package. 	<ul style="list-style-type: none"> • Control: 18-240 VAC. • 1.5 amps. • 15 amp inrush. • Knob-adjustable delays 0.03 to 10 min. (1.8 to 600 Seconds). • Voltage Drop: 3.5V typical. 4.5V max. • 40 mA holding current. 	<p>Diversified</p> <ul style="list-style-type: none"> • ASC-500 • ASC-501 • ASC-502 • ASC-503 • ASC-505-5 <p>Gemline</p> <ul style="list-style-type: none"> • 1C320 <p>Mars 32392</p> <p>Robertshaw</p> <ul style="list-style-type: none"> • 3310-072 <p>Supco</p> <ul style="list-style-type: none"> • TD-73 <p>Watsco</p> <ul style="list-style-type: none"> • EAC-501-ADJ • EAC-501-ADJ-X
 <p>24-ICM204 24-ICM205 24-ICM206</p>	<ul style="list-style-type: none"> • Brownout protection. • UL 873 recognition as compressor controller. • Helps prevent scroll compressor reversal. • Fast response time: 16 ms. • Compressor lockout/ anti-short cycle timer. • Prevents low voltage starts. • Eliminates relay chatter due to thermostat bounce or tampering. • Works with anticipator-type thermostats. • Patented: U.S. Patent No. 4,991,049. • Compact 2" x 2" package. • 24-ICM204: 3 minute delay. • 24-ICM205: 5 minute delay. • 24-ICM206: 3 - 10 minute delay 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • 1.5 amps. • 15 amp inrush. • 3 or 5 min. fixed or 10 min. adjustable time delays. • 40 mA holding current. 	<p>Gemline</p> <ul style="list-style-type: none"> • 1C243 <p>Mars</p> <ul style="list-style-type: none"> • 32381 • 32382 <p>Supco</p> <ul style="list-style-type: none"> • TL243 • TL245 <p>Robertshaw</p> <ul style="list-style-type: none"> • 3310-183 • 3310-305 <p>Watsco</p> <ul style="list-style-type: none"> • EAC511 • EAC-426-180 • EAC-426-300 • EAC-426-ADJ

Electrical

Delay On Break Timers



Anti-Short Cycle Protection

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM207 24-ICM208 24-ICM209</p>	<ul style="list-style-type: none"> • Universal voltage operation. • Helps prevent scroll compressor reversal. • Fast response time: 16 ms. • Compressor lockout/ anti-short cycle timer. • Eliminates relay chatter due to thermostat bounce or tampering. • Works with anticipator-type thermostats. • Compact, epoxy-encapsulated package. • 24-ICM207: 3 minute delay. • 24-ICM208: 5 minute delay. • 24-ICM209: 3 - 10 minute delay. 	<ul style="list-style-type: none"> • Control: 18-240 VAC. • 1 amp. • 10 amp inrush. • 3 or 5 min. fixed or 10 min. adjustable time delays. • 40 mA holding current. 	<p>N/A</p>
 <p>24-ICM210</p>	<ul style="list-style-type: none"> • UL 873 recognition as compressor controller. • Compressor lockout/ anti short-cycle timer plus random start function. • Dual function delay on make/ break. • Random start delay is ideal for stagger-starting multiple units. • Low cost, open board package. • Conformally coated for added protection. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • 1 amp. • 10 amp inrush. • Random start time: up to 3 sec. • ASC time delay: 5 min. fixed. • Voltage drop: 2.5V @ 1 amp. 	<p>Watsco • EAC-650</p>
 <p>24-ICM211</p>	<ul style="list-style-type: none"> • UL 873 recognition as compressor controller. • Compressor lockout/ anti short-cycle timer plus random start function. • Low cost, open board package. • Conformally coated for added protection. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • 1 amp. • 10 amp inrush. • ASC time delay: 5 min. fixed. • Voltage drop: 2.5V @ 1 amp. 	<p>N/A</p>
 <p>24-AMS Series</p>	<ul style="list-style-type: none"> • Reliable anti-short cycle protection. • Lockout delay is ideal to help prevent the rapid short cycling of compressors in HVAC/R equipment. • Fixed time delays from 0.1 to 600 seconds. • Built-in transient protection. • Factory selectable voltage range: 24, 115 and 240 VAC. 	<ul style="list-style-type: none"> • 18-240 Volts factory fixed. • Frequency: 50/ 60 Hz. • 1 amp. • 10 amp inrush. • Fixed delays from: 0.1 to 600 seconds. • Voltage drop: 2.5V @ 1 amp. • 20 mA holding current. 	<p>Trane • X13270061-01</p>

Random Start Timers



Applications	Timing Diagram	Mode Of Operation
<ul style="list-style-type: none"> "Delay on make / Delay on break" Ideal for use in compressor staging and to stagger-start multiple rooftop units. Helps to reduce power surges. No need to wait for the 5 minute delay typical with delay on make timers. 	<p>* Delay on make time is proportional to selected delay on break time.</p>	<ul style="list-style-type: none"> Upon application of power, the delay on make period begins. Once the delay is complete, the unit energizes. Lockout Timer: upon application of power, the load is energized. Upon opening thermostat or loss of power the load is de-energized and the delay period begins. The compressor will not start again during the delay period.

Ideal For Stagger-Starting

Part #	Features & Applications	Specifications	Cross Reference
<p>24-ICM150</p>	<ul style="list-style-type: none"> UL 873 recognition as compressor controller. Compressor lockout/ anti-short cycle timer. Integral random start capability. Adjustable initiation delay is ideal for stagger-starting multiple units. Reduces nuisance lockouts/ service calls. Compact 2" x 2" package. 	<ul style="list-style-type: none"> Control: 18-30 VAC. 1 amp. 10 amp inrush. Time delay 6 to 600 sec. knob adjustable. Voltage drop 1.5 volts @ 1 amp. 	Diversified • ASC-200
<p>24-ICM151</p>	<ul style="list-style-type: none"> UL 873 recognition as compressor controller. Compressor lockout/ anti-short cycle timer with random start feature plus: <ul style="list-style-type: none"> Safety switch lockout. Remote thermostat reset. LED fault indication. Reduces nuisance lockouts/ service calls. *Safety switch: upon interruption of power to the compressor via the pressure limit switch(es), the compressor will be locked out until the lockout delay expires and the control is reset by cycling the thermostat OFF then ON. 	<ul style="list-style-type: none"> Control: 18-30 VAC. 1 amp. 10 amp inrush. Time delay 0.1 to 600 sec. knob adjustable. 	N/A

Electrical

Coloured Standard

29-331
Illustrated

Marr Electrical Connectors

100 pcs. per box.

Black High Temp.

29-31
Illustrated

Marr Connectors XTP

The Marrette® XTP® is a high quality, twist-on wire connector with a unique spring and cap grip design that sets it apart from the competition.

- Standard Temperature: 105°C (221°F) rated.
- High temperature: 150°C (302°F) rated.

Part #	Description	Wire Min		Wire Max	
29-331	Orange	(2) #18		(3) #14	
29-333	Yellow	(1) #14 w/ (2) #18		(1) #10 w/ (2) #14	
29-335	Red	(2) #16 w/ (2) #18		(3) #10	
29-29	Black	(1) #20 w/ (1) #22		(2) #16	
29-30	Black	(3) #20		(3) #16	
29-31	Black	(2) #18		(4) #16	
29-33	Black	(6) #18 (1) #16 w/ (1) #18		(4) #14 w/ (1) #18 (300V) (4) #14 (600V)	
29-35	Black	(1) #12 w/ (7) #18 (2) #14		(3) #10 (300V) (3# #12 w/ (1) #18 (600V)	

Bypass Timer

Applications	Timing Diagram	Mode Of Operation
<ul style="list-style-type: none"> • "On delay interval timer" • "Normally closed delay on make" • Designed to bypass a control or device during startup. Typically used to bypass a low pressure switch during compressor heat pump startup or to bypass an oil pressure switch upon startup. Helps to eliminate nuisance lockouts. 		<ul style="list-style-type: none"> • With power applied to the input, the load energizes immediately and remains energized for the length of the time delay, regardless of the state of the switch being bypassed. At the end of the time delay, the condition of the load is determined by the state of the switch.

To Bypass A Switch Or Device During Startup

Part #	Features & Applications	Specifications	Cross Reference
<p>24-ICM175</p>	<ul style="list-style-type: none"> • Designed to bypass a low pressure switch or other device during start-up. • Ideal for low ambient start-ups. • Key component for "winter start" kits. • Helps to reduce nuisance lockouts. • Universal AC voltage operation. • Knob-adjustable time delays. • Epoxy-encapsulated circuitry. • Compact 2" x 2" package. 	<ul style="list-style-type: none"> • Control: 18-240 VAC. • Frequency: 50/ 60 Hz. • 1 amp maximum. • 40 mA minimum. • 10 amp inrush. • Knob-adjustable time delays: 10 to 1,000 sec. 	<p>Mars</p> <ul style="list-style-type: none"> • 32395 Supco • TDP68

Fan Blower Controls

OFF Delay Timing Purges Residual Air

Applications	Timing Diagram	Mode Of Operation
<ul style="list-style-type: none"> • "OFF delay ON break" • Controls the circulating fan in heat pump, air conditioning & forced air systems. OFF delay allows conditioning air to reach the proper comfort level prior to energizing the fan, helping to ensure comfort. OFF delay timing function continues to run the fan at the end of the heating/ cooling cycle, thereby purging ducts of residual air and increasing system efficiency. 	<p>Fan Blower Controls Continued - Next Page!</p>	<ul style="list-style-type: none"> • Power must be applied before & during time delay period. Upon closure of thermostat the delay on make period begins. Once complete, the load is energized, and remains energized as long as the initiate switch is closed. When the thermostat switch opens, the delay on break period begins. Once complete, the load is de-energized and all time delays reset. If the initiate contact recloses during the delay on break period, the load remains energized and the delay on break period is reset. Removal of input power resets all timing functions. Should the initiate contact open during the delay on make period, the delay on make period is reset to zero.

OFF Delay Only Fan Control

Part #	Features & Applications	Specifications	Cross Reference
<p>24-ICM253</p>	<ul style="list-style-type: none"> • UL 873 recognition for compressor applications. • Post-purge fan delay timer. • OFF delay purges ducts of residual air at the end of the heating/ cooling cycle. • Interrogation delay eliminates nuisance trips due to thermostat bounce/ tampering. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • 1 amp. • 10 amp inrush. • Adjustable time delays: 12 to 390 sec. 	<p>Gemline</p> <ul style="list-style-type: none"> • IC216 <p>Mars</p> <ul style="list-style-type: none"> • 32393

Fan Blower Control



Applications	Timing Diagram	Mode Of Operation
<ul style="list-style-type: none"> • "On delay on break" and • "Off delay on break" • Controls the circulating fan in heat pump, air conditioning and forced air systems. On delay on make lets air reach proper level prior to turning on the fan. Off delay timing function continues to run the fan at the end of the heating/ cooling cycle, thereby purging ducts of residual air and increasing system efficiency. 		<ul style="list-style-type: none"> • Power must be applied before and during the time delay period. When the initiate contact closes, the delay on make period begins. The load then energizes and remains energized as long as the initiate contact is closed. The delay on break period begins when the initiate contact opens. At the end of the time delay, the load is turned off. If the initiate contact recloses during the time delay, the load is reset to zero. Removal of input power during the delay turns off the load and resets the time delay to zero.

Fan Blower Control



Dual ON/ OFF Delays Fan Controls

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM251</p>	<ul style="list-style-type: none"> • Drives fan directly. • High power, relay output. • Dual function fan delay timer. • Controls the circulating fan in heat pump, A/C and forced air systems. • OFF delay controls fan relay to purge ducts of residual air at the end of the heating/ cooling cycle. • ON delay allows air to reach the proper comfort level prior to energizing the fan. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Output: N.O. 20 amps @ 240 VAC. N.C. 10 amps @ 240 VAC. • Time delays: fixed or adj. ON: 1 to 180 sec. OFF: 12 to 390 sec. 	<p>Mars</p> <ul style="list-style-type: none"> • 32377 • 32378 • 32379
 <p>24-ICM254</p>	<ul style="list-style-type: none"> • Dual function fan delay timer. • Controls the circulating fan in heat pump, A/C and forced air systems. • OFF delay controls fan relay to purge ducts of residual air at the end of the heating/ cooling cycle. • ON delay allows air to reach the proper comfort level prior to energizing the fan. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • 1 amp maximum. • 40 mA minimum. • 10 amp inrush. • Time delays: fixed or adj. ON: 1 to 180 sec. OFF: 12 to 390 sec. 	<p>Honeywell</p> <ul style="list-style-type: none"> • S876A1016 <p>Watsco</p> <ul style="list-style-type: none"> • PSTD-000-005W • PSTD-000-060W
 <p>24-ICM255</p>	<ul style="list-style-type: none"> • Low cost open board design. • High power, relay output. • Dual function fan delay timer. • Controls the circulating fan in heat pump, A/C and forced air systems. • OFF delay purges ducts of residual air. • ON delay allows air to reach the proper comfort level prior to energizing the fan. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Output: N.O. 20 amps @ 240 VAC. N.C. 20 amps @ 240 VAC. • Time delays: fixed. ON: 1 sec. OFF: 60 sec. 	<p>Bard</p> <ul style="list-style-type: none"> • 8201-056 <p>Mars</p> <ul style="list-style-type: none"> • 32393 <p>Snyder-General</p> <ul style="list-style-type: none"> • 1395336 <p>Watsco</p> <ul style="list-style-type: none"> • 5893 <p>Rheem</p> <ul style="list-style-type: none"> • 42-22515-01 • 42-22515-02 • 42-22515-03

Electrical

Fan Blower Control

Direct OEM Replacement Parts

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM270</p>	<ul style="list-style-type: none"> • Dual function fan delay timer. • Controls the circulating fan in heat pump, A/C and forced air systems. • OFF delay purges ducts of residual air. • ON delay allows air to reach the proper comfort level prior to energizing the fan. 	<ul style="list-style-type: none"> • Control: 18-30 VAC • Contact ratings: heat/ cool speed. N.O. 20 amps @ 240 VAC. N.C. 10 amps @ 240 VAC. • Time delays: blower off time adjustable 90, 120, 150, 180 sec. 	Robertshaw • 695-003 Evcon • 2702-300 Rheem • 47-22827-01 • 47-22827-81 • 47-22827-82 • 47-22828-01 • 47-22828-02 Honeywell • ST9120A1006 • ST9120A12004
 <p>24-ICM271</p>	<ul style="list-style-type: none"> • Reliable solid state fan blower control. • Specifically designed to replace popular gas furnace centres. • Pin selectable blower delays. • High power, relay output. • Dual function fan delay timer. • Controls the circulating fan in heat pump, A/C and forced air systems. • OFF delay purges ducts of residual air. • ON delay allows air to reach the proper comfort level prior to energizing the fan. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • Contact ratings: N.O. 20 amps. N.C. 10 amps. • Fixed time delays. 	Robershaw • 695-100
 <p>24-ICM272</p>	<ul style="list-style-type: none"> • Cooling control module with fan delay. • Integral low voltage terminal board with field thermostat wiring. • Electronic air cleaner output. • High power, relay output. • DC output for fan relays and 1st stage of electronic heater control. • Interlock circuitry; prevents 2nd and 3rd stage electric heat energization without proper fan operation. 	<ul style="list-style-type: none"> • Control: 18-30 VAC • Contact ratings: N.O. 20 amps N.C. 10 amps • Time delays: factory fixed at 60 sec. 	Texas Instruments • 2FD-1
 <p>24-ICM273</p>	<ul style="list-style-type: none"> • Solid state output. • Silent operation "no clicking" • Controls the circulating fan in heat pump, A/C and forced air systems. • OFF delay purges ducts of residual air. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. Output • Contact rating: 2 amps @ 240 VAC. • Time delays: factory fixed at 60 sec. 	EMI • 240000-969
 <p>24-ICM275</p>	<ul style="list-style-type: none"> • Microprocessor-based fan blower control. • Built-in humidity relay. • Manually adjustable post-purge OFF delay from 60-240 seconds. • Electronic air cleaner output. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. Output • Contact ratings: 20 amps @ 240 VAC on high. 10 amps @ 240 VAC on low. 	Robertshaw • 695-101 Carrier • CES110019 • HH84AA001 • HH84AA003 • HH84AA005 • HH84AA009 • HH84AA014 • HH84AA015 • HH84AA021

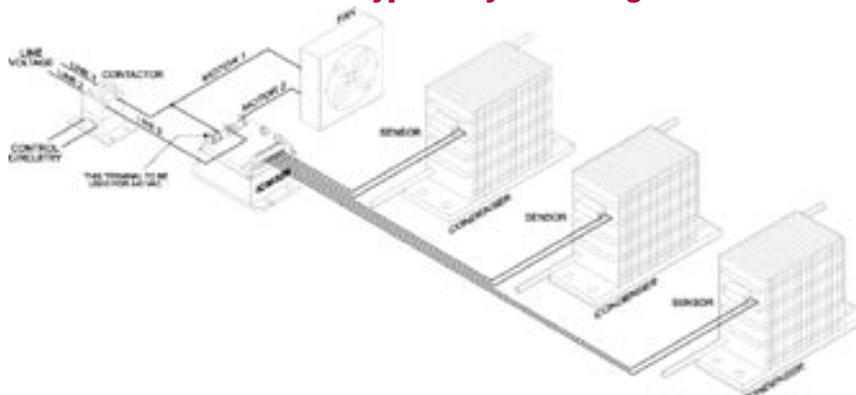
Head Pressure Controls



Dual ON/ OFF Delays Control Fan

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM325H 120-480 VAC</p>	<ul style="list-style-type: none"> Integral heat pump bypass circuitry allows electronic bypass of speed control. Eliminates overshoots common to on/ off and pressure switch controls. Helps prevent evaporator freeze-ups, low pressure cut-outs and liquid-slugged compressors in low ambient conditions. One model covers 120 to 480 VAC. Features hard start (adj. 1 to 5 sec.), low speed cut-off (adj.), high temperature bypass, isolated 24 VAC supply. Controls up to 3 refrigerant circuits. Typical application: heat pumps. 4.5" x 3" x 1.75". 	<p>Input</p> <ul style="list-style-type: none"> Control: 18-30 VAC. Frequency: 50/ 60 Hz. 1.8 VA max. Line input: 120-480 VAC. <p>Output</p> <ul style="list-style-type: none"> Max: 10 amps. Min: 100 mA. 	<p>One ICM model replaces:</p> <p>Hoffman</p> <ul style="list-style-type: none"> • 800 • 800A • 800AA • 814-50 • 816-10 <p>Ranco</p> <ul style="list-style-type: none"> • E31 Series <p>Johnson Controls</p> <ul style="list-style-type: none"> • P66 • ACT • FM2000
 <p>24-ICM325 120-600 VAC</p>	<ul style="list-style-type: none"> Eliminates overshoots common to on/ off and pressure switch controls. One model covers 120 to 600 VAC. Features hard start, low temperature bypass, isolated 24 VAC supply. Controls one refrigerant circuit. Typical application: refrigeration and A/C. 4.5" x 3" x 1.75". <p>Accessories:</p> <ul style="list-style-type: none"> • 24-ICM375 probe, 50° to 80°F (10° to 27°C). • 24-ICM376 probe, 70° to 100°F (21° to 38°C). • 24-ICM377 probe, 95 to 120°F (35° to 49°C). 	<p>Input</p> <ul style="list-style-type: none"> Control: 18-30 VAC. Frequency: 50/ 60 Hz. Line input: 120-600 VAC. <p>Output</p> <ul style="list-style-type: none"> Max: 10 amps. Min: 100 mA. 	N/A
 <p>24-ICM326H 120 or 208/ 240 VAC 24-ICM327H 480 VAC</p>	<ul style="list-style-type: none"> Built-in transformer eliminates cost, reduces installation time and simplifies wiring. Helps prevent evaporator freeze-ups, low pressure cut-outs and liquid-slugged compressors in low ambient conditions. Features hard start, low temperature cut-off, high temperature bypass. 4.5" x 3" x 2". Typical application: ideal for heat pumps, line voltage air conditioning and refrigeration. 	<p>24-ICM326H</p> <ul style="list-style-type: none"> Control: 120 or 208/ 240 VAC. <p>24-ICM327H</p> <ul style="list-style-type: none"> Control: 480 VAC. Frequency: 50/ 60 Hz. <p>Output current:</p> <ul style="list-style-type: none"> Max: 10 amps. Min: 100 mA. 	<p>Hoffman</p> <ul style="list-style-type: none"> • 800 • 800A • 800AA • 814-50 • 816-10 <p>Ranco</p> <ul style="list-style-type: none"> • E31 Series <p>Johnson Controls</p> <ul style="list-style-type: none"> • P66

24-ICM326H Typical System Diagram



Applications

- Ideal For Low Ambient Conditions.
- Found In Supermarkets, Frozen Food Storage, Computer Rooms, Cooling Tower Fans, Temperature/ Humidity-sensitive Environments.

Mode Of Operation

- Head pressure controls operate as temperature-sensitive motor fan speed controls. Head pressure is regulated during low ambient conditions by varying the amount of airflow through the condenser. This helps ensure sufficient pressure across the expansion valve, preventing costly down time and or loss of valuable perishable goods.

3-Phase Head Pressure Controls



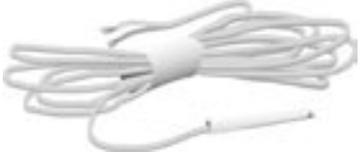
With LCD Diagnostics - Designed for 3-Phase Systems

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM336 208/ 240 VAC</p> <p>24-ICM337 460 VAC</p>	<ul style="list-style-type: none"> • Specifically designed for 3-phase systems. • Easy LCD programming and diagnostics. • Helps prevent evaporator freeze-ups, low pressure cutouts & liquid slugged compressors in low ambient conditions. • Controls head pressure by varying the amount of airflow through the condenser. • Low temp cut-off & high temp set points. • Temperature, pressure, milliamps, or DC voltage input. • True sine wave output. • Modulates voltage and frequency. 	<p>24-ICM336</p> <ul style="list-style-type: none"> • Control: 208-240 VAC 1 to 3 HP. <p>24-ICM337</p> <ul style="list-style-type: none"> • Control: 480 VAC 1 to 5 HP. 	<ul style="list-style-type: none"> • Motormaster III • Hoffmann

Head Pressure Control Accessories



Sensor Probes

Part #	Features & Applications
 <p>24-ICM375 24-ICM376 24-ICM377</p>	<ul style="list-style-type: none"> • Probes for use with 24-ICM325, 24-ICM326, and 24-ICM327 head pressure controls. • Sensor probes, choose from (3) temperature ranges. • 24-ICM375: 50° to 80°F (10° to 27°C). • 24-ICM376: 70° to 100°F (21° to 38°C). • 24-ICM377: 95 to 120°F (35° to 49°C).
 <p>24-ICM379</p>	<ul style="list-style-type: none"> • Probe for use with 24-ICM325H, 24-ICM326H, and 24-ICM327H head pressure controls with optional heat pump bypass features.
 <p>24-ICM380</p>	<ul style="list-style-type: none"> • Optional pressure transducer for 24-ICM336 & 24-ICM337 three-phase head pressure controls.

Outdoor Enclosure

Part #	Features & Applications
 <p>24-ACC0E01</p>	<ul style="list-style-type: none"> • It's worth protecting the controls that protect your equipment! • Rugged Steel Construction. • Easy to mount. • Protects controls from harsh environmental conditions such as temperature, shock, humidity and vibration.

Lead-Lag Controls



Reliable Long Life Switching

Part #	Features & Applications	Specifications	Cross Reference
 <p>24-ICM600</p>	<ul style="list-style-type: none"> • True dual stage control. • Built-in thermostat. - Adjustable set point: 55° to 90°F - Adjustable Deadband: 2° to 20°F - Adjustable Sequencer: 1 to 28 day • Regulates 1 or 2 heating/ cooling systems. • Compact housing. • Safety system halon contacts. • Memory on power loss. • Accelerated test mode. • Isolated inputs. • Isolated solid state outputs. • Built-in anti short-cycle delays. • Status LED's. • Advance state switch. • Ideal for refrigeration applications, communication substations, water plants anywhere redundant systems are used. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • 2 amps max. • Frequency: 50/ 60 Hz. • Power consumption: 2 watts max/ lockout. • Adjustable thermostat features: <ul style="list-style-type: none"> - Set point: 55° to 90°F. - Deadband: 2° to 20°F. - Sequencer: 1 to 28 day. 	<p>N/A</p>
 <p>24-ICM601</p>	<ul style="list-style-type: none"> • Low cost, open board version of the 24-ICM600. • True dual stage control. • Built-in thermostat. - Adjustable set point: 55° to 90°F - Adjustable Deadband: 2° to 20°F - Adjustable Sequencer: 1 to 28 day • Regulates 1 or 2 heating/ cooling systems. • Safety system halon contacts. • Memory on power loss. • Accelerated test mode. • Isolated inputs. • Isolated solid state outputs. • Built-in anti short-cycle delays. • Status LED's. • Advance state switch. • Ideal for refrigeration applications, communication substations, water plants anywhere redundant systems are used. 	<ul style="list-style-type: none"> • Control: 18-30 VAC. • 2 amps max. • Frequency: 50/ 60 Hz. • Power consumption: 2 watts max/ lockout. • Adjustable thermostat features: <ul style="list-style-type: none"> - Set point: 55° to 90°F. - Deadband: 2° to 20°F. - Sequencer: 1 to 28 day. 	<p>N/A</p>
 <p>24-ICM602</p>	<ul style="list-style-type: none"> • Low cost, open board lead lag control. • Regulates one or two devices. • Reliable, long life switching. • Status LED's. • Ideal for refrigeration applications. 	<ul style="list-style-type: none"> • Control: 18-30 VAC (24 VAC). • 2 amps max. • Frequency: 50/ 60 Hz. • Power consumption: 2 watts max/ lockout. 	<p>N/A</p>

Electrical

Multi-Mode Digital Timer

Versatile, Simple, Accurate

Part #	Features & Applications	Specifications	Cross Reference
 <p> 24-ICM500 24-ICM501 24-ICM502 24-ICM503 24-ICM504 24-ICM505 </p>	<ul style="list-style-type: none"> • Multi-mode, selectable time delay ranges. • Crystal timing accuracy. • Microprocessor controlled. • 4 single and two dual timing modes. DOM, DOB, interval, single shot. DOM/ DOB and repeat cycle. • Easy to select, switch-settable delays. • Bright LED's indicate input and output. • Switch-settable time delays: 1 to 1,023 seconds or minutes in multiple of 0.1, 1, 10, 100. • 75 millisecond reset time during and after timing. May be reset during the time delay period without false output. • 8-pin base standard models. Add suffix "D" for 11-pin models. • 8-pin is for single pole, 11-pin is for double pole. • Base sold separately. 	<ul style="list-style-type: none"> • Voltage: 24, 115 or 230 VAC. 12, 24 or 110 VDC. • Frequency: 50/ 60 Hz. • Power consumption: 2 watts maximum. • Output: 8-pin = SPDT. 11-pin = DPDT. • Relay: 10 amps resistive at 240 VAC. 1/6 Hp @ 115 VAC. 1/3 Hp @ 240 VAC. • Plug-in base. 	N/A

Relay socket

Part #	Features & Applications	Specifications	Cross Reference
 <p> 24-ACS-8 24-ACS-11 </p>	<ul style="list-style-type: none"> • 8-pin octal plug-in base. • 8-pin male connectors as terminals. • Locating key ensures proper orientation. • Order ACS-11 for 11-pin base. • For use with 24-ICM410 to ICM427, 24-ICM500 to ICM505. 	<ul style="list-style-type: none"> • 10 amps up to 480 VAC. 	Diversified • RB-08

Multi-Mode Digital Timer - 24-ICM500 to 24-ICM505 Specifications

Part #	Input Voltage	Output Type	Description
24-ICM500	24 VAC	Single Pole, 1 FORM C 8-Pin.	Timing Modes Of Operation: <ul style="list-style-type: none"> • Delay on Make. • Delay on Break. • Bypass. Control Operation Models <ul style="list-style-type: none"> • DOM, DOB, Interval, Single Shot. • DOM, DOB & Repeat Cycle. Time Delay Adjustment: <ul style="list-style-type: none"> • Switch-settable delays from 1 to 1,023 sec. min. multiples of 0.1, 1, 10 & 100. • Plug-in bases are to be ordered separately. Specify 8-pin or 11-pin.* 8-pin = ACS-8 • 11-pin = ACS-11.
24-ICM501	115 VAC		
24-ICM502	240 VAC		
24-ICM503	12 VDC		
24-ICM504	24 VDC		
24-ICM505	110 VDC		

*Note: Add suffix D when ordering 11-pin base model, Double Pole, 2 FORM.

RapidStart® Motor Starters

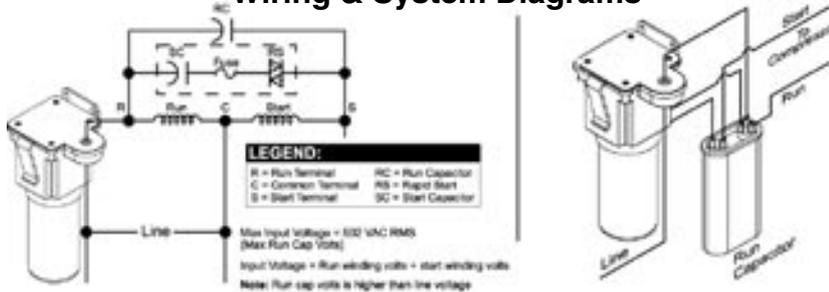


Current Sensing

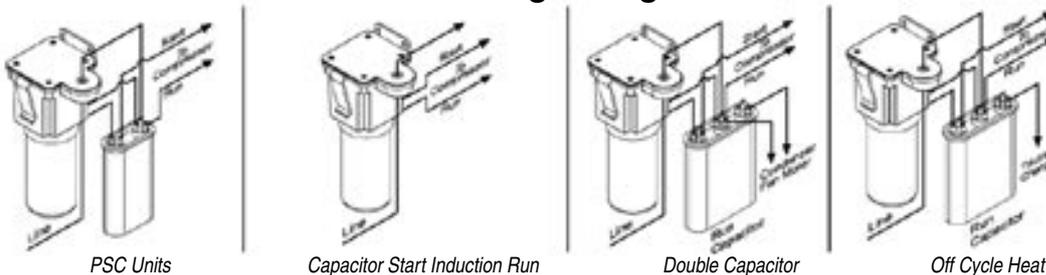
By monitoring the compressor "current" upon start-up, RapidStart® is able to engage the hard start capacitor for precisely the correct amount of time, ensuring maximum starting torque without the risk of supplying too much current into the start winding. A timed safety circuit is provided in the event the motor fails to start within 2 seconds. Current sensing hard start precisely increases starting torque.

Part #	Features & Applications	Specifications	Cross Reference
24-ICM803 	<ul style="list-style-type: none"> Operates from 95 to 288 VAC. Max input voltage: 502 VAC. Patented current sensing circuitry. Self-adjusting to voltage fluctuation. Easy to install, 2 wires. OEM approved. Solid-state circuitry. Boosts starting torque. Disengages upon start. 	<ul style="list-style-type: none"> Ideally suited for 1/2 thru 3 Hp. 88 to 106 Mfd. capacitor. 	Supco • SPP-8 Kickstart • TO5 • TO-5
24-ICM805 	<ul style="list-style-type: none"> Operates from 95 to 288 VAC. Max input voltage: 502 VAC. Patented current sensing circuitry. Self-adjusting to voltage fluctuation. Easy to install, 2 wires. OEM approved. Solid-state circuitry. Boosts starting torque. Disengages upon start. 	<ul style="list-style-type: none"> Ideally suited for 3 thru 5 Hp. 145 to 175 Mfd. capacitor. 	Kickstart • KS1
24-ICM810 	<ul style="list-style-type: none"> Operates from 95 to 288 VAC. Max input voltage: 502 VAC. Patented current sensing circuitry. Self-adjusting to voltage fluctuation. Easy to install, 2 wires. OEM approved. Solid-state circuitry. Boosts starting torque. Disengages upon start. 	<ul style="list-style-type: none"> Ideally suited for 5 thru 10 Hp. 243 to 292 Mfd. capacitor. 	N/A

Wiring & System Diagrams



Alternate Wiring Configurations



Electrical

RapidStart® Motor Starters

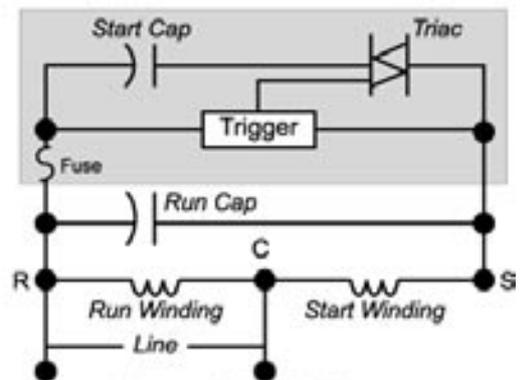
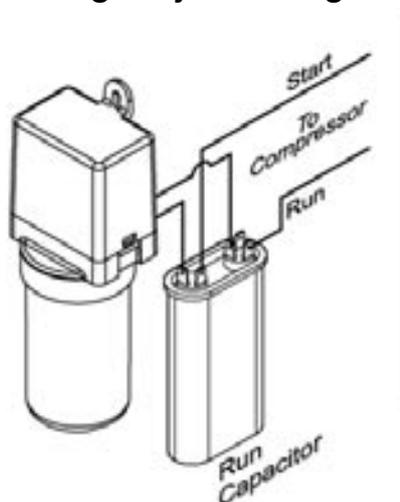


Voltage Sensing

ICM's differential voltage sensing products employ patented circuitry which monitors differential compressor auxiliary voltage, determines the state of the motor and precisely engages and disengages the start capacitor. A timed safety circuit is provided in the event the motor fails to start within 2 seconds.

Part #	Features & Applications	Specifications	Cross Reference
24-ICM850 	<ul style="list-style-type: none"> Increases starting torque up to 500%. Ensures precise starts. Reduces inventory. Not affected by ambient temperature. Recycles instantly (less than one second). Multi-voltage operation... either 115 or 240 VAC motors. 	<ul style="list-style-type: none"> Voltage: 90 to 277 VAC. Max input voltage: 390 VAC. Range: 1/12 to 10 Hp. Recommended range: 1/12 to 1 Hp. Oper. Temp. Range: 40°C to +65°C 43 to 52 Mfd 330 V Capacitor. 	N/A
24-ICM860 	<ul style="list-style-type: none"> Increases starting torque up to 500%. Ensures precise starts. Reduces inventory. Not affected by ambient temperature. Recycles instantly (less than one second). Multi-voltage operation... either 115 or 240 VAC motors. 	<ul style="list-style-type: none"> Voltage: 90 to 277 VAC. Max input voltage: 390 VAC. Range: 2 to 5 Hp. Oper. Temp. Range: -40°C to +65°C 88 to 106 Mfd 330 V Capacitor. 	N/A

Wiring & System Diagrams



Max Input Voltage = 390 VAC RMS
 (Max Run Cap Volts)
 Input voltage = Run winding volts + start winding volts
Note: Run cap volts is higher than line voltage

RapidStart® Features

- Self Adjusting
- Uses Current Differential Technology
- Does Not Use Potential Motor Start Relay
- Two Wires, Non-Polarized
- Recycles Instantly
- Senses Whether Motor Started or Not
- Replaces 3-Wire Relay & Capacitor Kit
- UL & CSA Recognized
- Approved By Compressor & Equipment Manufacturers
- Used By OEM Manufacturers
- Safety Cut-Off
- True Power Factor Starting Not Required
- Not Factory Calibrated
- Not Voltage Sensitive
- Does Not Require PTCR Device
- No Timing Circuit Device
- Not Affected By Ambient Temperature

RapidStart® Applications

- Water Coolers
- Vending Machines
- Household Refrigerators (115 or 230 VAC)
- Commercial Refrigerators (115 or 230 VAC)
- Air Conditioners
- Heat Pumps

Bake Elements



<p>37-UB300 2000W/240V W - 13.00" L - 11.10" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-450, RB-431, AM001-087, 902351 TIBK 40002-001</p>	<p>37-UB303^U 2000W/240V W - 13.00" L - 14.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-210-211-360 RB-166, AM001-096, 902352 TIBK 40002-002</p>	<p>37-UB323* 3000W/240V W - 13.00" L - 16.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-220-430, RB-407-440, AM001-007, AM001-092, 902785, 201937 TIBK 40002-007</p>	<p>37-UB324* 3000W/240V W - 13.00" L - 17.25" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-340-470-330, RB-410, AM001-048, AM001-078, 902215, 902326 TIBK 40002-004</p>	<p>37-UB400^{DEM} 2400W/240V W - 14.75" L - 14.63" I - 3.375" 90° Spade Terminals</p> <p>Replaces 211818-1050 Frigidaire Small TIBK 40002-002</p>
<p>37-UB474* 2500W/240V W - 15.55" L - 14.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-472-510-520-521, RB-202-203, AM001-080, AM001-098, 902299, 902326 TIBK 40003-005</p>	<p>37-UB481^U 2100W/240V W - 18.55" L - 14.55" I - 3.375" Straight Screw Terminals</p> <p>Replaces EB-473-570, RB-155, AM001-037, 902322 TIBK 40003-002</p>	<p>37-UB482^U 2500W/240V W - 15.55" L - 14.55" I - 3.875" Straight Screw Terminals</p> <p>Replaces EB-550, RB-152-172-234, AM001-009, 902304 TIBK 40003-003</p>	<p>37-UB484^U 2500W/240V W - 15.55" L - 16.5" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-530, RB-413, AM001-005, 902302 TIBK 40003-004</p>	<p>37-UB592* 2500W/240V W - 17.50" L - 15.05" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-582-590-620, AM001-004, AM001-055, AM001-089, 902331, 201978 TIBK 40004-003</p>
<p>37-UB593* 3000W/240V W - 17.50" L - 15.05" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-650-670, RB-404-418, AM001-002, AM001-051, 902208 TIBK 40004-004</p>	<p>37-UB639^{GE} 3000W/240V W - 18.55" L - 15.00" I - 3.375" Straight Spade Terminals</p> <p>Replaces WB44M162, WB44M169 TIBK 40004-001</p>	<p>37-UB640^{GE} 3000W/240V W - 18.55" L - 16.00" I - 3.375" Straight Spade Terminals</p> <p>Replaces WB44M164, WB44M167, AM001-111P TIBK 40003-001</p>	<p>37-UB641^{GE} 3000W/240V W - 18.50" L - 16.00" I - 3.875" Straight Screw Terminals</p> <p>Replaces WB44M147, WB44M161, RB147, AM001-111, 40020-001 TIBK 40003-001</p>	<p>37-UB642* 3000W/240V W - 18.50" L - 14.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-740, RB-147, AM001-111, WB44M147, 902808 TIBK 40005-004</p>
<p>37-UB643^U 3000W/240V W - 18.50" L - 14.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-548-640-780, RB-425-427, AM001-025, AM001-081, 902314 TIBK 40005-003</p>	<p>37-UB644^U 3000W/240V W - 18.50" L - 15.55" I - 3.875" Straight Screw Terminals</p> <p>Replaces EB-572-720, RB-224, AM001-052, 902328 TIBK 40005-001</p>	<p>37-UB706^{DEM} 2500W/250V W - 18.88" L - 14.63" I - 1.500" Straight Spade Terminals</p> <p>Replaces 9750213 Ingris/ Whirlpool TIBK 40018-001</p>	<p>37-UB732* 3000W/240V W - 19.25" L - 15.55" I - 1.875" Straight Screw Terminals</p> <p>EB-730-760-790, RB-420-423, RBMM30, AM001-016, AM001-057-090, 902209, 902211, 902308 TIBK 40006-002</p>	<p>37-UB750^{DEM} 3000W/240V W - 19.75" L - 15.38" I - 3.375" 90° Spade Terminals</p> <p>Replaces 211818-1010, 211818-1040 Frigidaire TIBK 40020-001</p>
<p>37-UB813* 2500W/240V W - 20.25" L - 14.55" I - 3.875" Straight Screw Terminals</p> <p>Replaces EB-860-862, RB-224, AM001-001-072, 902346 TIBK 40007-007</p>	<p>37-UB814* 3000W/240V W - 20.25" L - 14.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-820, RB-154, AM001-003, 902301 TIBK 40007-008</p>	<p>37-UB822* 3000W/240V W - 20.25" L - 16.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-830-870-872-890, RB-417, AM001-006, 902075, 902354 TIBK 40007-009</p>	<p>37-UB962* 3000W/240V W - 22.50" L - 14.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-910-911-960-890, RB-419, AM001-011, 902305 TIBK 40008-001</p>	<p>37-UB963* 3000W/240V W - 22.50" L - 14.55" I - 3.875" Straight Screw Terminals</p> <p>Replaces EB-920-922, RB-186-218, AM001-076-095, 902372, 902380 TIBK 40008-004</p>
<p>37-UB964* 3000W/240V W - 22.55" L - 14.55" I - 3.875" Straight Screw Terminals</p> <p>Replaces EB-930, RB-151, AM001-010, 902076 TIBK 40008-003</p>	<p>37-UB483^D 2200W/240V W - 15.55" L - 16.00" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-440-480-540-542-560, RB408, AM001-014, 902307, 902325 TIBK 40009-001</p>	<p>37-UB870^D 2500W/240V W - 20.25" L - 16.00" I - 2.750" Straight Spade Terminals</p> <p>Replaces Maytag 74003019 Maytag U Bracket TIBK 40009-003</p>	<p>37-UB873^D 2500W/240V W - 21.25" L - 16.00" I - 1.875" Straight Screw Terminals</p> <p>Replaces EB-880-882, RB-146, AM001-062, 902210, 902325 TIBK 40009-002</p>	



Broil Elements

<p>37-UT077^U 2500W/240V W - 11.00" L - 14.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces ET-075-105-106-145, AM002-038 TIBK 40010-001</p>	<p>37-UT095^U 3000W/240V W - 11.00" L - 14.55" I - 1.875" Straight Screw Terminals</p> <p>Replaces ET-116-117-125-175, RB-164, AM002-006, AM002-009, 902360, 902363 TIBK 40010-002</p>	<p>37-UT096^U 3000W/240V W - 11.00" L - 16.05" I - 1.875" Straight Screw Terminals</p> <p>Replaces ET-135-147-155-156, RB-426, AM002-005, AM002-010, 902212, 902359 TIBK 40010-003</p>	<p>37-UT097^U 3000W/240V W - 11.00" L - 16.55" I - 3.875" Screw Terminals</p> <p>Replaces ET-149-265 TIBK 40010-004</p>	<p>37-UT120* 3400W/240V W - 11.88" L - 16.44" I - 2.875" 90° Spade Terminals</p> <p>Replaces 211806-1010, 211806-1020 Frigidaire U Bracket TIBK 40016-001</p>
<p>37-UT316^U 3000W/240V W - 13.00" L - 15.05" I - 1.875" Straight Screw Terminals</p> <p>Replaces ET-215-225-245-285-315-317-325-465, RB-168, AM002-002, 902357 TIBK 40011-001</p>	<p>37-UT317^U 3000W/240V W - 13.00" L - 16.55" I - 3.875" Straight Screw Terminals</p> <p>Replaces ET-295-455, RB-225, AM002-011, 902356 TIBK 40011-002</p>	<p>37-UT076^D 2500W/240V W - 11.00" L - 14.00" I - 1.875" Straight Screw Terminals</p> <p>Replaces AM002-003, 902358, ET 165 TIBK 40012-001</p>	<p>37-UT306^D 2400W/240V W - 13.00" L - 14.00" I - 3.875" Straight Screw Terminals</p> <p>Replaces EB-415, ET-305, RB-221-240, AM002-011, 902364, 902367 TIBK 40012-002</p>	<p>37-UT315^D 2500W/240V W - 14.56" L - 14.50" I - 1.50" Straight Spade Terminals</p> <p>Replaces 9780993, 21142 U Bracket TIBK 21142-001</p>



Legend

Bracket Style

- * - 6 Hole Bracket
- D - Double Bracket
- GE - GE Style Bracket
- OEM - OEM Bracket
- U - Universal

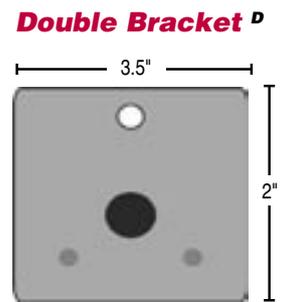
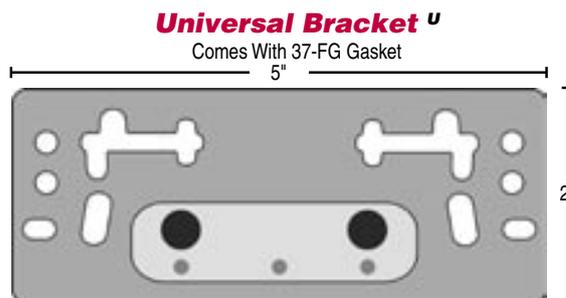
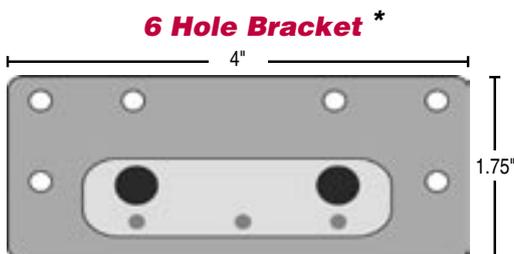
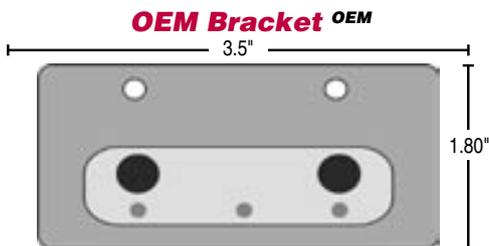
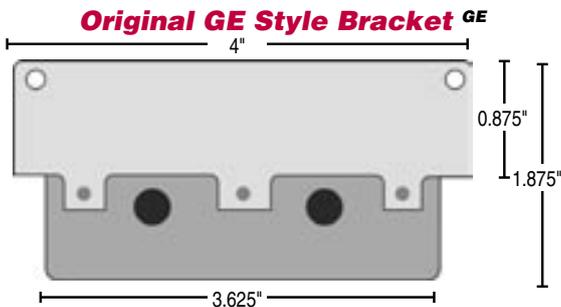
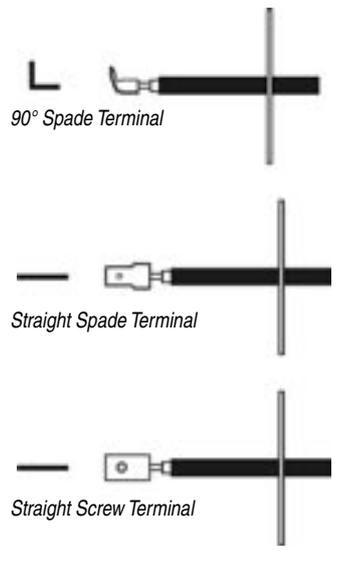
Dimensions

- W - Element Width
- L - Element Length
- I - Element Insert

Element Style

- UB - Bake
- UT - Broil

Bake & Broil Terminal Connections



Bake Elements Selection Chart



Bake Elements

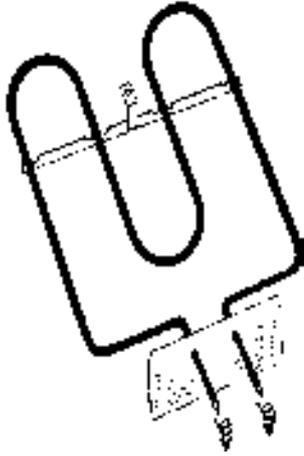
Width	Length	Insert Length							
		Standard			Long			Bent	"U" Shaped
		2.250"	1.875"	2.750"	3.500"	4.000"	3.875"	3.875"	1.875"
13.00"	11.10"		37-UB300 2000W						
	14.55"		37-UB303^U 2000W						
	16.55"		37-UB323[*] 3000W						
	17.55"		37-UB324[*] 3000W						
14.75"	14.63"					37-UB400^{OEM} 2400W			
15.55"	14.55"		37-UB474[*] 2500W		37-UB481^U 2100W			37-UB482^U 2500W	
	16.00"								37-UB483^D 2200W
	16.50"		37-UB484^U 2500W						
17.50"	15.05"		37-UB592[*] 2500W						
			37-UB593[*] 3000W						
18.50"	14.55"						37-UB642[*] 3000W	37-UB643^U 3000W	
	15.55"						37-UB644^U 3000W		
	16.00"						37-UB639^{GE} 3000W		
							37-UB640^{GE} 3000W		
						37-UB641^{GE} 3000W			
18.88"	14.63"	37-UB700^{OEM} 2500W							
19.25"	15.55"		37-UB732[*] 3000W						
19.75"	15.38"						37-UB750^{OEM} 3000W		
20.25"	14.55"		37-UB813[*] 2500W						
			37-UB814[*] 3000W						
	16.00"			37-UB870^D 2500W					
	16.55"		37-UB822[*] 3000W						
21.25"	16.00"								37-UB873^D 2500W
22.50"	14.55"		37-UB962[*] 3000W				37-UB963[*] 3000W	37-UB964[*] 3000W	

Note : 37-UB481 has a 3.375" Insert Length

Broil Element Selection Chart



Broil Elements



Width	Length	Insert Length					
		Standard		Long		Bent	"U" Shaped
		1.875"	2.250"	3.375"	3.875"		
11.00"	14.00"					37-UT076 ^D 2500W	
	14.55"	37-UT077 ^U 2500W					
		37-UT095 ^U 3000W					
16.55"	37-UT096 ^U 3000W				37-UT097 ^U 3000W		
11.88"	16.44"			37-UT120* 3400W			
13.00"	14.00"		37-UT315 ^D 2500W				37-UT306 ^D 2400W
	15.05"	37-UT316 ^U 3000W					
	16.55"				37-UT317 ^U 3000W		



Legend

Bracket Style

- * - 6 Hole Bracket
- D - Double Bracket
- GE - GE Style Bracket
- OEM - OEM Bracket
- U - Universal

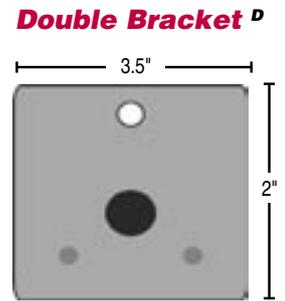
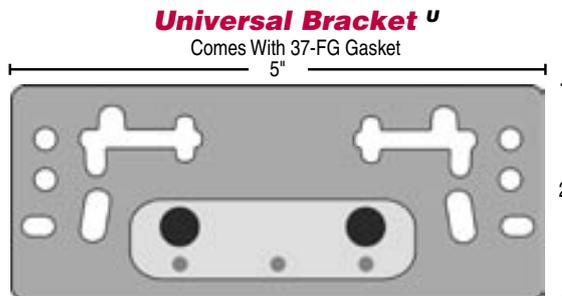
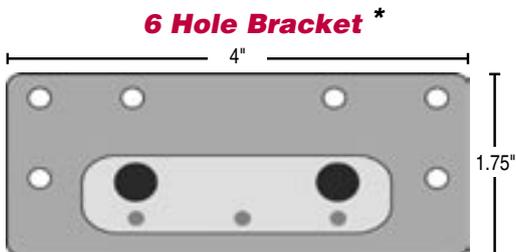
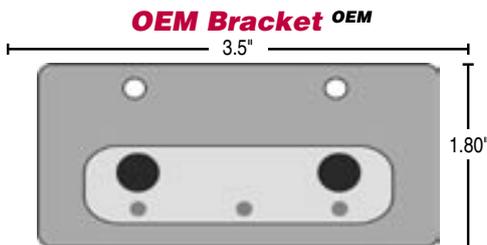
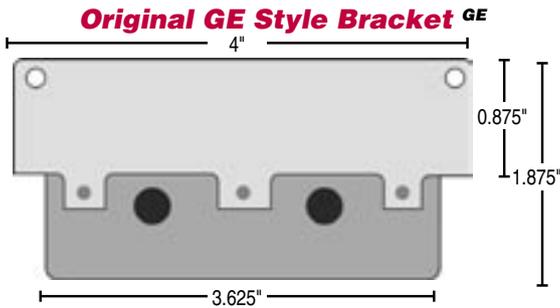
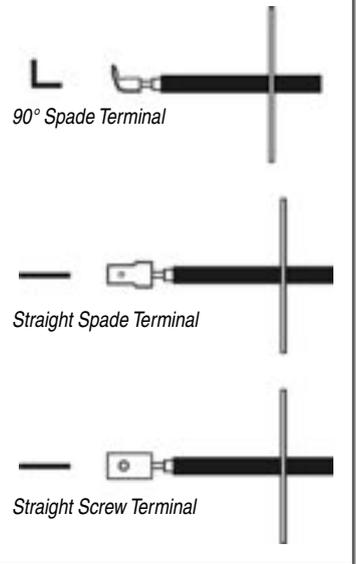
Dimensions

- W - Element Width
- L - Element Length
- I - Element Insert

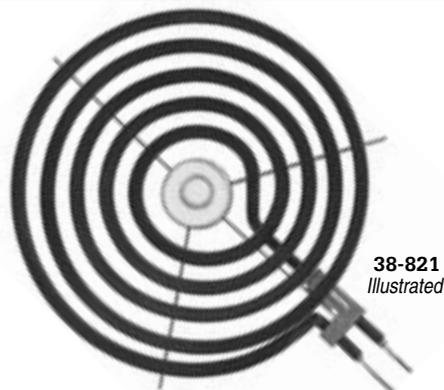
Element Style

- UB - Bake
- UT - Broil

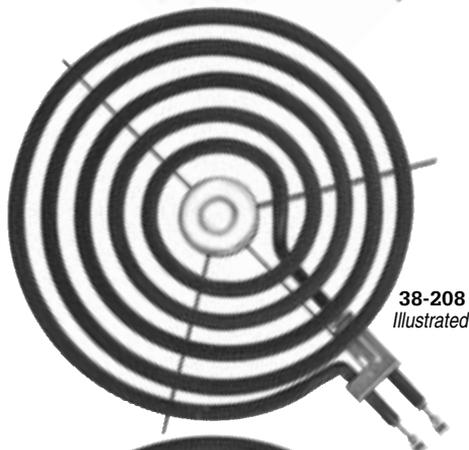
Bake & Broil Terminal Connections



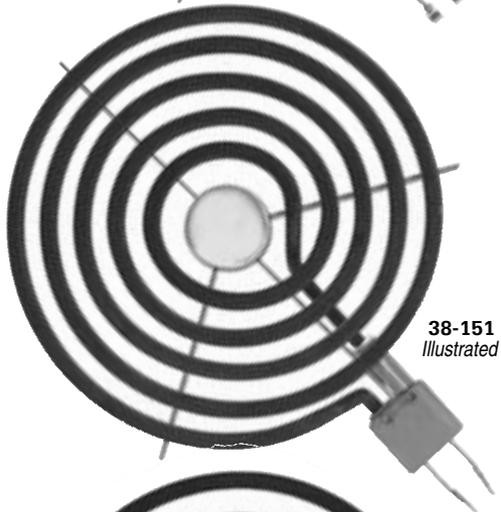
Plug-in Surface Elements



38-821
Illustrated



38-208
Illustrated



38-151
Illustrated



38-214
Illustrated

Universal Replacements Standard PS-4 Deluxe Series

New Terminal Style.

Single Coil					
Hotemp #	Chromalox #	Watts	Volts	Turns	Size
38-812	PS-12CS-4	1250	240	4	Small (6")
38-815	PS-15CS-4	1500	240	4	Small (6")
38-821	PS-21CS-4	2100	240	5	Large (8")
38-824	PS-240CS-4	2400	240	5	Large (8")
38-826	PS-26CS-4	2600	240	5	Large (8")

OEM Direct Replacement Westinghouse PS Deluxe Series

Old Horseshoe Terminal Style.
Complete with terminal block.

Single Coil					
Hotemp #	Chromalox #	Watts	Volts	Turns	Size
38-207	PS-15CS	1500	240	4	Small (6")
38-208	PS-21CS	2100	240	5	Large (8")

OEM Direct Replacement Moffat-Camco PSM Deluxe Series

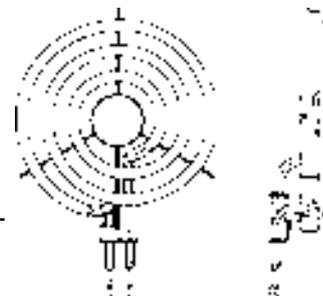
Spade Terminal Style.

Single Coil					
Hotemp #	Chromalox #	Watts	Volts	Turns	Size
38-140	PS-15M	1500	240	4	Small (6")
38-151	PS-21M, PSM-24CS	2400	240	5	Large (8")

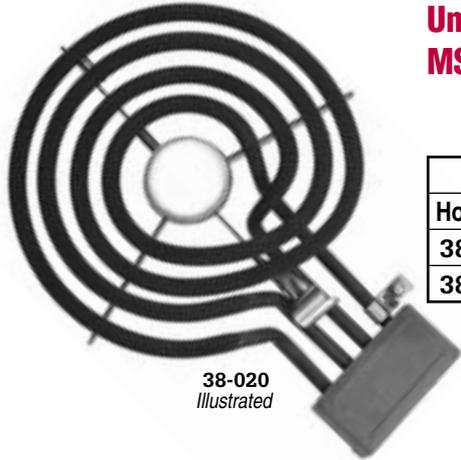
OEM Direct Replacement Standard PSU-4 Utility Element Series

New Terminal Style.
Utility series elements use a shorter length coil (higher watts density). This style of element is designed for apartments or multi-dwelling accommodations.

Single Coil					
Hotemp #	Chromalox #	Watts	Volts	Turns	Size
38-187	PSU-101CS-4	1000	120	3	Small (6")
38-188	PSU-121CS-4	1250	120	3	Small (6")
38-219	PSU-12CS-4	1250	240	3	Small (6")
38-214	PSU-21CS-4	2100	240	4	Large (8")



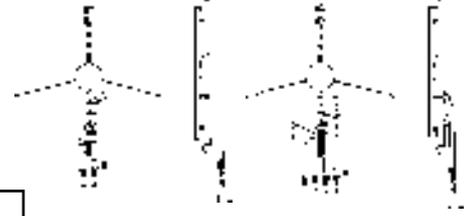
Wired-in Surface Elements



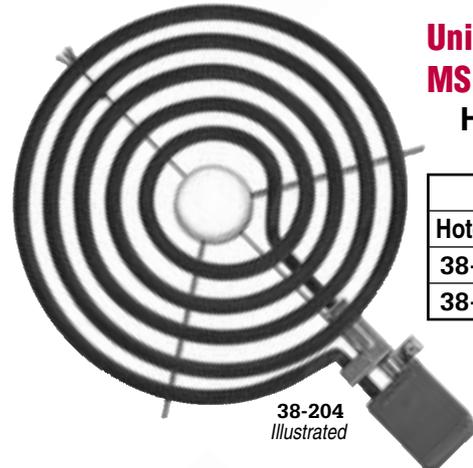
38-020
Illustrated

Universal Replacements MS & MC Deluxe Series

Lock-up Type
Terminal Block Style.



Single Coil		Dual Coil		Watts	Volts	Turns	Size
Hotemp #	Chromalox #	Hotemp #	Chromalox #				
38-061	MS-15L	38-020	MC-15L	1500/1125	240/208	4	Small (6")
38-070	MS-21L	38-228	MC-21L	2100	240	5	Large (8")



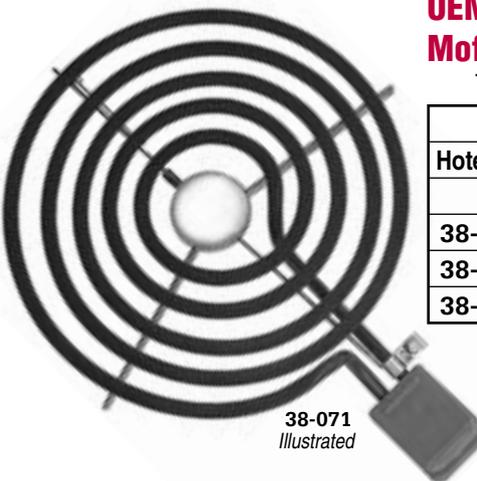
38-204
Illustrated

Universal Replacements MS & MC Deluxe Series

Hinged Type
Terminal Block Style.



