

INSTALLATION:

1. Valve will operate mounted in any position.
2. Detailed piping and mounting dimensions are shown.
3. Solenoid voltage ratings are described on the nameplate. Your electrical power source must agree with this rating. The coil identification chart indicates the various voltages and Hertz ratings available.
4. Check model number on valve against valve model chart. On a single pressure, dual exhaust model, pipe the supply pressure to the "in" port. On a dual pressure, common exhaust model, pipe the supply pressure to both "Exh" ports.
NOTE: The "Exh" port located at the "14" end (stamping is located on bottom of valve body) of valve must always have the highest supply pressure.
5. Pilot pressure when separately supplied should be approximately equal to inlet pressure but not less than 35 PSIG (2.4 bar), or more than 150 PSIG (10 bar).
6. Cylinder speed can be controlled by restricting the exhaust port(s) of the valve with flow controls.
CAUTION: Do not close off exhaust ports.
7. To obtain maximum valve life with a minimum of maintenance, it is necessary that filtered and lubricated air be used.

MAINTENANCE HINTS & TROUBLESHOOTING:

VALVE NOT SHIFTING COMPLETELY:

1. Be sure supply pressure is 35 PSIG or greater at the valve during shift.
2. Check for possible restrictions in air supply, such as sharp bends and undersized hose fittings.
3. Check for possible pilot exhaust restriction.
4. Check spool for smooth movement.
5. Check seals and gaskets for improper installation, dirt and damage.

SLOW AIR LEAKAGE THROUGH EXHAUST PORTS:

1. Check for internal leakage in the cylinder being operated by the valve.
2. Check condition of seals on spool and the valve body bore.
3. Check condition of seal on poppet assembly and their mating surfaces in the pilot body.
4. Check for missing, damaged or incorrectly assembled seals and o-rings.

NOISY SOLENOID:

1. Check voltage and frequency.
2. Inspect fixed pole assembly and plunger assembly for nicked and damaged mating surfaces and dirt. Replace parts, if damaged.
3. Check override access for excessive dirt.

VALVE SERVICE PROCEDURES:

CAUTION: Always shut off air supply and bleed off trapped pressure in the valve. For solenoid operated valves, turn off electrical power source.

PREPARATION: Lightly lubricate all rubber soft goods (o-rings, gaskets, and spool seals) found in the service kits. Use a non-detergent hydrocarbon base oil, or grease (preferably grease). This lubrication will help retain seals and gaskets in position for easier reassembly.

CAUTION: Do not use synthetic oils such as esters or fire retardant type compressor oils.

SERVICING VALVE BODY:

1. Single Solenoid/Single Air Pilot Valve: Remove air return operator (Item 26) from valve by loosening the end mounting screws (Item 27).
2. Solenoid Operated Valve: Remove end mounting screws (Item 7A), Pilot Body (Item 8) and solenoid (Item 1) as an assembly. The adaptor plate (Item 17) and the two gaskets (Item 16 & 18) must also be removed.
NOTE: Both pilot bodies must be removed from double solenoid valve.
3. Air Pilot Valve: Remove air pilot operator(s) (Item 19) from valve body by loosening the end mounting screws (Item 21).
4. Remove spool assembly (Item 23) and thoroughly clean the valve body internally of all dirt and contamination.
5. Inspect the valve body bore surface for nicks, voids, pits and deep scratches.
6. Install new spool into valve body bore.
7. Single Solenoid/Single Air Operated Valve: Attach air return operator (Item 26) to No. 12 end of valve body with mounting screws (Item 27) and tighten to (30 to 40 in. lbs.).
8. Solenoid Operated Valve: Insert mounting screws (Item 7A) into pilot body. This will assist you in positioning the pilot body to adaptor gasket (Item 16), the adaptor plate (Item 17) and the adaptor plate to body gasket (Item 18) for easier mounting to the valve body.
NOTE: All four (4) parts must have correct alignment in relationship with the pilot hole.
9. Position pilot body assembly to valve body and tighten mounting screws to (30 to 40 in. lbs.).
10. Air Pilot Valve: Attach air pilot operator(s) (Item 19) to valve body with mounting screws (Item 21) and tighten to (30 to 40 in. lbs.).

SERVICING SOLENOID SECTION:

1. Remove junction box top plate assembly (Item 31) by loosening the two mounting screws, and disconnect the lead wires in the junction box.
NOTE: Do not disconnect lead wires by cutting.
2. Remove pilot body and solenoid as an assembly by loosening the two mounting screws (Item 7A) and junction box seal (Item 32).
3. Remove solenoid coil by loosening the two top mounting screws (Item 7) and lifting solenoid from pilot body. Discard guide sleeve (Item 2), plunger assembly (Item 3), override seal (Item 4), solenoid to pilot body seal (Item 6) and mounting screws (Item 7A).
4. Remove fixed pole assembly (Item 15) by turning counter-clockwise

until threads are disengaged, and plunger pin (Item 14).

