

# Parker Weld-in Valve Stations

Product Bulletin 10-02 A

Type: S8VS

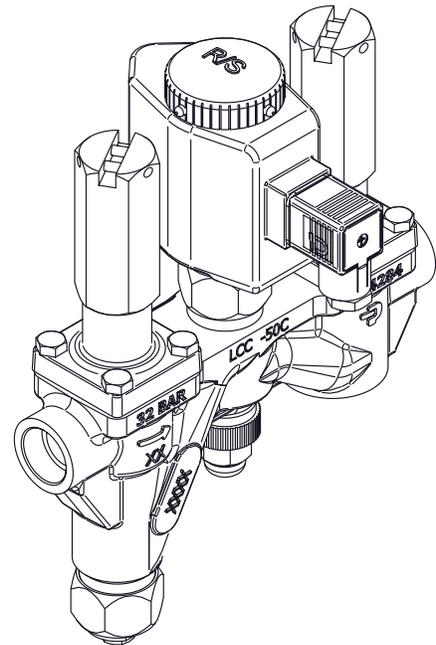


## Purpose:

The S8VS provides safe and economical solutions for small capacity lines. These products feature a weld-in construction which offers increased safety over traditional two-bolt flange connections. They come standard with an integrated strainer which eliminates the need to order and install additional components.

The S8VS valve station is based on the proven S8F solenoid valves, RSF strainers, and R/S hand valves. Both share common components which reduces complexity and spare part requirements.

**S** **8** **V** **S**  
O L E N O I D    1/2"    A L V E    T A T I O N



## Contact Information:

Parker Hannifin Corporation  
**Sporlan Division -**  
**Refrigeration Business Unit**  
2445 South 25th Avenue  
Broadview, IL 60155-3891

phone (708) 681-6300  
fax (708) 681-6306

[www.parker.com/rs](http://www.parker.com/rs)  
[rsd\\_orders@parker.com](mailto:rsd_orders@parker.com)

## Product Features:

- Suitable for ammonia and other common refrigerants
- Integrated 60 mesh strainer
- Replaceable seat ensures easy service and long life
- Interchangeable components with S8F solenoids, R/S hand valves, and RSF strainer
- Coil options to meet various applications
- Complies with PED 2014/68/EU
- AC and DC coil options
- Corrosion-resistant stainless steel versions available



ENGINEERING YOUR SUCCESS.

## Table of Contents

Technical Data .....	2	Material List: Stop/Check Module .....	7
Function and Design .....	3	Material List: Stop/Check/Expansion Module .....	7
Manual Opening Stem Operation .....	3	Nameplate Information .....	8
Electrical .....	4	Installation .....	8
Material List: Isolation (Hand Shut-off) Module .....	5	Maintenance and Service .....	9
Material List: Strainer .....	5	Dimensional Information .....	10
Material List: Solenoid .....	6	Clearance Zone 152.40 [6.00] .....	10
Material List: Stop/Expansion Module .....	6	Parts Kit Reference .....	11

## Technical Data

### Body Material

S8VSW .....	Cast Steel ASTM A352, LCC Zinc Nickel/Chromated Plated
S8VSC .....	Stainless Steel ASTM A351, CF3

Liquid Temperature Range .....

-50°C to 105°C (-58°F to 221°F)

Ambient Temperature Range .....

-50°C to 60°C (-58°F to 140°F)

Maximum Rated Pressure (MRP) .....

32 bar (464 psig)

Maximum Operating Pressure Differential (MOPD) .....

.21 bar (305 psid)

Burst Pressure .....

> 5 x MRP

Coil Classification .....

Class F; NEMA 4

Valve	Port Size		Connection		Flow Coefficient (control module)		Flow Coefficient (complete valve)	
	mm	inch	SW	BW (ANSI / DIN)	K <sub>v</sub>	C <sub>v</sub>	K <sub>v</sub>	C <sub>v</sub>
S8VS	15	1/2"	1/2", 3/4"	1/2", 3/4" / DN15, DN20	2.33	2.70	2.27	2.63

Number of Turns	Flow Coefficient			
	Stop/Expansion		Stop/Check/Expansion	
	K <sub>v</sub>	C <sub>v</sub>	K <sub>v</sub>	C <sub>v</sub>
1	0.3	0.3	0.1	0.1
2	0.4	0.5	0.2	0.3
3	1.4	1.6	0.4	0.5
4	2.3	2.7	0.6	0.7
5	2.9	3.4	0.9	1.0
6	3.5	4.1	1.1	1.3
7	—	—	1.2	1.4
7.65	—	—	1.3	1.5

Application	Pumped Liquid Feed	Purge Points	Hot Gas Feed	Suction Line	Liquid Feed
Picture					
Position 1	Shut-Off	Shut-Off	Shut-Off	Shut-Off	Shut-Off
Position 2	Strainer	Strainer	Strainer	Strainer	Strainer
Position 3	Solenoid S8	Solenoid S8	Solenoid S8	Solenoid S8	Solenoid S8
Position 4	Stop/Check/Expansion	Shut-Off	Stop/Check	Shut-Off	Stop/Expansion

Table 1: Applications

## Function and Design

The S8VS is a multi-module platform and is available as a four position unit with the capability of interchangeable modules in the fourth position, as shown in Figure 1.

- Position 1: Isolation valve (hand shut-off)
- Position 2: Strainer (60 mesh)
- Position 3: Solenoid
- Position 4: Option 1: Isolation valve (hand shut-off)  
Option 2: Stop expansion valve  
Option 3: Stop check valve  
Option 4: Stop check expansion valve

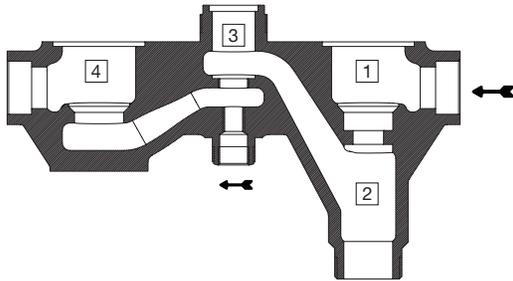


Figure 1: S8VS Modules

The S8VS can be configured for many different applications including liquid feed, hot gas feed, and as a purge point solenoid.

