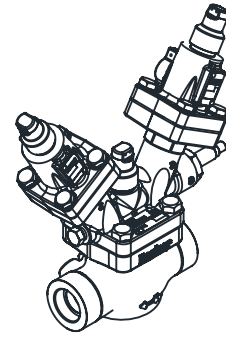


# P-Series Solenoids (PS4) and Pressure Regulators (PA4)

Product Bulletin 314456RSD  
Installation Instruction



## OPERATION

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

## FEATURES

### 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 barg (300 psid)

DC Coils

10.0 barg (145 psid)

### Connection Types

Socket Weld (SW)

Butt Weld (BW) ANSI

Butt Weld (BW) DIN

## 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 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:** Sporlan Division - Refrigeration Business Unit 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.



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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.

Figure 1

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

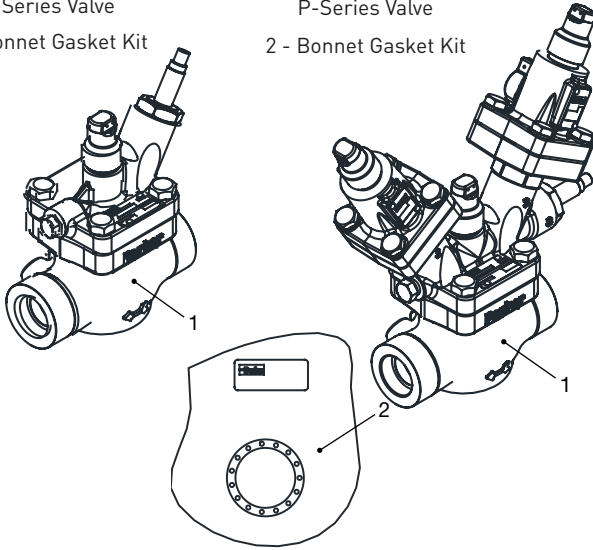


Figure 3

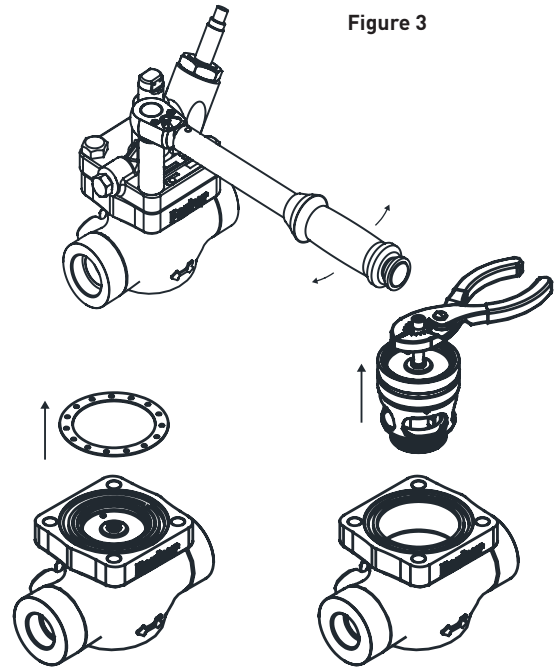


Figure 2: Welding diagram

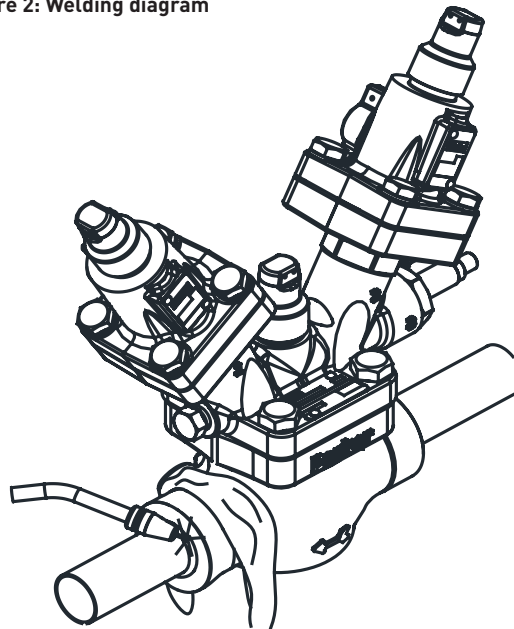
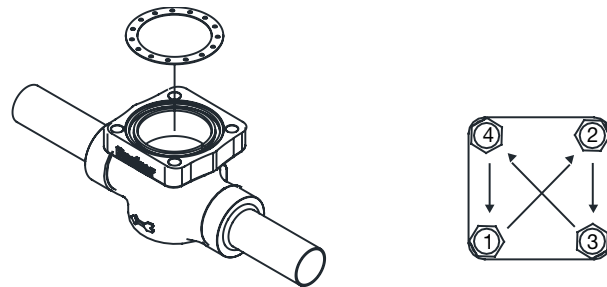


Figure 4. Torque Specs



Port Size		Bolt Size	Torque	
mm	inch		Nm	ft.lb.
20, 25	3/4, 1	M12 x 1.75	61	45
32, 40	1-1/4, 1-1/2	M16 x 2	149	110
50	2	M14 x 2	104	77
65	2-1/2	M16 x 2	149	110
80	3	M16 x 2	149	110

Warranty

All Sporlan Division - Refrigeration Business Unit Products are warranted against defect in workmanship and materials for a period of one year from date of shipment from the factory. This warranty is in force only when products are properly installed, maintained and operated in use and service as specifically stated in Sporlan Division - Refrigeration Business Unit Catalogs or Bulletins for normal refrigeration applications, unless otherwise approved in writing by Sporlan Division - Refrigeration Business Unit. Defective products, or parts thereof returned to the factory with transportation charges prepaid and found to be defective by factory inspection will be replaced or repaired at Sporlan Division - Refrigeration Business Unit option, free of charge, F.O.B. factory. Warranty does not cover products which have been altered or repaired in the field; damaged in transit, or have suffered accidents, misuse, or abuse. Products disabled by dirt, or other foreign substances will not be considered defective. THE EXPRESS WARRANTY SET FORTH ABOVE CONSTITUTES THE ONLY WARRANTY APPLICABLE TO REFRIGERATING SPECIALTIES PRODUCTS, AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL, INCLUDING ANY WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. No employee, agent, dealer or other person is authorized to give any warranties on behalf of Sporlan Division - Refrigeration Business Unit, nor to assume, for Sporlan Division - Refrigeration Business Unit, any other liability in connection with any of its products.