Single Coil		Dual Coil		Watts	Volts	Turns	Size
Hotemp #	Chromalox #	Hotemp #	Chromalox #				
38-203	MS-15CS	38-205	MC-15B	1500/1125	240/208	4	Small (6")
38-204	MS-21CS	38-216	MC-21B	2100	240	5	Large (8")

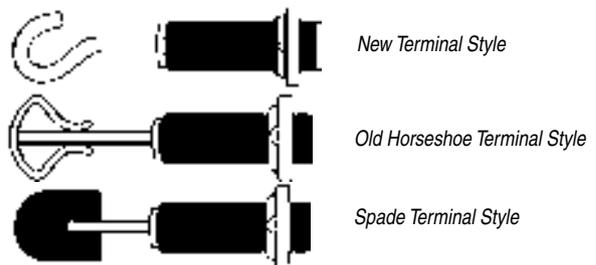


38-071
Illustrated

OEM Direct Replacement Moffat - GSW MS & MC Deluxe Series

Terminal Block Style.

Single Coil		Dual Coil		Watts	Volts	Turns	Size
Hotemp #	Chromalox #	Hotemp #	Chromalox #				
-	-	38-021	MC-15M	1500/1125	240/208	4	Small (6")
38-071	MS-21M	38-033	MC-21M	2100	240	5	Large (8")
38-063	MS-15MA	-	-	1500/1125	240/208	4	Small (6")
38-072	MS-21MA	-	-	2100	240	5	Large (8")



New Terminal Style

Old Horseshoe Terminal Style

Spade Terminal Style

Element Receptacle Blocks



Range Element Receptacle Bracket Blocks

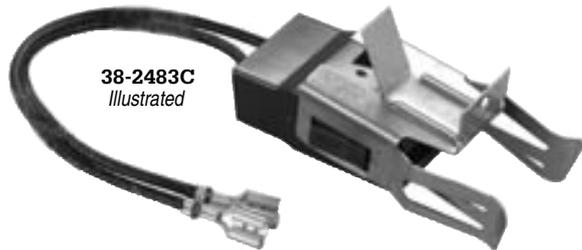
Part #	Description	Replaces
38-2481-C	6" wire leads.	
38-2481C-100	6" wire leads. (100/ pk.)	
38-2482-C	32" wire leads.	
38-2483C	6" wire leads.	G.E., Moffat & Whirpool.
38-2490FS	15" wire leads.	Jennair.
38-WB17M117	24" wire leads.	Camco.
38-WB17M146	24" wire leads.	Camco.
38-WB17M147	24" wire leads.	Camco.



38-2481C
Illustrated



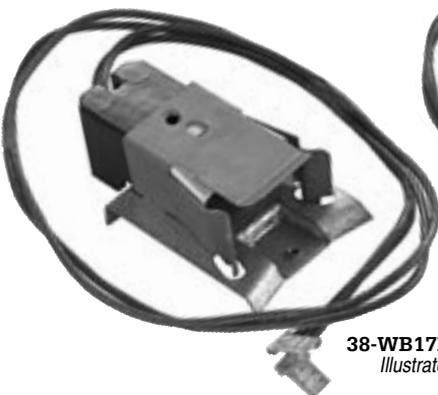
38-2482C
Illustrated



38-2483C
Illustrated



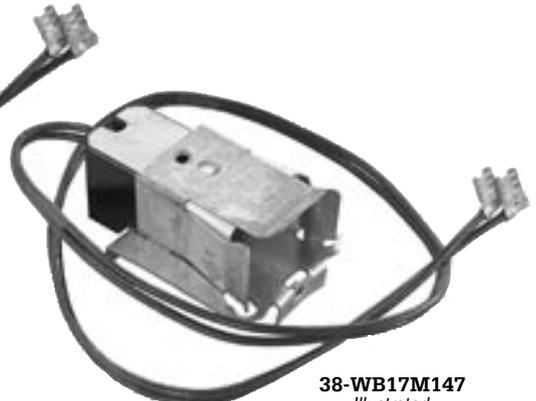
38-2490FS
Illustrated



38-WB17M117
Illustrated



38-WB17M146
Illustrated



38-WB17M147
Illustrated

Electrical

Element Discs



38-220011-4
Illustrated

Range Elements Centre Discs

Part #	Description	Package
38-220011-4	Chrome centre discs.	4/ pk.
38-220011B	Chrome centre discs.	100/ pk.

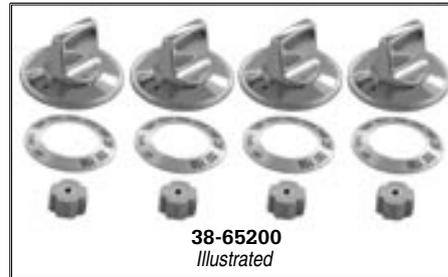
Stove & Oven Knobs



38-6412
Illustrated

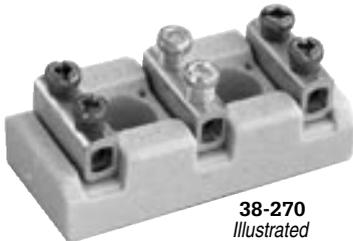
Stove & Oven Knob Kits

Part #	Description	Package
38-6412	Universal oven dial knob kit.	Chrome knob & 4 inserts.
38-65200	Universal infinite stove dial knob kit.	4 chrome knobs, 4 dials & 4 inserts.



38-65200
Illustrated

Receptacles



38-270
Illustrated

Range Element Terminal Blocks

Porcelain.

Part #	Description	Replaces
38-270	70 amp, 250 volt.	20010067.
38-11984-004	Block for UXY 542 & 538.	-



38-320
Illustrated

Appliance Outlet

Snap-in white appliance outlet.

Part #	Description	
38-320	15 amp, 125 volt.	203022-901, 85617.



29-1011
Illustrated

Fuse Holders

Part #	Description
29-1011	Single fuse with single screw terminals.

Screw-In Flange Water Heating Elements

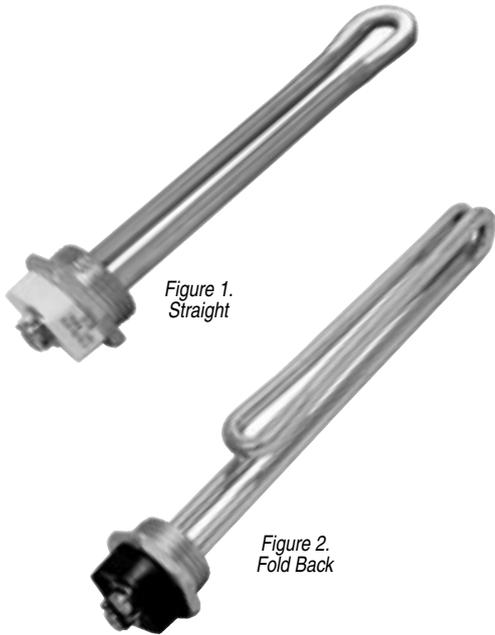


Figure 1.
Straight

Figure 2.
Fold Back

1" Non Tapered Brass Plug - Screw-In Flange (Residential)

- 0.312" Diameter Element.
- Zinc Plated Copper.
- UL & CSA Listed.
- Individually Packaged.
- Includes Gasket (39-10546-001).
- Adapter Kit To Convert To Square Flange.

120 & 240 Volt

Part #	Volts	Watts	Insert Length	Water Type	Reference	Watts @ 208
39-S1500-1	120	1500	6 1/2"	Normal / Hard	1	-
39-S1500	240	1500	6 1/2"	Normal / Hard	1	1150
39-S3001	240	3000	9"	Normal	1	2250
39-S3000	240	3000	8 1/2"	Normal / Hard	2	2250
39-S3000L	240	3000	10 3/4"	Normal / Hard	2	2250
39-S4000	240	4000	11 3/16"	Normal / Hard	2	3000
39-S4500	240	4500	11"	Normal	1	3500
39-S4500L	240	4500	13 1/8"	Normal / Hard	2	3500
39-S5000	240	5000	13 1/8"	Normal / Hard	2	3800
39-S6000	240	6000	10 3/4"	Normal	2	4500

Other wattages, watt densities, and incoloy models available upon requests.

Watt Density Reference

Water Type	Watt Density
Normal	High/ Medium Density
Hard	Medium/ Low Density
Hard	Low Density

Square Bolt-On Flange Water Heating Elements

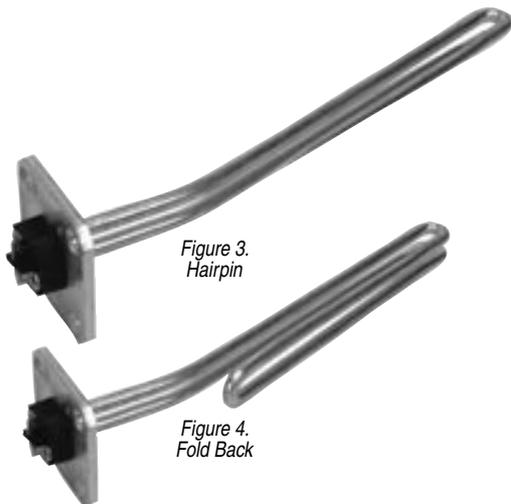


Figure 3.
Hairpin

Figure 4.
Fold Back

2 1/2" Square - Bolt-On Flange (Residential)

- 0.312" Diameter Element.
- Zinc Plated Copper.
- UL & CSA Listed.
- Individually Packaged.
- Includes Gasket (39-692-004).

120 & 240 Volt

Part #	Volts	Watts	Insert Length	Water Type	Reference	Watts @ 208
39-F1500-1	120	1500	6 15/16"	Normal / Hard	3	-
39-F1500	240	1500	8 7/16"	Normal / Hard	3	1150
39-F3000	240	3000	9 7/16"	Normal	3	2250
39-F3000L	240	3000	8 9/16"	Normal / Hard	4	2250
39-F3800	240	3800	9 7/16"	Normal	3	2850
39-F4500	240	4500	11 7/16"	Normal	3	3400
39-F4500L	240	4500	13 7/16"	Normal / Hard	4	3500
39-F5000	240	5000	8 9/16"	Normal	4	3800
39-F6000	240	6000	11 3/16"	Normal	4	4500

Other wattages, watt densities, and incoloy models available upon requests.

Watt Density Reference

Water Type	Watt Density
Normal	High/ Medium Density
Hard	Medium/ Low Density
Hard	Low Density

Round Bent Push-In Flange Water Heating Elements



Figure 5.
Hairpin

Round Bent - Push-In Flange (Residential)

- 0.312" Diameter Element.
- Zinc Plated Copper.
- UL & CSA Listed.
- Individually Packaged.
- Includes Gasket (39-692-005).

120 & 240 Volt

Part #	Volts	Watts	Insert Length	Water Type	Reference	Watts @ 208
39-RB1500-1	120	1500	6"	Normal / Hard	5	-
39-RB1500	240	1500	7"	Normal / Hard	5	1150
39-RB3000	240	3000	9 1/2"	Normal	5	2250
39-RB4500	240	4500	11 1/2"	Normal	5	3500

Other wattages, watt densities, and incoloy models available upon requests.

Watt Density Reference

Water Type	Watt Density
Normal	High/ Medium Density
Hard	Medium/ Low Density
Hard	Low Density

Terminal Box Water Heating Elements

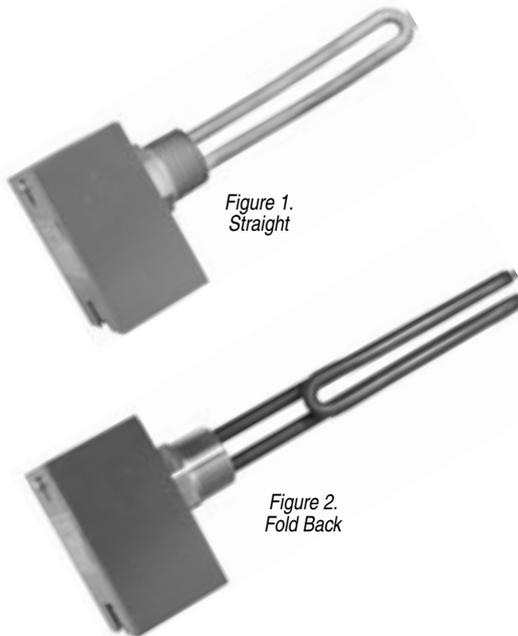


Figure 1.
Straight

Figure 2.
Fold Back

1" Tapered Brass Plug (Commercial / Industrial)

- Copper or incoloy sheath.
- 120 or 240 volt.
- CSA Approved.
- Individually packaged.
- Gasket not required.

120 Volt

Part #	Volts	Watts	Insert Length	Water Type	Reference	Watts @ 208
39-TB500-1	120	500	5"	Normal / Hard	1	-
39-TB750-1	120	750	6 5/8"	Normal / Hard	1	-
39-TB1000-1	120	1000	6 5/8"	Normal / Hard	1	-
39-TB1500-1	120	1500	9 3/4"	Normal / Hard	2	-
39-TB2000-1	120	2000	7 1/4"	Normal / Hard	2	-

240 Volt

Part #	Volts	Watts	Insert Length	Water Type	Reference	Watts @ 208
39-TB500	240	500	5"	Normal / Hard	1	400
39-TB750	240	750	6 5/8"	Normal / Hard	1	600
39-TB1000	240	1000	6 5/8"	Normal / Hard	1	800
39-TB1500	240	1500	9 3/4"	Normal / Hard	2	1200
39-TB2000	240	2000	7 1/4"	Normal / Hard	2	1600
39-TB3000	240	3000	10 3/8"	Normal / Hard	2	2400
39-TB3000-2	-	-	13 7/8"	Normal / Hard	2	3000
39-TB4000	240	4000	10 3/8"	Normal / Hard	2	3200
39-TB4500	240	4500	10 3/8"	Normal / Hard	2	3600
39-TB5000	240	5000	10 3/8"	Normal	2	4000
39-TB6000	240	6000	10 3/8"	Normal/ Hard	2	4800

Other wattages, watt densities, and incoloy models available upon requests.

Watt Density Reference

Water Type	Watt Density
Normal	High/ Medium Density
Hard	Medium/ Low Density
Hard	Low Density

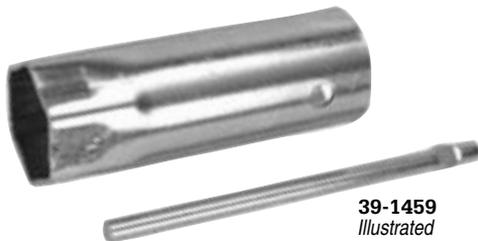
Water Heating Element Gaskets



Water Heating Element Gaskets

Part #	Application
39-10546-001	Screw-In Flange.
39-692-004	Bolt-On Square.
39-692-005	Round Flange.

Water Heater 5" Element Wrench



5" Element Wrench

- Fits all screw-in elements plus 1 1/2" nuts.
- Fits into offsets where other wrenches don't.

Part #	Description
39-1459	5" Heavy duty element wrench.

Water Heater Drain Valve



Drain Valve

- High performance non-corrosive glass filled polymer construction is tough and durable.
- Unlike brass, will not deplete anode system.
- Easy connection - long shank.

Part #	Description
39-DV7575	3/4" NPT x 3/4" NPT male hose thread.

Water Heater Silencer Heat Trap



Silencer Heat Trap

- Prevents heat loss through inlet and outlet.
- Super quiet design.
- Non-corrosive dielectric PEX (cross linked polyethylene).

Part #	Description
39-HT375	3/4" NPT x 3/4" NPT x 3" length.

Water Heater Dip Tubes



Cut To Length Design!



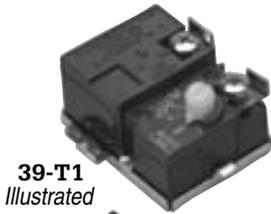
Dip Tubes

- Patented "self cleaning" design.
- PEX (cross linked polyethylene) construction. PEX is a compound that crosslinks when exposed to moisture and withstands temperatures up to 400°F providing enhanced resistance to heat distortion, environmental stress, cracking, creep, and abrasion. Cut tube to desired length.

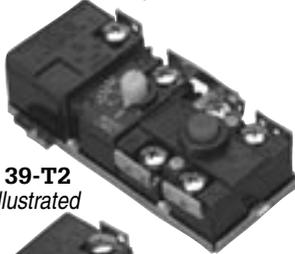
Part #	Description
39-DT5275	52" Flare Dip Tubes (0.65" I.D., 3/4" O.D.)



Electric Water Heater Thermostats



39-T1
Illustrated



39-T2
Illustrated



39-T3
Illustrated

Settings	Temperature
Dot:	110°F
Hot:	120°F
A:	130°F
B:	140°F
C:	150°F
Very Hot:	160°F

Electric Water Heater Thermostats

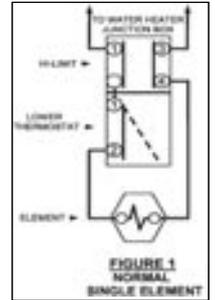
- Built-in safety shutoff prevents overheating.
- Come with plastic shock shield covers.
- 39-T2 & T3 feature a built-in high limit control.
- Includes installation instructions.
- Calibrated scale 160°/ 120°/ 110°F.
- Dual voltage 120V or 240V.
- Adjustable temperature ranges.
- Screw or clamp mounted.
- Commercial & residential applications.
- UL & CSA approved.
- Individually Packaged.

Part #	Description	Equivalent
39-T1	Lower or single element thermostat SPST (2 terminal)	39-H1
39-T2	Combination: 240V, Lower or single element thermostat SPST (2 terminal) with high limit DPST 190°F (4 terminal) - manual reset.	39-H1 + 39-HL190
39-T3	Combination: Upper element thermostat SPDT (3 terminal) with high limit DPST 190°F (4 terminal) - manual reset.	39-H2 + 39-HL190

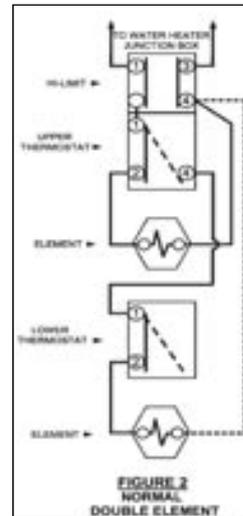
Thermostat (39-T1, T2 & T3)
 Calibrated to 120°F
 Temperature Range 110° to 160°F
 Differential Temp. 7°F to 17°F
 39-T2 Single pole/ Single throw
 39-T3 Single pole/ Double throw
 30A 120 to 250VAC
 22A 277VAC
 12.5A 480VAC
 125VA. PT. DTY. 120 to 480VAC

High Limit (Included On 39-T2 & T3)
 Opening Temp. 180°F
 Manual reset, Double pole/ Single throw
 40A 120 to 277VAC
 25A 480VAC
 125VA. PT. DTY. 120 to 480VAC

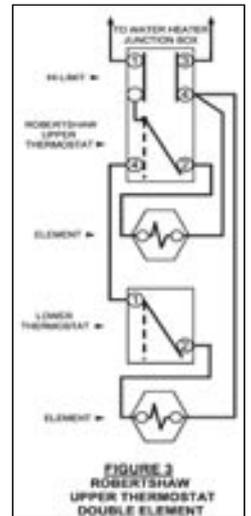
39-T1, T2, T3 Wiring Diagram



39-T1



39-T1 + 39-T3



39-T1 + 39-T2

Electric Water Heater Thermostats



39-H1
Illustrated



39-H2
Illustrated



39-HL190
Illustrated

Therm-O-Disc Electric Water Heater Thermostats

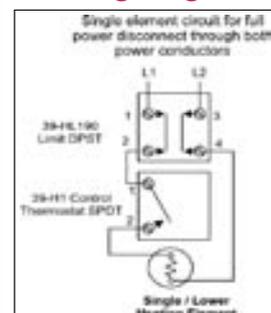
- Calibrated scale 170°/ 140°/ 110°F.
- Dual voltage 120V or 240V.
- Adjustable temperature ranges.
- Screw or clamp mounted.
- Commercial & residential applications.
- UL & CSA approved.
- Individually Packaged.

Part #	Description
39-H1	Lower or single element thermostat SPST (2 terminal) Circuit opens on temperature rise.
39-H2	Upper element thermostat SPDT (3 terminal), Circuit 1 opens on temperature rise, Circuit 2 opens on temperature fall.
39-HL190	High Limit Manual Reset Control <ul style="list-style-type: none"> • Trip-free manual reset, (4 terminal). • Electrical circuit opens when the thermostat reaches 190°F. • Designed to snap directly on either the 39-H1 or 39-H2.

Thermostat (39-H1 & H2)
 Calibrated to 140°F
 Temperature Range 110° to 170°F
 Differential Temp.
 39-H1 5°F to 15°F Single pole/ Single throw
 39-H2 17°F to 27°F Single pole/ Double throw
 30A 250VAC
 25A 277VAC
 12.5A 480VAC
 125VA. PT. DTY. 120 to 480VAC

High Limit (39-HL190)
 Opening Temp. 190°F
 Manual reset, Double pole/ Single throw
 40A 120 to 277VAC
 25A 480VAC
 125VA. PT. DTY. 120 to 480VAC

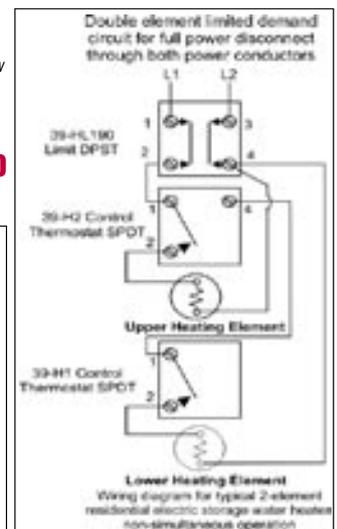
39-H1, H2, & HL190 Wiring Diagram



39-H1 + 39-HL190

WARNING

Thermostats are factory preset at 120°F. Higher water temperatures increase the risk of scalds.



39-H1 + 39-H2 + 39-HL190

Electric Water Heater Parts - Reference Guide



Apcom		Caloritech		Caloritech		Chromalox	
Apcom	Hotemp	Caloritech	Hotemp	Caloritech	Hotemp	Chromalox	Hotemp
Screw Plug		Screw Plug - Continued...		Round Push-in Flange		Screw Plug - Continued...	
00253	39-S1500-1	CXC10642-15	39-S1500	CXC10636-08	39-TB3000	20704-660	39-S1500
00474	39-S1500	CXC10642-16	39-S1500-1	CXC10636-12	39-TB4500	20704-280	39-S1500
00359	39-S3001	CXC10642-18	39-S1500			20704-290	39-S3001
00535	39-S3000	CXC10642-21	39-S3000	Caloritech	Hotemp	20704-300	39-S3001
02866	39-S3000L	CXC10642-22	39-S1500-1	Terminal Box		20704-310	39-S1500-1
00579	39-S4000	CXC10642-23	39-S3001	CXC10640-01	39-TB500-1	20704-330	39-S3001
03140	39-S4500	CXC10642-24	39-S3001	CXC10640-03	39-TB500	20704-350	39-S4000
16454	39-S4500L	CXC10642-25	39-S1500-1	CXC10640-04	39-TB750-1	20704-360	39-S3001
16510	39-S5000	CXC10642-27	39-S3001	CXC10640-06	39-TB750	20704-690	39-S3000
00352	39-S6000	CXC10642-29	39-S4000	CXC10640-07	39-TB1000-1	20704-410	39-S6000
		CXC10642-30	39-S3001	CXC10640-09	39-TB1000	20704-420	39-S4500
		CXC10642-33	39-S3000	CXC10640-11	39-TB2000	20704-710	39-S6000
Apcom	Hotemp	CXC10642-35	39-S6000	CXC10640-12	39-TB1500	20704-720	39-S4500
Square Flange		CXC10642-36	39-S4500	CXC10640-13	39-TB1500-1	20704-440	39-S5000
00371	39-F1500-1	CXC10642-38	39-S6000	CXC10640-14	39-TB2000	20704-450	39-S5000
22508	39-F1500	CXC10642-39	39-S4500	CXC10640-15	39-TB1500	20704-510	39-S6000
22200	39-F3000	CXC10642-41	39-S5000	CXC10640-16	39-TB1500-1		
00854	39-F3000L	CXC10642-42	39-S5000	CXC10640-17	39-TB2000	Chromalox	Hotemp
22184	39-F3800	CXC10642-44	39-S6000	CXC10640-18	39-TB1500	Square Flange	
22182	39-F4500	CXC10642-45	39-S5000	CXC10640-20	39-TB3000	20200-010	39-F1500-1
16484	39-F4500L	CXC10642-42	39-S5000	CXC10640-21	39-TB2000	20200-100	39-F1500-1
00795	39-F5000	CXC10642-48	39-S6000	CXC10640-22	39-TB2000-1	20200-120	39-F1500
00592	39-F6000	CXC10642-51	39-S6000	CXC10640-23	39-TB2000	20200-160, 20204-070	39-F1500
				CXC10640-24	39-TB2000	20200-180, 20204-090	39-F1500
Apcom	Hotemp	Caloritech	Hotemp	CXC10640-26	39-TB3000	20200-580	39-F1500-1
Round Push-in Flange		Square Flange		CXC10640-29	39-TB4000	20200-600	39-F1500
22186	39-RB1500-1	CXC10632-01	39-F1500-1	CXC10640-30	39-TB3000	20200-250, 20204-130	39-F1500-1
00157	39-RB1500	CXC10632-04	39-F1500-1	CXC10640-31	39-TB2000-1	20200-260, 20204-150	39-F1500
00841	39-RB3000	CXC10632-06	39-F1500	CXC10640-32	39-TB4000	20200-670	39-F1500-1
03152	39-RB4500	CXC10632-07	39-F1500-1	CXC10640-33	39-TB3000	20200-680	39-F3000
		CXC10632-09	39-F1500	CXC10640-35	39-TB6000	20200-690	39-F1500
Apcom	Hotemp	CXC10632-10	39-F1500-1	CXC10640-36	39-TB4500	20200-640, 20204-430	39-F1500-1
Thermostats		CXC10632-12	39-F1500	CXC10640-38	39-TB6000	20200-650, 20204-440	39-F3000L
WH9	39-T1, 39-H1	CXC10632-13	39-F1500-1	CXC10640-39	39-TB4500	20200-660, 20204-450	39-F1500
WH9-6	39-T2, H1+HL190	CXC10632-15	39-F1500	CXC10640-41	39-TB6000	20200-760, 20204-490	39-F2000-1
WH10-6	39-T3, H2+HL190	CXC10632-16	39-F1500-1	CXC10640-44	39-TB6000	20200-770, 20204-500	39-F3800
		CXC10632-18	39-F1500	CXC10640-45	39-TB5000	20200-780, 20204-510	39-F3000
		CXC10632-19	39-F1500-1	CXC10640-42	39-TB5000	20200-860, 20204-560	39-F6000
ASB	Hotemp	CXC10632-20	39-F3000	CXC10640-48	39-TB6000	20200-870, 20204-570	39-F4500L
Terminal Box		CXC10632-21	39-F1500	CXC10640-51	39-TB6000	20200-890, 20204-590	39-F6000
SPC-500	39-TB500	CXC10632-22	39-F1500-1			20200-900, 20204-600	39-F5000
SPC-750	39-TB750	CXC10632-23	39-F3000L	Caloritech	Hotemp	20200-930, 20204-690	39-F6000
SPC-1000	39-TB1000	CXC10632-24	39-F1500	Thermostats			
SPC-1250	39-TB1500	CXC10632-28	39-F2000-1	AW7025	39-H1 or 39-T1	Chromalox	Hotemp
SPC-1500	39-TB1500	CXC10632-29	39-F3800	AW7135	39-H2 or 39-T3 (includes high limit)	Terminal Box	
SPC-2000	39-TB2000	CXC10632-30	39-F3000			30201-070	39-TB500-1
SPC-3000	39-TB3000	CXC10632-31	39-F2000-1			30201-090	39-TB500
SPC-4500	39-TB4500	CXC10632-33	39-F3000	HCL1610	39-HL190 or 39-T2 (SPST) or 39-T3 (SPDT)	30201-130	39-TB750-1
SPC-5000	39-TB500	CXC10632-35	39-F6000			30201-150	39-TB750
		CXC10632-36	39-F4500L			30201-190	39-TB1000-1
		CXC10632-38	39-F6000			30201-210	39-TB1000
		CXC10632-39	39-F4500L			30201-250	39-TB1500-1
Caloritech	Hotemp	CXC10632-41	39-F6000	Chromalox	Hotemp	30201-270	39-TB1500
Screw Plug		CXC10632-42	39-F5000	Screw Plug		30201-280	39-TB2000-1
CXC10642-06	39-S1500-1	CXC10632-44	39-F6000	20704-190	39-S1500-1	30201-300	39-TB2000
CXC10642-07	39-S1500-1	CXC10632-45	39-F5000	20704-210	39-S1500	30201-360	39-TB3000
CXC10642-09	39-S1500	CXC10632-48	39-F6000	20404-580	39-S1500-1	30201-300	39-TB3000
CXC10642-10	39-S1500-1	CXC10632-51	39-F6000	20704-600	39-S1500	30201-420	39-TB4500
CXC10642-12	39-S1500			20704-640	39-S1500-1	30201-450	39-TB5000
CXC10642-13	39-S1500-1						

Electrical

Electric Water Heater Parts - Reference Guide



Giant		Giant		Rheem-Ruud		Rheem-Ruud		Uni-line	
Giant	Hotemp	Giant	Hotemp	Rheem-Ruud	Hotemp	Rheem-Ruud	Hotemp	Uni-Line	Hotemp
Screw Plug		Terminal Box - Continued		Screw Plug - Continued		Thermostats		Square Flange - Cont.	
03G15/120	39-S1500-1	01G15/80	39-TB1500-1	SP10869NL	39-S5000	SP11698	39-T3, H2+HL190	50-215	39-F1500-1
04G15/120	39-S1500	01G20/80	39-TB2000-1	SP10869PH	39-S6000	SP11699	39-T3, H2+HL190	51-215	39-F1500
04G30/120	39-S3001	02G10/80	39-TB1000	SP10869QL	39-S6000	SP11700	39-T2, H1+HL190	51-225	39-F3000L
04G45/120	39-S4500	02G15/80	39-TB1500	SP10867GL	39-S3000	SP11695	39-T1, 39-H1	51-230	39-F300L
03G10/80	39-S1500-1	02G20/80	39-TB2000	SP10867JL	39-S3000L	SP20057	39-T2, H1+HL190	51-235	39-F3800
03G15/80	39-S1500-1	02G30/80	39-TB3000	SP10867LL	39-S5000	SP8295	39-T1, 39-H1	51-245	39-F4500L
03G20/80	39-S1500-1	02G45/80	39-TB4500	SP10867ML	39-S6000	SP8293	39-T3, H2+HL190	51-255	39-F6000
3AG10/80	39-S1500	02G50/80	39-TB5000	SP10867NL	39-S6000			56-215	39-F1500-1
3AG15/80	39-S3000			SP10868LH	39-S1500-1	Rheem-Ruud Hotemp		57-215	39-F1500
3AG20, 80	39-S3001	Giant Hotemp		SP10868KL	39-S1500-1	Gaskets		57-225	39-F3000
3AG30/80	39-S4000	Thermostats		SP10868GL	39-S1500-1	AP12914	39-10546-001	57-230	39-F3000
3AG45/80	39-S6000	TH3ZX004	39-T1, 39-H1	SP10552FL	39-S1500	AP12915	39-692-001	57-235	39-F3800
3AG50, 80	39-S5000	TH3ZX002	39-T3, 39-H2	SP10552GH	39-S1500	AP12917	39-692-004	57-245	39-F4500
04G10/80	39-S1500	TH3ZX001	39-HL190	SP10552GL	39-S3000	UV12920MC	39-1459	57-255	39-F6000
04G15/80	39-S1500	TH3ZX006	39-T3, H2+HL190	SP10552HH	39-S3001			50-415	39-F1500-1
04G20/80	39-S1500	TH3ZX005	39-T2, H1+HL190	SP10552JH	39-S3001	Rheem-Ruud Hotemp		51-415	39-F1500
04G30/80	39-S3000			SP10552JL	39-S3000	Drain Valves		51-425	39-F3000L
04G38/80	39-S4000	GSW		SP10552KL	39-S4000	SP6070G	39-DV7575	51-430	39-F3000L
04G45/80	39-S4500L	GSW Hotemp		SP10552LL	39-S4000	SP6070S	39-DV7575	51-435	39-F3800
04G50/80	39-S5000	Screw Plug		SP10552MH	39-S4500	SP12039	39-DV7575	51-445	39-F4500
04G55/80	39-S6000	80476	39-S1500-1	SP10552ML	39-S4500L	SP12112G	39-DV7575	51-455	39-F6000
04G60/80	39-S6000	80474	39-S1500	SP10552NL	39-S5000			56-415	39-F1500-1
		80475	39-S3001	SP10552PH	39-S6000	Rheem-Ruud Hotemp		57-415	39-F1500
		80477	39-S4500	SP10552QH	39-S6000	Dip Tubes		57-425	39-F3000
Giant Hotemp				SP10872GH	39-S3001	SP11251R	39-DT5275	57-430	39-F3000
Square Flange		GSW Hotemp		SP10872GL	39-S3000L	SP11248R	39-DT5275	57-435	39-F3800
10G15/120	39-F1500	Square Flange		SP10872HH	39-S3001	AP12932	39-DT5275	57-445	39-F4500
10G30/120	39-F3000	85075	39-F1500	SP10872JL	39-S4000	SP20003	39-HT375	57-455	39-F6000
09G15/80	39-F1500-1	85079	39-F1500	SP10872LL	39-S5000				
9AG10/80	39-F1500	85100	39-F1500-1	SP10872ML	39-S6000	Uni-line		Uni-Line Hotemp	
9AG15/80	39-F3000	85104	39-F1500	SP10874FH	39-S1500-1	Uni-Line Hotemp		Thermostats	
9AG20/80	39-F3000	85151	39-F1500	SP180874GH	39-S1500-1	Screw Plug		5600-411	39-T1
9AG30/80	39-F3800	85202	39-F2000-1	UV12890	39-S1500-1	50-015	39-S1500-1	5600-310	39-T2
9AG38/80	39-F5000	85200	39-F3800	UV12892	39-S1500-1	51-015	39-S1500	5600-311	39-T3
9AG45/80	39-F6000	85201	39-F3000	UV12891	39-S1500	51-025	39-S3000		
10G10/80	39-F1500	85302	39-F6000	UV12893	39-S1500	51-030	39-S3000	Wattco	
10G15/80	39-F1500	85304	39-F4500L	UV12894	39-S3001	51-035	39-S4000	Wattco Hotemp	
10G20/80	39-F3000	85402	39-F6000	UV12895	39-S3001	51-045	39-S4500L	Terminal Box	
10G30/80	39-F3000L	85400	39-F5000	UV12896	39-S4000	51-055	39-S6000	SX-5A1	39-TB500-1
10G38/80	39-F3800	85501	39-F6000	UV12897	39-S4000	56-015	39-S1500-1	SX-75A1	39-TB750-1
10G45/80	39-F4500L			UV12898	39-S4000	57-015	39-S1500	SX-1A1	39-TB1000-1
10G50/80	39-F5000	GSW Hotemp		UV12899	39-S4500	57-020	39-S3000	SX1-5A1	39-TB1500-1
10G60/80	39-F6000	Terminal Box		UV12900	39-S5000	57-025	39-S3000	SX-2A1	39-TB2000-1
		80469	39-TB1000-1	UV12901	39-S4500	57-030	39-S3000	SX-5A2	39-TB500
Giant Hotemp		80471	39-TB1000			57-035	39-S4000	SX-75A-2	39-TB750
Round Push-in Flange		80470	39-TB1500-1	Rheem-Ruud Hotemp		57-040	39-S4000	SX-1A2	39-TB1000
05G10/80	39-RB1500-1	80472	39-TB1500	Square Flange		57-040	39-S4000	SX1-5A2	39-TB1500
08G15/80	39-RB1500-1	80473	39-TB3000	UV12944	39-F1500-1	57-045	39-S4500	SX-2A2	39-TB2000
5AG15/80	39-RB3000			UV12908	39-F1500	57-055	39-S6000	SX-3A2	39-TB3000
5AG30/80	39-RB4500	Rheem-Ruud		UV12909	39-F3800			SX-40A2	39-TB4000
06G10/80	39-RB1500	Hotemp		UV12910	39-F4500			SX-45A2	39-TB4500
06G15/80	39-RB1500	Screw Plug		UV12903	39-S300L			SX-50A2	39-TB5000
06G30/80	39-RB3000	SP10869GL	39-S3000	UV12904	39-S4500L			SX-60A2	39-TB6000
06G45/80	39-RB4500	SP10869HL	39-S3000	UV12905	39-S5000				
		SP18069JL	39-S3000L						
Giant Hotemp		SP10869KL	39-S4000						
Terminal Box		SP10869LL	39-S4000						
01G075/80	39-TB750-1	SP10869ML	39-S4500L						
01G10/80	39-TB1000-1	SP10869MM	39-S4500						

Help Us Serve You Better!

Additional Cross Referencing Is Greatly Appreciated.

Please e-mail any cross referencing suggestions to sales@alltemp.ca.

Thermostats - Simple Comfort



Programmable Features

- Elegant design.
- Easy to operate.
- Auto-on fan switch.
- 7 Day programmable.
- Large backlit LCD display*.
- Precise temperature sensing.
- Non-volatile program memory.
- Easy access terminal block.
- Zoning system compatible.
- Compatible with standard 24 volt AC heating/ cooling systems.
- Integral four minute anti-short cycle protection.
- Temporary and vacation hold.
- Mercury free environment safe.
- Suitable for electric, gas or oil.

*78-SC3000 not backlit.



Specifications

Electrical Rating

- 24 volt AC (18-30 VAC)
- 1 amp maximum per terminal
- 4 amp maximum total load

Temperature Control Ranges

- Accuracy $\pm 1^{\circ}\text{F}$ 45°F to 90°F

Programmable Thermostats

Part #	Features
78-SC3000	<ul style="list-style-type: none"> • Single stage heat/ single stage cool. • Single stage heat pump. • Manual changeover. • Battery (included). • Millivolt compatible. • 4 or 5 wire compatible. • Terminations RC, RH, W, Y, O, B, G.
78-SC3001	<ul style="list-style-type: none"> • Single stage heat/ single stage cool. • Single stage heat pump. • Backlit display. • Manual changeover. • Hardwired. • 4 or 5 wire compatible. • Terminations RC, RH, C, W, Y, O, B, G.
78-SC3006 (Heat Pump)	<ul style="list-style-type: none"> • Single stage heat/ single stage cool. • Single stage heat pump. • Backlit display. • Auto changeover. • Hardwired. • 4 or 5 wire compatible. • Freeze protection. • Keypad lockout. • Terminations RC, RH, C, W, Y, O, B, G.
78-SC3201	<ul style="list-style-type: none"> • Two stage heat pump. • Status LED's. • Backlit display. • Manual changeover. • Hardwired. • Terminations R, C, Y1, Y2, W2, O, B, G, E, L.
78-SC3801	<ul style="list-style-type: none"> • Two stage heat/ two stage cool. • Two stage heat pump. • Status LED. • Backlit display. • Auto changeover. • Programmable fan. • Hardwired. • 4 or 5 wire compatible. • Keypad lockout. • Freeze protection. • Terminations R,C,W1/O/B,Y1,W2,Y2,G,S1,S2.

Programmable Thermostats

- SIMPLESET® 7 Day Programming**
- Programming is made simple with exclusive "step back feature".
 - Program each day individually or program one day and copy it for the entire week.

Simple Comfort®

Applications

- Residential
- New Construction
- Light Commercial



Thermostat Guards



Pages
93 To 94

**Plastic & Metal
Thermostat Guards**

Electrical

Thermostats - Simple Comfort

Non-Programmable Features

- Elegant design.
- Easy to operate.
- Auto-on fan switch.
- Zoning system compatible.
- Adjustable differential.
- Large LCD temperature display.
- Precise temperature sensing.
- Easy access terminal block.
- Selectable Fahrenheit or Celsius.
- Compatible with standard 24 volt AC heating/ cooling systems.
- Integral five minute anti-short cycle protection.
- Mercury free environment safe.
- Manual changeover.
- 30 Minute power loss memory retention.
- Suitable for electric, gas or oil.



Specifications

- Electrical Rating
- 24 volt AC (18 to 30 VAC).
 - 1 amp maximum per terminal.
 - 4 amp maximum total load.
- Temperature Control Ranges.
- Accuracy $\pm 1^{\circ}\text{F}$ 45°F to 90°F.

Non-Programmable Thermostats

Part #	Features
78-SC1600	<ul style="list-style-type: none"> • Single stage heat only. • No fan. • Battery (included). • Freeze protection. • Terminations R, W.
78-SC1601	<ul style="list-style-type: none"> • Single stage heat only. • No fan. • Hardwired. • Freeze protection. • Terminations R, C, W.
78-SC1800	<ul style="list-style-type: none"> • Single stage heat only. • Battery (included). • Freeze protection. • Terminations R, W, G.
78-SC1801	<ul style="list-style-type: none"> • Single stage heat only. • Hardwired. • Freeze protection. • Terminations R, C, W, G.
78-SC1900	<ul style="list-style-type: none"> • Single stage cool only. • Battery (included). • Terminations R, Y, G.
78-SC1901	<ul style="list-style-type: none"> • Single stage cool only. • Hardwired. • Terminations R, C, Y, G.

Non-Programmable Thermostats



ASK ABOUT OUR "LASER BURN" PRIVATE BRANDING PROGRAM FOR YOU OR YOUR CUSTOMER!



Non-programmable thermostats continued on next page.

Thermostats - Simple Comfort



Non-Programmable Features

- Elegant design.
- Easy to operate.
- Auto-on fan switch.
- Zoning system compatible.
- Adjustable differential.
- Large LCD temperature display.
- Precise temperature sensing.
- Easy access terminal block.
- Selectable Fahrenheit or Celsius.
- Compatible with standard 24 volt AC heating/ cooling systems.
- Integral five minute anti-short cycle protection.
- Mercury free environment safe.
- Manual changeover.
- 30 Minute power loss memory retention.
- Suitable for electric, gas or oil.



Specifications

- Electrical Rating
- 24 volt AC (18 to 30 VAC).
 - 1 amp maximum per terminal.
 - 4 amp maximum total load.
- Temperature Control Ranges.
- Accuracy $\pm 1^{\circ}\text{F}$ 45°F to 90°F.

Non-Programmable Thermostats



ASK ABOUT OUR "LASER BURN" PRIVATE BRANDING PROGRAM FOR YOU OR YOUR CUSTOMER!



Non-Programmable Thermostats

Part #	Features
78-SC2000	<ul style="list-style-type: none"> • Single stage heat/ single stage cool. • Single stage heat pump. • Battery (included). • Millivolt compatible. • 4 or 5 wire compatible. • Freeze protection. • Terminations RC, RH, W, Y, O, B, G.
78-SC2001	<ul style="list-style-type: none"> • Single stage heat/ single stage cool. • Single stage heat pump. • Hardwired. • 4 or 5 wire compatible. • Freeze protection. • Terminations R, C, W, Y, O, B, G.
78-SC2200	<ul style="list-style-type: none"> • Two stage heat pump. • Status LED's. • Battery (included). • Terminations R, C, Y1, Y2, W2, O, B, G, E, L.
78-SC2201	<ul style="list-style-type: none"> • Two stage heat pump. • Status LED's. • Hardwired. • Terminations R, C, Y1, Y2, W2, O, B, G, E, L.
78-SC2211 Hotel/ Motel Model	<ul style="list-style-type: none"> • Two stage heat pump. • No emergency mode (hotel/ motel model). • Hardwired. • Terminations R, C, Y1, Y2, W2, O, B, G.
78-SC2300	<ul style="list-style-type: none"> • Two stage heat/ cool. • Status LED's. • Battery (included). • Terminations RC, RH, C, W1, W2, Y1, Y2, G.

Thermostat Guards



Pages 93 To 94

Plastic & Metal Thermostat Guards

Thermostat Accessories



78-ACCWP Series

Wall Plates

- Perfect for those installations where you need more wall coverage.
- Rugged, flexible construction.
- Foam gasket prevents drafts through wall opening.
- Hidden mounting screws (included) for a sleek appearance.

Simple Comfort Thermostat Wall Plates

Two convenient sizes to choose from.

Part #	Description
78-ACCWP01	4 27/32" x 5 15/16".
78-ACCWP02	5 19/32" x 7 1/2".



78-RT104 Series

Remote Sensor

- Designed for 78-SC3801 thermostats.
- Designed to monitor the temperature remotely or away from the thermostat.
- For tamper-prone areas.
- Poor air flow areas.
- Troubled applications.
- Foam gasket prevents drafts through wall opening.

Simple Comfort Remote Sensor

- Designed to work with the 78-SC3801.
- Mounts to standard 2" x 4" outlet box.

Part #	Description
78-RT104	• 2 3/4" x 4 1/2". • Terminations: S1, S2.

Thermostats - Temporary Construction Site



Temporary Construction Site Thermostats

- The 78-SC055 to 78-SC075S series of thermostats are low cost single set point thermostats intended for temporary heating or cooling to allow drywall to dry during construction. Can also be used for low ambient cut-off switch.
- Rugged utility thermostat for temporary applications.
- Ideal for new or ongoing construction areas.
- Five fixed set point models to choose from (55°, 60°, 65°, 70°, 75°F).
- Hardwired.

Specifications

- Electrical Rating
- 24 volt AC (18-30 VAC)
 - 2 amp maximum

Temperature Control Ranges

- Accuracy ±5°F 55°, 60°, 65°, 70°, 75°F

"Dry Out" Thermostats



78-SC075 Illustrated



78-SC075S Illustrated

Applications

Ideal for warehouses!

Construction Thermostats

Two Wire Installation.

Part #	Description
78-SC055	55°F cool.
78-SC060	60°F heat.
78-SC065	65°F heat.
78-SC070	70°F heat.
78-SC075	75°F cool.

Construction Thermostats

- Three wire installation
Switched fan, 3 modes:
- Fan Only
 - Off
 - Heat or Cool

Part #	Description
78-SC060S	60°F w/ switch - fan/off/ heat.
78-SC065S	65°F w/ switch - fan/off/ heat.
78-SC070S	70°F w/ switch - fan/off/ heat.
78-SC075S	75°F w/ switch - fan/off/ cool.

Thermostats - Simple Comfort



Thermostat Selection Table



78-SC3801
On Wall Plate
Illustrated

Features

	Programmable					Non-Programmable											
	78-SC3000*	78-SC3001*	78-SC3006*	78-SC3201*	78-SC3801*	78-SC1600	78-SC1601	78-SC1800	78-SC1801	78-SC1900	78-SC1901	78-SC2000	78-SC2001	78-SC2200	78-SC2201	78-SC2211	78-SC2300
Single Stage	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓				
2 Stage				✓	✓									✓	✓	✓	✓
Heat Pump	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	
Heat	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
Cool	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓
Status LEDs			✓	✓	✓									✓	✓		✓
Backlit		✓	✓	✓	✓												
Auto Changeover			✓		✓												
7-Day Programmable	✓	✓	✓	✓	✓												
Programmable Fan					✓												
Non-Programmable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Battery	✓					✓		✓		✓		✓		✓			✓
Hardwired		✓	✓	✓	✓		✓		✓		✓		✓		✓	✓	
Millivolt Compatible	✓					✓		✓				✓					
4 or 5 Wire Compatible	✓	✓	✓		✓							✓	✓				
Freeze Protection	✓					✓	✓	✓	✓			✓	✓				
Keypad Lockout			✓		✓												

* Energy Star



78-SC075S
Three Wire Switch

78-SC075
Two Wire

Features

	"Dry Out" Thermostats									
	78-SC055	78-SC060	78-SC060S	78-SC065	78-SC065S	78-SC070	78-SC070S	78-SC075	78-SC075S	
Temperature Range	55°F ±5°F	60°F ±5°F		65°F ±5°F		70°F ±5°F		75°F ±5°F		
2 Wire	✓	✓		✓		✓		✓		
3 Wire			✓	✓	✓	✓	✓		✓	
Heat		✓	✓	✓	✓	✓	✓			
Cool	✓							✓	✓	
Switched Fan			✓		✓		✓		✓	

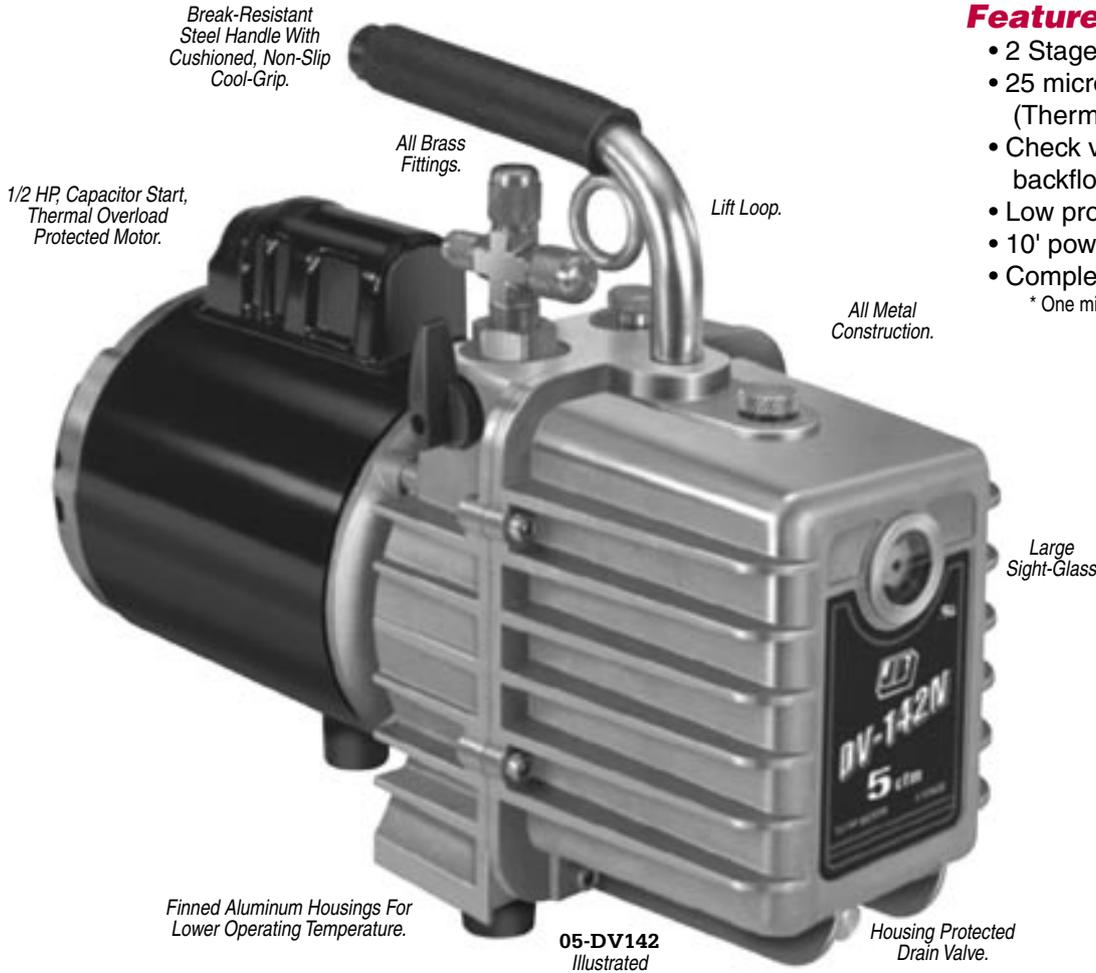


**PUT YOUR
LOGO
WHERE CUSTOMERS
WILL SEE IT FIRST!**

**PERSONALIZED!
ASK ABOUT OUR "LASER BURN"
PRIVATE BRANDING PROGRAM
FOR YOU OR YOUR CUSTOMER!**



Vacuum Pumps



Features

- 2 Stage, direct drive.
- 25 micron* field tested (Thermister gauge reading).
- Check valve prevents oil backflow during power failure.
- Low profile rocker switch.
- 10' power cord.
- Completely field repairable.

* One micron on a U-tube manometer
25,400 microns = 1".

120 Volt Models Deep Vacuum Pumps

Part #	Motor			Free Air Displacement (Liters/ min)		Intake Ports (male flare)	Oil Capacity†	Weight
	HP	RPM	FLA	60 Hz				
05-DV42	1/2	1725	7.5	1.5 CFM (42)		1/4"	865cc (30oz)	26.5 lbs
05-DV85				3 CFM (85)		1/4" x 3/8"	785cc (27oz)	30 lbs
05-DV142				5 CFM (142)		3/8" x 1/4" x 3/8"	660cc (23oz)	32 lbs
05-DV200				7 CFM (200)		3/8" x 1/4" x 3/8"	660cc (23oz)	30 lbs
05-DV285				10 CFM (285)		3/8" x 1/4" x 3/8"	705cc (24oz)	39 lbs

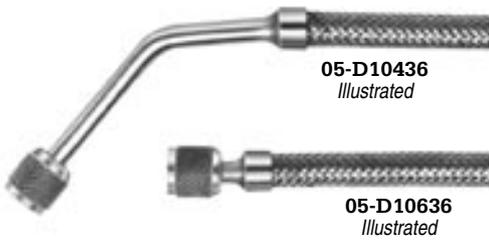
120/ 230 Volt Deep Vacuum Pumps

Part #	Motor			Free Air Displacement (Liters/ min)		Intake Ports (male flare)	Oil Capacity†	Weight
	HP	RPM	FLA	60 Hz	50 Hz			
05-DV42-250	1/2	1425/ 1725	7.2/ 3.6	1.5 CFM (42) 1.25 CFM (35)		1/4"	865cc (30oz)	30 lbs
05-DV85-250				3 CFM (85) 2.5 CFM (71)		1/4" x 3/8"	785cc (27oz)	32 lbs
05-DV142-250				5 CFM (142) 4.2 CFM (119)		3/8" x 1/4" x 3/8"	660cc (23oz)	34 lbs
05-DV200-250				7 CFM (200) 5.8 CFM (167)		3/8" x 1/4" x 3/8"	660cc (23oz)	32 lbs
05-DV285-250				10 CFM (285) 8.3 CFM (237)		3/8" x 1/4" x 3/8"	705cc (24oz)	40 lbs

† Top of oil level line while pump is running.

• Operating temperature: 60°C ±10°C (150°F ±18°F)

Vacuum Pump Accessories



05-D10436
Illustrated

05-D10636
Illustrated

Flexible Metal Line

- Unlike charging hose, will not permeate under vacuum. Uses finger tight o-ring quick coupler ends.

Part #	Description
05-D10436	1/4" x 36" (one 45° fitting)
05-D10472	1/4" x 72" (one 45° fitting)
05-D10636	3/8" x 36" (90° fittings)
05-D10660	3/8" x 60" (90° fittings)

Economy Deep Vacuum Manifold

- Ideal for use in domestic services.

Part #	Description
05-D10053	<ul style="list-style-type: none"> • 3/8" Female quick connect to pump intake port. • Hook-up for charging, micron gauge or charging hoses. • Separate valves for isolating system from pump, charging and/ or performing pressure drop test.



05-D10053
Illustrated



05-D10160
Illustrated

Blank-Off Manifold Valve

- Isolate pump from system. Designed for all pumps without internal blank-off valve.

Part #	Description
05-D10160	<ul style="list-style-type: none"> • 3/8" Female quick connect to manifold centre port. • 3/8" SAE flare port for hose connection from pump. • 1/4" ports for refrigerant line and micron gauge.



05-D10162
Illustrated

Shut-Off Valve

- O-ring quick connect coupler valve excellent for blanking off any vacuum system. Also excellent for pressure to 500lbs.

Part #	Description
05-D10162	1/4" female quick connect x 1/4" flare.



05-D10244
Illustrated

Swivel Couplers

- O-ring seal.
- Mount 05-DV22 directly to pump using 05-D10244

Part #	Description
05-D10244	1/4" female swivel coupler.
05-D10266	3/8" female swivel coupler.



02-CQC-E64
Illustrated



02-CQC-S64
Illustrated

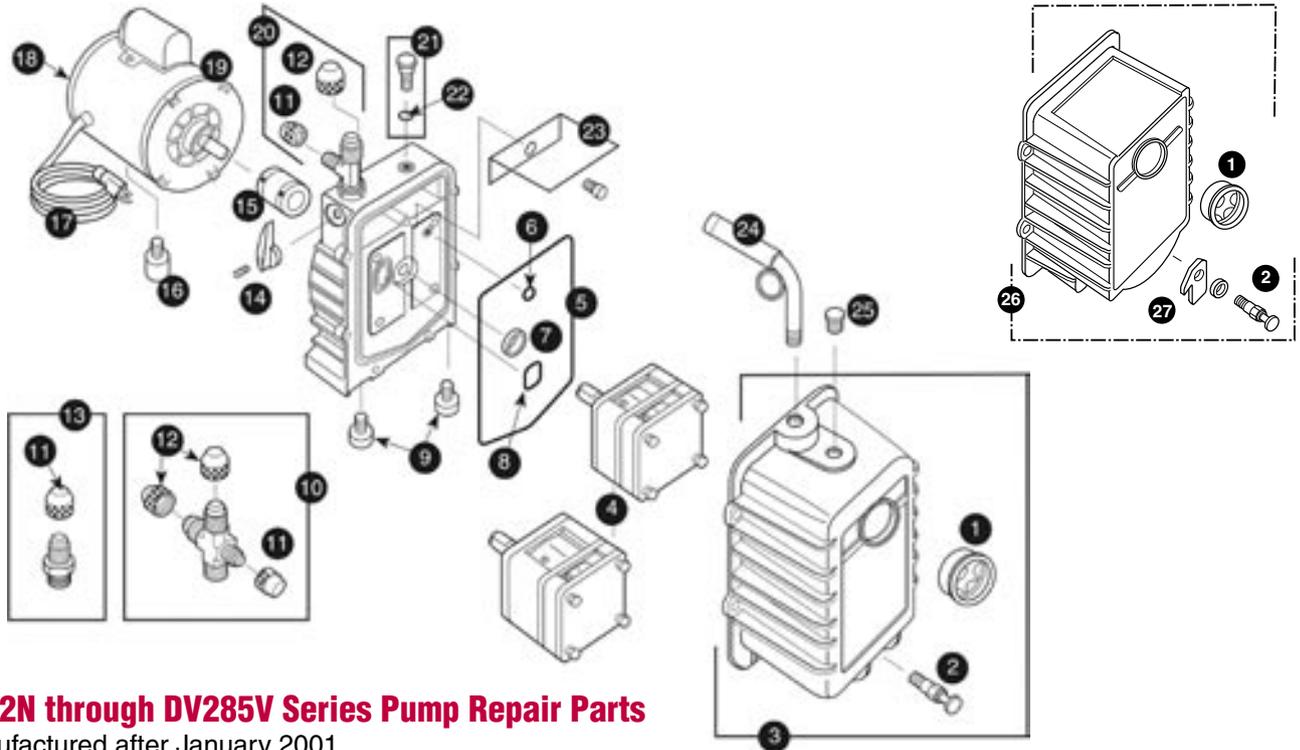
Quick Couplers

- O-ring seal.
- No depressor.

Part #	Description
05-CQC-E64	3/8" quick coupler x 1/4" SAE Elbow.
05-CQC-S64	3/8" quick coupler x 1/4" SAE straight.

Replacement Quick Coupler O-Rings (1/4" o-ring = 02-P90009) (3/8" o-ring = 02-P90012)

Vacuum Pump Repair Parts



05-DV42N through DV285V Series Pump Repair Parts

Manufactured after January 2001.

Ref.	Part #	Description
1	05-PR-1	Sight glass.
2	05-PR-2	Drain valve.
3	05-PR-300	DV-42N through DV-200N cover assy. w/sight glass and drain valve.
	05-PR-301	DV-285N cover assy. w/sight glass and drain valve.
4	05-PR-202	DV-85N cartridge w/o-ring and cover seal.
	05-PR-203	DV-142N cartridge w/o-ring and cover seal.
	05-PR-204	DV-200N cartridge w/o-ring and cover seal.
	05-PR-214	DV-285N cartridge w/o-ring and cover seal.
	05-PR-305	DV-42N cartridge w/o-ring and cover seal.
	05-PR-302	DV-85N cartridge w/o-ring and cover seal.
	05-PR-303	DV-142N cartridge w/o-ring and cover seal.
	05-PR-304	DV-200N cartridge w/o-ring and cover seal.
5	05-PR-314	DV-285N cartridge w/o-ring and cover seal.
	05-PR-216	Cover seal.
	05-PR-311	Cover seal.
6	05-PR-211	Trap o-ring, gas ballast.
7	05-PR-3	Shaft seal.
8	05-PR-215	Trap o-ring, intake.
	05-PR-315	Trap o-ring, intake.
9	05-PR-4	Rubber foot & screw assy. (1/ pkg.)
10	05-PR-24	Intake cross with caps.
11	02-NFT5-4	1/4" o-ring caps.
12	02-NFT5-6	3/8" o-ring caps.
13	05-PR-32	1/4" intake with cap.
14	05-PR-209	Plastic isolation valve handle & screw (not interchangeable with metal handle below).
	05-PR-210	Metal isolation valve handle & screw.