### Isolation (Hand Shut-Off) Module

The isolation valves are located in position 1 and optionally in position 4. These are designed based on the proven technology of the R/S hand valve series and serve to isolate the strainer. These isolation valves feature a proven seat and seal as well as a back-seating design.

### Strainer Module

The RSF refrigerant strainer in position 2 collects foreign materials and dirt in a refrigerant system at minimal pressure drop to minimize damage to or prevent malfunction of control valves. This is extremely important upon start-up of a new refrigeration system where dirt, scale, and weld particles may be present in the system and are disturbed and circulated when pressure testing or upon system start-up. It is also important when an existing system is revised and any settled dirt or foreign matter may be disturbed and circulated throughout the system.

### S8 - Solenoid Module

The S8 solenoid valve in position 3 is a semi-direct acting valve. A small pilot port is opened by a magnetically-lifted solenoid plunger assembly, causing relief of pressure from the top of a main valve and piston assembly. The resulting pressure difference between valve inlet and valve outlet allows the main valve to be lifted. A minimum pressure difference of approximately 1 psi is required for operation.

### Stop / Expansion Module

An isolation valve with expansion feature allows the user to manually adjust the flow rate and the shut-off feature permits to close the last position with a back-seating design.

### Stop / Check Module

A shut-off valve with check feature allows the user to manually close the last position with a back-seating design. The check valve feature prevents backflow.

### Stop / Check / Expansion Module

Position 4 features an isolation valve with expansion and check feature in the same module allows the user to manually adjust the flow rate and the check valve feature prevents backflow and it is generally used in applications that employ a hot gas defrost.

Operation is as follows, starting with a closed valve.

- When energized, the solenoid coil (1) forms a magnetic field which pulls the solenoid plunger (2) upward, striking the valve needle and pulling it up from its pilot seat. This permits fluid travel from chamber A (in and above piston plug assembly [3]), through orifice B in the piston plug assembly, and to the downstream side of the valve.
- When the pressure in chamber A has dropped almost to the downstream pressure, the higher upstream pressure, acting on the annular portion of the piston plug assembly (3) outside of the seat bead, lifts the main valve to its open position.
- When the electrical circuit to the valve is broken, the solenoid coil (1) is de-energized, allowing the solenoid plunger (2) to drop and the valve needle to close the pilot port (4) in the piston plug.
- Liquid and/or gas leakage through the clearance area around the piston plug (3) causes a rapid pressure buildup in chamber A. This pressure, along with the downward force of the spring in the solenoid plunger (2) and the weight of the piston plug assembly, forces the main valve disc tight against the seat bead to stop all flow.

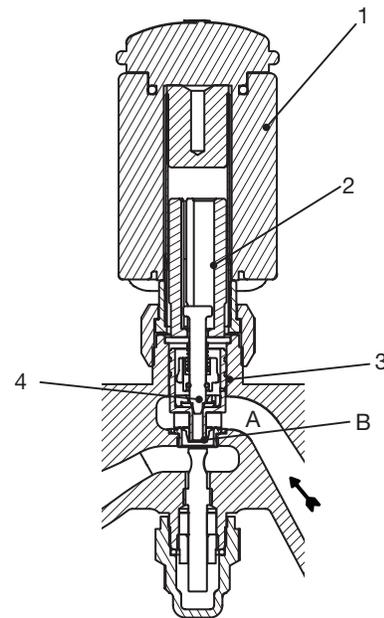


Figure 2: S8VS Function Schematic

### Manual Opening Stem Operation

To manually open the S8VS solenoid port, first remove the bottom seal cap. Turn the manual opening stem in (clockwise viewed from beneath). The rising stem will lift the piston assembly from its seat and permit flow through the valve. To resume automatic operation, turn the manual opening stem out (counterclockwise viewed from beneath) until it stops and then replace the seal cap.

## Electrical

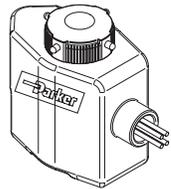
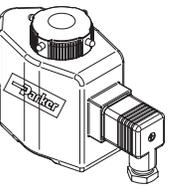
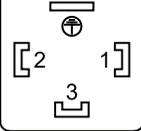
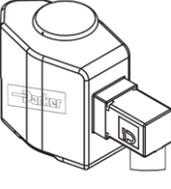
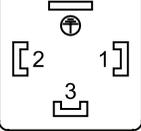
The Parker Refrigerating Specialties Division molded water resistant Class "F" solenoid coil is designed for long life and powerful opening force. The standard coil housing meets NEMA 4 requirements. This sealed construction can withstand direct contact with moisture and ice. By definition, Class "F" coil construction will permit coil temperatures, as measured by resistance method, as high as 155°C (311°F). Final coil temperatures are a function of both fluid and ambient temperatures. The higher fluid temperatures require lower ambient temperatures for the maximum coil temperature not to be exceeded. Conversely, low fluid temperatures permit higher ambient temperatures.

A solenoid coil should never be energized except when mounted on its corresponding solenoid tube.

The molded Class "F" coil is available from stock with most standard voltages. However, coils are available for other voltages and frequencies, as well as for direct current.

The solenoid coil must be connected to electrical lines with Volts and Hertz same as stamped on the coil. The supply circuits must be properly sized to give adequate voltage at the coil leads even when other electrical equipment is operating. The coil is designed to operate with line voltage from 85% to 110% of rated coil voltage. Operating with a line voltage above or below these limits may result in coil burn-out. Also, operating with line voltage below the limit will definitely result in lowering the valve's maximum opening pressure differential. Power consumption during normal operation will be 35 watts or less.

