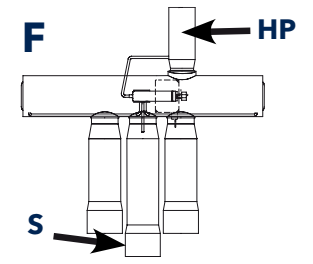
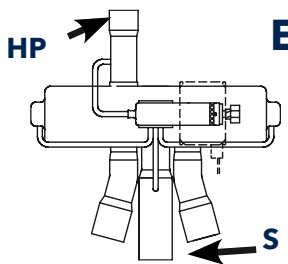
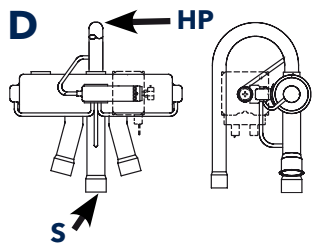
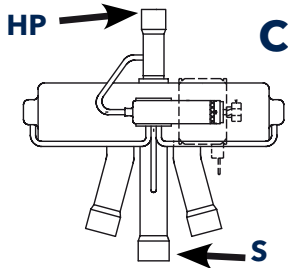
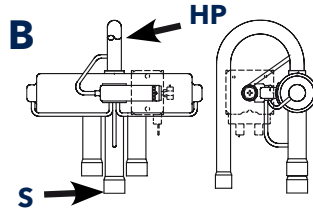
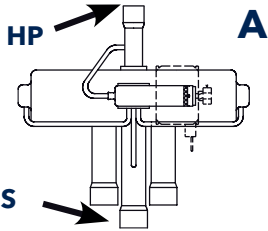


DESCRIPTION / APPLICATION

The Ranco® Reversing Valves are solenoid operated, slide type, with a 4-way pilot valve and operate under the full pressure of the heat pump system. The valves are used on unitary, split system, and window-type heat pump applications. There are six different styles designed to meet your particular system need.



Legend
HP: High Pressure
S: Suction



WARNING

V Series reversing valves can be used to replace the older version valves as indicated in the far right column of the above chart. Solenoid coils are not interchangeable. LDK Series coils must be used with the V Series reversing valves while the L30 Series coils are used with the old version valves listed above.

REVERSING VALVE 4-WAY PILOT VALVE

Part Numbers	Capacity (Tons)			Style #	Tube Size (I.D.)		Old Valve #
	R32	R143A	R410A		Suction	High Pressure	
V2-408060-170	2.8 to 4	1.6 to 2.3	2.5 to 3.6	A	1/2"	3/8"	V2-128
V2-408060-270	2.8 to 4	1.6 to 2.3	2.5 to 3.6	B	1/2"	3/8"	V2-100
V2-4100F0-370	2.8 to 4	1.6 to 2.3	2.5 to 3.6	C	5/8"	3/8" O.D.	V2-179
V2-410060-470	3.3 to 4.7	1.9 to 2.8	3 to 4.3	D	5/8"	3/8"	V2-150
V3-410080-770	3.3 to 4.7	1.9 to 2.8	3 to 4.3	E	5/8"	1/2"	V3-1003
V3-412080-870	3.3 to 4.7	1.9 to 2.8	3 to 4.3	E	3/4"	1/2"	V3-1004
V6-412080-170	7.1 to 10.2	4.1 to 5.9	6.4 to 9.2	A	3/4"	1/2"	V6-2101
V6-414080-170	7.1 to 10.2	4.1 to 5.9	6.4 to 9.2	A	7/8"	1/2"	V6-2103
V6-414120-170	7.1 to 10.2	4.1 to 5.9	6.4 to 9.2	A	7/8"	3/4"	V6-2106
V10-414080-170	10.5 to 15.2	6.1 to 8.8	9.6 to 13.8	A	7/8"	1/2"	V10-2500
V10-414120-170	10.5 to 15.2	6.1 to 8.8	9.6 to 13.8	A	7/8"	3/4"	V10-2750
V10-418140-170	10.5 to 15.2	6.1 to 8.8	9.6 to 13.8	A	1-1/8"	7/8"	V10-2762
V10-414140-470	10.5 to 15.2	6.1 to 8.8	9.6 to 13.8	A	7/8"	7/8"	V10-2765
V12-4220T0-270	13.5 to 19.4	7.8 to 11.2	12.3 to 17.6	F	1-3/8"	1-1/8" O.D.	V12-321

SOLENOID COILS

Part Numbers	Voltage (VAC)	Color Code	Power (W) @ 50 / 60 Hz
LDK-110000-070	24	Red	7/5
LDK-310000-070	120	Black	7/5
LDK-410000-070	208/240	Green	7/5
LDK-510000-070	277	Blue	7/5

CHOOSING THE CORRECT SOLENOID COIL

The Ranco LDK solenoid coils are used with the V2, V3, V6, V10, and V12 Ranco Reversing Valves. These continuous duty, moisture resistant magnetic coils are designed to operate the pilot valve controlling the reversing valves listed above. Included with the solenoid coil is a W29 wiring harness with 48" leads.