Ref.	Part #	Description
15	05-PR-208	Flexible coupler.
16	05-PR-42	Motor foot & screw.
17	05-PR-31	Line cord (Emerson motor).
	05-PR-33	Line cord (Marathon motor).
18	05-PR-30	Rocker switch (Marathon).
	05-PR-35	Rocker switch (Marathon after 1101).
	05-PR-54	Rocker switch (Emerson).
19	05-PR-206	1/2 HP, 115V, 60 Hz motor w/line cord & switch.
	05-PR-207	1/2 HP, 115/230V, 50/60 Hz motor w/line cord & switch.
20	05-PR-5	Intake tee with caps.
21	05-PR-7	Gas ballast valve w/o-ring.
22	05-P90009	O-ring, gas ballast valve.
23	05-PR-39	3 CFM splash guard and screw.
	05-PR-40	Splash guard & screw (excludes 3 CFM manufactured before Jan 2001).
24	05-PR-205	Cushioned handled w/ lift loop.
25	05-PR-22	Oil fill plug w/o-ring.
26	05-PR-200	DV-85N cover assy. w/sight glass, drain valve & guard
	05-PR-201	DV-142N & DV-200N cover assy. w/sight glass, drain valve and guard.
27	05-PR-55	Drain valve guard and spacer.
♦	05-PR-18	Cartridge valve repair kit (excludes DV-285N).
♦	05-PR-52	DV-285N cartridge valve repair kit.
♦	05-PR-45	Pump repair kit: PR-1, PR-2, (2) PR-4, PR-42, PR-208.

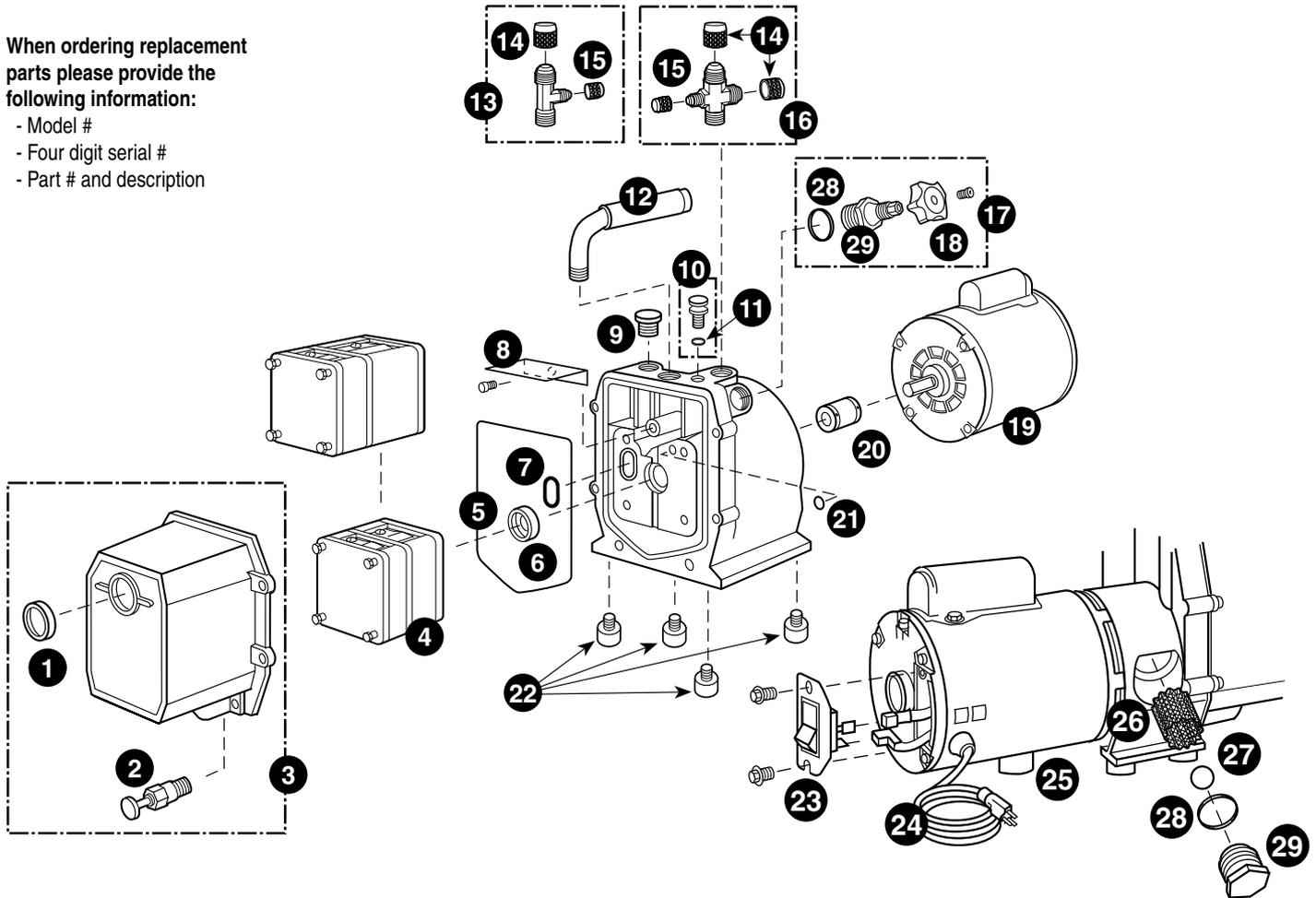
♦Not shown

Vacuum Pump Repair Parts



When ordering replacement parts please provide the following information:

- Model #
- Four digit serial #
- Part # and description



05-DV85 & DV142 Series Pump Repair Parts

Manufactured April 1988 to January 1995.

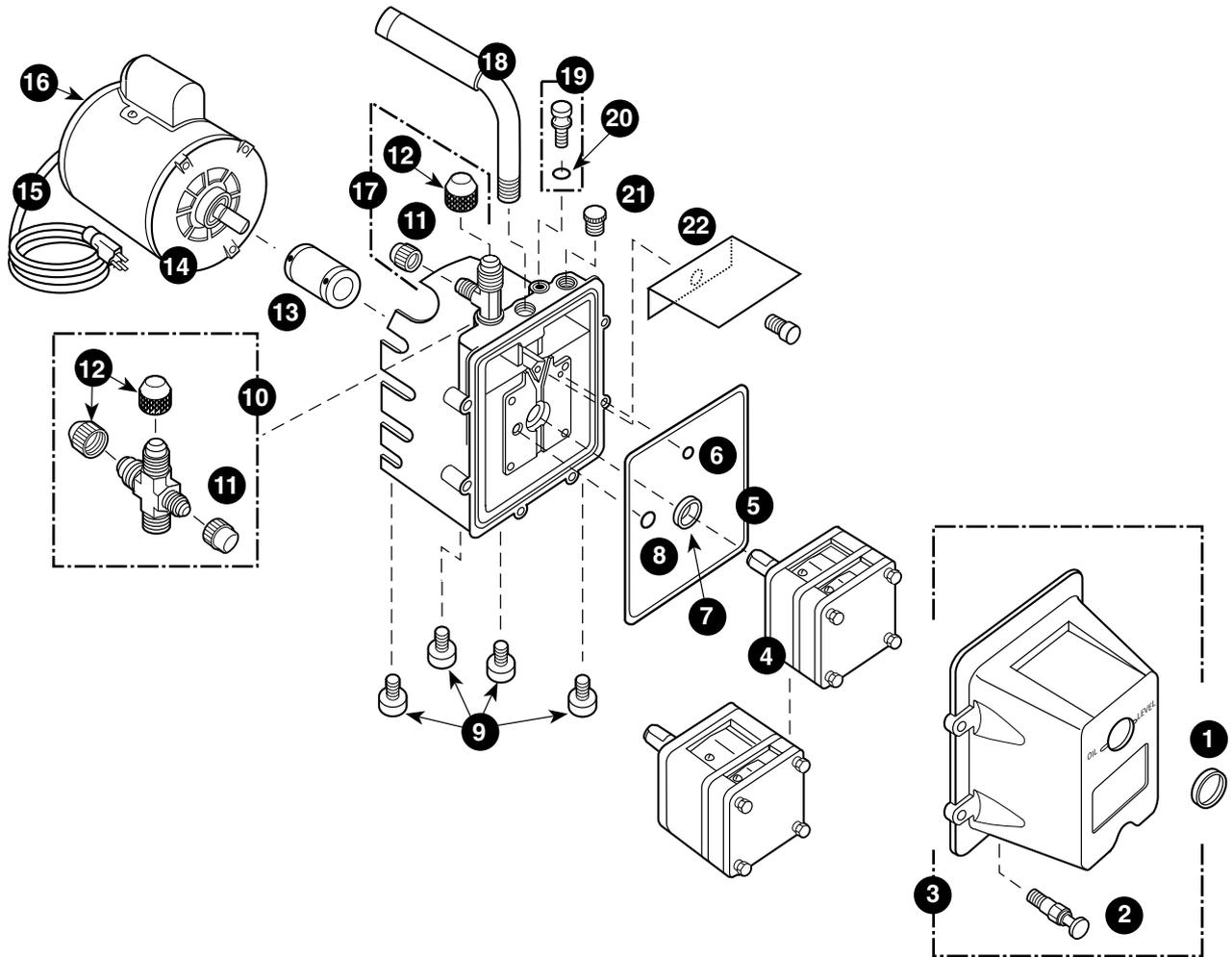
Ref.	Part #	Description
1	05-PR-1	Sight glass*.
2	05-PR-2	Drain valve*.
3	05-PR-19	Cover assy. w/sight glass and drain valve.
4	05-D10087	DV-85 cartridge w/o-rings & cover seal 4.
	05-D10143	DV-142 cartridge (four (4) digit serial #) w/O-rings & cover seal.
5	05-PR-311	Cover seal.
6	05-PR-3	Shaft seal.
7	05-PR-20	Trap intake O-ring.
8	05-PR-39	3 CFM splash guard and screw.
	05-PR-40	5 CFM splash guard and screw.
9	05-PR-22	Oil fill plug w/O-ring.
10	05-PR-7	Gas ballast w/O-ring.
11	05-P90009	Gas ballast O-ring.
12	05-PR-23	Handle w/cushioned grip.
13	05-PR-5	DV-85 intake tee* with caps.
14	02-NFT5-6	3/8" O-ring cap.
15	02-NFT5-4	1/4" O-ring cap.

Ref.	Part #	Description
16	05-PR-24	DV-142 intake cross* with caps.
17	05-PR-25	Blank-off valve w/O-ring, hand-wheel and screw.
18	05-MR-501B	Blue nylon hand-wheel.
19	05-PR-206	1/2 HP, 115V motor w/line cord and switch.
	05-PR-207	1/2 HP, 115/230V, 50/60 cycle motor w/line cord and switch.
20	05-PR-6	Flexible coupler*.
21	05-PR-12	trap gas ballast o-ring.
22	05-PR-4	rubber foot & screw assy. (1/ pkg.).
23	05-PR-30	115V motor switch-rocker (Marathon motor).
24	05-PR-33	Line cord (Marathon motor).
25	05-PR-42	Motor foot & screw.
26	05-PR-26	Oil filter.
27	05-PR-27	Check ball.
28	05-PR-28	Oil filter plug O-ring.
29	05-PR-29	Oil filter plug.
♦	05-PR-18	Cartridge valve repair kit. all pumps excluding DV-142 (6 digit serial #).

*Coat threads with thread sealant when replacing.

♦Not shown

Vacuum Pump Repair Parts



05-DV3, DV5 & DV127 Series Pump Repair Parts

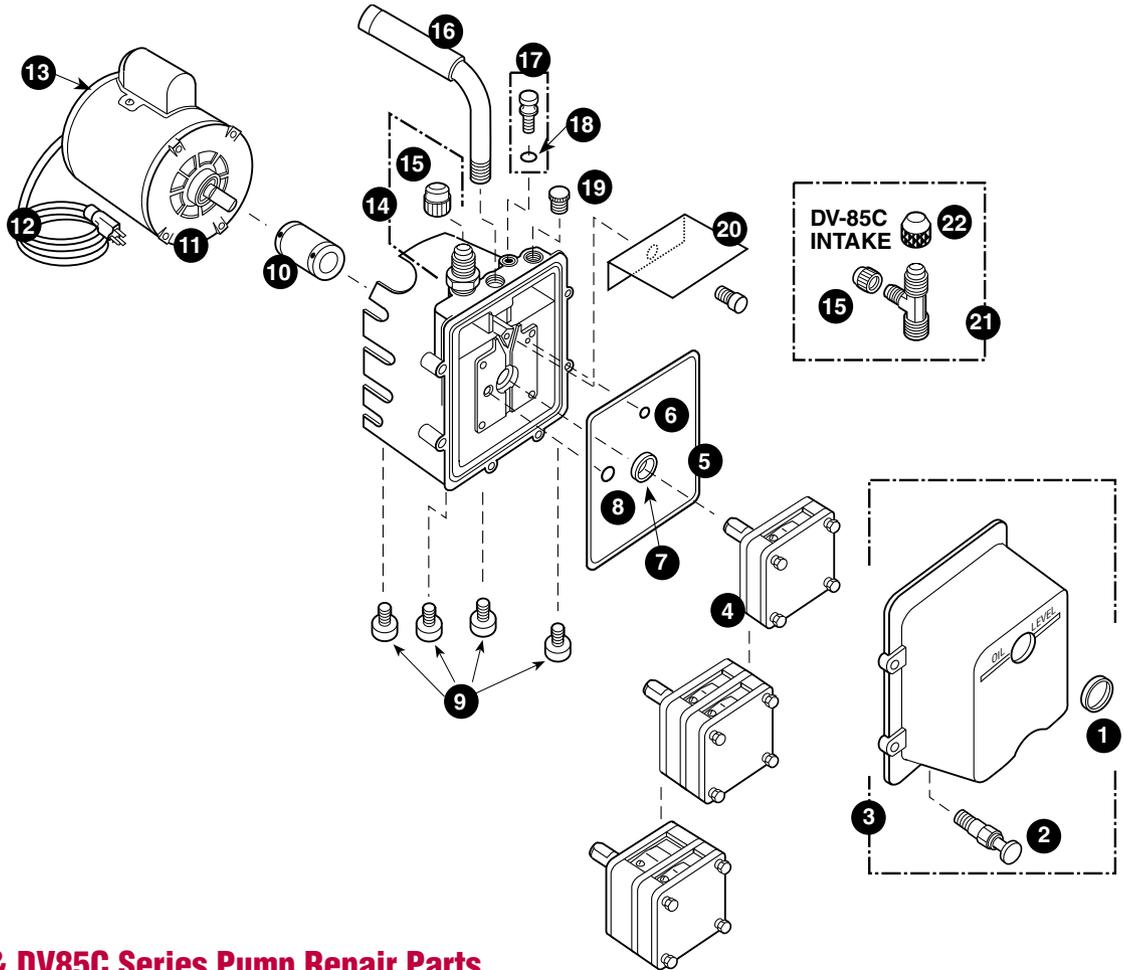
Manufactured 1992 to December 2000.
(DV127 manufactured 1982 to April 1988).

Ref.	Part #	Description
1	05-PR-8	Sight glass*.
2	05-PR-2	Drain valve*.
3	05-PR-10	Cover assembly, includes sight glass and drain valve.
4	05-D10086	DV-3 cartridge complete w/o-rings and cover seal.
	05-D10128	DV-5/DV-127 cartridge complete w/o-rings and cover seal.
5	05-PR-216	Cover seal.
6	05-PR-12	O-ring.
7	05-PR-3	Shaft seal.
8	05-P90015	O-ring.
9	05-PR-4	Rubber foot & screw assy. (1/ pkg.).
10	05-PR-24	Intake cross with caps.
11	02-NFT5-4	1/4 O-ring cap.
12	02-NFT5-6	3/8 O-ring cap.
13	05-PR-6	Flexible coupler*.
	05-PR-53	Flexible coupler* (-250 models after serial # 0198).

Ref.	Part #	Description
14	05-PR-206	1/2 HP, 115V, 60 Hz motor w/line cord and switch.
	05-PR-207	1/2 HP, 115/230V, 50/60 Hz motor complete.
15	05-PR-31	Line Cord (Emerson motor).
	05-PR-33	Line Cord (Marathon motor).
16	05-PR-14	115V motor toggle switch.
	05-PR-30	115V motor switch-rocker (Marathon motor).
	05-PR-54	115/230V motor switch-rocker (Emerson motor after serial # 0198).
17	05-PR-5	Intake tee* with caps.
18	05-PR-23	DV-3 & 5 handle w/cushioned grip.
19	05-PR-7	Gas ballast w/o-ring assy.
20	05-P90009	O-ring, gas ballast.
21	05-PR-22	DV-3/DV-5 oil fill plug w/O-ring.
22	05-PR-39	DV-3 splash guard w/screw.
	05-PR-40	DV-5/127 splash guard w/screw.
♦	05-PR-18	Cartridge valve repair kit.

♦ Not shown
*Coat threads with thread sealant when replacing.

Vacuum Pump Repair Parts



When ordering replacement parts please provide the following information:

- Model #
- Four digit serial #
- Part # and description

05-DV42, DV-42N & DV85C Series Pump Repair Parts

Manufactured February 1988 to December 2000.

Ref.	Part #	Description
1	05-PR-1	DV-85C & DV-42 Sight Glass*.
2	05-PR-2	Drain valve*.
3	05-PR-9	DV-85C & DV-42 cover assy. Includes sight glass and drain valve.
	05-PR-44	DV-42N cover assy. Includes sight glass and drain valve.
4	05-D10043	DV-42 cartridge complete w/o-rings and cover seal.
	05-D10086	DV-85C cartridge complete w/o-rings and cover seal.
	05-PR-212	DV-42N cartridge complete w/o-rings and cover seal.
5	05-PR-216	Cover seal.
6	05-PR-12	O-ring.
7	05-PR-3	Shaft seal.
8	05-P90015	O-ring.
9	05-PR-4	Rubber foot & screw assy. (1/ pkg.).
10	05-PR-6	Flexible coupler*.
	05-PR-53	Flexible coupler* (-250 models after Serial # 0198).

Ref.	Part #	Description
11	05-PR-207	1/2 HP, 115/230V, 50/60 Hz motor w/line cord & switch.
	05-PR-206	1/2 HP motor w/line cord & switch.
12	05-PR-31	Line cord (Emerson motor).
	05-PR-33	Line cord (Marathon motor).
13	05-PR-14	Motor switch—toggle.
	05-PR-30	Motor switch—rocker (Marathon motor).
	05-PR-54	115/230V motor switch-rocker (Emerson motor after serial #0198).
14	05-PR-32	DV-42 Intake* with cap.
15	02-NFT5-4	1/4" O-ring cap.
16	05-PR-23	DV-42 New style handle and comfort grip complete - 3/8 nipple.
17	05-PR-7	Gas ballast w/O-ring assy.
18	05-P90009	O-ring, gas ballast.
19	05-PR-22	Oil fill plug w/o-ring for newer style DV-42.
20	05-PR-39	DV-42 and DV-85C splash guard with screw.
21	05-PR-5	DV-85C intake tee* with caps.
22	02-NFT5-6	3/8" O-ring cap.
♦	05-PR-18	Cartridge valve repair kit.

♦ Not shown

*Coat threads with thread sealant when replacing.

Vacuum Pumps - Dual Voltage

cps

PRO-SET® Dual Stage Vacuum Pumps

Dual voltage design vacuum pump operates on 110 VAC or 220 VAC. Heavy duty high torque motor for easy startup & efficient operation. Advanced two stage rotary vane design pulls deep vacuum fast to 15 microns. Gas ballast speeds evacuation and keeps oil cleaner. A blank-off valve used to isolate pump from the system. Pump is completely field serviceable. Able to tap into rooftop power with an optional 220V jumper cable (46-VPXJ220).



46-VP6
Illustrated

Dual Stage Vacuum Pumps

Part #	Specification
46-VP4 1/3 HP	<ul style="list-style-type: none"> Free Air Displacement <ul style="list-style-type: none"> - 46-VP4 (4.0 CFM) - 46-VP6 (6.0 CFM) Stages: 2 Motor <ul style="list-style-type: none"> - 46-VP4 (1/3 HP) - 46-VP6 (1/2 HP) Frequency: 50/ 60 Hz RPM: 1440 (@50Hz) 1730 (@60Hz)
	<ul style="list-style-type: none"> Voltage: 110/ 220 VAC Internal Start Capacitor Thermal Overload Protector Intake: 1/4" SAE & 3/8" SAE Oil Capacity: 0.24 Gallon Dimensions: 16.93"L x 5.71"W x 10.43"H Shipping Weight <ul style="list-style-type: none"> - 46-VP4 (29.76 lbs) - 46-VP6 (30.20 lbs)
46-VP6 1/2 HP	

Vacuum Pump Accessories & Replacement Parts

cps



46-VPXJ220
Illustrated



46-AVT48
Illustrated

CPS Vacuum Pump Replacement Parts

Part #	Description
46-VPXJ220	220 Volt jumper kit.
46-VPX4RK	Rebuild kit for 46-VP4.
46-VPX6RK	Rebuild kit for 46-VP6.
46-VPXPH	Pump handle.
46-VPXPG	Gas ballast valve.
46-VPXOF	Oil fill port.
46-VPXOS	Oil sightglass.
46-VPXOC	Oil drain cap.
46-VPXPB	Molded base.
46-VPXPR	Aluminum reservoir housing.
46-VPXMF	Motor flange.
46-VPXM4	1/3 HP motor with thermal overload protector.
46-VPXM6	1/2 HP motor with thermal overload protector.
46-VPXPV	Valve with 1/4" flare and 1/2" ACME ports.
46-VPXEP	Electrical switch plate.
46-VPXPC	1/4" plastic caps with strap.
46-VPXC12	1/2" plastic caps with strap.
46-AVT48	Vacuum pump tee adapter (1/4" x 1/4" x 1/2" Acme).

Service Tools

Vacuum Pump Oil



Premium Vacuum Pump Oil

Especially formulated for deep vacuum service.
Viscosity, Saybolt SUS at 38°C (100°F) 223 to 225.
Low temperature flow point -12°C (10°F).

- Hydro-processed.
- Non-detergent.
- High viscosity mineral oil.

Premium Vacuum Pump Oil

Part #	Description	Package	Weight
10-DVO-6-4	Pint bottle.	24/ctn	25 lbs
10-DVO-12-12	Quart bottle.	12/ctn	24 lbs
10-DVO-24-6	Gallon bottle.	6/ctn	47 lbs

Sold in carton quantities only.

Vacuum Pump Oil



CPS Vacuum Pump Oil

Part #	Description
46-VPXOQ	Premium pump oil (12) 1-quart bottles
46-VPXOG	Premium pump oil (6) 1-gallon bottles
46-VPXOP	Premium pump oil (12) 1-pint bottles

Vacuum Pump Oil



10-VAC235Q
Illustrated

VAC235 Series Vacuum Pump Oil

10-VAC235 is made from a very high quality paraffinic base oil. The oil is highly refined and severely hydro-treated to produce a quality-finished product with 0 aromatics. What separates 10-VAC235 from other vacuum pump oils is that it is water white. Even though the aromatic component enhances lubricity, it also is the first component to break down under heat. 10-VAC235 offers excellent high temperature stability which is necessary under the rigours of a long run.



Features

- Excellent chemical and thermal stability
- Does not react with contaminants
- Meets or exceeds pump manufacturers requirements
- Prevents sludge and corrosion

Specifications

Viscosity @ 40°C cSt	69.2
Viscosity @ 100°F SUS	310
Viscosity Index	105
Flash Point COC °C	243
Pour Point °C	-12
Aniline Point °C	112
Density @ 60°F	0.8703
Di-Electric Strength KV	>30
API Gravity	31.0
Colour	<0.5

Vacuum Pump Oil

- Easy pour spout cap.

Part #	Unit Volume	Package
10-VAC235Q	32 oz	12/ carton
10-VAC235G	1 gal	6/ carton

Vacuum Gauges



Vacrometer™ Vacuum Gauge

Compact self-contained instrument design to provide constant indication and monitoring of the evacuation process from start to finish. Nine discrete high intensity LED's are preset to illuminate upon achieving industry standards for proper system evacuations. Advanced surface mount technology automatically compensates for ambient changes in the environment ensuring accuracy and consistency in performance. Advanced field-cleanable sensor is able to withstand 400 PSI of positive pressure. Unit operates 25 hours on 9V alkaline battery (included) with low battery indicator and auto-OFF feature. Includes carrying case, hanging hook and adapter fitting.

Vacrometer™ Vacuum Gauge

Part #	Description
46-VG100A	LED vacuum gauge.

Replacement Parts & Accessories

Part #	Description
46-VGXH	Hanging hook.
46-AVT48	Adapter fitting.
46-VGXC	Carrying case for 46-VG100A & 46-VG200.



Vacrometer™ Digital Vacuum Gauge

Advanced evacuation measurement instrument providing continual digital readout of evacuation process on large 5 digit LCD. Measurement units are user selectable to read in microns, in/hg or mBar at the touch of a key. Advanced surface mount technology automatically compensates for ambient changes in the environment ensuring accuracy and consistency in performance. Advanced field-cleanable sensor is able to withstand 400 PSI of positive pressure. Unit operates 30 hours on 9V alkaline battery (included) with low battery indicator and auto-OFF feature. Includes carrying case, hanging hook and adapter fitting.

Vacrometer™ Digital Vacuum Gauge

Part #	Description
46-VG200	Digital vacuum gauge.

Replacement Parts & Accessories

Part #	Description
46-VGXH	Hanging hook.
46-AVT48	Adapter fitting.
46-VGXC	Carrying case for 46-VG100A & 46-VG200.

Automotive Oil

Page 85

BVA

Refrigeration Oil

Pages 81 To 84

BVA

Digital Vacuum Gauge



05-DV22
Illustrated

50 to 250 microns, $\pm 15\%$ average accuracy.
250 to 6,000 microns, $\pm 10\%$ average accuracy.

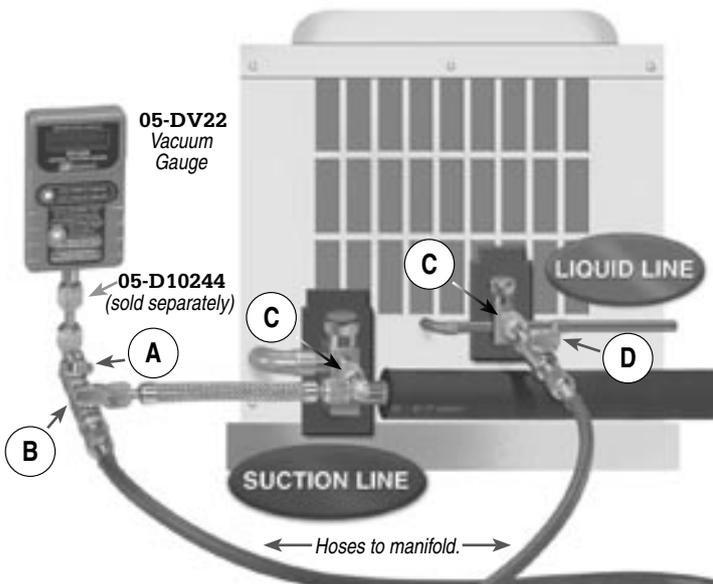
Digital Vacuum Gauge - Hand Held Model

- Simple two button operation.
- Protected sealed touch buttons.
- Accurate display from 25 to 12,000 microns.
- Reads vacuum in 7 international units: micron, PSIA, InHg, mBars, Pascal's, Torr, mTorr.
- Digital display with solid state circuitry.
- Solid state design - no adjustment necessary for temperature.
- NIST traceable.
- Saves last vacuum readout after shutdown.
- Retractable hanging hook.
- Uses one 9 volt battery (not included).
- Low battery indicator.
- Automatic power off battery saver (10 minute).
- 300 psi maximum pressure.
- 0°C to 48.9°C (32°F to 120°F) ambient temperature.

Digital Vacuum Gauge - Hand Held Model

Part #	Description
05-DV22	Hand held digital vacuum gauge.
Part #	Description
05-DV24	05-DV22 with protective carrying case.
05-DV26	Protective carrying case for 05-DV22.
05-D10244	1/4" SAE swivel o-ring coupler.

Digital Micron Gauge Blankoff Test Unit



- A. Valve to micron gauge (close valve when charging).
B. Valve to system.
C. O-ring quick couplers with depressor.
D. Valve to system.

Micron Gauge Blankoff Test Unit

- The most accurate reading is obtained at the high and low side of system.
- Deep vacuum has its own unique properties which requires leak-proof design in all the components including couplers and hoses.

Digital Micron Gauge Blankoff Test Unit

Part #	Description
05-DV29	Kit includes:
	• Ball valve with o-ring coupler with core depressor.
	• 10" metal hose with o-ring couplers.
	• 90° male flare with o-ring coupler with core depressor.
	• (2) ball valve unit with 90° SAE elbow.
• 05-D10244 sold separately.	
Part #	Description
05-D10244	1/4" female swivel coupler.

Digital Vacuum Gauge



05-DV20
Illustrated



05-DV18
Illustrated

Digital Vacuum Gauge - Carrying Case Model

- Accurate display from 50 to 9,000 microns.
- Digital display with solid state circuitry.
- NIST traceable.
- Saves last vacuum readout after shutdown.
- Self-contained with easy access compartments.
- Dual power supply uses either (4) "AA" batteries (not included) or A/C power adapter (included).
- Automatic power Off battery saver (10 minute).
- 300 psi maximum pressure.
- 0°C to 48.9°C (32°F to 120°F) ambient temperature.

Digital Vacuum Gauge - Carrying Case Model

Part #	Description
05-DV20	Digital vacuum gauge and 05-DV18 A/C adapter.
Part #	Description
05-DV18	Replacement A/C adapter.

Analogue Vacuum Gauge



05-DV21N
Vacuum Gauge



05-DV18
AC Adapter

05-DVS27
Sensor

Analogue Vacuum Gauge - Carrying Case Model

- Accurate display from 25 to 12,000 microns.
- Self-contained with easy access compartments.
- Dual power supply uses either 4 "AA" batteries (not included) or A/C power adapter (included).
- Low battery indicator.
- Automatic power Off battery saver (10 minute).
- 300 psi maximum pressure
- Gauge can be switched from battery to A/C power under vacuum.
- 6' sensor leads.
- O-ring quick coupler for perfect seal.
- Easy to read dial face.

Analogue Vacuum Gauge - Carrying Case Model

Part #	Description
05-DV21N	Analogue vacuum gauge w/ 05-DV18 A/C adapter.
Part #	Description
05-DV18	Replacement A/C adapter.
05-DVS27	Replacement sensor.

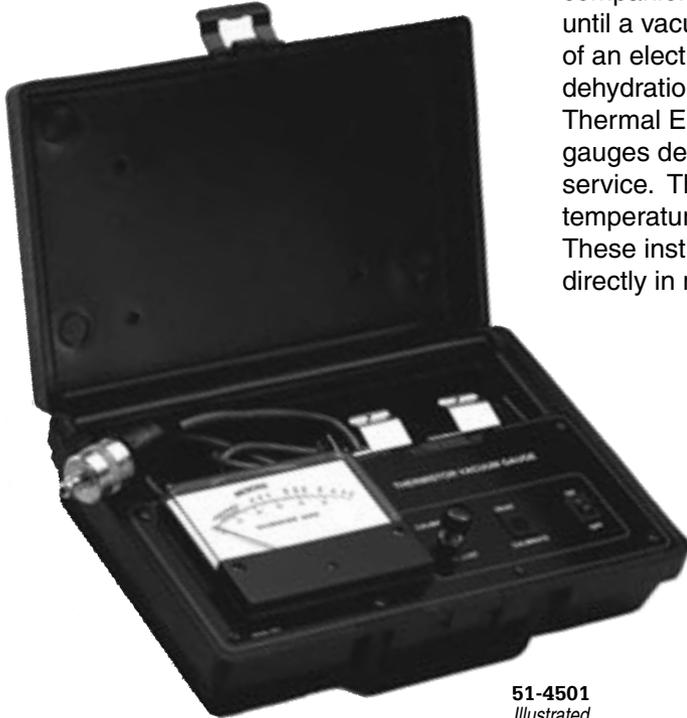
Analogue Vacuum Gauges

THERMAL

Vak-Check Vacuum Gauges

For proper evacuation and dehydration of refrigeration and air conditioning systems, an electronic vacuum gauge is an indispensable companion to a vacuum pump. Significant dehydration does not occur until a vacuum of 1000 microns or greater has been achieved. Use of an electronic vacuum gauge is the only way to determine when dehydration is occurring and when it is complete.

Thermal Engineering Vak-Checks are precision thermistor vacuum gauges designed especially for refrigeration and air conditioning service. They automatically compensate for changes in ambient temperature and permit continuous monitoring during evacuation. These instruments are compact, lightweight, easy to use and read directly in microns on a large easy-to-read meter.



51-4501
Illustrated

Vak-Check Analog Vacuum Gauge

Part #	Description
51-4501	<ul style="list-style-type: none"> Battery operated. Range: Atmospheric to 10 microns. Ambient temperature compensated. Complete with model 51-4510 sensor. Accuracy: 200 to 1000 microns \pm 5%. Power: (2) "D" batteries (not included).

Super Vak-Check II Analog Vacuum Gauge

This analog thermistor vacuum gauge allows you to choose between 110 AC and battery with all the same features as the 51-4501

Part #	Description
51-14571	<ul style="list-style-type: none"> A/C or battery operated. Range: Atmospheric to 10 microns. Ambient temperature compensated. Complete with 51-4510 sensor. Accuracy: 200 to 1000 microns \pm 5%. Power: 110V AC or (2) "D" batteries (not included).

Vacuum Gauge Sensors

THERMAL



51-4510
Illustrated

Replacement Vacuum Sensors

Part #	Description
51-4510	Vacuum sensor for Vak-Check, Super Vak-Check and Super Vak-Check II models (51-4500, 51-4501, 51-4551, 51-14500, and 51-14571) with 0 to 50 calibration scale.
51-4520	Vacuum sensor for Super-Vak-Check II model 51-14571 with a serial number beginning with N and 50 to 100.

Oil Pumps

THERMAL



55-1751
Illustrated



55-1768
Illustrated



55-1770
Illustrated

Charge Oil Pumps

- It eliminates the possibility of drawing air & moisture into the system
- Built-in check valve prevents you from having to pump down the system first.
- Measures the oil you are adding (20 strokes = 1 quart).
- Designed to operate at pressures up to 250 PSI.
- Charges without pumping compressor down.
- Reduces charging time by over 70%.

Charge Oil Pumps

Part #	Description
55-1702	1 gallon cans.
55-1703	5 gallon cans.

Change Oil Pumps

- Removes oil from compressor, marine engines and other equipment.
- Pumping capacity is 10 strokes per quart.
- Suction tube is 5/16" x 15" but lengths up to 60" can be used.
- Not designed to operate under pressure.

Change Oil Pump

Part #	Description
55-1751	Change oil pump.

Charge Oil Pump Adapters

Part #	Description
55-1768	Adapter kit for all popular cans and bottles of refrigerant oil. Kit contains 5 rings and one spacer to accommodate most oil containers. Supplied with the 55-1702 and 55-1703 models.
55-1770	Suction adapter for new style aluminum Charge-Oil Pump. Converts a 55-1702 pump into suction pump for refrigeration, marine and other similar applications where it is impossible to draw oil in the normal manner.

Controls Pump



12-40200
Illustrated

Controls Pump

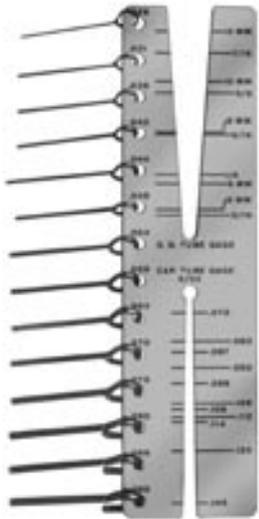
- Quickly and accurately test and set single or dual pressure controls to 350 psi and 25" of vacuum. Use with gauge manifold.

Part #	Description
12-40200	Controls pump with 12-40201 adapter.

Replacement Parts

Part #	Description
12-40201	Adapter w/o-ring.
12-40202	Adapter o-ring.
12-40203	Pressure access valve w/35 psi core.
12-40204	Piston o-ring.
12-40205	Pressure valve core 35 psi.
12-40206	Vacuum valve core 3 psi.
12-40207	Vacuum access valve w/3 psi core.

Capillary Tubing Gauge



12-A10971
Illustrated

Determining Cap Tube Size

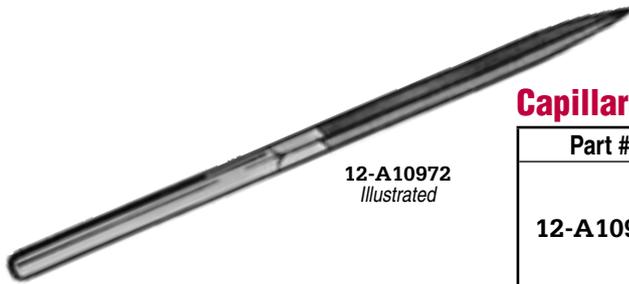
The 12-A10971 cap tube gauge accurately measures a full range of capillary tube sizes. Correct tube size is determined by using both the ID and OD dimensions. Check OD of tube in "V" slot. Compare OD with reference chart printed on back of gauge to determine probable ID. Use pin gauge to confirm actual size of ID. This same means of cross referencing can be used whenever two standard ID's are very close or OD's are the same.

MEASURES BOTH ID & OD

- Precision engineered.
- Stainless steel with black etched numbers
- Stainless steel wire plugs
- 12-A10971 includes cap tube file (12-A10972) and protective vinyl carrying pouch.

Capillary Tubing Gauge

Part #	Description
12-A10971	<ul style="list-style-type: none"> • 14 ID sizes from 0.026" to 0.090" (0.660mm to 2.286mm) • 22 OD sizes from 0.072" to 7/16" (5mm to 12mm)



12-A10972
Illustrated

Capillary Tubing File

Part #	Description
12-A10972	Specially designed to cut & open cap tubing. File notch around tubing at desired cutting point and then simply bend at notch to snap tube. Also cleans burrs by reaming out with special file tip.

Capillary Tubing Pliers



12-A10973
Illustrated

Working With Capillary Tubing

Every precaution possible should be taken to prevent chips, dirt, flux, moisture, filings, etc. from entering the system when changing the cap tube. Cap tube is sealed and dehydrated from the factory. Remember, most cap tubes have very small holes. It doesn't take much to plug them. The 12-A10972 Cap Tube File and 46-TCAP Cap Tube Cutter are specifically designed tools for working with cap tube.

Capillary Tube Cutting Pliers

Specially designed to cut all sizes of soft and many sizes of hard drawn cap tubes.

Part #	Features
46-TCAP	<ul style="list-style-type: none"> • Sturdy Design • Clean Cut • No Chips • No Collapse of Tube

Capillary Tubing Service Tools

THERMAL

Cap-Check

The Cap-Check is a Thermal Engineering innovation that has made cap tube cleaning possible and practical. It is designed to pump a high rate of oil into the cap tube, building up pressures needed to open any plugged cap tube. The Cap-Check will also clean partially plugged cap tubes when used with the 55-1101 Thermal Chaser Kit.



Cap-Check

Part #	Description
51-1003	<ul style="list-style-type: none"> • Cap-Check is a portable, self contained hydraulic power unit with auxiliary equipment especially adapted to cleaning refrigeration capillary tubes. • A 0 to 6000 PSI gauge shows pressure build-up if cap tube is restricted and also shows when chaser has passed through the tube. A trigger operated gauge shut-off is provided so the gauge will not be damaged if pressures greater than 6000 PSI are desired. A 30" high pressure hydraulic hose with a 1/4" SAE male flare outlet connects the cap tube to the Cap-Check for simple handling. • An adapter is supplied to connect the cap tube directly to the hose outlet without a flared fitting

Cap-Check Outfit Kit

Part #	Description
55-5101	<ul style="list-style-type: none"> • Cap-Check Outfit provides both the Cap-Check and Chaser Kit in one compact case along with an extended base that holds the Cap-Check. The Cap-Check can be operated with one hand, allowing high pressures to be easily pumped. • Carrying case has clips to hold Cap-Check, Chaser Kit, hose, handle and extended base.



Cap-Check Outfit

Part #	Description
55-1101	<ul style="list-style-type: none"> • Chaser Kit is the only means available to clean partially plugged cap tubes. The kit must be used with the Thermal Cap-Check since no other cap tube cleaning tool provides a rate of oil flow large enough to remove partial restrictions even from the smallest cap tubes. • The Chaser Kit consists of 10 spools of lead alloy wire which can be used as a chaser for the 10 most popular sizes of cap tubes (0.028, 0.031, 0.036, 0.039, 0.042, 0.046, 0.050, 0.055, 0.064, 0.070). • In addition to the wire, a cap tube gauge, a set of sizing tools and a combination file/reamer are all included in a durable metal case.

Cap-Check Accessories

Part #	Description
55-1003RK	Cap-Check Repair Kit-complete set of gaskets,"O" rings, springs, and balls for 1003, with instructions.
12-1102	Capillary tubing gauge.
55-1011	0 to 6000 PSI gauge
55-1012	30" Hydraulic hose.
55-1056	Adapter seals for 55-1012 (12pk.)
55-1201	Carrying case for Cap-Check.
55-1301	Extended base for Cap-Check.



Charging Cylinders

THERMAL



55-7000
Series Illustrated

R12, R22 & R502 Charging Cylinders

Part #	Capacity	Graduation
55-7001	16 oz (454g)	1/2 oz (14g)
55-7002*		
55-7005	80 oz (2,268g)	1 oz (28g)
55-7006*		

R134a HFC Charging Cylinders

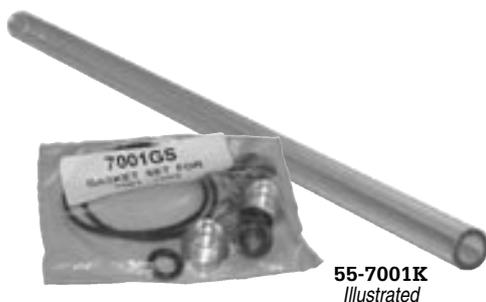
- 1/4" SAE fittings.

Part #	Capacity	Graduation
55-U7001	16 oz (454g)	1/8 oz (3g)
55-U7002*		
55-U7005	80 oz (2,268g)	1 oz (28g)
55-U7006*		

* Carrying case included.



55-7020
Illustrated



55-7001K
Illustrated

Thermal Charge-Check Refrigerant Charging Cylinders

- Available in light domestic to heavy-duty commercial applications.
- Allows measuring precise quantities of refrigerant.
- Helps speed up the charging process by letting you charge with heat. All cylinders except the 16 oz models will hold a model 55-7020 heater assembly.
- Allows you to carry small quantities of refrigerant to the job, yet buy refrigerant in large quantities and keep the drum back at your shop.
- Available in a steel carrying case to completely protect from tough use. Cylinder need not be removed from the case as all connections and valves are accessible from front. Case forms a stand to set on the floor or bench.
- Easily used in the field. Unit can hang from system being charged by means of a top-mounted bail.
- Can be calibrated for ambient temperature variations by means of temperature correction chart on the side of the scale. This is required only if better than 2% accuracy is required.
- Safety relief valve for protection
- Plastic liquid level indicators

For refrigerants other than R12, R22 & R-502

1. Correct for refrigerant temperature
2. "Using the proper scale", multiply by the quantity of refrigerant required by the correction from the table below.

Refrigerant	Scale	Correction Factor
R134a	-	R22 0.99
R401A	MP39	R22 1.00
R401B	MP66	R22 1.00
R401C	MP52	R22 0.99
R402A	HP90	R22 1.05
R402B	HP81	R22 1.04
R404	HP62	R22 1.14
R406A	-	R12 1.00
R410A	AZ20	R22 1.15
R414B	-	R12 1.00
R507	AZ50	R22 1.14

Charge-Check Accessories

Gasket Sets	Size
55-7007	55-7001 carrying case.
55-7008	55-7005 carrying case.
55-7020	120V heater assembly.
55-7024	240V heater assembly.

Charge-Check Gasket Sets & Repair Kits

Charge-Check repair kits contain a complete gasket set and replacement gauge glass.

Gasket Sets	Repair Kits	Size
55-7001GS	55-7001K	16 oz (454g)
55-7003GS	55-7003K	2.5 lb (1.1kg)
55-7005GS	55-7005K	5 lb (2.3kg)
-	55-7009K	10 lb (4.5kg)

Quick Charging Devices

THERMAL



55-7701
Illustrated

Vizi-Vapr Charger

The Vizi-Vapr eliminates the problem of slow vapour charging by removing the refrigerant from the cylinder as a liquid and injecting it into the system as a saturated vapour. Since the liquid refrigerant is removed from the cylinder by its own pressure, no heat is removed from it and the cylinder does not get cold. Refrigerant blends must be removed from their containers as a liquid. Many times charging liquid directly into a system is not feasible. Using the Vizi-Vapr, the blend can be charged into the system as a saturated vapour without any composition change. Vizi-Vapr is adjustable from 1/8 ton up to 50 tons. The operation is completely visible so there is little danger of liquid entering the system.

Vizi-Vapr Charger

Part #	Description
55-7701	Adjustable from 1/8 ton to 50 tons.
55-7701RK	55-7701 repair kit.

Refrigerant Recovery Pumps

ALLTEMP



Spooter II & IIM

- Recovers & Transfers.
- Pulls Quick Vacuum.
- Set Pressure Controls.
- Disassembles For Service.
- Rebuild Kits Available.

Spooter Refrigerant Recovery Pumps

The original hand operated recovery pump. The Spooter started its second generation in the year 2000 with the most current certification ratings standard. Safe and efficient recovery of category III and IV refrigerants. ARI certified and EPA accepted as a self-contained recovery device. Field repairable o-ring and seal repair kits available.

Features

- Can be used as:
 - Control testing pump.
 - Oil pump.
 - Pressure test pump.
 - Vacuum pump.
 - Transferring refrigerants from one cylinder to another.
 - ARI certified.
 - EPA accepted.

Use Spooter To Recover Or Transfer Hot Shot R414B!

Spooter Refrigerant Recovery Pumps

Part #	Refrigerant Category	Refrigerant Type	Liquid Recovery	Vapour Recovery	Shut Off Vacuum	Residual Trapped Refrigerant
54-SP2	Category III	R-134a*	1.94 lb/min	0.09 lb/min	10 Hg vac	<0.11 lb/min
		R-500*	1.89 lb/min	0.09 lb/min		
	Category IV	R22*	2.1 lb/min	0.11 lb/min		
		R407C*	2.29 lb/min	0.09 lb/min		
54-SP2M Metric Model (Bar/°C)	Category III	R-134a*	0.88 kg/min*	0.04 kg/min	67.46 kpa	<0.05 kg/min
		R-500*	0.86 kg/min*	0.04 kg/min		
	Category IV	R22*	0.95 kg/min*	0.05 kg/min		
		R407C*	1.04 kg/min*	0.04 kg/min		

* = Representative Refrigerants Tested as Specified by Standard.

Category III - R12, R134a, R401C, R406a, R500.

Category IV - R401a, R409A, R401B, R412A, R411A, R407D, R22, R411B, R407C, R402B, R408A, R509.

Refrigerant Recovery Machines

CPS®

All PRO-SET® Machines!

- On the fly self-clearing valve (except 46-CR300).
- Integrated manifold block system.
- Built-in suction filter located under the suction port.
- Indestructible high-density polyethylene case.
- Comfortable integrated carrying handle.
- Worldwide approvals - CSA, CE, TUV-GS.
- UL certified to meet or exceed EPA regulations per ARI standard 740-95.

**R410A
Compatible**



46-CR400
Illustrated

Applications

- Appliances
- Small A/C units
- Automobiles

**R410A
Compatible**



46-CR500
Illustrated

Applications

- Appliance
- Residential A/C
- Light Commercial

**R410A
Compatible**



46-CR600
Illustrated

Applications

- Residential A/C
- Commercial

Oil Filled Refrigerant Recovery Machines - PRO-SET®

Part #	Features	Specifications
46-CR300 46-CR310 <i>Includes 80% overfill sensor cord.</i>	<ul style="list-style-type: none"> • R410A Ready! • Economical recovery workhorse. • Heavy-duty oil filled compressor. • Simple, easy-to-use design. • Built-in suction filter. • 46-CR300A (230V Model) 	<u>Capacity</u> <ul style="list-style-type: none"> • Direct Vapour: 6kg/hr (0.22lbs/min). • Direct Liquid: 19.8kg/hr (0.73lbs/min). • Push-Pull Liquid: 282kg/hr (10.38lbs/min). <u>Mechanics</u> <ul style="list-style-type: none"> • Compressor: 1/6HP Hermetic. • Voltage: 110VAC 50/60hz. • Weight: 12.6kg (28lbs).
46-CR400 46-CR410 <i>Includes 80% overfill sensor cord.</i>	<ul style="list-style-type: none"> • R410A Ready! • Fully automatic liquid or vapour recovery. • Advanced rifled tube lance fin condenser. • 550 PSI high pressure cut-off switch. • Extremely quiet operation. • 46-CR400E (230V Model). 	<u>Capacity</u> <ul style="list-style-type: none"> • Direct Vapour: 6kg/hr (0.22lbs/min). • Direct Liquid: 19.8kg/hr (0.73lbs/min). • Push-Pull Liquid: 282kg/hr (10.38lbs/min). <u>Mechanics</u> <ul style="list-style-type: none"> • Compressor: 1/6HP Hermetic. • Voltage: 110VAC 50/60hz. • Weight: 12.6kg (28lbs).

Oil-Less Refrigerant Recovery Machines - PRO-SET®

Part #	Features	Specifications
46-CR500 46-CR510 <i>Includes 80% overfill sensor cord.</i>	<ul style="list-style-type: none"> • R410A Ready! • Lightest recovery unit in its class! Only 19.5lbs. • Fast recovery of liquid or vapour refrigerant. • Advanced rifled tube lance fin condenser. • Fast recovery of liquid or vapour. • 550 PSI high pressure cut-off switch. • 46-CR500E (230V Model) 	<u>Capacity</u> <ul style="list-style-type: none"> • Direct Vapour: 10.3kg/hr (0.38lbs/min). • Direct Liquid: 82.3kg/hr (3.03lbs/min). • Push-Pull Liquid: 332kg/hr (12.22lbs/min). <u>Mechanics</u> <ul style="list-style-type: none"> • Compressor: 1/3HP Oil-Less. • Voltage: 110VAC 50/60hz. • Weight: 9.0kg (20lbs).
46-CR600 46-CR610 <i>Includes 80% overfill sensor cord.</i>	<ul style="list-style-type: none"> • R410A Ready! • Fully automatic liquid or vapour recovery. • Advanced rifled tube lance fin condenser. • "Super Cool" dual fan cooling system enables unit to operate in 60°C (140°F) desert heat! • 550 PSI high pressure cut-off switch. • 46-CR600E (230V Model). 	<u>Capacity</u> <ul style="list-style-type: none"> • Direct Vapour: 10.3kg/hr (0.38lbs/min). • Direct Liquid: 70.6kg/hr (2.60lbs/min). • Push-Pull Liquid: 317kg/hr (11.66lbs/min). <u>Mechanics</u> <ul style="list-style-type: none"> • Compressor: 1/2HP Oil-Less. • Voltage: 110VAC 50/60hz. • Weight: 13.1kg (29lbs).

Refrigerant Recovery Machines

cps

46-CR700 CYCLONE



46-CR700
Illustrated

PRO-SET® CR700 Recovery Machine!

- On the fly self-clearing valve.
- Integrated manifold block system.
- Built-in suction filter located under the suction port.
- Indestructible high-density polyethylene case.
- Comfortable integrated carrying handle and shoulder strap.
- Worldwide approvals - CSA, CE, TUV-GS.
- UL certified to meet or exceed EPA regulations per ARI standard 740-95.

R410A Ready!

Refrigerants

- R12, R134a, R401C, R406A, R500, R401A, R409A, R401B, R412A, R411A, R407D, R22, R411B, R502, R407C, R402B, R408A, R509, R407A, R404A, R402A, R507, R407B, R410A.

Applications

- Residential A/C
- Commercial

Oil-Less Refrigerant Recovery Machine - PRO-SET®

Part #	Features	Specifications
46-CR700	<ul style="list-style-type: none"> • Powerful 1 HP oil-less reciprocating recovery compressor. • An exceptional compressor, condensing & cooling system allows for fast recovery rates in high temperature environments. • R410A ready with 550 psi high pressure shut-off switch. • Automatic low pressure shut-off switch turns unit off when recovery is complete. • Heavy duty components enclosed in a rugged high density double walled polyethylene case housing. • Easy view top mounted controls. • Externally serviceable valves and gauges. • Ergonomic - well balanced design for easy transport. • Convenient shoulder strap for easy transportation. • Compact modular design with easy access 4 bolt latching system. • Complete compressor rebuild in minutes. • Oversized piston head & cylinder combined with a 450% larger discharge port allows the 46-CR700 to achieve the fastest overall ARI certified recovery rates in its class. • Built-in suction filter located under suction port. • No suction valve eliminates failures caused by liquid slugs. 	<p><u>Capacity</u></p> <ul style="list-style-type: none"> • Direct Vapour: Up to 43 kg/h (1.6 lb/min). • Direct Liquid: Up to 271 kg/h (10 lb/min). • Push-Pull: Up to 542 kg/h (20 lb/min). • Operating Temperature: 0°C (32°F) to 49°C (120°F). • Power Consumption: 850 W • Suction Pressure Gauge: -76cm hg to 35 kg/cm (-30" hg to 350 psig). • Discharge Pressure Gauge: 0 to 55kg/cm (0 to 800 psig). • Overload protection: 15 amp. • High Pressure Shut-off: 38 bar (550 psig). <p><u>Mechanics</u></p> <ul style="list-style-type: none"> • Compressor: 1HP oil-less reciprocating. • Voltage: 120V, 50/60hz, 1 Ph. • Filtration: Cleanable 100 mesh screen integrated into suction port. • Shut-off Valves: Both suction and discharge piston manifold valves. • Dimensions: 20cm (8") × 37cm (14.5") × 30.5cm (12"). • Weight: 16.3 kg (36lbs).

Refrigerant Recovery Machines - Multiple Refrigerants CPS®

PRO-SET® Oil-Less Recovery/ Recycling Unit

The 46-AR500 is a portable recovery unit with recycling. It's perfect for small shops, off road, tractor and mobile service. It comes with hoses and (1) 50 lb. recovery tank.

Automotive



46-AR500
Illustrated

Oil-Less Recovery/ Recycling Unit - PRO-SET®

Part #	Specifications	
46-AR500	Compressor Type:	1/3 hp reciprocating oil-less.
	Recovery Rate:	0.75 lbs. per minute vapour/ 3 lbs. liquid.
	Refrigerant Clearing:	Manual self clearing valve.
	Refrigerants*:	CFC's & HFC's (46-AR500 meets SAE & EPS standards).
	Operation:	Automatic recover.
	Hoses & Couplers:	3' tank, 8' charge & R134a low coupler.
	Tank Size*:	50 lb. 1/2" ACME (AR500S - 1/4" SAE
	Operating Temp Range:	tank.
	Weight:	32°F to 132°F.
	Filter Rating/ Type:	24 lbs. (tank 27 lbs.).
Voltage:	50 hours/ molecular sieve filter (46-ARXF).	
Warranty:	110 VAC 50/60 Hz. 220 VAC 50/60 Hz* (order 46-AR500S). 1 year parts and labour.	

* Each refrigerant requires a separate tank.

For R12 1/4" SAE systems order these part #'s 46-CRX350TS, 46-HS8BL, 46-HS3RL.

Refrigerant Recovery Machines - Multiple Refrigerants CPS®

Mach 1™ High Capacity Truck & Bus Recycling Units

The 46-AR212TR is excellent for reefer trailer refrigeration, truck cab and bus air conditioning. Specifically designed for large capacity systems and multiple refrigerants it incorporates an extra large 90 lb. recovery storage tank, dual stage 6 cfm vacuum pump, with single pass recovery/ recycling. Pump down refrigerant recovery clearing circuit only from CPS.

Automotive



46-AR212TR
Illustrated

Mach 1™ High Capacity Truck & Bus Recycling Unit

Part #	Specifications	
46-AR212TR	• Compressor Type:	3/4 hp oil-filled hermetic.
	• Recovery Rate:	0.75 lbs. per minute vapour/ 1 lbs. liquid.
	• Refrigerant Clearing:	Manual self clearing valve.
	• Refrigerants*:	HP 62 (R404a), HP80 (R402a), MP66 (R401a), FX56 (R409a), R22, R500, R502, R12, R134a.
	• Operation:	Automatic recover, evacuation and recharging functions.
	• Vacuum Pump:	Dual stage 6 cfm/ 170 lit./min.
	• Hoses:	8' in-line ball valve 1/4" SAE premium hose.
	• Tank Size:	90 lb. DOT approved (46-CRX390T).
	• Operating Temp Range:	32°F to 132°F.
	• Weight:	150 lbs.
	• Filter Rating/ Type:	50 hours/ molecular sieve filter (46-ARXF).
	• Language Options:	English, French, Spanish, German, Italian and Swedish.
	• Voltage:	110 VAC 50/60 Hz. 220 VAC 50/60 Hz* (order 46-AR212TRS).
• Warranty:	1 year parts and labour.	

* Each refrigerant requires a separate tank.

** Optional vacuum accessories-digital micron gauge (46-VG200) and 3/8" hoses (46-HV14E).

Refrigerant Recycling & Charging Machines



46-AR300
Illustrated



46-AR400
Illustrated

Automotive

Mach1™ R134a Automatic Recover/ Recycle, Vacuum & Recharge

The 46-AR300 series provides the latest in microprocessor controlled recycling, evacuation and recharging for today's R134a vehicles. It's perfect for car dealerships, fleets and general repair shops. Technicians simply select the specific function or choose fully automatic and let the 46-AR300 do the rest.

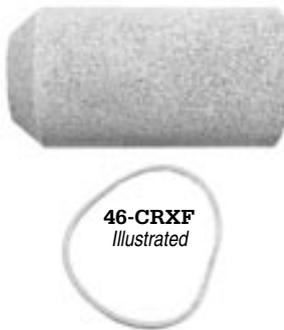
Mach 1™ R134a Automatic Refrigerant Recycling System

Part #	Specifications
46-AR300 110 VAC R134a Only	Compressor Type: 3/4 hp oil-filled hermetic.
	Recovery Rate: 0.75 lbs. per minute vapour/ 1 lbs. liquid. (0.34 kg per minute vapour/ 0.45 kg liquid.)
46-AR400 220 VAC R134a & R12	Refrigerants*: R134a only. (46-AR400 R12 & R134a)
	Operation: Automatic functions.
	Vacuum Pump: Dual stage 6 cfm/ 142 lit/min.
	Hoses & Couplers: 8' (240cm) 1/2" ACME premium hose.
	Tank Size*: 50 lb. 1/2" ACME (46-AR400 - 2 tanks).
	Operating Temp Range: 40°F to 120°F (4°C to 49°F).
	Weight: 200 lbs. (46-AR400 285 lbs.).
	Filter Rating/ Type: 50 hours/ molecular sieve filter (46-ARXF).
	Language Options: English, French & Spanish.
	Voltage: 110 VAC 50/60 Hz 220 VAC 50/60 Hz (46-AR300A).
	Warranty: 1 year parts and labour.

Replacement Recovery Machine Parts & Accessories



46-CRXF2
Illustrated



46-CRXF
Illustrated

Recovery Machine Accessories

Part #	Description
46-CRXC1	Compressor rebuild kit for 46-CR600.
46-CRXC2	Compressor rebuild kit for 46-CR500.
46-CRXC3	Compressor rebuild kit for 46-CR500 (230V).
46-CRXC8	Compressor rebuild kit for 46-CR700.
46-CRXTOS1	Optional 80% tank overfill sensor cord kit for 46-CR400 & 46-CR600.
46-CRXTOS2	Optional 80% tank overfill sensor cord kit for 46-CR300 & 46-CR500.
46-CRXTOS3	Optional 80% tank overfill sensor cord kit for 230V machines.
46-CRXF1	(6) 46-CR400/600 replacement suction filter.
46-CRXF2	(6) 46-CR300/500 replacement suction filter.
46-CRXF3	(6) 46-CR700 replacement suction filter.
46-CR115P	110 VAC printer with cable for 46-AR300 & 46-AR400.
46-CRXC	Nylon cover for 46-AR300 & 46-AR400.

Tank Float Switches

ALTEMP



54-EN1285
Illustrated

Recovery Tank Floats

Part #	Description
54-EN1285	80% liquid level float switch for all 30 & 60 lb cylinders.