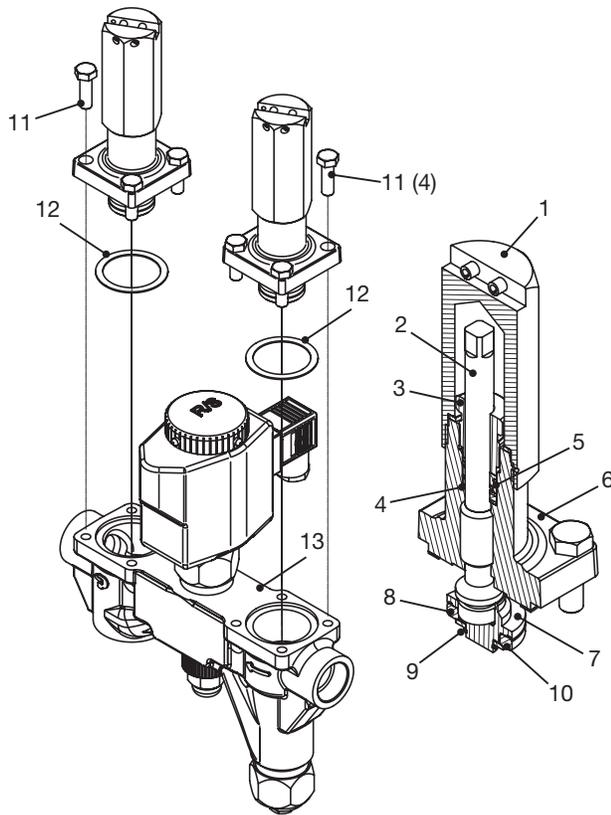
Coil (Volts/Hz)	Power Lead	Neutral Lead	Inrush Current (Amps)	Running Current (Amps)	Fuse Size (Amps)	Temp °C (°F)
24/50	Brown	White	6.82	2.99	4	250 (482)
24/60	Brown	White	6.70	2.73	4	250 (482)
115/50	Purple	White	1.22	0.21	1	90 (194)
120/60	Blue	White	1.18	0.46	1	90 (194)
208/60	Red	White	0.63	0.24	1	90 (194)
230/50	Yellow	White	0.65	0.26	1	90 (194)
240/50	Black	White	0.59	0.24	1	90 (194)
240/60	Orange	White	0.60	0.23	1	98 (208)
12 DC	Brown	White	-	-	-	-
24 DC	Brown	White	6.70	6.70	-	204 (400)

Type	Image	Terminal Diagram	Classification	Voltages/Frequencies	Wattage (Holding)	Certifications
Leaded		 Start Winding: White Wire End Winding: Black Wire	Class "F" approved system with housing meeting 3R and 4 requirements  (457mm) 18" Leaded Wires NEMA 3R and 4	24 VAC/50 Hz 24 VAC/60 Hz 115 VAC/50 Hz 120 VAC/60 Hz 208 VAC/60 Hz 230 VAC/50 Hz 240 VAC/50 Hz 240 VAC/60 Hz  12 VDC <sup>[1]</sup> 24 VDC <sup>[1]</sup>	- - 34.0 34.0 32.5 32.5 35.0 37.5  - 32	CSA UL <sup>[2]</sup>
DIN QD		 Terminal 1- Power Terminal 2- Electrical Neutral	Class "F" approved system with housing meeting 3R and 4 requirements  NEMA 3R and 4 IP65	24 VAC/50 Hz 48 VAC/50 Hz 115 VAC/50 Hz 230 VAC/50 Hz 240 VAC/50 Hz	- 42.5 N/A 34.5 30.0	CSA CE UL <sup>[2]</sup>
		 Terminal 1- Power Terminal 2- Electrical Neutral	Class "F" approved system with housing meeting 3R and 4 requirements  NEMA 3R and 4	24 VAC/60 Hz 120 VAC/60 Hz 240 VAC/60 Hz  24 VDC <sup>[1]</sup> 48 VDC <sup>[1]</sup>	- 35.5 37.5  32.0 42.5	CSA UL <sup>[2]</sup>

### Notes:

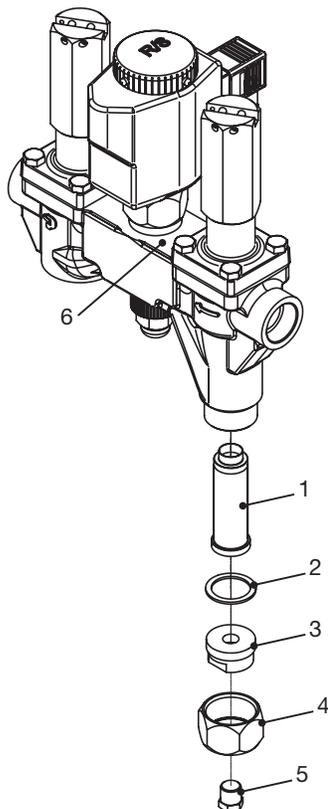
- Consult factory for other voltages/frequencies.
- See current price list ILP- for coil part numbers.
- Optional LED pilot light knob kit (green or red) that indicates when the coil is energized. LED knob kits can be used with 115 to 240 Volts AC coils only.
- [1] DC coils are limited to an ambient temperature of -25°C to 60°C (-13°F to 140°F).
- [2] Only on approved coils.

