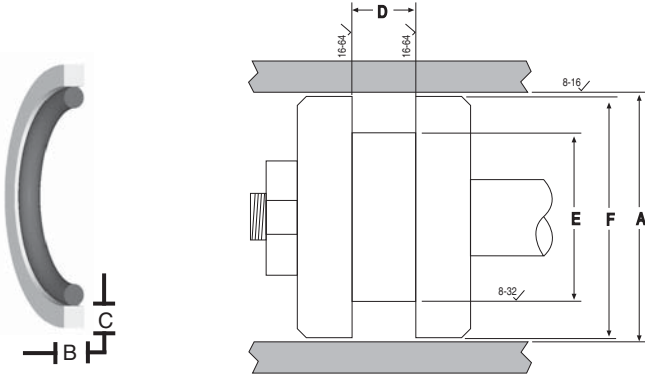


STYLE PS1400 GLASS FILLED PTFE PISTON SEALS

The PS1400 seals offer low friction and high strength in a compact double-acting piston seal design. The PTFE seal ring, combined with a rubber energizer, assures positive contact with the dynamic surface. The PS1400 is designed to fit ANSI/B93.32-1973 groove standards. Piston diameter "F" dimensions are given for pistons without wear rings.



SEAL INFORMATION

MATERIAL	15% GLASS FILLED PTFE SEAL RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +220° F
PRESSURE RANGE	O TO 5,000 PSI
PART NUMBER	(Piston Seal) (Type of Seal)-(Size)

Part Number	A Bore Diameter Tol. +0.002-0.000	B & C Seal Height & Cross Section	D Groove Width Tol. ±0.002	E Groove Dia. Tol. ±0.002	F Piston Dia. Tol. ±0.001	List Price
PS1400-16	1.000	0.070 ±0.005	0.083	0.740	0.997	\$ 3.21
PS1400-18	1.125	0.070 ±0.005	0.083	0.865	1.122	4.28
PS1400-20	1.250	0.070 ±0.005	0.083	0.990	1.247	3.54
PS1400-22	1.375	0.070 ±0.005	0.083	1.115	1.372	5.97
PS1400-24	1.500	0.070 ±0.005	0.083	1.240	1.497	3.69
PS1400-26	1.625	0.109 ±0.010	0.122	1.233	1.622	3.75
PS1400-28	1.750	0.109 ±0.010	0.122	1.358	1.747	3.84
PS1400-30	1.875	0.109 ±0.010	0.122	1.483	1.872	7.48
PS1400-32	2.000	0.115 ±0.010	0.129	1.608	1.996	3.99
PS1400-34	2.125	0.115 ±0.010	0.129	1.733	2.121	7.48
PS1400-36	2.250	0.115 ±0.010	0.129	1.858	2.246	4.15
PS1400-38	2.375	0.115 ±0.010	0.129	1.983	2.371	4.18
PS1400-40	2.500	0.115 ±0.010	0.129	2.108	2.496	4.19
PS1400-44	2.750	0.115 ±0.010	0.129	2.358	2.746	4.24
PS1400-48	3.000	0.115 ±0.010	0.129	2.608	2.996	4.36
PS1400-50	3.125	0.115 ±0.010	0.129	2.733	3.121	15.86
PS1400-52	3.250	0.115 ±0.010	0.129	2.858	3.246	4.42
PS1400-54	3.375	0.115 ±0.010	0.129	2.983	3.371	8.19
PS1400-56	3.500	0.115 ±0.010	0.129	3.108	3.496	4.55
PS1400-58	3.625	0.115 ±0.010	0.129	3.233	3.621	8.41
PS1400-60	3.750	0.115 ±0.010	0.129	3.358	3.746	4.94
PS1400-64	4.000	0.115 ±0.010	0.129	3.608	3.996	5.02
PS1400-68	4.250	0.115 ±0.010	0.129	3.858	4.246	5.12
PS1400-70.4	4.400	0.115 ±0.010	0.129	4.008	4.396	16.33
PS1400-72	4.500	0.115 ±0.010	0.129	4.108	4.496	5.61
PS1400-76	4.750	0.115 ±0.010	0.129	4.358	4.746	8.72
PS1400-78	4.875	0.115 ±0.010	0.129	4.483	4.871	16.46
PS1400-80	5.000	0.115 ±0.010	0.129	4.608	4.996	6.26
PS1400-84	5.250	0.115 ±0.010	0.129	4.858	5.246	6.70
PS1400-88	5.500	0.115 ±0.010	0.129	5.108	5.496	6.89

STYLE PS1400 GLASS FILLED PTFE PISTON SEALS



Part Number	A Bore Diameter Tol. +0.002-0.000	B & C Seal Height & Cross Section	D Groove Width Tol. ± 0.002	E Groove Dia. Tol. ± 0.002	F Piston Dia. Tol. ± 0.001	List Price
PS1400-92	5.750	0.143 ± 0.010	0.159	5.232	5.746	\$ 7.32
PS1400-94	5.875	0.143 ± 0.010	0.159	5.357	5.871	18.73
PS1400-96	6.000	0.143 ± 0.010	0.159	5.482	5.996	7.69
PS1400-98	6.125	0.143 ± 0.010	0.159	5.607	6.121	16.43
PS1400-100	6.250	0.143 ± 0.010	0.159	5.732	6.246	8.20
PS1400-104	6.500	0.143 ± 0.010	0.159	5.982	6.496	9.76
PS1400-112	7.000	0.143 ± 0.010	0.159	6.482	6.996	10.02
PS1400-116	7.250	0.143 ± 0.010	0.159	6.732	7.246	10.02
PS1400-120	7.500	0.143 ± 0.010	0.159	6.982	7.496	10.03
PS1400-128	8.000	0.143 ± 0.010	0.159	7.482	7.996	10.19
PS1400-130	8.125	0.143 ± 0.010	0.159	7.607	8.121	22.49
PS1400-132	8.250	0.143 ± 0.010	0.159	7.732	8.246	24.68
PS1400-136	8.500	0.143 ± 0.010	0.159	7.982	8.496	28.81
PS1400-144	9.000	0.143 ± 0.010	0.159	8.482	8.996	30.27
PS1400-152	9.500	0.143 ± 0.010	0.159	8.982	9.496	39.03
PS1400-160	10.000	0.143 ± 0.010	0.159	9.482	9.996	42.75
PS1400-168	10.500	0.143 ± 0.010	0.159	9.982	10.496	54.63
PS1400-176	11.000	0.143 ± 0.010	0.159	10.482	10.996	59.16
PS1400-184	11.500	0.143 ± 0.010	0.159	10.982	11.496	60.62
PS1400-192	12.000	0.143 ± 0.010	0.159	11.482	11.996	62.85
PS1400-200	12.500	0.143 ± 0.010	0.159	11.982	12.496	66.19
PS1400-208	13.000	0.143 ± 0.010	0.159	12.482	12.996	80.88
PS1400-224	14.000	0.143 ± 0.010	0.159	13.482	13.996	98.12

INSTALLATION OF PTFE PISTON SEALS

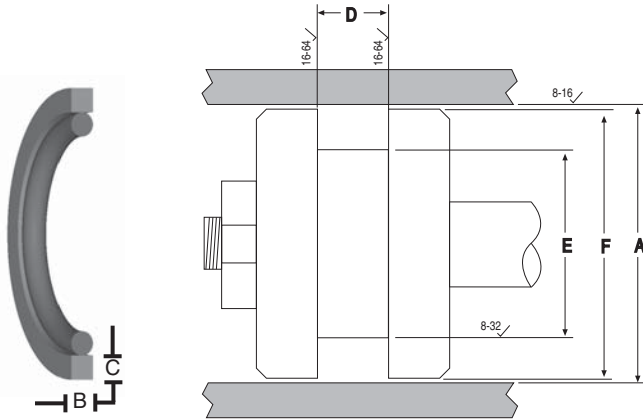
Installing PTFE piston seals is not always an easy task. The use of installation tools is recommended but often not convenient when working with a wide variety of sizes and applications. Finger installations are practical with rings of smaller cross-sections. Using fingers or a rounded plastic stick, knead the ring over the piston into the groove. With rings of larger cross-sections it may be necessary to heat the ring. Warming the ring in water or oil at 130° F or 140° F for about 5 minutes will soften the material for easier installation. Always avoid inconsistent stretching or overstretching of the PTFE seal.

To prevent the PTFE ring from snapping into the wrong groove, cover wear ring grooves with plastic tape.

After seal installation, assembly of the cylinder may be difficult if the piston seal is loose on the piston or the cylinder has an inadequate leading edge chamfer. In such cases, compress the piston seal with belting or a suitable hose clamp. If the piston seal must pass threads or any other sharp edges during the cylinder assembly, cover the edges with plastic tape or wrap.

STYLE PS1500 POLYURETHANE PISTON SEALS

Totally interchangeable with Style PS1400 PTFE piston seals, Style PS1500 piston seals are molded from tough 60 Shore D durometer polyurethane. During the molding process, a .002" thick band of molybdenum disulfide is molded into the outside diameter of the seal ring for reduced friction. PS1500 piston seals are easily stretched over the piston and recover rapidly with the elimination of the "cold flow" characteristics found in PTFE seals. Piston diameter "F" dimensions are given for pistons without wear rings.



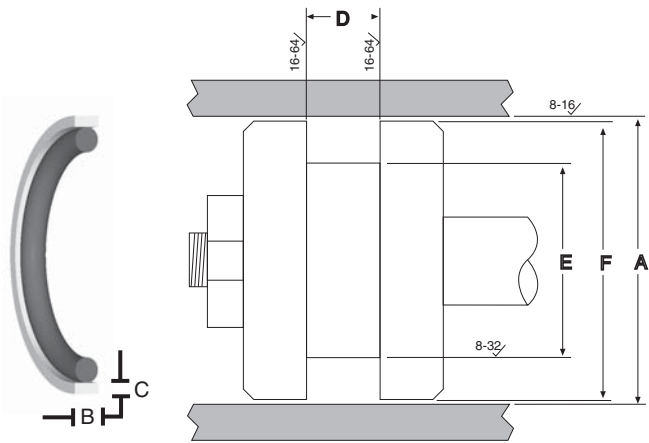
SEAL INFORMATION

MATERIAL	POLYURETHANE SEAL RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +200° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Piston Seal) (Type of Seal) - (Size)

Part Number	A Bore Diameter Tol. +0.002 -0.000	B & C Seal Height & Cross Section	D Groove Width Tol. ±0.002	E Groove Dia. Tol. ±0.002	F Piston Dia. Tol. ±0.001	List Price
PS1500-24	1.500	0.070 ±0.005	0.083	1.240	1.497	\$ 4.07
PS1500-28	1.750	0.109 ±0.005	0.122	1.358	1.747	4.23
PS1500-32	2.000	0.115 ±0.006	0.129	1.608	1.996	4.40
PS1500-36	2.250	0.115 ±0.006	0.129	1.858	2.246	4.52
PS1500-38	2.375	0.115 ±0.006	0.129	1.983	2.371	4.55
PS1500-40	2.500	0.115 ±0.006	0.129	2.108	2.496	4.57
PS1500-44	2.750	0.115 ±0.006	0.129	2.358	2.746	4.65
PS1500-48	3.000	0.115 ±0.006	0.129	2.608	2.996	4.77
PS1500-52	3.250	0.115 ±0.006	0.129	2.858	3.246	4.87
PS1500-54	3.375	0.115 ±0.006	0.129	2.981	3.371	7.15
PS1500-56	3.500	0.115 ±0.006	0.129	3.108	3.496	5.02
PS1500-60	3.750	0.115 ±0.006	0.129	3.358	3.746	5.13
PS1500-64	4.000	0.115 ±0.006	0.129	3.608	3.996	5.48
PS1500-68	4.250	0.115 ±0.006	0.129	3.858	4.246	5.63
PS1500-72	4.500	0.115 ±0.006	0.129	4.108	4.496	6.21
PS1500-76	4.750	0.115 ±0.006	0.129	4.358	4.746	6.41
PS1500-80	5.000	0.115 ±0.006	0.129	4.608	4.996	6.87
PS1500-84	5.250	0.115 ±0.006	0.129	4.858	5.246	7.29
PS1500-88	5.500	0.115 ±0.006	0.129	5.108	5.496	7.68
PS1500-92	5.750	0.143 ±0.007	0.159	5.232	5.746	8.50
PS1500-96	6.000	0.143 ±0.007	0.159	5.482	5.996	10.90
PS1500-104	6.500	0.143 ±0.007	0.159	5.982	6.496	11.45
PS1500-112	7.000	0.143 ±0.007	0.159	6.482	6.996	12.09
PS1500-136	8.500	0.143 ±0.007	0.159	7.982	8.494	13.73

STYLE PS1600 GLASS FILLED PTFE PISTON SEALS

NOTE: Piston diameter "F" dimensions are given for pistons without wear rings.