Test Plugs

ALTEMP



54-TP-3P
Illustrated

Test Plug

Part #	Description
54-TP-3P	Test plug.

Recovery Tank Adapters

ALTEMP



54-1095
High Side

ALTEMP

46-AD12
Low Side

cps

02-C31614
Flare Fitting Adapter
Illustrated

J/B

R134a Tank Adapters

Part #	Description
54-1095	1/2 Acme female x high side adapter.
46-AD12	1/2 Acme female x low side adapter.

Screw-on adapter converts 1/2" acme thread to auto style coupling nipple

R12 Tank Adapter

Part #	Description	Package
02-C31614*	1/4" female SAE flare union w/copper gasket for recovery and virgin tanks. Allows for use with Kwick Couplers.	5/pk

Torque flare nuts 8 to 10/lbs
*Core pre-torqued at 2.9 to 2.95 "/lbs

Heater Blankets

J/B

Refrigerant Tank Heater Blankets

Heater blanket speeds up recharge time and assures total discharge from tank. Fits 30 lb. and 50 lb. tanks. Built-in thermostat automatically maintains a maximum temperature of 55°C (125°F) and maximum pressure of 185 psi (R134a) and 170 psi (R12). Quick working 300 watt heater elements.

Refrigerant Tank Heater Blankets

- Excellent compliment to any refrigerant scale.

Part #	Description
05-HB20110	110V tank heater blanket.
05-HB20220	220V tank heater blanket.



05-HB20110
Illustrated

Recovery Tanks

Refrigerant Recovery Tanks

- All tanks meet ARI guidelines and government specifications for CFC, HCFC & HFC recovered refrigerants, including R11, R12, R22, R500, R502, R134a and R414b.
- Tough yellow & grey (blue for Automotive R134a) polyurethane finish protects against rust and corrosion.
- Atmospherically controlled heat treat oven assures clean cylinder interior.
- Rugged steel withstands the rigours of grueling work-a-day use.
- All tanks meet Transport Canada specifications.

Recovery Tanks

Part #	Description
54-RC30	30 lb tank equipped with liquid/ vapour Y valve.
54-RC30F	54-RC30 with 54-EN1285 float switch installed.
54-RC60	60 lb tank equipped with liquid/vapour Y valve.
54-RC60F	54-RC60 with 54-EN1285 float switch installed.
54-RC100	100 lb tank equipped with liquid/ vapour Y valve.
54-RC100F	54-RC100 with 54-EN1285 float switch installed.
54-RC200	200 lb tank with separate liquid & vapour valves and safety relief.
54-RC200F	54-RC200 with 54-EN1285 float switch installed.
54-RC1000	1000 lb tank with separate liquid & vapour valves and safety relief. Has 3/4" plugged opening in bottom of tank. Also has 4 way entry for forklift rails.

350 psi working pressure (54-RC30, RC60 & RC100 series).
260 psi working pressure (54-RC200 & RC1000 series).

R410A Recovery Tanks

Part #	Description
54-RC410	50 lb, 400 psi R410A tank with 1/4" SAE fittings.
54-RC410F	50 lb, 400 psi R410A tank with 1/4" SAE fittings & float switch.
54-RC410A	123 lb, 400 psi R410A tank with 1/4" SAE fittings.

400 psi working pressure.

Automotive R134a Cylinders

Part #	Description
54-RC3134A	30 lb R134a tank equipped with liquid/ vapour Y valve.
54-RC3134AF	54-RC3134A with 54-EN1285 float switch installed.

350 psi working pressure.



Charging Scales - Digital

CPS®

Compute-A-Charge® Compact High Capacity Charging Scale

High capacity 100kg (220lb) Compute-A-Charge refrigerant charging/ recovery scale, calibrated to strict NIST standards. Fully enclosed and removable metal scale platform enables use of product in or out of the protective case. Large, highly visible 38mm x 51mm (1½" x 2") high resolution LCD readout displays either Imperial or Metric measurements in 10g (0.25oz) increments. The ergonomic hand held remote incorporates a 183cm (6') coil cord, a hanging hook and is backed with a magnet for attaching to metal surfaces. Full mechanical and visual overload protection. Operates 60 continuous hours on two 9V alkaline batteries.



46-CC220
Illustrated

**220 lbs.
Max**

220 lb Charging Scale

Part #	Features	Specifications
46-CC220	<ul style="list-style-type: none"> Capacity: 100kg (220lb). Accuracy: .015% of reading. Resolution: ±10g (±¼oz) Platform (removable): 22.3cm x 22.3cm (8¾" x 8¾") Programmable: No 	<ul style="list-style-type: none"> Weight: 2.55kg (5.6lb). Power: (1) 9V batteries included. Readout: Imperial/ Metric Operating temp: -10°C to 50°C (-4°F to 156°F)

Compute-A-Charge® Programmable Charging Scale

Programmable high capacity 100kg (220lb) Compute-A-Charge refrigerant charging/ recovery scale, calibrated to strict NIST standards. Operating exclusively on two 9V alkaline batteries, the 46-CC800A is the only fully automatic refrigerant scale that does not require line voltage and is R410A compatible. Using the keypad controls, simply program the 46-CC800A to transfer or recover a pre-set amount of refrigerant, hit go and walk away. The scale's advanced microcomputer circuitry will constantly monitor the progress of the job, shutting off the refrigerant flow when the pre-set amount is obtained and audibly alerts the user. A large, highly visible high resolution LCD readout displays either Imperial or Metric measurements in 10g (0.25oz) increments. The ergonomic hand held remote incorporates a 183cm (6') coil cord, a hanging hook and is backed with a magnet for attaching to metal surfaces. Full mechanical and visual overload protection. Operates 30 continuous hours on two 9V alkaline batteries.



46-CC800A
Illustrated

**220 lbs.
Max**

220 lb Charging Scale - Programmable

Part #	Features	Specifications
46-CC800A	<ul style="list-style-type: none"> Capacity: 100kg (220lb). Accuracy: .015% of reading. Resolution: ±10g (±¼oz) Platform (stationary): 22.3cm x 22.3cm (8¾" x 8¾") Programmable: Yes 	<ul style="list-style-type: none"> Weight: 8.5kg (3.9lb). Power: (2) 9V batteries included. Readout: Imperial/ Metric Operating temp: -10°C to 50°C (-4°F to 156°F)



46-CC800A
Application

R410A Compatible

Charging Scales - Digital

CPS®



46-CCLT
Illustrated

**110 lbs.
Max**

Certified Legal For Trade Charging Scale

Certified by NMI to meet or exceed OMIL standards. Adjustable feet and bubble level ensure accurate weight measurements. The ergonomic hand held remote incorporates a 183cm (6') coil cord, a hanging hook and is backed with a magnet for attaching to metal surfaces. Full mechanical and visual overload protection. Operates 60 continuous hours on two 9V alkaline batteries.

110 lb Charging Scale

Part #	Features	Specifications
46-CCLT	<ul style="list-style-type: none"> Capacity: 50kg. Accuracy: Class III. Resolution: 20g. Platform (removable): 22.3cm x 22.3cm (8¾" x 8¾") Programmable: No 	<ul style="list-style-type: none"> Weight: 2.55kg (5.6lb). Power: (1) 9V batteries included. Readout: Metric only Operating temp: -10°C to 50°C (-4°F to 156°F)

Refrigerant Scale - Digital



**Removable
Platform**



04-TSR10
Illustrated

Accuracy
±10g (±1/16 oz) or ±1% of total weight..

Electronic Refrigerant Scale

The 05-DS10000 electronic refrigerant scale is constructed of rugged die cast aluminum. The heavy-duty 9" x 9" platform and digital display module can be easily removed from the ABS case and carried to any convenient location.

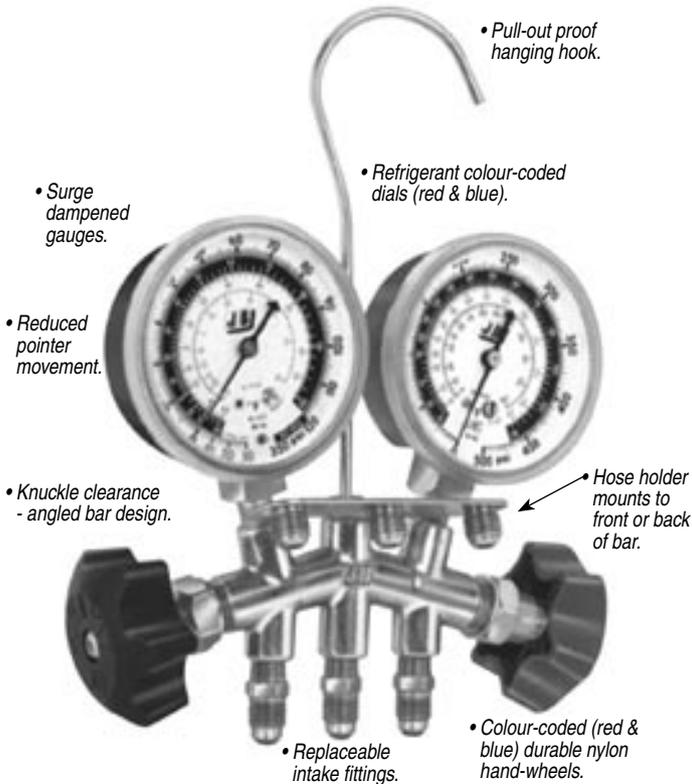
Features

- 80kg (176 lb) capacity.
- Actual weight at all corners of scale.
- Saves last weight in memory.
- Heavy-duty load cell has a built-in overload protector.
- Rugged die cast, aluminum construction.
- Reliable membrane keypad switches.
- Built-in low battery warning.
- Extra large LCD display (lbs, oz, kg).
- Reading may be zeroed out at any time.
- 15 minute auto power off conserves battery life.

Electronic Refrigerant Scale

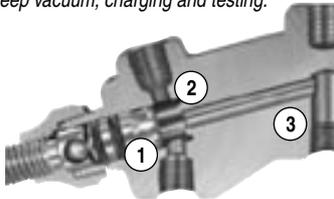
Part #	Description
05-DS10000	Electronic scale with carrying case.

1/4" Standard Bar - Charging & Testing Manifolds



Features

• First introduced in 1967, the "heart" of the J/B manifold has never been back to the drawing board. The original free floating o-ring sealing system has been the standard world over for deep vacuum, charging and testing.



1. Stem seats retract completely to provide full flow.
2. Zero leakage high pressure raised seat for positive sealing.
3. Double size flow path throughout length of centre port.

LIFETIME WARRANTY ON MANIFOLD BAR

Manifold & No Hose Sets

R12, R22 & R502	Description
04-M2-8	Manifold
04-M2-12	Bar Only - no gauges.

Manifold & Standard Hose Sets

R12, R22 & R502	Description
04-M2-36	Manifold & 3' standard hose set.
04-M2-6	Manifold with 3' standard red, 3' blue & 5' yellow hose.
04-M2-5	Manifold & 5' standard hose set.

Available Hose Sets

Come with J/B manifolds where specified.

Standard 1/4" Hose Sets

- 750 psi working pressure; 3000 psi burst.
- Blowout resistant depressor and barrel gasket.
- Depressor set to ARI access valve core standards.

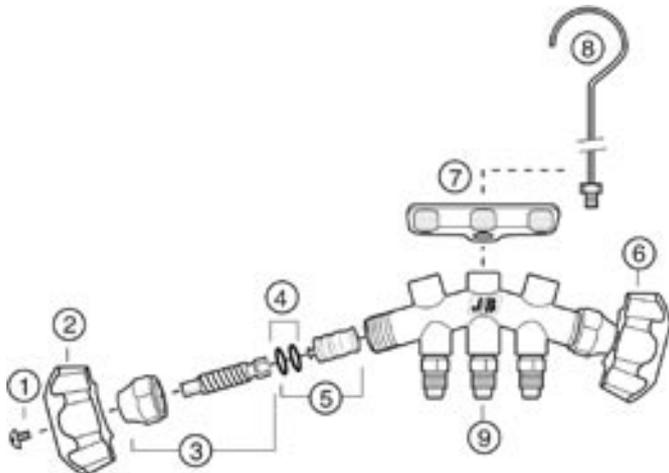
Enviro-Safe 1/4" Hose Sets

- 800 psi working pressure; 4000 psi burst.
- High pressure colour coded hose sets for all refrigerants.
- Three fitting styles available in 02-M3, M4, M5, M7, M8 & M9 series manifolds. Environmental hose is less permeating than standard.

Manifold Replacement Parts

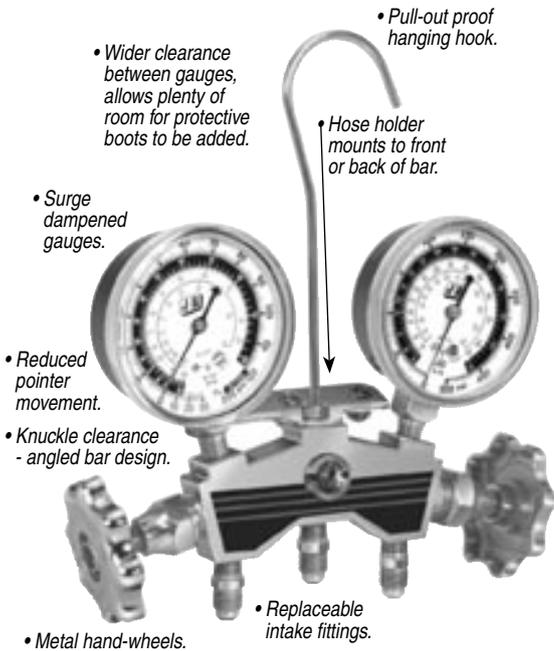
• 04-M2 Series

No.	Part #	Description
1	04-MR503	Hand-wheel screws (2).
2	04-MR501B	Blue hand-wheel.
3	04-MR516	Stem assembly & nut.
4	04-MR509	O-rings (2).
5	04-MR505	Piston w/seat & o-rings.
6	04-MR501R	Red hand-wheel.
7	04-M2-300	Hose holder.
8	04-M2-102N	Hanging hook.
9	02-U1-4B	Intake fitting.
-	04-MR519K	Valve Repair Kit - Includes: 04-MR516, 04-MR505, o-rings & screws.



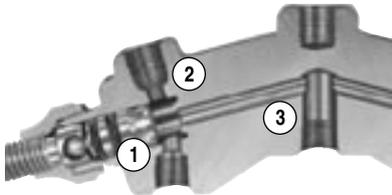


1/4" Forged Bar - Charging & Testing Manifolds

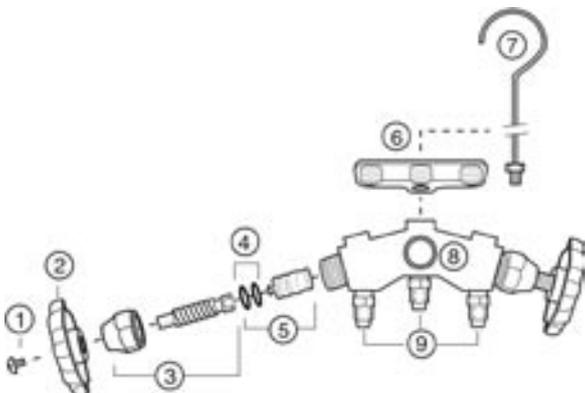


Features

- Manifold offers a heavier, more durable, forged body than the standard bar. Ideal for high pressure refrigerants.



- Stem seats retract completely to provide full flow.
- Zero leakage high pressure raised seat for positive sealing.
- Double size flow path throughout length of centre port.



Manifold & No Hose Sets

R12, R22 & R502	R410A	R134a, R404A & R507	Description
04-M8-8	04-M7-8	04-M5-8	Manifold.
04-M8-8SG	-	-	Manifold - sight glass.
04-M9-8SG	-	-	Manifold - sight glass & liquid filled gauges.

Manifold & Enviro-Safe Hose Sets

R12, R22 & R502	R410A	R134a, R404A & R507	Description
-	-	04-M5-36	Manifold & 3' hose set.
04-M8-5	04-M7-5	04-M5-5	Manifold & 5' hose set.
04-M8-6	04-M7-6	04-M5-6	Manifold with 3' red, 3' blue & 5' yellow hose.
04-M8-6SG	-	04-M5-6SG	Manifold with sight glass, 3' red, 3' blue & 5' yellow hose.
04-M9-6SG	-	-	Manifold, sight glass, liquid gauges, 3' red, 3' blue & 5' yellow hose.

Manifold & Secure-Seal Fitting Hose Sets

R12, R22 & R502	R410A	R134a, R404A & R507	Description
04-M8-5S	-	04-M5-5S	Manifold & 5' secure-seal.

Manifold & Ball Valve Shut-Off Hose Sets

R12, R22 & R502	R410A	R134a, R404A & R507	Description
04-M8-5GY5	04-M7-5GY5	04-M5-5GY5	Manifold & 5' ball valve shut-off hoses.

R410A manifolds with 5/16" fittings available upon request.

Manifold Replacement Parts

- 04-M5, M6, M7, M8 & M9 Series

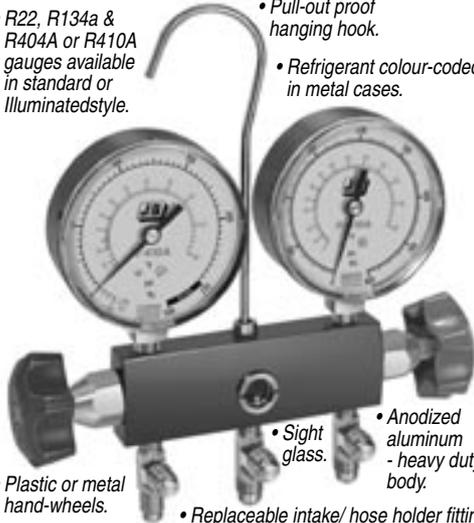
No.	Part #	Description
1	04-MR503	Hand-wheel screws (2).
2	04-MR508	Metal hand-wheel.
3	04-MR516	Stem assembly & nut.
4	04-MR509 02-P90019	O-rings (2). R134a o-rings (5).
5	04-MR505 04-MRA505	Piston w/seat & o-rings. R134a piston w/seat & o-rings.
6	04-M2-300 04-MR521	Hose holder. Acme hose holder.
7	04-M2-102N	Hanging hook.
8	04-MR520	Sight glass.
9	02-U1-4B 02-AF13450	Intake fitting. Acme Intake fitting.
-	04-MR519K	Valve Repair Kit Includes: 04-MR516, 04-MR505, o-rings & screws.

1/4" Aluminum Bar Charging & Testing Manifolds



- R22, R134a & R404A or R410A gauges available in standard or illuminated style.

- Pull-out proof hanging hook.
- Refrigerant colour-coded dials in metal cases.



- Plastic or metal hand-wheels.

- Anodized aluminum - heavy duty body.
- Sight glass.
- Replaceable intake/ hose holder fittings.

04-M3-8-410A
Illustrated

1/4" Aluminum Bar Manifolds - 80mm Gauges Aluminum Handwheels

5' Environmental Hose Set Description	R22, R134a & R404A		R410A
	Standard Gauges	Illuminated Gauges	Standard Gauges
No hose set.	04-M3-8	04-M3-8I	04-M3-8-410A
1/4" CLE (Gasket) Enviro hose set.	04-M3-5	04-M3-5I	04-M3-5-410A
1/4" CLS (Secure Seal) Enviro hose set.	04-M3-5S	04-M3-5SI	-
1/4" CLB (Ball Valve) Enviro hose set.	04-M3-5BV	-	-

Plastic Handwheels

5' Environmental Hose Set Description	R22, R134a & R404A		R410A
	Standard Gauges	Illuminated Gauges	Standard Gauges
No hose set.	04-M3-8P	04-M3-8IP	04-M3-8P-410A
1/4" CLE (Gasket) Enviro hose set.	04-M3-5P	04-M3-5IP	04-M3-5P-410A

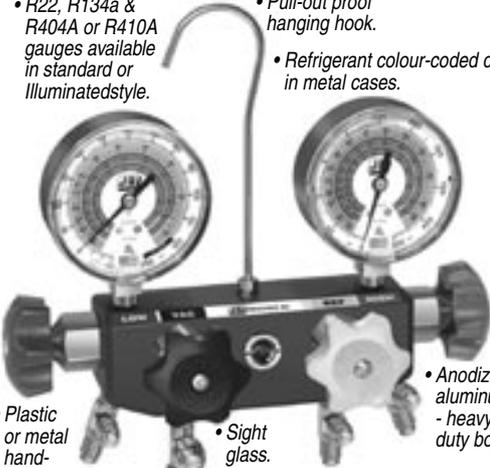
4 Valve - Aluminum Bar Charging & Testing Manifolds



Evacuate, Charge Or Test System Without Disconnecting Hoses!

- R22, R134a & R404A or R410A gauges available in standard or illuminated style.

- Pull-out proof hanging hook.
- Refrigerant colour-coded dials in metal cases.



- Plastic or metal hand-wheels.

- Anodized aluminum - heavy duty body.
- Sight glass.
- Replaceable intake/ hose holder fittings.

04-M4-8P
Illustrated

4 Valve Piston Manifolds - 80mm Gauges Aluminum Handwheels

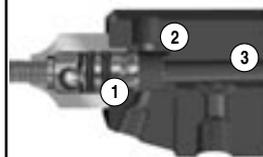
5' Environmental Hose Set Description	R22, R134a & R404A		R410A
	Standard Gauges	Illuminated Gauges	Standard Gauges
No hose set.	04-M4-8	04-M4-8I	04-M4-8-410A
1/4" CLE (gasket) Enviro hose set & 3/8" black hose.	04-M4-5	04-M4-5I	04-M4-5-410A

Plastic Handwheels

5' Environmental Hose Set Description	R22, R134a & R404A		R410A
	Standard Gauges	Illuminated Gauges	Standard Gauges
No hose set.	04-M4-8P	04-M4-8IP	04-M4-8P-410A
1/4" CLE (gasket) Enviro hose set & 3/8" black hose.	04-M4-5P	04-M4-5IP	04-M4-5P-410A

Features

1. All stem seats retract completely to give full flow.
2. Zero leakage high pressure raised seats for positive sealing.
3. Double size flow path throughout length of center port.



Available Gauges

Come with J/B manifolds where specified.

Standard

Glow In The Dark

R410A



Standard Gauge

Illuminated Gauge

R410A Gauge

Available Hose Sets

Come with J/B manifolds where specified.



CLE Standard Fitting



CLBV Ball Valve Shut-Off



CLS Secure Seal Fitting

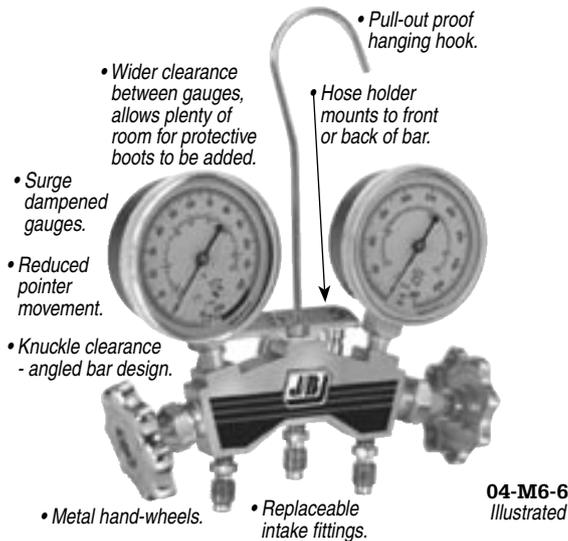


CLV6 O-Ring Seal

Enviro-Safe Hose Sets

- M3 series manifolds are available with CLE, CLS or CLBV Enviro-Safe 1/4" colour coded high pressure hose sets.
- M4 series manifolds are available with CLE Enviro-Safe 1/4" colour coded high pressure hose sets and a 3/8" black CLB6 Environmental hose with o-ring seal.
- CLE, CLS & CLB: 800 psi working pressure; 4000 psi burst.
- CLV6 Series: 500 psi working pressure; 2500 psi burst.

Automotive - Charging & Testing Manifolds



1/2" ACME R134a Manifolds

- Meets SAE J2196 requirement.

Part #	Description
04-M6-8	Manifold without hose set.
04-M6-5	Manifold, 5' hose set & couplers.
04-M6-3	Manifold, 5' hose set, couplers & carrying case.

Automotive Manifold Hose Set

Comes with J/B manifolds where specified.



Enviro-Safe Hose Sets

- 500 psi working pressure; 2500 psi burst.
- 5' hose set includes couplers & ball valve shut-off.

1/2" ACME Thread Half Union



1/2" ACME Thread Half Union

Part #	Description
02-AF13450	1/8" NPTF.
02-AF13451	1/4" NPTF.
02-AF13452	3/8" NPTF.
02-AF13455	1/4" female SAE.
02-AF13457	3/8" female SAE.

R134a Automotive Quick Couplers

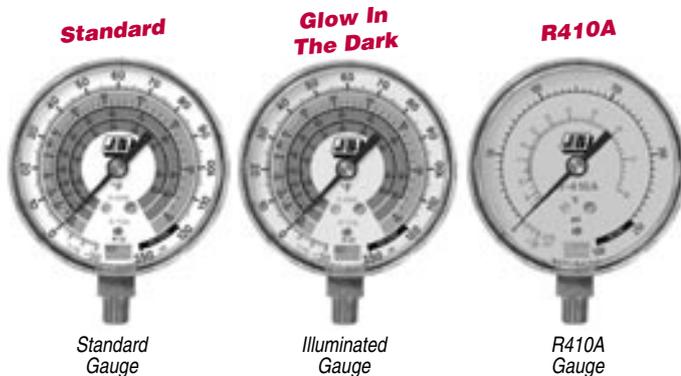


134a Automotive Quick Couplers

- Retrofit existing SAE flare fitting for 134a auto service.

Part #	Description
02-QCS4A-134	1/4" QC x 1/2" male Acme thread
02-13445-134	1/2" Acme QC x 1/4" male flare

Manifold Gauges - 80mm



For safety reasons, gauges and hoses not specified for R410A can damage product and cause serious injury.

R22, R134a & R404A 80mm Gauges (°F)

- 30" vacuum to 120 psi, retard to 350 psi.

Part #	Description
04-M2-850	Blue - compound standard gauge.
04-M2-851	Blue - compound illuminated gauge.
04-M2-855	Red - pressure standard gauge.
04-M2-856	Red - pressure illuminated gauge.

R410A 80mm Gauges (°F)

- 30" vacuum to 250 psi, retard to 500 psi.

Part #	Description
04-M2-810	Blue - compound R410A gauge.
04-M2-815	Red - pressure R410A gauge.

Manifold Gauges



All J/B Gauges Feature

- Full Size Brass Movement.
- Colour Coded refrigerant Scales.
- Pointer Flutter & Surge Dampened.
- Recall Screw.
- Screw-on High Impact Clear View Lexan Lens.
- 1/8" MPT Connection

For safety reasons, gauges and hoses not specified for R410A can damage product and cause serious injury.



04-M2-250
Illustrated



04-M2-500
Illustrated



04-M2-500LF
Chrome Plating
Liquid Filled



04-29260
Illustrated



04-29263
Illustrated



04-M2-410
Illustrated



04-M2-415
Illustrated



04-M2-350
Illustrated



04-M2-355
Illustrated



04-M2-420
Illustrated



04-M2-425
Illustrated

R12, R22 & R502 Compound Gauges (°F)

- 30" vacuum to 120 psi, retard to 350 psi.

Part #	Description
04-M2-250	Blue - plastic case.
04-M2-250B	Brass - brass plated metal case.
04-M2-250C	Chrome - chrome plated metal case.
04-M2-250LF	Blue - plastic case, liquid filled.

R12, R22 & R502 Pressure Gauges (°F)

- Pressure from 0 to 500 psi.

Part #	Description
04-M2-500	Red - plastic case.
04-M2-500B	Brass - brass plated metal case.
04-M2-500C	Chrome - chrome plated metal case.
04-M2-500LF	Red - plastic case, liquid filled.

R12, R22 & R502 Metric Gauges (°C)

- 30" vacuum to 120 psi, retard to 350 psi.
- Pressure from 0 to 500 psi.

Part #	Description
04-29260	KPA/PSI, °C compound gauge.
04-29263	KPA/PSI, °C pressure gauge

R410A Gauges

- Low side 30" vacuum to 250 psi, retard to 500 psi.
- High side 0 to 800 psi.
- Pink tint gauge face.

Part #	Description
04-M2-410	Compound gauge.
04-M2-415	Pressure gauge.

R134a Gauges - Automotive

- Pressure from 0 to 500 psi.
- 30" vacuum to 120 psi, retard to 350 psi.
- Blue tint gauge face.

Part #	Description
04-M2-350	Compound gauge.
04-M2-355	Pressure gauge.

R134a, R404A & R-507 Gauges

- Pressure from 0 to 500 psi.
- 30" vacuum to 120 psi, retard to 350 psi.
- Blue tint gauge face.

Part #	Description
04-M2-420	Compound gauge (°F).
04-M2-425	Pressure gauge (°F).
04-29290	Bar/PSI compound gauge (°C).
04-29295	Bar/PSI pressure gauge (°C).

Identical top quality gauges used on J/B manifold sets. Gauges are sensitive instruments and should not be subjected to pressures beyond scale.

Manifold Accessories



04-M2-106
Illustrated



04-MR-517
Illustrated



04-MR-591B
Illustrated

04-MR-591R
Illustrated



04-M29116
Illustrated



04-M29122
Illustrated

Gauge Mounting Brackets

Brass bracket for wall or panel mounting gauges, etc.

Part #	Description
04-M2-106	1/8 FPT.
04-M2-108	1/4" FPT.

Replacement Gauge Lens

Plastic screw-on lens for 2½" gauges.

Part #	Description
04-MR-517	Plastic gauge lens.
04-MR-518	Metal gauge lens.

Replacement 80mm Gauge Lens

Plastic screw-on len for 80mm gauges.

Part #	Description
04-MR-533	Plastic gauge lens.

Protective Gauge Boots

Part #	Description
04-MR591	Red boot.
04-MR592	Blue boot.

Protective Manifold Case

Part #	Description
04-M2-103	Plastic case fits all J/B manifolds.

Manifold Conversion Adapters

Converts 1/4" 2-valve manifold to convenient 4-valve operation through centre port.

Part #	Description
04-M29116	Straight swivel connection - access style valve.
04-M29-120	Replaces centre port. Provides separate charge and vacuum valves - 1/8" MPT style.
04-M29-122	Provides separate charge and vacuum valves - 1/4" quick coupler.

One Valve Diaphragm Manifolds

CPS®

1-Valve Diaphragm Aluminum Manifolds - 1/4" SAE Fittings

PRO-SET One Valve Manifolds

- Anodized aluminum block body.
- One full turn open or close valve.
- Super strong 100% virgin Teflon diaphragms.
- Excellent vacuum characteristics.
- No-flutter gauge design.
- Extra large knobs for easy grip.

Manifold - Low Side

Part #	46-M1CL	46-M1DL
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Manifold - High Side

Part #	46-M1CH	46-M1DH
--------	---------	---------

Refrigerant	R12, R22, R502.	R134a, R404A, R507.
Pressure (Units)	PSI (°F)	PSI (°F)
Gauge Size	66mm (2.5")	66mm (2.5")
High Gauge Part #	46-RGCH	46-RGDH
Low Gauge Part #	46-RGCL	46-RGDL



Two Valve Diaphragm Manifolds

CPS®

2-Valve Diaphragm Aluminum Manifolds - 1/4" SAE Fittings

PRO-SET Two Valve Manifolds

- Anodized aluminum block body.
- R410A body colour coded pink.
- One full turn open or close valve.
- Oversized sight glass for easy viewing.
- Excellent vacuum characteristics.
- No-flutter gauge design.
- Extra large knobs for easy grip.

Manifold

Part #	46-M2C	46-M2M*	46-M3R*
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Manifold & (3) - 90cm (3') Hoses

Part #	46-M2CS3	46-M2MS3*	46-M3RP5*
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Manifold & (3) - 150cm (5') Hoses

Part #	46-M2CS5	46-M2MS5*	46-M3R5E*
--------	----------	-----------	-----------

Refrigerant	R12, R22, R502.	R134a, R404A, R507.	R410A.
Pressure (Units)	PSI (°F)	PSI (°F)	PSI/ kPA (°C & °F)
Gauge Size	66mm (2.5")	80mm (3.5")*	80mm (3.5")
High Gauge Part #	46-RGCH	46-RGMH*	46-RGRH*
Low Gauge Part #	46-RGCL	46-RGML*	46-RGRL*

* Designates Oil Filled Gauges



R410A Manifolds

Manifold & (3) - 150cm (5') Hoses

Manifold & (3) 150cm (5') Hoses (Ball Valve On End)

Two Valve Piston Manifolds - Aluminum

cps®



BlackMax™

46-MBC
Illustrated

Two-Valve Piston Aluminum Manifolds - ¼" SAE Fittings

Two Valve BlackMax™ Manifolds

- High gloss anodized aluminum block.
- Exclusive Triple Seal™ valve system.
- Valve stems retract fully for maximum flow.
- Back seating o-ring seals valve nut when fully open.
- No-flutter gauge design with rugged metal housing.
- Additional Schrader valve "T" port.
- Extra large knobs for easy grip.

Manifold

Part #	46-MBC	46-MBD
--------	--------	--------

R410A Manifolds

46-MBH	46-MBB
--------	--------

Manifold & (3) - 90cm (3') Hoses

Part #	46-MBCS3	46-MBDP3
--------	----------	----------

Manifold & (3) - 150cm (5') Hoses

46-MBHP5	46-MBBP5
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Manifold & (3) - 150cm (5') Hoses

Part #	46-MBCS5	46-MBDP5
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Manifold & (3) 150cm (5') Hoses (Ball Valve On End)

46-MBHP5E	46-MBBP5E
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Refrigerant	R12, R22, R502.	R134a, R404A, R507.	R410A, R22, R404A	R410A.
Pressure (Units)	PSI (°F)	PSI (°F)	PSI (°F)	PSI/ kPA (°C & °F)
Gauge Size	68mm (2.5")	68mm (2.5")	68mm (2.5")	68mm (2.5")
High Gauge #	46-RGCH	46-RGDH	46-RGHH	46-RGBH
Low Gauge #	46-RGCL	46-RGDL	46-RGHL	46-RGBL

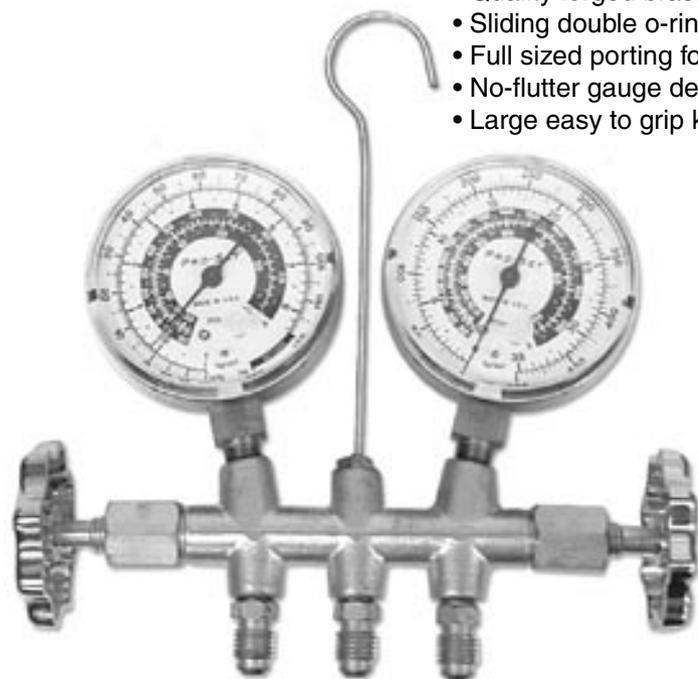
Two Valve Piston Manifolds - Brass

cps®

2-Valve Piston Brass Manifolds - ¼" SAE Fittings

PRO-SET Two Valve Manifolds

- Quality forged brass body.
- Sliding double o-ring piston valve system.
- Full sized porting for maximum flow.
- No-flutter gauge design with rugged metal housing.
- Large easy to grip knobs.



46-M6C
Illustrated

Manifold

Part #	46-M6C	46-M6D
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Manifold & (3) - 90cm (3') Hoses

Part #	46-M6CS3	46-M6DP3
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Manifold & (3) - 150cm (5') Hoses

Part #	46-M6CS5	46-M6DP5
--------	----------	----------

Refrigerant	R12, R22, R502.	R134a, R404A, R507.
Pressure (Units)	PSI (°F)	PSI (°F)
Gauge Size	68mm (2.5")	68mm (2.5")
High Gauge Part #	46-RGCH	46-RGDH
Low Gauge Part #	46-RGCL	46-RGDL

Four Valve Diaphragm Manifolds

CPS®

4-Valve Diaphragm Aluminum Manifolds - 1/4" SAE Fittings

PRO-SET Four Valve Manifolds

- Anodized aluminum block body.
- One full turn open or close valve.
- Oversized sight glass for easy viewing.
- Excellent vacuum characteristics.
- No-flutter gauge design.
- Extra large knobs for easy grip.
- Available with 80mm (3.5") liquid filled gauges.



46-M4M
Illustrated

R410A Manifolds

Manifold

Part #	46-M4C	46-M4D	46-M4M*	46-M4R*
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Manifold & 3 - 150cm (5') Hoses

Part #	46-M4CS5	46-M4DP5	46-M4MS5*	46-M4RP5*
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Manifold & (3) - 150cm (5') Hoses (Ball Valve On End)

Part #	46-M4CS5E	46-M4DP5E	46-M4MS5E*	46-M4R5E*
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Refrigerant	R12, R22, R502.	R134a, R404A, R507.	R12, R22, R502.	R410A.
Pressure (Units)	PSI (°F)	PSI (°F)	PSI (°F)	PSI/ kPA (°C & °F)
Gauge Size	68mm (2.5")	68mm (2.5")	80mm (3.5")*	80mm (3.5")
High Gauge Part #	46-RGCH	46-RGDH	46-RGMH*	46-RGRH*
Low Gauge Part #	46-RGCL	46-RGDL	46-RGML*	46-RGRL*

* Designates Oil Filled Gauges

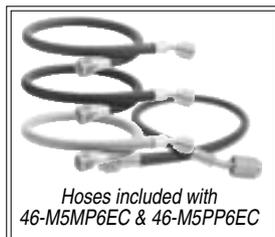
Five Valve Diaphragm Manifolds

CPS®

5-Valve Diaphragm Aluminum Manifolds - 1/4" SAE Fittings

PRO-SET Five Valve Manifolds

- Anodized aluminum block body.
- One full turn open or close valve.
- Oversized sight glass for easy viewing.
- Excellent vacuum characteristics.
- Includes 46-VG100A digital vacuum gauge.
- No-flutter gauge design.
- Extra large knobs for easy grip.
- Carrying case included with all 5-valve manifolds.



Hoses included with
46-M5MP6EC & 46-M5PP6EC



46-MXC case included with all
5-Valve manifolds.

Manifold

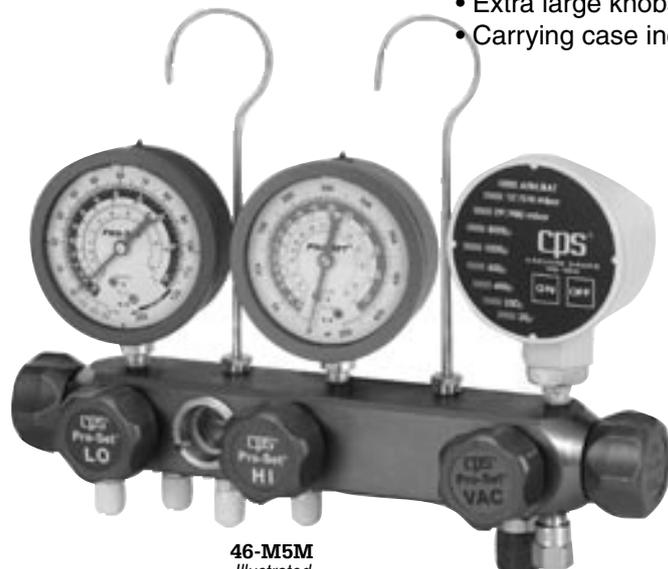
Part #	46-M5M*	46-M5P*
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Manifold (3) - 150cm (5') Hoses & (1) 3/8" Vacuum Hose

Part #	46-M5MP5EC*	46-M5PP5EC*
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Refrigerant	R12, R22, R502.	R22, R134a, R404A.
Pressure (Units)	PSI (°F)	PSI/ kPA (°C)
Gauge Size	80mm (3.5")*	80mm (3.5")*
High Gauge Part #	46-RGMH*	46-RGPH*
Low Gauge Part #	46-RGML*	46-RGPL*

* Designates Oil Filled Gauges



46-M5M
Illustrated

Replacement Manifold Gauges



46-RGCL
Illustrated



46-RGTH & 46-RGTL
Illustrated



46-RGRL & 46-RGRH
Illustrated



PRO-SET® 68mm (2½") Gauges With Metal Casting

- No-flutter gauge design.
- Easy to read colour coded dials.
- Durable metal casing.
- Front calibration access port.
- High impact pop-in lexan lens (46-RGX68L).
- 1/8" NPT brass connection

2½" Gauges

High Gauge Part #	Low Gauge Part #	Refrigerant	Pressure (Units)
46-RGBH	46-RGBL	R410A.	PSI/ kPa (°C & °F)
46-RGCH	46-RGCL	R12, R22, R502.	PSI (°F)
46-RGDH	46-RGDL	R134a, R404A, R507.	PSI (°F)
46-RGHH	46-RGHL	R22, R410A, R404A.	PSI (°F)
46-RGIH	46-RGIL	R134a	PSI/ kg/ cm ² (°C & °F)
46-RGTH	46-RGTL	R22, R134a, R404A.	PSI/ kPa (°C)
46-RGYH	46-RGYL	R407C, R22.	PSI/ kPa (°C)
46-RGZH	46-RGZL	R12, R22, R502.	PSI/ kg/ cm ² (°C & °F)

PRO-SET® 80mm (3½") Gauges Liquid Filled

- Glycerine-filled for maximum accuracy.
- Extra large easy to read scales.
- No-flutter gauge design.
- Rear calibration access port.
- 1/8" NPT brass connection

3½" Liquid Filled Gauges

High Gauge Part #	Low Gauge Part #	Refrigerant	Pressure (Units)
46-RGMH	46-RGML	R12, R22, R502.	PSI (°F)
46-RGRH	46-RGRL	R410A.	PSI/ kPa (°C & °F)
46-RGPH	46-RGPL	R22, R134a, R404A.	PSI/ kPa (°C & °F)

Manifold Replacement Parts



Manifold Replacement Parts BlackMax™ Piston Manifolds

Part #	Description
46-MXPV	Piston repair kit.
46-MXPVO	Piston valve seals repair kit (services 2 valves).
46-MXMH	Hook assembly.
46-MXPK	1 Valve handle with screw.
46-386	(T) ¼" SAE fitting.
46-388	(T) ½" Acme fitting.

Manifold Replacement Parts PRO-SET® Diaphragm Manifolds

Part #	Description
46-MXC	Manifold plastic carrying case
46-MXK	1 valve handle & 4 labels (HI, LOW, VAC, REF)
46-MXMH	Hook assembly
46-MXP	Replacement o-ring/ piston for brass manifold
46-M2XRK	Diaphragm valve repair kit (2 valves)
46-M4XRK	Diaphragm valve repair kit (4 valves)
46-M2XHA	2-way hose anchor assembly
46-M4XHA	4-way hose anchor assembly
46-386	(T) ¼" SAE fitting.
46-388	(T) ½" Acme fitting.
46-147	(straight) ¼" SAE fitting.
46-109	(straight) ½" Acme fitting.

Charging Hoses - Standard

CPS[®]

PRO-SET[®] Standard Charging Hoses

- All-weather flexibility and strength.
- 750 psi working pressure (3000 psi burst).
- Blow-off grooves channel refrigerant to prevent spray back.
- Fully adjustable valve core depressors.
- Available with Micro Seal[™] or ball valve fittings.
- Extra deep knurling on nuts for easy grip.
- ¼" SAE fittings with 45° bend on one end.
- Leak-proof eight-sided crimp.



46-HS3
Standard Hoses

Standard Hoses

Length	Yellow	Blue	Red	3-Pack
90cm (3')	46-HS3Y	46-HS3B	46-HS3R	46-HS3
120cm (4')	46-HS4Y	46-HS4B	46-HS4R	46-HS4
150cm (5')	46-HS5Y	46-HS5B	46-HS5R	46-HS5
180cm (6')	46-HS6Y	46-HS6B	46-HS6R	46-HS6
240cm (8')	46-HS8Y	46-HS8B	46-HS8R	46-HS8
300cm (10')	46-HS10Y	46-HS10B	46-HS10R	46-HS10

46-HXG Replacement Gaskets • 46-HXD Replacement Depressor

Standard Hoses With 45° Ball Valve On One End

Unique 45° ball valve at end.

Length	Yellow	Blue	Red	3-Pack
90cm (3')	46-HS3YE	46-HS3BE	46-HS3RE	46-HS3E
150cm (5')	46-HS5YE	46-HS5BE	46-HS5RE	46-HS5E
180cm (6')	46-HS6YE	46-HS6BE	46-HS6RE	46-HS6E
240cm (8')	46-HS8YE	46-HS8BE	46-HS8RE	46-HS8E

46-HXG Replacement Gaskets • 46-HXD Replacement Depressor

Standard Hoses With Micro Seal[™] Valve On One End

Micro Seal[™] fittings automatically seal & prevent refrigerant loss when disconnected.

Length	Yellow	Blue	Red	3-Pack
90cm (3')	46-HS3YA	46-HS3BA	46-HS3RA	46-HS3A
150cm (5')	46-HS5YA	46-HS5BA	46-HS5RA	46-HS5A
180cm (6')	46-HS6YA	46-HS6BA	46-HS6RA	46-HS6A
240cm (8')	46-HS8YA	46-HS8BA	46-HS8RA	46-HS8A

46-HXGA Replacement Gaskets

Standard In-Line Ball Valve Hoses

Ball valve crimped directly in-line to reduce refrigerant loss.

Length	Yellow	Blue	Red	3-Pack
90cm (3')	46-HS3YL	46-HS3BL	46-HS3RL	46-HS3L
150cm (5')	46-HS5YL	46-HS5BL	46-HS5RL	46-HS5L
180cm (6')	46-HS6YL	46-HS6BL	46-HS6RL	46-HS6L
240cm (8')	46-HS8YL	46-HS8BL	46-HS8RL	46-HS8L

46-HXG Replacement Gaskets • 46-HXD Replacement Depressor



46-HS3YE
Illustrated



46-HS3BA
Illustrated



46-HS3RL
Illustrated

Charging Hoses - Premium

**R410A
Compatible**

**Superior hose
construction with
"Double Barrier
Protection"**

PRO-SET® Premium Charging Hoses

- All-weather flexibility and strength.
- 800 psi working pressure (4000 psi burst).
- Blow-off grooves channel refrigerant to prevent spray back.
- Fully adjustable valve core depressors.
- Available with Micro Seal™ or ball valve fittings.
- Designed for all refrigerants - R410A compatible.
- Environment friendly nylon permeation barrier.
- Compatible with CFC, HCFC and HFC refrigerants & blends.
- ¼" SAE fittings with 45° bend on one end.
- Leak-proof eight-sided crimp.



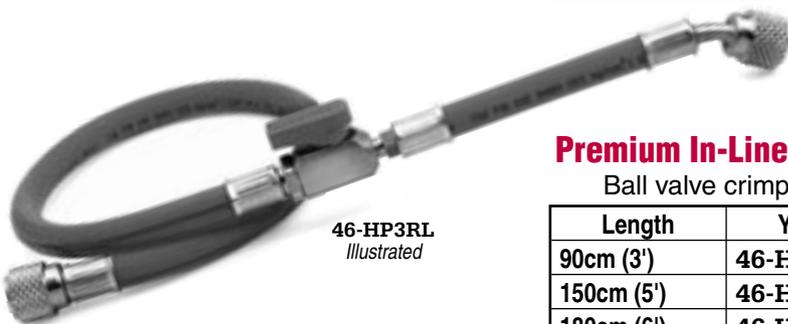
46-HP3
Premium Hoses



46-HP3YE
Illustrated



46-HP3BA
Illustrated



46-HP3RL
Illustrated

Premium Hoses

Length	Yellow	Blue	Red	3-Pack
90cm (3')	46-HP3Y	46-HP3B	46-HP3R	46-HP3
150cm (5')	46-HP5Y	46-HP5B	46-HP5R	46-HP5
180cm (6')	46-HP6Y	46-HP6B	46-HP6R	46-HP6

46-HXG Replacement Gaskets • 46-HXD Replacement Depressor

Premium Hoses With 45° Ball Valve On One End

Unique 45° ball valve at end.

Length	Yellow	Blue	Red	3-Pack
90cm (3')	46-HP3YE	46-HP3BE	46-HP3RE	46-HP3E
150cm (5')	46-HP5YE	46-HP5BE	46-HP5RE	46-HP5E
180cm (6')	46-HP6YE	46-HP6BE	46-HP6RE	46-HP6E

46-HXG Replacement Gaskets • 46-HXD Replacement Depressor

Premium Hoses With Micro Seal™ Valve On One End

Micro Seal™ fittings automatically seal & prevent refrigerant loss when disconnected.

- Super compact design (19mm x 25mm / ¾" x 1") enable access to service ports in tight quarters.

Length	Yellow	Blue	Red	3-Pack
90cm (3')	46-HP3YA	46-HP3BA	46-HP3RA	46-HP3A
150cm (5')	46-HP5YA	46-HP5BA	46-HP5RA	46-HP5A
180cm (6')	46-HP6YA	46-HP6BA	46-HP6RA	46-HP6A

46-HXGA Replacement Gaskets

Premium In-Line Ball Valve Hoses

Ball valve crimped directly in-line to reduce refrigerant loss.

Length	Yellow	Blue	Red	3-Pack
90cm (3')	46-HP3YL	46-HP3BL	46-HP3RL	46-HP3L
150cm (5')	46-HP5YL	46-HP5BL	46-HP5RL	46-HP5L
180cm (6')	46-HP6YL	46-HP6BL	46-HP6RL	46-HP6L

46-HXG Replacement Gaskets • 46-HXD Replacement Depressor

Hoses - Specialty

CPS®

PRO-SET® Premium Charging Hoses

- All-weather flexibility and strength.
- 800 psi working pressure (4000 psi burst).
- Extra deep knurling on nuts for easy grip.
- Leak-proof eight-sided crimp.

Premium 30cm (12") Ball Valve Hose Extensions

Add to any 1/4" SAE hose for full control of refrigerant flow.

Length	Yellow	Blue	Red	3-Pack
30cm (12")	46-HT1YE	46-HT1BE	46-HT1RE	46-HT1E

Premium Pressure Control Hoses

- Replaces standard copper capillary tubing.
- 1/4" SAE hex style fittings.

Length	90° x 90°	Straight x 90°
60cm (2')	46-HHC2	46-HHC2S
90cm (3')	46-HHC3	46-HHC3S
120cm (4')	46-HHC4	46-HHC4S

Premium 3/8" Vacuum/ Charging Hoses

- 5/16" I.D. heavy-duty hose.
- Permeation resistant barrier.
- 460 psi working pressure (2300 psi burst).

Length	Without Ball Valve	With In-Line Ball Valve
90cm (3')	46-HV3	-
150cm (5')	46-HV5	46-HV5E
180cm (6')	46-HV6	-



Premium Non-Permeating Automotive Charging Hoses

CPS®

R410A
Compatible

Premium Non-Permeating Hoses

14mm & 1/2" Acme.

Length	Yellow 1/2" acme x 1/2" Acme	Blue 1/2" acme x 14mm	Red 1/2" acme x 14mm	3 Pack	Yellow Anti Blowback 1/2" acme x 1/2" Acme	3 Pack Anti Blowback
90cm (3')	46-HA3Y	46-HA3B	46-HA3R	46-HA3	46-HA3YA	46-HA3A
150cm (5')	46-HA5Y	46-HA5B	46-HA5R	46-HA5	46-HA5YA	46-HA6A
180cm (6')	46-HA6Y	46-HA6B	46-HA6R	46-HA6	46-HA6YA	46-HA6A
240cm (8')	46-HA8Y	46-HA8B	46-HA8R	46-HA8	-	-
300cm (10')	46-HA10Y	46-HA10B	46-HA10R	-	-	-
600cm (20')	46-HA20Y	46-HA20B	46-HA20R	-	-	-

Meets and exceeds SAE J2196 standard as required by section 608 of USA EPA Clean Air Act.

46-HX14R - 14mm Hose O-rings.

46-HXG2 - 1/2" Acme gaskets.



R134a Automotive Charging Hoses

CPS®



R134a Ball Hose With Coupler

Part #	Description
46-OCL4	14mm
46-OCH4	14mm

R12 to R134a Automotive Hose Conversion Set

cps®

Automotive



R12 to R134a Hose Conversion Sets

Part #	Description
46-HC6	Complete manifold hose set 1/4" SAE x 1/2" Acme 6' hoses with R134a couplers.
46-HC6B	Blue replacement hose.
46-HC6R	Red replacement hose.
46-HC6Y	Yellow replacement hose.
46-OCL134	R134a low coupler 14mm.
46-OCH134	R134a high coupler 14mm.

R12 & R134a Automotive Flex Hose Adapters

cps®



R12 & R134a Flex Hose Adapters

Part #	Description
46-ADK237	R12 Flex hose kit (not shown).
46-HTAD1	R12 1/4" x 1/4" SAE.
46-HTAD2	R12 1/8" x 1/4" SAE.
46-HTAD3	3/16" x 1/4" SAE.
46-HT134L	1/4" SAE x R134a low.
46-HT134H	3/16" SAE x R134a high.

R134a Recharge Hose Kit

cps®



R134a Recharge Hose Kit

Part #	Description
46-HT134	Screws onto 12 oz. can for low side charging. Works on 1/2" Acme cans only.

Charging Hoses - Replacement Parts

cps®



Replacement Parts - Charging Hoses

Part #	Description
46-HXGD	(6) 1/4" SAE hose gaskets & (6) core depressors.
46-HX3G	(10) 3/16" hose gaskets.
46-HX14R	(10) 14mm hose rings.
46-HX38G	(10) 3/8" hose gaskets.
46-HXG	(10) hose gaskets - fits 1/4" SAE & 1/2" Acme.
46-HXD	(10) 1/4" SAE hose core depressors.
46-HX4D	(10) 1/4" SAE top hat core depressors.

R134a & R12 Automotive Charging Hoses Service Kit

cps®

Automotive



Hose Service Kit

This assortment contains hose gaskets, valve cores, service port caps and coupler o-rings. Order the 46-HXKIT for both R134a and R12. Replacement parts sold individually include: 46-AVS1, AVC3P, AVC4P, AVC134L, AVC134H, HXD, HX3D, HX4D, HXG, HX14R, QCXR34.

Part #	Description
46-HXKIT	R134a & R12 hose service kit.

Hose Crimper - Air Conditioning

CPS®

Automotive



46-TLCK56
Illustrated

Air Conditioning Hose Crimper

This portable air conditioning hose crimper allows you to make hoses on the actual vehicle or bench mounted. No other crimper on the market works as easily as the 46-TLCK56.

Part #	Description
46-TLCK56	Hose: Standard & reduced barrier. Fittings: Barb & beadlock. Pump Rating: 9000 psi.

LIFETIME WARRANTY!

Automotive Couplers - R134a

CPS®

Automotive



46-QCL14
Illustrated

46-QCH14
Illustrated

PRO-SET Manual Couplers 1/4" SAE

This 1/4" style converts old Freon hoses and manifolds to R134a*. Order the 46-QC14SET for R134a 1/2" Acme systems that require the 46-AD84 tank adapter.

Part #	Description
46-QCL14	Low side (6 ball).
46-QCH14	High side (6 ball).
46-QCXR34	O-ring repair kit.

Automotive



46-QCH90
Illustrated

46-QCL90
Illustrated

Economy Snap Couplers 1/4" SAE

Change your old R12 brass manifold to R134a* with the 46-QC90SET. Many air conditioner injectors use the quick connect snap style for the low side dye/oil application.

Part #	Description
46-QCL90	Low side (4 ball).
46-QCH90	High side (4 ball).
46-QCXO	O-ring repair kit.

* Meets EPA SNAP rule.

Automotive



46-QCL134
Illustrated

46-QCH134
Illustrated

PRO-SET Manual Couplers 14mm

These patented couplers include latching balls to provide superior service port alignment, cross pin valve depressor control, and a safety sleeve to prevent accidental refrigerant venting.

Part #	Description
46-QCL134	Low side (6 ball).
46-QCH134	High side (6 ball).
46-QCXR34	O-ring repair kit.

* Meets EPA SNAP rule.

Automotive



46-QCL13490
Illustrated

46-QCH13490
Illustrated

Economy Snap Couplers 14mm

The snap style† is designed for mechanics just starting air conditioning repairs.

Part #	Description
46-QCL13490	Low side (4 ball).
46-QCH13490	High side (4 ball).
46-QCXO	O-ring repair kit.

† Do not use for refrigerant recovery equipment - doesn't meet the required SAE J-639 standard.

Ball Valves



**R410A
Compatible**

PRO-SET Ball Valves

- Add to existing hoses to eliminate refrigerant loss - complying with EPA regulations.
- Over 140,000 cycles open/ close without a leak.
- Easy ¼ turn open/ close with rugged plastic composite colour-coded handles.
- Oversized chrome ball for smooth operation and non-restrictive flow.
- Individual valves include all three colour-coded handle inserts.
- R410A compatible.



**46-BV
Illustrated**

Swivel Nut Straight x Male Full Flow Ball Valve

Part #	Part # (3pk.)	Description
46-BV	46-BV3	¼" SAE female, ¼" SAE male.



**46-BV45
Illustrated**

45° Swivel Elbow x Male Full Flow Ball Valve

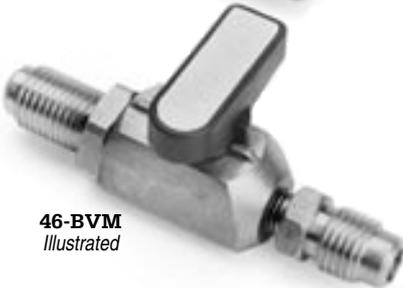
Part #	Part # (3pk.)	Description
46-BV45	46-BV453	¼" SAE female, ¼" SAE male.



**46-BV90
Illustrated**

90° Swivel Elbow x Male Full Flow Ball Valve

Part #	Part # (3pk.)	Description
46-BV90	46-BV903	¼" SAE female, ¼" SAE male.



**46-BVM
Illustrated**

Swivel Nut Straight x Male Full Flow Ball Valve

Part #	Part # (3pk.)	Description
46-BVM	46-BVM3	¼" SAE male, ¼" SAE male.

Ball Valves & Accessories - Continued

Part #	Description
46-BV12	1/2" Acme female x 1/2" Acme male.
46-BV38	3/8" SAE female x 3/8" SAE male.
46-BV410	1/2" 20 UNF female x 1/2 20 UNF male.
46-BVAD	3/16" female x 1/4" SAE male.
46-BVAD12	1/2" SAE female x 3/8" male.
46-BVAD24	1/2" Acme female x 1/4" SAE male.
46-BVAD38	3/8" female x 1/4" SAE male.
46-BVAD90	3/16" SAE female x 1/4" SAE male.
46-BVBH	Bulkhead BV 1/4" flare.
46-BVXH	Ball valve handle & red, blue & yellow inserts.

Automatic Sealing Valves

**R410A
Compatible**



**46-AB
Illustrated**

PRO-SET Micro Seal™ Automatic Sealing Valves

- Advanced automated sealing valve eliminates refrigerant loss and blow back.
- Micro valve technology enables use on systems with limited access to service ports.
- Add to existing hoses to eliminate refrigerant loss - complying with EPA regulations.
- Deep easy grip knurling and non-restrictive porting for maximum refrigerant flow.
- Up to 25% smaller O.D. than similar competitive models.

Automatic Sealing Valves

Part #	Part # (3pk.)	Description
46-AB	46-AB3	¼" SAE female, ¼" SAE male.
46-AB12	-	¼" ACME female, ½" ACME male.
46-AB410	46-AB4103	½" 20 UNF female, ½" 20 UNF male.
46-HXHA	-	(6) Microseal replacement gaskets.