### Material List: Isolation (Hand Shut-Off) Module



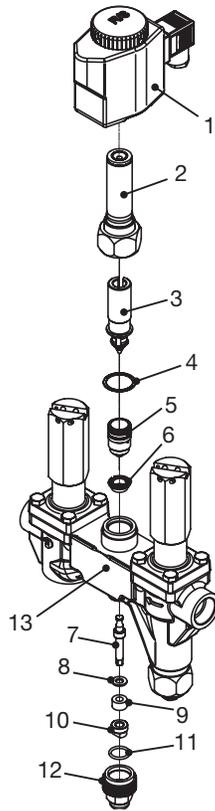
Item	Description	Material	
		S8VSW	S8VSC
1	Seal Cap, not painted (Metal)	Aluminum, 2011-T3 per ASTM B211	Aluminum, 2011-T3 per ASTM B211
2	Stem, Hand Valve	303 Stainless Steel	303 Stainless Steel
3	Nut, Packing	303 Stainless Steel	303 Stainless Steel
4	Packing Gland	PTFE, Carbon Filled	PTFE, Carbon Filled
5	Packing	Style 235A Crane Foil	Style 235A Crane Foil
6	Bonnet, Hand Valve	Steel, Zinc Plated - A350-LF2 Class 1	Stainless Steel ASTM A351, CF3
7	Disc Carrier, Hand Valve	1117 Stainless Steel	1117 Stainless Steel
8	Seat Disc, Hand Valve	PTFE, Carbon Filled	PTFE, Carbon Filled
9	Washer, Retaining Ring	Low Carbon Steel, Zinc with Clear Chromate Plated	Low Carbon Steel, Zinc with Clear Chromate Plated
10	Retaining Ring	Carbon Spring, Temper Steel	Carbon Spring, Temper Steel
11	Bolts, Hand Valve Bonnet	Stainless Steel, SAE 304	Stainless Steel, SAE 304
12	Gasket, Hand Valve Bonnet	Gylon 3500	Gylon 3500
13	Valve Body	Cast Steel, ASTM A352, LCC	Stainless Steel ASTM A351, CF3
-	O-Rings	Neoprene	Neoprene

### Material List: Strainer Module



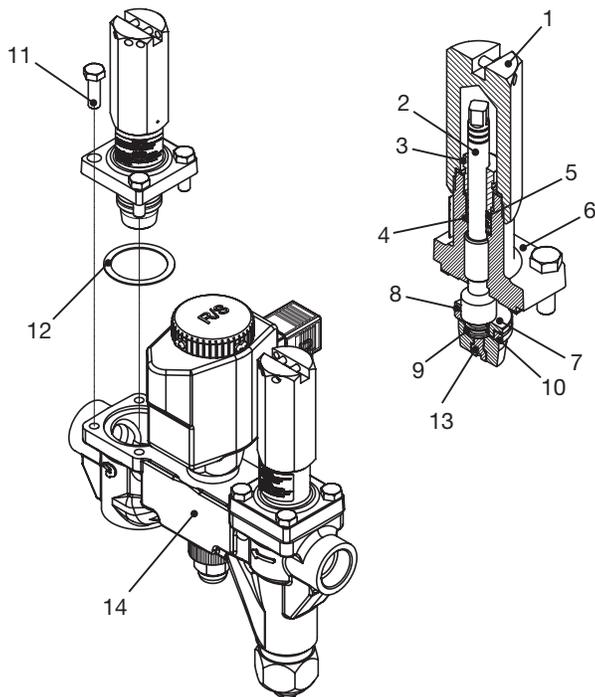
Item	Description	Material	
		S8VSW	S8VSC
1	Strainer Basket, 60 Mesh	304 Stainless Steel	304 Stainless Steel
2	Gasket, Strainer	Garlock 2930	Garlock 2930
3	Cap, Strainer Bottom	416 Stainless Steel	416 Stainless Steel
4	Nut, Strainer	Zinc-Plated Steel	304 Stainless Steel
5	Plug Pipe 1/4" NPT	Zinc-Plated Steel	304 Stainless Steel
6	Valve Body	Cast Steel, ASTM A352, LCC	Stainless Steel ASTM A351, CF3

### Material List: Solenoid Module



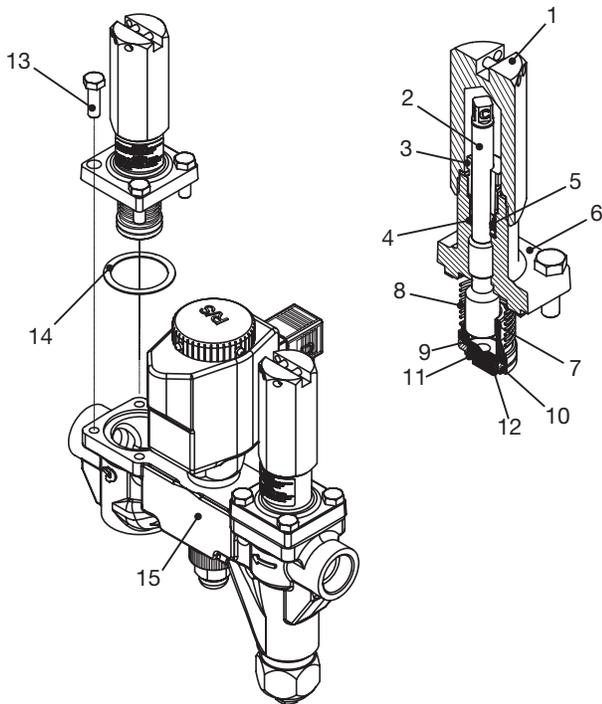
Item	Description	Material	
		S8VSW	S8VSC
1	Coil, Industrial	Various	Various
2	Tube ASM Solenoid	Stainless Steel	Stainless Steel
3	Plunger/Needle ASM S8W	Stainless Steel	Stainless Steel
4	Gasket, Solenoid	Wolverine	Wolverine
5	Piston Plug ASM S8W	Steel with PTFE	Steel with PTFE
6	Valve Seat S8W	303 Stainless Steel	303 Stainless Steel
7	Manual Opening Stem	416 Stainless Steel	416 Stainless Steel
8	Washer, Flat	Steel	Steel
9	Packing, Stem	Graphite	Graphite
10	Packing Nut	Steel	Steel
11	O-Ring	Neoprene	Neoprene
12	Seal Cap Gauge, Valve	Aluminum	Aluminum
13	Valve Body	Cast Steel, ASTM A352, LCC	Stainless Steel ASTM A351, CF3