SEAL INFORMATION

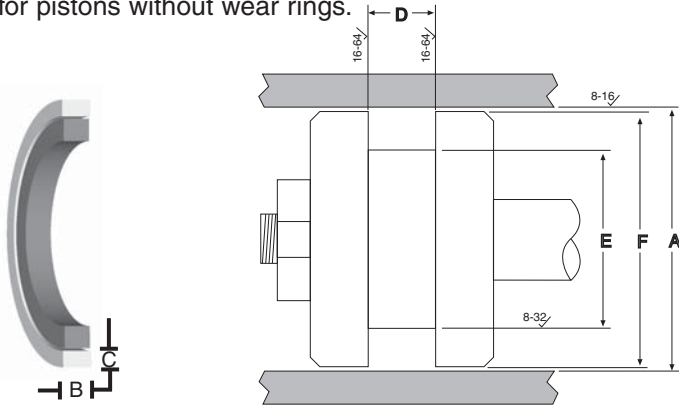
MATERIAL	15% GLASS FILLED PTFE SEAL RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +220° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Piston Seal) (Type of Seal)-(Size)

PISTON SEAL ASSEMBLIES

Part Number	A Bore Dia. Tol. +0.002 -0.000	B Seal Height Tol. ±0.005	C Cross Section Tol. ±0.005	D Groove Width Tol. ±0.003	E Groove Dia. Tol. ±0.002	F Piston Dia.	List Price
PS1600-16	1.000	0.088	0.055	0.094	0.787	0.999+0/-0.003	\$ 4.92
PS1600-18	1.125	0.088	0.055	0.094	0.912	1.124+0/-0.003	5.03
PS1600-20	1.250	0.088	0.055	0.094	1.037	1.249+0/-0.003	5.16
PS1600-22	1.375	0.088	0.055	0.094	1.162	1.374+0/-0.003	5.25
PS1600-24	1.500	0.088	0.055	0.094	1.287	1.499+0/-0.003	5.40
PS1600-26	1.625	0.088	0.055	0.094	1.412	1.624+0/-0.003	5.58
PS1600-28	1.750	0.088	0.055	0.094	1.537	1.749+0/-0.003	6.09
PS1600-30	1.875	0.120	0.060	0.126	1.598	1.874+0/-0.003	6.28
PS1600-32	2.000	0.120	0.060	0.126	1.723	1.999+0/-0.003	6.80
PS1600-36	2.250	0.120	0.060	0.126	1.973	2.249+0/-0.003	7.23
PS1600-38	2.375	0.120	0.060	0.126	2.098	2.374+0/-0.003	7.57
PS1600-40	2.500	0.120	0.060	0.126	2.223	2.499+0/-0.003	7.57
PS1600-44	2.750	0.150	0.090	0.157	2.348	2.749+0/-0.004	9.03
PS1600-48	3.000	0.150	0.090	0.157	2.603	2.999+0/-0.004	11.64
PS1600-52	3.250	0.150	0.090	0.157	2.853	3.249+0/-0.004	12.27
PS1600-56	3.500	0.150	0.090	0.157	3.103	3.499+0/-0.004	12.63
PS1600-60	3.750	0.150	0.090	0.157	3.353	3.749+0/-0.004	12.71
PS1600-64	4.000	0.150	0.090	0.157	3.603	3.999+0/-0.004	12.98
PS1600-68	4.250	0.150	0.090	0.157	3.853	4.249+0/-0.004	12.95
PS1600-72	4.500	0.150	0.090	0.157	4.103	4.499+0/-0.004	13.11
PS1600-76	4.750	0.150	0.090	0.157	4.353	4.749+0/-0.004	15.98
PS1600-80	5.000	0.150	0.090	0.157	4.603	4.999+0/-0.004	16.26
PS1600-84	5.250	0.150	0.090	0.157	4.853	5.249+0/-0.004	17.37
PS1600-88	5.500	0.150	0.090	0.157	5.103	5.499+0/-0.004	18.42
PS1600-92	5.750	0.150	0.090	0.157	5.353	5.749+0/-0.004	22.54
PS1600-96	6.000	0.287	0.120	0.293	5.305	5.999+0/-0.005	25.58
PS1600-112	7.000	0.287	0.120	0.293	6.305	6.999+0/-0.005	38.79

STYLE PS1800 GLASS FILLED PTFE PISTON SEALS

The PS1800 provides low friction, high strength piston sealing. The PS1800 also provides double-acting piston sealing in a compact design that meets the requirements of ANSI/B93-32-1973. **NOTE:** Piston diameter "F" dimensions are given for pistons without wear rings.



SEAL INFORMATION	
MATERIAL	15% GLASS FILLED PTFE SEAL RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +220° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Piston Seal) (Type of Seal) - (Size)

PISTON SEAL ASSEMBLIES

Part Number	A Bore Dia. Tol. +0.002 -0.000	B Seal Height	C Cross Section	D Groove Width Tol. ±0.002	E Groove Dia. Tol. ±0.002	F Piston Dia.	List Price
PS1800-16	1.000	0.116-0.121	0.067-0.073	0.129	0.690	0.999+0/-0.005	\$ 4.73
PS1800-20	1.250	0.116-0.121	0.067-0.073	0.129	0.940	1.249+0/-0.005	4.81
PS1800-24	1.500	0.116-0.121	0.067-0.073	0.129	1.190	1.499+0/-0.005	4.97
PS1800-28	1.750	0.116-0.121	0.067-0.073	0.129	1.440	1.749+0/-0.005	5.48
PS1800-32	2.000	0.116-0.121	0.067-0.073	0.129	1.690	1.999+0/-0.005	6.65
PS1800-36	2.250	0.116-0.121	0.067-0.073	0.129	1.940	2.249+0/-0.005	7.42
PS1800-40	2.500	0.116-0.121	0.067-0.073	0.129	2.190	2.499+0/-0.005	7.48
PS1800-44	2.750	0.116-0.121	0.067-0.073	0.129	2.440	2.749+0/-0.005	9.01
PS1800-44A	2.750	0.269-0.274	0.087-0.093	0.284	2.190	2.749+0/-0.005	9.41
PS1800-48	3.000	0.269-0.274	0.087-0.093	0.284	2.440	2.999+0/-0.006	9.66
PS1800-52	3.250	0.269-0.274	0.087-0.093	0.284	2.690	3.249+0/-0.006	11.46
PS1800-56	3.500	0.269-0.274	0.087-0.093	0.284	2.940	3.499+0/-0.006	12.63
PS1800-60	3.750	0.269-0.274	0.087-0.093	0.284	3.190	3.749+0/-0.006	14.36
PS1800-64	4.000	0.269-0.274	0.087-0.093	0.284	3.440	3.999+0/-0.006	15.95
PS1800-68	4.250	0.269-0.274	0.087-0.093	0.284	3.690	4.249+0/-0.006	18.42
PS1800-72	4.500	0.269-0.274	0.087-0.093	0.284	3.940	4.499+0/-0.006	19.34
PS1800-74	4.625	0.269-0.274	0.087-0.093	0.284	4.078	4.624+0/-0.007	27.51
PS1800-76	4.750	0.269-0.274	0.087-0.093	0.284	4.190	4.749+0/-0.006	19.94
PS1800-80	5.000	0.269-0.274	0.087-0.093	0.284	4.440	4.999+0/-0.006	20.88
PS1800-84	5.250	0.362-0.367	0.137-0.147	0.379	4.488	5.249+0/-0.007	24.60
PS1800-88	5.500	0.362-0.367	0.137-0.147	0.379	4.738	5.499+0/-0.007	27.50
PS1800-90	5.625	0.362-0.367	0.137-0.147	0.379	4.863	5.624+0/-0.007	34.14
PS1800-92	5.750	0.362-0.367	0.137-0.147	0.379	4.988	5.749+0/-0.007	29.71
PS1800-96	6.000	0.362-0.367	0.137-0.147	0.379	5.238	5.999+0/-0.007	31.89
PS1800-100	6.250	0.362-0.367	0.137-0.147	0.379	5.488	6.249+0/-0.007	32.20
PS1800-104	6.500	0.362-0.367	0.137-0.147	0.379	5.738	6.499+0/-0.007	32.20
PS1800-112	7.000	0.362-0.367	0.137-0.147	0.379	6.238	6.999+0/-0.007	32.78
PS1800-116	7.250	0.362-0.367	0.137-0.147	0.379	6.488	7.249+0/-0.007	35.61
PS1800-120	7.500	0.362-0.367	0.137-0.147	0.379	6.738	7.499+0/-0.007	32.87
PS1800-128	8.000	0.362-0.367	0.137-0.147	0.379	7.238	7.999+0/-0.007	36.62
PS1800-132	8.250	0.362-0.367	0.137-0.147	0.379	7.488	8.249+0/-0.007	38.99
PS1800-136	8.500	0.362-0.367	0.137-0.147	0.379	7.738	8.499+0/-0.007	41.43
PS1800-144	9.000	0.362-0.367	0.195-0.210	0.379	8.122	8.999+0/-0.008	49.00
PS1800-152	9.500	0.362-0.367	0.195-0.210	0.379	8.622	9.499+0/-0.008	55.77
PS1800-160	10.000	0.362-0.367	0.195-0.210	0.379	9.122	9.999+0/-0.008	54.53
PS1800-168	10.500	0.362-0.367	0.195-0.210	0.379	9.622	10.499+0/-0.008	116.33

STYLE PS1800 GLASS FILLED PTFE PISTON SEALS

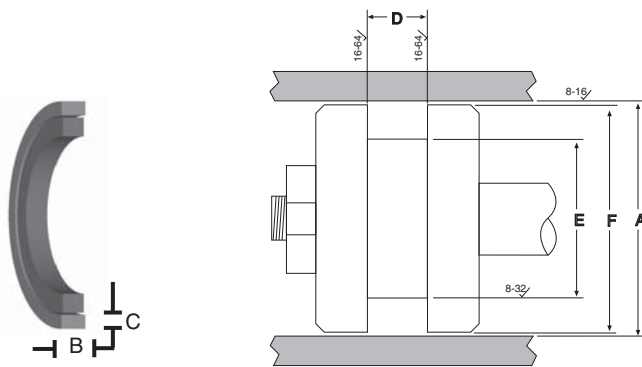
Part Number	A Bore Dia. Tol. +0.002 -0.000	B Seal Height	C Cross Section	D Groove Width Tol. ±0.002	E Groove Dia. Tol. ±0.002	F Piston Dia.	List Price
PS1800-176	11.000	0.362-0.367	0.195-0.210	0.379	10.122	10.999+0/-0.008	\$ 124.29
PS1800-192	12.000	0.362-0.367	0.195-0.210	0.379	11.122	11.999+0/-0.008	128.91
PS1800-208	13.000	0.362-0.367	0.195-0.210	0.379	12.122	12.999+0/-0.008	116.36
PS1800-224	14.000	0.362-0.367	0.195-0.210	0.379	13.122	13.999+0/-0.008	139.83

INSTALLATION OF PTFE PISTON SEALS

Installing PTFE piston seals is not always an easy task. The use of installation tools is recommended but often not convenient when working with a wide variety of sizes and applications. Finger installations are practical with rings of smaller cross-sections. Using fingers or a rounded plastic stick, knead the ring over the piston into the groove. With rings of larger cross-sections it may be necessary to heat the ring. Warming the ring in water or oil at 130° F or 140° F for about 5 minutes will soften the material for easier installation. Always avoid inconsistent stretching or overstretching of the PTFE seal. To prevent the PTFE ring from snapping into the wrong groove, cover wear ring grooves with plastic tape. After seal installation, assembly of the cylinder may be difficult if the piston seal is loose on the piston or the cylinder has an inadequate leading edge chamfer. In such cases, compress the piston seal with belting or a suitable hose clamp. If the piston seal must pass threads or any other sharp edges during the cylinder assembly, cover the edges with plastic tape or wrap.

