Now Featuring...
1½"-6" Bore PH-2 and 7" & 8" Bore PH-3
- “Tri-Lip” polyurethane Rod Seal for leak proof service
- Long inboard rod bearing surface that is lubricated from within
- Circular bolt-on gland retainer

PH-2 & PH-3 Series
Heavy Duty Hydraulic Cylinders

Bulletin SB1140-B1
January, 2011
Schrader Bellows PH-2 & PH-3 Series – your best choice in heavy duty hydraulic cylinders

Primary Seal – “Tri-Lip” Rod Seal is a proven leak proof design – completely self-compensating and self-relieving to withstand variations and conform to mechanical deflection that may occur.

Secondary Seal – Rod Wiper – wipes clean any oil film adhering to the rod on the extend stroke and cleans the rod on the return stroke.

Piston Rod Stud – Furnished on 2” diameter rods and smaller when standard style #2 rod end threads are required. Studs have rolled threads and are made from high strength steel. Anaerobic adhesive is used to permanently lock the stud to the piston rod.

Rod Gland Assembly – Standard bronze gland is externally removable without cylinder disassembly. Long inboard bearing surface is ahead of the seals assuring lubrication by cylinder operating fluid.

Steel Head – Bored and grooved to provide concentricity for mating parts.

End Seal – Pressure-actuated cylinder tube-to-head and cap “O” rings.

Piston Rod Stud – Furnished on 2” diameter rods and smaller when standard style #2 rod end threads are required. Studs have rolled threads and are made from high strength steel. Anaerobic adhesive is used to permanently lock the stud to the piston rod.

Alloy Steel Tie Rod Nuts


Here’s What’s New...

“Tri-Lip” Rod Seal – The “Tri-Lip” rod seal has multiple sealing edges to produce “dry rod” performance. It is molded from a special polyurethane material that is extremely resistant to abrasion and extrusion.

Lubricated Rod Bearing – The rod seal is moved forward in the rod gland allowing operating fluid to lubricate the bearing area. Increased lubrication of the bearing can improve performance and extend gland life.

Bolt-on Gland – Most (but not all) rod glands are serviceable without cylinder disassembly. See the table below for mounting, bore, and rod combinations (indicated with an “R”) that do not have this feature.

<table>
<thead>
<tr>
<th>Bore</th>
<th>Rod Dia.</th>
<th>MX2, MF2, MF6, ME6, MS2, MS4, MT1, MT2, MT4, MP1, MPU3</th>
<th>MX1, MX3</th>
<th>MF1, MF5</th>
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<tr>
<td>1½</td>
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<td>1</td>
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<td>2</td>
<td>1½</td>
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<tr>
<td>5</td>
<td>3½</td>
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</table>
High Strength Tie Rods – Made from 100,000 PSI minimum yield steel with rolled threads for added strength.

Adjustable Floating Stepped Cushions – For maximum performance – economical and flexible for even the most demanding applications – provides superior performance in reducing shock. Cushions are optional and can be supplied at head end, cap end, or both ends without change in envelope or mounting dimensions.

Ports – S.A.E. “O”-ring ports are standard

OPTIONAL PORTS

Gland Assembly with “Tri-Lip” Rod Seal
Gland Assembly externally removable without cylinder disassembly. An O-ring is used as a seal between the gland and head. The “Tri-Lip” rod seal has multiple sealing edges to produce “dry rod” performance. It is molded from a special polyurethane material that is extremely resistant to abrasion and extrusion, resulting in exceptional service life. Wiperseal cleans rod of dirt, preventing it from entering the gland and also acts as a secondary rod seal.

Step cut iron piston rings are optional.

Piston with Retainer Nut – Optional at no extra charge.

Hi Load Piston – Standard in 7” bore and larger (optional at extra charge 1½-6” bores). Includes wear rings and bronze-filled PTFE seals. Two wear rings serve as bearings which deform radially under side-loading, enabling the load to be spread over a larger area and reduce unit loading. Bronze-filled PTFE seals are designed for extrusion-free, leak-proof service and longer cylinder life than the lipseal type piston. Not available with retainer nut.

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Schrader Bellows
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www.schraderbellows.com
How to Order PH-2 & PH-3 Series Cylinders

How To Order
By Model Number

PH-2 and PH-3 Hydraulic Cylinders can be specified by model number by using the tables shown at right.

1. **Type**
   Select the Model Number Code which identifies single, double end and port specification.

2. **Bore & Rod Diameter**
   Select the Model Number Code which identifies the desired bore size and rod diameter combination.

3. **Mounting & Cushioning**
   Select the Model Number Code which identifies the desired mounting style and cushioning option.

4. **Rod End Style**
   Select the Model Number Code which identifies the desired rod end thread style.

5. **Seal Type**
   Complete the Model Number by selecting the Seal Type and seal material desired.

6. **Stroke Length**
   It is necessary to specify the stroke length desired following the Model Number. For example: PHAA00823 with 6" stroke.

Specifying the Desired Trunnion Location
For cylinders with intermediate trunnion mounting, the dimension specified should be the distance from the piston rod reference point to the center-line of the pin.

The Example Would Identify:
A single end hydraulic cylinder, 1-1/2" bore size, 5/8" piston rod diameter, side lug mount, cushioned both ends, with a small male rod thread, Piston Rings with Buna N Seals, a 6" stroke, and S.A.E. Ports.

Optional Mounting Accessories
Specify separately the part number for desired optional mounting accessories.

Note: For special modifications other than piston rod ends use S in the tenth position of the model number and describe special features required. Example: PHAA00823S 6" Stroke Ports to be position 2.

For complete PH-2 and PH-3 Series product specifications and ordering details, see catalog SB0106.