NOTE:

Heat pumps and heat/cool units – many original equipment manufacturers connect the system tubing to the Ranco reversing valve based on which mode (heat or cool) the system will operate should the solenoid coil fail. For example, solenoid coil energized for cooling (Figure 1); solenoid coil failure mode to heat cycle. Solenoid coil energized for heating (Figure 2); solenoid coil failure mode to cooling cycle. Prior to replacing the valve, confirm which mode (heat or cool) the solenoid coil controls when energized.

Solenoid coil fails, cycle goes to heating. Solenoid coil energized for cooling (de-energized for heat); solenoid fails, valve goes to heat cycle. As shown in figure 1.

Solenoid coil fails, cycle goes to cooling. Solenoid coil energized for heat (de-energized for cooling); solenoid fails, valve goes to cooling cycle. As shown in figure 2.

Figure 1

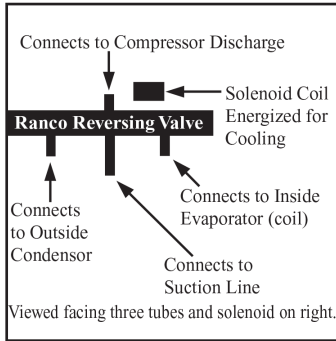
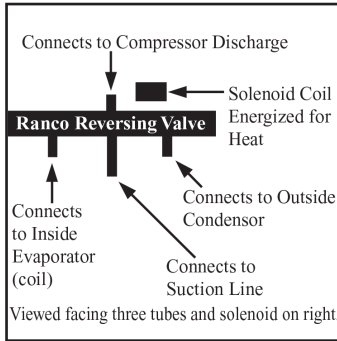


Figure 2



REPLACING THE VALVE ASSEMBLY

SYSTEM REPAIR - Follow the original equipment manufacturer’s recommendations for replacement of refrigerant components.

SYSTEM EVACUATION - Follow original equipment manufacturer’s recommendations and/or RSES Service Application Manuals.

COMPRESSOR MOTOR BURNOUT - Follow original equipment manufacturer’s recommendations and/or RSES Service Application Manuals.



CAUTION

To prevent possible electrical shock or equipment damage, disconnect electrical power to unit before and during installation. DO NOT restore electrical power to unit until the device is properly installed.

GENERAL INSTALLATION PROCEDURES - REMOVAL

- Use only an oxy-acetylene torch to unsolder connections. Other type torches may not have the heat capacity to do the job.
- Protect the valve from excessive heat. Temperatures above 250°F are apt to damage internal parts. Wrapping a wet rag around the valve body while using the torch will help to dissipate heat.

- Inadequate heat is also a problem. Not only will the soldered joints be difficult to separate, but also the build up of heat over the longer period of time required will transfer to the valve body and possibly damage its internal parts.
- The joint should separate in seconds, not minutes. Use enough heat to accomplish this, while relying on the wet rag to protect the valve body. Also remember that the remelt temperature of any solder alloy is much higher than the initial soldering temperature.
- After removing the valve, inspect the lines to make sure they are round and do not have any large solder blobs, which will interfere with the mechanical fit of the new joints.

VALVE INSTALLATION

- Avoid any rough handling of the new valve during installation. This especially includes the use of vise-type pliers to manipulate the valve body while inserting the piping into the connection tubes. If the valve body or the capillaries are dented or flattened, the reversing action may be impaired or stopped completely.
- Use wet rags around the valve body and adjoining tubing to prevent overheating. Direct the flame of the torch away from the valve body. Excess heat over 250°F may distort internal parts.
- Use low temperature brazing rod as local code will permit, and use an inert gas to prevent oxide scale on the inside of the tubing.
- Preferably use a phosphorus-bearing silver solder which requires no external flux. The entrance of even a tiny bit of flux may be enough to damage a new valve.
- If you must use silver solder with externally applied flux, be sure the sections to be joined are bright and clean and that you use the flux sparingly. This will do the job, but because this kind of solder requires exceptional skill and care in its use, most valve manufacturers are reluctant to recommend it.

REVERSING VALVE OPERATING SPECIFICATIONS

Min. ▲ P to Reverse	40 PSI
Max. ▲ P to Reverse	450 PSI
Max. Pressure.....	650 PSI
Min. Burst Pressure	2500 PSI
Max. Operating Temperature	250°F
Min. Life Cycles.....	100,000
Min. Operating Voltage	85% of Rated Volts
Max. Operating Voltage.....	110% of Rated Volts
Max. Leakage to Suction:	
V2/V3	2,000 cc/min.
V6	4,000 cc/min.
V10.....	6,000 cc/min.
V12.....	15,000 cc/min.

NOTE: Dry Air at 150 PSI. Valve at 160°F. Air at 70°F.



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