5. Replace plunger pin (Item 14) and reassemble fixed pole assembly (Item 15) to pilot body by turning clockwise and torque to (30 to 40 in. lbs.).



CAUTION: Do not exceed torque specifications. This could cause severe damage to the pilot body poppet seating ledge, and result in valve malfunction.

6. Replace solenoid to pilot body seal (Item 6) guide sleeve (Item 2) by resting on fixed pole assembly, plunger assembly (Item 3) by setting inside guide sleeve.
7. Mount solenoid coil over guide sleeve. Replace override seal (Item 4) and attach solenoid top plate (Item 5) with mounting screws (Item 7) and tighten solenoid to pilot body to (30 to 40 in. lbs.).
8. Install solenoid coil to junction box seal (Item 32) into junction box.
9. Before attaching pilot body to valve body, refer to Item #8 note: under servicing valve body. Insert mounting screws (Item 7A) into pilot body. Position pilot body to adaptor gasket (Item 16), the adaptor plate (Item 17), the adaptor plate to body gasket (Item 18). Thread the solenoid coil lead wires into the junction box, and attach the pilot body and solenoid assembly to the valve body and tighten the mounting screws to (30 to 40 in. lbs.).
10. Reconnect solenoid coil lead wires and attach junction box top plate assembly (Item 31) and tighten the mounting screws to (30 to 40 in. lbs.).

SERVICING PILOT BODY:

1. Remove junction box top plate assembly (Item 31) by loosening the two mounting screws and disconnect the lead wires in the junction box.
NOTE: DO NOT disconnect lead wires by cutting.
2. Remove pilot body and solenoid as an assembly by loosening the two mounting screws (Item 7A), and junction box seal (Item 32).
3. Remove solenoid coil by loosening the two top mounting screws (Item 7) and lifting solenoid from pilot body.
CAUTION: DO NOT drop or damage plunger assembly.
4. Remove fixed pole assembly (Item 15) by turning counter-clockwise until threads are disengaged. Remove plunger pin (Item 14), bore insert (Item 12), poppet assembly (Item 11), and poppet return spring (Item 10).
5. Thoroughly clean pilot body bore surfaces and inspect for nicks, voids, pits, and deep scratches.
6. Install poppet return spring (Item 10). Assemble bore insert seals (Item 13) to bore insert (Item 12). Assemble poppet assembly (Item 15) into bore insert. Position poppet assembly with seal at top as shown on opposite side. Failure to do so can cause plunger to be propelled from unit when air is applied. Install with poppet assembly seating against the poppet return spring.
7. Install plunger pin (Item 14) and reassemble fixed pole assembly (Item 15) to pilot body by turning clockwise and torque to (30 to 40 in. lbs.).



CAUTION: DO NOT exceed torque specifications. This could cause severe damage to the pilot body poppet seating ledge, and result in valve malfunction.

8. Before attaching solenoid, suggest inspecting the guide sleeve (Item 2) for excessive wear, and the plunger assembly (Item 3) for battered and flared metal conditions. If items appear in this described condition, they should be replaced before reassembly of the solenoid.
9. If conditions are not noted, place guide sleeve over fixed pole assembly, and plunger assembly inside guide sleeve. Mount solenoid over guide sleeve and tighten to pilot body to (30 to 40 in. lbs.).
10. Install solenoid coil to junction box seal (Item 32) into junction box.
11. Before attaching pilot body to valve body, refer to Item #8 Note: under servicing valve body. Insert mounting screws (Item 7A) into pilot body. Position pilot body to adaptor gasket (Item 16), the adaptor plate (Item 17), the adaptor plate to body gasket (Item 18). Thread the solenoid coil lead wires into the junction box and attach the pilot body and solenoid assembly to the valve body and tighten the mounting screws to (30 to 40 in. lbs.).
12. Reconnect solenoid coil lead wires and attach junction box top plate assembly (Item 31) and tighten the mounting screws to (30 to 40 in. lbs.).

COIL SELECTION:

Voltage/Frequency Class B Solenoid			Part # for Standard Lead Wire Type	Part # for ISO 4400 3-Pin Connector
60Hz. AC	50 Hz. AC	DC		
24V	22V		L0071812CP	L0058172CP
		12V	L0071815CP	L0058175CP
		24V	L0071819CP	L0058179CP
120V	110V		L0071823CP	L0058183CP
240V	220V		L0071827CP	L0058187CP
		120V	L0071830CP	L0058190CP

PS2028B - ISO 4400 3-Pin connector kit. Consists of Female connector, gasket and screw.

OPERATING TEMPERATURE & PRESSURE

Ambient Operating Temperature, 0°F to 160°F (–18°C to 71°C)
Operating Pressure, 35 to 150 psig (2.4 to 10 bar).