



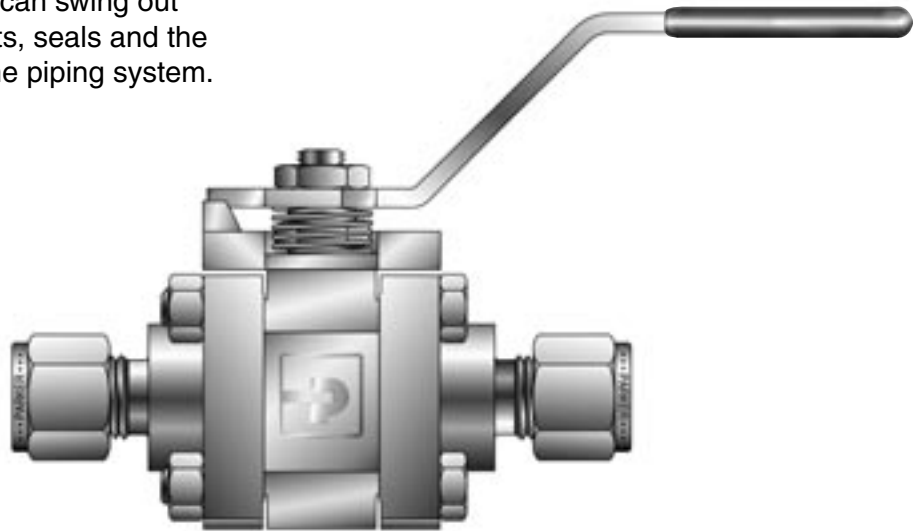
# **Swing-Out Ball Valves (SWB Series)**

*Catalog 4125-SWB  
July 2005*



## Introduction

Parker's three-piece SWB Series Ball Valves are durable valves that can handle the pressure and piping loads. The center section can swing out to quickly and easily replace seats, seals and the ball without major disruption to the piping system.