STYLE PS1850 BRONZE FILLED PISTON SEALS

The PS1850 piston seal can be used interchangeably with the PS1800 style piston seal. This seal provides improved heat resistance for demanding applications. **NOTE:** Piston diameter "F" dimensions are given for pistons without wear rings.



SEAL INFORMATION

MATERIAL	BRONZE FILLED PTFE SEALS RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +220° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Piston Seal) (Type of Seal) - (Size)

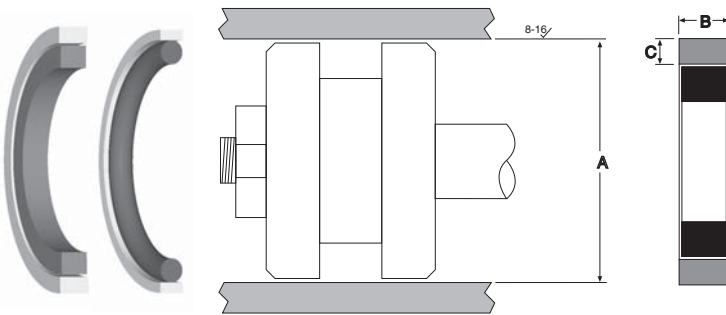
Part Number	A - Bore Diameter Tol. +0.002 -0.000	B Seal Height	C Seal Cross Section	D - Groove Width Tol. ±.002	E - Groove Diameter Tol. ±.002	F Piston Diameter	List Price
PS1850-16	1.000	0.116-0.121	0.067-0.073	0.129	0.690	0.999+0/-0.005	\$ 7.41
PS1850-20	1.250	0.116-0.121	0.067-0.073	0.129	0.940	1.249+0/-0.005	7.18
PS1850-24	1.500	0.116-0.121	0.067-0.073	0.129	1.190	1.499+0/-0.005	7.49
PS1850-28	1.750	0.116-0.121	0.067-0.073	0.129	1.440	1.749+0/-0.005	8.07
PS1850-32	2.000	0.116-0.121	0.067-0.073	0.129	1.690	1.999+0/-0.005	9.28
PS1850-36	2.250	0.116-0.121	0.067-0.073	0.129	1.940	2.249+0/-0.005	9.51
PS1850-40	2.500	0.116-0.121	0.067-0.073	0.129	2.190	2.499+0/-0.005	10.16
PS1850-44	2.750	0.116-0.121	0.067-0.073	0.129	2.440	2.749+0/-0.005	11.27
PS1850-48	3.000	0.269-0.274	0.087-0.093	0.284	2.440	2.999+0/-0.006	12.06
PS1850-52	3.250	0.269-0.274	0.087-0.093	0.284	2.690	3.249+0/-0.006	14.34
PS1850-56	3.500	0.269-0.274	0.087-0.093	0.284	2.940	3.499+0/-0.006	15.80
PS1850-60	3.750	0.269-0.274	0.087-0.093	0.284	3.190	3.749+0/-0.006	17.94
PS1850-64	4.000	0.269-0.274	0.087-0.093	0.284	3.440	3.999+0/-0.006	19.94
PS1850-68	4.250	0.269-0.274	0.087-0.093	0.284	3.690	4.249+0/-0.006	23.04
PS1850-72	4.500	0.269-0.274	0.087-0.093	0.284	3.940	4.499+0/-0.006	24.18

STYLE PS1850 BRONZE FILLED PISTON SEALS

Part Number	A - Bore Diameter Tol. +0.002 -0.000	B Seal Height	C Seal Cross Section	D - Groove Width Tol. ±.002	E - Groove Diameter Tol. ±.002	F Piston Diameter	List Price
PS1850-76	4.750	0.269-0.274	0.087-0.093	0.284	4.190	4.749+0/-0.006	\$ 24.92
PS1850-80	5.000	0.269-0.274	0.087-0.093	0.284	4.440	4.999+0/-0.006	26.10
PS1850-84	5.250	0.362-0.367	0.137-0.147	0.379	4.488	5.249+0/-0.007	30.75
PS1850-88	5.500	0.362-0.367	0.137-0.147	0.379	4.738	5.499+0/-0.007	34.38
PS1850-92	5.750	0.362-0.367	0.137-0.147	0.379	4.988	5.749+0/-0.007	37.13
PS1850-96	6.000	0.362-0.367	0.137-0.147	0.379	5.238	5.999+0/-0.007	39.88
PS1850-104	6.500	0.362-0.367	0.137-0.147	0.379	5.738	6.499+0/-0.007	40.25
PS1850-112	7.000	0.362-0.367	0.137-0.147	0.379	6.238	6.999+0/-0.007	40.98
PS1850-116	7.250	0.362-0.367	0.137-0.147	0.379	6.488	7.249+0/-0.007	41.04
PS1850-120	7.500	0.362-0.367	0.137-0.147	0.379	6.738	7.499+0/-0.007	41.11
PS1850-124	7.750	0.362-0.367	0.137-0.147	0.379	6.988	7.499+0/-0.007	44.37
PS1850-128	8.000	0.362-0.367	0.137-0.147	0.379	7.238	7.999+0/-0.007	46.91
PS1850-132	8.250	0.362-0.367	0.137-0.147	0.379	7.488	8.249+0/-0.007	50.16
PS1850-136	8.500	0.362-0.367	0.137-0.147	0.379	7.738	8.499+0/-0.007	55.07
PS1850-144	9.000	0.362-0.367	0.195-0.210	0.379	8.122	8.999+0/-0.008	63.34
PS1850-152	9.500	0.362-0.367	0.195-0.210	0.379	8.622	9.499+0/-0.008	79.99
PS1850-160	10.000	0.362-0.367	0.195-0.210	0.379	9.122	9.999+0/-0.008	87.99
PS1850-176	11.000	0.362-0.367	0.195-0.210	0.379	10.122	10.999+0/-0.008	155.37
PS1850-192	12.000	0.362-0.367	0.195-0.210	0.379	11.122	11.999+0/-0.008	161.15
PS1850-208	13.000	0.362-0.367	0.195-0.210	0.379	12.122	12.999+0/-0.008	167.16
PS1850-224	14.000	0.362-0.367	0.195-0.210	0.379	13.122	13.999+0/-0.008	181.12

STYLE PS1900 NON-STANDARD PTFE PISTON SEALS

These specifically sized seals are for certain OEM cylinders (primarily Heil & Timberjack). Their use is intended for existing housings where the old seals are dimensionally comparable to the table below. Please call your sales representative if you need additional assistance.



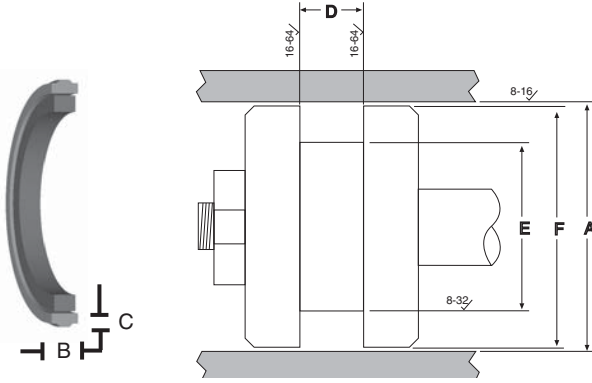
SEAL INFORMATION

MATERIAL	GLASS FILLED PTFE SEAL RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +220° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Piston Seal) (Type of Seal) - (Size)

Part Number	A - Bore Diameter	B - Seal Height	C - Seal Cross-Section	Energizer Ring	List Price
PS1900-32	2	0.150	0.085	568-130	\$ 14.90
PS1900-40	2-1/2	0.245	0.092	580-329	27.16
PS1900-56	3-1/2	0.370	0.145	580-410-1/2	29.95
PS1900-64	4	0.370	0.145	580-414	33.29
PS1900-64A	4	0.310	0.092	580-341	22.68
PS1900-72	4-1/2	0.370	0.142	568-419	38.77
PS1900-72A	4-1/2	0.310	0.092	580-345	21.21
PS1900-76	4-3/4	0.225	0.160	568-345	60.25
PS1900-80A	5	0.360	0.145	4-11/16 OD X 0.265 C/S	32.48

STYLE PS2700 POLYURETHANE PISTON SEALS

This seal, molded from high grade polyester with 5% glass fiber and 5% PTFE, may retrofit the PS1800 seals, considering all dimensions are comparable. This seal material, with a high degree of memory, stretches over the piston and snaps in the groove for immediate assembly. These seals also feature low friction and high abrasion and extrusion resistance which helps to eliminate assembly damage. Piston diameter "F" dimensions are given for pistons without wear rings.



SEAL INFORMATION

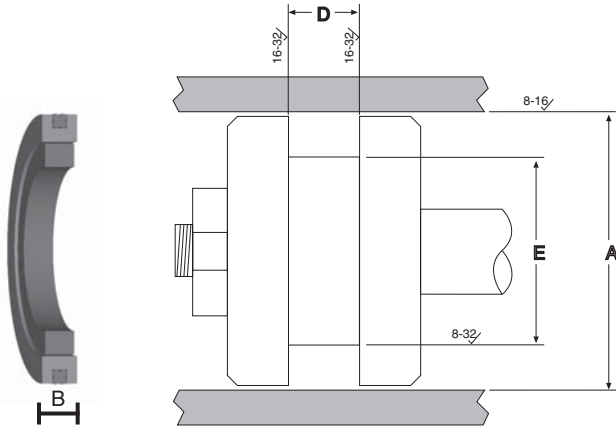
MATERIAL	GLASS/PTFE FILLED POLYESTER SEAL, RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +220° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Piston Seal) (Type of Seal) - (Size)

Part Number	A - Bore Diameter Tol. +0.002 -0.000	B Seal Height	C Seal Cross Section	D - Groove Width Tol. ±.002	E - Groove Diameter Tol. ±.002	F Piston Diameter	List Price
PS2700-16	1.000	0.116-0.121	0.067-0.073	0.129	0.691	0.999+0/-0.009	\$ 4.82
PS2700-20	1.250	0.116-0.121	0.067-0.073	0.129	0.941	1.249+0/-0.009	4.82
PS2700-24	1.500	0.116-0.121	0.067-0.073	0.129	1.191	1.499+0/-0.009	5.03
PS2700-28	1.750	0.116-0.121	0.067-0.073	0.129	1.441	1.749+0/-0.009	5.03
PS2700-32	2.000	0.116-0.121	0.067-0.073	0.129	1.691	1.999+0/-0.009	5.43
PS2700-36	2.250	0.116-0.121	0.067-0.073	0.129	1.941	2.249+0/-0.009	5.73
PS2700-40	2.500	0.116-0.121	0.067-0.073	0.129	2.191	2.499+0/-0.009	5.97
PS2700-40A	2.500	0.269-0.274	0.087-0.093	0.284	1.962	2.499+0/-0.009	8.58
PS2700-44	2.750	0.116-0.121	0.067-0.073	0.129	2.441	2.749+0/-0.009	6.14
PS2700-48	3.000	0.269-0.274	0.087-0.093	0.284	2.462	2.999+0/-0.014	7.56
PS2700-52	3.250	0.269-0.274	0.087-0.093	0.284	2.712	3.249+0/-0.014	8.98
PS2700-56	3.500	0.269-0.274	0.087-0.093	0.284	2.962	3.499+0/-0.014	9.12
PS2700-60	3.750	0.269-0.274	0.087-0.093	0.284	3.212	3.749+0/-0.014	9.23
PS2700-64	4.000	0.269-0.274	0.087-0.093	0.284	3.462	3.999+0/-0.014	9.45
PS2700-68	4.250	0.269-0.274	0.087-0.093	0.284	3.712	4.249+0/-0.014	9.50
PS2700-72	4.500	0.269-0.274	0.087-0.093	0.284	3.962	4.499+0/-0.014	9.81
PS2700-76	4.750	0.269-0.274	0.087-0.093	0.284	4.212	4.749+0/-0.014	10.16
PS2700-80	5.000	0.269-0.274	0.087-0.093	0.284	4.462	4.999+0/-0.014	11.67
PS2700-84	5.250	0.362-0.367	0.137-0.147	0.379	4.504	5.249+0/-0.014	16.28
PS2700-88	5.500	0.362-0.367	0.137-0.147	0.379	4.754	5.499+0/-0.014	16.42
PS2700-96	6.000	0.362-0.367	0.137-0.147	0.379	5.254	5.999+0/-0.014	17.16
PS2700-100	6.250	0.362-0.367	0.137-0.147	0.379	5.504	6.249+0/-0.014	17.67
PS2700-104	6.500	0.362-0.367	0.137-0.147	0.379	5.754	6.499+0/-0.014	17.69
PS2700-112	7.000	0.362-0.367	0.137-0.147	0.379	6.250	6.999+0/-0.014	17.96
PS2700-116	7.250	0.362-0.367	0.137-0.147	0.379	6.504	7.249+0/-0.014	18.47
PS2700-128	8.000	0.362-0.367	0.137-0.147	0.379	7.254	7.999+0/-0.014	18.89
PS2700-136	8.500	0.362-0.367	0.137-0.147	0.379	7.754	8.499+0/-0.014	21.53
PS2700-144	9.000	0.362-0.367	0.195-0.210	0.379	8.137	8.999+0/-0.014	44.05
PS2700-160	10.000	0.362-0.367	0.195-0.210	0.379	9.137	9.999+0/-0.014	52.03

