

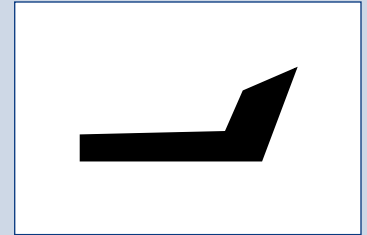
Piston Cups

Piston Cups are primarily used on piston heads, plungers or rams in hydraulic or pneumatic service. Its mechanical sealing surface is at its periphery.

Piston Cups are commonly used because of economical cost, excellent service life, efficient assemble, universal acceptance, and simple accessories.

Homogeneous Piston Cups are recommended to handle low pressures (under 150 psi) in air, water, hydraulic fluids, and lubricating oils. Homogeneous Piston Cups standard DMR compound is 80 Durometer Nitrile. They are also available in other homogeneous materials such as EPR, Fluoroelastomer, and Silicone.

Fabric reinforced Piston Cups prevent extrusion in medium pressure installations (up to 1000 psi) or where diametrical clearances are greater.



Piston Cup Installation Data

Figure 1 shows a Piston Cup packing (P) attached directly to a ram (R) without the use of a separate backing plate.

This is a proper method, as long as the rules of good design are observed. The cylinder should be correctly finished to close tolerances and the ram of a size and material that can be finished to leave only a minimum working clearance between it and the cylinder wall. The cylinder and ram must be of suitable material so that no scoring of the cylinder will take place.

Due to the nature of the work being done by a ram of this type, wear is inevitable and usually occurs to a great extent on one side. When this wear has progressed to a certain degree, the Piston Cup packing will not be properly supported.

To insure lip contact, Piston Cups generally are designed with the heel .010"-.015" under nominal O.D., and the lip diameter is .020"-.030" over nominal O.D. This insures heel clearance and full lip contact.

Heel clearance is needed so full pressure is not carried by this narrow area, or it wears excessively. Clearance between the piston and cylinder wall must be minimized to prevent extrusion at the cup's heel.

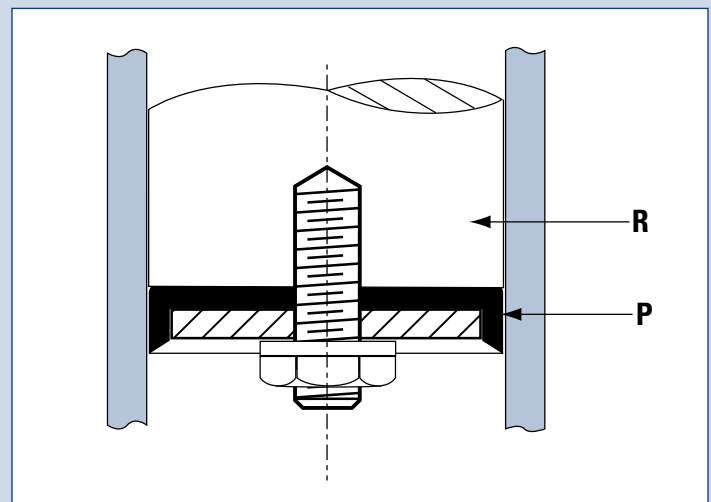


Figure 1
Piston Cup Attached to Ram

The seal between the bottom of the cup and the piston head is a compression seal, created by bolting or otherwise fastening the cup between the piston head (or backing plate) and follower plate. Do not over-tighten the follower nut especially when using homogenous Piston Cups. Over-tightening will cause heel to extrude cause premature failure.

Piston Cup packings are installed with the sealing lips toward the pressure medium, thus the mechanical seal between the piston and the cylinder wall for which the cup is designed is created by the pressure applied against the cup. In the dynamic seal area indicated in Figure 2, make sure there is enough compression, with no gaps, to insure a seal. It is also important to be sure that the heel of the Piston Cup is thick enough to create compression between the areas of B and C.

Figure 2 illustrates two Piston Cup packings (A and A) which are installed back to back against a common backing plate C in a double-acting cylinder. B serves as the follower plate to compress the static seal. A good solid plate is provided which is a piston head. Packings should not be installed without a backing plate between them