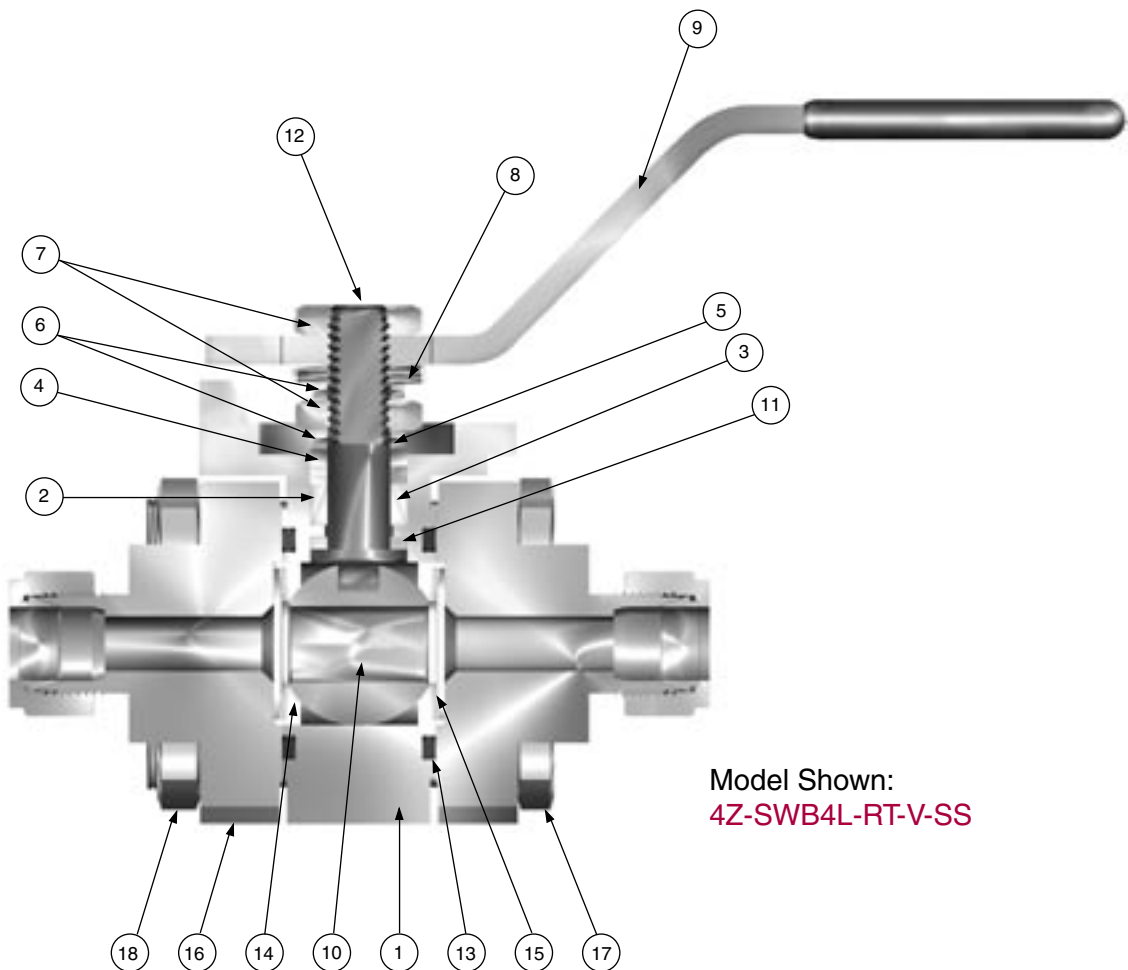
Model Shown: **8Z-SWB8L-RT-BN-SS**

## Features

- ▶ Ultra low internal volume
- ▶ Free floating ball design allows for seat wear compensation
- ▶ Self-compensating stem seal
- ▶ Spring-loaded seats
- ▶ Blow out resistant stem
- ▶ Fully enclosed body bolting
- ▶ Four bolt construction
- ▶ ISO-type actuator mounting design
- ▶ Pneumatic and electric actuation options
- ▶ 100% factory tested

## Specifications

Body Materials.....	Stainless Steel
Seat Materials .....	Reinforced PTFE
.....	PEEK
Seal Materials.....	Buna-N Rubber
.....	Ethylene Propylene Rubber
.....	Fluorocarbon Rubber
.....	PTFE
.....	Grafoil®
Flow Data .....	C <sub>v</sub> : 1.1 to 35.0
Pressure Ratings.....	2500 psig (172 bar)
Temperature Ratings — Seats:	
Reinforced PTFE Seats ...	-65°F to 450°F (-54°C to 232°C)
PEEK Seats .....	-65°F to 600°F (-54°C to 316°C)
Temperature Ratings — Seals:	
Buna-N Rubber Seals .....	-40°F to 250°F (-40°C to 121°C)
Ethylene Propylene	
Rubber Seals .....	-65°F to 300°F (-54°C to 149°C)
Fluorocarbon	
Rubber Seals .....	-15°F to 400°F (-26°C to 204°C)
PTFE Seals.....	-65°F to 350°F (-54°C to 177°C)
Grafoil® Seals.....	-65°F to 600°F (-54°C to 316°C)



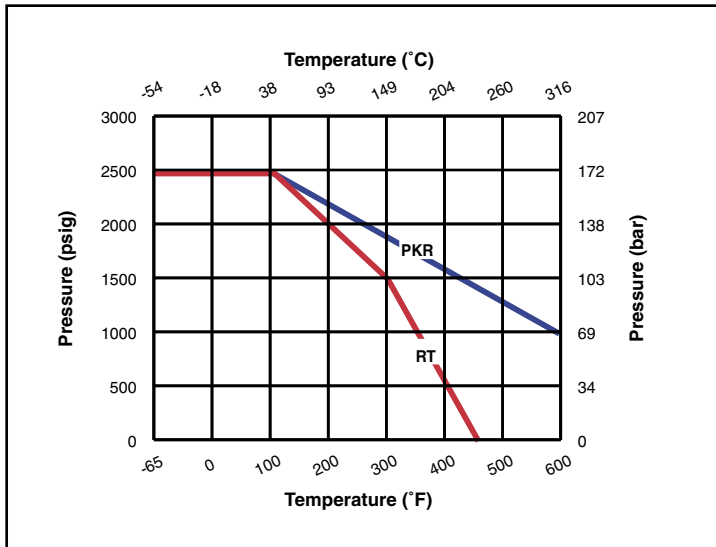
Model Shown:  
4Z-SWB4L-RT-V-SS

## Materials of Construction

Item #	Part	Qty	Material
1	Body	1	ASTM A 351 Grade CF3M
2	Lower Packing	1	PTFE
3	Upper Packing	1	PTFE
4	Packing Support	2	PEEK
5	Packing Gland	1	ASTM A 276 Type 304
6	Stem Spring	4	ASTM A 666 Type 301
7	Stem Hex Nut	2	ASTM A 276 Type 304
8	Grounding Spring	1	ASTM A 276 Type 304
9	Handle Assembly	1	ASTM A 276 Type 304; Vinyl Covered
10	Ball	1	ASTM A 276 Type 316
11	Thrust Washer	2	PEEK
12	Stem	1	ASTM A 276 Type 316
13	Body Seal	2	Fluorocarbon Rubber*
14	Seat	2	Reinforced PTFE, PEEK
15	Seat Spring	2	ASTM A 666 Type 301
16	End Flanges	2	ASTM A 351 Grade CF3M
17	Body Bolts	4	ASTM A 193 Grade B8
18	Body Bolt Nuts	4	ASTM A 194 Grade 8