### Material List: Stop/Expansion Module



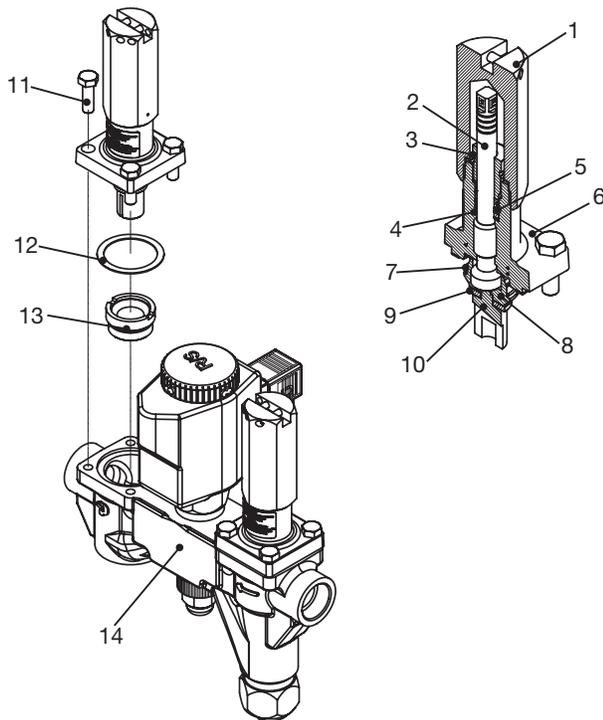
Item	Description	Material	
		S8VSW	S8VSC
1	Seal Cap, Yellow (3 Grooves in the top)	Aluminum, 2011-T3 per ASTM B211	Aluminum, 2011-T3 per ASTM B211
2	Stem, Stop/Expansion	303 Stainless Steel	303 Stainless Steel
3	Nut, Packing	303 Stainless Steel	303 Stainless Steel
4	Packing Gland	PTFE, Carbon Filled	PTFE, Carbon Filled
5	Packing	Style 235A Crane Foil	Style 235A Crane Foil
6	Bonnet, Stop/Expansion	Steel, Zinc Plated - A350-LF2 Class 1	Stainless Steel ASTM A351, CF3
7	Disc Carrier, Stop/Expansion	1117 Stainless Steel	1117 Stainless Steel
8	Seat Disc, Stop/Expansion	PTFE, Carbon Filled	PTFE, Carbon Filled
9	Washer, Retaining Ring	Low Carbon Steel, Zinc with Clear Chromate Plated	Low Carbon Steel, Zinc with Clear Chromate Plated
10	Retaining Ring	Carbon Spring, Temper Steel	Carbon Spring, Temper Steel
11	Bolts, Bonnet	Stainless Steel, SAE 304	Stainless Steel, SAE 304
12	Gasket, Bonnet	Gylon 3500	Gylon 3500
13	Shoulder Screw	Steel	Steel
14	Valve Body	Cast Steel, ASTM A352, LCC	Stainless Steel ASTM A351, CF3

### Material List: Stop/Check Module



Item	Description	Material	
		S8VSW	S8VSC
1	Seal Cap, Green (1 Groove and "C" mark in the top)	Aluminum, 2011-T3 per ASTM B211	Aluminum, 2011-T3 per ASTM B211
2	Stem, Stop/Check	303 Stainless Steel	303 Stainless Steel
3	Nut, Packing	303 Stainless Steel	303 Stainless Steel
4	Packing Gland	PTFE, Carbon Filled	PTFE, Carbon Filled
5	Packing	Style 235A Crane Foil	Style 235A Crane Foil
6	Bonnet, Stop/Check	Steel, Zinc Plated - A350-LF2 Class 1	Stainless Steel ASTM A351, CF3
7	Disc Carrier, Stop/Check	1117 Stainless Steel	1117 Stainless Steel
8	Spring, Stop/Check	PTFE, Carbon Filled	PTFE, Carbon Filled
9	O-ring, Stop/Check	Low Carbon Steel, Zinc with Clear Chromate Plated	Low Carbon Steel, Zinc with Clear Chromate Plated
10	Seat Disc, Stop/Check	Carbon Spring, Temper Steel	Carbon Spring, Temper Steel
11	Washer, Retaining Ring	Low Carbon Steel, Zinc with Clear Chromate Plated	Low Carbon Steel, Zinc with Clear Chromate Plated
12	Retaining Ring	Carbon Spring, Temper Steel	Carbon Spring, Temper Steel
13	Bolts, Bonnet	Stainless Steel, SAE 304	Stainless Steel, SAE 304
14	Gasket, Bonnet	Gylon 3500	Gylon 3500
15	Valve Body	Cast Steel, ASTM A352, LCC	Stainless Steel ASTM A351, CF3

### Material List: Stop/Check/Expansion Module

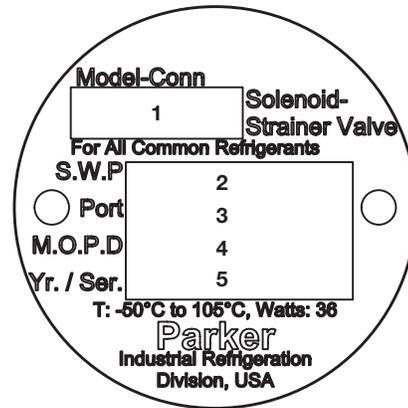


Item	Description	Material	
		S8VSW	S8VSC
1	Seal Cap, Orange (3 Grooves and "E" mark in the top)	Aluminum, 2011-T3 per ASTM B211	Aluminum, 2011-T3 per ASTM B211
2	Stem, Stop/Check/Expansion	303 Stainless Steel	303 Stainless Steel
3	Nut, Packing	303 Stainless Steel	303 Stainless Steel
4	Packing Gland	PTFE, Carbon Filled	PTFE, Carbon Filled
5	Packing	Style 235A Crane Foil	Style 235A Crane Foil
6	Bonnet, Stop/Check/Expansion	Steel, Zinc Plated - A350-LF2 Class 1	Stainless Steel ASTM A351, CF3
7	Spring, Stop/Check/Expansion	Stainless Steel ASTM A313	Stainless Steel ASTM A313
8	Plate, Spring Stop/Check/Expansion	1213/1215 Steel	1213/1215 Steel
9	Seat Disc, Stop/Check/Expansion	PTFE	PTFE
10	Plug, Stop/Check/Expansion	1213/1215 Steel	1213/1215 Steel
11	Bolts, Bonnet	Stainless Steel, SAE 304	Stainless Steel, SAE 304
12	Gasket, Bonnet	Gylon 3500	Gylon 3500
13	Seat, Stop/Check/Expansion	Steel	Steel
14	Valve Body	Cast Steel, ASTM A352, LCC	Stainless Steel ASTM A351, CF3

## Nameplate Information

Item	Description
1	Model - Connection Size
2	Safe Working Pressure
3	Port Size
4	Maximum Operating Pressure Differential
5	Year / Serial Number

**Table 2:** S8VS Nameplate Identification



**Figure 3:** S8VS Nameplate

## Installation

All valves are packed for a maximum protection. Unpack carefully. Check the carton to make sure all items are unpacked. Save the enclosed instruction for the installer and eventual user.

