

SERIES "R" REFRIGERATION SOLENOID VALVES

INSTALLATION and SERVICE INSTRUCTIONS

Valve Location

The valve location selected should be as clean and cool as conditions will permit. Poor locations always increase the possibility of encountering trouble and definitely decrease the life of the valve no matter how durable the construction.

Installation

J-E valves may be installed in any line regardless of the direction in which the line runs. The only caution to be observed is that the valve should never be mounted so that coil is lower than the valve body (See Fig. 1).

Apply a small amount of pipe dope to the male threads on screwed line connections.

WARNING

**REMOVE THE BONNET ASSEMBLY AND DIAPHRAGM
BEFORE BRAZING LINE CONNECTIONS NEAR VALVE BODY.**

Electrical Connections

The electrical data for the valve will be found on the coil label. Make sure the voltage and frequency are correct. Many of the electrical codes require that each solenoid valve be protected by adequate fuses. Fused capacities for J-E Solenoid valves should not exceed 2 amperes for voltages below 50 volts and 1 ampere for voltages above 50 volts.

Make secure all electrical connections and do not use conductors smaller than No. 18 B&S gauge.

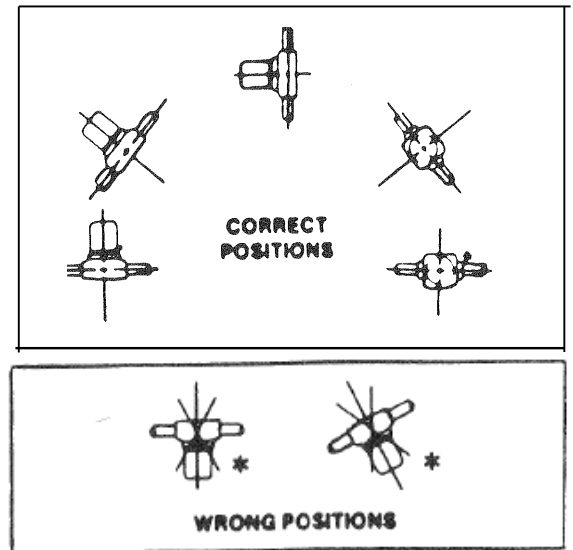


FIG. 1

The Junction Box or conduit connections on the coil housing can be moved to any desired position by loosening the retaining screw at the top of the coil housing and rotating the housing to the desired position. Be sure to tighten the retaining screw after this operation.

WIRING FOR MULTI-VOLTAGE COIL

Electrical Data Plate supplied with all Multi-Voltage Coils has diagram (See Fig. 1A) showing the correct hook-up for various electrical requirements.

TO REMOVE OR CHANGE THE COIL

To remove the solenoid coil, first take out the retaining screw at the top of the coil housing. The entire-coil assembly can be lifted off the enclosing tube.

To reassemble, make sure that the parts are placed on the enclosing tube in the following order:

1. Be sure to change electrical data plate if coil specifications change.
2. Place coil and yoke assembly on the enclosing tube, lay data identification plate in place.
3. Insert the coil retaining screw, rotate housing to proper position and tighten screw securely.

● to take the valve apart

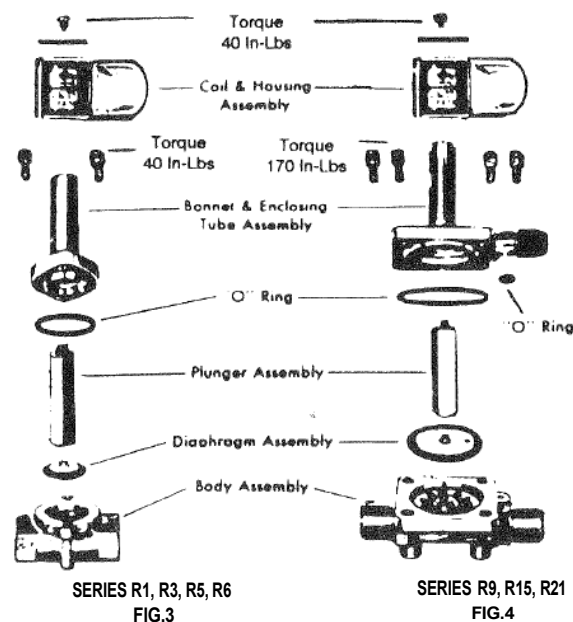
series R1,R3,R5,R6,R9,R15, and R21

Disassembly-These valves may be taken apart by removing the socket head screws which hold the body and bonnet together. See Fig 3 and 4. After removing the screws, carefully lift off the bonnet assembly (upper part of the valve). Don't drop the plunger. The diaphragm can now be lifted out. Be careful not to damage the machined faces while the valve is apart.