STYLE PSQ BRONZE FILLED PISTON SEALS

These piston seals provide bi-directional, low friction sealing with increased stability and superior leakage control. The square cut energizer provides low pressure sealing and eliminates backside leakage. This seal also effectively seals between different fluids on each side of the piston seal, making gas/liquid sealing combinations possible.

NOTE: Piston diameter "F" dimensions are given for pistons without wear rings.



SEAL INFORMATION

MATERIAL	40% BRONZE FILLED PTFE SEAL RUBBER ENERGIZER AND QUAD® RING
TEMPERATURE RANGE	-40° TO +220° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(PISTON SEAL) - (SIZE)

MAXIMUM EXTRUSION GAP

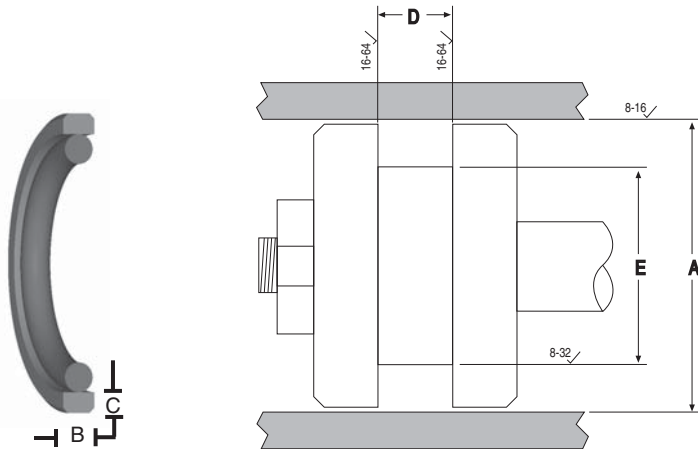
PRESSURE	1000 PSI	3000 PSI	5000 PSI
MAX DIAM. GAP BORE 1-1/2" - 5"	0.024"	0.008"	0.005"
MAX DIAM. GAP BORE 6" - 10"	0.030"	0.010"	0.006"

Part Number	A Bore Diameter	B Seal Height	D Groove Width	E Groove Diameter	List Price
PSQ-24	1.500 +0.003/-0	0.271	0.288/0.293	.884 +0/-0.003	\$ 31.06
PSQ-32	2.000 +0.003/-0	0.271	0.288/0.293	1.384 +0/-0.003	40.39
PSQ-36	2.225 +0.004/-0	0.271	0.288/0.293	1.630 +0/-0.003	41.79
PSQ-40	2.500 +0.004/-0	0.271	0.288/0.293	1.634 +0/-0.004	44.04
PSQ-48	3.000 +0.004/-0	0.271	0.288/0.293	2.384 +0/-0.004	47.52
PSQ-52	3.250 +0.004/-0	0.271	0.288/0.293	2.634 +0/-0.004	50.23
PSQ-56	3.500 +0.004/-0	0.271	0.288/0.293	2.884 +0/-0.004	51.25
PSQ-64	4.000 +0.004/-0	0.271	0.288/0.293	3.384 +0/-0.004	51.42
PSQ-72	4.500 +0.004/-0	0.271	0.288/0.293	3.884 +0/-0.004	58.43
PSQ-80	5.000 +0.004/-0	0.271	0.288/0.293	4.384 +0/-0.004	63.29
PSQ-88	5.500 +0.005/-0	0.362	0.375/0.380	4.660 +0/-0.005	77.08
PSQ-96	6.000 +0.005/-0	0.362	0.375/0.380	5.160 +0/-0.005	82.98
PSQ-104	6.500 +0.005/-0	0.362	0.375/0.380	5.660 +0/-0.005	100.85
PSQ-112	7.000 +0.005/-0	0.362	0.375/0.380	6.160 +0/-0.006	89.43
PSQ-128	8.000 +0.006/-0	0.362	0.375/0.380	7.160 +0/-0.006	98.12
PSQ-160	10.000 +0.006/-0	0.362	0.375/0.380	9.160 +0/-0.006	114.58

STYLE PS2470 BRONZE FILLED PTFE PISTON SEALS



Molded from a PTFE base material with 40% bronze and machined to exacting tolerances, this seal exhibits low friction and high strength. Corners are chamfered for cold flow resistance.



SEAL INFORMATION

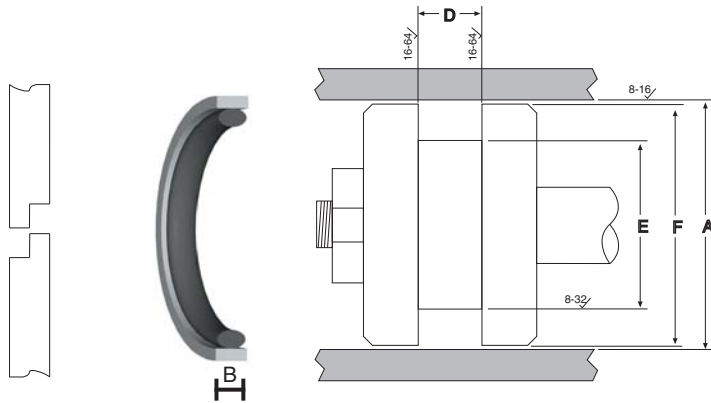
MATERIAL	40% BRONZE FILLE PTFE RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +220° F
PRESSURE RANGE	0 TO 5,000
PART NUMBER	(Piston Seal) (Type of Seal)-(Size)

PISTON SEAL ASSEMBLIES

Part Number	A Bore Diameter	B Seal Height	C Seal Cross Section	D Groove Width	E Groove Diameter	List Price
PS2472-32	2.000	0.150	0.100	0.168 ±0.002	1.576 ±0.002	\$ 12.08
PS2472-40	2.500	0.150	0.100	0.168 ±0.002	2.076 ±0.002	12.79
PS2472-44	2.750	0.150	0.100	0.168 ±0.002	2.326 ±0.002	17.56
PS2472-48	3.000	0.150	0.100	0.168 ±0.002	2.576 ±0.002	14.15
PS2473-52	3.250	0.225	0.140	0.249 ±0.002	2.634 ±0.003	22.59
PS2473-56	3.500	0.225	0.140	0.249 ±0.002	2.884 ±0.003	23.26
PS2473-64	4.000	0.225	0.140	0.249 ±0.002	3.384 ±0.003	25.69
PS2473-68	4.250	0.225	0.145	0.249 ±0.002	3.634 ±0.003	24.40
PS2473-72	4.500	0.225	0.140	0.249 ±0.002	3.884 ±0.003	29.91
PS2473-80	5.000	0.225	0.140	0.249 ±0.002	4.384 ±0.003	30.55
PS2474-88	5.500	0.290	0.195	0.322 ±0.002	4.670 ±0.004	40.18
PS2473-96	6.000	0.225	0.140	0.249 ±0.002	5.384 ±0.004	36.93
PS2474-96	6.000	0.290	0.195	0.322 ±0.002	5.170 ±0.004	45.99
PS2474-104	6.500	0.290	0.195	0.322 ±0.002	5.670 ±0.004	47.16
PS2474-112	7.000	0.290	0.195	0.322 ±0.002	6.170 ±0.004	49.26
PS2474-120	7.500	0.290	0.195	0.322 ±0.002	6.670 ±0.004	53.48
PS2474-128	8.000	0.290	0.195	0.322 ±0.002	7.170 ±0.004	55.97
PS2474-152	9.500	0.290	0.195	0.322 ±0.002	8.670 ±0.004	66.33
PS2474-160	10.000	0.290	0.195	0.322 ±0.002	9.170 ±0.004	94.03

STYLE PS914 NYLON STEP CUT PISTON SEALS

NOTE: Piston diameter "F" dimensions are given for pistons without wear rings.



SEAL INFORMATION

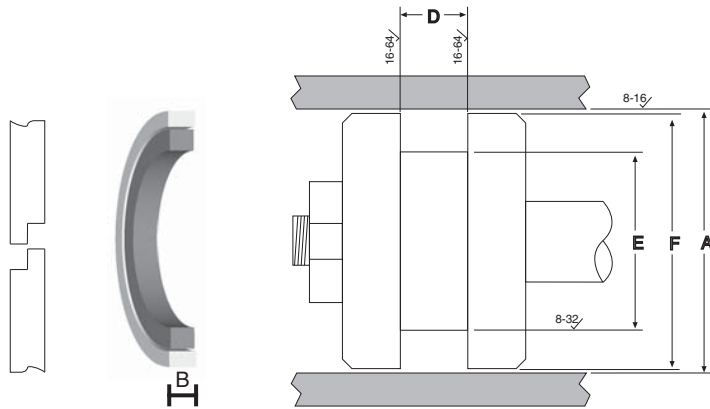
MATERIAL	GLASS FILLED NYLON SEAL RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +220°
PRESSURE RANGE	0 TO 6,000 PSI
PART NUMBER	(Piston Seal) (Type of Seal)-(Size)-(Groove Width)