Do not remove the protective coverings from the inlet and outlet of the valve until the valve is ready to be installed. Protect the inside of the valve from dirt and chips before and during installation.

### ⚠ Caution

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

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. Proper indicating gauges should be installed to be easily visible to the operating engineer for system checks and adjustment purposes.

The preferred mounting method for the S8VS series is in the upright horizontal position. The valve must be installed with the arrow pointing in the direction of flow for the valve to function properly. Prior to welding, protect the inside of the valve body from welding debris and dirt.

In the event the valve is left disassembled for any length of time, protecting the components is essential. Place the components in a polyethylene bag or apply a rust protection agent, such as refrigerant oil.

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

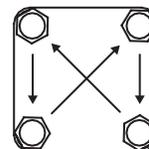
Socket welding, where allowed, is the preferred connection. This connection helps to reduce the amount of welding debris in the piping system.

Remove welding debris and any dirt from the pipes and valve body before reassembling the valve.

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 the appropriate codes.

Item	Bolt Size	Module Position	Torque	
			Nm	ft. lb.
Bolts, Bonnet	5/16"-18 x 1" L	1 & 4	28	21
Solenoid, Nut	-	3	81	60
Strainer Nut	1/4" NPT	2	81	60

**Table 3:** Torque Recommendations



**Figure 4:** Bonnet Torque Pattern.

## Maintenance and Service

Depending on operating conditions, periodic cleaning and/or replacement of components may be necessary.

### Warning

Prior to any service work, the system should be put into a safe condition by qualified personnel. Failure to do so may result in injury or loss of life.

1. The system should be pumped down according to standard operating procedures and in accordance with all local rules and regulations.
2. The coil and electrical connections should be disconnected and put into a known safe condition.

Only after the system is put into a safe condition should maintenance work be performed.

### Valve Disassembly

1. Disconnect the coil. Depending on the type of coil used, the method to disconnect the coil from the electrical system may vary.
2. Remove the coil nut and washer. Care should be taken not to apply any forces or torques to the operator.
3. Remove the coil.
4. Disassemble the operator from the body. A wrench nut or spanner wrench should be used to apply the torque necessary. No tools should be used to apply force or torque to the operator sleeve itself as this can cause an unsafe condition.
5. Remove the gasket from the valve body.
6. Remove the valve seat from the housing. The valve seat features a  $\frac{3}{8}$ " hex design to allow for disassembly using standard tools.

Prior to reassembly all gaskets and sealing surfaces should be inspected for any damage. If damage is found the parts should be replaced.

### Valve Service

If the S8VS fails to open or close, there are four probable causes.

- *Coil is improperly applied.* Check supply voltage and frequency compared to coils rated voltage and frequency. Ensure that the control circuitry is applying power when needed. Ensure that the coil is not burned out.
- *Pressure exceeds MOPD.* Check the system pressure compared to the valve's rating. The valve will not be able to open when the system pressure exceeds its MOPD.
- *Control seat is dirty or eroded.* This can be remedied by replacing the valve seat or by cleaning the seat.
- *Valve is installed backwards.* This can be remedied by removing the valve from the system and reinstalling in the correct orientation.

### Strainer Cleaning

It is important that the strainer is periodically inspected for dirt and cleaned during system start-up until no further dirt is found. To remove the strainer basket, first ensure that the S8VS has been pumped out and that no refrigerant is trapped in the valve. Then remove the bottom cap. After the strainer has been inspected and cleaned, place the screen assembly into the body so that the spring clip on the closed end is towards the open end of the body. The spring clip must fit tightly into the thread, as it helps hold the basket in place for service. Lightly oil and place a new gasket on the valve body and fit the bottom cap over the gasket. Place the strainer nut on top of the bottom cap and torque to 60 lb-ft (81 Nm). Use the flat surfaces of the bottom cap to secure it with a wrench when installing the pipe plug. Do not permit the bottom cap to turn when installing the pipe plug.

### Strainer Service

There are three possible failure modes of the RSF strainer portion of the S8VS valve.

- *Screen assembly is ruptured.*
  - (a) Clogged screen causing excessive pressure drop to rupture the screen — check and clean more frequently.
  - (b) Fluid Velocity too great — use a larger strainer or expansion valve to reduce velocity.
- *Screen assembly has collapsed.*
  - (a) Reverse flow through strainer — avoid reverse flow by using a check valve where appropriate and never open a hand valve downstream of a strainer before the upstream hand valve has been opened.
  - (b) Screen assembly crushed during installation — ensure that care is taken when aligning and inserting the screen into the valve body.
- *Dirt is passing through strainer.*
  - (a) Ruptured or collapsed screen assembly — replace.
  - (b) Spring is broken or missing — replace.
  - (c) Fine dirt, less than several thousandths of an inch in size requires more frequent cleaning of the strainer or possible temporary insertion of an R/S filter bag where applicable.