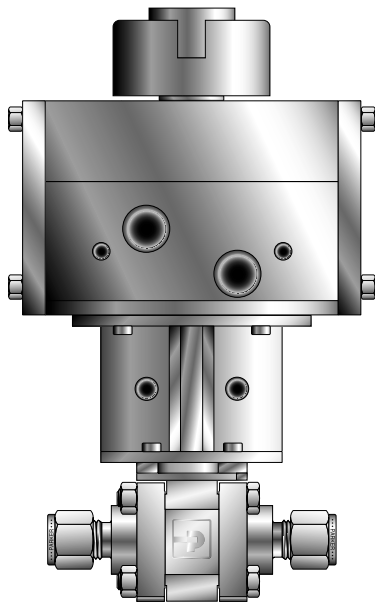
\*Optional body seal materials are described in the [How to Order](#) section.

## Pressure vs. Temperature

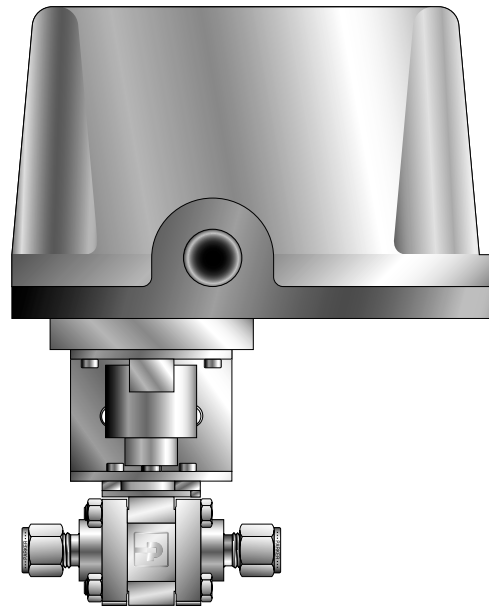


**Notes:**

- This Pressure versus Temperature chart reflects the use of indicated seat materials in Stainless Steel valves without consideration of seal materials. When combining seat and seal materials, the most restrictive temperature rating of the seats or seals becomes the limiting factor on temperature range. Please refer to Page 2 for seal temperature ranges.
- Elastomeric seals are recommended if the application subjects the valve to thermal cycling.



Pneumatic Actuated Model Shown:  
8Z-SWB8L-RT-V-SS-62AD



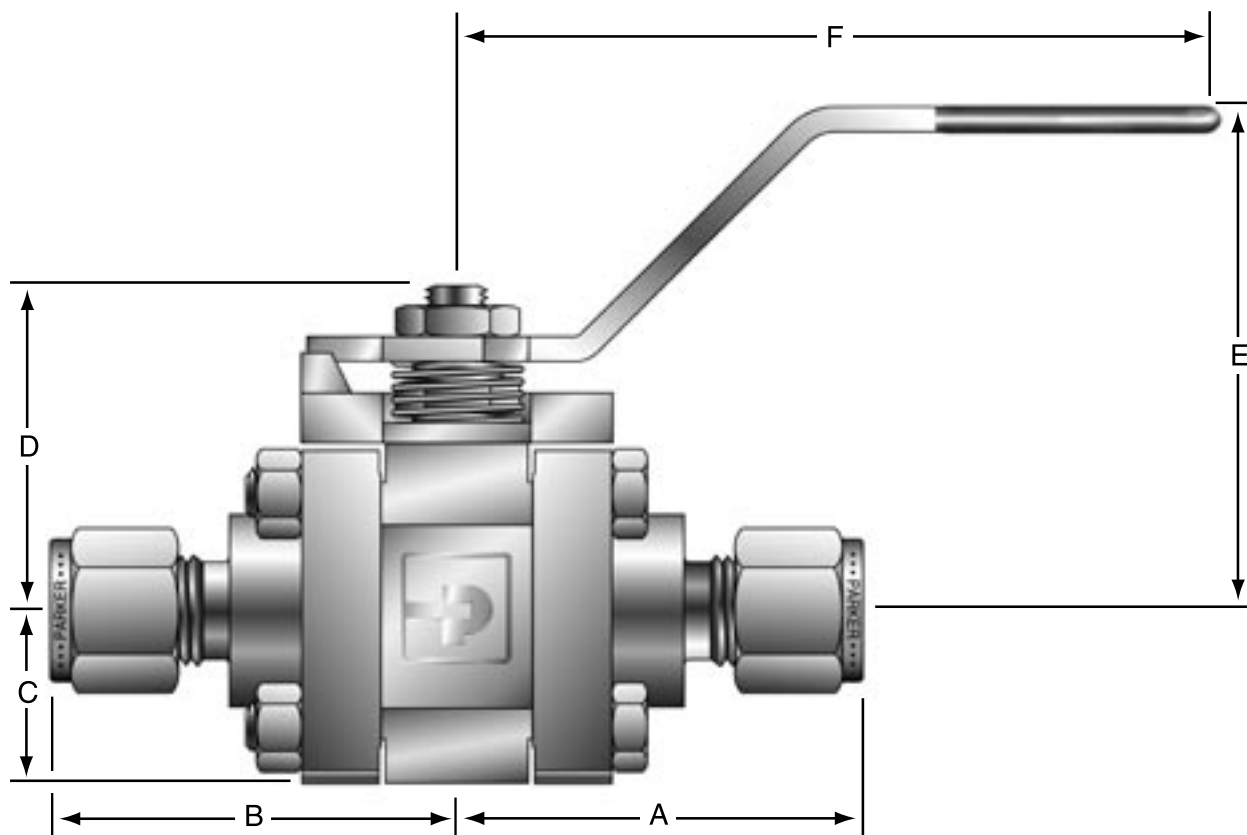
Electric Actuated Model Shown:  
8A-SWB8L-PKR-G-SS-71