PISTON SEAL ASSEMBLIES

Part Number	A - Bore Diameter Tol. +0.005/-0	B Seal Height	D - Groove Width Tol +0.005/-0	E - Groove Diameter Tol. +.0/-0.005	F Piston Diameter	List Price
PS914-2000-282	2.000	0.274	0.282	1.462	1.999+0/-0.065	\$ 43.10
PS914-2250-282	2.250	0.274	0.282	1.712	2.249+0/-0.065	44.49
PS914-2500-282	2.500	0.274	0.282	1.962	2.499+0/-0.065	45.13
PS914-2500-312	2.500	0.306	0.312	1.908	2.499+0/-0.065	52.31
PS914-2750-282	2.750	0.274	0.282	2.212	2.749+0/-0.065	46.27
PS914-3000-282	3.000	0.274	0.282	2.442	2.999+0/-0.080	54.20
PS914-3000-312	3.000	0.306	0.312	2.408	2.999+0/-0.080	52.94
PS914-3500-282	3.500	0.274	0.282	2.942	3.499+0/-0.080	62.68
PS914-3500-312	3.500	0.306	0.312	2.908	3.499+0/-0.080	64.36
PS914-4000-282	4.000	0.274	0.282	3.442	3.999+0/-0.080	64.02
PS914-4000-312	4.000	0.306	0.312	3.408	3.999+0/-0.080	67.33
PS914-4250-282	4.250	0.274	0.282	3.692	4.249+0/-0.080	54.55
PS914-4265-282	4.265	0.274	0.282	3.707	4.264+0/-0.080	56.04
PS914-4500-282	4.500	0.274	0.282	3.942	4.499+0/-0.080	72.64
PS914-4500-312	4.500	0.306	0.312	3.908	4.499+0/-0.080	71.89
PS914-4750-282	4.750	0.274	0.282	4.192	4.749+0/-0.080	70.68
PS914-5000-282	5.000	0.274	0.282	4.442	4.999+0/-0.080	70.94
PS914-5000-375	5.000	0.370	0.377	4.240	4.999+0/-0.080	84.57
PS914-5250-375	5.250	0.370	0.377	4.490	5.249+0/-0.100	84.57
PS914-5500-375	5.500	0.370	0.377	4.740	5.499+0/-0.100	84.57
PS914-6000-375	6.000	0.370	0.377	5.240	5.999+0/-0.100	89.71
PS914-6500-375	6.500	0.370	0.377	5.740	6.499+0/-0.100	90.40
PS914-7000-375	7.000	0.370	0.377	6.240	6.999+0/-0.100	90.82
PS914-7500-375	7.500	0.370	0.377	6.740	7.499+0/-0.100	92.63
PS914-8000-375	8.000	0.370	0.377	7.240	7.999+0/-0.100	93.60
PS914-8500-375	8.500	0.370	0.377	7.740	8.499+0/-0.100	94.73
PS914-9000-375	9.000	0.370	0.377	8.124	8.999+0/-0.110	166.98
PS914-9500-375	9.500	0.370	0.377	8.624	9.499+0/-0.110	181.89
PS914-10000-375	10.000	0.370	0.377	9.124	9.999+0/-0.110	208.96

STYLE PS2000 NYLON STEP CUT PISTON SEALS

Some PS2000 piston seals utilize a round instead of a square energizer. Also, piston diameter "F" dimensions are given for pistons without wear rings. Many sizes shown are completely interchangeable with style PS914 piston seals.



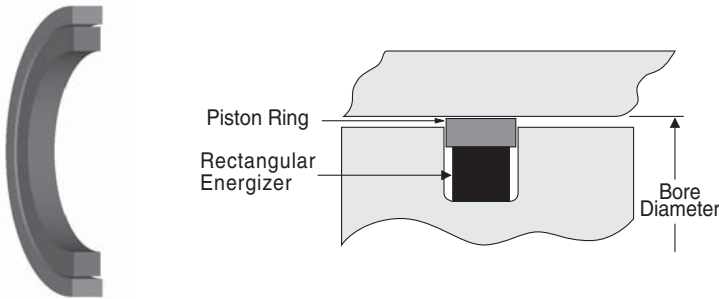
SEAL INFORMATION

MATERIAL	GLASS FILLED NYLON SEAL RUBBER ENERGIZER
TEMPERATURE RANGE	-40° TO +220°
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Piston Seal) (Type of Seal)-(Size)- (Groove Width)

Part Number	A - Bore Diameter Tol. +.005/-0	B Seal Height	D - Groove Width Tol. +.005/-0	E - Groove Diameter Tol. +.0/-0.005	F Piston Diameter	List Price
PS2027-28	1.750	0.274	0.282	1.155	1.749 +.0/-0.052	\$ 10.34
PS2027-32	2.000	0.274	0.282	1.462	1.999 +.0/-0.065	15.98
PS2027-36	2.250	0.274	0.282	1.712	2.249 +.0/-0.065	17.00
PS2027-40	2.500	0.274	0.282	1.962	2.499 +.0/-0.065	19.18
PS2031-48	3.000	0.305	0.312	2.408	2.999 +.0/-0.080	20.21
PS2027-48	3.040	0.274	0.282	2.462	3.039 +.0/-0.080	18.73
PS2027-52	3.250	0.274	0.282	2.712	3.249 +.0/-0.080	20.66
PS2031-56	3.500	0.305	0.312	2.908	3.499 +.0/-0.080	22.13
PS2037-56	3.500	0.368	0.375	2.740	3.499 +.0/-0.080	22.13
PS2027-56	3.500	0.274	0.282	2.942	3.499 +.0/-0.080	20.06
PS2031-64	4.000	0.305	0.312	3.408	3.999 +.0/-0.080	23.45
PS2027-64	4.000	0.274	0.282	3.442	3.999 +.0/-0.080	21.53
PS2031-72	4.500	0.305	0.312	3.908	4.499 +.0/-0.080	29.26
PS2027-72	4.500	0.274	0.282	3.942	4.499 +.0/-0.080	22.85
PS2031-80	5.000	0.305	0.312	4.408	4.999 +.0/-0.080	31.03
PS2037-80	5.000	0.368	0.375	4.240	4.999 +.0/-0.080	31.03
PS2031-88	5.500	0.305	0.312	4.908	5.499 +.0/-0.100	33.70
PS2037-88	5.500	0.368	0.375	4.740	5.499 +.0/-0.100	33.70
PS2037-96	6.000	0.368	0.375	5.240	5.999 +.0/-0.100	28.71
PS2037-100	6.250	0.368	0.375	5.490	6.249 +.0/-0.100	119.41
PS2037-104	6.500	0.368	0.375	5.740	6.499 +.0/-0.100	54.23
PS2037-112	7.000	0.368	0.375	6.240	6.999 +.0/-0.100	70.96

CATERPILLAR® 2 PIECE PISTON SEALS

NOTE: Caterpillar® part numbers are used as a reference only. We do not imply that these parts are original equipment parts.



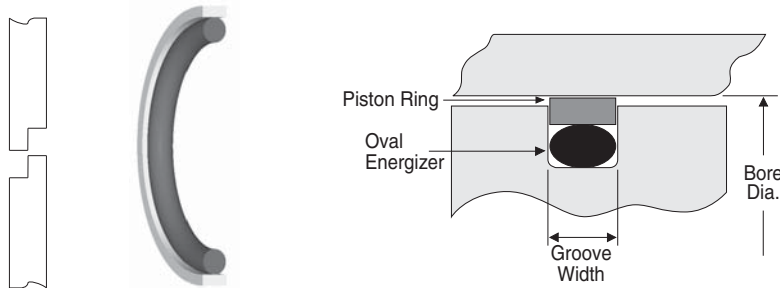
PISTON SEAL ASSEMBLIES

Part Number	Bore Diameter	List Price
CTC-5J7004A	2	\$ 8.86
CTC-8J6213A	2-1/2	10.55
CTC-5J7010A	2-3/4	16.11
CTC-6J1972A	3	11.86
CTC-6J0793A	3-1/4	16.84
CTC-5J7013A	3-1/2	14.75
CTC-5J8011A	3-3/4	21.43
CTC-5J5402A	4	16.67

Part Number	Bore Diameter	List Price
CTC-5J7854A	4-1/4	\$ 18.00
CTC-5J4986A	4-1/2	20.80
CTC-5J4987A	4-3/4	22.73
CTC-5J5020A	5	24.63
CTC-5J7234A	5-1/4	29.37
CTC-5J4988A	5-1/2	29.10
CTC-5J4989A	6	27.83
CTC-5J4990A	6-1/4	28.44

Part Number	Bore Diameter	List Price
CTC-5J4991A	6-1/2	\$ 31.94
CTC-5J4997A	7	34.63
CTC-5J4993A	7-1/4	31.10
CTC-5J5559A	8-1/4	39.34
CTC-6J9385A	8-1/2	43.67
CTC-5J7019A	9-1/4	49.13

CATERPILLAR® 2 PIECE STEP-CUT PISTON SEALS



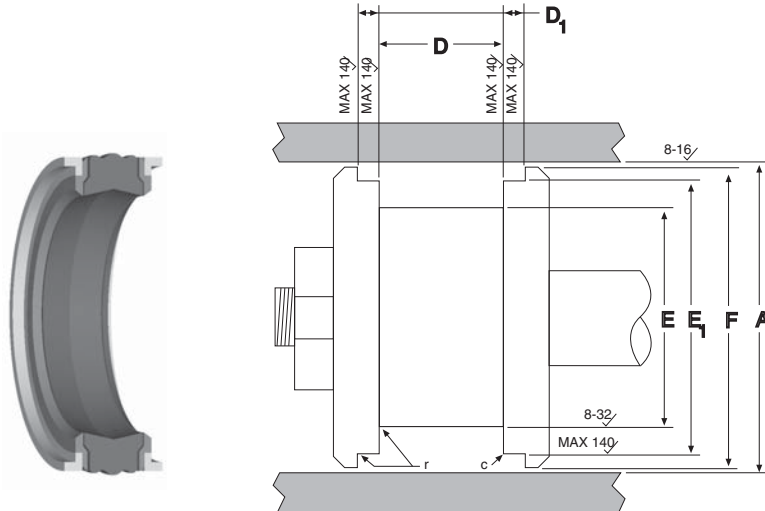
Part Number	Bore Diameter	Groove Width	List Price
CTC-9X7337	3	0.192	\$ 22.64
CTC-4T8054	3-1/2	0.192	32.43
CTC-9X7274	3-3/4	0.192	25.61
CTC-8C9160	4	0.252	37.69
CTC-8C9164	4-1/4	0.252	32.21
CTC-4T5172	4-1/2	0.500	56.32
CTC-9X7269	4-1/2	0.252	57.01
CTC-9X7264	5	0.379	45.91
CTC-8T1787	5	0.630	62.69
CTC-8T0763	5-1/4	0.379	37.45
CTC-4T5173	5-1/2	0.629	35.15
CTC-6E0465	5-1/2	0.379	57.39

Part Number	Bore Diameter	Groove Width	List Price
CTC-4T4144	6	0.629	\$ 38.95
CTC-4T8695	6-1/2	0.629	40.68
CTC-8T1789	7	0.629	33.61
CTC-8T1790	7-1/4	0.629	69.83
CTC-8T1792	7-3/4	0.629	40.01
CTC-8T1793	8-1/4	0.629	60.48
CTC-9T0119	8-1/2	0.629	61.29
CTC-8T1794	10	0.690	98.12
CTC-8T1795	10-1/4	.0690	100.75
CTC-8T1796	10-1/2	0.690	102.41
CTC-8T1797	11-1/2	0.690	129.09

STYLE PSA PISTON SEALS



Designed to fit on one or two piece pistons, this piston seal employs a nitrile seal for high sealability, nylon split back-ups for extrusion resistance, and two split bearing rings. No further support bearings are required.



SEAL INFORMATION

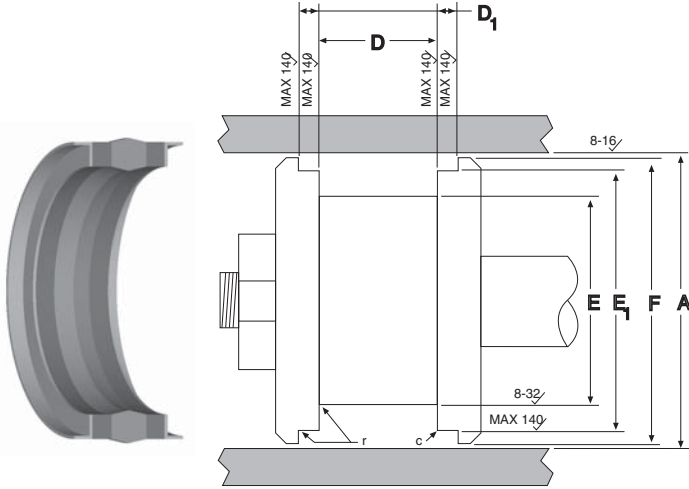
MATERIAL	90A NITRILE SEAL NYLON BACK-UP NYLON BEARING
TEMPERATURE RANGE	-22° TO +212° F
PRESSURE RANGE	0 TO 6,000 PSI
MAXIMUM SPEED	1.5 Ft/Sec.
PART NUMBER	(Prefix) - (Size)