Fitting Adapters

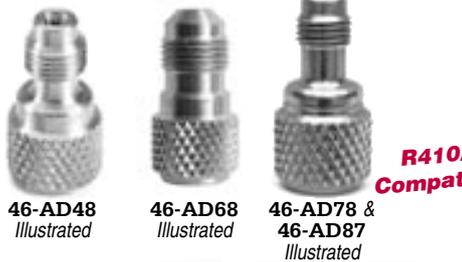
CPS®



46-AD24
Illustrated

46-AD44
Illustrated

46-AD47
Illustrated

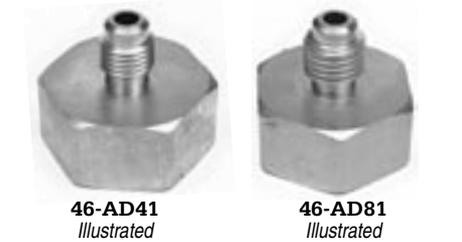


46-AD48
Illustrated

46-AD68
Illustrated

46-AD78 &
46-AD87
Illustrated

**R410A
Compatible**



46-AD41
Illustrated

46-AD81
Illustrated

Fitting Adapters

Part #	Description	Applications
46-AD24	1/4" SAE male x 1/8" MNPT (6/pk).	1/4" service manifold adapter.
46-AD41	3/4" 14 SAE female x 1/4" SAE male.	Large 125lb cylinders.
46-AD44	1/4" SAE male x 1/4" MNPT adapter (6/pk). Includes caps & cores.	Vacuum pumps.
46-AD47	1/4" SAE male x 1/4" SAE male union.	1/4" hose union.
46-AD48	1/4" SAE female x 1/2" Acme male (3/pk). Includes cores.	Manifolds, hoses, tanks, recovery & vacuum pumps.
46-AD68	1/2" ACME female x 3/8" SAE male (3/pk).	Vacuum pumps.
46-AD78	1/4" SAE female x 1/2" 20 UNF male. Includes core & depressor.	R410A international - manifolds, hoses, tanks, recovery & vacuum pumps.
46-AD81	3/4" 14 SAE female x 1/2" Acme male .	125 lb. tank adapter.
46-AD84	1/2" Acme female x 1/4" SAE male (3/pk).	Manifolds, hoses, tanks, recovery & vacuum pumps.
46-AD849C	90° 1/2" Acme female x 1/4" SAE male (3/pk). Includes core.	Manifolds, hoses, tanks, recovery & vacuum pumps.
46-AD87	1/2" 20 UNF female x 1/4" SAE male. Includes core & depressor.	R410A international - manifolds, hoses, tanks, recovery & vacuum pumps.

Automotive Adapters

CPS®

**Automotive
Adapters**



46-ADGM
Illustrated

46-AD18C
Illustrated

46-AD36C
Illustrated

46-AD149C
Illustrated

46-AD369C
Illustrated

R12 90° & Straight Adapters

Part #	Description	Applications
46-ADGM	GM deep reach female x 1/4" SAE. Includes extended core depressor.	GM R12 posiseal Hi-side 91-94.
46-AD18C	Straight 1/8" SAE female x 1/4" SAE male. Includes core & depressor.	R12 automotive Hi-side.
46-AD36C	Straight 3/16" SAE female x 1/4" SAE male. Includes cap & core.	R12 automotive Hi-side.
46-AD149C	90° 1/4" SAE female" x 1/4" SAE male. Includes core & depressor.	Hard to access ports.
46-AD369C	90° 3/16" SAE female x 1/4" SAE male. Includes cap & core.	R12 automotive Hi-side.

R134A Tank, Coupler & Vacuum Pump Adapters

Part #	Description	Applications
46-AD12	1/2" ACME female x male low side R134a.	R134a automotive tank adapter.
46-AD14	14mm male x 1/4" male SAE.	R134a automotive coupler adapter.
46-AD48	1/4" SAE female x 1/2" Acme male (3/pk). Includes cores.	Manifolds, hoses, tanks, recovery & vacuum pumps)
46-AD81	3/4" 14 SAE female x 1/2" Acme male.	125 lb. tank adapter.

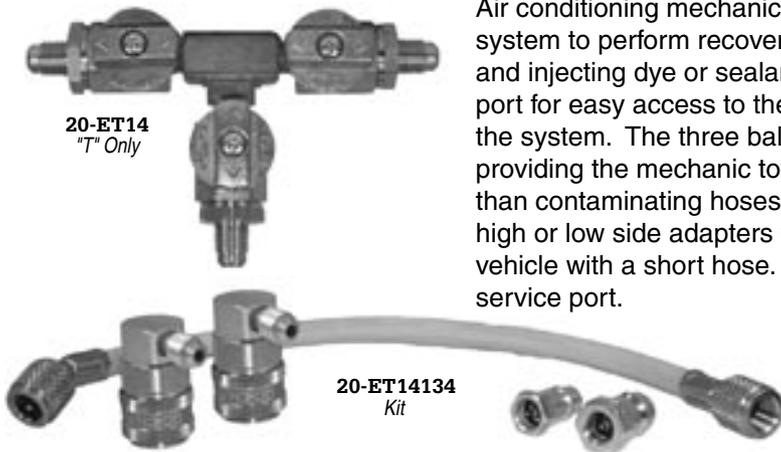
Service Tools

"T" Ball Valve Service Port

ALTEMP

"T" Ball Valve Service Port For R12 & R134a Systems

Air conditioning mechanics are always having to connect and disconnect to the system to perform recovery, evacuation, charging, checking vacuum, adding oil and injecting dye or sealant. The 20-ET14 "T" connector provides an isolated port for easy access to the system while minimizing any risk of air entering the system. The three ball valve system allows 3-position isolation therefore providing the mechanic total flexibility to install products at the vehicle rather than contaminating hoses. One connects from the recovery machine providing high or low side adapters while the second port connects to the high side of the vehicle with a short hose. The third port remains open to use as an optional service port.



"T" Ball Valve Service Port

Part #	Description
20-ET14134	Automotive "T" service port kit, includes 20-ET14 "T" connector, high & low side fittings, couplers & service hose.
20-ET14	Ball valve isolated service "T" only.

Automotive Adapter Kits

CPS



R12 Adapter Kit

Part #	Description
46-ADK12	Kit Contains: <ul style="list-style-type: none"> • Shut off ball valves for A/C hoses. • Quick disconnects. • Straight adapters plus 1/8" and 3/16" systems that still require Freon recovery.

Adapters sold separately: AD18C, AD48, ADGM, BV, BV90, BVAD90, QCDF, QCGM.



R134a To R12 Adapter Kit

Use your R134a manifold to check old R12 systems.

Part #	Description	
46-ADK1234	Flex Hoses	46-HT134L 1/4" SAE x R134a low (blue). 46-HT134H 3/16" SAE x R134a high (red).
	Tanks	46-AD12 1/2" acme female x R134a high.
	Straight	46-AD48 1/4" SAE female x 1/2" acme male.



R12 To R134a Adapter Kit

Retrofit R12 tools to R134a for vacuum and recharging with the 46-ADK134 kit.

Part #	Description	
46-ADK134	Couplers	46-QCH14 & 46-QCL14 1/4" SAE.
	Can Tap	46-TLCT134 1/2" acme female x 1/2" acme male.
	Tanks	46-AD12 1/2" acme x low.
	Pumps	46-AD48 1/4" SAE female x 1/2" acme male. 46-AD84 1/2" acme female x 1/4" SAE male.

Spring Lock Coupling Tools

CPS®



Spring Lock Coupling Tools

Fits: Ford, Jaguar, Chrysler/ Jeep & Mitsubishi.

Part #	Description
46-TL238	Set of 4.
46-TL7239	3/8" (red).
46-TL7240	1/2" (blue).
46-TL7241	5/8" (black).
46-TL7242	3/4" (white).

Anodized Aluminum A/C Disconnect Tool Kit

CPS®



Anodized Aluminum A/C Disconnect Tool Kit

Part #	Description
46-TL7881	Set of 4 (3/8", 1/2", 5/8", 3/4").

R134a Retrofit Fitting Assortment & Tools Kit

CPS®



46-RFK
Illustrated



R134a Retrofit Fitting Assortment & Tools

Part #	Kit Description
46-AVC134H	R134a hi side caps.
46-AVC134L	R134a low side caps.
46-AVC2	1/4" termination caps.
46-AVC3	3/16" termination caps.
46-RF342	3/16" R134a hi side fitting.
46-RF343	R134a posi-seal fitting.
46-RF344	1/4" R134a hi side fitting.
46-RF345	1/4" R134a low side fitting.
46-RF352	3/16" 90° hi side fitting.
46-RF353	1/4" 90° hi side fitting.
46-RF354	1/4" 90° low side fitting.
46-RFL	Retrofit labels.
46-RFSGM*	GM posi-seal remover socket.
46-RFSL*	R134a low side socket.
46-RFSH*	R134a high side socket.
46-TLVC4*	4 way R12 rethreader/ core tool.
46-TLVC2*	Dual valve core tool.

All fittings are OEM approved, meet the SAE J1660 standard and comply with SNAP rule.
* 46-RFTK - Tool Kit not shown.

O-Ring Kit

CPS®

Automotive O-Ring Kit

The 46-TLRK covers the most popular metric and SAE o-rings. A must for today's busy air conditioning repair shop. HNBR & neoprene - OEM approved.

Part #	Description
46-TLK134	180 o-rings in 18 sizes.



46-TLRK
Illustrated

Compressor Clutch Tools

cps®



Automotive

Domestic & Imports

46-CTK1300A
Illustrated

Compressor Clutch Tools

The 46-CTK1300A includes the most popular tools that remove and install clutch hubs. In addition, the universal spanner wrench has been added. The instruction manual covers all specification for air gap, oil, compressor identification and troubleshooting tips.

Compressor Clutch Tool Kit

Part #	Description
46-CTK1300A	Kit includes: 46-CT206, CT305, CT499, CT861, CT867, CT884.



Compressor Clutch Tools

Part #	Description	Remover	Installer
46-CT206	Zexel (Diesel Kiki)*.	yes	no
46-CT305	Sanden SD 5&6.	yes	no
46-CT499	Universal spanner wrench.	yes	yes
46-CT861	GM R4, A6 SAE.	yes	yes
46-CT867	GM V5, DA6, HR6 metric.	yes	yes
46-CT884	Ford FS6/ Chrysler C171. Hitachi MJ/ Tecumseh. Nippondenso 6P/ 10.P.	yes	yes

* Used with 46-CT305

Compressor Clutch Hub Puller & Installer Deluxe Kit

cps®



Automotive

46-CTK9100
Illustrated

Compressor Clutch Hub Puller & Installer Tool Kit

Part #	Description
46-CTK9100	Comprehensive variety of A/C clutch hub pullers and installers for popular (GM, Ford, Chrysler & imports) A/C compressors.

Orifice Tube Tools

cps®



Automotive

46-TLO19
Illustrated

46-TLO18
Illustrated

46-TLO12
Illustrated

46-TLOTK
Kit

Orifice Tube Tools

Part #	Description
46-TLOTK	Universal orifice tube tool kit with case.
46-TLOT12	Orifice tube installer & remover (long).
46-TLOT18	Orifice tube installer & remover (short).
46-TLOT19	Orifice tube extractor.

Valve Core & Orifice Tube Kit

cps®



Automotive

46-TLK134
Illustrated

R134a Tool Kit

The 46-TLK134 is the most complete tool kit on the market for valve core and orifice tube service. Easy to find tool application chart.

Part #	Description
46-TLK134	Kit includes: 46-TLDB34, TLOTK, TLVC2, TLVC6, TLVC810.

Tube & Pipe Cutters

CPS®



46-TCSET
Illustrated



46-TC127
Illustrated



46-TC174
Illustrated



46-TC274
Illustrated

46-TC312
Illustrated

Tube Cutting Tools

- For soft tubing - copper, aluminum, brass, stainless steel.
- Smooth operation - provides consistent clean cuts.
- Premium cutting wheel - top grade steel for easy cutting and longer life.
- Wide flare cut-off groove - to accommodate flares on large size tubing.

Tube Cutters Tools

Part #	Description
46-TC127	Mini Tube Cutter • 4mm to 15mm (1/8" to 5/8") O.D. tubing.
46-TC174	Big Mini Tube Cutter • 9.5mm to 28mm (3/8" to 1 1/8") O.D. tubing.
46-TC274	Premium Tube Cutter • 4mm to 28mm (1/8" to 1 1/8") O.D. tubing. • Retractable steel reamer with turned cutting edge removes inside burrs while filing surface effectively removes outside burrs. • Spare cutting wheel located under retractable locking reamer.
46-TC312	Premium Heavy Duty Tube Cutter • 7mm to 41mm (1/4" to 1 5/8") O.D. tubing. • Retractable steel reamer with turned cutting edge removes inside burrs while filing surface effectively removes outside burrs. • Spare cutting wheel located under retractable locking reamer.
46-TCSET	Premium Tube Cutter Package • 46-TC127 & 46-TC274 tube cutters.

LIFETIME WARRANTY!
On CPS Tube Cutters



46-TC127
Mini Tube Cutter

Tube Cutting Tool Replacement Parts

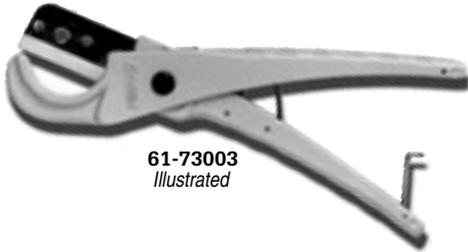
Part #	Description
46-TCX4C	Cutting wheels for 46-TC274 & 46-TC312 (10pk.)
46-TCX4S	Cutting wheel screws for 46-TC274 & 46-TC312 (10pk.)
46-TCX4R	Reamer blade for 46-TC274 & 46-TC312 (1pk.)
46-TCX4RS	Reamer blade screw for 46-TC274 & 46-TC312 (1pk.)
46-TCX7C	Cutting wheels for 46-TC127 & 46-TC174 (10pk.)
46-TCX7S	Cutting wheel screws for 46-TC127 & 46-TC174 (10pk.)

Tube & Hose Cutters

MILL-ROSE

Scissor-Action Tube Cutters

Cut soft plastic tubing and hose quickly & easily. Features cast aluminum construction with easy change, reversible blade for long lasting performance. Cuts tubing and hose from 1/8" to 1 1/4" OD.



61-73003
Illustrated

Scissor Style Tube Cutter

Part #	Description
61-73003	Scissor action tube cutter.
61-73010	Replacement blades

Ratchet-Action Tube Cutters

The contractors choice when cutting PVC, CPVC, ABS, vinyl, poly pipe and tubing. Features all metal, heavy duty construction with easy-change blades. Cuts from 1/4" to 1 1/2" depending on model.



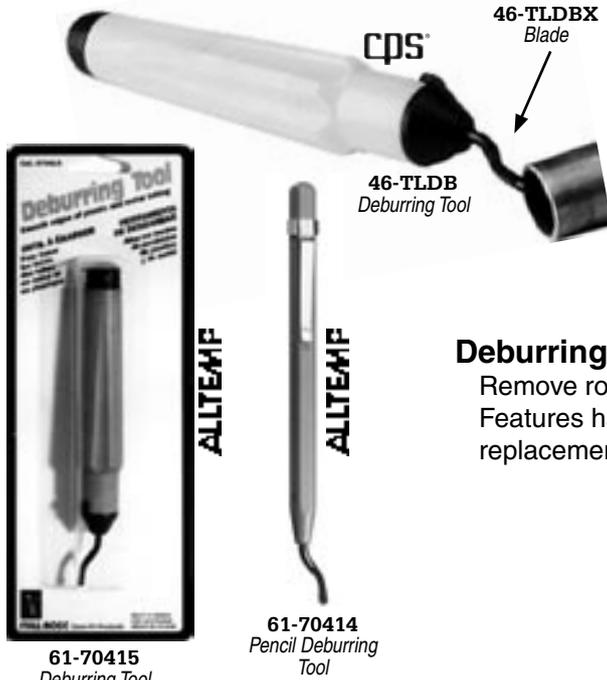
61-73002
Illustrated

Ratchet Style Tube Cutter

Part #	Description
61-73002	1" ratchet-action tube cutter.
61-73004	1 1/2" ratchet-action tube cutter.
61-73006	Replacement blades for 61-73002.
61-73008	Replacement blades for 61-73004.

Deburring Tools

ALTEMP



46-TLDBX
Blade

46-TLDB
Deburring Tool

61-70414
Pencil Deburring
Tool

61-70415
Deburring Tool

Deburring Tool

cps

Part #	Description
46-TLDB	Deburring tool.
46-TLDBX	Replacement blade for 46-TLDB.

Deburring Tool - Alltemp Model

Remove rough or irregular ID edges on plastic, ferrous and non-ferrous metals. Features hand contoured handle and screw on cap for convenient storage of 3 replacement blades.

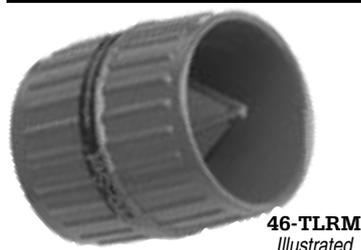
Deburring Tool

MILL-ROSE

Part #	Description
61-70414	Pencil deburring tool.
61-70415	Standard deburring tool with 3 blades.
61-70417	Replacement blades (3/pk).

Reamer Tool

cps



46-TLRM
Illustrated

Universal Reamer Tools

Part #	Description
46-TLRM	Universal tubing reamer.

Flaring Tools

CPS[®]

Flaring & Swaging Tools

- For soft tubing - copper, aluminum, brass.
- Lifetime warranty.

Flaring & Swaging Tools

Part #	Description
46-FT195	45° Flaring Tool • 3/16", 1/4", 5/16", 3/8", 1/2" & 5/8" O.D. tubing.
46-FS275	Premium 45° Flaring & Swaging Tool Kit • 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" & 3/4" O.D. tubing.
46-FT500	Flares & Burnishes • 3/16", 1/4", 5/16", 3/8", 1/2" & 5/8" O.D. tubing.
46-FT525	Universal Flaring & Burnishing Tool • Any size tubing from 3/16" to 5/8" O.D. tubing.
46-BTQ180	Flaring tool clutch type R410A.
46-BTQ420	Flaring tool gauge.



46-FT195
Illustrated



46-FT525
Illustrated



46-FT500
Illustrated



46-BTQ180
Illustrated

R410A
Compatible



46-FS275
Illustrated

LIFETIME WARRANTY!
On CPS Flaring Tools

Replacement Parts & Accessories

Part #	Description
46-FS226	Tube cutting, double flaring kit 1/8" to 3/4".
46-FS275M	45° flaring, swaging kit 4mm to 22mm.
46-FS276M	ISO Metric bubble flaring tool kit 4.75, 6, 8, 10.
46-FTX500	Yoke assembly for 46-FT195.
46-7885801	Yoke assembly for 46-FS275 (cone excluded).
46-FTX513	Yoke assembly for 46-FT500.
46-FTX516	Yoke assembly for 46-FT525.
46-38600	Cone for 46-FS275.
46-FTX518	Cone for 46-FT525.
46-FTX509	Compressor cone.
46-FT806A	1/4", 5/16", 3/8", 1/2", 5/8", 3/4" eccentric cone flaring tool.
46-FT806M	6, 8, 10, 12, 15, 16, 18mm eccentric cone flaring tool.
46-FTX510	Wing nut.
46-FSX503	5/16" swaging adapter for 46-FS275.

Part #	Description
46-FSX504	1/8", 3/16", 1/4", 3/8" swaging adap. 46-FS275.
46-FSX505	1/2" swaging adapter for 46-FS275.
46-FSX506	5/8" swaging adapter.
46-FSX508	3/4" swaging adapter.
46-FSX507	8, 12, 14, 16, 22mm swaging adapter.
46-FSX501	7/16", 1/4", 1/8", 3/16", 5/16", 3/8" bar.
46-FSX502	1/2", 5/8", 3/4" O.D. short bar.
46-FT500M	45° flaring, burnishing tool 6mm to 16mm.
46-FTX501	3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" flare bar.
46-FSX511	4, 6, 8, 10, 12, 15, 16mm flaring bar.
46-FSX512	14, 18, 22mm flaring bar.
46-FTX514	Die holder assembly for 46-FT500.
46-FTX515	Die holder assembly for 46-FT500.
46-FTX517	Tube holding assembly for 46-FT525.

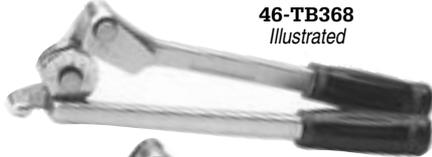
Tube Benders - Lever Type

Lever-Type Tube Benders

- Fast accurate bends with minimum effort.
- No marking, scraping or flattening of tubing.
- Calibrated to show angle of bend.
- Super strong steel handles.
- Produces short radius bends up to 180°.
- Lifetime warranty (leaver-type benders only)



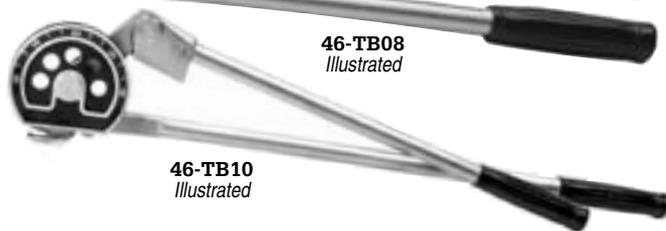
46-TB368
Illustrated



46-TB04
Illustrated



46-TB08
Illustrated



46-TB10
Illustrated



46-TB250
Illustrated

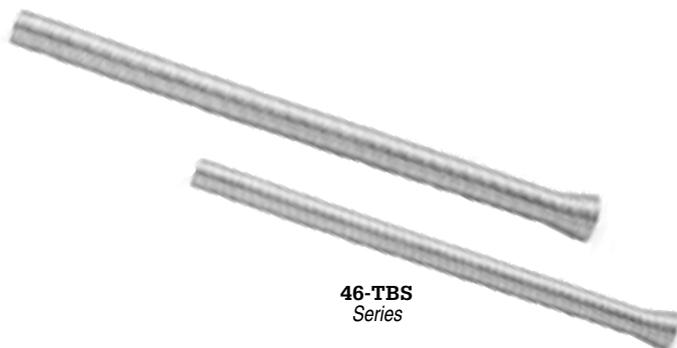


46-TB250
Kit includes reamer tool & tube cutter.

Lever Type Tube Benders

Part #	Description
46-TB368	Three-In-One Tube Bender • 1/4", 5/16", 3/8" (6, 8, 10mm) O.D. tubing.
46-TB04	Tube Bender • 1/4" (6mm) O.D. tubing.
46-TB05	Tube Bender • 5/16" (8mm) O.D. tubing.
46-TB06	Tube Bender • 3/8" (10mm) O.D. tubing.
46-TB08	Tube Bender • 1/2" (13mm) O.D. tubing.
46-TB10	Tube Bender • 5/8" (16) O.D. tubing.
46-TB12	Tube Bender • 3/4" (19mm) O.D. tubing.
46-TB250	Universal Tube Bender • Imperial 3/8", 1/2", 5/8", 3/4", 7/8". • Metric (10, 13, 16, 19, 22mm). • Ratchet style. • One hand operation. • Durable storage case. • Kit includes reamer tool & tube cutter.

Tube Benders - Spring Type



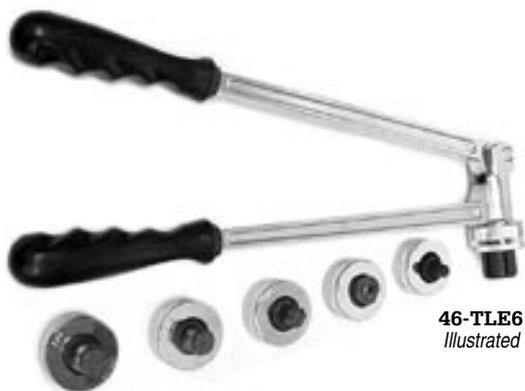
46-TBS
Series

Spring-Type Tube Benders

Part #	Description
46-TBS04	Tube Bender • 1/4" O.D. tubing.
46-TBS05	Tube Bender • 5/16/8mm" O.D. tubing.
46-TBS06	Tube Bender • 3/8" O.D. tubing.
46-TBS08	Tube Bender • 1/2" O.D. tubing.
46-TBS10	Tube Bender • 5/8" O.D. tubing.
46-TBS12	Tube Bender • 3/4" O.D. tubing.

Tube Expanders

CPS[®]



46-TLE6
Illustrated

Tube Expander Sets

Part #	Description
46-TLE6	Tube expander set with 6 (Standard) heads. • 3/8", 1/2", 5/8", 3/4", 7/8", 1 1/8".
46-TLE6M	Tube expander set with 6 (Metric) heads. • 10mm, 12mm, 15mm, 18mm, 22mm, 28mm.
46-TLE601	Expander tool only.

Swaging Tools



12-T21000
Illustrated

Multiswage

Handy all-in-one tool that produces perfect solder cups for 9 OD tube sizes. Unscrews to reveal all sizes.

Part #	Tube OD	Nominal
12-T21000	3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4" & 7/8".	1/8", 1/4", 3/8", 1/2", 5/8" & 3/4".



12-T21000
Illustrated

Single Size Swage

Size stamped OD and nominal.

Part #	Tube OD	Nominal
12-T21002	1/8"	
12-T21003	3/16"	
12-T21004	1/4"	1/8"
12-T21005	5/16"	
12-T21006	3/8"	1/4"
12-T21007	7/16"	
12-T21008	1/2"	3/8"
12-T21010	5/8"	1/2"
12-T21012	3/4"	5/8"
12-T21014	7/8"	3/4"
12-T21018	1 1/8"	1"

Single Size Swage Set

Set of 4 swaging tools.

Part #	Tube OD	Nominal
12-T21024	1/4", 3/8", 1/2" & 5/8" set.	1/8", 1/4", 3/8" & 1/2".

Pinch-Off Pliers



12-T21294
Illustrated

Pinch-Off Pliers

Part #	Description
12-T21294	Pinch-off pliers for 1/8" to 5/8" OD.

Tube Piercing Pliers

cps[®]



46-TLPPX
Illustrated

46-TLPP
Illustrated

Tube Piercing Pliers

Recover refrigerant quickly with clamp on, tube piercing pliers. Pliers are simple to use and light weight. Piercing tip easily replaceable.

Part #	Description
46-TLPP	Tube piercing pliers (Vise Grip®). Works on tubing sizes from 1/4" to 7/8".
46-TLPPX	Replacement tip for 46-TLPP

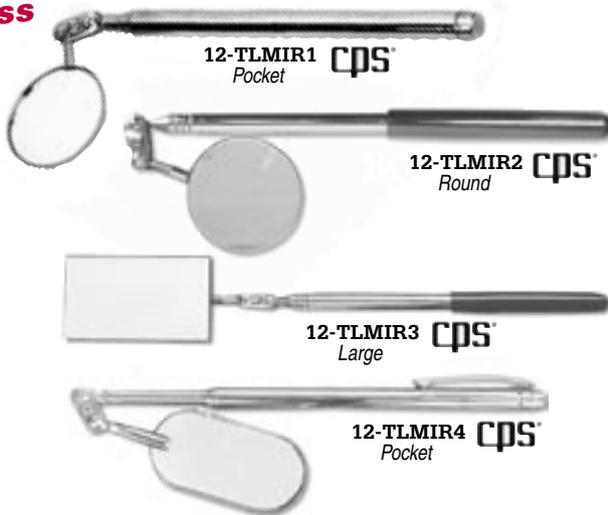
Instructions

Connect service hose to fitting on pliers. Size locking pliers to tubing for proper clamping. Align tip to centre of tubing and clamp down. Recover refrigerant.

Inspection Mirrors

ALTEMP

Glass



12-TLMIR1
Pocket cps[®]

12-TLMIR2
Round cps[®]

12-TLMIR3
Large cps[®]

12-TLMIR4
Pocket cps[®]

Telescoping Inspection Glass Mirrors

- All models are made of stainless steel with brass backed mirrors.

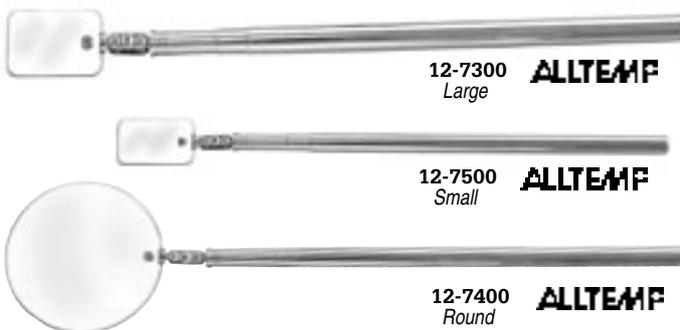
Part #	Description
46-TLMIR1	(1 1/4") diameter circular telescoping pocket mirror.
46-TLMIR2	(2 1/4") diameter circular telescoping mirror.
46-TLMIR3	(2 1/8" x 3 1/2") Rectangular telescoping mirror.
46-TLMIR4	(1" x 2") oval pocket mirror.

Telescoping Inspection Steel Mirrors

- Unbreakable, made of highly polished stainless steel

Part #	Description
12-7500	Small (2" x 1 1/4") rectangular mirror.
12-7300	Large (2" x 3 3/4") rectangular mirror.
12-7400	Large round (3 3/4") mirror.

Steel



12-7300
Large ALLTEMP

12-7500
Small ALLTEMP

12-7400
Round ALLTEMP

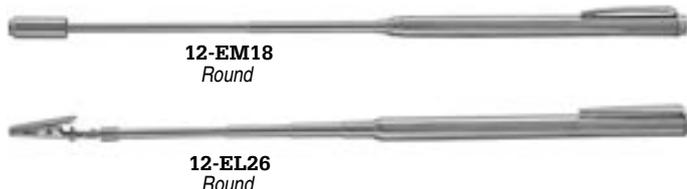
Inspection Mirror Replacement Parts

- For 12-7500, 7300 & 7400 series inspection mirrors.

Part #	Description
12-7500-1	Small (2" x 1 1/4") rectangular spare mirror only.
12-7500-2	Small (2" x 1 1/4") rectangular spare mirror & swivel.
12-7300-1	Large (2" x 3 3/4") rectangular spare mirror only.
12-7300-2	Large (2" x 3 3/4") rectangular spare mirror & swivel.
12-7400-1	Large round (3 3/4") spare mirror only.
12-7400-2	Large round (3 3/4") spare mirror & swivel.
12-7303	Telescopic handle.
12-7304	Swivel link assembly.

Magnet & Lighter Extension Instruments

ALTEMP



12-EM18
Round

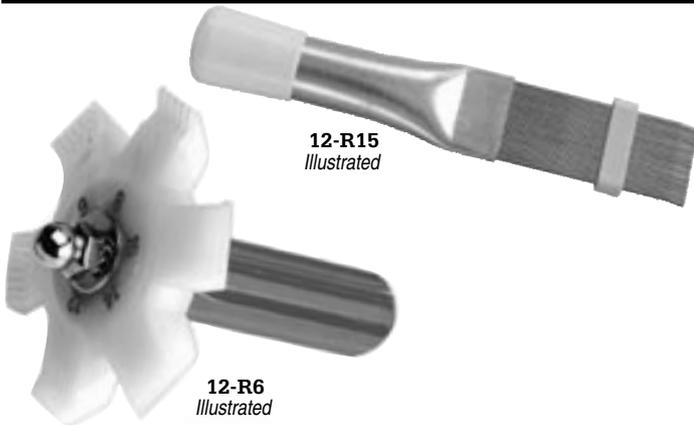
12-EL26
Round

Telescoping Magnets- Alltemp

Part #	Description
12-EM18	18" telescoping extension magnet.
12-EL26	26" telescoping extension lighter.

Fin Combs

ALTEMP



Fin Comb Tools

Part #	Description
12-R15	Metal fin straightening tool is adjustable to any fine space.
12-R6	Universal cleaning & straightening tool for 8, 9, 10, 12, 14 & 15 fins per inch.



Test Leads

ALTEMP



Electrical Test Leads

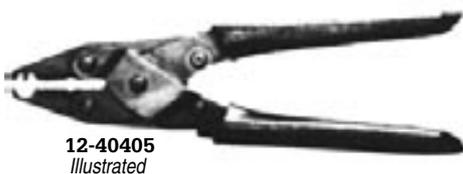
Test leads are coated with soft flexible vinyl covers and feature ragged tooth clips encased in protective boots to prevent accidental shock. Poly bagged and tagged for display.

12" & 30" Test Leads

Part #	Description
12-40630	12" test leads.
12-40632	30" test leads

Cutting & Crimping Tool

ALTEMP



Heavy Duty Terminal Crimping Tool

Heavy duty parallel action wire cutting and terminal crimping tool. 8" overall length for maximum leverage. Handles are plastic coated for comfort. Poly bagged and tagged for display.

Cutting & Crimping Tool

Part #	Description
12-40405	Cutting & crimping terminal tool.

Screwdriver

cps



Auto-Loading Screwdriver (6 In 1)

Part #	Description
46-TLSD1	<ol style="list-style-type: none"> 1. Pull handle back to return bit to storage chamber. 2. Rotate handle to select bit. 3. Push handle forward to load & lock bit in place. <ul style="list-style-type: none"> • Magnetic heads. • Lifetime warranty!!!

1. Pull handle back to return bit to storage chamber.
2. Rotate handle to select bit.
3. Push handle forward to load bit.



LIFETIME WARRANTY!!!

Screwdrivers

Superior Quality Screwdrivers

- Life time warranty.
- Covers all your screwdriver needs.
- Professional quality.
- Precision ground.
- Professional quality.
- Finest grade tool steel.
- Deep-tempered
- The ultimate in professional-quality forged hand tools.

Material

Domestic, high carbon, fine-grained, open-hearth tool steel, guarantees high blade quality. Bits are salt-bath hardened and tempered to provide optimum hardness, maximum torque transfer, high wear resistance and exceptional durability.

Tips

Slotted - precision-ground tip and flat surfaces.

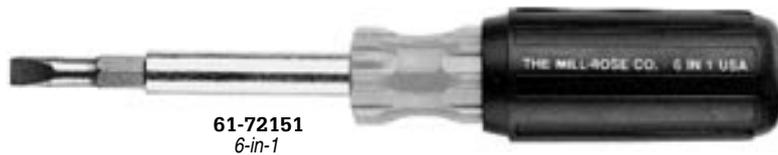
Phillips - special, precision geometry which transmits higher torque, decreases screw or screwdriver slippage, reduces ejection forces, less wear & longer edge life.

Handles

Cushion grip and generous size for operator comfort and high torque. Unbreakable acetate plastic, extrusion & turn processed, first quality grade.

Government Specs

Each driver far exceeds all federal torque test requirements for strength and durability.

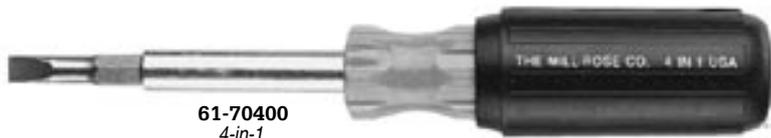


61-72151
6-in-1

6-In-1 Screwdriver

- Slot, Phillips & nut driver.

Part #	Description
61-72151	6-in-1 screwdriver & flat/ Phillips/ Nut driver bits.
61-72152	6-in-1 screwdriver replacement tube.
61-70410	Flat 3/16" & 5/16" bit.
61-72086	Flat 1/8" & 3/16" bit.
61-70412	Phillips PB1 & PB2 bit.
61-72088	Phillips PB0 & PB1 bit.



61-70400
4-in-1

4-In-1 Screwdriver

- Slot & Phillips, Torx or Robertson.

Part #	Description
61-70400	4-in-1 screwdriver & flat/ Phillips bits.
61-72062	4-in-1 screwdriver Torx (#15, #20, #25 & #30)
61-72072	4-in-1 screwdriver Robertson (#0, #1, #2 & #3)
61-70410	Flat 3/16" & 5/16" bit.
61-70412	Phillips PB1 & PB2 bit.
61-72064	Torx #15 & #20 bit.
61-72066	Torx #25 & #30 bit.
61-72074	Robertson #0 & #1 bit.
61-72078	Robertson #2 & #3 bit.
61-72082	5/4" Extension tube.



61-72082
Extension Tube

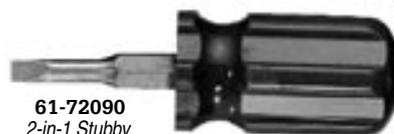


61-72083
4-in-1 Mini

4-In-1 Mini-Screwdriver

Perfect for recreational vehicles, utility drawers, automobiles, boats and as gifts.

Part #	Description
61-72083	4-in-1 mini-screwdriver & flat/ Phillips bits.
61-72086	Flat 1/8" & 3/16" bit.
61-72088	Phillips PB0 & PB1 bit.



61-72090
2-in-1 Stubby

2-In-1 Stubby Screwdriver

Part #	Description
61-72090	2-in-1 stubby-screwdriver & flat/ Phillips bits.
61-72092	Flat 3/16" & PB1 bit.

Wrenches

cps®



Service Wrenches

Part #	Description
46-TLSWL	Service wrench • 3/16", 1/4", 9/16", 1/2".
46-TLSWO	Offset wrench • 3/16", 1/4", 3/8", 5/16".
46-TLSWS	Service wrench • 3/16", 1/4", 3/8", 5/16".

Torque Wrenches

cps®



Torque Wrenches

Part #	Description
46-800FN	1/4" torque wrench 17mm x 16N.m (in/lb).
46-HK901	3/8" torque wrench 22mm x 42N.m.
46-BTQ550	1/2" torque wrench 26mm x 50N.m (R410a size).
46-BTQ650	5/8" torque wrench 29mm x 65N.m (R410a size).

Utility Boxes

MILL-ROSE

Stackable Utility Cases

Great for tools and accessories, fishing, hobby gear, workshop items and hundreds of other uses. Heavy duty ABS construction holds up to 80 lbs. Useful as a carrying case yet stackable feature make them ideal for storage. Double-lock catch prevents accidental opening.



Stackable Utility Cases

Part #	Description
61-75600	12" x 6" x 6".

Lock N' Load Heavy-Duty Dry Box

Lock N' Load heavy-duty Dry Box locks out moisture as well as dirt and grime. Three compartments conveniently store and organize tools and accessories. An easy access lid-top compartment is ideal for small tools and parts.

Lock N' Load Heavy-Duty Dry Box

Part #	Description
61-75605	15" x 8" x 10".

Core Removal Tools



02-CD3813
Illustrated

Core Container Wrench

Part #	Description
02-CD3813	<ul style="list-style-type: none"> • Durable construction. • Core container with wrench. • All brass with knurl for easy handling. • Compact design holds three valve cores.



02-CD3800
Illustrated

Core Chaser & Wrench

Part #	Description
02-CD3800	<ul style="list-style-type: none"> • Two tools in one. • Core wrench and a thread chaser. • Storage bottle for cores. • Comes with six (6) cores. • 3½" overall length.



02-C32004
Illustrated

1/4" Valve Core Tool

Part #	Description	Package
02-C32004	<ul style="list-style-type: none"> • 1/4" valve core tool. • Hollow handle for storage. • Furnished with 6 extra cores. 	1/pk
02-C32004-147	<ul style="list-style-type: none"> • Replacement core remover bits for old style. 	2/pk



02-C31997
Illustrated

02-CD2250
Illustrated

02-C31998
Illustrated

Fitting Caps + Core Remover

Part #	Description	Package
02-C31997	<ul style="list-style-type: none"> • 1/4" SAE gasket seal cap with core remover. 	5/pk
02-CD2250	<ul style="list-style-type: none"> • 1/4" flare heavy-duty brass cap with core remover tool and neoprene o-ring seal. 	6/pk
02-C31998	<ul style="list-style-type: none"> • 1/4" Standard core remover. 	5/pk

Adjustable Torque Wrench



12-32002
Illustrated

Features

Rotary torque mechanism prevents over-torquing of valve core. Wrench is easily adjustable from 1 to 6"/lbs. in 0.05 increments. A locking ring prevents accidental alteration of the torque setting. Accuracy ±3% at each increment. Standards of accuracy exceed those of the National Institute of Standards and Technology. Certification available upon request.

Instructions

- Turn black ring to unlock internal mechanism.
- Adjust torque to desired setting.
- Return black ring to locked position.

Adjustable Torque Wrench

Part #	Description
12-32002	Used to tighten valve cores to the proper torque. Recommended torque range is 1½" to 3"/lbs. Over tightening of a valve core can cause damage to the core and loss of refrigerant.
12-32003	Bit designed specifically for use with valve cores.

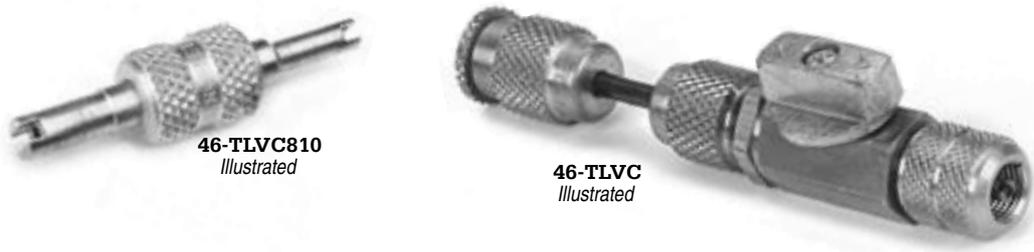
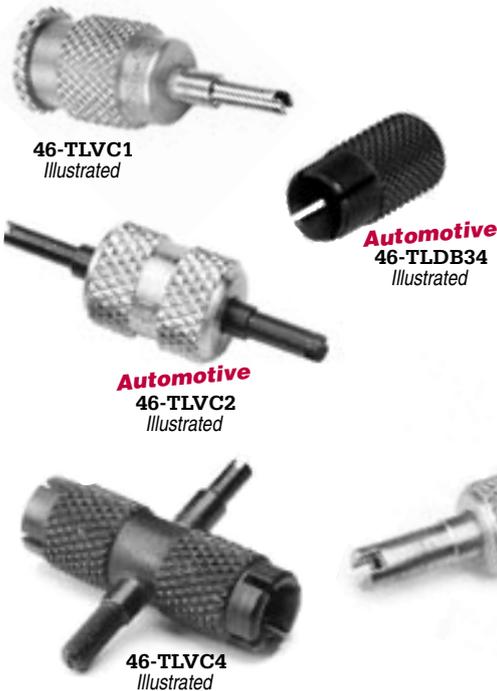
Valve Core Removal Tools

CPS®

Valve Core Tools

- Removes cores in systems under pressure.
- Includes three spare cores in handle.

Part #	Description
46-TLVC	¼" SAE valve corer remover (R12).
46-TLVC1	Valve core tool.
46-TLVC2	Dual valve core tool. (works with R12 & R134a)
46-TLVC4	Valve core remover & I.D./ O.D. re-threader tool (R12).
46-TLVC6	JRA 6mm core remover & installer (R134a cars mfg in Japan).
46-TLVC810	R134a 8mm & 10mm Eaton valve cores.
46-TLDB34	R134a high & low charge port deburring tool.



Valve Core Remover Tool Deluxe- R134a

CPS®

R134a Valve Core Remover & Installer

- Fits Hi & Lo service ports with standard size valve cores.
- Built-in ball valve retains charge & allows access to A/C system.
- Excellent for replacing valve cores without discharging the system and for speeding recovery and recharging of large systems.



Valve Core Tool Delux

Part #	Description
46-TLVC134	R134a valve core remover & installer with high & low side adapters.

Valve Core Remover Tool - R134a

ALLTAP

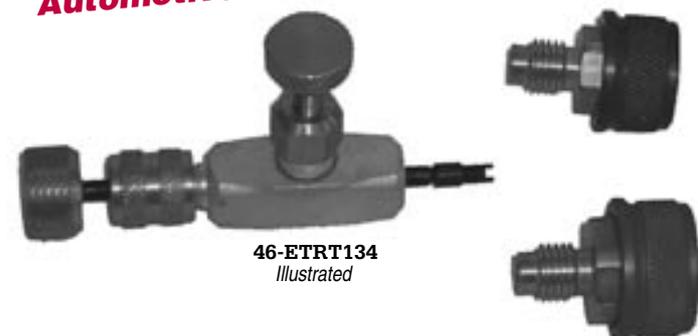
First On The Market!
Automotive

Enviro Tool - R134a Valve Core Remover

Compact in design and easy to use, the 20-ETRT134 allows changing Schrader valves without losing system charge, saving time and money.

Enviro Valve Core Tool

Part #	Description
46-ETRT134	R134a valve core remover with high & low side adapters.



Service Tools

Ball Valve Core Removal Tools

BV Series CRT's

The BV series of CRT's works the same as our original CRT. It removes a valve core from a 1/4" male flare access fitting without loss of refrigerant. Because it has a ball valve inside rather than a stem, the tool can be closed effortlessly with just a quarter turn.



02-CD3920
Illustrated



02-CD3930
Illustrated

Features

- Removes bad cores.
- Able to add or remove refrigerant.
- Measures internal temperature (02-CD3975 required)
- Measures system pressure by attaching a gauge to the side access port of the 02-CD3930.

BV CRT's

Part #	Description
02-CD3920	Same as the 02-CD3930 except with no side port. Works with all accessories.
02-CD3930	1/4" male flare side port. 02-CD2245 brass cap included. Works with all accessories.

All accessory tools are compatible with the 02-CD3920 & 02-CD3930.

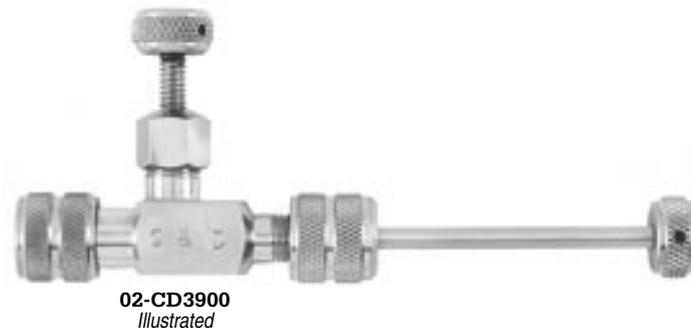
Original Core Removal Tools

Original Series CRT's

Look at all we can do now with a 02-CD3910 without losing the charge. We have brought it a long way since we originally developed it. Workmanship guaranteed.



02-CD3910
Illustrated



02-CD3900
Illustrated

Original CRT - Access Port

Part #	Description
02-CD3910	1/4" male flare side port. 02-CD2245 brass cap included. Works with all accessories. No loss of charge!

Original CRT - No Access Port

Part #	Description
02-CD3900	Same as the 02-CD3910 except with no side port. Works with all accessories.

CRT Grappler & Extractor

Part #	Description
02-CD5577	Valve core grappler and extractor. Remove a core without loss of refrigerant. Standard tool included with the 02-CD3910 & 02-CD3900.

All accessory tools are compatible with the 02-CD3900 & 02-CD3910.



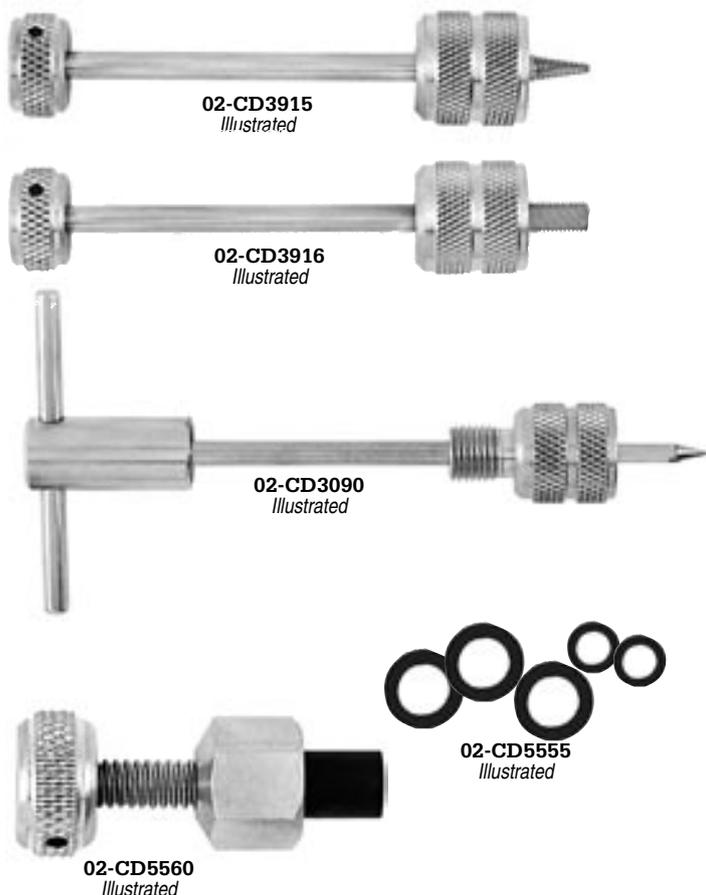
02-CD5577
Brass rod with chuck, rear end sealing nut & knob all in one piece.

Core Removal Tool - Accessories

C&D
valve mfg. co

Core Removal Accessories

All accessory tools are compatible with the 02-CD3900, 02-CD3910, 02-CD3920 & 02-CD3930.



CRT Broken Core Extractor

Part #	Description
02-CD3915	A pick to extract a broken core from a housing without loss of refrigerant. Left handed threads.

CRT Thread Chaser

Part #	Description
02-CD3916	A thread chaser to clean and align the internal threads of an access fitting.

CRT Core Extractor / Chaser Kit

Part #	Description
02-CD3917	02-CD3915 & 02-CD3916 Kit.

Tube Piercing Attachment

Part #	Description
02-CD3090	Punches a hole in copper tubing through a V-Series fitting

All accessory tools are compatible with the 02-CD3900, 02-CD3910, 02-CD3920 & 02-CD3930.

Replacement CRT Parts

Part #	Description
02-CD5555	All the O-rings necessary to repair any CRT, except the ones in the chuck that grab the core stem.
02-CD5560	The shut-off stem with molded neoprene shut-off gland for the 02-CD3900 & 02-CD3910. Brass stem knob, retaining nut & gland, all in one piece.

Core Remover & Evacuation Tools



Core Removal & Evacuation Tools

Specifically designed for valve off systems to remove valve core. Speed evacuation, recovery or recharging time through full flow port. Valve core can be completely removed and replaced without losing system charge.

- Quarter-turn ball valve shut-off.
- O-ring seals.
- Storage area for spare valve cores.



Core Remover & Evacuation Tools

Part #	Description
02-C32500	1/4" Valve core remover.
02-C32525	1/4" Valve core remover with access port.

Replacement Parts

Part #	Description
02-C32501	Replacement bit for 02-A32500.
02-C32504	Replacement bit for 02-A32525.

Electronic Leak Detector

cps®

Leak-Seeker®

Unique detection circuit design & patented ion-pump sensor technology combine to create an accurate field reliable refrigerant leak detector that is easy to use. A rugged, three position slide switch is used to turn the instrument ON and select either LO or HIGH sensitivity ranges. Visual indication of the leak size is provided by a high intensity LED varying in brightness with the concentration of the refrigerant detected.



46-LS780B
Illustrated

- **Sensor Type** - Patented ION-PUMP sensor for fast response time with built-in selective filter housing to eliminate false alarms.
- **Sensitivity**: Detects all refrigerants & blends (HFC) leaks small as a 7g (0.25 oz.) per year.
- **Audible Alarm**: Wide range audible alarm.
- **Visual Display**: High intensity LED.
- Simple HI/ LOW sensitivity setting operation.
- **Power**: 40 Hour battery life - 4 "AA" batteries (low battery indicator).
- **Auto OFF**: After 15 minutes of inactivity.
- **Flex Probe**: Flexible 36cm (14 1/4") metal cable probe.
- **Operating Temperature**: -18°C to 60°C (0°F to 140°F).
- **Weight**: Single hand operation! 500g (1lb 2oz).
- **Warranty**: 1 year excluding sensors and batteries.

**1 Year
Warranty!**

Leak-Seeker®

Part #	Description
46-LS780B	Electronic Leak Detector.

Electronic Leak Detector

cps®

Leak-Seeker®

Combines the most advanced microcomputer circuitry with field proven ion-pump technology creating a highly sensitive, accurate electronic leak detector. Over 100 computer generated tones and a high intensity bar graph display quickly alerts the user to varying halogen concentrations. Patented automatic calibration eliminates the need for manual balance or tick rate adjustments while a user selectable 10 sensitivity ranges enables the 46-LS790B to detect leaks of all refrigerants.



46-LS790B
Illustrated

- **Sensor Type** - Patented ION-PUMP sensor for fast response time with built-in selective filter housing to eliminate false alarms.
- **Sensitivity**: Detects all refrigerants & blends (HFC) leaks small as a 7g (0.25 oz.) per year.
- **Audible Alarm**: Over 100 computer generated tones varying in intensity with leak size.
- **Visual Display**: 10 visual LED leak size indicators.
- **LOCK-OUT Mode**: Unique feature enables quick & easy locating of refrigerant leaks in highly contaminated search zones. In this mode, the unit will automatically & systematically store the recorded concentration levels of background refrigerants while initiating leak search, alarming only in the area of the highest recorded concentration level, the actual leak source.
- **Power**: 40 Hour battery life - 4 "AA" batteries (low battery indicator).
- **Auto OFF**: After 15 minutes of inactivity.
- **Flex Probe**: Flexible 46cm (18") metal cable probe.
- **Operating Temperature**: -18°C to 60°C (0°F to 140°F).
- **Weight**: Single hand operation! 500g (1lb 2oz).
- **Warranty**: 2 year excluding sensors and batteries.

**2 Year
Warranty!**

Leak-Seeker®

With Lockout Mode & Bar Graph LED Display.

Part #	Description
46-LS790B	Electronic Leak Detector.

Automatic Refrigerant Leak Detector

CPS[®]



State of the art cold cathode diode (CCD) sensor technology

High output alarm speaker delivers clear crisp alarm tones.
8 LED Tachometer Display enables user to pinpoint exact location of leak.
Leak Size: small, medium & large.
Neutral: unit is ready for operation.
Easy one button operation: depress once to turn ON, press again to CLEAR, double click to change audible alarm and hold to turn OFF.

The Eliminator™

Exclusive Powershift™ - Fully automatic electronic refrigerant leak detector for all HFC, HCFC, CFC, SF6 gases & blends. Exclusive POWERSHIFT software automatically monitors, controls & adjusts all critical instrument settings to ensure maximum leak search results under any job environment. Two separate visual LED displays enables you to pinpoint the exact location of leak source & approximate size of that leak.

- **Sensor Type:** State of the art CCD (Cold Cathode Diode Sensor) technology. Patented design delivers quick and accurate response detection of refrigerant leaks while maintaining maximum sensitivity throughout the life of the sensor. Detects all halogenated refrigerants, vapours & gases. Highly resistant to background contaminants including heavy condensation, oils, leak solutions brake oils, radiator coolants, washer fluids, etc...
- **Sensitivity:** Detects all refrigerants & blends (HFC) leaks small as a 7g (0.25 oz.) per year.
- **Audible Alarm:** Two pre-programmed & user-selectable alarm tones (HIGH & LOW intensity).
- **Visual Display:** - TACHOMETER bar graph display; 8 high intensity LEDs indicate refrigerant intensity, pinpointing the exact location of a leak source.
- GEARSHIFT display; 7 high intensity LEDs indicate the current sensitivity range of the unit and subsequent leak size.
* Gear 1 & 2 for small leaks. * Gear 5 & 6 for large leaks.
* Gear 3 & 4 for medium leaks. * "N" (Neutral) unit is ready for operation.

• One Button Operation:

- Depress once to turn unit ON. - Depress again to CLEAR the unit.
- Depress & hold to turn unit OFF. - Double-click to change audible alarms tone.

• **Power:** 75 Hour battery life - Includes 3 "C" batteries (low battery indicator).

• **Auto OFF:** After 10 minutes of inactivity.

• **Flex Probe:** Flexible 35.5cm (14") long, 6.4mm (0.25") diameter.

• **Operating Temperature:** -18°C to 60°C (0°F to 140°F).

• **Weight:** Ergonomic Design! Single hand operation! 500g (1lb 2oz).

• **Warranty:** 2 year excluding sensors and batteries.

• 46-LS3000 Includes:

- Spare CCD sensor (46-LSXS3)
- (3) size "C" alkaline batteries
- Instructions
- Durable plastic carrying case (46-LSXC3)

Applications

- A/C & R
- Automotive



46-LS3000 Illustrated

2 Year Warranty!

The Eliminator

Part #	Description
46-LS3000	Automatic Leak Detector

Leak Detector Parts & Accessories

CPS[®]

The Eliminator™ 46-LS3000

Part #	Description
46-LSXC3	Replacement carrying case.
46-LSXS3	1 sensor replacement.

Leak-Seeker® 46-LS780 & LS790 Series

Part #	Description
46-LSXBC	Battery compartment cover.
46-LSXC	Leatherette carrying case.
46-LSXE	Earphone.
46-LSXSF	Selective filter housing (46-LS780B & LS790B).
46-LSXSH	Aluminum sensor housing (46-LS780A & LS790A).
46-LSXS	Ion-pump sensor.
46-LSXVF	Water vapour filter (46-LS780A & LS790A).
46-LSXMK	(2) 46-LSXS sensors & (2) 46-LSXVF water vapour filters (46-LS780A & LS790A).
46-LSXBMK	(1) 46-LSXS sensor & (1) 46-LSXSF selective filter/ housing (46-LS780B & LS790B).



46-LSXS3 Illustrated 46-LSXSF Illustrated 46-LSXS Illustrated

Service Tools

Refrigerant Gas Leak Detector

ALLTEMP



53-D340
Illustrated

Refrigerant Leak Detection

- Detects all R134a, R12, R22 & alternative refrigerants.
- The most sensitive hand held leak detector on the market when adjusted to MAX mode.
- Adjustable sensitivity levels.
- No calibration required.
- Long life sensor.
- Low battery indicator.
- Finds leaks in contaminated areas.
- Includes holster with belt clip.

- **Alarm Sensitivity:** 0.5 oz/yr. (R134a), 0.025 oz/yr. (R22)
- **Sensitivity - Exceeds SAE standard J1627.**
- **Operating Temperature Range:** 32°F to 105°F.
- **Power:** 4 AA batteries
- **Battery Life:** 8 to 10 continuous hrs with low battery indicator.
- **Warm Up:** < 60 seconds.
- **Operating Temperature:** -32°F to 104°F.
- **Probe Length** 16.5".
- **Total Reach:** 24".
- **Weight:** 12.3 oz.
- **Warranty:** 2 years.

Applications

- Motor vehicle A/C
- Centrifugal chillers
- Refrigerant transport
- Industrial process refrigeration.
- Industrial process air conditioning
- Ice skating rinks
- Cold storage warehouses
- Heat transfer systems
- Household refrigerators, freezers & A/C
- Reciprocating & screw chillers
- Retail food refrigeration
- Ice machines
- Vending machines
- Water coolers
- Refrigerated transport

Refrigerant Gas Leak Detector

Part #	Description
53-D340	Electronic leak detector.

Electronic Leak Detector

ALLTEMP

Automotive



53-H10PA
Illustrated

Professional Automotive Refrigerant Leak Detection

- Detects all CFC, HFC and HCFC refrigerants.
- Manual or automatic auto zero balance control.
- Unique sensor calibration system.
- Pinpoints both small and large leaks.
- Impact resistant, rugged case.
- Powered from external 12V DC source.
- Sensitivity ratings exceed SAE J1627.
- **Sensor Type - Positive ion emission heated diode.**
- **Sensitivity - Moving probe exceeds SAE standard J1627.**
- **Alarm Sensitivity:** Detects all CFC, HRC and HCFC refrigerants:
 - Small: 0.5 oz/yr. (R134a), 0.1 oz/yr. (R12)
 - Medium: 1.0 oz/yr. (R134a), 0.5 oz/yr. (R12).
 - Large: 5.0 oz/yr. (R134a), 3.0 oz/yr. (R12).
- **Leak Alarm:** Audible alarm and visible neon lamp.
- **Operating Temperature:** -32°F to 104°F.
- **Warranty:** Five year.
- **Dimensions:** 5.5" x 10.5" x 8.5".
- **Weight:** 3 lbs.

Leak Detector - Automotive

Part #	Description
53-H10PA	<ul style="list-style-type: none"> • 12 V DC battery clamp adapter. • Probe length 4.5'.

Ultrasonic Leak Detector

ALLTEMP

Accu Trak Ultrasonic Leak Detector

- Most sensitive ultrasonic detector available.
- Clearest leak sound translation (no beeps or squeals).
- Not affected by wind or fans.
- Detects any pressurized or vacuum leak.
- No false alarms due to residues or environmental contaminants.
- No sensors to clean or replace.
- Optional sound generator.

Patented technology detects the ultrasonic sound of a leak. The Accu Trak is so sensitive you can actually hear the blink of a human eye, yet while leak testing most background noises are easily suppressed.

