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**Parker**

## ENGLISH

### P-Series Solenoids (PS4) and Pressure Regulators (PA4) Installation Information

#### Operation

Prior to installing P-series valves the included safety bulletin must be read and understood.

#### Refrigerants

Suitable for ammonia, CO<sub>2</sub> and halocarbon refrigerants

#### Liquid Temperature Range

-60°C to 120°C (-76°F to 248°F)

#### Ambient Temperature Range

AC Coils

-60°C to 60°C (-76°F to 140°F)

DC Coils

-25°C to 60°C (-13°F to 140°F)

#### Maximum Rated Pressure (MRP)

52 barg (754 psig)

#### Maximum Operating Pressure

#### Differential (MOPD)

AC Coils

20.7 bard (300 psid)

DC Coils

10.0 bard (145 psid)

#### Connection Types

Socket Weld (SW)

Butt Weld (BW) ANSI

Butt Weld (BW) DIN

**Figure 1.A:** Components

- 1 - Single Port Plate P-Series Valve
- 2 - Bonnet Gasket Kit

**Figure 1.B:** Components

- 1 - Multi Port Plate P-Series Valve
- 2 - Bonnet Gasket Kit

**Figure 4:** Torque Specs

| Port Size |              | Bolt Size | Torque |         |
|-----------|--------------|-----------|--------|---------|
| mm        | inch         |           | Nm     | ft. lb. |
| 20, 25    | 3/4, 1       | M12 x 1.5 | 61     | 45      |
| 32, 40    | 1 1/4, 1 1/2 | M16 x 2   | 149    | 110     |

**Figure 2:** Welding diagram

module. Reference the module identifying sections in this literature for correct seal cap locations.

#### Installation (Disassembled)

If you choose to disassemble the P-series valve prior to welding protect the inside of the valve station body, port plate assembly and cartridge from welding debris and dirt. Place the components in a plastic bag, plastic container or use a rust protection agent, such as refrigerant oil, and store them in an area where they will not be damaged.

Remove welding debris and any dirt from the valve body before reassembling the valve. Check all contact surfaces, teflon seats, and cartridge o-rings for damage. Apply some silicon grease on the o-rings for protection and for ease installation.

Note: Refrigerating Specialties provides new a port plate gasket to be use as a replacement if valve is disassembled for welding, see Figure 4 for gasket location.

To remove the cartridge assembly screw a M5 bolt into the top center of the cartridge and pull using pliers, as shown in Figure 3.

When welding in the valve care should be taken not to damage the internal from weld splatter and debris. After welding check all contact surfaces for damage.

Reassemble valve in reverse order. Tighten the port plate assembly with a torque wrench, evenly in a X configuration, shown in Figure 4, to provide proper seating. For all torque specs refer to the table in Figure 4 of this literature. Apply some silicon grease on the o-rings for protection and ease of installation.

Before putting valves into service, all pipe connections, valve seats, bonnet seals, and stem seals should be tested for leaks at pressure levels called for in appropriate codes.

See bulletin 24-05 for information on the PS4 and PA4 valves.

#### Installation

All personnel working on valves must be qualified to work on refrigeration systems. If there are any questions contact Refrigerating Specialties before proceeding with the installation.

All valves are packed for a maximum protection. Unpack carefully. Check the carton to make sure all items are unpacked, see Figure 1 for the list of items included.

The valve should be installed in a location where it is easily accessible for adjustment and maintenance. The location should be such that the valve can not be easily damaged by material handling equipment. When it is necessary to insulate the valve the insulation should be installed to provide access for adjustment and maintenance. Do not insulate solenoid coils, this also applies to pressure regulators with pilot solenoid options. Pressure gauges should be installed to be easily visible to the operating engineer for system checks and adjustment purposes.

The P-series valves must be mounted in the upright horizontal position with the manual opening stems on the top. The valve must be installed with the arrow pointing in the direction of flow for the valve to function properly.

It is not necessary to disassemble the P-series valves before welding. It is recommended to use a wet rag around the valve near the weld location, as shown in Figure 2.

Contractors need to follow a WPS (Welding Procedure Specification) for all welding. The procedure must be qualified and the welder doing the weld must be qualified to perform that procedure.

The codes applicable to the welding of socket weld valves require that the pipe be inserted into the socket until bottomed against the stop. The pipe is then to be backed out approximately 1/16 of an inch before welding. Use of welding rings is optional, but recommended for butt weld valves. They help align, control the width of the gap for full penetration welding and reduce welding debris entry.

Note: When welding carbon steel and stainless steel the welded joint should be painted to prevent galvanic corrosion. Use American Welding Society (AWS) standards for proper welding wire or weld rod.

After welding the valve in place back seat the hand shut-off modules and put the seal caps back to the correct location. The expansion and electronic models can be adjusted at a later time. Seal caps are color coded: red for the stop/check module, yellow for the hand expansion module and non-painted for the hand shut-off