PISTON SEAL ASSEMBLIES

Part Number	A Bore Diameter	D Seal Groove Width Tol. +0.035/+0.025	D1 Bearing Groove Width Tol. +0/-0.005	E Seal Groove Diameter	E1 Bearing Groove Diameter	F Piston Diameter	List Price
PSA-1750	1.750+0.006/-0	0.750	0.250	1.125±0.003	1.569+0/-0.002	1.698±0.003	\$ 8.16
PSA-2000	2.000+0.007/-0	0.750	0.250	1.375±0.003	1.820+0/-0.002	1.948±0.004	8.95
PSA-2250	2.250+0.007/-0	0.750	0.250	1.625±0.003	2.069+0/-0.003	2.197±0.004	17.57
PSA-2375	2.375+0.007/-0	0.750	0.250	1.750±0.003	2.194+0/-0.003	2.322±0.004	11.39
PSA-2500	2.500+0.007/-0	0.750	0.250	1.875±0.003	2.318+0/-0.003	2.446±0.004	12.63
PSA-2750	2.750+0.007/-0	0.943	0.250	2.000±0.004	2.522+0/-0.003	2.685±0.004	21.00
PSA-3000	3.000+0.007/-0	0.943	0.250	2.250±0.004	2.771+0/-0.003	2.935±0.004	13.53
PSA-3250	3.250+0.009/-0	0.943	0.250	2.500±0.004	3.021+0/-0.003	3.184±0.004	23.38
PSA-3250A	3.250+0.009/-0	0.772	0.245	2.625±0.004	3.021+0/-0.003	3.184±0.004	23.70
PSA-3500	3.500+0.009/-0	0.943	0.250	2.750±0.004	3.270+0/-0.003	3.434±0.004	14.75
PSA-3500A	3.500+0.009/-0	0.772	0.295	2.850±0.004	3.272+0/-0.003	3.460±0.004	23.24
PSA-3750	3.750+0.009/-0	0.943	0.250	3.000±0.004	3.520+0/-0.003	3.683±0.004	26.28
PSA-4000	4.000+0.009/-0	0.943	0.250	3.250±0.004	3.770+0/-0.003	3.933±0.004	17.33
PSA-4000A	4.000+0.009/-0	1.375	0.425	3.250±0.004	3.709+0/-0.003	3.933±0.004	47.51
PSA-4000B	4.000+0.009/-0	0.772	0.245	3.375±0.004	3.772+0/-0.003	3.960±0.004	29.61
PSA-4500	4.500+0.009/-0	1.250	0.250	3.500±0.004	4.229+0/-0.003	4.422±0.005	34.98
PSA-4500A	4.500+0.009/-0	1.750	0.550	3.500±0.004	4.229+0/-0.003	4.422±0.005	58.70
PSA-5000	5.000+0.010/-0	1.250	0.400	4.000±0.004	4.709+0/-0.004	4.902±0.005	43.59
PSA-5000A	5.000+0.010/-0	0.960	0.245	4.250±0.004	4.772+0/-0.004	4.960±0.005	40.92
PSA-6000	6.000+0.010/-0	1.250	0.375	5.000±0.004	5.709+0/-0.004	5.902±0.005	53.88
PSA-6000A	6.000+0.010/-0	1.750	0.500	5.000±0.004	5.675+0/-0.004	5.900±0.005	68.64

STYLE PSA-58 PISTON SEALS

Style PSA-58 piston seals combine a heavy duty, fabric reinforced seal with two polyacetal "L" bearings. This construction allows the seal to withstand pressures up to 5,000 PSI. "L" bearings also react to pressure to prevent extrusion and support the piston. For 2-piece pistons.



SEAL INFORMATION

MATERIAL	FABRIC REINFORCED NITRILE SEAL POLYACETAL ANTI-EXTRUSION RING
TEMPERATURE RANGE	-22° TO +212° F
PRESSURE RANGE	0 TO 5,000 PSI
MAXIMUM SPEED	1.5 Ft/Sec.
PART NUMBER	(Prefix) (Type of Seal) - (Size)

Part Number	A Bore Diameter	D Seal Groove Width Tol. +0.035/+0.025	D1 Bearing Groove Width Tol. +0/+0.005	E Seal Groove Diameter	E1 Bearing Groove Diameter	F Piston Diameter	List Price
PSA-58-1000	1.000	0.596	0.182	0.625	0.865	0.865	\$ 12.63
PSA-58-1250	1.250	0.750	0.250	0.750	1.115	1.218	15.09
PSA-58-1375	1.375	0.750	0.250	0.875	1.241	1.343	17.12
PSA-58-1500	1.500	0.750	0.250	1.000	1.371	1.468	24.13
PSA-58-1625	1.625	0.937	0.250	1.000	1.428	1.562	39.45
PSA-58-1750	1.750	0.937	0.250	1.125	1.555	1.687	28.03
PSA-58-1875	1.875	0.937	0.250	1.250	1.679	1.812	22.81
PSA-58-2000	2.000	0.937	0.250	1.375	1.805	1.937	29.27
PSA-58-2000B	2.000	0.750	0.250	1.375	1.802	1.937	15.76
PSA-58-2250	2.250	0.937	0.250	1.625	2.055	2.187	32.48
PSA-58-2375	2.375	0.937	0.250	1.750	2.180	2.312	20.80
PSA-58-2500	2.500	0.937	0.250	1.875	2.305	2.437	36.39
PSA-58-2625	2.625	0.937	0.250	2.000	2.428	2.562	19.78
PSA-58-2750	2.750	1.187	0.250	2.000	2.485	2.687	42.32
PSA-58-3000	3.000	1.187	0.250	2.250	2.735	2.937	44.58
PSA-58-3000A	3.000	0.937	0.250	2.250	2.774	2.937	27.27
PSA-58-3000B	3.000	0.843	0.250	2.250	2.732	2.937	25.48
PSA-58-3250	3.250	1.187	0.250	2.500	2.985	3.187	46.41
PSA-58-3500	3.500	1.187	0.250	2.750	3.235	3.437	49.36
PSA-58-3750	3.750	1.187	0.250	3.000	3.485	3.687	51.53
PSA-58-4000	4.000	1.187	0.250	3.250	3.735	3.937	57.64
PSA-58-4250	4.250	1.187	0.250	3.500	3.982	4.187	40.59
PSA-58-4500	4.500	1.500	0.375	3.500	4.234	4.437	69.04
PSA-58-4750	4.750	1.500	0.375	3.750	4.485	4.687	70.59
PSA-58-5000	5.000	1.500	0.375	4.000	4.735	4.937	79.24

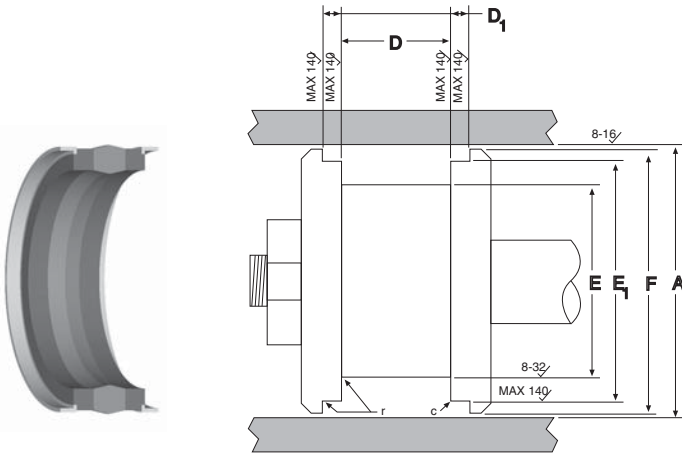
STYLE PSA-58 PISTON SEALS



Part Number	A Bore Diameter	D Seal Groove Width Tol. +0.035/+0.025	D1 Bearing Groove Width Tol. +0/+0.005	E Seal Groove Diameter	E1 Bearing Groove Diameter	F Piston Diameter	List Price
PSA-58-5250	5.250	1.500	0.375	4.250	4.982	5.187	\$ 44.27
PSA-58-5500	5.500	1.500	0.375	4.500	5.236	5.437	84.47
PSA-58-5750	5.750	1.500	0.375	4.750	5.484	5.687	154.56
PSA-58-6000	6.000	1.500	0.375	5.000	5.736	5.937	89.95
PSA-58-6500	6.500	1.500	0.375	5.500	6.236	6.437	134.04
PSA-58-7000	7.000	1.500	0.375	6.000	6.736	6.937	142.16
PSA-58-8000	8.000	1.250	0.375	7.000	7.740	7.937	179.32
PSA-58-10000	10.00	1.250	0.375	9.000	9.740	9.937	356.64

STYLE PSA-59 PISTON SEALS

This style is designed for 2 piece piston. The seal is a molded Nitrile rubber element with bonded rubberized fabric reinforcement and two anti-extrusion polyacetal bearings.



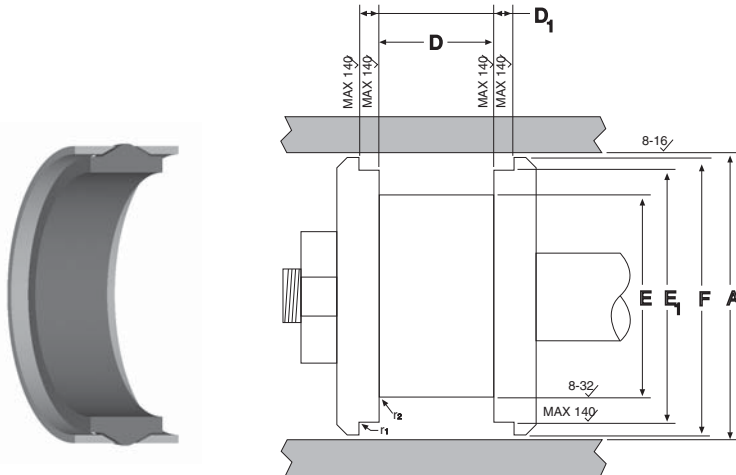
SEAL INFORMATION

MATERIAL	FABRIC REINFORCED NITRILE SEAL POLYACETAL ANTI-EXTRUSION RING
TEMPERATURE RANGE	-22° TO +212° F
PRESSURE RANGE	0 TO 5,000 PSI
MAXIMUM SPEED	1.5 Ft/Sec.
PART NUMBER	(Prefix) (Type of Seal) - (Size)

Part Number	A Bore Diameter	D Seal Groove Width Tol. +0.035/+0.025	D1 Bearing Groove Width Tol. +0/-0.005	E Seal Groove Diameter	E1 Bearing Groove Diameter	F Piston Diameter	List Price
PSA-59-1000A	1.000+0.006/-0	0.468	0.250	0.625±0.003	0.883+0/-0.002	0.964±0.003	\$ 14.42
PSA-59-1500	1.500+0.006/-0	0.625	0.250	1.000±0.003	1.360+0/-0.002	1.458±0.003	13.53
PSA-59-1625	1.625+0.006/-0	0.625	0.250	1.125±0.003	1.485+0/-0.002	1.583±0.003	16.21
PSA-59-1750	1.750+0.006/-0	0.750	0.250	1.125±0.003	1.570+0/-0.002	1.698±0.003	18.57
PSA-59-2125	2.125+0.007/-0	0.750	0.250	1.500±0.003	1.944+0/-0.003	2.074±0.004	19.22
PSA-59-2250	2.250+0.007/-0	0.750	0.250	1.625±0.003	2.069+0/-0.003	2.197±0.004	15.32
PSA-59-2375	2.375+0.007/-0	0.750	0.250	1.750±0.003	2.194+0/-0.003	2.322±0.004	16.21
PSA-59-2500A	2.500+0.007/-0	0.750	0.250	1.875±0.003	2.321+0/-0.003	2.437±0.004	29.61
PSA-59-2750	2.750+0.007/-0	0.750	0.250	2.000±0.004	2.522+0/-0.003	2.685±0.004	27.27
PSA-59-2750A	2.750+0.007/-0	0.937	0.250	2.000±0.004	2.522+0/-0.003	2.685±0.004	19.99
PSA-59-3000	3.000+0.007/-0	0.937	0.250	2.250±0.004	2.772+0/-0.003	2.935±0.004	20.66
PSA-59-3000A	3.000+0.007/-0	1.125	0.250	2.250±0.004	2.772+0/-0.003	2.935±0.004	22.04
PSA-59-3250	3.250+0.009/-0	0.937	0.250	2.500±0.004	3.021+0/-0.003	3.184±0.004	25.48
PSA-59-3500	3.500+0.009/-0	0.937	0.250	2.750±0.004	3.271+0/-0.003	3.434±0.004	27.07
PSA-59-4000	4.000+0.009/-0	0.937	0.250	3.250±0.004	3.770+0/-0.003	3.933±0.004	26.15
PSA-59-4500	4.500+0.009/-0	1.250	0.250	3.500±0.004	4.229+0/-0.003	4.422±0.005	35.66
PSA-59-5000	5.000+0.010/-0	1.250	0.250	4.000±0.004	4.728+0/-0.004	4.921±0.005	35.89
PSA-59-5500	5.500+0.010/-0	1.250	0.250	4.500±0.004	5.227+0/-0.004	5.420±0.005	53.75
PSA-59-6000	6.000+0.010/-0	1.250	0.250	5.000±0.005	5.726+0/-0.004	5.919±0.005	48.61
PSA-59-6500	6.500+0.010/-0	1.250	0.250	5.500±0.005	6.226+0/-0.004	6.419±0.005	77.25
PSA-59-7000	7.000+0.010/-0	1.250	0.250	6.000±0.005	6.724+0/-0.004	6.917±0.005	91.89
PSA-59-8000	8.000+0.011/-0	1.250	0.250	7.000±0.005	7.723+0/-0.005	7.915±0.006	104.28

STYLE PSA-65 PISTON SEALS

Compact and easy to install, the Style PSA-65 piston seal is a simple and economical design for pressures up to 3,000 PSI. The assembly consists of a nitrile rubber seal and two polyacetal bearings to support the piston. For 1-piece pistons.