Accu Trak Ultrasonic Leak Detector

Part #	Description
53-VPE	<ul style="list-style-type: none"> • Audio Output: 0 to 4 kHz. • Dimensions: 4.56" x 2.40" x 0.866". • Construction: Durable PVC & anodized aluminum. • Headset: Dynamic 32 ohm. • Frequency response: 38 to 42 kHz. • Sensitivity: -80db/ V/ ubar. • Power: 15 hrs on 9 volt battery (included). • Power Switch: push button with quick release maximizes battery life and protects hearing.



Flow-Thru UV Refrigerant Leak Detection

CPS

Flow Thru - Portable A/C & Refrigeration UV Light Kits

This economical method of injection uses refrigerant to push dye into the system through a refillable anodized aluminum in-line injector. Simply fill the injector with the appropriate amount of universal Moonshine™ dye (¼ oz. of dye treats 20 oz. lubricant), connect the injector to the system and refrigerant tank, then open valves to push the dye into the system.

Flow Thru - Portable 50 watt UV Light Kits

Part #	Description
46-UV150	<ul style="list-style-type: none"> • 50 watt, 12 VDC, 90° UV swivel light. • 12V rechargeable battery pack. • 110 volt charger. • In-line injector (1 oz dye included). • Enhance glasses & case.
46-UV152	<ul style="list-style-type: none"> • 50 watt, 12 VDC, 90° UV swivel light. • 12V rechargeable battery pack. • 220 volt charger. • In-line injector (1 oz dye included). • Enhance glasses & case.
46-UV200	<ul style="list-style-type: none"> • 50 watt, 12 VDC, 90° UV swivel light. • 12V rechargeable battery pack. • 110 volt charger. • In-line injector (8 oz. bottle of dye). • Enhance glasses & case.



Squeeze-Injector UV Refrigerant Leak Detection

Squeeze-Injector - Portable A/C & Refrigeration UV Light Kits

The squeeze gun injection system is the easiest, cleanest and fastest method of injecting dye into a system. Simply match the appropriate pre-filled, pre-measured universal dye cartridge with the size of the system being serviced, place it into the squeeze injector system, make your connection and inject the dye. It's just that simple!



46-UV55
Illustrated

Squeeze-Injector - UV PRO Light Kits

Part #	Description
46-UV55	<ul style="list-style-type: none"> • UVPRO light. • Squeeze gun injector. • Hose assembly. • (1) UV dye cartridge. • R134a low coupler. • Enhancing glasses. • Carrying Case

**Ideal For
A/C & R Or
Automotive**



46-UV250 (110V Charger)
46-UV252 (220V Charger)

Squeeze-Injector - Portable 50 watt UV Light Kits

Part #	Description
46-UV250	<ul style="list-style-type: none"> • 50 watt, 12 VDC, 90° UV fixed light. • 12V rechargeable battery pack. • 110 volt charger. • Squeeze-injector. • 6 universal dye cartridges. • Enhance glasses & case.
46-UV252	<ul style="list-style-type: none"> • 50 watt, 12 VDC, 90° UV fixed light. • 12V rechargeable battery pack. • 220 volt charger. • Squeeze-injector. • 6 universal dye cartridges. • Enhance glasses & case.



46-UV400 (110V Charger)
46-UV452 (220V Charger)

Squeeze-Injector - Portable 100 watt UV Light Kits

Part #	Description
46-UV400	<ul style="list-style-type: none"> • 100 watt, 12 VDC, 90° UV fixed light. • 12V rechargeable battery pack. • 110 Volt charger. • Squeeze-injector. • 6 universal dye cartridges. • Enhance glasses & case.
46-UV452	<ul style="list-style-type: none"> • 100 watt, 12 VDC, 90° UV fixed light. • 12V rechargeable battery pack. • 220 Volt charger. • Squeeze-injector. • 6 universal dye cartridges. • Enhance glasses & case.

Automotive Flow-Thru UV Refrigerant Leak Detection

CPS®



Flow Thru - Portable A/C UV Light Kits

This economical method of injection uses refrigerant to push dye into the system through a refillable anodized aluminum in-line injector. Simply fill the injector with the appropriate amount of universal Moonshine™ dye (¼ oz. of dye treats 20 oz. lubricant), connect the injector to the system and refrigerant tank, then open valves to push the dye into the system.

Flow Thru - Portable 50 watt UV Light Kits

Part #	Description
46-UV100	<ul style="list-style-type: none"> • 50 watt, 12 VDC, 90° UV swivel light. • In-line flow-thru injector. • Automotive coupler. • 1 oz dye included. • Enhance glasses & case.

Automotive Dye Stick UV Refrigerant Leak Detection

CPS®



Hand-Turn Dye Stick Injector - Portable A/C UV Light Kits

The larger disposable pre filled dye stick services up to 25 standard cars. Simply turn the handle once and ¼ oz of dye is injected into the A/C system. Dye can be added to low side without recovering refrigerant. Dye meets and exceeds SAE J 2297 standard for R134a air conditioning. Works with both PAG, Ester and mineral oils.

Dye Stick - Portable 50 watt UV Light Kits

Part #	Description
46-UV100UN	<ul style="list-style-type: none"> • 50 watt, 12 VDC, 90° UV swivel light. • In-line hand-turn dye stick injector. • Automotive coupler. • 1 oz dye included. • Enhance glasses & case.

Automotive Squeeze Injector UV Refrigerant Leak Detection



Squeeze Injector - Portable A/C UV Light Kits

This design allows technicians to use pre measured, pre filled dye cartridges and requires no refrigerant to inject dye into the system. Simply connect to the low or high side and squeeze the trigger. Standard automotive A/C systems require only a 1/4 of an ounce. Larger cartridges are available for vans, trucks, buses and refrigerated trailers.

Squeeze Injector - Portable 50 watt UV Light Kits

Part #	Description
46-UV300	<ul style="list-style-type: none"> • 50 watt, 12 VDC, 90° UV swivel light. • R134a squeeze dye-injector. • Automotive coupler. • 6 dye cartridges included. • Enhance glasses & case.

Replacement UV Leak Detection Lights



Portable 50 Watt UV Light

Part #	Features
46-UVCL	<ul style="list-style-type: none"> Powerful 50W UV light. 90° swivel head focuses beam anywhere. Instant ON technology - click and shine. Portable use with automotive battery clips. Works with all common fluorescent dyes.
46-UVAM <i>Automotive</i>	<ul style="list-style-type: none"> Powerful 50W UV light. 90° swivel head focuses beam anywhere. Instant ON technology - click and shine. Portable use with rechargeable battery pack. Works with all common fluorescent dyes.

Portable 100 Watt UV Light

Part #	Features
46-UVCL100	<ul style="list-style-type: none"> Powerful 100W UV light. 45° case design for comfortable grip. Instant ON technology - click and shine. Portable use with rechargeable battery pack. Works with all common fluorescent dyes.
46-UVAM <i>Automotive</i>	<ul style="list-style-type: none"> Powerful 100W UV light. 45° case design for comfortable grip. Instant ON technology - click and shine. Portable use with automotive battery clips. Works with all common fluorescent dyes.

Pocket Size UV Light

Part #	Features
46-UVPRO	<ul style="list-style-type: none"> True UV LED technology. Patented focusable beam. Inspection range up to 3' (0.9m). Magnetic base. Patented UV emitter bulb. 25,000 hour bulb life. Operates 20 hours on (2) "AA" batteries. Works with all common fluorescent dyes. Instant ON, no heat. Includes UV enhancing glasses.

Replacement Parts & Accessories - UV Leak Detection

Replacement Parts & Accessories

For UV Lights & UV Kits.

Part #	Description
46-UVXBLB	50W bulb.
46-UVXLNS	50W lens.
46-UVXBLB100	100 W bulb.
46-UVXLNS100	100W lens.
46-UVXB	12V rechargeable battery.
46-UVXBC	Battery carrying case.
46-UVXC	110V battery charger.
46-UVXCE	220V battery charger.
46-UVXG	Enhance safety glasses.

Replacement Parts & Accessories

For Injection Systems.

Part #	Description
46-UVXSHA	Hose assembly for automotive 46-UVSTICK1 & 46-UVSTICK2 w/coupler.
46-UVXSH	Hose assembly for 46-UVSTICK1 & 46-UVSTICK2.
46-UVNJXOR	(2) Replacement o-rings for 46-UVNJ, 46-UVNJ134 & 46-UVNJ1234.
46-UVNJXO	(2) replacement o-rings 46-UVNJ2 & 46-UVNJ34
46-UVXSTA	3/8" x LO side auto coupler adapter for 46-UVSTICK.

Flow-Thru UV Injection Systems

CPS®

Refillable Injectors - 1/4 oz (7.5ml) to 2 oz (60ml) capacity



46-UVNJS
Illustrated



46-UVNJSA
Illustrated
Includes 46-QCL90



46-UVSTICK2
Illustrated



46-UVNJ
Illustrated



46-UVNJ1234
Illustrated



46-UVNJ34
Illustrated

46-UVNJ2
Not Illustrated



46-TLJ2
Illustrated

46-TLJ4
Not Illustrated

Squeeze Gun Injectors

Dye cartridges ordered separately

Part #	Description
46-UVNJS	<ul style="list-style-type: none"> • 1/4" HVAC squeeze gun only. • Uses 46-UVS series pre-charged squeeze cartridges. Order cartridges separately.
46-UVNJSA <i>Automotive</i>	<ul style="list-style-type: none"> • 1/4" HVAC squeeze gun only. • Uses 46-UVS series pre-charged squeeze cartridges. Order cartridges separately. • Includes 46-QCL90 coupler.

Dye Stick Injectors

Treat up to 175lbs. of refrigerant (one turn = 7lbs of refrigerant)

Part #	Description
46-UVSTICK1	<ul style="list-style-type: none"> • 1/4" UV dye injector stick & adapter hose. • Uses 46-UVSTICK pre-charged dye stick.
46-UVSTICK2 <i>Automotive</i>	<ul style="list-style-type: none"> • 1/4" UV dye injector stick & adapter hose. • Uses 46-UVSTICK pre-charged dye stick. • Includes automotive R134a coupler.
46-UVSTICK	<ul style="list-style-type: none"> • Replacement dye stick.

Refillable Flow-Thru Injectors

Treat up to 175lbs. of refrigerant (one turn = 7lbs of refrigerant)

Part #	Description
46-UVNJ	<ul style="list-style-type: none"> • 1/4" in-line dye injector (1/2 oz. capacity) • Uses 46-UV series pre-charged dye capsule sticks.
46-UVNJ1234 <i>Automotive</i>	<ul style="list-style-type: none"> • In line automotive dye injector. • Includes R134a coupler. • Uses bottle dye refills.
46-UVNJ34 <i>Automotive</i>	<ul style="list-style-type: none"> • Hand turn in-line automotive dye injector. • Includes R134a coupler. • Uses bottle dye refills.
46-UVNJ2	<ul style="list-style-type: none"> • 1/4" hand turn dye injector (1/2 oz. capacity) • Uses bottle dye refills.
46-TLJ2	<ul style="list-style-type: none"> • R12 1/4" SAE manifold dye injector. • Uses bottle dye refills.
46-TLJ4	<ul style="list-style-type: none"> • R134a 1/2" ACME manifold dye injector. • Uses bottle dye refills.

Replacement Parts & Accessories - UV Injector Systems CPS®

Replacement Parts & Accessories

For Refillable Flow-Thru Injectors.

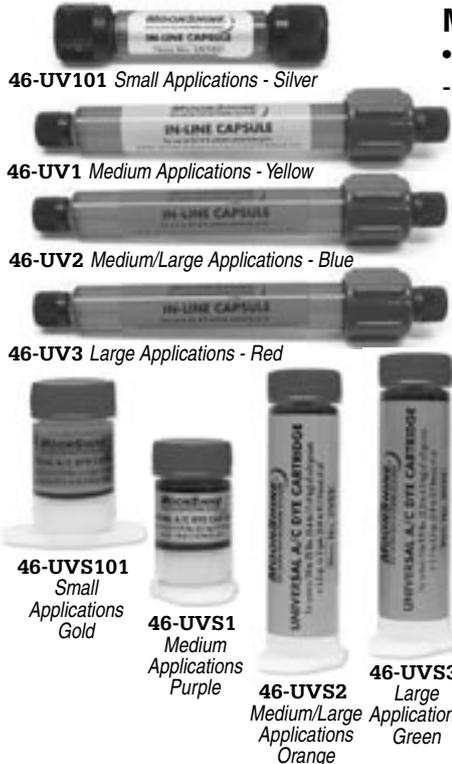


46-UVXSHA
Illustrated

Part #	Description
46-UVNJOR	(2) Replacement O-rings for 46-UVNJ, UVNJ134, UVNJ1234.
46-UVNJO	(2) Replacement O-rings for 46-UVNJ2 & UVNJ34.
46-UVXSH	Hose assembly for 46-UVSTICK & UVSTICK2.
46-UVXSHA	Hose assembly for 46-UVSTICK1 & UVSTICK2 with coupler.
46-UVXSTA	3/8" Female x LO side auto coupler adapter for 46-UVSTICK.

UV Dye Capsule Sticks & Cartridges

cps®



Moonshine™ Universal Dye Sticks & Squeeze Cartridges.

- OEM approved universal dyes are compatible with:
 - Mineral, Ester, PAG, & Alkyl Benzene Lubricants.

**Tecumseh
Approved!**

Dye Capsule Sticks & Squeeze Cartridges

Dye Capsule Sticks* (6 Per Pack)	Squeeze Cartridges** (6 Per Pack)	System Type	Refrigerant Charge	Refrigerant Oil (Lubricant)
46-UV101 (Silver)	46-UVS101 (Gold)	SMALL Ice Machines, Window A/C Units, Refrigerators	1/4 oz. treats up to 2.9 lbs.	Up to 15 oz.
46-UV1 (Yellow)	46-UVS1 (Purple)	MEDIUM Residential Systems	1/4 oz. treats up to 4.9 lbs.	Up to 1.6 qt.
46-UV2 (Blue)	46-UVS2 (Orange)	MEDIUM-LARGE Light Commercial & Large Residential Systems	1/2 oz. treats 5 to 9.9 lbs	1.7 to 3.2 qt.
46-UV3 (Red)	46-UVS3 (Green)	LARGE Commercial & Light Industrial, Including All Split Systems	3/4 oz. treats 10 to 25 lbs	3.3 qt. to 2 gal.

*Only use In-line capsules with Spectronics & Tracer Products dye injection kits, bleed valves and Universal Connect Sets.

** Use squeeze cartridges with 46-UVNJC squeeze Injector gun.
• UV Moonshine dyes meet SAE (J2297).

UV Bottled Dye

cps®



Moonshine™ Universal Bottled Dye.

- OEM approved universal dyes are compatible with:
 - Mineral, Ester, PAG, & Alkyl Benzene Lubricants (Meets SAE J2297).

Bottled Dyes

Part #	Description
46-UVUD6	240ml (8oz) bottle of universal dye (6/pk.)
46-UVUD	30ml (1oz) bottles of universal dye (1 ea.)
46-UVUDS	30ml (1oz) bottles of universal dye (6/pk.)
46-UV34DS	7.5ml (1/4oz) bottles of universal dye (12pk.)
46-UVCLNR	UV dye cleaner 500ml (16 oz) spray bottle.

Leak Detection Liquid

ALTEMP



20-FS Series

First Shot Leak Detector

- Specially formulated for the best leak sensitivity and maximum bubble protection.
- Compatible with R12, R134a & alternative blends.
- Environmentally friendly.
- Covers high, medium and low applications to -30°F (-34.5°C).
- Saves time, money and inventory shelf space by eliminating the need to stock separate products for different applications.
- Will not freeze on a pipe to -30°F (-34.5°C).

**Automotive,
HVAC/R &
Appliance**

First Shot

Part #	Description	Package
20-FS-6-1	8 oz. spray bottle.	1
20-FS-6	8 oz. spray bottles.	24
20-FS-32-1	32 oz. spray bottle.	1
20-FS-32	32 oz. spray bottles.	12

Air Conditioner Sealant - Advanced Formula



Automotive Permanent Leak Sealant That Saves Time And Money The Easy Way!

Enviro Seal

- Designed for automotive applications.
- Compatible with R12, R134a & alternative blends.
- Environmentally friendly.
- Easy pressurized installation.
- Seals leaks quickly.
- Improves system lubrication.
- Contains leak detection dye.
- Preventative maintenance product.
- For professional use only.

Performance

Easy to use, Enviro Seal is installed through the high side of an unevacuated air conditioning system prior to charging. Enviro Seal travels through the system with the oil and refrigerant. The sealant portion of Enviro Seal attempts to repair any leaks or damage. Additional additives rejuvenate hoses, condition seals and gaskets, revitalize components and increase lubrication to enhance overall oil carrying capacities of the system, providing long life system protection. If there is not sufficient sealant to repair system damage, Enviro Seal features fluorescent dye that will assist in quickly and accurately locating the source of any leaks. Any unused sealant still in the system after service will provide extended protection against future leaks or component wear.

20-5100 Series

Repairs leaks while rejuvenating hoses, gaskets & seals:

- Evaporators
- Condensers
- Hoses
- O-rings
- Gaskets

All The Features Of Enviro Seal 2

- Plus:**
- Enhances oil carrying capacity of system.
 - Lubricates for extended component protection.
 - Contains UV fluorescent leak detection dye.

Enviro Seal 2

Includes injector hose.

Part #	Description	Package
20-5106	Enviro Seal - Includes 20-EA12 R12 adapter and 20-EA13414H R134a high side coupler.	6
20-5112	Enviro Seal (couplers not included).	12

Enviro Seal Adapters & Couplers



Enviro Seal Adapter & Coupler Included With Every 6 Pack Of:

- Enviro Seal
- Enviro Seal 2
- Enviro Tune Up Kit



Enviro Injector Hose

20-EA12
Injector Hose Adapter
R12 Applications

20-EA13414L
20-EA12 Coupler Adapter
R134a Applications

Enviro Seal R12 Adapters & R134a Couplers

Part #	Description
20-EA12	R12 Enviro Seal injector hose adapter.
20-EA13414H	R134 Enviro Seal high side coupler.
20-EA13414L	R134 Enviro Seal low side coupler.

Applications

R12 Injector hose adapter (20-EA12) and R134a coupler (20-EA13414L) are designed for injecting the following Enviro products into most automotive systems:

- ENVIRO SEAL
- ENVIRO SEAL 2
- ENVIRO TUNE UP KIT

Air Conditioner Sealant - Standard Formula



20-5200 Series

Automotive Permanent Leak Sealant That Saves Time And Money The Easy Way!

Enviro Seal 2

- Designed for automotive applications.
- Compatible with R12, R134a & alternative blends.
- Environmentally friendly.
- Easy pressurized installation.
- Seals leaks quickly.
- Preventative maintenance product.
- For professional use only.

Performance

Once introduced into the system, Enviro Seal 2 travels through the system with the oil and refrigerant. The sealant portion of Enviro Seal 2 attempts to seal any leaks while another component revitalizes and conditions system parts. Any unused sealant still in the system provides extended protection against future leaks or component wear. Easy to use, Enviro Seal 2 can be installed through the low side of the air conditioning system while the vehicle is still operating.

Repairs leaks while rejuvenating hoses, gaskets & seals:

- Evaporators
- Condensers
- Hoses
- O-rings
- Gaskets

Enviro Seal 2

Includes injector hose.

Part #	Description	Package
20-5200-6	Enviro Seal 2 - Includes 20-EA12 R12 adapter and 20-EA13414L R134a low side coupler.	6
20-5200-12	Enviro Seal 2 (couplers not included).	12

Air Conditioner Tune-Up Kit - Preventative



20-5800 Series

Automotive Enviro Tune Up Kit

- Preventative maintenance.
- Compatible with R12, R134a & alternative blends.
- Improves system lubrication.
- Seal hose o-rings and gaskets.
- Contains UV fluorescent leak detection dye.
- Environmentally friendly.
- Designed for automotive applications.
- Easy pressurized installation.
- For professional use only.

Preventative Maintenance!

Performance

The Enviro Tune Up Kit includes lubricant enhancer, lubricant, UV dye, hose, o-ring and gasket sealer. This aerosol product is easy to install and does not seal metal parts.

Simple to use, Enviro Tune Up Kit can be installed through the low side of the air conditioning system while the system is charged or evacuated.

Enhances lubricant, lubricates, Rejuvenates hoses, gaskets & seals, contains UV fluorescent leak detection dye:

- Hoses
- O-rings
- Gaskets

Enviro Tune Up Kit

Includes injector hose.

Part #	Description	Package
20-5800-6	Enviro Tune Up Kit - Includes 20-EA12 R12 adapter and 20-EA13414L R134a low side coupler.	6
20-5800-12	Enviro Tune Up Kit (couplers not included).	12

Evaporator Cleaner



**Automotive
& HVAC/R
Biodegradable!**

20-5701-1
Illustrated

Enviro Evaporator Cleaner

Enviro Evaporator Cleaner is an aggressive yet biodegradable high-pressure spray of uniquely formulated foaming agents. Enviro Cleaner utilizes a microbial action to attack and quickly break down dirt, grime build-up and odor-causing germs on dirty evaporators, all with a mild citrus fragrance. Enviro Evaporator Cleaners 10 oz. aerosol can is a first stage washing treatment that should be followed up with Enviro Evaporator Protector for a long lasting barrier against dirt build-up.

Enviro Evaporator Cleaner

Flexible spray hose included.

Part #	Description	Package
20-5701-1	Enviro Evaporator Cleaner (10 oz. can)	1
20-5701-6	Enviro Evaporator Cleaner (10 oz. cans)	6

Evaporator Protector



**Automotive
& HVAC/R**

20-5700-1
Illustrated

Enviro Evaporator Protector

Enviro Evaporator Protector is a second stage treatment that coats and locks down the surface of a new or cleaned evaporator. Sprayed directly on the evaporator, Enviro Protector creates a long lasting protective coating designed to help eliminate the formation of odor causing germs or dirt build-up. To ensure adequate protection the product comes in a 6 oz. aerosol can.

Enviro Evaporator Protector

Flexible spray hose included.

Part #	Description	Package
20-5700-1	Enviro Evaporator Protector (6 oz. can)	1
20-5700-6	Enviro Evaporator Protector (6 oz. cans)	6

Evaporator Treatment Kit



**Automotive
& HVAC/R**

20-5600KIT
Illustrated

Enviro Evaporator Treatment Kit

Kit contains one 20-5701-1 evaporator cleaner and one 20-5700-1 evaporator protector.

Enviro Evaporator Kit

Flexible spray hose included.

Part #	Description
20-5600KIT	20-5701-1 Enviro Evaporator Cleaner (10 oz. can) 20-5700-1 Enviro Evaporator Protector (6 oz. can)

Flush



Flush That Works!

Enviro Flush

- Designed for automotive & commercial applications.
- Dilutes oil & contaminate deposits enabling a complete system flush.
- Compatible with all refrigerants.
- Evaporates quickly & residue free.
- Will not harm system components.
- No ozone depleting properties.
- High-pressure application.
- Safe & great for cleaning external components.
- For professional use only.

Performance

Replacement compressor damage often occurs due to debris that build up in the system. Enviro Flush helps reduce compressor damage by diluting the oil allowing any debris and oil to be flushed out of the system. Enviro Flush does not require the use of any expensive equipment or service tools. Enviro Flush is solvent based which provides fast and easy cleaning in most systems since it's compatible with all refrigerants. Flushing will likely soon be an industry standard when it comes to ensuring warranty.

Directions

1. Evacuate refrigerant from system.
2. Disconnect system components to be flushed, ie hoses, condenser, evaporator, etc.
3. Spray in Enviro Flush liberally & allow several minutes to dilute and dissolve contaminates.
4. Blow flush through components using compressed air/ nitrogen.
5. Pull a deep vacuum to remove flushed residue.

Applications

- Evaporators
- Condensers
- Hoses
- Lines

Enviro Flush

Includes injector hose.

Part #	Description	Package
20-5100	Enviro Flush (20 oz. can)	1
20-5100-6	Enviro Flush (20 oz. cans)	6
20-5400-1	Enviro Flush	1
20-5400-4	Enviro Flush	4

Note: Do not flush compressors, receiver driers or accumulators driers.

Flush Dispenser



46-TLFG
Illustrated

Evaporator & Condenser Flush Dispenser

Reduce comebacks by flushing evaporator and condenser with 46-TLFG. Simply add solvent and use shop air to reverse flush the component.

Flush Dispenser

Part #	Description
46-TLFG	Dispensing cylinder, hose, gun & tip.
46-TLFGXT	Replacement tip for flush gun.

Refrigerant Gas Analyzer

ALTEMP

Automotive



53-GA500
Illustrated

Refrigerant Leak Detection

- One button testing with a total test cycle time of <60 seconds.
- Identifies and measures % of purity of R134a, R12, R22 and hydrocarbons with 98% accuracy.
- Audible and visible alarms for flammable hydrocarbons.
- Indicates presence of blends and contaminated refrigerants.
- Printer port for record retention.
- **Sensor Type** - Positive ion emission heated diode.
- **Sensitivity** - Moving probe exceeds SAE standard J1627.
- **Alarm Sensitivity**: Detects all CFC, HRC and HCFC refrigerants:
 - Small: 0.5 oz/yr. (R134a), 0.1 oz/yr. (R12)
 - Medium: 1.0 oz/yr. (R134a), 0.5 oz/yr. (R12).
 - Large: 5.0 oz/yr. (R134a), 3.0 oz/yr. (R12).
- **Leak Alarm**: Audible alarm and visible neon lamp.
- **Operating Temperature**: -32°F to 104°F.
- **Warranty**: Five year.
- **Dimensions**: 5.4" x 8" x 2.5".
- **Weight**: 6.5 oz.

Refrigerant Gas Analyzer

Part #	Description
53-GA500	Includes: <ul style="list-style-type: none"> • One hose assembly for both R12 & R134a. • Quick connect adapter for R134a. • 12 V DC battery clamp adapter. • 12 V DC cigarette lighter adapter. • Replacement in-line filter. • Operators manual. • Carry/ storage case.

Refrigerant Leak Monitors

CPS

RM Gas Monitors & Replacement Sensors

Compact, highly reliable, yet economical refrigerant leak monitoring systems. Designed to monitor a single refrigerant in a single zone providing early warning of costly and environmentally damaging refrigerant leakage. Adjustable sensitivity settings between 100 to 1,000 PPM with an auxiliary 1/2HP N.O. and N.C. dry contact control function for operating an additional alarm or other safety device. Replacement sensors are interchangeable enabling the replacement of a failed sensor directly in the field without recalibration, minimizing downtime.

Refrigerant Leak Monitors



Refrigerant Leak Monitor Part #	Refrigerant	Replacement Sensor Part #	Features
46-RM11	R-11	46-RMX11	<ul style="list-style-type: none"> • Sensitivity: 100 to 1,000 ppm. • Accuracy: ±3% of the setting or ± 25ppm. • Audible Alarm: 85db @ 30cm (1"). • Visual Alarm: High intensity LED display. • Operating Temperature: -28°C to 65°C (-20°F to 150°F). - Relative humidity 10 to 95% non-condensing. • Sensor Module: 0°C to 65°C (32°F to 150°F). • Power: AC or DC control voltages (sensor failure indicator). • Weight: 500g (1lbs 2oz). • Warranty: 1 year.
46-RM12	R-12	46-RMX12	
46-RM134	R-134a	46-RMX12	
46-RM22	R-22	46-RMX12	
46-RM404	R-404	46-RMX12	
46-RM407	R-407A	46-RMX11	
46-RM500	R-500	46-RMX12	
46-RM502	R-502	46-RMX12	
46-RM507	R-507A	46-RMX12	
46-RMPRC	Perchloroethylene	46-RMXPRC	

Service Tools

Combustible Gas Detector

Gas-Seeker™

The 46-GS20 is a completely self-contained gas detector designed to pinpoint combustible and toxic gas leaks of various types. An efficient and sensitive gas sensor is combined with solid-state circuitry, which provides an audible alarm that increases in pitch as the concentration of the gas increases. The sensor has been extensively field-tested and is sensitive to a broad range of gases, in some cases providing a response at levels as low as 50 ppm.

Combustible Gas Detector



46-GS20
Illustrated

Part #	Features	46-GS20 (Gases & Sensitivity)	
		Gas	Sensitivity
46-GS20	<ul style="list-style-type: none"> • Sensor Type: Adjustable for background contaminants. • Audible Alarm: Wide range variable pitch alarm. • Visual Display: High intensity LED display. • Power: 25 hours battery life - 4 "C" batteries. • Low battery: LED indicates low battery condition. • Probe: 1.83m (6') coil cord. • Operating Temperature: -18°C to 60°C (0°F to 140°F). • Weight: Rugged metal chassis! 500g (1lb 2oz). • Warranty: 1 year excluding sensors and batteries. 	Iso-Butane	500 to 10,000 ppm
		Methane (natural gas)	500 to 10,000 ppm
		Propane	500 to 10,000 ppm
		Carbon Monoxide	500 to 10,000 ppm
		Hydrogen	500 to 10,000 ppm
		Benzene	50 to 5,000 ppm
		Methanol	50 to 5,000 ppm
		Ethanol	50 to 10,000 ppm
		Acetone	50 to 5,000 ppm
		Nitro Methane	50 to 5,000 ppm
		Methyl Ethyl Ketone	50 to 5,000 ppm
		Ammonia	20 to 5,000 ppm
		Sulfur Dioxide	5 to 500 ppm
46-GSXS	Replacement sensor element for 46-GS20	-	-

CAUTION:

The 46-GS20 is not intrinsically safe in class 1 (explosive) atmospheres. This instrument is designed for service applications and should not be used to determine the safety of personnel exposed to hazardous atmosphere or general air quality.

Gas Pressure Test Kits



12-29435
Illustrated

Gas Pressure Test Kit

- Use for natural or LP gas.
- Diaphragm gauge scale. Complete in case with hose and hook-up fitting.

Part #	Description
12-29435	Scales: 0 to 20 oz/sq.in; 0" to 35" of water column.
12-29436	Scales: 0 to 6 oz/sq.in; 0" to 10" of water column.

Compressor Quick Start

THERMAL



51-2601
Illustrated

Hermetic Compressor Quick Start

Designed for use by qualified air conditioning and refrigeration service technicians, hermetic compressor Quick Start will start all single phase 110, 220, or 277 VAC compressors up to 5 HP. Convenient 5½' power cord, 29" run (black), start (red) and common (white) leads, and 24" capacitor (green & yellow) leads. Test leads are coated in a soft flexible cover and feature ragged tooth clips encased in protective boots to prevent accidental shock. Poly bagged, complete with instructions and tagged for display.

Compressor Quick Start

Part #	Description
51-2601	Starts all single phase 110, 220 or 277 VAC compressors up to 5HP.

Compressor Analyzer

THERMAL



51-2001
Illustrated

Hermeti-Check

- Tests all single phase compressors up to 5HP, 110, 220 or 277 Volts.
- Tied up compressors may be freed by reversing motor rotation.
- Tests windings for opens, continuity and grounds.
- Tests starts and run capacitors and system relays by substitution.
- Measures running amps, 0 to 10, 50A ranges.
- Measures start and run volts, 0 to 150, 600V AC ranges.
- Compressors tested in manner in which they were designed to operate:
 - split phase, capacitor start or PSC.
- Provisions for connecting external run capacitor.
- 30 amp breaker protected to allow high starting current with adequate overload protection.
- Complete with 220V adapter cord and capacitor leads.

Hermeti-Check Compressor Analyzer

Part #	Description
51-2001	Analog compressor analyzer.

Digital Hermetic Analyzer

THERMAL



51-12501
Illustrated

Professional Series Digital Hermetic Analyzer

- Easy to read digital LCD display.
- Tests and runs 110, 220 or 277 Volt 50/60 Hz single phase compressors up to 5 HP.
- Tied up compressors may be freed by reversing motor rotation.
- Tests windings for opens, continuity and grounds.
- Checks capacitors for leaks, opens and shorts.
- Measures capacitor values, 0 to 200, 0 to 2000 MFD ranges.
- Automatic capacitor discharge.
- Measures compressor amps 0 to 30A.
- Measures start and run volts, 0 to 600V AC.
- Measures winding resistance, 0 to 2000 ohm.
- 500V megger for testing compressor windings for grounds.
- Compressors tested in manner in which they were designed to operate:
 - split phase, capacitor start or PSC.
- Multiple internal starting capacitors, 100, 200 and 400 MFD values.
- Has provisions for connecting external run capacitor.
- 30A breaker protected.
- Complete with 220V adaptor leads and capacitor leads.
- Power: 110, 220 or 277 VAC 50/60 Hz.
- Dimensions: 13 ½" x 10" x 4".
- Weight: 5 ½ lbs.

Hermeti-Check

Part #	Description
51-12501	Digital hermetic analyzer.

Recommended By Copeland!



Digital Superheat & Sub-Cooling Gauges



Ideal For Refrigeration Applications

04-SH35N Illustrated

- 1 & 24 Hour Memory!**
- Saves High, Low and Average Values**
- Instantly Displays**
 - Superheat
 - Sub-cooling
 - Temperature
 - Pressure

Multi-Function A/C & Refrigeration Gauge

Instant superheat, sub-cooling, temperature and pressure readings at the touch of a button. Comes with built in R22 table, R410A refrigerant key, 04-A34000 quick coupler access tee, 6' dry/ wet bulb temperature sensor and socks. The 04-SH35N features selectable 1 or 24 hour memory. The high, low and average values are saved in all four modes. Only by accurately determining the superheat or sub-cooling value, can a system's critical charge be obtained to reach maximum performance.

The Superheat method of refrigerant charging is used with evaporators equipped with piston type expansion devices or capillary tube (non TXV). The subcooling method is primarily used for residential and commercial air conditioning systems which have a TXV expansion device but do not have a liquid refrigerant receiver.

Pulsation proof and accurate at any elevation from sea level to 16,000' without any adjustment.

Features

- 1 and 24 hour memory!
- Saves high, low and average values.
- Simple two button operation.
- Protected sealed touch buttons.
- R22 built-in, R410A key included.
- NIST traceable.
- Retracting hanging hook.
- Carrying case.
- Keys for all standard refrigerants.
- Low battery indicator.
- Auto shut-Off after 60 min inactivity.
- 100 hours on (1) 9V (not included).
- For low temperature applications use lithium battery.
- 800 psi (5512 kPa) maximum over pressure.

<p>Pressure Display Range 29 InHg to 600 psig. (-98kPa to 4134 kPa). (±1 psi to 200 psi, 0.5% to 600 psi).</p> <p>Temperature Display Range -40°C to 93°C (-40°F to 200°F).</p> <p>Operating Temperature -12°C to 49°C (-10°F to 120°F). (±1°F *32°F/120°F, ±1.5°F *-10°F/32°F).</p> <p>Refrigerant Data Source NIST REFRPRO software and manufacturers data.</p>

Hand Held Digital Superheat & Sub-Cooling Gauge

Part #	Description
04-SH35N	°F model & carrying case.

Replacement Parts & Accessories

Part #	Description
04-SH51	28" temperature sensor extension.
04-SH54	6' temperature sensor.
04-SH55	Replacement plastic carrying case.
04-SH56	Socks (5/pk)
04-A34000	1/4" quick coupler x 1/4" access.

04-A34000 recommended for charging hook-up.
Not intended for use on hazardous or corrosive fluids.

A/C & Refrigeration Applications

Checking TXV Setting

- The objectives of the TXV superheat setting is to prevent liquid refrigerant from flooding back to the compressor and to optimize system operation by the use of a selected setting.
- The 04-SH35N measures true superheat. The two temperature method of measuring superheat is not recommended. It can produce a wrong superheat measurement due to the effect of temperature glide of the blended refrigerants and variations in evaporator pressure drop. Contact your TXV manufacturer for the exact superheat adjust rate.

Retrofitting Systems

- Retrofitting systems to a new refrigerant can change the TXV superheat setting. The superheat setting should be checked before and after retrofitting to be sure the superheat is right for the equipment.

Refrigeration Applications

Set Superheat For Hunting TXV Valves

- In refrigeration and air conditioning systems, the expansion valve often operates to produce an evaporator superheat which constantly swings up and down in value, called "hunting". The 04-SH35N provides the "average" superheat value to use for TXV valve adjustment.

Setting For Pressure Controlled Cases & Coolers

- Obtain accurate high, low and average evaporator pressure under EPR control. Accurately test for the cut-in/ cut-out setting of the system's low pressure control.

Setting For Thermostat Controlled Cases & Coolers

- Accurate verification of high, low and average temperatures over a period of time.

Digital Superheat & Sub-Cooling Gauges



Multi-Function A/C & Refrigeration Gauge

Instant superheat, sub-cooling, temperature and pressure readings at the touch of a button. Features built in R22 table or ability to use plug-in refrigerant pressure-temperature memory key. Pulsation proof and accurate at any elevation from sea level to 16,000' without any adjustment. Only by accurately determining the superheat or sub-cooling value, can a system's critical charge be obtained to reach maximum performance.

Instantly Calculates

- Superheat
- Sub-cooling
- Temperature
- Pressure



04-SH31N
Illustrated

Pressure Display Range
29 InHg to 600 psig. (-98kPa to 4134 kPa).
(±1 psi to 200 psi, 0.5% to 600 psi).

Temperature Display Range
-40°C to 93°C (-40°F to 200°F).

Operating Temperature
-12°C to 49°C (-10°F to 120°F).
(±1°F *32°F/120°F, ±1.5°F *-10°F/32°F).

Features

- Simple two button operation.
- Protected sealed touch buttons.
- R22 built-in, R410A key included.
- 300 psi maximum pressure.
- NIST traceable.
- Retracting hanging hook.
- Carrying case.
- Keys for all standard refrigerants.
- Available in °C or °F.
- Low battery indicator.
- Auto shut-Off after 60 min inactivity.
- 100 hours on (1) 9V alkaline (not included).
- 800 psi (5512 kPa) maximum pressure.
- 04-SH31N & SH34N include:
 - 04-A34000 1/4" x 1/4" access.
 - 6' dry/ wet bulb temperature sensor & socks.

Hand Held Digital Superheat & Sub-Cooling Gauge

Part #	Description
04-SH31N	°F model & carrying case.
04-SH34N	°C model & carrying case.

Replacement Parts & Accessories

Part #	Description
04-SH51	28" temperature sensor extension.
04-SH54	6' temperature sensor.
04-SH55	Replacement plastic carrying case.
04-SH56	Socks (5/pk).
04-A34000	1/4" quick coupler x 1/4" access.

04-A34000 recommended for charging hook-up.
Not intended for use on hazardous or corrosive fluids.

Refrigerant Keys

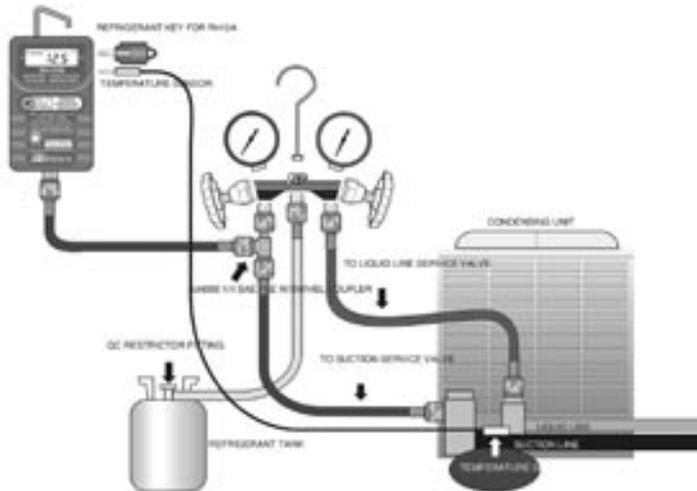
- For 04-SH31N & 04-SH34N.

°F Part #	°C Part #	Description	°F Part #	°C Part #	Description
04-SK40012	04-SK50012	R12	04-SK40407C	04-SK50407C	R407C
R22 key usually built into instruments.		R22	04-SK40408A	04-SK50408A	R408A
04-SK40134A	04-SK50134A	R134a	04-SK40409A	04-SK50409A	R409A
04-SK40401A	04-SK50401A	R401A	04-SK40410A	04-SK50410A	R410A
04-SK40401B	04-SK50401B	R401B	04-SK40411C	04-SK50411C	R411C
04-SK40402A	04-SK50402A	R402A	04-SK40414B	04-SK50414B	R414B
04-SK40402B	04-SK50402B	R402B	04-SK40416A	04-SK50416A	R416A
04-SK40404A	04-SK50404A	R404A	04-SK40500	04-SK50500	R500
04-SK40406A	04-SK50406A	R406A	04-SK40502	04-SK50502	R502
04-SK40407A	04-SK50407A	R407A	04-SK40507	04-SK50507	R507
04-SK40407B	04-SK50407B	R407B	04-SK40476	04-SK50476	RB276

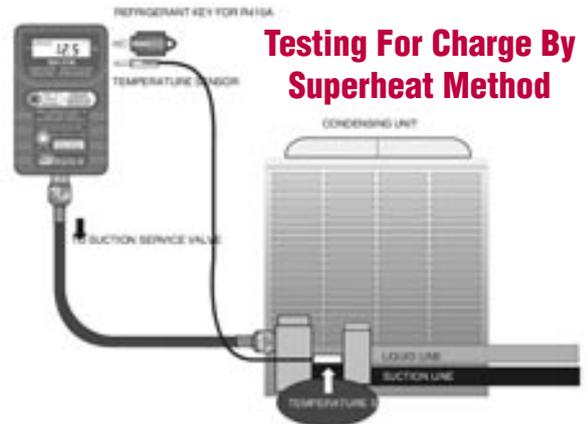
Fahrenheit and Celsius keys are not interchangeable!



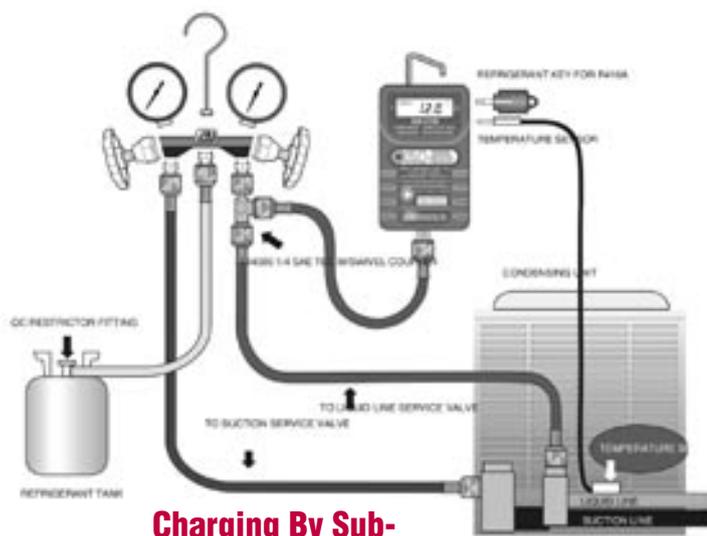
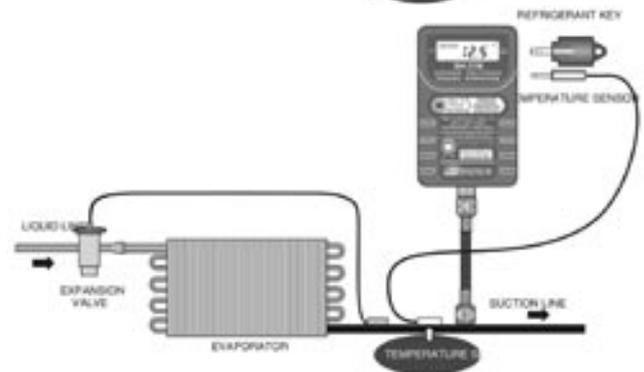
Digital Superheat & Sub-cooling Gauges



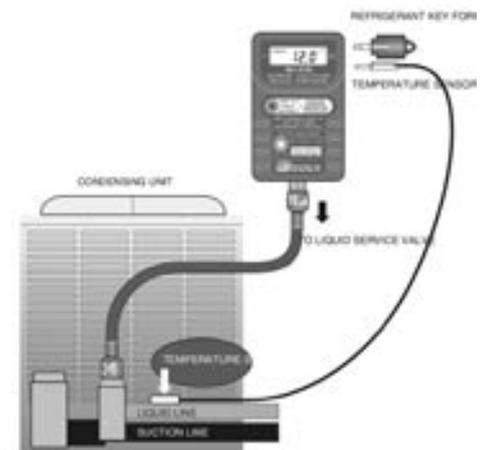
Charging By Superheat Method



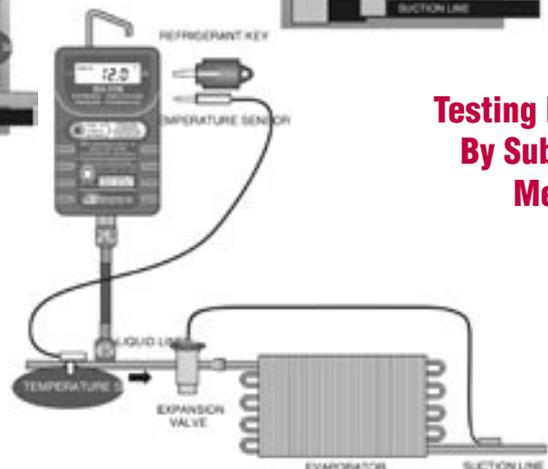
Testing For Charge By Superheat Method



Charging By Sub-cooling Method



Testing For Charge By Sub-cooling Method



Superheat Tube Thermometer Kits

C&D
valve mfg. co

Features

- LCD read out.
- Swivel head.
- On/ Off switch.
- Hold/ Test switch.
- Spare battery



Superheat Line Thermometer

A thermometer to obtain a temperature reading through an access fitting for calculating superheat.

Tube Thermometer

Part #	Description
02-CD3975	Temperature Range: -58°F to 302°F

Superheat Kits

Part #	Description
02-CD3970	Original CRT Kit - Combines 02-CD3910 & 02-CD3975 thermometer.
02-CD3990	BV CRT Kit - Combines 02-CD3930 & 02-CD3975 thermometer.

Instructions for Accurate Superheat

Step 1. Remove Valve Core

Attach the valve core removal tool to the 1/4" male flare fitting on the suction line thumb tight. With side shut-off valve open completely, push extractor in to engage the valve core. Rotate the extractor knob counter clockwise to unscrew the core. Pull the extractor back as far as possible to allow the shut-off valve to be closed. Close shut-off valve completely by rotating clockwise. Remove rear coupler, extractor rod and valve core.

Step 2. Insert Thermometer

Insert the thermometer and rotate the coupler clockwise until thumb tight. Open shut-off valve completely and insert thermometer as far as it will go.

Step 3. Attach Manifold

Attach manifold or low side gauge to the 1/4" access port on the side of the core removal tool.

Step 4. Read the Temperature and Pressure of the Refrigerant

Step 5. Determine Superheat

Referring to a refrigerant "Pressure/Temperature" chart, determine the saturation temperature corresponding to the suction pressure measured. Subtract the saturation temperature from the actual temperature measured. The difference is the superheat of the refrigerant at the point measured. Adjust the expansion valve accordingly or adjust the system charge on cap tube systems.

Step 6. Determine Sub Cooling (If Needed)

Follow Steps 1 - 4 with an access fitting properly located on the liquid line to obtain the actual internal temperature and pressure. Referring to a refrigerant "Pressure/Temperature" chart, determine the condensing temperature for the pressure measured. Subtract the actual temperature measured from the condensing temperature to get true sub-cooling. Make any equipment adjustments that are needed.

Step 7. Replace Valve Core

Reverse procedure in Steps 1 and 2 to replace valve core. Be sure that shut-off valve is open or closed completely as required.

TIPS:

Follow equipment manufacturer's recommendations for adjustment of superheat and sub-cooling. The superheat measurements required for the adjustment of a thermal expansion valve should be made as near the outlet of the evaporator as possible. If no 1/4" access valve is near the outlet of the evaporator, a V-series or M-series valve mounted on the suction line near the evaporator can provide the necessary access.



02-CD3970
Illustrated



02-CD3990
Illustrated

Superheat Tube Thermometer Set



02-C32550
Illustrated

Evacuation Core Remover & Superheat Thermometer Tool Set (J/B)

- Calculate superheat with temperature/ pressure tool.
- Calibrated -58°F to 302°F
- Quarter-turn ball valve shut-off.
- O-ring seals.

Superheat Thermometer Set

Part #	Description
02-C32550	Includes : evacuation, core remover & superheat tool.

Replacement Parts.

Part #	Description
02-C32504	Replacement bit for 02-A32500 & 02-A32525.

Electronic Thermometers



46-TMINI
Illustrated

Mini TEMP-SEEKER® Infrared Gun Thermometers

- Instant temperature measurement over a wide range of applications.
- Simple one-handed operation.
- Laser point sighting, backlit display.
- °C or °F select ability.
- Includes leatherette carrying case and battery.
- Automatic power off feature.

Applications

Quickly measure the temperature of:

- Registers
- Ductwork
- Furnaces,
- Evaporators
- Condensers
- Compressors
- Relays
- Manifolds
- Radiators
- Exhaust systems
- Thermostats
- Bearings and more.

Mini Infrared Temperature Gun

Part #	Description
46-TMINI	<ul style="list-style-type: none"> • Temperature Range: -20°C to 500°C (-4°F to 932°F). • Distance To Spot Ratio: 8:1. • Emissivity: Pre-set at 0.98. • Accuracy: ±2°C (±3°F) or ±2% of reading. • Display: 4 digital backlit LCD. • Resolution: 0.5° C/F° • Power: Approximately 15 hours (9V alkaline included).

Electronic Thermometers



46-TM150
Illustrated

TEMP-SEEKER™ Multi-Port Digital Thermometers

Multipurpose temperature (°C or °F selectable) measurement instrument with three remote temperature stations. Measures temperature differential from any two of the three remote stations. Extra large probe storage area protects the two 4.5m (15') general purpose probes (46-TMX2G) included with kit.

46-TM150

Part #	Description
46-TM150	Includes: (2) 46-TMX2G.

Specification

46-TM150, TM250, TM250A, TM250C Temp-Seekers
<ul style="list-style-type: none"> • Temperature Range: -40°C to 150°C (-40°F to 300°F) 0 to 100% RH. • Accuracy Temperature: 0.1°C (0.2°F) 0°C to 70°C (32°F to 158°F). • Relative Humidity: ±2% of reading (0 to 100%). • Dewpoint: ±2% of reading. • Operation Temperature: 0°C to 60°C (32°F to 140°). • Display: 3 digits, 15 annunciators 12mm (½") characters. • Power: 20 hours continuous use - 9V alkaline battery

Electronic Thermometers

CPS®

TEMP-SEEKER™ Multi-Port Digital Thermometers

Professional grade temperature measurement instrument with four remote stations and a wide range of job specific accessory probes to complete all your temperature testing needs. Measures temperature differential between any two of the four remote stations and incorporates a unique SCAN function that alternates measurement readings between all four of its remote stations in three-second intervals. Upgradeable to measure relative humidity, dewpoint and drybulb using the 46-TMX2RH accessory probe. Incorporates Min/ Max, memory, °C or °F selectable and clear functions.

46-TM250 & 46-TM250C

Part #	Description
46-TM250	Includes: (1) 46-TMX2G, (1) 46-TMX2S, (1) 46-TMX2A.
46-TM250C	Includes: (1) 46-TMX2G, (1) 46-TMX2S, (1) 46-TMX2A, (1) 46-TMX2C.

Specification

46-TM150, TM250, TM250A, TM250C Temp-Seekers

- Temperature Range: -40°C to 150°C (-40°F to 300°F) 0 to 100% RH.
- Accuracy Temperature: 0.1°C (0.2°F) 0°C to 70°C (32°F to 158°F).
- Relative Humidity: ±2% of reading (0 to 100%).
- Dewpoint: ±2% of reading.
- Operation Temperature: 0°C to 60°C (32°F to 140°).
- Display: 3 digits, 15 annunciators 12mm (½") characters.
- Power: 20 hours continuous use - 9V alkaline battery



46-TM250
Illustrated



46-TM250C
Illustrated

Automotive

TEMP-SEEKER™ Multi-Port Digital Thermometers

The 46-TM250A is an excellent tool to diagnose compressor, condenser and evaporator problems for today's automotive critical R134a charged systems. Clamp on and air vent 15' probes allow for road testing problem vehicles. System temperature measurements of up to 4 locations plus the optional humidity probe can be scanned for differential readings. A comprehensive R134a automotive troubleshooting manual is included.

46-TM250A

Part #	Description
46-TM250A	Includes: (1) 46-TMX2G, (1) 46-TMX2C.



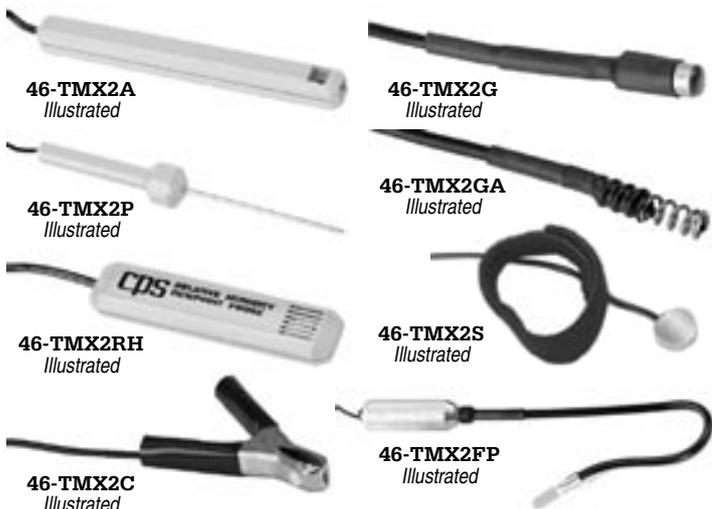
46-TM250A
Illustrated

Electronic Thermometers Replacement Probes

CPS®

46-TM150 & 46-TM250 Series Accessory Probes

Part #	Description
46-TMX2A	Air Probe - 4.5m (15') long.
46-TMX2C	Clamp-On-Probe - 4.5m (15') long.
46-TMX2G	General Purpose Probe - 4.5m (15') long.
46-TMX2GA	General Purpose Air Probe - 4.5m (15') long.
46-TMX2P	Puncture Probe - 4.5m (15') long.
46-TMX2RH	RH/ DP/ Dry Bulb Probe - 4.5m (15') long.
46-TMX2S	Surface Probe - 4.5m (15') long.
46-TMX2FP	Evaporator Flex Probe.



46-TMX2A
Illustrated

46-TMX2G
Illustrated

46-TMX2P
Illustrated

46-TMX2GA
Illustrated

46-TMX2RH
Illustrated

46-TMX2S
Illustrated

46-TMX2C
Illustrated

46-TMX2FP
Illustrated

Digital Thermometers



14-DT52A-4
Illustrated

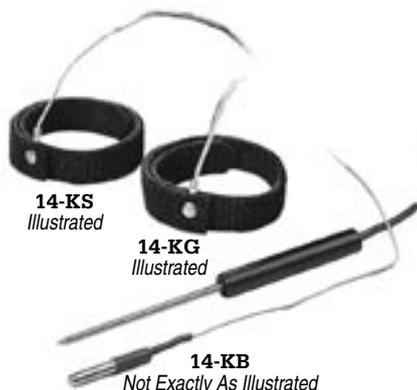
14-DTA Hand Held Differential Series

The Serviceman today needs an instrument that is reliable, durable and accurate, has usable functions and probes for measuring refrigeration and air conditioning systems, and is reasonably priced. The Weiss DT51A and DT52A offers such a product for temperature measurement.

14-DTA Hand Held Differential Series

Part #	Features	Specifications
14-DT51A-1 • Includes: 14-KG	<ul style="list-style-type: none"> • Liquid crystal display. • °F or °C switch. • 2.5 measurements per second. • Data hold feature. • Max hold feature. • Battery included. • Operates 150 hours on 9 volt alkaline battery. • Low battery indicator. • Yellow grip sleeve • Carrying case. • Differential measurement (not available on 14-DT51A-1). • Output jack allows for data recording or computer interface. 	Electrical <ul style="list-style-type: none"> • Temperature Range: -50°C (-50°F) to 1300°C (1999°F). • Resolution 0.1° / 1° • Maximum Voltage at Thermocouple Input: 60V DC, 24V AC. • RF Field De-rating: Strong RF fields can adversely affect measurement accuracy. Environmental <ul style="list-style-type: none"> • Ambient Operating Range: 0°C (32°F) to 50°C (122°F). • Storage Temperature: -10°C (-14°F) to 60°C (140°F). • Humidity: 0% to 90% (0 to 35°C) 0% to 70% (35 to 50°C). Accuracy <ul style="list-style-type: none"> • Single-Thermocouple Measurements : <ul style="list-style-type: none"> - 0.3% ± 1°C (between -50 to 1000°C). - 0.3% ± 2°F (between -50 to 1999°F). • T1-T2 Measurements: <ul style="list-style-type: none"> - ±(0.3% of T1-T2 reading 2°C). - ±(0.3% of T1-T2 reading 2°F).
14-DT52A-2 • Includes: 14-KS (x2)		
14-DT52A-4 • Includes: 14-KS (x2) 14-KG 14-KB		
14-DT52B-2 • Includes: 14-KS (x2)		

Digital Thermometer Accessories



14-KS
Illustrated

14-KG
Illustrated

14-KB
Not Exactly As Illustrated

Replacement / Accessory Probes

Part #	Description	Range	Length
14-KS	Type K surface probe with 31" Velcro strap.	-50°C to 95°C (-50°F to 200°F)	8'
14-KA	Type K air/ surface probe.	-50°C to 125°C (-50°F to 260°F)	8'
14-KG	Type K general purpose probe.	-50°C to 175°C (-50°F to 350°F)	8'
14-KP	Type K puncture probe.	-50°C to 205°C (-50°F to 400°F)	5'
14-KO	Type K oven probe.	-0°C to 705°C (0°F to 1300°F)	8'
14-KL	Type K long with 31" Velcro strap.	-50°C to 95°C (-50°F to 200°F)	8'
14-KB	Type K bead probe.	-50°C to 175°C (-50°F to 350°F)	12'

General Purpose Pocket Thermometers



General Purpose Refrigeration & Freezer Thermometers

The instruments illustrated here are general purpose type. The group consists of bimetal dial, glass, pocket clip, wall mounting, vertical and hanging bracket, indoor outdoor and commercial 1/2" NPT bimetals for use in air ducts.

Dial Thermometer

Part #	Description	Range
14-PT125	Pocket Dial	25 to 125°F
14-PT180	Pocket Dial	-40 to 180°F
14-PT220	Pocket Dial	0 to 220°F
14-134-125	1 3/4" Dial	25 to 125°F
14-134-160	1 3/4" Dial	-40 to 160°F
14-134-220	1 3/4" Dial	0 to 220°F
14-25FBM7	Flange Stem	-40 to 60°F
14-25FBM9	Flange Stem	-40 to 60°F
14-3BM6-120	3" Dial	-20 to 120°F & °C
14-3BM6-130	3" Dial	-30 to 130°F & °C
14-3BM6-250	3" Dial	0 to 250°F & °C
14-25HBM	Hanging or Standing (Refrigerator & Freezer)	-20 to 80°F & °C

Glass Thermometers

Part #	Description	Range
14-PLC120	Pocket Glass	-30 to 120°F
14-PLC220	Pocket Glass	0 to 220°F
14-HB120	Vertical Hanging (Refrigerator & Freezer)	-40 to 120°F & °C
14-HZ80	Horizontal Hanging (Refrigerator & Freezer)	-40 to 80°F & °C

Digital Thermometers

Part #	Description	Range
14-DP300	Pocket Digital (auto off)	-58 to 302°F & °C
14-DP300A	Pocket Digital (waterproof)	-58 to 302°F & °C

Drum Thermometers

Part #	Description	Range
14-DR58	Remote Mounting (Refrigerator & Freezer)	-40 to 60°F & °C



14-PT220
Illustrated

14-134-160
Illustrated

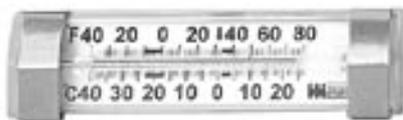
14-25FBM7
Illustrated

14-25HBM
Illustrated



14-PLC220
Illustrated

14-HB120
Illustrated



14-HZ80
Illustrated



14-DP300A
Illustrated

14-DP300
Illustrated



14-DR58
Illustrated

General Purpose Pocket Thermometers

cps®



Multi-Function Pocket Thermometers

Part #	Description
46-TMDP	<ul style="list-style-type: none"> • Digital. • Steel probe with pocket clip. • ON/ OFF operation. • °C or °F selectable. • Temperature Range: -40°C to 230°C (-40°F to 450°F) .
46-TMAPC 46-TMAP	<ul style="list-style-type: none"> • 1" Analog dial. • Steel probe with pocket clip. • Temperature Range: (46-TMAPC) -40°C to 80°C. (46-TMAP) 0°F to 220°F

Multi-Function Pocket Thermometers

cps®



Multi-Function Pocket Thermometer

A step above the standard pocket thermometer, the 46-TM50 is packed full of features, including a user selectable temperature alarm, a countdown timer, Min/ Max, °C or °F selectable and memory functions. The unit incorporates a highly accurate stainless steel 9.6cm puncture probe with a 4' cord.