NOTE: THE ABOVE PROCEDURE MUST BE FOLLOWED BEFORE BRAZING SOLDER TYPE BODIES INTO THE LINE.

To Reassemble-Place the diaphragm in the body with the pilot port extension up. Hold the plunger with the synthetic seat against the pilot port. Make sure the bonnet "O" rings are in place, then lower the bonnet assembly over the plunger, making sure that the locating sleeve (series with manual operator) in the bonnet enters the mating hole in the body. Insert body screws and tighten uniformly.

NOTE: R9, R15, & R21 SHOWS OPTIONAL MANUAL OPERATOR.



TO TAKE APART

SERIES R41, R71, R101, and R201

These valves have the plunger and diaphragm in separate enclosures. The diaphragm is between the body bonnet.

To Remove the Diaphragm-Remove the socket head body screws (See Fig.5). Next carefully lift the bonnet assembly (upper part of the valve) off the body. The diaphragm assembly can then be removed. Be careful not to lose the diaphragm spring.

NOTE: THE ABOVE PROCEDURE MUST BE FOLLOWED BEFORE BRAZING SOLDER-

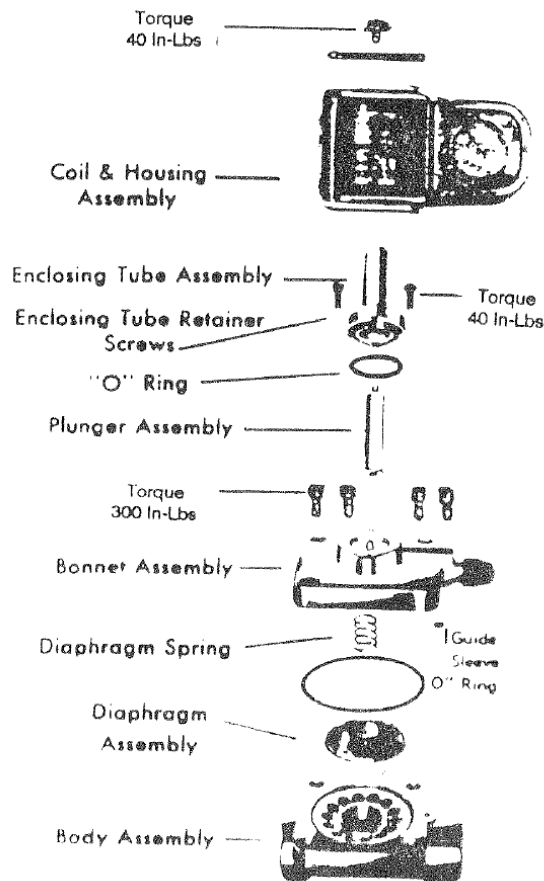
To Reassemble-Place the diaphragm in the body so that the large metal buffer is on top. Position diaphragm spring in the center of the buffer plate. Place the bonnet assembly in position on the body. Replace the socket head screws and tighten uniformly.

To Remove the Plunger-First take off the coil assembly as outlined under "To Remove or Change the Coil". Remove the two small socket head screws which hold the enclosing tube to the bonnet. Then lift off enclosing tube, being careful not to drop the plunger.

To Reassemble-Hold the plunger with its synthetic seat against the pilot port in the bonnet. Lower enclosing tube over the plunger making sure "O" ring seal is in place. Replace, socket head screws and tighten uniformly. Reinstall coil assembly as outlined under "To Remove or Change the Coil".

NOTE: NORMALLY OPEN SERIES (PREFIXED "O") PLUNGERS ARE PERMANENTLY ATTACHED INSIDE ENCLOSING TUBE ASSEMBLY. TO CHANGE REPLACE ENCLOSING TUBE ASSEMBLY.

NOTE: Teflon and Buna "N" diaphragms are not interchangeable in the same valve assembly. Teflon diaphragms are used with bonnet assemblies stamped "B" on bonnet edge.