## Dimensions / Flow Data

Basic Part Number	Flow Data				Dimensions											
	Orifice		C <sub>v</sub>	X <sub>T</sub> *	A†		B†		C		D		E		F	
	Inch	mm			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
4Z(A)-SWB4L	0.19	4.8	1.1	0.19	1.59	40.4	1.59	40.4								
4F-SWB4L	0.28	7.1	2.9	0.29	1.09	27.7	1.09	27.7	0.68	17.3	1.28	32.5	2.00	50.8	3.00	76.2
6Z(A)-SWB4L	0.28	7.1	4.5	0.19	1.59	40.4	1.59	40.4								
6F-SWB8L	0.44	11.2	8.2	0.35	1.29	32.8	1.29	32.8								
8Z(A)-SWB8L	0.41	10.4	6.4	0.35	2.03	51.6	2.03	51.6								
8F-SWB8L	0.44	11.2	8.2	0.26	1.29	32.8	1.29	32.8	0.89	22.6	1.54	39.1	2.36	59.9	3.94	100.1
8W-SWB8L	0.41	10.4	6.4	0.35	1.29	32.8	1.29	32.8								
8PBW1-SWB8L	0.44	11.2	8.2	0.26	1.35	34.3	1.35	34.3								
8PSW-SWB12L	0.52	13.2	13.5	0.34	1.35	34.3	1.35	34.3								
12Z(A)-SWB12L	0.56	14.2	14.7	0.28	2.03	51.6	2.03	51.6								
12F-SWB12L	0.56	14.2	14.7	0.28	1.39	35.3	1.39	35.3	1.06	26.9	1.81	46.0	2.59	65.8	3.94	100.1
12W-SWB12L	0.56	14.2	14.7	0.28	1.39	35.3	1.39	35.3								
12PBW1-SWB12L	0.56	14.2	14.7	0.28	1.37	34.8	1.37	34.8								
12PSW-SWB16L	0.88	22.4	35.0	0.29	1.95	49.5	1.95	49.5								
16Z(A)-SWB16L	0.88	22.4	35.0	0.29	2.68	68.1	2.68	68.1								
16F-SWB16L	0.88	22.4	35.0	0.29	1.79	45.5	1.79	45.5	1.25	31.8	2.30	58.4	3.00	76.2	5.71	145.0
16W-SWB16L	0.88	22.4	35.0	0.29	1.79	45.5	1.79	45.5								
16PBW1-SWB16L	0.88	22.4	35.0	0.29	1.81	46.0	1.81	46.0								

\* Tested in accordance with ISA S75.02. Gas flow will be choked when  $P_1 - P_2 / P_1 = x_T$ .

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.



## How to Order

The correct part number is easily derived from the following number sequence. The seven product characteristics required are coded as shown below.

**Example:** **8A \* - SWB8L - RT - BN - SS** Describes a SWB8L Two-Way Ball Valve with 1/2" A-LOK® end connections for ports 1 and 2, reinforced PTFE seats, Buna-N rubber body seals, and stainless steel construction.