Multi-Function Digital Pocket Thermometer

Part #	Description
46-TM50	<ul style="list-style-type: none"> • Temperature range: -50°C to 260°C (-58°F to 500°F). • Power - 1.5V "AAA" alkaline battery to provide 25 hours of operation. • Auto-off function and low battery indicator.

Sound Level Meter

cps®



Sound Level Meter

Professional grade sound level indicator designed to measure noise levels from 35 to 130 dm. The unit incorporates a large LCD, maximum hold function, over and under range indicator, peak and average response settings and A-C weightings for checking compliance with standard safety regulations. Applications include the monitoring of HVAC/R compressors, blowers, health and safety requirements, environmental quality issues, offices, factory machinery, airports, auditoriums and studio acoustics. Includes carrying case.

Sound Level Meter

Part #	Specifications
46-SM150	Sound level meter

46-SM150
Illustrated

Digital Temperature Humidity Tester



Temperature Humidity Tester

Accurate humidity measurement at reasonable cost with usable functions best describes the Weiss 14-RHT-1. This rugged hand held instrument features a wide humidity measurement range from 10% to 95% and a temperature range from -4° to 140°F (-20° to 60°C). Accuracy of 2% RH and 1°F, plus a F/C switch, Hold feature and Output Jack make the 14-RHT-1 ideal for HVAC and refrigeration applications. The precision capacitance humidity sensor offers fast response and the output jack offers the ability to record data or remotely monitor both temperature and humidity. These features are normally found on instruments costing much more than the reasonably priced 14-RHT-1, complete with 400 hour 9V battery and case.



14-RHT-1
Illustrated

Digital Temperature Humidity Tester

Part #	Specifications
14-RHT-1	Electrical • Display: 3 1/2" digit, 1/2" LCD display. • Range Humidity: 10% - 95% RH. Temperature: -20 to 140°F (-30 to 60°C). • Resolution: 0.1% RH, 0.1°C, 0.1°F. • Accuracy Humidity: 2% RH @ 25°C, 30 - 95% RH. 5% RH @ 25°C, 10 - 30% RH. • Temperature: ±0.8°C (±1.0°F). • Sensor Type Humidity: precision gold capacitance sensor. Temperature: semiconductor sensor. • Response Time Humidity: 45% - 95% < 3 minutes. 95% - 45% < 5 minutes. Temperature: 1°C / 2 seconds. • Sampling Rate: 2.5 times per second. • Auxiliary Outputs Humidity: 10mVdc/ 1% RH. Temperature: 10mVdc/ 1°C
	Environmental Operating Temperature: 0 to 50°C (32 to 122°F*). *(-20 to 140°F will operate for limited time period). Operating Humidity: >85% RH Storage Temperature: -10 to 60°C (14 to 140°F) Storage Humidity: > 70% RH

Digital Temperature & Humidity Indicator



14-HT2096
Illustrated



Standard Packaging

HT2096 Series Thermo/ Hygrometer

- Temperature & humidity indicator.
- Desktop or wall mounted.
- Compact design.

Part #	Specifications
14-HT-2096C	• 40/0/70°C (15% to 95% RH)
14-HT-2096	• 40/0/122°F (15% to 95% RH)
14-HT-2096FB*	• 40/0/122°F (15% to 95% RH)

* Unit is encased in an attractive brass face plate.

Digital Thermo-Anemometer

cps®



46-AM50
Illustrated

Air Velocity Meter

Precision vane type anemometer provides fast, accurate air velocity measurements for use in balancing HVAC systems or determining CFM calculations. A convenient type "K" thermocouple is built-in to the remote van providing quick measurement of grille or duct outflow temperatures from 0°C to 50°C (32°F to 122°F). Included, is an easy-to-read laminated conversion chart that allows the user to quickly convert air velocity measurements into CFM calculations at a glance. and a rugged carrying case.

Air Velocity Meter

Part #	Specifications	
46-AM50	Range	Accuracy
	• 0 to 8,800 ft/min.	• ±3% or 0.1
	• 0 to 45 m/s.	• ±3% or 0.1
	• 0 to 140 km/hr.	• ±3% or 0.1
	• 0 to 88 knots.	• ±3% or 0.1

Digital Thermo-Anemometer

WEISS INSTRUMENTS

Digital Thermo-Anemometer

The 14-CFM-01 is a valuable tool in the measurement of air flow and air temperature. This instrument will automatically calculate CFM's and CMM (cubic ft. per minute & cubic meters per minute). Instant/ average and 2/3V max flow measurements are simply and easily obtained using the 12 key pads to enter the duct or hood area in feet or meters and displayed on the LCD dual readout. Air velocity can be measured in m/s, ft./min, knots, km/hr. and mph. Temperature readings are obtained with fast response type K thermocouple.



14-CFM-01
Illustrated

Digital Thermo-Anemometer

Part #	Features	Specifications
14-CFM-01	<ul style="list-style-type: none"> • CFM made easy. • Large LCD. • Dual display. • °C or °F. • Auto shut-off. • 9V battery included. • Comes with carrying case. 	<ul style="list-style-type: none"> • Display: 1/2" with 3/8" digit. • Bearing: Sapphire jewel bearing. • Operating Temperature: <ul style="list-style-type: none"> - Meter: 0° to 50°C (32° to 122°F). - Vane: 0° to 60°C (32° to 140°F). • Operating Humidity: Less than 80% RH.

Range Of Wind Temperature

Units	Range	Resolution	Accuracy
°C	0.0 to 45.0	0.2	±1.0°C
°F	32.0 to 113.0	0.36	±1.8°F

Range Of Wind Velocity

Units	Range	Resolution	Accuracy
m/s	0.0 to 45.0	0.1	±3% ±0.1
ft/min	0.0 to 8800	0.1/ 1	±3% ±10
knots	0.0 to 88.0	0.1	±3% ±0.1
km/hr	0.0 to 140.0	0.1	±3% ±0.1
mph	0.0 to 100.0	0.1	±3% ±0.1

Electrical Test Instruments

CPS®

Mini Clamp-On Amp-seeker®

Pocket sized auto ranging clamp-on meter measuring ACA, ACV and continuity. Large 1/2" x 3 1/2" digit (1999 count) LCD display with low battery and data hold indicators. Unit includes probe set and batteries. Protected to a maximum of 800 Vrms/ 500Arms.

Mini Clamp-On Amp-seeker®

Part #	Features	Range	Specifications
46-AC400	Function	Range	Accuracy
	<ul style="list-style-type: none"> VAC ACA Continuity 	<ul style="list-style-type: none"> 200 to 500V 200 to 400A Below 600 Ohms 	<ul style="list-style-type: none"> (±1.2% rdg + 5dgts) 40Hz to 500 Hz (±1.5% rdg + 5dgts) 50Hz to 600 Hz

Analogue Clamp-On Amp-seeker®

Rugged analog display clamp-on meter measuring AC current, AC voltage, Ohms, continuity and temperature (with optional probe). Unit includes high quality probe set, spare fuse (0.5A / 250V), carrying case, "AA" battery and wrist strap.

Analogue Clamp-On Amp-seeker®

Part #	Features	Range	Specifications
46-AC600	Function	Range	Accuracy
	<ul style="list-style-type: none"> VAC ACA Temperature Continuity 	<ul style="list-style-type: none"> 0 to 600V 0 to 600A -50°C to 200°C (-26°F to 392°F) 0-2K Ohm/ 0-200K Ohm 	<ul style="list-style-type: none"> ±3% of full scale ±3% of full scale ±3% of full scale ±3% of full scale

Digital Clamp-On Amp-seeker®

Professional auto-ranging clamp-on volt, ohm amp meter is a multi-functional electrical testing workhorse, capable of performing all of your maintenance and inspection needs. Large 1/2" x 3 1/2" digit (1999 count) LCD display with low battery and data/ peak hold indicators, fully circuit protected to 1100DCV/ 800AC/ 1000A. Unit includes high quality probe set, carrying case and battery.

Digital Clamp-On Amp-seeker®

Part #	Features	Range	Specifications
46-AC610	Function	Range	Accuracy
	<ul style="list-style-type: none"> VAC VDA ACA Resistance Frequency Count Continuity Check 	<ul style="list-style-type: none"> 200mV to 750V 1V to 1,000V 20mA to 600A 200m Ohm -20K Ohm 10Hz to 2 KHz Forward or reverse 	<ul style="list-style-type: none"> ±3% of full scale ±3% of full scale ±3% of full scale

Peak Hold Measurements

Overload Protection	Range	Accuracy
<ul style="list-style-type: none"> 1000A DC1100V / AC800V 	<ul style="list-style-type: none"> 20 to 600A 200 to 750V 	<ul style="list-style-type: none"> (±1.2% rdg + 3dgts) (±0.8% rdg + 2dgts)



46-AC400
Illustrated



46-AC600
Illustrated



46-AC610
Illustrated

Replacement Parts - Electrical Test Instruments

CPS®

Clamp-On AMP-SEEKER® Replacement Parts

Part #	Description	Part #	Description
46-ACXB4	Batteries (2) 1.55V (46-AC400).	46-ACXP	Probe set (46-AC600 & 46-AC610).
46-ACXC6	Carrying case (46-AC600 & 46-AC610).	46-ACXTP	Temperature probe (46-AC600).
46-ACXF60	Fuse (46-AC600)	46-ACXOP	Ohms probe.

Insulation Spray Foam (One-Component)



Applications

- Filling cracks and voids
- Sealing around HVAC units
- Filling gaps around pipes
- Filling gaps behind electrical outlets
- Sealing cracks at wall and floor joints
- Fixing small holes and other damage

Handi-Foam® One-Component Foam

It can be used to economically insulate, seal, bond, fill and stop air infiltration. One-component foams cure when moisture in the air reacts with the chemistry of the foam. All one-component foams meet ASTM E-84 flame spread requirements for caulks and sealants. Handi-Foam One-Component Foam is tack-free in less than 10 minutes and cures within 24 hours. Handi-Foam One-Component Foams cure to in-place densities between 1.0 and 2.0 lb. per cubic foot (16.02 to 32.04 kg. per cubic meter) and carry an R-value of 4 to 5 per inch (0.03 w/m.k). Cured foam can be trimmed, sanded and/or painted.



84-HF1-12
Illustrated

84-P10115
Illustrated

Handi-Foam® Straw Foam

- Handi-Foam Straw Foam with non-flammable propellant/ blowing agent.
- Consists of a canister and one-piece straw applicator.
- Lightweight cans are ideal for small projects.

Part #	Description	Weight
84-HF1-12	Straw Foam 12oz. (340g)	1.17 lb (0.53 kg)
84-HF1-24	Straw Foam 24oz. (680g)	2.0 lb (0.91 kg)
84-HF1-33	Straw Foam 33oz. (935g)	2.58 lb (1.17 kg)

Handi-Foam® Gun Foams

- Consists of a single canister and is applied with a dispensing unit.
- Provides increased control and metering.
- Reduces waste and saves time.
- Handi-Foam Gun Foam with non-flammable propellant /blowing agent.

Part #	Description	Weight
84-P10115	Gun Foam 24oz. (680g)	2.0 lb (0.53 kg)
84-P10290	Gun Foam 31oz. (880g)	2.42 lb (0.55 kg)
84-P10295	Gun Foam (Black) 31oz. (880g)	2.42 lb (0.55 kg)

Handi-Foam® One-Component Cylinders

- Consists of a single canister ordered with or without hoses and applicators.
- Provides the most efficient application for large projects.
- Cylinder foam is often chosen by professionals over straw or gun foam.
- Handi-Foam® Cylinder Foam with non-flammable propellant/ blowing agent.



84-P10340 & 84-P10540
Illustrated

Part #	Description	Weight
84-P10340	160 Handi-Foam® with Accessories	16lbs (7.26kg)/ unit
84-P10341	160 Handi-Foam® without Accessories	15lbs (6.80kg)/ unit
84-P10540	260 Handi-Foam® with Accessories	24lbs (10.89kg)/ unit
84-P10541	260 Handi-Foam® without Accessories	23lbs (10.43kg)/ unit

Insulation Spray Foam (Two-Component)



Applications

- Insulating commercial & residential construction
- Cold storage warehouses
- Noise reduction
- Insulating spas & hot tubs
- Insulating transportation trailers
- Large surface coverage and large voids
- Pole & post settings

Handi-Foam® Two-Component Foam

Chemically cured foam system. Two-component foam systems consist of an "A" component and a "B" component. These two components mix in the nozzle of the dispensing unit, and the resulting foam cures much more quickly than one-component foams. Handi-Foam® Two-component Foams are available in a variety of densities. Handi-Foam® Two-Component Foams expand at a ratio of 8:1 and carries an R-Value of 6 to 7 per inch (2.54cm). Handi-Foam Two-Component Foam is tack free in less than 60 seconds and cures completely in 2 to 5 minutes. Cured foam can be trimmed, sanded and/or painted.



84-HF2-12
Illustrated

84-HF2-15
Illustrated

Handi-Foam® Compact Kits

- Lightweight systems ideal for small projects.
- Disposable compact kits.

Part #	Description
84-HF2-12	Handi-Foam (2x) 12 oz. (340g)
84-HF2-15	Handi-Foam (2x) 15 oz. (New)
84-HF2-22	Handi-foam (2x) 22 oz. (623g)



84-HF2-105
Illustrated

Handi-Foam® Large Kits

- These kits utilize the patented Handi Gun® dispensing unit.
- Increased output and better accuracy.
- Easy open box with pre-attached hoses and upright cylinders.
- Ideal for large projects yet kit still compacts for easy transport and use.
- Consists of two canisters, dispensing system & two nozzles
- Yield = 12 board feet or 1 cubic foot (0.03 cubic meters)

Item #	Description
84-HF2-105	Handi-foam (2x) 105 oz. (2.97g)
84-HF2-205	Handi-foam (2x) 205 oz. (5.81g)
84-HF2-605	Handi-foam (2x) 605 oz. (17.15g)

Handi-Foam Cleaner



84-P10083
Illustrated

Handi-Foam® Polyurethane Cleaner

A spray solvent used to dissolve uncured foam. Handi-Foam Polyurethane Cleaner can also be attached to any of the one-component dispensing units, allowing the unit to be flushed and kept clean and operable.

Handi-Foam Cleaner

Part #	Description
84-P10083	12oz (340 g) Handi-Foam Polyurethane Cleaner

One & Two Component Dispensing Units



84-F61110
Illustrated



84-F61020
Illustrated



84-F61030
Illustrated



84-F61039
Illustrated



84-F61400
Illustrated



84-F66200
Series

One-Component Dispensing Units

Used with Handy-Foam® Gun Foam, Handy-Stick® Adhesives, and Handy-Seal® Window and Door Sealant. The cans screw easily into the unit's adapter, allowing for increased flow and metering control. Handy-Foam® Polyurethane Cleaner should be used to keep the units in good working condition.

Steel Dispensing Units

Built to withstand the rigors of construction; choose the 22" gun for subfloor and hard to reach applications.

Convertible Dispensing Unit

Intended for professionals who use both gun foam and cylinder foam. The Convertible Dispensing Unit has a bottom threaded opening for optional attachment of cylinder foam hoses.

Polymer Dispensing Unit

The least expensive unit intended for limited reuse.

Fomo One-Component Dispensing Units

Part #	Description
84-F61110	Convertible Dispensing Unit 7" (18cm)
84-F61020	Steel Dispensing Unit 22" (56cm)
84-F61030	Steel Dispensing Unit 7" (18cm)
84-F61039	Steel Dispensing Unit 6" (15cm)
84-F61400	Blue Polymer Dispensing Unit 7" (18cm)

Handi-Gun™ Two-Component Dispensing Unit

Comes standard with many of our two-component disposable kits and all of our refillable sets. The Handi-gun offers the highest flow rate available, convenient nozzle attachments, responsive trigger for accurate metering and an anti-crossover design.

Handi-Gun Hose Assemblies

Part #	Description
84-F66200	Handi-Gun Hose Assembly 9½' (3m)
84-F66210	Handi-Gun Hose Assembly 15' (5m)
84-F66220	Handi-Gun Assembly 10" (25cm)

One & Two Component Dispensing Unit Nozzles



Dispensing Unit Nozzles

Part #	Description
84-E54100	4" Plastic Nozzle
84-E54130	6" Brass Nozzle
84-E55100	7" Long Straw
84-F62180	160/ 260 Hose Assembly
84-F66160	Cone fan spray nozzle tips for Handi-Gun 2-comp. (8 pk.)
84-F66170	Cone fan spray nozzle tips for Handi-Gun 2-comp. (50 pk.)
84-F66180	Fan spray nozzle tips for Handi-Gun 2-comp. (8 pk.)
84-F66190	Fan spray nozzle tips for Handi-Gun 2-comp. (50 pk.)
84-HFN	Replacement tip for II-12 & II-22 two-component foam kits.

Silicone

ALTEMP

Features

- Contractors Grade
- 300 ml Cartridge
- 24 Per Case

General Purpose Sealant / Adhesives

Contractor grade sealants and adhesives are formulated for professional contractor use only and are available in a variety of general purpose styles for increased convenience and efficiency. The long-term reliability under extremely environmental conditions make these general purpose silicone adhesives the ideal rubber sealant for any interior or exterior job.



Silicone

Part #	Description
83-SCS1000C	Clear
83-SCS1000W	White
83-SCS1000A	Aluminum
83-SCS1000B	Black
83-IS806*	Red "Hi-Temp"

83-SCS1000 Application Temperature: -37°C to 60°C (-35°F to 140°F).
Performance Temperature: -62°C to 204°C (-80°F to 400°F).
83-IS806 Performance Temperature: -60°C to 260°C (-75°F to 500°F).

Window & Door Sealing Foam



Features

- Does not sag when wet.
- Tack-free in under 5 min.
- Good flow in low temperatures.
- Will not shrink or expand once cured.

84-P10131
Illustrated

Handi-Seal

Handi-Seal window & door sealant is specially formulated for window and door sealing or insulating applications. With unique low pressure and minimal expansion properties any chance of bowing is virtually eliminated. The product also provides superior thermal insulating properties compared to traditional building materials such as fibreglass, mineral fibre and caulk.

Handi-Seal

- Low pressure window & door sealing foam.
- Uses one component dispensing units.

Part #	Description
84-P10131	Handi-Seal window & door gun foam sealant 24 oz. (680g).
84-P10141	Handi-Seal window & door straw foam sealant 24 oz. (680g).

All Purpose Adhesive & Sealant

ALTEMP



15-08512-1
Illustrated

**The Only
Gloo You'll
Ever Need!!**

Repairs:

- Rubber
- Glass
- Fibreglass
- Vinyl
- Metal
- Plastic
- Leather
- Fabric

GLOOZIT®

A premium universal adhesive available in six popular styles to cover all your gluing needs.

Gloozit

- 90 ml tube.

UV Resistant

12/ Carton Part #	Single Tube Part #	Description
15-08312	15-08312-1	Automotive Gloozit.
15-08412	15-08412-1	Home & Craft Gloozit.
15-08512	15-08512-1	Plumber's Gloozit.
15-08612	15-08612-1	Marine & RV Gloozit.
15-08712	15-08712-1	Shoe Gloozit.
15-08812	15-08812-1	Industrial Gloozit.

Adhesives



84-P10132
Illustrated

Handi-Stick® Construction Adhesive

Used as both an adhesive and an insulator, carrying an R-value of 4 to 5 per inch (0.03 w/w.k). It is also an excellent sealant for cracks and small holes. Handi-Stick Construction Adhesive adheres to a variety of building materials, has an open time of approximately 3 minutes and cures tack-free in less 5 minutes.

Handi-Stick Construction Adhesive

- Uses one component dispensing units.

Part #	Description
84-P10132	Handi-Stick Construction Adhesive 24oz. (680g)
84-P10162	Handi-Stick Construction Adhesive 31oz. (880g)



84-P10116
Illustrated

Handi-Stick® Multi-Purpose Adhesive

Dispenses quickly and easily and then slowly flattens for maximum coverage and yield. Handi-Stick Multi-Purpose Adhesive adheres to a variety of building materials and dries tack-free in 15-25 minutes, depending on moisture and temperature conditions. Handi-Stick Multi-Purpose Adhesive has an open time of approximately 20 minutes.

Handi-Stick® Multi-Purpose Adhesive is applied with a dispensing unit, providing increased control and metering. These features help to reduce waste and save time. Fomo Products offers four styles of one-component dispensing units, designed to meet the user's specific requirements.

Handi-Stick Multi-Purpose Adhesive

- Uses one component dispensing units.

Part #	Description
84-P10116	Handi-Stick Multi-Adhesive 24oz. (680g)
84-P10296	Handi-Stick Multi-Adhesive 31oz. (880g)

Applications

- Drywall
- Insulation foam board
- FRP panels
- Ceramic tile



84-P10130
Illustrated

Handi-Stick® Subfloor Adhesive

Creates an extremely strong bond between the floor joist and subfloor decking and offers a permanent adhesion to wet, dry and frozen lumber. Handi-Stick Subfloor Adhesive has an open time of approximately 20 minutes and offers faster application than traditional cartridges for reduced labour costs. Handi-Stick Subfloor Adhesive is used to reduce squeaks, nail pops and sound transmission.

Handi-Stick® Subfloor Adhesive is applied with a dispensing unit, providing increased control and metering. These features help to reduce waste and save time. Fomo Products offers four styles of one-component dispensing units, designed to meet the user's specific requirements.

Handi-Stick Subfloor Adhesive

- Uses one component dispensing units.

Part #	Description
84-P10130	Handi-Stick Subfloor Adhesive 24oz. (680g)

Applications

- Adhering subfloor decking.
- Noise reduction.

Rubberized Cork Insulation Tape



84-PT-30
Illustrated

Wraptite Rubberized Cork Insulation Tape

Formulated to provide insulation and to prevent condensation on hot or cool pipes, fittings and tubing used in heating, air conditioning, refrigeration and plumbing applications. Cork Insulation Tape adheres well to most clean, dry surfaces and to itself, making it possible to apply more than one layer without adding fasteners or adhesives.

It is sufficiently soft and pliable enabling it to be molded around most fitting or connections. The material retains its flexibility and adhesion after prolonged exposure to UV and over a service temperature range of -29°C to 88°C (-20°F to 190°F). Cork Insulation Tape is black in colour and has a grainy, rubber-like consistency which is non-toxic and non-asbestos.

Cork Tape

Part #	Description
84-PT-30	1/8" x 2" x 30' Roll

Foam Insulation Tape



84-F'T-30
Illustrated

Wraptite Foam Insulation Tape

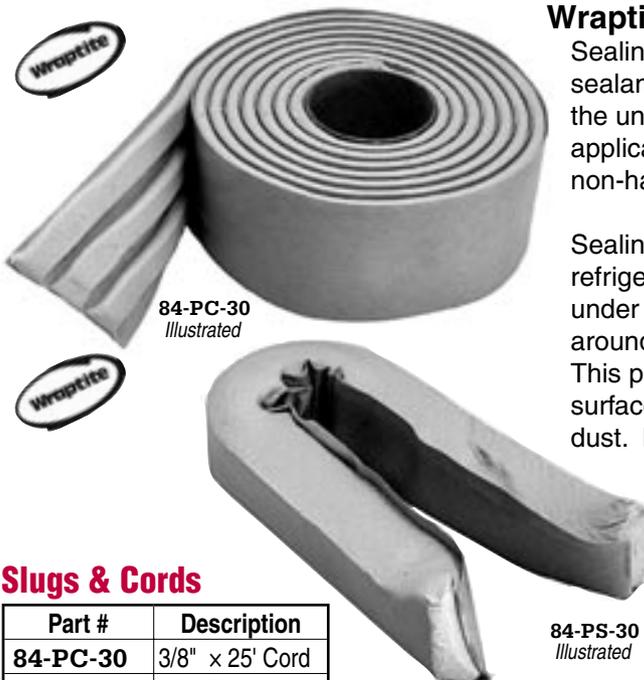
Foam Insulation Tape is designed to seal, insulate and isolate vibration in air conditioning and refrigeration applications. The soft, flexible, closed cell sponge tape with paper covered self-adhesive backing seals out air and moisture while reducing heat loss or transfer. Cold water pipes, valves, chilled water and refrigeration lines can be wrapped to prevent sweating or condensation while hot water pipes and pipe heaters can be wrapped to insulate against heat loss.

Easily applied by hand, Wraptite Foam Insulation Tape adheres well to most clean, dry surfaces and to itself, making it possible to apply more than one layer. The formulated operating temperature of Wraptite Foam Insulation Tape is between -34°C to 82°C (-30°F to 180°F) with the ability to intermittently tolerate temperature of 98°C (210°F).

Foam Tape

Part #	Description
84-F'T-30	1/8" x 2" x 30' Roll

Slugs & Cords



84-PC-30
Illustrated

Wraptite Slugs & Cords

Sealing slugs & cord are soft, permanently pliable, water-resistant sealants having a wide variety of applications. The product has the unique quality of retaining the same consistency throughout its application range of -7°C to 60°C (20°F to 140°F). Non-asbestos and non-hardening, remains flexible to -7°C (-20°F).

Sealing slugs & cords are used widely in the air conditioning and refrigeration industries to seal around outer cases, behind hinges and under breaker strips. They can be used to seal out air or moisture around utility panels, cables, ducts, window frames and metal joints. This product adheres to metal, wood, glass, plastic and most clean surfaces to provide an effective barrier against water, moisture, dirt and dust. It is non-staining, non-bleeding, odorless and can be painted.

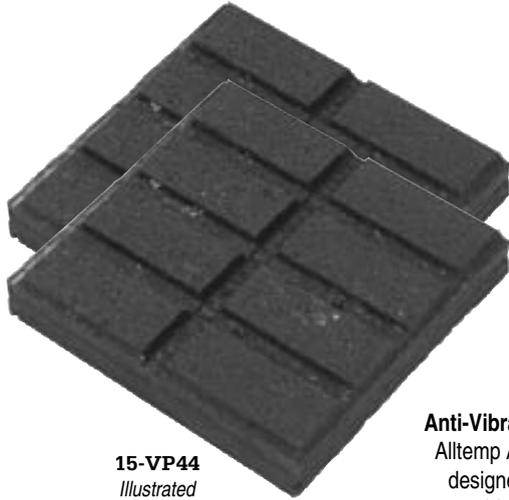
Slugs & Cords

Part #	Description
84-PC-30	3/8" x 25' Cord
84-PS-30	2 lb. Slug
84-PS30-B	50 lb. Bulk Slug

84-PS-30
Illustrated



Anti-Vibration Pads



15-VP44
Illustrated

Anti-Vibration

- Alltemp Anti-Vibration Pads designed for industry and machinery applications.
- Air conditioning and heating
 - Pumps
 - Compressors
 - Household appliances
 - Construction Applications

Features

- Can be installed directly under machinery.
- A highly effective Anti-vibration pad.
- Used in residential, industrial and commercial applications.
- Superior anti-vibration pad made from recycled rubber by-products.
 - Surface - Anti-Skid Honeycomb (shallow hexagons).
 - Underside - Air circulation grooves every 19 mm (3/4").
- Shock-absorbing properties.
- Water-resistant.
- Coefficient of heat transmission: R-2/ inch.

Anti-Vibration Pads

Part #	Description
15-VP22	2" x 2" (5.08cm x 5.08cm)
15-VP33	3" x 3" (7.62cm x 7.62cm)
15-VP44	4" x 4" (10.16cm x 10.16cm)
15-VP66	6" x 6" (15.24cm x 15.24cm)
15-VP1212	12" x 12" (30.48cm x 30.48cm)
15-VP1818	18" x 18" (45.72cm x 45.72cm)

All Anti-Vibration Pads 7/8" Thick

Strapping



15-PC-10
Copper



15-PS-10
Steel

Copper & Steel All Purpose Strapping

- The smooth wavy edges make it easier to bend.
- Uniform strength - no weakness at strip holes.
- 1001 uses!

All Purpose Strapping

Part #	Description
15-PC-10	½ Gauge x 10' Copper (wavy edges)
15-PC-25	½ Gauge x 25' Copper (wavy edges)
15-PS-10	¾" Gauge x 10" Steel - zinc coated (straight edges)
15-PS-25	¾" Gauge x 25" Steel - zinc coated (straight edges)
15-PS-50	¾" Gauge x 50" Steel - zinc coated (straight edges)

Bungee Cords

Heavy Duty Rubber Tie Down Straps

- Available in 9", 15", 21" & 31" lengths.
- Sold individually.



15-BC9
Illustrated

**Super Value!
Excellent Price!**

Applications

- Tie down:
- Cylinders
 - Ladders
 - Tubing to equipment
 - Car trunks
 - Basically anything in seconds!!

A Must For Every Truck!

Bungee Cords

Part #	Description
12-BC9	23 cm (9")
12-BC15	38 cm (15")
12-BC21	54 cm (21")
12-BC31	79 cm (31")

Carts

ALTEMP



54-RMST-3
Illustrated

Universal Shop Utility Cart

- Steel, 2 shelf service cart with handles on both ends.
- 4 large, heavy-duty swivel caster wheels.
- 32 strapping holes for securing equipment.
- Mounting bar ideal for hanging manifold, hoses, tools or parts.

Universal Shop Utility Cart

Part #	Description
54-RMST-3	Mobile service shop cart.

Applications

- Air conditioning & refrigeration service centre:
 - Recovery machines.
 - Vacuum pump.
 - Charging cylinders.
 - Refrigerant tanks & scales.
 - Manifolds & hoses.
 - Designed for 54-RMS2112 & RMS2134 recovery systems.
- Parts cart.
- Order picking carts.
- Equipment & service tools storage.
- Moves heavy loads without unsafe lifting or carrying around any service shop or farm.

Rags

ALTEMP

Service & Shop Wipers

Reclaimed rags are sold by net weight for maximum value. Buttons and zippers have been removed. Service & shop wipers use a highly specialized packaging system, which compresses wiping rags into small, compact, clear plastic packages. These packages hold numerous benefits over corrugated boxes.



Service Package

20-536-10
10 lbs. Package

Heavy Duty

- Soft, general purpose wiping cloths are an ideal medium weight rag for absorbing or cleaning liquids, oils and grease. Perfect for auto shops and HVAC/R contractors.

Package Features

- Compact: 50% space savings.
- Stackable.
- Save money on storage.
- Easy-to-handle.
- Save money on transport.
- Extremely attractive for resale purposes.
- Waterproof.
- Hassle-free dispensing design.

Heavy Duty Service & Shop Rags

Coloured rags equivalent to soft, thick, fleece like sweatshirt material.

Part #	Description	Weight
20-546-10	10 lbs. service size pack.	4.5 kg (10 lbs)
20-546-25	25 lbs. shop size pack.	11.3 kg (25 lbs)

Medium Duty

- Low cost, no lint, light weight general purpose shop rags. A good general purpose, medium quality wiper at a relatively low cost.

Medium Duty Service & Shop Rags

Coloured rags, similar to balbriggan or Polo cotton T-shirt material.

Part #	Description	Weight
20-536-10	10 lbs. service size pack.	4.5 kg (10 lbs)
20-536-25	25 lbs. shop size pack.	11.3 kg (25 lbs)

Light/ Medium Duty

- Low cost, no lint, light weight general purpose shop rags. A good general purpose wiper at a relatively low cost.

Light/ Medium Duty Service & Shop Rags

Lightly coloured, near white cotton blend rags, similar to dress shirts or linen sheet material.

Part #	Description	Weight
20-538-10	10 lbs. service size pack.	4.5 kg (10 lbs)
20-538-25	25 lbs. shop size pack.	11.3 kg (25 lbs)



Shop Package

20-536-25
25 lbs. Package

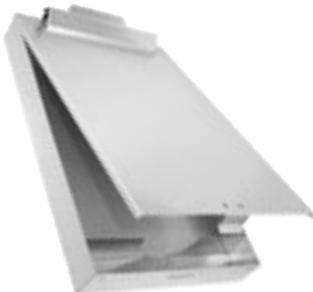
Form Holders



"A"-Holder



Clip Board



Ready-Rite



Snapak

Privacy cover / hinged writing plate conceals confidential documents, prevents write-through on carbon forms & protects documents from the elements.

Saunders - The Original Aluminum Form Holders

- Aluminum - heavy duty construction.
- Finish resists weather, stains & mildew.
- Lightweight & built to last!
- A size and style for every need!

Form Holders

Part #	Description	Form Size	Storage Capacity
15-AH8512	"A"-Holder Compact & versatile!	8½" x 12"	3/8"
15-KK8512	Clip Board Controlled environment applications!	9" x 12½"	1/2"
15-RR8512	Ready-Rite - bottom opening. Portable storage desk & organizer!	8½" x 12"	1½"
15-SN5795	Snapak - side opening. Interior clip & storage forms holder	5 2/3" x 9½"	3/8"
15-SN8512	Snapak - side opening. Interior clip & storage forms holder	8½" x 12"	3/8"
15-SN8515	Snapak - side opening. Interior clip & storage forms holder	8½" x 15"	3/8"
15-SN9512	Snapak - side opening. Interior clip & storage forms holder	9½" x 12"	3/8"

Smoke Emitters



61-S210
Illustrated



61-HT102
Illustrated



61-HT105
Illustrated

Smoke Emitters

Smoke products provide an inexpensive method of generating swirling smoke. This is a great product for testing of all high, medium, and low pressure duct-work systems and also for air balancing. The smoke emitted does not contain oil nor zinc and will not leave any residue. It is non-toxic and has the same density as air, so that it is possible to observe true air movements without the complicating factor of having to allow for the natural rise or fall of the smoke. The particle size is 0.3 to 2.5 microns making it ideal to check HEPA filters. The smoke cartridges produce a generous amount of smoke, which is emitted at a constant rate to help with the identification of flow patterns.

**Check duct work,
filters, air balancing!**

Applications

- "DATAx" designed for super-clean areas like data processing rooms.
- Smoke emitted at constant rate.
- Leak test duct work, air balancing.
- Study make-up air systems.

Cartridge Type Smoke Emitters.

Part #	Type	Burning Time (seconds)	Cartridge / Pack	Smoke Emitted (Cu. ft.)	Weight / Cartridge
61-S210	Splintax	20	20 matches/ pk	20	1/4 lbs
61-HT102	Fumax	45	10	150	1/10 lbs
61-HT103	Fumax KS	90	10	600	1/3 lbs
61-HT104	Ventax	180	5	1,200	2/3 lbs
61-HT105	Datax	240	5	2,500	2 lbs
61-HT107	Brandax KS	480	1	18,000	1 lbs

Multi Purpose Cleaner



Spray Nine - Premium Multi-Purpose Cleaner/ Degreaser/ Disinfectant

Spray Nine - The First & Still The Best!

Spray Nine cleans hard surfaces such as stainless steel, plastic, tile, rubber, vinyl, fibreglass, porcelain and formica with "spray on-wipe off" ease.

Digs Out Tough Soils Fast!

Enriched with a powerful germicidal, Spray Nine can be used to disinfect and deodorize hospitals, nursing homes, schools, and other institutions where housekeeping is of prime importance. Also controls mold and mildew while destroying bacterial odors.

30 second disinfecting time*!

When used as directed, Spray Nine will disinfect hard non-porous surfaces such as walls, floors, tables, chairs and countertops. Spray Nine kills many bacteria and destroys powerful odors. Used as a hospital grade disinfectant, Spray Nine has been registered by Health and Welfare Canada to kill HIV-1 virus (associated with AIDS), Salmonella, Staphylococci, and Pseudomonas on inanimate surfaces in just 30 seconds. Used regularly, Spray Nine greatly reduces the risk of cross infection.

* Most disinfectant products require a 10 minute contact time to kill germs.



15-26824
700 ml Pump

15-26825
739 ml Spray



15-26832
946 ml Spray



15-26804
4 L Jug



15-26820
20 L pail

Spray Nine

Part #	Description	Package
15-26824	700 ml pump bottle	12/ctn
15-26825	739 ml spray bottle	12/ctn
15-26832	946 ml spray bottle	12/ctn
15-26804	4 L jug	4/ctn
15-26820	20 L pail	1

Multi Purpose Cleaner - Wipes



Spray Nine - Wipes Multi-Purpose Cleaner/ Degreaser/ Disinfectant

Spray Nine - Wipes

The cleaning and disinfecting power you've grown to expect from Spray Nine multi-purpose cleaners is now available in convenient wipe style sheets.

Features

- Quick
- Convenient
- Fresh scent

Applications

- Home
- Work
- Automobile
- Office

Spray Nine Wipes

Part #	Description	Package
15-C268WP	25 wipes per tube.	6/ctn



15-C268WP
20 L pail

HVAC - Coil Cleaner

HVAC Cleaner

Industrial & Commercial Liquid Cleaner

HVAC Liquid Cleaner is a balanced formulation of degreasers, alkaline cleaners, corrosion inhibitors, surfactants and wetting agents designed specifically around the cleaning needs of the HVAC industry. It cleans condenser or evaporator coils, air handlers, fan blades, permanent filters, collector cells and exhaust vents by removing dust, grease, tar, resins and other air borne pollutants. HVAC is free rinsing, non flammable and contains no petroleum solvents. Simply spray on and rinse off. HVAC is also harmless to pure metals or alloys, zinc or chrome plating, rubber, plastics, fibreglass and most enameled surfaces.

Exclusive To Alltemp



15-101
Illustrated



15-102
Illustrated

HVAC Cleaner

Part #	Description	Package
15-101	946 ml spray bottle	12/ctn
15-102	4 L jug	4/ctn
15-103	20 L pail	1
15-104	68 L	1
15-105	205 L	1

Degreasers / Multi Purpose Cleaners



Spray Nine - Industrial Multi-Purpose Cleaner/ Degreaser

Spray Nine Industrial - The In-process Cleaning & Degreasing Solution!

No other product removes really tough industrial soils as quickly and effectively from manufacturing equipment, engines and machinery to countertops, floors and even washrooms as Spray Nine Industrial. The ready to use formula saves time, labour and money by effectively serving as a all in one cleaner.



15-13532
Illustrated



15-13501
Illustrated

Spray Nine - Industrial

Part #	Description	Package
15-13532	946 ml spray bottle	12/ctn
15-13501	3.78 L jug	6/ctn
15-13520	20 L pail	1
15-13545	208 L	1

Degreasers / Multi Purpose Cleaners



Grez-Off - Industrial Strength Degreaser

Rated #1 in an independent consumer report! A breakthrough degreaser with block buster power. Grez-Off cuts thru heavy grease and soil quickly and effectively on engines, shop machinery, tools, garden & farm equipment, condenser & evaporator coils, gas grills, driveway stains, garage floors and much more. Grez-Off is a great non-flammable alternative to harsh petroleum solvent-based degreasers. Biodegradable, Grez-Off is made with you and the environment in mind.

Grez-Off

Part #	Description	Package
15-12632	946 ml spray bottle	12/ctn
15-C12601	3.78 L jug	6/ctn
15-12620	20 L pail	1
15-12656	57 L	1
15-12645	208 L	1

Citrus Blaster

Degreaser

A bolt of true cleaning power, charged with nature's own d'Limonen - a pure orange solvent. Orange Lightning instantly dissolves and lifts grease, tar, asphalt and adhesives from machinery, equipment, tile, concrete floors, engines, tools and many other tough to clean materials. This environmentally friendly formula contains no petroleum solvents and smells orange fresh.

Citrus Blaster

Part #	Description	Package
15-15717	495g aerosol can style	12/ctn

Orange Lightning

Degreaser/ Cleaner

A bolt of true cleaning power blasts away dirt, grease and grime in a flash. The versatility of the product enables it to zap stubborn soils from workshop surfaces such as engines, tools, shop machinery, garage floors and more! Ideal for automotive tasks. Charged with a burst of pure orange oil for a citrus fresh scent.

Orange Lightning

Part #	Description	Package
15-C47832	946 ml spray bottle	12/ctn
15-C47804	4 L jug	4/ctn
15-C47820	20 L pail	1
15-C47845	208 L pail	1

Kork Buster

Engine & Equipment Degreaser

Concentrated engine and equipment degreaser formulated for dilution with kerosene for maximum cleaning efficiency with optimum economy. A unique blend of grease and oil penetrates, emulsifiers for complete rinsing and rust inhibitors to protect cleaned metal.

Kork Buster

Part #	Description	Package
15-C12401	3.78 L jug	4/ctn
15-C12420	20 L pail	1
15-C12456	57 L pail	1
15-C12445	208 L	1



15-12632
Illustrated



15-12601
Illustrated



15-15717
Illustrated



15-C47832
Illustrated



15-C12420
Illustrated

Glass Cleaners



Glass & Stainless Steel Cleaner

All-Purpose Glass Cleaner

Glass & Stainless Steel Cleaner cuts soils instantly on glass, metal, formica and more. A true light duty, all-purpose cleaner that sprays on and wipes clean without streaking, leaving glass and metal sparkling.

Glass Cleaner

Part #	Description	Package
15-C23319	539 g aerosol can style	12/ctn

15-C23319
Illustrated



15-C23320
Illustrated

Window Clean RTU

All-Purpose Glass Cleaner

Premium cleaners for glass, metal and lightly soiled surfaces. A special blend of ammonia, solvents and surfactants provide powerful cleaning action and rapid streak-free drying

Window Clean RTU

Part #	Description	Package
15-C23301	3.78 L jug	6/ctn
15-C23320	20 L pail	1
15-C23345	208 L	1

Bathroom Cleaner



15-C27525
Illustrated



15-C27501
Illustrated

Tub'N Tile Cleaner

All-Purpose Bathroom Cleaner

A unique high foaming, non-acid, bleach and abrasive-free bathroom cleaner. Tub'N Tile Cleaner's powerful, ready to use formula penetrates and dissolves tough soap scum and hard water deposits quickly and effectively. Use on tile, grout, porcelain, baked enamel, stainless steel, acrylic, formica, fiberglass, fixtures, tubs, shower curtains/ doors and other rest room surfaces. Also makes for an ideal non-acid bowl cleaner. Tub'N Tile Cleaner leaves washrooms sparkling clean and lemon-lime fresh.

Tub'N Tile Cleaner

Part #	Description	Package
15-C27525	739 ml spray bottle	12/ctn
15-C27501	3.78 L jug	6/ctn

Odor Neutralizers & Air Fresheners



15-C23032
Illustrated



15-C23001
Illustrated

Odor Eliminator

Air Deodorizer

An odor neutralizer and air freshener all in one. Contains a specially developed odor counter-actant that eliminates most malodors, leaving a clean, fresh floral fragrance.

Odor Eliminator

Part #	Description	Package
15-C23032	946 ml spray bottle	12/ctn
15-C23001	3.78 L jug	6/ctn

Fireplace Cleaners



15-C15825
Illustrated



15-C15825DSP
Illustrated

Fireview - Fireplace Premium Fireplace, Glass & Woodstove Cleaner

Fireview Premium Fireplace Glass & Woodstove Cleaner is formulated to remove stubborn carbon-based soils without tedious scrubbing. Dissolves burned-on carbon deposits and creosote build-up on contact! Tackles smoke residue, soot, ash dust and grime on stone, brick, grates, grills, toolsets, hearth rugs and more. Cleans cast, iron, steel, porcelain, soapstone and enamel surfaces quickly. Safer - no acids, non-caustic and non-corrosive.

Fireplace Cleaner

Part #	Description	Package
15-C15825	739 ml spray bottle	12/ctn

Fireview - Fireplace Display Program Great Merchandising Solution!

Enhance your fireplace selection with the Fireview Display Program. In-store impulse sales are maximized with Fireview's traffic stopping merchandising unit - Free to every stocking location. This attractive, durable and two shelf unit comes pre-assembled and occupies just 2½ square feet of floor space to display 24 bottles.

Gas Fireplace Cleaner

Part #	Description	Package
15-C15825DSP	(24) 739 ml spray bottles & display merchandiser.	24/ctn



15-C15808
Illustrated



Gas Fireview display merchandiser available upon request.

Fireview - Gas Gas Fireplace Glass Cleaner

Fireview Gas Fireplace Cleaner is specially formulated to remove unsightly "white haze", baked-on smoke, carbon and mineral deposits caused by gas-log fires. Gas fireplace cleaner polishes glass crystal clear and leaves a protective, invisible coating to help prevent future build-up. Fireview Gas Fireplace Cleaner is the sure-fire solution for maintaining the beauty and ambiance of your gas fireplace.

Gas Fireplace Display Pack

Part #	Description	Package
15-C15808	236 ml bottle	12/ctn

BBQ Cleaner



15-C26725
Illustrated

BBQ Grill Cleaner Complete Barbecue Cleaner

Innovative barbecue cleaner that revitalizes grills to look like new. Effortlessly dissolves grease, fat, burned-on food and carbon deposits quickly and effectively. BBQ Grill Cleaner is ideal for grates, propane tanks, countertops, utensils, painted surfaces, stainless steel, brick, aluminum, ceramic, tempered glass and treated wood. In addition to being biodegradable and non-flammable, BBQ Grill Cleaner is dye-free and has a mild, pleasant fragrance... no harsh chemical fumes!

BBQ Grill Cleaner

Part #	Description	Package
15-C26725	739 ml spray bottle	12/ctn

Patio Furniture Cleaner



15-C26625
Illustrated

Patio Furniture Cleaner

Deep Cleaning, Versatile & Biodegradable

Patio Furniture Cleaner brightens, revitalizes and restores patio or poolside furniture by removing really tough dirt, stains and grime. Simply spray on and wipe off. Patio Furniture Cleaner is a clear biodegradable product with a pleasant lavender fragrance which can be used on a variety of patio furniture including vinyl, wicker, canvas umbrellas or canopies, plastic, painted surfaces, counters, yard ornaments and metals.

Patio Furniture Cleaner

Part #	Description	Package
15-C26625	739 ml spray bottle	12/ctn



15-C26C25DSP
Patio Furniture Cleaner
& BBQ Grill Cleaner
display merchandiser

Patio Furniture & BBQ Grill Cleaner Display Program

Great Merchandising Solution!

Enhance your outdoor cleaning products selection with the Patio Furniture & BBQ Grill Display Program. In-store impulse sales are maximized with this two in one traffic stopping merchandising unit - Free to every stocking location. This attractive and durable four shelf unit comes pre-assembled and occupies just 2½ square feet of floor space to display 12 bottles of each - Patio Furniture & BBQ Grill Cleaner products.

Patio & BBQ Cleaner Display Pack

Part #	Description	Package
15-C26C25DSP	(12) 739 ml Patio Furniture Cleaner spray bottles. (12) 739 ml BBQ Grill Cleaner spray bottles. 24 bottles total & display merchandiser.	24/ctn

Garage Floor Cleaner



15-C11525
Illustrated

Garage Floor Cleaner

Concrete Floor Cleaner

A powerful, powdered alkaline detergent mixture formulated to quickly and completely remove dirt, grease and oil from concrete floors. Repeated side by side tests with leading competitive products have consistently shown Garage Floor Cleaner to be the winner - the best cleaner in its category.

Garage Floor Cleaner

Part #	Description	Package
15-C11525	11.3 kg pail	1
15-C11550	22.7 kg pail	1

Hand Cleaners



15-C21501
Illustrated

Grease Grabber

Hand Cleaner

Hard Hitting, Two Fisted Mechanics' Hand Cleaner!

Grease Grabber's improved, fast-breaking, cleaning power cuts through grease, tar, paint, gasket cement, ink and other tough soils on contact. Fortified with soothing lanolin for chapped skin. Pleasant fragrance too! Grease Grabber does not contain any acids or caustic chemicals. Bolstered with additional heavier grade pumice, Knight's extra heavy duty Grease Grabber digs out really nasty soils as the original with soothing skin conditioner for rough hands.

Grease Grabber

Part #	Description	Package
15-C21501	3.78 L pump jug	6/ctn



15-C13104
Illustrated



15-C71500
Poly 500
Dispenser

Poly Scrub

Hand Cleaner

Antibacterial industrial hand cleaner formulated with millions of dirt busting poly "scrubbers" that dig out and mob up even the toughest soils. Removes ink, grease, adhesives, varnish, hydraulic fluids, carbon and other tough industrial soils. Poly Scrub also eliminates nasty odors leaving a fresh lemon/lime fragrance. Solvent free Poly Scrub moisturizes hard working hands and softens skin. Poly Scrub contains chloroxylenol which is a skin substantive antiseptic that destroys micro-organisms, kills germs and reduces the risk of cross infection.

Poly Scrub

Part #	Description	Package
15-C13175	213 g container	12/ctn
15-C13104	1.81 kg pail	6/ctn
15-C71500	Poly 500 Dispenser Designed exclusively to dispense Poly Scrub hand cleaner.	6/ctn



15-C46216
Illustrated

Knuckles

Dirt Blocking Hand Cream

The proactive hand cleaner that effectively blocks dirt and grime and allows quick and easy removal of the toughest soils such as grease, tar, asphalt, pitch, caulk, adhesives, cement, glue, paint, ink and more. Simply apply the non-greasy formula with pleasant floral fragrance to hands before they get dirty and tough soils will simply wash away.

Knuckles

Part #	Description	Package
15-C46216	473 ml bottle	12/ctn

Lubricants & Protectants



15-C10
Illustrated

Break•Away Fast Penetrating Oil

Brake•Away is a pure oil-based product that penetrates faster and lubricates longer. It leaves a thicker, longer lasting film vs. light duty solvent-based water displacement formulas. Brake•Away is famous for completing the cycle of lubrication and reducing the coefficient of friction on hot or cold moving parts. Whether it be freeing frozen parts, lubricating moving components or protecting tools and equipment from rust or corrosion, Brake•Away's fast penetrating oil is your anywhere, anytime solution. Contains no ozone depleting CFC's. (pin point applicator straw included).

Break Away

Part #	Description	Package
15-C10	369g aerosol can style	12/ctn



15-C33
Illustrated

Silicone Spray Synthetic Polymer Lube - The Heavy Duty, Industrial Grade Lubricant!

Silicone Spray's industrial grade formula is an extra heavy-duty concentrate of high quality silicone for maximum performance. Silicone Spray lubricates mechanical parts, conditions rubber, waterproofs and protects against rust or corrosion. Silicone is a stain-free synthetic polymer lubricant that virtually dries to the touch. It reduces friction and lubricates without petroleum oil or grease. Contains no ozone depleting CFC's. (pin point applicator straw included).

Silicone Spray

Part #	Description	Package
15-C33	450 ml aerosol can style	12/ctn



15-C34
Illustrated

White Grease Heavy Duty Lithium Plus Teflon®

White Grease is a uniquely blended grease that sprays on as a liquid, penetrates and then sets up as a lubricating grease to reduce wear, stop squeaks and repel moisture. Once set-up White Grease remains soft and pliable without drying out. Excellent for applications with close tolerances where metal to metal or metal to plastic lubrication and lasting protection are desired. White Grease works well in both high or low temperatures and in all types of weather. Contains no ozone depleting CFC's. (pin point applicator straw included).

White Grease

Part #	Description	Package
15-C34	443.5 ml aerosol can style	12/ctn

Lubricants & Protectants

EZ Telescopic Oiler

The Finest All-Purpose Industrial Oil

The telescoping Spout That Reaches Everywhere! Telescopic Oiler's are specially formulated to reduce wear on moving parts. The oil contains superior additives with anti-rust properties preventing corrosion. The convenient retractable spout makes it easy to get to those hard to reach places.

Oiler

Part #	Description	Package
10-ZS75	118 ml telescopic bottle	12/ctn



10-ZS75
Illustrated

10-RB75
Illustrated

EZ Rust Breaker

The Finest All-Purpose Industrial Oil

Alltemp's Rust Breaker is specially formulated to quickly loosen rust and frozen parts. Rust Breaker's demineralizing agents act as a penetrating oil and superior rust inhibitor. The telescoping spout reaches everywhere! The convenient retractable spout makes it easy to get to those hard to reach places.

Rust Breaker

Part #	Description	Package
10-RB75	118 ml telescopic bottle	12/ctn

Lubricant

High Performance Lubricant

Enviro ProLube is blended from the highest quality natural ingredients which are uniquely formulated to loosen rusted, seized parts, nuts and bolts with ease. EnviroLube's capillary action combined with superior lubrication works in minutes to reduce torque and thread wear, requiring less replacement of parts, machinery and equipment. User-friendly, EnviroLube is compatible with all metals, alloys, plastic, rubber and synthetics. EnviroLube saves time and money.

- Non-aerosol.
- Displaces moisture.
- User friendly formulation.
- No harmful solvents.
- Non-flammable in liquid state.
- Will not damage painted surfaces.
- Protects metals.
- 100% active ingredients (use less, superior performance, better value).
- Fast long lasting lubrication (last up to 1 year without evaporation).
- Ensures smooth operation of machinery and fine mechanisms.
- Formulated to food grade standards.
- Environmentally friendly.

Applications

- Loosens seized or stiff joints, nuts, bolts or rusted parts.
- Lubricates bearings, pumps, shafts, hinges, locks, O-rings and seals.

High Performance Lubricant

Part #	Description	Package
20-6300	130 ml. (850 applications).	12 cans per case.
20-6400	284 ml. (1850 applications).	12 cans per case.



20-6300
850 Applications

20-6400
1850 Applications

Plumbing Tube & Fitting Brushes

MILL-ROSE

Tube & Fitting Brushes

Six models of brushes are made available to ensure clean, tight, leak proof joints in all your installation or repair projects.

6300 Series Fitting Brushes

Sets the industry's standard for quality. These brushes have 4 wire, double-spiral, heavy-gauge galvanized, double stems and oil-tempered, high-carbon fill wire to deliver a stiffer brush action and longer life. Each brush is clearly marked with its nominal size, UPC and individually boxed.

- Heavy-Duty
- Professional Plumbing
- Premium Quality AAA



61-63060
Illustrated

Part #	Nominal ID
61-63035	1/2"
61-63060	3/4"
61-63085	1"



61-61332
Illustrated

6100 "Hard-Head" Series Fitting Brushes

The hard-head features a protective galvanized end plate that prevents the brush from going beyond either a fitting or valve stop. This helps reduce damage to valve seats & seals, extends brush life and reduces misuse in under sized fittings. Constructed with heavy-gauge galvanized stem wire and high carbon fill wire.

- Superior Quality AA.

Part #	Nominal ID
61-61212	1/2"
61-61332	3/4"
61-61453	1"

"Hard-Head" Fitting Brush Point-Of-Purchase Display

Build sales at the point-of purchase with this 2 colour display. Contains 24 Hard-head fitting brushes that last 2 times longer than standard fitting brushes.



61-61625
Illustrated

Part #	Description
61-61625	(12) 1/2" & (12) 3/4" Hard head fitting brushes.

6700 Series Fitting Brushes

The next best brush available to the 6300 series. These brushes feature double stem, single spiral construction with heavy-gauge galvanized stem wire secured in a large, hand-contoured handle. Spring-tempered stainless steel fill bristles are standard and prevent rust.

- Heavy-Duty.
- Professional Plumbing.
- Superior Quality AA.



61-67020
Illustrated

Part #	ID	OD
61-67020	1/2"	5/8"
61-67030	3/4"	7/8"
61-67040	1"	1 1/8"



61-61330
Illustrated

6100 Series Standard Fitting Brushes

An inexpensive answer to clean fittings. High carbon crimped steel bristles cut faster and last longer than similar brushes. Two-wire galvanized stem fastens securely into a contour plastic handle that has a hanging hole for point of purchase display.

- Good Quality A.

Part #	Nominal ID
61-61210	1/2"
61-61330	3/4"
61-61450	1"

9600 Standard Series Fitting Brush

An economical answer to clean fittings Galvanized stem wire with stainless steel bristles cut faster and last longer than similar brushes.

- Good Quality A.

Part #	ID	OD
61-96030	1/2"	5/8"
61-96050	3/4"	7/8"
61-96070	1"	1 1/8"



61-9600
Series



61-6800
Series

6800 "Quick-Twist" Series Fitting Brushes

The only all stainless steel fitting brush on the market; both stem and fill wire. This is a spark proof brush that will not rust. Meets MIL and ASTM specifications where a spark-proof brush is specified (oxygen and similar explosive gas atmospheres).

- All Stainless Steel.
- Rust-Resistant
- Superior Quality AA.

Part #	ID	OD
61-68035	1/2"	5/8"
61-68055	3/4"	7/8"
61-68075	1"	1 1/8"

Refrigeration Tube & Fitting Brushes

MILL-ROSE

Tube & Fitting Brushes

Six models of brushes are made available to ensure clean, tight, leak proof joints in all your installation or repair projects.

6400 Series Fitting Brush



61-64040
Illustrated

An industry standard for quality. This brush features double-stem (4 wire), double-spiral heavy gauge galvanized stem wire and stainless steel straight fill wire to deliver a stiffer brush action. The four wire stem is firmly secured in the hand-contoured plastic handle. Each brush is individually boxed with UPC and clearly marked with actual OD size.

- Professional Refrigeration.
- Stainless Steel.
- Heavy Duty.
- Premium Quality AAA.

Part #	Actual OD
61-64020	3/8"
61-64030	1/2"
61-64040	5/8"
61-64060	7/8"

6800 "Quick-Twist" Series Fitting Brushes



61-6800
Series

The only all stainless steel fitting brush on the market; both stem and fill wire. Can be used for both copper and stainless fittings for faster, better cleaning. Tagged with nominal and actual sizes along with UPC for your convenience.

- All Stainless Steel.
- Rust-Resistant
- Superior Quality AA.

Part #	ID	OD
61-68015	1/4"	3/8"
61-68025	3/8"	1/2"
61-68035	1/2"	5/8"
61-68055	3/4"	7/8"

9400 Standard Series Fitting Brush



61-94030
Illustrated

Has a single spiral construction, and two wire galvanized stem that fastens securely into a contoured plastic handle. Handles are clearly marked with fitting brush size and have a hanging hole for point of purchase display.

- Good Quality A.

Part #	Actual OD
61-94010	3/8"
61-94020	1/2"
61-94030	5/8"
61-94050	7/8"

6700 Series Fitting Brush



61-67020
Illustrated

Features a single-spiral, double stem construction with heavy-gauge, galvanized stem and a double layer of crimped stainless steel fill wire that delivers a stiffer brushing action. The four wire stem is firmly secured in a large, hand-contoured handle.

- Professional Refrigeration.
- Stainless Steel.
- Heavy Duty.
- Superior Quality AA.

Part #	ID	OD
61-67010	1/4"	3/8"
61-67015	3/8"	1/2"
61-67020	1/2"	5/8"
61-67030	3/4"	7/8"

9600 Standard Series Fitting Brush



61-9600
Illustrated

An economical answer to clean fittings. Galvanized stem wire with stainless steel bristles cut faster and last longer than similar brushes.

- Good Quality A.

Part #	ID	OD
61-96010	1/4"	3/8"
61-96030	1/2"	5/8"
61-96050	3/4"	7/8"
61-96070	1"	1 1/8"

Hand Refrigeration Tube & Fitting Brushes

MILL-ROSE



61-6600 Series

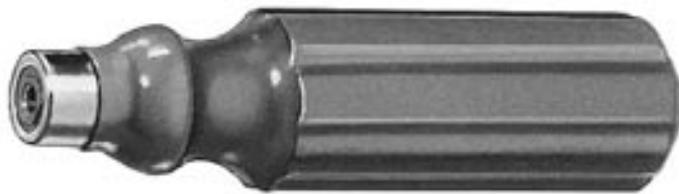
6600 Series Power Fitting Brushes

Power tube and fitting brushes feature high carbon or stainless steel bristles that provide long brush life and clean fittings and tubing in seconds. These brushes are ideal for quick cleaning of drill holes, tubes, deburring soft steel, stainless steel brass, copper, aluminum, plastic and many other materials.

- Designed for use with handy handle (61-6018) or power drills.
- Superior Quality AA.

Power Fitting Handy Handle

Part #	Description
61-60181	Power fitting handy handle screwdriver. 8-32 Female thread.



61-60181 Illustrated

Power Fitting Attachment Brushes

Part #	Description
61-66301	Power brush kit - 3/8", 1/2", 3/4", 1", 8-32 coupling & handy handle. (bagged)
61-66036	1/4" ID power fitting brushes 8-32 coupling (4/ bag).
61-66340	3/8" ID power fitting brushes 8-32 coupling (4/ bag).
61-66350	1/2" ID power fitting brushes 8-32 coupling (4/ bag).
61-66360	3/4" ID power fitting brushes 8-32 coupling (4/ bag).
61-66370	1" ID power fitting brushes 8-32 coupling (4/ bag).

Power Refrigeration Tube & Fitting Brushes

MILL-ROSE



61-6600 Standard Packaging

6600 Series Power Fitting Brushes

Brushes have been beefed up to provide greater strength and longer wear under the rigors of power drills and presses.