### Dimensional Information

mm [inch]

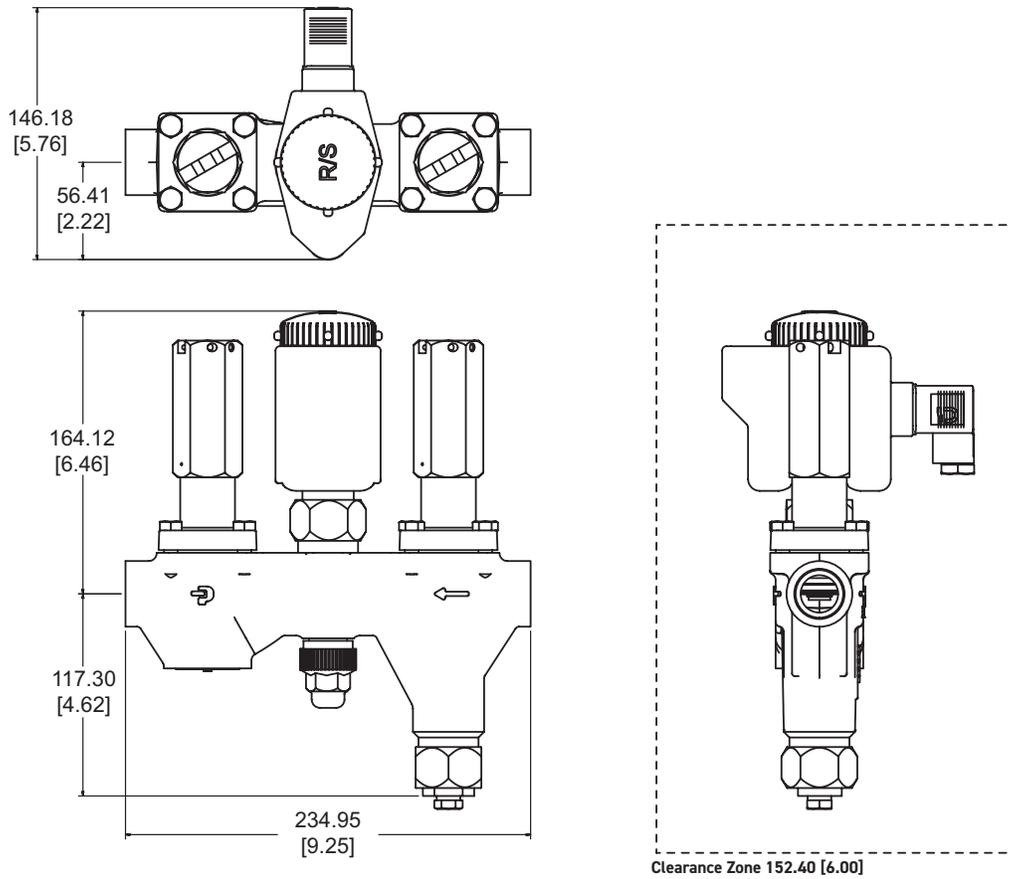
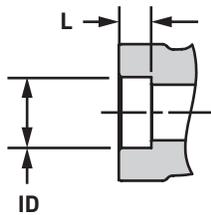


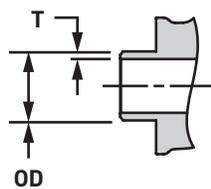
Figure 5: S8VS Dimensional Diagram

SW: Socket Weld ANSI



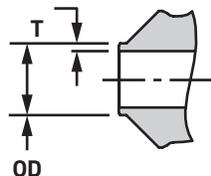
Socket Weld (SW) ANSI						
Port Size		Connection	L		ID	
mm	inch		mm	inch	mm	inch
15	1/2	1/2"	9.5	0.375	22.2	0.874
		3/4"	12.7	0.500	27.6	1.087

BW: Butt-Weld ANSI



Butt-Weld (BW) ANSI							
Port Size		Connection	Valve Body Material	T		OD	
mm	inch			mm	inch	mm	inch
15	1/2"	1/2"	Steel (S8VSW)	3.9	0.152	21.6	0.850
			Stainless Steel (S8VSC)	2.9	0.114		
		3/4"	Steel (S8VSW)	4.0	0.159	26.9	1.060
			Stainless Steel (S8VSC)	3.0	0.118		

BW DN: Butt-Weld Metric



Butt Weld (BW) Metric						
Port Size		Connection	T		OD	
mm	inch		mm	inch	mm	inch
15	1/2	1/2"	2.5	0.099	22.0	0.866
		3/4"	3.0	0.118	28.0	1.102