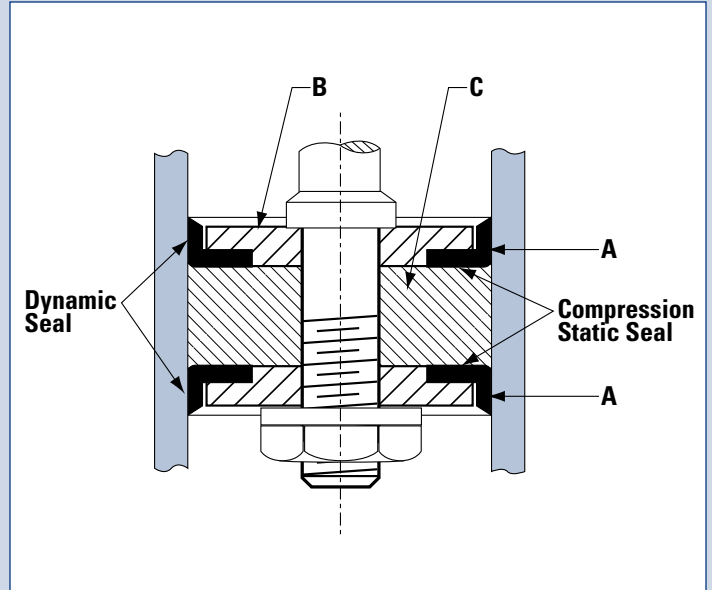


Figure 2
Proper Installation of Piston Cups
for Double-Acting Piston

Style 6000 Rubber

DMR Part Number	Bore	Lip Ht.	Thick-ness	Hole Size
6062	5/8	0.305	0.115	blank
6075	3/4	5/16	3/32	blank
6100	1	7/16	3/32	blank
6100-037	1	7/16	3/32	3/8
6125	1-1/4	1/2	1/8	blank
6137	1-3/8	1/2	1/8	blank
6150	1-1/2	1/2	1/8	blank
6150-062	1-1/2	1/2	1/8	5/8
6162	1-5/8	1/2	1/8	blank
6175	1-3/4	1/2	1/8	blank
6187	1-7/8	1/2	1/8	blank
6200	2	1/2	1/8	blank
6225	2-1/4	1/2	1/8	blank
6237-050	2-3/8	1/2	1/8	1/2
6237-100	2-3/8	1/2	1/8	1
6250	2-1/2	1/2	1/8	blank
6250-062	2-1/2	1/2	1/8	5/8
6262	2-5/8	1/2	1/8	blank
6275	2-3/4	1/2	1/8	blank
6275-068	2-3/4	1/2	1/8	11/16
6287	2-7/8	1/2	1/8	blank
6300	3	5/8	5/32	blank
6312	3-1/8	5/8	5/32	blank
6325	3-1/4	5/8	5/32	blank
6350	3-1/2	5/8	5/32	blank
6375	3-3/4	5/8	5/32	blank
6400	4	5/8	5/32	blank
6400-275-90D	4	5/8	5/32	2-3/4
6425	4-1/4	5/8	5/32	blank
6450	4-1/2	5/8	5/32	blank
6475	4-3/4	5/8	5/32	blank
6500	5	3/4	3/16	blank
6500-075	5	3/4	3/16	3/4

DMR Part Number	Bore	Lip Ht.	Thick-ness	Hole Size
6550	5-1/2	3/4	3/16	blank
6575	5-3/4	3/4	3/16	blank
6600	6	3/4	3/16	blank
6600-100	6	3/4	3/16	1
6610	6	1	3/16	blank
6625	6-1/4	3/4	3/16	blank
6650	6-1/2	3/4	3/16	blank
6700	7	3/4	3/16	blank
6800	8	1	3/16	blank
6900	9	1	3/16	blank
61000	10	1	3/16	blank
61200	12	1	3/16	blank
61400	14	1	3/16	blank

Style 8000 URETHANE

DMR Part Number	Bore	Lip Ht.	Thick-ness	Hole Size
8050-000	1/2	1/4	3/32	blank
8100-000	1	1/2	1/8	blank
8150-000	1-1/2	1/2	1/8	blank
8175-000	1-3/4	1/2	1/8	blank
8275-000	2-3/4	5/8	3/16	blank
8300-000	3	5/8	3/16	blank
8325-000	3-1/4	5/8	3/16	blank
8337-000	3-3/8	5/8	3/16	blank
8350-000	3-1/2	5/8	3/16	blank
8400-000	4	5/8	3/16	blank
8450-000	4-1/2	5/8	3/16	blank
8500-000	5	5/8	3/16	blank
8550-000	5-1/2	3/4	3/16	blank
8600-000	6	3/4	3/16	blank
8650-000	6-1/2	3/4	3/16	blank