- Designed for use with power drills.
- Superior Quality AA.

Plumbing.

- 1/4" Hex shank carbon steel.

Part #	ID	OD
61-66430	1/2"	5/8"
61-66450	3/4"	7/8"

Refrigeration

- 1/4" Hex shank stainless steel.

Part #	ID	OD
61-66435	1/4"	3/8"
61-66455	3/8"	1/2"
61-66475	1/2"	5/8"
61-66490	3/4"	7/8"



61-6600 ID Brushes

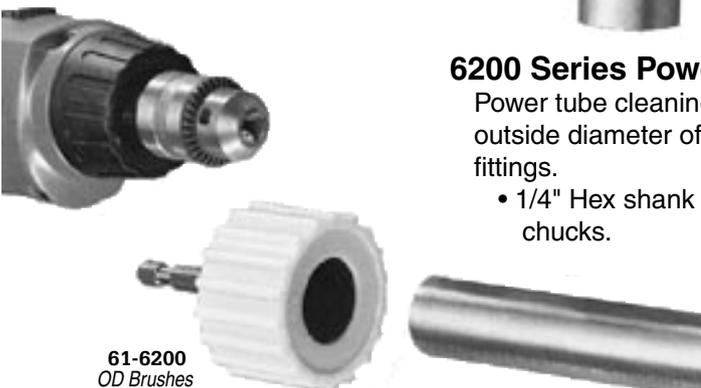
6200 Series Power Tube Cleaning Brushes

Power tube cleaning brushes make fast work of cleaning and scoring the outside diameter of tubing projects requiring a number of solder or brazed fittings.

- 1/4" Hex shank for use with a quik-change chuck adapter or standard drill chucks.

OD Power Cleaning Brushes

Part #	Plumbing	Refrigeration
61-62350	1/2"	5/8"
61-62370	3/4"	7/8"
61-62390	1"	1 1/8"



61-6200 OD Brushes

Power Deuce ID & OD Cleaning Brush

MILL-ROSE

6200 Series Power-Deuce Brushing Tool

Two brushes in one to clean ID & OD copper tube and fittings without changing tools.

- Designed for use with power drills or as a hand tool.
- ABS impact resistant body protects bristles to retain brush shape.
- Rust proof, stainless steel bristles for HVAC and plumbing projects.



**Two Brushes
In One!**

61-62821
Illustrated

Power-Deuce Brushing Tool

Part #	ID	OD
61-62821	1/2"	5/8"
61-62831	3/4"	7/8"
61-62841	1"	1 1/8"

Chuck Adapter

MILL-ROSE

Quick Change Chuck Adapter

Change all 1/4" hex-shank attachments fast with the Quick Change Chuck Adapter. Inserts in 1/4" and 3/8" drill chucks. Ideal accessory for all 6600 & 6200 Series Power Tube Cleaning Brushes.

Quick Change Chuck Adapter

Part #	Description
61-70420	1/4" Hex Quick Change drill chuck.



61-70420
Quick Change Chuck
Adapter

Hand Tube Cleaning Brushes

MILL-ROSE

6200 Series Hand Tube Cleaning Brushes

The first high impact (ABS) plastic tube cleaning brush ever made. Cleans and scores the outside diameter of tubing with a minimum of effort, making for better soldered joints.

Hand Tube Cleaning Brushes

Part #	Plumbing	Refrigeration	Package
61-62035	3/8"	1/2"	Bulk
61-62050	1/2"	5/8"	Bulk
61-62505	1/2"	5/8"	Bagged
61-62080	3/4"	7/8"	Bulk
61-62506	3/4"	7/8"	Bagged



61-6200
Series

Four-In-One Tube Cleaning Brushes

MILL-ROSE

Four-In-One Brush

The only quality combination tube cleaning and fitting brush on the market. Made of high impact engineered plastic, designed for easy parts replacement. Ideal for every tool box. Brushes are individually packaged in poly-bags for point of purchase display.

Refrigeration

- Stainless steel.

Part #	Description
61-70268	Refrigeration - 5/8" x 7/8" OD brush.

Plumbing

- High carbon steel.

Part #	Description
61-70260	Plumbing - 1/2" x 3/4" ID brush.
61-70269	Replacement kit for 61-70260.



61-70260
Illustrated

Abrasive Grit Pads

MILL-ROSE



Nylon Grit Pads

Applications

- Deburring
- Cleaning
- Scouring
- Blending
- Polishing
- Deflashing plaster
- Dulling laminates
- Removing oxides & rust
- Scuffing plastic pipe prior to adhesion

Nylon Abrasive Grit Hand Pads

Clean Fit Hand Pads are offered with different abrasives, grit sizes and backing material combinations for a broad range of applications, from heavy-duty cleaning to finishing and light-duty polishing. These pads are very durable and waterproof, so they can be used wet or dry, will not rust and are an excellent alternative to steel wool pads.

- Most to least aggressive: maroon fine, black fine, maroon very fine.

Nylon Abrasive Grit Hand Pads

Part #	Description	Colour	Grit	Package
61-70198	4" x 6" Nylon abrasive pads.	Maroon	Fine	10/ display carton.
61-70181	4" x 6" Nylon abrasive pads.	Maroon	Very fine	5/ bag.
61-70199	4" x 6" Nylon abrasive pads.	Maroon	Very fine	10/ display carton.
61-70186	2" x 6" Nylon abrasive pads.	Black	Fine	2/ carded.
61-70183	4" x 6" Nylon abrasive pads. Pack includes: (1) maroon very fine, (1) black fine, (2) maroon fine, (1) white non-abrasive.			5/ bag.

Abrasive Cloth

MILL-ROSE



61-70102
Illustrated

61-70113
Illustrated

Silicon Carbide Open Nylon Mesh

Designed to provide an alternative to aluminum oxide open nylon mesh. Silicon carbide mesh is sharper and tends to cut faster and produce finer scratch pattern on most surfaces. Black open mesh can be used on a wide variety of surfaces and materials including ferrous and non-ferrous metals, ceramics, plastics, fiberglass, plywood and others.

- Waterproof
- 180 Grit
- Premium Grade AAA.

Silicon Carbide Open Nylon Mesh

Part #	Description	Grit
61-70092	1 1/2" x 5 yards.	180 SC / 18
61-70102	1 1/2" x 10 yards.	180 SC / 18
61-70113	1 1/2" x 25 yards.	180 SC / 18



61-70100
Illustrated

61-70110
Illustrated

Aluminum Oxide Open Nylon Mesh

Original AO mesh for copper tube cleaning. Made with open nylon fabric, phenolic resin adhesive which makes it waterproof and rugged aluminum oxide. Coated on both sides of the nylon fabric to produce a long-lasting sharp cutting product. If mesh becomes loaded with copper, brass or other non-ferrous residues, simply rinse in water or tap against a hard surface to clean.

- Waterproof
- 180 Grit
- Premium Grade AAA.

Aluminum Oxide Open Nylon Mesh

Part #	Description	Grit
61-70090	1 1/2" x 5 yards.	180 AO / 24
61-70100	1 1/2" x 10 yards.	180 AO / 24
61-70110	1 1/2" x 25 yards.	180 AO / 24



**100%
Waterproof**

61-70164
Illustrated

61-70166
Illustrated

"Wet One" - Aluminum Oxide Sand Cloth

The "Wet One" is an aluminum oxide 100% waterproof - ideal for tough deburring, cleaning and polishing plumbing tubing, fittings and parts exposed to water. Our bonding system provides exceptional grain retention and durability under the most severe conditions.

- Waterproof
- 120 Grit
- Premium Grade AAA.

Aluminum Oxide Sand Cloth

Part #	Description	Grit
61-70162	1 1/2" x 5 yards.	120 - J
61-70164	1 1/2" x 10 yards.	120 - J
61-70166	1 1/2" x 25 yards.	120 - J

Abrasive Cloth

MILL-ROSE

Red Stuff



61-70050
Illustrated

61-70060
Illustrated

Aluminum Oxide Sand Cloth

Our best quality closed coat abrasive cloth with a "J" weight cotton backing. Features a full aluminum oxide coating for increased cutting power, water and weather-resistant bond for consistently strong solder joints. The original copper tubing cleaner.

- Red Stuff
- 120 Grit
- Superior Grade AA

Aluminum Oxide Sand Cloth

Part #	Description	Grit
61-70045	1 1/2" x 5 yards.	120 - J
61-70050	1 1/2" x 10 yards.	120 - J
61-70060	1 1/2" x 25 yards.	120 - J

Brown Stuff



61-70130
Illustrated

61-70140
Illustrated

Aluminum Oxide Sand Cloth

A good quality closed coat abrasive cloth on a "J" weight cotton backing. Brown in colour, water-resistant bonding and flexible backing provides a durable, efficient abrasiveness for long life. Almost as good as the "Red Stuff".

- Brown Stuff
- 120 Grit
- Superior Grade AA

Aluminum Oxide Sand Cloth

Part #	Description	Grit
61-70125	1 1/2" x 5 yards.	120 - J
61-70130	1 1/2" x 10 yards.	120 - J
61-70140	1 1/2" x 25 yards.	120 - J

Air Conditioning & Refrigeration

Yellow Stuff



61-70070
Illustrated

61-70080
Illustrated

Aluminum Oxide Sand Cloth

Our best quality open coat abrasive cloth with a "J" weight cotton backing. This premium water resistant abrasive cloth is designed to clean soft metals. The open coating of aluminum oxide resists loading while leaving a uniform, consistent surface-finish for soldering operations.

- Yellow Stuff
- 120 Grit
- Superior Grade AA

Aluminum Oxide Sand Cloth

Part #	Description	Grit
61-70068	1 1/2" x 5 yards.	120 - J
61-70070	1 1/2" x 10 yards.	120 - J
61-70080	1 1/2" x 25 yards.	120 - J

Economy



61-70170
Illustrated

61-70180
Illustrated

Aluminum Oxide Sand Cloth

Good, economy-grade closed coat abrasive cloth, "J" weight cotton cloth. Our resin bonding of the grit still gives you a water resistant cloth when price may be your principle factor.

- Economy
- 120 Grit
- Good Grade A

Aluminum Oxide Sand Cloth

Part #	Description	Grit
61-70175	1 1/2" x 5 yards.	120 - J
61-70170	1 1/2" x 10 yards.	120 - J
61-70180	1 1/2" x 25 yards.	120 - J

Condenser Tube & Heat Exchanger Brushes

MILL-ROSE

Condenser Tube Brushes



61-6500 Series

A complete line of condenser tube and heat exchanger brushes are available in four bristle materials: high carbon steel, stainless steel, brass and nylon. Bristle sizes are graduated from 0.006" on small diameter brushes to 0.012" on larger sizes to provide consistent cleaning power. There are not OD threads on 3/8" brushes. Shank length is 2". Adapters are also available to accommodate other standard thread sizes.

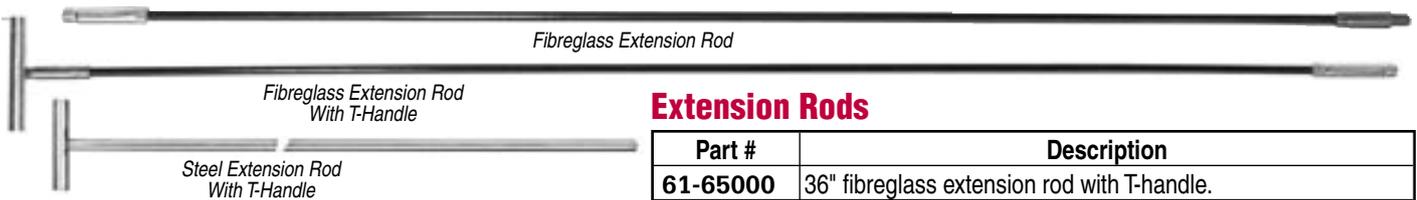
- 1/8" NPT outside.
- 5/16"-18 internal thread.
- 1 1/32" diameter coupling

Condenser Tube Brushes

H/C Steel	Stainless	Brass	Nylon	Brush Dia.	Brush Length	Overall Length	Wire Size
61-65030	61-65145	61-65260	61-65375	1/2"	4 1/2"	7 1/2"	0.008
61-65040	61-65155	61-65270	61-65385	5/8"	4 1/2"	7 1/2"	0.008
61-65070	61-65185	61-65300	61-65415	1"	4 1/2"	7 1/2"	0.010
61-65080	61-65195	61-65310	61-65425	1 1/4"	4 1/2"	7 1/2"	0.010

Extension Rods For Condenser Tube Brushes

MILL-ROSE



Extension Rods

Part #	Description
61-65000	36" fibreglass extension rod with T-handle.
61-65001	T-handle 1/2" x 3" with 5/16-18 male female thread.
61-65002	36" steel extension rod.
61-65003	Brush adapter to comp. rod (5/16-18 male brush to 12-24 female rod).
61-65004	Rod adapter to comp. brush (5/16-18 female rod to 12-24 male brush).
61-65006	T-handle for steel extension rods.
61-65007	Brush adapter to power condenser cleaning machine.
61-65010	24" fibreglass ext. rod 5/16-18 1/8" NPT.
61-65015	36" fibreglass ext. rod 5/16-18 1/8" NPT.
61-65016	48" fibreglass ext. rod 5/16-18 1/8" NPT.
61-65017	6' fibreglass ext. rod 5/16-18 1/8" NPT.

Refrigeration Coil Cleaning Brushes

MILL-ROSE



61-01390 Illustrated

61-01392 Illustrated

61-01394 Illustrated

Refrigeration Coil Cleaning Brushes

Part #	Description
61-01390	5/8" to 1 5/8" tapered diameter, horsehair, 32" OAL, wood handle, display package.
61-01392	5/8" to 1 5/8" tapered diameter, horsehair, 29" OAL, plastic handle, coated stem display package.
61-01394	3/4" to 1 5/8" double stepped diameter, synthetic, 26" OAL, wood handle, display package.

Service Tools

Flue & Boiler Tube Brushes

MILL-ROSE

Applications

- Boilers
- Burners
- Radiators
- Flues
- Vents
- Nozzles & Fans

These brushes have 3" brush lengths and 1/2" or 3/4" loop handles for easy hanging. All brushes have labels on handles with individual UPC identifications. Manufactured with the highest quality materials and workmanship, the brushes presented here address cleaning all major boilers and other service needs. For your convenience, these brushes are organized with you in mind. First determine the type of brush fill you need (Fine wire, nylon, horsehair, etc.) and then select the desired brush size (diameter & overall length).

Fine-Wire Single Spiral Brushes

Part #	Description
61-01015	3/16" Dia., 7" OAL, .005 Carbon Steel
61-01025	1/4" Dia., 7" OAL, .005 Carbon Steel
61-01045	3/8" Dia., 8" OAL, Carbon Steel
61-01210	3/8" Dia., 24" OAL, Stainless Steel
61-01060	1/2" Dia., 8" OAL, .004 Carbon Steel
61-01065	1/2" Dia., 8" OAL, .006 Stainless Steel
61-01212	1/2" Dia., 24" OAL, Stainless Steel
61-01286	1/2" Dia., 42" OAL, Carbon Steel, 4" Loop
61-01080	5/8" Dia., 9" OAL, Carbon Steel
61-01157	5/8" Dia., 16" OAL, Carbon Steel
61-01100	3/4" Dia., 9" OAL, Carbon Steel
61-01399	3/4" Dia., 42" OAL, Carbon Steel, 4" Loop
61-01140	1" Dia., 10" OAL, Carbon Steel
61-01202	1" Dia., 18" OAL, Stainless Steel
61-01270	1" Dia., 36" OAL, Stainless Steel
61-01294	1" Dia., 42" OAL, Carbon Steel, 4" Loop
61-01274	1 1/2" Dia., 36" OAL, Stainless Steel
61-01398	1 1/2" Dia., 42" OAL, Carbon Steel, 4" Loop
61-01400	2" Dia., 42" OAL, Carbon Steel, 4" Loop
61-01405	2 1/2" Dia., 42" OAL, Carbon Steel, 4" Loop
61-01410	3" Dia., 42" OAL, Carbon Steel, 4" Loop

61-01025
Carbon Steel
Illustrated

Horsehair/ Fibre & Radiator Tube Brushes

Part #	Description
61-04856	3/8" Dia., 9" OAL Horsehair
61-04860	1/2" Dia., 9" OAL Horsehair
61-04964	1/2" Dia., 12" OAL Horsehair
61-04970	1/2" Dia., 24" OAL Horsehair
61-01836	1/2" Dia., 36" OAL Horsehair
61-04865	3/4" Dia., 9" OAL Horsehair
61-39919**	1 Row, 24" OAL Horsehair
61-39924	1 1/4" Dia., 30" OAL Horsehair
61-39961	2" Dia., 27" OAL Tampico
61-01480	2" Dia., 42" OAL Tampico
61-39962	3" Dia., 27" OAL Tampico
61-01490	3" Dia., 42" OAL Tampico

**Wooden handle.

61-04865
Horsehair/ Fibre
Illustrated

Nylon Tube Brushes

Part #	Description
61-04882	1/4" Dia., 6 1/4" OAL, Nylon
61-04883	3/8" Dia., 6 1/4" OAL, Nylon
61-04884	1/2" Dia., 8 1/2" OAL, Nylon
61-01445	1/2" Dia., 30" OAL, Nylon
61-04867	3/4" Dia., 9" OAL, Nylon
61-01450	3/4" Dia., 30" OAL, Nylon
61-01470	3/4" Dia., 36" OAL, Nylon
61-01455	1" Dia., 30" OAL, Nylon
61-01475	1" Dia., 36" OAL, Nylon
61-04891	1-1/2" Dia., 13" OAL, Nylon
61-01460	1-1/2" Dia., 30" OAL, Nylon
61-01520	2" Dia., 24" OAL, Nylon
61-39963	2" Dia., 27" OAL, Nylon
61-01481	2" Dia., 42" OAL, Nylon
61-01538	2 1/2" Dia., 36" OAL, Nylon
61-39964	3" Dia., 27" OAL, Nylon

61-01538
Nylon
Illustrated

61-01481
Nylon
Illustrated

61-84210
Stainless
Illustrated

Specialty Boiler Brushes

Part #	Description
61-84006	1/2" x 1, 27" OAL Blk. oil tempered wire.
61-84007	1/2" x 1, 48" OAL Blk. oil tempered wire.
61-84009	2 1/4", 20" OAL tapered nylon slant fin.
61-84200*	1 1/2" x 1 1/8, 30" OAL Blk. oil tempered wire
61-84210*	1 1/2" x 1 1/8, 42" OAL Blk. oil tempered wire
61-84201*	30" OAL Heavy Duty Horsehair
61-84211*	42" OAL Horsehair
61-84027	1 7/8" x 1 1/8, 42" OAL Horsehair

* Weil McClain

61-84027

Weil McClain Series

Columbia Series

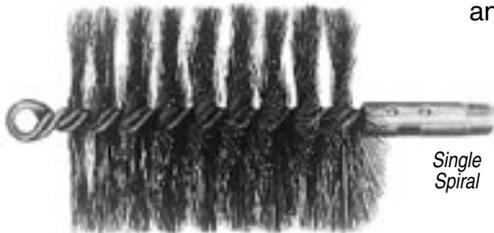
61-84009

Flue & Boiler Tube Brushes

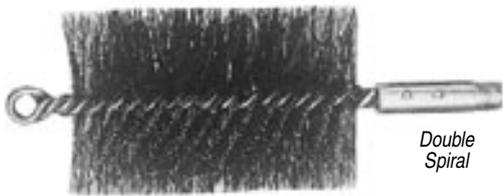
MILL-ROSE

Flue & Boiler Tube Brushes

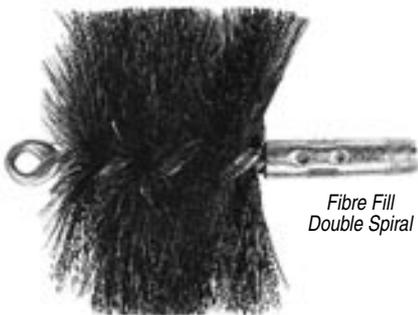
Quality flue and boiler tube brushes are manufactured from durable black oil-tempered wire. Available in two standard constructions; single spiral (8300 series) and double spiral (8400 series). Brushes have an overall length of 8" and brush lengths of 4½". Individually packaged with unit size and UPC.



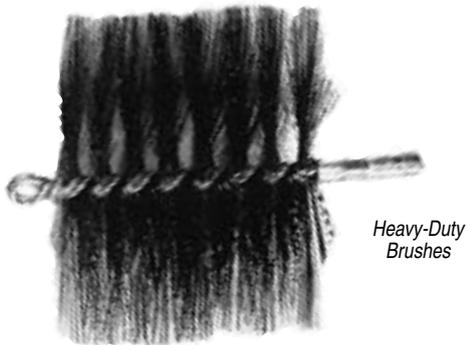
Single Spiral



Double Spiral



Fibre Fill Double Spiral



Heavy-Duty Brushes

Flue and Boiler Tube Brushes

- 1/4 NPT.

Single Spiral		Double Spiral
Part #	Diameter	Part #
61-83002	1/2"	-
61-83005	3/4"	-
61-83010	1"	-
61-83015	1-1/4"	-
61-83020	1-1/2"	61-84020
61-83025	1-3/4"	61-84025
61-83030	2"	61-84030
61-83035	2-1/4"	61-84035
61-83040	2-1/2"	61-84040
61-83045	2-3/4"	-
61-83050	3"	61-84050
61-83070	4"	61-84070

Fibre Fill Boiler Tube Brushes

- Single Spiral 1/4" NPT

Part #	Description
61-84850	3" Dia.
61-84870	4" Dia.
61-84890	6" Dia.

Heavy-Duty Furnace Flue & Chimney Cleaning Brushes

Multi-purpose brushes useful for a variety of cleaning jobs.

- 1/4 NPT.

Part #	Description
61-84032	2" x 4" x 4-1/2" Oval Shape Wire
61-84054	3" x 4" Oval Shape Wire

Chimney & Flue Cleaning Brushes

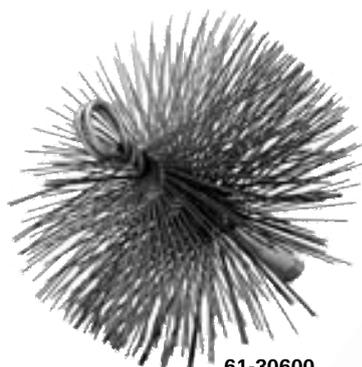
MILL-ROSE

Chimney & Flue Brushes

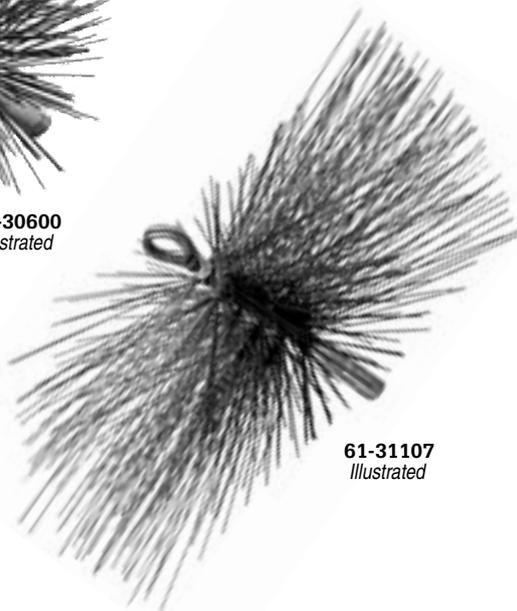
Chimney/ flue cleaning brushes are available in wire for cleaning ceramic flues and chimneys, and poly for cleaning metal flues and chimneys. Choose from a complete range of standard sizes and shapes with 1/4" NPT connectors. Heavy-duty brushes are offered with 3/8" NPT connectors.



61-30808
Packaging
Illustrated



61-30600
Illustrated



61-31107
Illustrated



Square



Rectangular



Round



Heavy-Duty Wire
Chimney Brushes

Wire Chimney & Flue Brushes

• 1/4" NPT.

Part #	Description
61-30600	6" Round.
61-30700	7" Round.
61-30800	8" Round.
61-30900	9" Round.
61-31000	10" Round.
61-31200	12" Round.
61-30606	6" x 6" Square.
61-30707	7" x 7" Square.
61-30808	8" x 8" Square.
61-31010	10" x 10" Square.
61-31006	10" x 6" Rectangular.
61-31008	10" x 8" Rectangular.
61-31107	11" x 7" Rectangular.
61-31208	12" x 8" Rectangular.

Poly Chimney & Flue Brushes

• 1/4" NPT.

Part #	Description
61-33110	5" Round.
61-33140	6" Round.
61-33170	7" Round.
61-33190	8" Round.
61-33210	12" Round.
61-33150	6" x 6" Square.
61-33200	8" x 8" Square.

Wire Chimney & Flue Brushes

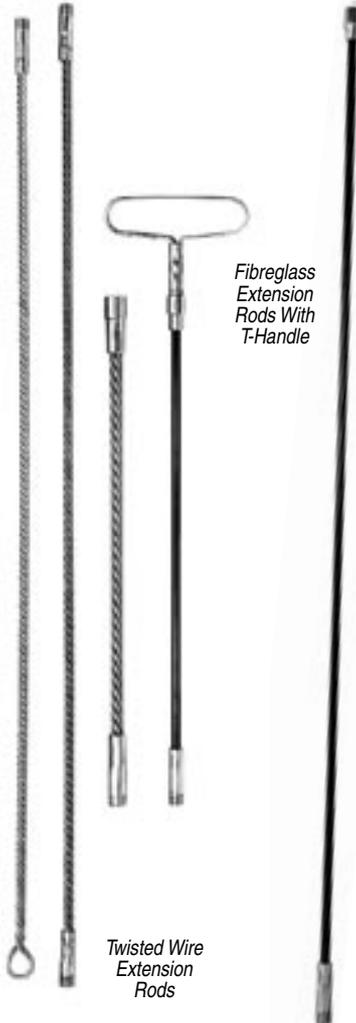
Heavy-duty wire chimney brushes are designed for professional trade applications.

• Brushes 3/8" NPT.

Part #	Description
61-30601	6" Round.
61-30801	8" Round.
61-31001	10" Round.
61-31401	14" Round.
61-30708	7" x 7" Square.
61-30809	8" x 8" Square.
61-31011	10" x 10" Square.
61-31108	11" x 7" Rectangle.
61-31205	12" x 8" Rectangle.

Extension Rods - Flue Boiler & Chimney

MILL-ROSE



Fiberglass Extension Rods With T-Handle

Twisted Wire Extension Rods

61-30002 Fiberglass Extension Rod

Extension Rods

Flexible, self-connecting fibreglass or twisted wire extension rods with self-connecting 1/4" NPT nipples are available in three convenient lengths; 3', 4' & 6'.

Fiberglass & Steel Extension Rods

• 1/4" NPT 0.34 diameter.

Part #	Description	Length
61-30002	Fibreglass	3'
61-30021	Fibreglass	4'
61-30022	Standard Fibreglass Rod with T-Handle (6 pk)	4'
61-30023	Fibreglass (24pkg.)	4'
61-30061	Fibreglass	6'
61-30071	Standard Fibreglass Rod (24pkg.)	6'



61-70766 Illustrated

T-Extension Rod Handle

• Steel construction to be used with 1/4" NPT fibreglass or steel extension rods.

Part #	Description
61-70766	4" x 2 1/2"

Twisted Wire Extension Rods

• 1/4" NPT 0.34 diameter.

Part #	Description	Length
61-30003	With loop handle.	3'
61-30007	Single	3'
61-30009	24/pk.	3'
61-30031	Single	4'
61-30033	24/pk.	4'
61-30073	24/pk.	6'

Heavy-Duty Fibreglass Extension Rods

• 3/8" NPT self-connect 0.44 diameter.

Part #	Description
61-30035	4' Single
61-30065	6' Single

Poly Utility Rope

Part #	Description
61-70040	25' poly rope designed to be used with standard or heavy-duty chimney brushes and eye socket nipple or brush ring to clean chimneys.

Woodstove & Fireplace Cleaner

Fireview

Premium Fireplace, Glass & Woodstove Cleaner

Fireview Premium Fireplace Glass & Woodstove Cleaner is formulated to remove stubborn carbon-based soils without tedious scrubbing. Dissolves burned-on carbon deposits and creosote build-up on contact! Tackles smoke residue, soot, ash dust and grime on stone, brick, grates, grills, toolsets, hearth rugs and more. Cleans cast, iron, steel, porcelain, soapstone and enamel surfaces quickly. Safer - no acids, non-caustic and non-corrosive.

Display Program

Great Merchandising Solution!

Enhance your fireplace selection with the Fireview Display Program. In-store impulse sales are maximized with Fireview's traffic stopping merchandising unit - Free to every stocking location. This attractive, durable and two shelf unit comes pre-assembled and occupies just 2 1/2 square feet of floor space to display 24 bottles.



15-C15825 Illustrated



15-C15825DSP Illustrated

15-C15825 739 ml spray bottle (12/ctn)

15-C15825DSP (24) 739 ml spray bottles & display. (24/ctn)

Pellet Stove Flue Brushes

MILL-ROSE

Features

- Improve heating efficiency.
- reduce fire hazards.



Brushes and Accessories

Pellet Stove Brushes

Fibre brushes work best for soot removal in pellet stove flues, while stainless steel brushes are more suitable for creosote removal. Brushes and flexible extension rods are designed to negotiate 90° joints in most vent and flues, many cases without disassembly.

Pellet Stove Brushes

- 1/4" - 20 male/ female thread.
- POP packaged.

Part #	Description
61-84332	3" dia. fibre pellet stove brush.
61-84333	4" dia. fibre pellet stove brush.
61-84334	4" dia. fibre pellet stove brush. 12' flexible extension rod.
61-84352	3" dia. stainless steel wire pellet stove brush.
61-84372	4" dia. stainless steel wire pellet stove brush.
61-84380	6" dia. fibre pellet stove brush 1/4-20 coupling.
61-84385	8" dia. fibre pellet stove brush 1/4-20 coupling.



Pellet Stove Brushes

Pellet Stove Vent Cleaning Brushes

- 5/16"-18 female thread.

Part #	Description
61-84331	2" Dia. fibre pellet stove/vent brush.
61-84351	3" Dia. fibre pellet stove/vent brush.
61-84371	4" Dia. fibre pellet stove/vent brush.

Pellet Stove Flexible Connector

- Designed for pellet stove brush extension rods.
- Attaches to extension rods for 90° bends.

Part #	Description
61-70721	10 3/4" OAL, 5/16"-18 spring connector.
61-70722	13" OAL, std rod, 1/4" NPT.

Extension Rods - Pellet Stove Flue

MILL-ROSE



Fibre Glass Pellet Stove Extension Rod

Fibreglass Pellet Stove Extension Rod With T-Handle

Pellet Stove Extension Rods

- 5/16"-18 male/female thread.

Part #	Description
61-65000	3' Fibreglass ext. rod with T-handle.
61-65010	2' Fibreglass extension rod.
61-65015	3' Fibreglass extension rod.
61-65016	4' Fibreglass extension rod.
61-65017	6' Fibreglass extension rod.
61-65019	4' Fibreglass extension rod display package with 'T' handle (6/pk).
61-65001	T-handle only 1/2" x 3", 5/16" -18 male/ female thread.
61-65009	Rod/ brush adapter 5/16-18 to 1/4-20 thread.

Dryer Vent Brushes

MILL-ROSE

Features

- Improve heating efficiency.
- Reduce fire hazards.



Dryer Vent Brushes

Dryer Vent Brushes

Soft synthetic fibre brushes are designed to remove lint build-up from dryer vents. Brushes and flexible extension rods are designed to negotiate 90° joints in most vent and flues, many cases without disassembly.

Dryer Vent Flexible Connector

- Designed for dryer vent brush extension rods.
- Attaches to extension rods for 90° bends.

Part #	Description
61-70723	6" OAL, 1/4"-20 spring connector.

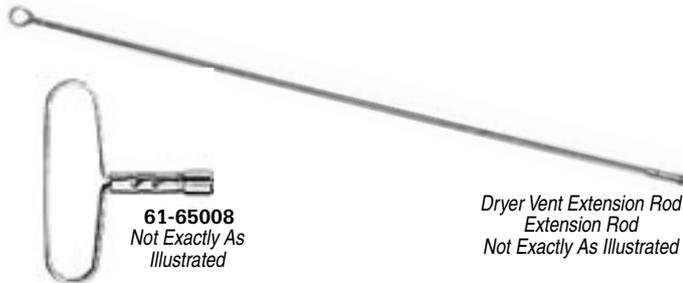
Dryer Vent Brushes

- 1/4" - 20 male/ female thread.
- POP packaged.

Part #	Description
61-84373	4" dia. synthetic fibre dryer vent brush.
61-84374	4" dia. synthetic fibre dryer vent brush. 8' flexible extension rod.
61-84375	4" dia. synthetic fibre dryer vent brush. 12' flexible extension rod.

Dryer Vent Extension Rods

MILL-ROSE



61-65008
Not Exactly As
Illustrated

Dryer Vent Extension Rod
Extension Rod
Not Exactly As Illustrated

Dryer Vent Extension Rods

- 1/4"-20 male/female thread.

Part #	Description
61-65011	4' flexible extension rod.
61-65012	4' flexible extension rod. (24/pk.)
61-65013	8' flexible extension rod.
61-65008	T-handle only 1/4-20 male threads.

Gas Fireplace Cleaner



15-C15808
Illustrated



Gas Fireview display merchandiser
available upon request.

Fireview - Gas

Gas Fireplace Glass Cleaner

Fireview Gas Fireplace Cleaner is specially formulated to remove unsightly "white haze", baked-on smoke, carbon and mineral deposits caused by gas-log fires. Gas fireplace cleaner polishes glass crystal clear and leaves a protective, invisible coating to help prevent future build-up. Fireview Gas Fireplace Cleaner is the sure-fire solution for maintaining the beauty and ambiance of your gas fireplace.

15-C15808 236 ml bottle (12/ctn).

Teflon Tape®

MILL-ROSE



61-70190
Illustrated

Standard Grade (White) Teflon® Tape

Unlike those stringy, flimsy tapes that are stretched razor thin before you get them, our better quality white thread sealant tape is 16% thicker than the tapes made for those who are not up on the current standards.

- Thread Seal Tape TF20-1.

Standard Grade (White) Teflon® Tape

Part #	Description
61-70190	1/2" x 260" roll
61-70200	1/2" x 520" roll

Water Line (Red) Teflon® Tape

Our quality will not be confused with any thin, stringy white tape. It's three times thicker!. Three wraps ensures you of a leak free joint and no call-backs.

- Full Density Thread Seal Tape TF5-15.
- For plumber's and pipe fitters.

Applications

- May be used on most thread seal connections (metal or plastic) involving air, water, sewage, chemicals, hydraulic and overhead sprinkler systems.

Water Line (Red) Teflon® Tape

Part #	Description
61-70796	1/2" x 260" roll.
61-70797	1/2" x 540" roll.



Water Line
(RED) Teflon
Tape

Gas (Yellow) Teflon® Tape

Yellow tape is 4 to 5 times heavier than common white thread seal tapes! Meets national standards and is approved by gas companies world-wide.

- Thread Seal Tape TF5-20.

Applications

- Ideally suited for natural gas, propane and butane lines. May also be used in water, oil and chemical installations. Do not use Gas Thread Seal Tape on oxygen systems.

Gas (Yellow) Teflon® Tape

Part #	Description
61-70820	1/2" x 260" rolls
61-70822	1/2" x 260" 40pk. counter display
61-70825	1/2" x 260" 10pk. dispenser pack



61-70820
Gas (Yellow) Teflon
Tape

Oxygen (Green) Teflon® Tape

Green thread seal tape is over five times heavier than common sealing tapes. You can use it and never worry about contaminating the system. Because it is degreased, it has no residual lubricant, unlike common tapes made with petroleum as a lubricant.

- Full Density Thread Seal Tape TF5-25.

Applications

- Oxygen lines, systems and other highly flammable environments. May also be used on most liquid, oil and chemical installations.

Oxygen (Green) Teflon® Tape

Part #	Description
61-70850	1/2" x 260" roll



Oxygen (Green)
Teflon Tape

Teflon Tape®

MILL-ROSE



Copper Filled Teflon Tape

Copper Filled Teflon® Tape

A clean copper based, high-temperature, anti-seize material for protection from corrosion, seizure, galling, rust carbon fusion and galvanic pitting. The copper acts like ball bearings. Tape will maintain elasticity where temperatures reach as high as 600°F.

Applications

- Bolts
- Studs
- Threaded fittings & couplings
- Valve shafts
- Cylinder heads
- Connections in hostile environments (boilers, ovens, exhaust manifolds, hot water storage tanks...)

Copper Filled Teflon® Tape

Part #	Description
61-70800	1/2" x 120" x 0.0045" roll.



Stainless Steel Teflon Tape

Stainless Steel Teflon® Tape

Prevent stainless steel fittings from galling or seizing during assembly and disassembly. The added thickness and density also ensure an effective seal up to 12,000 PSI. This product will not harden or crack in the joints, is effective within a broad range of temperatures, does not require a curing time, it's not-flammable and has an unlimited shelf life.

- Thread Seal Tape TF5-28.

Applications

- Stainless steel pipe systems including joints, connections, bolts, nuts, valves, flanges, studs, threaded fittings, bushings, plugs and assemblies. Also used for protection from corrosion, seizing, galling, rust carbon fusion and galvanized pitting.

Stainless Steel Teflon® Tape

Part #	Description
61-70891	1/2" x 260" roll.



Teflon Cord Packing

Teflon® Cord Packing

Use this self-forming, self-lubricating, non-toxic cord packing made of 100% pure Teflon®. It is resistant to most liquids and gases. PH range from 0 to 14. Temperature range from -450°F to 450°F. PSI range is 1500 to 3000.

Teflon® Cord Packing

Part #	Description
61-70290	3/32" x 40'.
61-70306	1/8" x 4'.
61-70308	3/16" x 4'.
61-70302	3/16" x 16'.

Solder Paste Flux

MILL-ROSE



Solder Paste Flux

Solder Paste Flux

Clean fit solder paste flux is used in all industries and is a non-aggressive formula used to sweat copper and brass fittings. Not for electronic use unless so stated. The all purpose formula stays stiff in hot weather and stays soft and sticky, even in cold weather.



61-71030
Illustrated

Solder Paste Flux

Part #	Description
61-70702	8 oz. tub.
61-70705	1 lb. tub.
61-70700	2 oz. (std. 12/pk POP display)
61-71030	2 oz. (carded)
61-71031	Solder paste flux kit: includes 2 oz. flux, abrasive cloth, acid brush.

Heat Shields

MILL-ROSE



- Heat Resistant to 2000°F
- Flexible

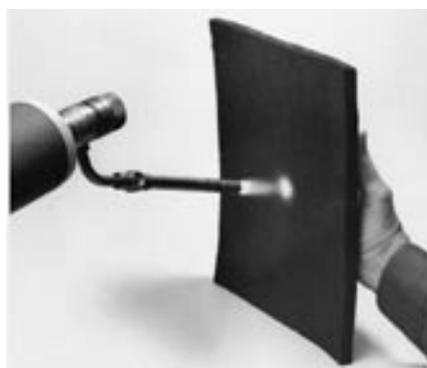
Torch-Guard Solder Heat Shield

Torch-Guards high strength (asbestos free) silica-based woven fibre stands up to and blocks intense heat to ensure flame resistance and liability protection. Flexible and easy to work with, Torch Guard provides heat resistance up to 2000°F or 1500°F continuous use. Soak Torch Guard in water and it may be used for higher temperatures particularly when folded over.

Applications

- Shield studs, walls, floors and other surfaces from flames, sparks or molten splash during soldering and brazing installations.

Part #	Description
61-71032	9" x 12"
61-71034	12" x 12"



- Heat Resistant to 2500°F

The Insurance Pad™

The Insurance Pad is the ultimate heat shield. Use wet or dry where ever higher temperature protection is required, up to 2500°F. The Insurance Pad is a fibrous felt heat shield with the safest specs in the industry. Repeated use of the product actually increases its heat resistance.

Applications

- Ideal for use with propane, MAPP gas, acetylene/ air and higher temperature torches.

Part #	Description
61-71036	6" x 9"
61-71038	9" x 12"

Acid Brushes

MILL-ROSE

Acid, Adhesive, Solder Paste & Flux Applicator Brushes

Ideal for thread sealant, flux and paste solders. Long, stiff, 100% horsehair bristles are evenly placed and securely crimped into tinned acid-resistant handles.



Acid, Adhesive, Solder Paste, and Flux Applicator Brushes

Acid Brushes

Standard Packages

Bulk Packages

Part #	Package	Part #	Package	Brush Width
15-C33804	12/pk.	15-C33804-B	144/pk.	1/4"
15-C33808	10/pk.	15-C33808-B	144/pk.	1/2"
15-C33812	3/pk.	15-C33812-B	144/pk.	3/4"

Paint Brushes

MILL-ROSE

Horsehair Paint & Applicator Brush

An economical throw-away line of brushes ideal for a variety of applications such as applying solvents, stains, paint, plastic pipe or tubing applicators, adhesives, fibreglass repair work, equipment/ parts clean up, etc.

- Best quality
- Pure undyed natural bristles
- Chemically resistant adhesive
- Wooded handle with hanging hole.



Economy Paint Chip and Applicator Brush

Horsehair Paint Brushes

Part #	Description
61-70440	1"
61-70460	2"
61-70470	2½"
61-70480	3"

Soot Saw

MILL-ROSE

Soot & Creosote Saw

Ideal for heavy-duty soot and creosote removal from commercial and residential boilers. The perfect tool when brushes just don't do the job. Features a plastic handle and heavy-gauge galvanized steel with serrated edge that cuts through soot and creosote fast.



12-SS30
Illustrated

Soot & Creosote Saw

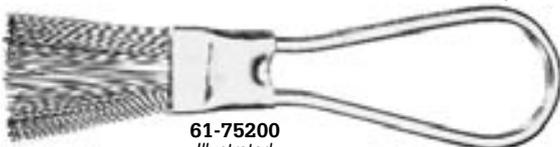
Part #	Description
12-SS30	Soot Saw - 32" overall length.

Maintenance Brushes

MILL-ROSE

Wire Chip Brush

For removal of machine chips, cuttings and dust from those narrow, hard to get at places.



61-75200
Illustrated

Wire Chip Brush

Part #	Fill Material	Brush Width	Overall Length
61-75200	Carbon steel wire.	1½"	5½"

Maintenance Brushes

MILL-ROSE



61-70550
Bent Handle

Scratch Brushes

- Oil tempered, carbon steel fill wire.
- Extra deep wire staple.
- Hard wooden handles.



61-70606
Bent Handle

Scratch Brushes

Part #	Block Size	Handle Type	Rows	Brush Trim
61-70550	14" x 1 1/8"	Bent	4 x 18	1 3/16"
61-70606	14" x 1"	Bent	3 x 19	1 3/16"
61-70570	10" x 1 1/8"	Shoe	4 x 16	1 3/16"



61-70570
Shoe Handle

Platers Brushes

Designed for finer detailed cleaning found in metal finishing solder joints, grills, wire mesh, etc. Platers brushes differ from hand scratch brushes in that they are made with finer wire resulting in a softer brush. Available with shoe or longer bent hardwood handle. 1" brush trim.



Platers Brush
Shoe Handle



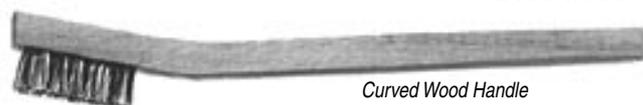
Platers Brush
Curved Handle

Platers Brushes

Part #	Fill Material	Handle Type	Rows
61-73802	Fine brass wire.	Shoe	4 x 16
61-73806	Fine stainless steel.	Shoe	4 x 16
61-73812	Fine brass wire.	Curved	4 x 19
61-73816	Fine stainless steel.	Curved	4 x 19

Fine Wire Scratch Brushes

Utility brushes ideal for general cleaning in tight spots and available in either curved wood or molded plastic handles. 1/2" brush trim.



Curved Wood Handle

Fine Wire Scratch Brushes

Part #	Fill Material	Handle Type	Rows
61-73830	Stainless steel.	Wood	3 x 7
61-73832	Brass.	Wood	3 x 7
61-73834	Stainless steel.	Plastic	3 x 7
61-73836	Brass.	Plastic	3 x 7



Ergonomic Plastic Handle

Appliance Brushes

These are small scouring brushes with smooth hardwood handles. Ideal for cleaning and scouring appliances, stoves, burner units, oil burners and other small parts. 11/16" brush trim.



61-73844
Illustrated

Fine Wire Appliance Brushes

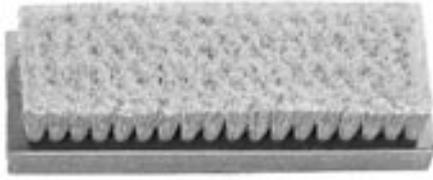
Part #	Fill Material	Handle Type	Rows
61-73842	Stainless steel.	Curved	2 x 9
61-73844	Brass.	Curved	2 x 9

Maintenance Brushes

MILL-ROSE

Scrub Brushes

Stiff brush bristles seated in a smooth hardwood block for tough scouring jobs. Brush trim 1 1/8"



61-73862
Illustrated

Scrub Or Scouring Brush

Part #	Fill Material	Block Size
61-73862	White tampico.	3" x 8 1/4"

Spoke Brush

Spoke-type brushes have many applications besides cleaning vehicle rims. They can be used to clean small duct openings, grill work, lattices, louvers and other openings that require a tapered bristle brush on an end-mounted handle.



61-81000
Illustrated

Spoke Brushes - Maintenance

Part #	Fill Material	Brush Size
61-81000	Tampico	2 3/4" x 9 1/2"

Applications

Scrubbing:

- Combustion chambers
- Ducts
- Vehicles
- Cans
- Tubs
- Pots
- Pipe
- Refuse containers

Utility Scrub Brushes

Offered in both short or long hardwood handles. Fill material is staple set. Brush trim 2 1/4".



61-75096
Illustrated

Long Handle
Utility Brush

Utility Scrub Brushes

Part #	Fill Material	Brush Type	OVL
61-75096	Tampico	Short handle.	9"
61-75104	Tampico	Long handle.	20"

Dauber Brushes

Dauber brushes are used to apply larger quantities of dope, liquids, adhesives, solvents, grease and other coatings or materials to larger size pipe casings or tubes. Fibres are tightly wound onto wood handles for a uniform, full density industrial or commercial application brush.



Dauber Brush
Illustrated

Dauber Brushes

Part #	Fill Material	Brush Size	OVL
61-73750	Tampico	6 1/2" x 3 1/4"	25"
61-73762	Tampico	5 3/4" x 4 1/2"	25"

Counter Dusters

Designed for general purpose light brushing or dusting. Staple set construction in shaped hardwood beaver tail style handle in a lacquer coated finish and hanging hole. Brush trim 2 1/2".



61-70035
Illustrated

Counter Dusters

Part #	Fill Material	Brush Size
61-70035	Horsehair/ Tampico	13" x 3"

Floor Broom Heads

MILL-ROSE

Floor Brooms

Push brooms are available in a broad range of top grade fill materials to meet fine, medium or coarse sweeping requirements. Several types of handles are available and must be ordered separately.



Palmyra Finer



Synthetic Flagged Boarder



Synthetic Fully Flagged



Tampico Heavy Fill



Tampico/Horsehair Mixed Fill

Floor Brooms

Part #	Material	Block Size	Trim
61-75056	Palmyra Finer.	3" x 24"	4"
61-75032	Synthetic - flagged border.	3" x 24"	2 7/8"
61-75014	Synthetic - fully flagged.	3" x 24"	2 7/8"
61-75040	Tampico - heavy fill.	3" x 18"	2 7/8"
61-75041	Tampico - heavy fill.	3" x 24"	2 7/8"
61-75022	Tampico/ horsehair mix.	3" x 24"	2 7/8"

Handles Sold Separately!

Floor Broom Handles

MILL-ROSE



Floor Broom Handles

- Threaded tips.

Part #	Overall Length	Diameter	Handle
61-75070	60"	1 1/8"	Lacquered wood.
61-75072	60"	1 1/8"	Sanded wood.
61-75071*	60"	15/16"	Lacquered wood.
61-75080	60"	1"	Virtually unbreakable fibreglass.

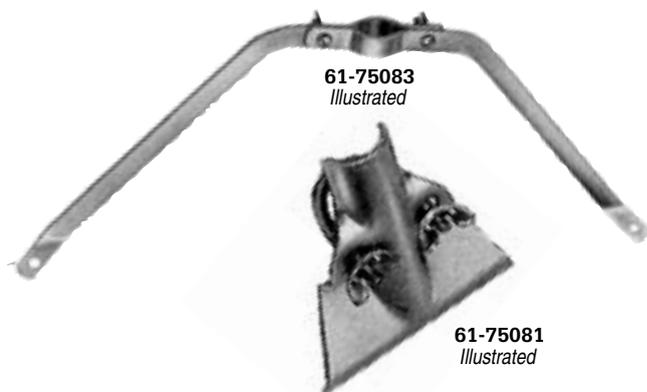
* With tuff tip thread protection.

Floor Broom Accessories

MILL-ROSE

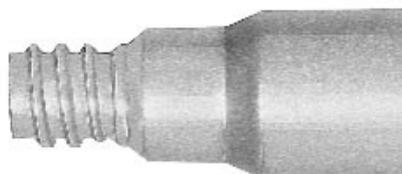
Broom Handle Accessories

Part #	Description
61-75081	Standard metal brace for 24" or longer floor brooms.
61-75083	Heavy duty cad-plated metal brace.
61-75085	Tuff-tip replacement for broom handles.



61-75083 Illustrated

61-75081 Illustrated



61-75085 Tuff-Tip

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Errors & Omissions Excepted

All information, data and dimension tables in this catalogue have been carefully compiled and thoroughly checked. However, no responsibility for possible errors or omissions can be assumed.

Changes

The company reserves the right to change specifications and other information included in this catalogue without notice.

Refrigeration

°C	Temp.	°F
-273.15	-459.67	-459.67
-268	-450	-450
-262	-440	-440
-257	-430	-430
-251	-420	-420
-246	-410	-410
-240	-400	-400
-234	-390	-390
-229	-380	-380
-223	-370	-370
-218	-360	-360
-212	-350	-350
-207	-340	-340
-201	-330	-330
-196	-320	-320
-190	-310	-310
-184	-300	-300
-179	-290	-290
-173	-280	-280
-169	-273	-459.4
-168	-270	-454
-162	-260	-436
-157	-250	-418
-151	-240	-400
-146	-230	-382
-140	-220	-364
-134	-210	-346
-129	-200	-328
-123	-190	-310
-118	-180	-292
-112	-170	-274
-107	-160	-256
-101	-150	-238
-95.6	-140	-220
-90.0	-130	-202
-84.4	-120	-184
-78.9	-110	-166
-73.3	-100	-148
-67.8	-90	-130
-62.2	-80	-112
-56.7	-70	-94
-51.1	-60	-76
-45.6	-50	-58
-40.0	-40	-40
-34.4	-30	-22
-28.9	-20	-4
-23.3	-10	14
-17.8	0	32
-17.2	1	33.8
-16.7	2	35.6
-16.1	3	37.4
-15.6	4	39.2
-15.0	5	41.0
-14.4	6	42.8
-13.9	7	44.6
-13.3	8	46.4
-12.8	9	48.2

Heating & A/C

°C	Temp.	°F
-12.2	10	50.0
-11.7	11	51.8
-11.1	12	53.6
-10.6	13	55.4
-10.0	14	57.2
-9.4	15	59.0
-8.9	16	60.8
-8.3	17	62.6
-7.8	18	64.4
-7.2	19	66.2
-6.7	20	68.0
-6.1	21	69.8
-5.6	22	71.6
-5.0	23	73.4
-4.4	24	75.2
-3.9	25	77.0
-3.3	26	78.8
-2.8	27	80.6
-2.2	28	82.4
-1.7	29	84.2
-1.1	30	86.0
-0.6	31	87.8
0	32	89.6
0.6	33	91.4
1.1	34	93.2
1.7	35	95.0
2.2	36	96.8
2.8	37	98.6
3.3	38	100.4
3.9	39	102.2
4.4	40	104.0
5.0	41	105.8
5.6	42	107.6
6.1	43	109.4
6.7	44	111.2
7.2	45	113.0
7.8	46	114.8
8.3	47	116.6
8.9	48	118.4
9.4	49	120.2
10.0	50	122.0
10.6	51	123.8
11.1	52	125.6
11.7	53	127.4
12.2	54	129.2
12.8	55	131.0
13.3	56	132.8
13.9	57	134.6
14.4	58	136.4
15.0	59	138.2
15.6	60	140.0
16.1	61	141.8
16.7	62	143.6
17.2	63	145.4
17.8	64	147.2
18.3	65	149.0
18.9	66	150.8

Electrical

°C	Temp.	°F
19.4	67	152.6
20.0	68	154.4
20.6	69	156.2
21.1	70	158.0
21.7	71	159.8
22.2	72	161.6
22.8	73	163.4
23.3	74	165.2
23.9	75	167.0
24.4	76	168.8
25.0	77	170.6
25.6	78	172.4
26.1	79	174.2
26.7	80	176.0
27.2	81	177.8
27.8	82	179.6
28.3	83	181.4
28.9	84	183.2
29.4	85	185.0
30.0	86	186.8
30.6	87	188.6
31.1	88	190.4
31.7	89	192.2
32.2	90	194.0
32.8	91	195.8
33.3	92	197.6
33.9	93	199.4
34.4	94	201.2
35.0	95	203.0
35.6	96	204.8
36.1	97	206.6
36.7	98	208.4
37.2	99	210.2
37.8	100	212.0
43	110	230
49	120	248
54	130	266
60	140	284
66	150	302
71	160	320
77	170	338
82	180	356
88	190	374
93	200	392
99	210	410
100	212	413
104	220	428
110	230	446
116	240	464
121	250	482
127	260	500
132	270	518
138	280	536
143	290	554
149	300	572
154	310	590
160	320	608

Service Tools

°C	Temp.	°F
166	330	626
171	340	644
177	350	662
182	360	680
188	370	698
193	380	716
199	390	734
204	400	752
210	410	770
216	420	788
221	430	806
227	440	824
232	450	842
238	460	860
243	470	878
249	480	896
254	490	914
260	500	932
266	510	950
271	520	968
277	530	986
282	540	1004
288	550	1022
293	560	1040
299	570	1058
304	580	1076
310	590	1094
316	600	1112
321	610	1130
327	620	1148
332	630	1166
338	640	1184
343	650	1202
349	660	1220
354	670	1238
360	680	1256
366	690	1274
371	700	1292
377	710	1310
382	720	1328
388	730	1346
393	740	1364
399	750	1382
404	760	1400
410	770	1418
416	780	1436
421	790	1454
427	800	1472
432	810	1490
438	820	1508
443	830	1526
449	840	1544
454	850	1562
460	860	1580
466	870	1598
471	880	1616
477	890	1634

°C	Temp.	°F
482	900	1652
488	910	1670
493	920	1688
499	930	1703
504	940	1724
510	950	1742
516	960	1760
521	970	1778
527	980	1796
532	990	1814
538	1000	1832
543	1010	1850
549	1020	1868
554	1030	1886
560	1040	1904
566	1050	1922
571	1060	1940
577	1070	1958
582	1080	1976
588	1090	1994
593	1100	2012
599	1110	2030
604	1120	2048
610	1130	2066
616	1140	2084
621	1150	2102
627	1160	2120
632	1170	2138
638	1180	2156
643	1190	2174
649	1200	2192
704	1300	2372
760	1400	2552
816	1500	2732
871	1600	2912
927	1700	3092
982	1800	3272
1038	1900	3452
1093	2000	3632
1149	2100	3812
1204	2200	3992
1260	2300	4172
1316	2400	4352
1371	2500	4532
1427	2600	4712
1482	2700	4892
1538	2800	5072
1593	2900	5252
1649	3000	5432

Temperature Conversion Table

Use center column to locate the known temperature (°C or °F) you wish to convert. With known temperature located read left if Celsius equivalent is required or read right if Fahrenheit equivalent is required.

Fraction	Inches (")	Millimeters (mm)
1/64	0.0156	0.3969
	0.0250	0.6350
1/32	0.0312	0.7937
	0.0394	1.0000
	0.0400	1.0160
3/64	0.0469	1.1906
	0.0472	1.2000
	0.0550	1.3970
	0.0591	1.5000
1/16	0.0625	1.5875
	0.0709	1.8000
5/64	0.0781	1.9844
	0.0787	2.0000
	0.0906	2.3012
3/32	0.0937	2.3812
	0.0984	2.5000
	0.1000	2.5400
	0.1024	2.6000
7/64	0.1094	2.7781
	0.1100	2.7940
	0.1102	2.8000
	0.1181	3.0000
1/8	0.1250	3.1750
	0.1256	3.1902
	0.1378	3.5000
9/64	0.1406	3.5719
5/32	0.1562	3.9687
	0.1575	4.0000
11/64	0.1719	4.3656
3/16	0.1875	4.7625
	0.1892	4.8057
	0.1969	5.0000
13/64	0.2031	5.1594
	0.2165	5.4991
7/32	0.2187	5.5562
15/64	0.2344	5.9531
	0.2362	6.0000
1/4	0.2500	6.3500
17/64	0.2656	6.7469
	0.2756	7.0000
9/32	0.2812	7.1437
	0.2883	7.3228

Fraction	Inches (")	Millimeters (mm)
19/64	0.2969	7.5406
5/16	0.3125	7.9375
	0.3150	8.0000
21/64	0.3281	8.3344
11/32	0.3437	8.7312
	0.3543	9.0000
23/64	0.3594	9.1281
3/8	0.3750	9.5250
25/64	0.3906	9.9213
	0.3937	10.0000
13/32	0.4062	10.3187
	0.4100	10.4140
27/64	0.4219	10.7156
	0.4250	10.7950
	0.4331	11.0000
7/16	0.4375	11.1125
29/64	0.4531	11.5094
	0.4600	11.6840
15/32	0.4687	11.9062
	0.4724	12.0000
31/64	0.4844	12.3031
1/2	0.5000	12.7000
	0.5118	13.0000
33/64	0.5156	13.0968
17/32	0.5312	13.4937
35/64	0.5469	13.8906
	0.5512	14.0000
9/16	0.5625	14.2875
37/64	0.5781	14.6844
	0.5906	15.0000
19/32	0.5937	15.0812
39/64	0.6094	15.4781
5/8	0.6250	15.8750
	0.6299	16.0000
41/64	0.6406	16.2719
	0.6500	16.5100
21/32	0.6562	16.6687
	0.6620	16.8148
	0.6693	17.0000
43/64	0.6719	17.0656
11/16	0.6875	17.4625
45/64	0.7031	17.8594

Fraction	Inches (")	Millimeters (mm)
	0.7087	18.0000
23/32	0.7187	18.2562
47/64	0.7344	18.6532
	0.7435	18.8849
	0.7480	19.0000
3/4	0.7500	19.0500
49/64	0.7656	19.4469
	0.7717	19.6012
25/32	0.7812	19.8433
	0.7874	20.0000
51/64	0.7969	20.2402
13/16	0.8125	20.6375
	0.8268	21.0000
53/64	0.8281	21.0344
27/32	0.8437	21.4312
55/64	0.8594	21.8281
	0.8661	22.0000
7/8	0.8750	22.2250
57/64	0.8906	22.6219
	0.9055	23.0000
29/32	0.9062	23.0187
59/64	0.9219	23.4156
15/16	0.9375	23.8125
	0.9449	24.0000
61/64	0.9531	24.2094
31/32	0.9687	24.6062
	0.9843	25.0000
63/64	0.9844	25.0031
	1.0000	25.4000
	1.0236	26.0000
	1.0415	26.4541
	1.0480	26.6192
1 1/16	1.0625	26.9875
	1.0630	27.0000
	1.1025	28.0000
1 1/8	1.1250	28.5750
	1.1417	29.0000
	1.1812	30.0000
1 3/16	1.1875	30.1625
1 1/4	1.2500	31.7500
1 1/2	1.5000	38.1000

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Refrigerants - Quick Reference

ENVIRO Refrigerants

R12 Replacements



R22 Replacement



R12 Replacement

Part #	Description	Weight
57-R414B	R12 drop-in replacement.	21.8kg (48lb)
57-EC2*	R12 & R134a drop-in replacement.	0.91kg (2 lb)
57-R34+	R12 & R134a drop-in replacement.	11.34kg (25 lb)
57-R134A-2*	R12 drop-in replacement.	0.91kg (2lb)
57-R134A	R12 drop-in replacement.	11.34kg (25 lb)

R22 Replacement - NU22 (R417A)

Part #	Description	Weight
57-NU22	R22 drop-in direct replacement.	21.8kg (48lb)

* Reusable actuator valve (57-1000) sold separately.

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