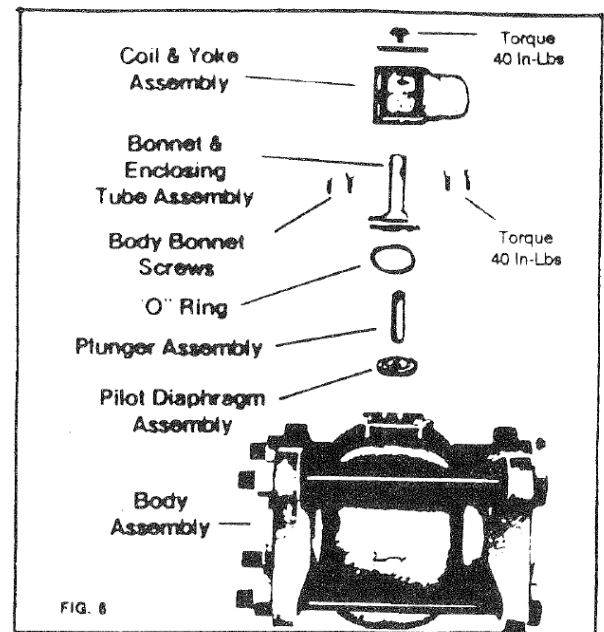
SERIES R41, R71, R101, R201
FIG. 5

TO TAKE VALVE APART

RA51, RA71, RA101, RA201,
RA301, RA401 →

Pilot Assembly-The pilot assembly may be taken apart by removing the socket head screws which hold the body and bonnet together (See Fig.6). After removing the screws, carefully lift off the bonnet assembly (upper part of the valve). Don't drop the plunger. The pilot diaphragm can now be lifted out. Be careful not to damage the machined faces while the valve is apart.

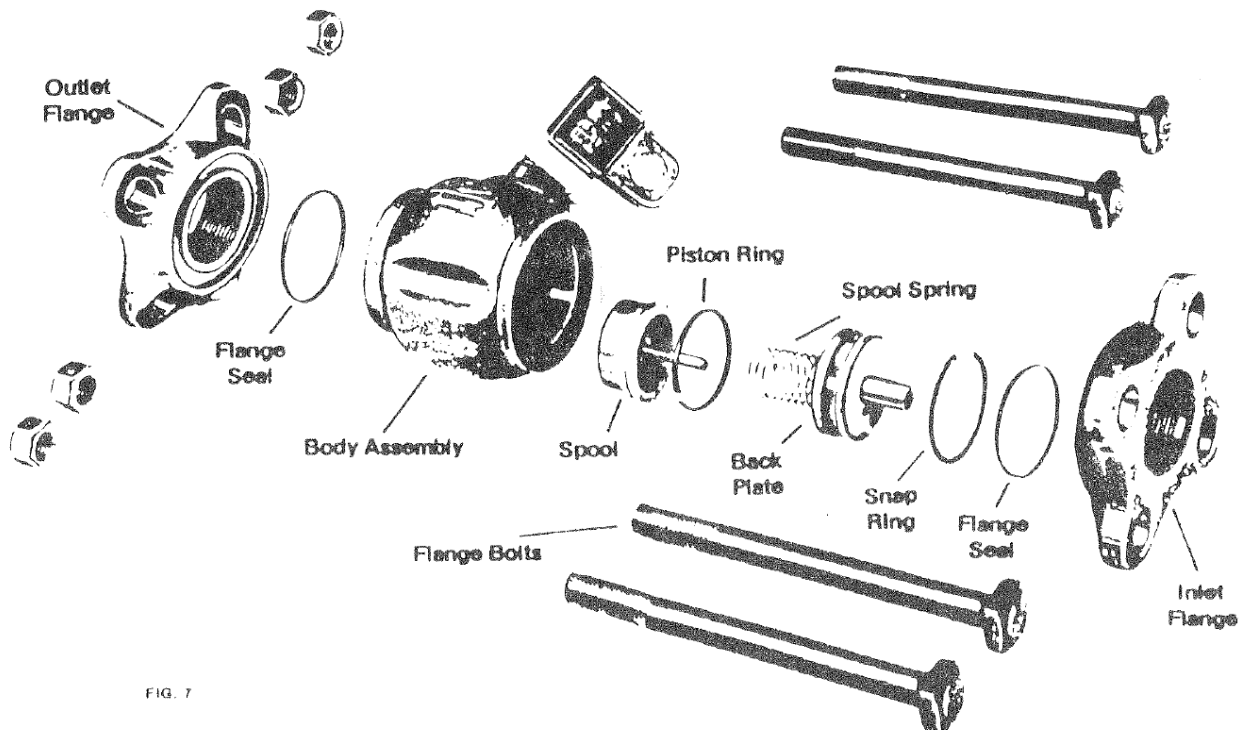
To Reassemble-Place the pilot diaphragm in the body with the Pilot Port extension up. Hold the plunger with the synthetic seat against the pilot port. Make sure the bonnet "O" ring is in place, then lower the bonnet assembly over the plunger. Insert body screws and tighten uniformly.