**\*Note:** If ports 1 and 2 are the same, eliminate the port 2 designator.

8	A	*	- SWB8	L	- RT	- BN	- SS
Port Size	Port 1	Port 2	Valve Series	Valve Configuration	Seal Material	Seal Material	Body Material
4	Z - CPI™ Tube		<b>SWB4</b>	L - 2 Way	<b>PKR</b> - PTFE	<b>T</b> - PTFE	
6	A - A-LOK® Tube		<b>SWB8</b>		Lubricated PEEK	<b>BN</b> - Buna-N Rubber	<b>SS</b> - Stainless Steel
8	F - Female NPT		<b>SWB12</b>			<b>EPR</b> - Ethylene Propylene Rubber	
12	W - Tube Socket Weld		<b>SWB16</b>		<b>RT</b> - Glass Reinforced PTFE	<b>V</b> - Fluorocarbon Rubber	
16	PSW - Pipe Socket Weld PBW1 - Pipe Butt weld (Schedule 10)					<b>G</b> - Grafoil® Gasket	

Note: Upper and Lower PTFE packing is replaced with PEEK when valves are ordered with Grafoil® Seals.

## How to Order Options

### Examples

#### Lever Lock-Out Devices –

Add the suffix -LD to the end of the part number to order directly on the valve.  
For field installation, order part number as shown in the example.

4F-SWB8L-RT-V-SS-LD  
SWB8L-HANDLE-LOCKING

#### Oval Handles – Add the suffix -S to the end of the part number.

8A-SWB8L-RT-T-SS-S

#### Oval Handle Lock-Out Devices –

Add the suffix -LD to the end of the part number to order directly on the valve.  
For field installation, order part number as shown in the example.

6F-SWB8L-PKR-V-SS-S-LD  
SWB8L-OVAL-LOCKING- HANDLE

#### Handle Extensions – Add the suffix -EXT#, where # is the length in inches, to the end of the part number to order directly on the valve.

6F-SWB8L-PKR-G-SS-EXT4

#### Pneumatic Actuators – For detailed actuator information, refer to [Catalog 4123](#).

For factory assembly, add the actuator part number as the suffix to the valve part number.

For field installation, specify the the actuator desired.

The appropriate mounting hardware may be obtained by adding the valve series and actuator size to the prefix MK-.

8F-SWB8L-RT-BN-SS-61AC-2  
61AC-2

MK-SWB8L-61

#### Electric Actuators – For detailed actuator information, refer to [Catalog 4123](#).

For factory assembly, add the actuator part number as the suffix to the valve part number.

For field installation, specify the actuator desired.

The appropriate mounting hardware may be obtained by adding the valve series and actuator series to the prefix MK-.

8A-SWB8L-PKR-EPR-SS-71A  
71A

MK-SWB8L-70.

Grafoil® is a registered trademark of UCAR Carbon Technology Corporation

### WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS 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 and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

© Copyright 2005, Parker Hannifin Corporation. All Rights Reserved.

The items described in this document and other documents or descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors are hereby offered for sale at prices to be established by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any such items, when communicated to Parker Hannifin Corporation, its subsidiary or an authorized distributor ("Seller") verbally or in writing, shall constitute acceptance of this offer.

**1. Terms and Conditions of Sale:** All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

**2. Payment:** Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

**3. Delivery:** Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

**4. Warranty:** Seller warrants that items sold hereunder shall be free from defects in material or workmanship. **THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED.**

**NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNS OR SPECIFICATIONS.**

**5. Limitation Of Remedy: SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.**

**6. Changes, Reschedules and Cancellations:** Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

**7. Special Tooling:** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and not withstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

**8. Buyer's Property:** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property, Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

**9. Taxes:** Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

**10. Indemnity For Infringement of Intellectual Property Rights:** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

**11. Force Majeure:** Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

**12. Entire Agreement/Governing Law:** The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

11/98-P



**Parker Hannifin Corporation**

Instrumentation Products Division  
2651 Alabama Highway 21 North  
Jacksonville, AL 36265-9681  
USA

Phone: (256) 435-2130

Fax: (256) 435-7718

[www.parker.com/ipdus](http://www.parker.com/ipdus)

**Parker Hannifin plc**

Instrumentation Products Division  
Riverside Road  
Pottington Business Park  
Barnstaple, Devon EX31 1NP  
England

Phone: +44 (0) 1271 313131

Fax: +44 (0) 1271 373636

Email: [ipd@parker.com](mailto:ipd@parker.com)

[www.parker.com/ipd](http://www.parker.com/ipd)