Figure 6: S8VS Connection Diagram

### Parts Kits Reference

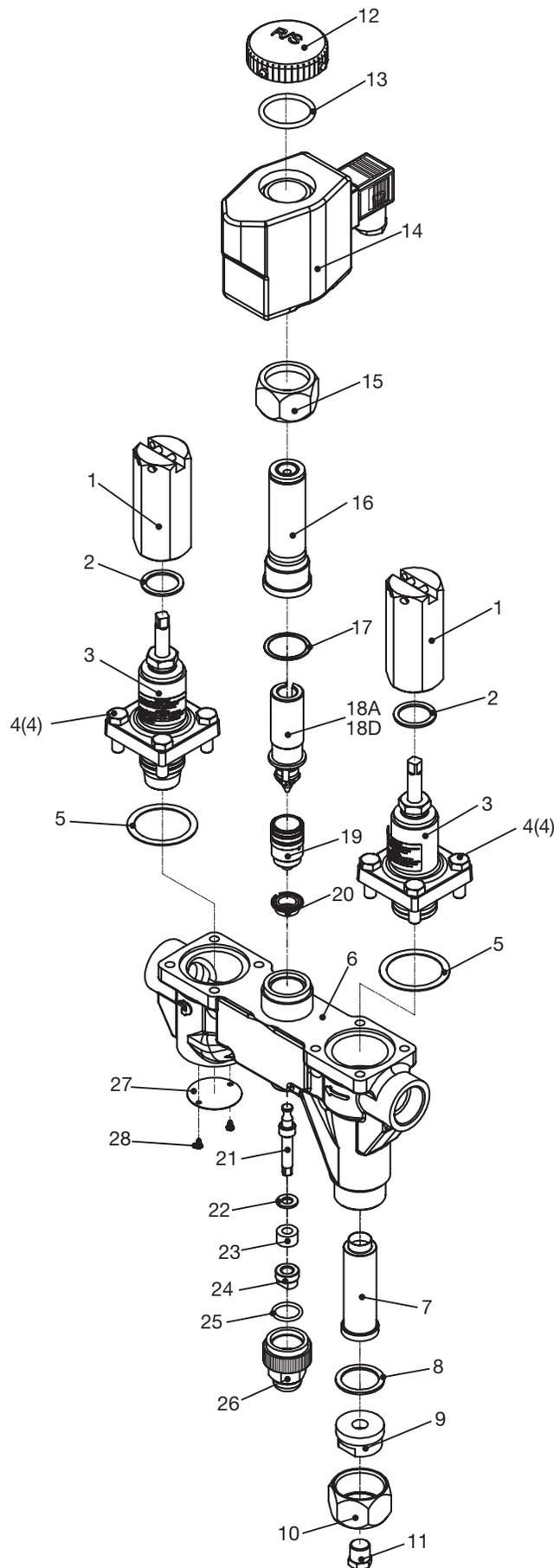


Figure 7: S8VS Exploded View

S8VS Service Parts List			
Item	Description	Kit Description	Part No.
1	Seal Cap	Seal Cap Kit: Hand Shut Off (Metal) Stop Expansion (Yellow) Stop Check (Green) Stop Check Expansion (Orange)	210458
2	Gasket, Seal Cap		210514
			210515
			251477
3	Bonnet Assembly, S8VS	Bonnet Assembly Kit: Hand Shut Off Stop Expansion Stop Check Stop Check Expansion	210564
4 (4)	Bolts, 5/16"-18 x 1" Long SS		210565
5	Gasket, Bonnet		251188
			251745
6	Body	Body, S8VS	—*
7	Strainer Basket	1/2" Screen Kit	205945
8	Gasket, Strainer		
9	Cap, Bottom Strainer		
10	Cover		
11	Pipe Plug 1/4" NPT		
8	Gasket, Strainer	Gasket Kit, Strainer	303070
12	Knob	Knob Kit Solenoid: Standard (No LED) Green LED Red LED	205237
13	O-Ring		208543
			208544
12	Knob Kit	Industrial Coil, Solenoid	Consult Price List**
13	Coil		
14			
15	Nut, Screw-Locking	Tube Kit, Solenoid: Standard DN	209320 209321
16	Tube Assembly, Solenoid		
17	Gasket, Solenoid		
17(10)	Gasket, Solenoid Tube	Gasket Kit, Solenoid	209322
17	Gasket, Solenoid	Plunger Kit, Needle, VAC Solenoid	201019
18A	Plunger/Needle Assy. VAC		
17	Gasket, Solenoid	Plunger Kit, Needle, VDC Solenoid	201021
18D	Plunger/Needle Assy. VDC		
17	Gasket, Solenoid	Piston/Seat Kit, Solenoid	210562
19	Piston		
20	Seat		
21	Stem, Manual Opening	Opening Stem Kit, Solenoid	210563
22	Flat Washer		
23	Packing		
24	Packing Nut		
25	O-Ring, Cap	Seal Cap, Manual Opening Stem, Solenoid	209916
26	Cap, Manual Opening Stem		
5 (2)	Gaskets, Bonnet Assy.	Gasket Kit, S8VS (Complete Valve)	210561
17	Gasket, Solenoid Tube Assy.		
8	Gasket, Strainer		
27	Nameplate	Nameplate	—
28(2)	Screw, Nameplate	Screw, Nameplate	—

Table 4: S8VS Repair Kits

\* It cannot be sold as individual component.

There are 2 different S8VS bodies:

- One body is machined for use with Hand Valve, Stop/Check, or Stop/Expansion in the final position only.
- The other body is machined for use with a Stop/Check/Expansion bonnet in the final position only.

\*\*Encapsulated coils are available in a variety of styles and voltages. Contact factory for coil options and part number.

---

**Safe Operation (See Bulletin RSBHV)**

People doing any work on a refrigeration system must be qualified and completely familiar with the system and the Refrigerating Specialties Division valves involved, or all other precautions will be meaningless. This includes reading and understanding pertinent Refrigerating Specialties Division Product Bulletins and Safety Bulletin RSB prior to installation or servicing work.

Where cold refrigerant liquid lines are used, it is necessary that certain precautions be taken to avoid damage which could result from liquid expansion. Temperature increase in a piping section full of solid liquid will cause high pressure due to the expanding liquid which can possibly rupture a gasket, pipe or valve. All hand valves isolating such sections should be marked, warning against accidental closing, and must not be closed until the liquid is removed. Check valves must never be installed upstream of solenoid valves, or regulators with electric shut-off, nor should hand valves upstream of solenoid valves or downstream of check valves be closed until the liquid has been removed.

It is advisable to properly install relief devices in any section where liquid expansion could take place. Avoid all piping or control arrangements which might produce thermal or pressure shock.

For the protection of people and products, all refrigerant must be removed from the section to be worked on before a valve, strainer, or other device is opened or removed. Flanges with ODS connections are not suitable for ammonia service.

**Warranty**

All Refrigerating Specialties products are under warranty against defects in workmanship and materials for a period of one year from date of shipment from factory. This warranty is in force only when products are properly installed, field assembled, maintained, and operated in use and service as specifically stated in Refrigerating Specialties Catalogs or Bulletins for normal refrigeration applications, unless otherwise approved in writing by the Refrigerating Specialties Division. 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 Refrigerating Specialties 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, expressed or implied, written including any warranty of merchantability, or fitness for a particular purpose. In no event is Refrigerating Specialties responsible for any consequential damages of any nature whatsoever. No employee, agent, dealer or other person is authorized to give any warranties on behalf of Refrigerating Specialties, nor to assume, for Refrigerating Specialties, any other liability in connection with any of its products.

---

**⚠WARNING - USER RESPONSIBILITY**

Failure or improper selection or improper use of the products described herein or related items can cause death, personal injury and property damage. This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

For safety information see the Safety Guide at [www.parker.com/safety](http://www.parker.com/safety) or call 1-800-CParker.