Body and Spool Assembly-Remove the body assembly from the mounting flanges. Flange seals are located in the outlet flange and inlet connection of the body assembly. If damaged replace the new "T" seals or they may be replaced with standard asbestos flange gaskets.

The internal parts may be taken out by compressing the snap ring which holds the back plate, spool spring and spool in place (See Fig.7). Be careful not to damage the machined surfaces or spool seat while the valve is apart.

To Reassemble-Place the spool spring over the neck on the back plate and twist to lock in place. Insert the spool through the body assembly against the port seat. Guide the back plate on to the spool pin until it stops. The snap ring groove should be clear of the back plate. Compress the snap ring and insert it into the groove. This locks the internal parts in place. Operate the spool by hand to make sure it is free and open and closes smoothly. Install flange "T" seals before bolting the body assembly to the flanges. The body assembly directional arrow must be in the direction of the flow from the inlet flange to outlet flange.



UNDERWRITERS LABORATORIES, INC.

Solenoid Valve Guide

TYPE	FLUID	MAX. AMBIENT	TEMPERATURE F FLUID	TYPE	FLUID	MAX. AMBIENT	TEMPERATURE F FLUID
RA51MP8, MS9, MS11, MSW8, MW8, P8, S9, S11, SW8, W8, RA71MP10, MS11, MS13, MSW10, MW10, P10, S11, S13, SW10, W10, RA101MP12, MS13, MS17, MSW12, MW12, P12, S13, S17, SW12, W12, RA201MP16, MS17, MS21, MSW16, MW16, P16, S17, S21, SW16, W16, RA301MP20, MS21, MS25, MSW20, MW20, P20, S21, S25, SW20, W20, RA401MP24, MS25, MS29, MSW24, MW24, P24, S25, S29, SW24, W24	A, F, G, LP, 02, W	120	240	RS907 RS912, RS50, RS55, RS65, RS70 ORA51P8, S9, S11, SW8, W8 ORA71P10, S11, S13, SW10, W10, ORA101P12, S13, S17, SW12, W12, ORA201P16, S17, S21, SW16, W16, ORA301P20, S21, S25, SW20, W20, ORA401P24, S25, S29, SW24, W24 ORB1E2 ORB1F2, F3 ORB1P2, P3, S2, S3 ORB3E2, E3, F2, F3, P2, P3, S3, S4 ORB5F3, P3, S4, ORB6E4, E5, F4 ORB9F4, E5, E7, F5, P3, S4, S5, ORB15E5 E7, E9, P4, S5, ORB21P6, E7, E9, S7, ORB41P8, S9, E9, E11, ORB71P10, ORB101P12, ORS301, 302 ORS303, 304, 306, 307 ORS160	A, F, G, LP, 02, W A, F, G, LP, 02, W F A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W, BRINE A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W	120 120 120 120 120 120 120 120 120 120 120 120 120 120 120 120	240 240 105 240 240 240 240 240 225 225 225 240
RA51MP8, MS9, MS11, MSW8, MW8, P8, S9, S11, SW8, W8, RA71MP10, MS11, MS13, MSW10, MW10, P10, S11, S13, SW10, W10, RA101MP12, MS13, MS17, MSW12, MW12, P12, S13, S17, SW12, W12, RA201MP16, MS17, MS21, MSW16, MW16, P16, S17, S21, SW16, W16, RA301MP20, MS21, MS25, MSW20, MW20, P20, S21, S25, SW20, W20, RA401MP24, MS25, MS29, MSW24, MW24, P24, S25, S29, SW24, W24	A, F, G, LP, 02, W	120	240	RS300 RS301, 302 RS303, 304, 306, 307, 308, 309 RS314 RS315 RS316 RS321, 322, 325 RS501, 503 RS901 RS902, 903, 904	A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W A, F, G, LP, 02, W	120 120 120 120 120 120 120 120	225 225 240 225 240 225 240 225

#02-No. 1 and 2 Fuel Oils, oils having viscosities not more than 40, SU at 100 °F

S - Steam

W - Water or other aqueous nonflammable liquids.

A - air or nontoxic, nonflammable gases

G - City gas supplied by public utilities

LP - Liquefied petroleum gases.

F - Common refrigerants except ammonia.

Parker Hannifin Corporation • Climate & Industrial Controls Group • Skinner Valve Division

147 W. Hoy Road, Madison, MS 39110 U.S.A.

(601) 856-4123

Parker