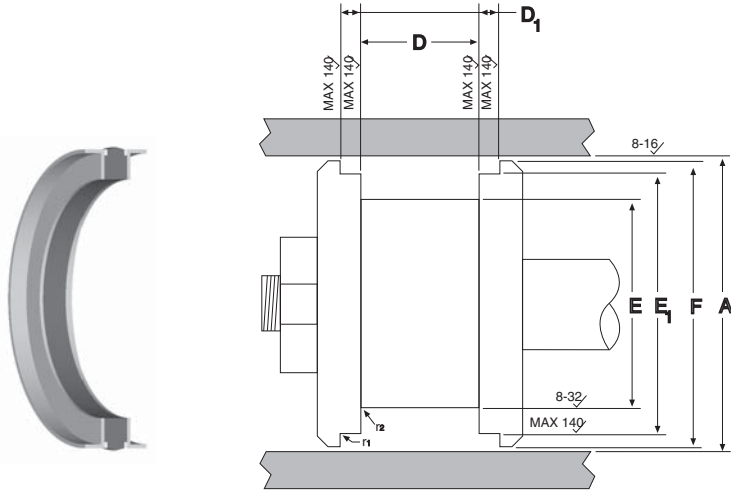
SEAL INFORMATION

MATERIAL	NITRILE SEAL POLYACETAL ANTI-EXTRUSION RING
TEMPERATURE RANGE	-22° TO +212° F
PRESSURE RANGE	0 TO 3,000 PSI
MAXIMUM SPEED	1.5 Ft/Sec.
PART NUMBER	(Prefix) (Type of Seal) - (Size)

Part Number	A Bore Diameter	D Seal Groove Width Tol. +0.015/+0.005	D1 Bearing Groove Width Tol. +0/-0.005	E Seal Groove Diameter	E1 Bearing Groove Diameter	F Piston Diameter	List Price
PSA-65-1000	1.000 +0.004/-0	0.343	0.125	0.687 +0/-0.002	0.829 +0/-0.002	0.937 +0/-0.006	\$ 7.17
PSA-65-1250	1.250 +0.004/-0	0.343	0.125	0.943 +0/-0.002	1.079 +0/-0.002	1.187 +0/-0.006	6.81
PSA-65-1500	1.500 +0.004/-0	0.437	0.150	1.125 +0/-0.002	1.324 +0/-0.002	1.437 +0/-0.006	6.81
PSA-65-1750	1.750 +0.004/-0	0.437	0.150	1.375 +0/-0.002	1.574 +0/-0.002	1.687 +0/-0.006	12.08
PSA-65-2000	2.000 +0.005/-0	0.437	0.150	1.625 +0/-0.002	1.824 +0/-0.002	1.937 +0/-0.006	24.15
PSA-65-2250	2.250 +0.005/-0	0.437	0.150	1.875 +0/-0.002	2.075 +0/-0.003	2.187 +0/-0.006	9.94
PSA-65-2375	2.375 +0.005/-0	0.437	0.150	2.000 +0/-0.002	2.195 +0/-0.003	2.312 +0/-0.007	8.60
PSA-65-2500	2.500 +0.005/-0	0.437	0.150	2.125 +0/-0.003	2.325 +0/-0.003	2.437 +0/-0.007	28.75
PSA-65-2500A	2.500 +0.005/-0	0.625	0.255	2.000 +0/-0.003	2.325 +0/-0.003	2.437 +0/-0.007	17.62
PSA-65-2750	2.750 +0.005/-0	0.437	0.150	2.375 +0/-0.003	2.575 +0/-0.002	2.687 +0/-0.007	18.36
PSA-65-3000	3.000 +0.005/-0	0.437	0.150	2.625 +0/-0.003	2.825 +0/-0.003	2.937 +0/-0.007	36.31
PSA-65-3500	3.500 +0.006/-0	0.562	0.210	3.000 +0/-0.003	3.270 +0/-0.003	3.437 +0/-0.009	41.93
PSA-65-4000	4.000 +0.006/-0	0.562	0.210	3.500 +0/-0.003	3.770 +0/-0.003	3.937 +0/-0.009	46.80
PSA-65-5000	5.000 +0.006/-0	0.687	0.344	4.375 +0/-0.003	4.689 +0/-0.003	4.937 +0/-0.010	60.54
PSA-65-5500	5.500 +0.006/-0	0.687	0.344	4.875 +0/-0.004	5.188 +0/-0.004	5.437 +0/-0.010	65.33
PSA-65-6000	6.000 +0.006/-0	1.000	0.500	5.250 +0/-0.004	5.712 +0/-0.004	5.937 +0/-0.010	68.82
PSA-65-7000	7.000 +0.006/-0	1.000	0.500	6.250 +0/-0.004	6.712 +0/-0.004	6.937 +0/-0.010	84.18

STYLE PSF PISTON SEALS

Designed to fit on one or two piece pistons, this seal employs a nitrile seal element, PTFE split back-up rings and polyacetal split bearing rings.



SEAL INFORMATION

MATERIAL	NITRILE SEAL POLYACETAL ANTI-EXTRUSION RING
TEMPERATURE RANGE	-22° TO +212° F
PRESSURE RANGE	0 TO 3,000 PSI
PART NUMBER	(Prefix) - (O-Ring Size)

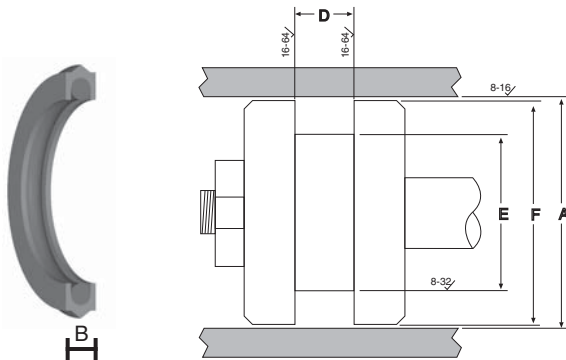
Part Number	A Bore Diameter	D Seal Groove Width Tol +0.015/+0.005	D1 Bearing Groove Width Tol. +0/-0.005	E Seal Groove Diameter	E1 Bearing Groove Diameter	F Piston Diameter	List Price
PSF-2000	2.000 +0.005/-0	0.496	0.245	1.625 +0/-0.002	1.888 +0/-0.002	1.960 +0/-0.006	\$ 11.63
PSF-2500	2.500 +0.005/-0	0.650	0.245	2.000 +0/-0.003	2.320 +0/-0.003	2.460 +0/-0.007	15.41
PSF-2750	2.750 +0.005/-0	0.650	0.250	2.250 +0/-0.003	2.570 +0/-0.003	2.710 +0/-0.007	16.89
PSF-3000	3.000 +0.005/-0	0.775	0.245	2.375 +0/-0.003	2.772 +0/-0.003	2.960 +0/-0.007	16.99
PSF-4000	4.000 +0.006/-0	0.562	0.210	3.500 +0/-0.003	3.770 +0/-0.003	3.937 +0/-0.009	28.05

STYLE PSC PISTON SEALS

The Style PSC is a double acting piston seal designed to replace o-rings, quad-rings, and T-seals with the same groove dimensions (O-ring dash number). Style 575 urethane back-up rings may be added to either or both sides of the "PSC" to accommodate wider groove widths. The PSC is made of 95A Durometer polyurethane, giving it high extrusion and abrasion resistance. The crowned sealing surface produces a positive seal from vacuum to high pressure.

Our company also offers a wide base (WB) Style PSC piston seal. These wide base seals have the same characteristics of the standard PCS seals but offer a wider base, eliminating the need to use back-up rings to accommodate wider grooves.

NOTE: Piston diameter "F" dimensions are given for piston without wear rings.



SEAL INFORMATION

MATERIAL	95A POLYURETHANE SEAL 70A NITRILE ENERGIZER
TEMPERATURE RANGE	-40° TO +200° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Prefix) - (O-Ring Size) - (Wide Base)

Part Number	A Bore Diameter	B Seal Height	D Groove Width	E Groove Diameter	F Piston Diameter	List Price
PSC-203	0.561	0.150	0.185	0.315	0.559	\$ 3.74
PSC-204	0.625	0.150	0.185	0.378	0.623	3.75
PSC-205	0.686	0.150	0.185	0.440	0.684	3.83
PSC-207	0.811	0.150	0.185	0.565	0.809	4.11
PSC-208	0.875	0.150	0.185	0.628	0.873	4.21
PSC-211	1.062	0.150	0.185	0.816	1.060	4.67
PSC-212	1.125	0.150	0.185	0.879	1.123	4.67
PSC-213	1.187	0.150	0.185	0.941	1.185	4.67
PSC-214	1.250	0.150	0.185	1.004	1.248	6.61
PSC-216	1.375	0.150	0.185	1.129	1.373	4.67
PSC-218	1.500	0.150	0.185	1.254	1.498	4.67
PSC-218-WB	1.500	0.265	0.304	1.254	1.498	7.32
PSC-220	1.625	0.150	0.185	1.374	1.623	5.08
PSC-222	1.750	0.150	0.185	1.504	1.748	5.28
PSC-222-WB	1.750	0.265	0.304	1.504	1.748	8.44
PSC-325	1.875	0.255	0.280	1.500	1.873	5.62
PSC-326	2.000	0.255	0.280	1.625	1.998	5.85
PSC-326-WB	2.000	0.370	0.424	1.625	1.998	9.59
PSC-328	2.250	0.255	0.280	1.875	2.248	6.74
PSC-329	2.375	0.255	0.280	2.000	2.373	7.22
PSC-330	2.500	0.255	0.280	2.125	2.498	7.62
PSC-330-WB	2.500	0.370	0.424	2.125	2.498	12.07
PSC-332	2.750	0.255	0.280	2.374	2.747	8.99
PSC-332-WB	2.749	0.370	0.424	2.374	2.747	19.21
PSC-334	3.000	0.255	0.280	2.624	2.997	9.43
PSC-334-WB	3.000	0.370	0.424	2.624	2.997	14.52
PSC-336	3.250	0.255	0.280	2.874	3.247	14.57
PSC-337	3.375	0.255	0.280	3.000	3.373	16.89
PSC-338	3.500	0.255	0.280	3.125	3.498	11.78
PSC-338-WB	3.500	0.370	0.424	3.125	3.498	14.55
PSC-339	3.625	0.255	0.280	3.250	3.623	18.18
PSC-340	3.750	0.255	0.280	3.375	3.748	12.72
PSC-341	3.875	0.255	0.280	3.500	3.873	20.06
PSC-342	4.000	0.255	0.280	3.625	3.998	13.98
PSC-342-WB	4.000	0.370	0.424	3.625	3.998	21.55
PSC-344	4.250	0.255	0.280	3.875	4.248	15.94