Style 9000 NEOFAB

DMR Part Number	Bore	Lip Ht.	Thick-ness	Hole Size
9062-000F	5/8	5/16	3/32	blank
9075-000F	3/4	7/16	3/32	blank
9087-000F	7/8	7/16	3/32	blank
9100-000F	1	7/16	3/32	blank
9100-025F	1	7/16	3/32	1/4
9100-037F	1	7/16	3/32	3/8
9100-050F	1	7/16	3/32	1/2
9112-000F	1-1/8	7/16	3/32	blank
9125-000F	1-1/4	7/16	3/32	blank
9125-037F	1-1/4	7/16	3/32	3/8
9137-000F	1-3/8	7/16	3/32	blank
9137-062F	1-3/8	7/16	3/32	5/8
9150-000F	1-1/2	1/2	1/8	blank
9150-037F	1-1/2	1/2	1/8	3/8
9150-062F	1-1/2	1/2	1/8	5/8
9162-000F	1-5/8	1/2	1/8	blank
9175-000F	1-3/4	1/2	1/8	blank
9175-062F	1-3/4	1/2	1/8	5/8
9175-069F	1-3/4	1/2	1/8	11/16
9187-000F	1-7/8	1/2	1/8	blank
9187-062F	1-7/8	1/2	1/8	5/8
9200-000F	2	1/2	1/8	blank
9200-037F	2	1/2	1/8	3/8
9200-050F	2	1/2	1/8	1/2
9200-062F	2	1/2	1/8	5/8
9200-100F	2	1/2	1/8	1
9212-000F	2-1/8	1/2	1/8	blank
9225-000F	2-1/4	1/2	1/8	blank
9225-075F	2-1/4	1/2	1/8	3/4
9225-100F	2-1/4	1/2	1/8	1
9237-000F	2-3/8	1/2	1/8	blank
9237-050F	2-3/8	1/2	1/8	1/2
9237-100F	2-3/8	1/2	1/8	1

Style 9000 NEOFAB

DMR Part Number	Bore	Lip Ht.	Thick-ness	Hole Size
9250-000F	2-1/2	1/2	1/8	blank
9250-037F	2-1/2	1/2	1/8	3/8
9250-062F	2-1/2	1/2	1/8	5/8
9250-075F	2-1/2	1/2	1/8	3/4
9250-100F	2-1/2	1/2	1/8	1
9250-125F	2-1/2	1/2	1/8	1-1/4
9250-137F	2-1/2	1/2	1/8	1-3/8
9262-000F	2-5/8	1/2	1/8	blank
9275-000F	2-3/4	1/2	1/8	blank
9275-075F	2-3/4	1/2	1/8	3/4
9275-100F	2-3/4	1/2	1/8	1
9275-150F	2-3/4	1/2	1/8	1-1/2
9287-000F	2-7/8	1/2	1/8	blank
9300-000F	3	5/8	5/32	blank
9300-050F	3	5/8	5/32	1/2
9300-100F	3	5/8	5/32	1
9300-125F	3	5/8	5/32	1-1/4
9300-137F	3	5/8	5/32	1-3/8
9300-150F	3	5/8	5/32	1-1/2
9300-162F	3	5/8	5/32	1-5/8
9300-175F	3	5/8	5/32	1-3/4
9300-187F	3	5/8	5/32	1-7/8
9312-100F	3-1/8	5/8	5/32	1
9325-000F	3-1/4	5/8	5/32	blank
9325-037F	3-1/4	5/8	5/32	3/8
9325-050F	3-1/4	5/8	5/32	1/2
9325-100F	3-1/4	5/8	5/32	1
9500-125F	5	3/4	3/16	1-1/4
9500-250F	5	3/4	3/16	2-1/2
9525-050F	5-1/4	3/4	3/16	1/2
9550-000F	5-1/2	3/4	3/16	blank
9550-125F	5-1/2	3/4	3/16	1-1/4
9550-200F	5-1/2	3/4	3/16	2

DMR Part Number	Bore	Lip Ht.	Thick-ness	Hole Size
9575-000F	5-3/4	3/4	3/16	blank
9600-000F	6	3/4	3/16	blank
9600-050F	6	3/4	3/16	1/2
9600-200F	6	3/4	3/16	2
9600-250F	6	3/4	3/16	2-1/2
9600-350F	6	3/4	3/16	3-1/2
9650-000F	6-1/2	3/4	3/16	blank
9675-000F	6-3/4	3/4	3/16	blank
9700-000F	7	3/4	3/16	blank
9700-125F	7	3/4	3/16	1-1/4
9700-200F	7	3/4	3/16	2
9700-400F	7	3/4	3/16	4
9725-162F	7-1/4	3/4	3/16	1-5/8
9800-000F	8	1	3/16	blank
9800-100F	8	1	3/16	1
9800-125F	8	1	3/16	1-1/4
9900-000F	9	1	3/16	blank
91000-100F	10	1	3/16	1
91200-000F	12	1	3/16	blank