STYLE PSC PISTON SEALS

PISTON SEAL ASSEMBLIES

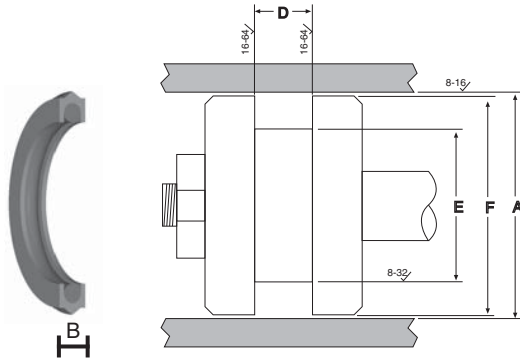
Part Number	A Bore Diameter	B Seal Height	D Groove Width	E Groove Diameter	F Piston Diameter	List Price
PSC-346	4.500	0.255	0.280	4.125	4.498	\$ 23.48
PSC-347	4.625	0.255	0.280	4.250	4.623	24.43
PSC-350	5.000	0.255	0.280	4.626	4.999	22.64
PSC-429	5.500	0.320	0.365	5.021	4.499	27.44
PSC-433	6.000	0.320	0.365	5.521	5.999	34.40
PSC-433-WB	6.000	0.500	0.579	5.521	5.999	47.31
PSC-437	6.500	0.320	0.365	6.020	6.498	37.28
PSC-439	7.000	0.320	0.365	6.520	6.998	39.50
PSC-441	7.500	0.320	0.365	7.020	7.498	44.55
PSC-442	7.750	0.320	0.365	7.270	7.748	63.89
PSC-443	8.000	0.320	0.365	7.520	7.998	46.21
PSC-444	8.250	0.320	0.365	7.770	8.248	47.22
PSC-445	8.500	0.320	0.365	8.020	8.498	49.67
PSC-446	9.000	0.320	0.365	8.520	8.998	49.80
PSC-447	9.500	0.320	0.365	9.020	9.498	50.93
PSC-448	10.000	0.320	0.365	9.520	9.998	57.16
PSC-449	10.500	0.320	0.365	10.020	10.498	59.41
PSC-450	11.000	0.320	0.365	10.520	10.998	61.18
PSC-451	11.500	0.320	0.365	11.020	11.498	88.16
PSC-452	12.000	0.320	0.365	11.520	11.998	98.71
PSC-456	14.000	0.320	0.365	13.520	13.998	128.27

STYLE PSC PISTON SEALS - FLUOROTREL COMPOUND



These Style PSC are molded from Fluorotrel which is a tough, wear-resistant material able to run at temperatures up to 275° F. Fluorotrel is also resistant to fluids that are incompatible with polyurethane such as water, glycol, water in oil, mineral oil and petroleum. Consult our Engineering Department for other fluids compatible with Fluorotrel.

NOTE: Piston diameter "F" dimensions are given for pistons without wear rings.

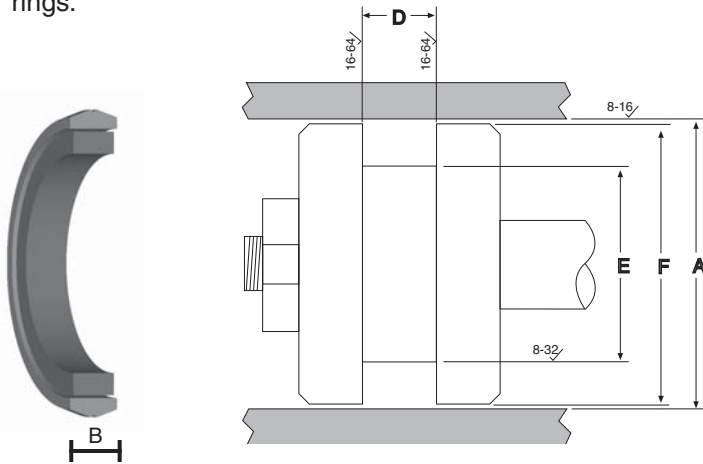


SEAL INFORMATION	
MATERIAL	55D FLUOROTREL SEAL 70A NITRILE ENERGIZER
TEMPERATURE RANGE	-40° TO +235° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Prefix) - (O-Ring Size) - (Fluorotrel)

Part Number	A Bore Diameter	B Seal Height	D Groove Width	E Groove Diameter	F Piston Diameter	List Price
PSC-222F	1.750	0.150	0.185	1.504	1.748	\$ 8.40
PSC-326F	2.000	0.255	0.280	1.625	1.998	9.51
PSC-328F	2.250	0.255	0.280	1.875	2.248	11.10
PSC-330F	2.500	0.255	0.280	2.125	2.498	12.65
PSC-332F	2.749	0.255	0.280	2.374	2.747	13.74
PSC-333F	2.875	0.255	0.280	2.499	2.872	14.12
PSC-334F	3.000	0.255	0.280	2.624	2.997	14.76
PSC-335F	3.125	0.255	0.280	2.749	3.122	15.43
PSC-338F	3.500	0.255	0.280	3.125	3.498	17.44
PSC-340F	3.750	0.255	0.280	3.375	3.748	19.01
PSC-342F	4.000	0.255	0.280	3.625	3.998	21.14
PSC-343F	4.125	0.255	0.280	3.750	4.123	21.63
PSC-350F	5.000	0.255	0.280	4.625	4.999	31.67
PSC-433F	6.000	0.320	0.365	5.520	5.999	45.89

STYLE PSM URETHANE PISTON SEALS

Molded from 93 Shore A polyurethane with a 70 Shore A energizer, this seal utilizes the same groove dimensions as a standard o-ring or T-seal. One or two Style 575 back-up rings may be used for wider grooves. Extrusion resistant by design, this seal is also resistant to rolling and twisting. Installation is an easy two step snap-in procedure with no need to re-size before insertion into the bore. **NOTE:** Piston diameter "F" dimensions are given for pistons without wear rings.



SEAL INFORMATION

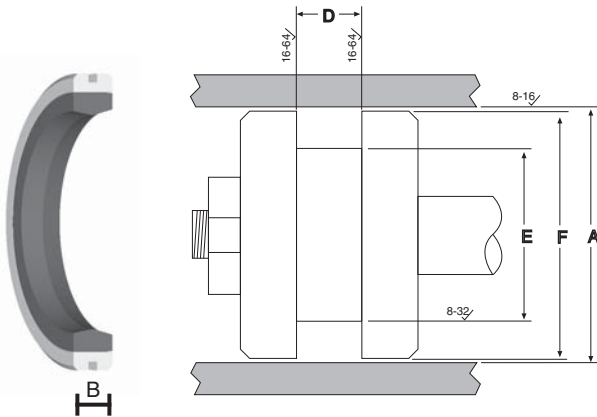
MATERIAL	93A URETHANE SEAL 70A NITRILE ENERGIZER
TEMPERATURE RANGE	-65° TO +220° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Prefix) - (Size)

Part Number	A Bore Diameter Tol. +0.002 -0.000	B Seal Height	D Groove Width Tol. ±.002	E Groove Diameter Tol. ±.002	F Piston Diameter	List Price
PSM-218F	1.500	0.160	0.188	1.258	1.499 +0/-0.005	\$ 7.31
PSM-218-WB	1.500	0.265	0.275	1.258	1.499 +0/-0.005	7.37
PSM-222	1.750	0.165	0.185	1.500	1.749 +0/-0.005	6.49
PSM-326	2.000	0.265	0.280	1.625	1.999 +0/-0.005	7.61
PSM-326-WB	2.000	0.375	0.394	1.625	1.999 +0/-0.005	9.43
PSM-328	2.250	0.265	0.280	1.875	2.249 +0/-0.005	8.31
PSM-329	2.375	0.265	0.280	2.000	2.374 +0/-0.005	8.31
PSM-330	2.500	0.265	0.280	2.125	2.499 +0/-0.005	9.41
PSM-330-WB	2.500	0.395	0.410	2.125	2.499 +0/-0.005	12.62
PSM-332	2.750	0.265	0.280	2.375	2.749 +0/-0.005	10.13
PSM-48A	3.000	0.235	0.250	2.380	2.999 +0/-0.005	37.08
PSM-334	3.000	0.265	0.280	2.625	2.999 +0/-0.005	11.23
PSM-334-WB	3.000	0.395	0.410	2.625	2.999 +0/-0.005	14.63
PSM-336	3.250	0.265	0.280	2.875	3.249 +0/-0.005	11.23
PSM-338	3.500	0.265	0.280	3.125	3.499 +0/-0.005	13.04
PSM-338-WB	3.500	0.395	0.410	3.125	3.499 +0/-0.005	17.33
PSM-340	3.750	0.265	0.280	3.375	3.749 +0/-0.005	14.48
PSM-342	4.000	0.265	0.280	3.625	3.999 +0/-0.005	16.60
PSM-342-WB	4.000	0.395	0.410	3.625	3.999 +0/-0.005	20.97
PSM-344	4.250	0.265	0.280	3.875	4.249 +0/-0.005	18.08
PSM-346	4.500	0.265	0.280	4.125	4.499 +0/-0.005	18.77
PSM-347	4.625	0.265	0.280	4.250	4.624 +0/-0.005	18.77
PSM-350	5.000	0.265	0.280	4.625	4.999 +0/-0.005	26.69
PSM-425-WB	5.000	0.518	0.538	4.528	4.999 +0/-0.005	31.59
PSM-429	5.500	0.350	0.365	5.020	5.499 +0/-0.005	31.40
PSM-433	6.000	0.350	0.365	5.520	5.999 +0/-0.005	34.36
PSM-433-WB	6.000	0.518	0.538	5.520	5.999 +0/-0.005	42.79
PSM-437	6.500	0.350	0.365	6.020	6.499 +0/-0.005	36.48
PSM-439	7.000	0.350	0.365	6.520	6.999 +0/-0.005	38.98
PSM-441	7.500	0.350	0.365	7.020	7.499 +0/-0.005	41.12
PSM-443	8.000	0.350	0.365	7.520	7.999 +0/-0.005	43.34
PSM-445	8.500	0.350	0.365	8.020	8.499 +0/-0.005	45.47
PSM-446	9.000	0.350	0.365	8.520	8.999 +0/-0.005	45.47

STYLE PSU PISTON SEALS



Our Style PSU piston seal, or uniring, is a laminated one piece double acting seal made of cast polyurethane. The tough outer layer is highly resistant to abrasion and is impregnated with molybdenum disulfide to reduce friction. The softer inner layer acts as a static seal and also energizes the OD to make full contact with the bore. This seal may be used to replace an existing Uniring or other seals of the same dimensions -- O-rings, O-rings with back-ups, T-seals, U-seals, etc. **NOTE:** Piston diameter "F" dimensions are given for pistons without wear rings.



SEAL INFORMATION

MATERIAL	60D & 57A URETHANE COMPOSITE
TEMPERATURE RANGE	-65° TO +220° F
PRESSURE RANGE	0 TO 5,000 PSI
PART NUMBER	(Prefix) - (OD) X (ID) X (Groove Width)

PISTON SEAL ASSEMBLIES

Part Number	A Bore Diameter	B Seal Height	D Groove Width Tol. +0.015/-0	E Groove Diameter	F Piston Diameter Tol. +0/-0.004	List Price
PSU-1.50X1.00X.375	1.500 +0.006/-0	0.375	0.394	1.000 +0.006/-0	1.499	\$ 7.83
PSU-1.50X1.12X.250	1.500 +0.004/-0	0.250	0.263	1.125 +0.004/-0	1.499	5.89
PSU-1.50X1.25X.187	1.500 +0.003/-0	0.187	0.196	1.250 +0.003/-0	1.499	4.38
PSU-1.75X1.25X.375	1.750 +0.006/-0	0.375	0.394	1.250 +0.006/-0	1.749	8.19
PSU-1.75X1.37X.250	1.750 +0.004/-0	0.250	0.263	1.375 +0.004/-0	1.749	6.01
PSU-1.75X1.37X.500	1.750 +0.004/-0	0.500	0.526	1.375 +0.004/-0	1.749	10.62
PSU-2.00X1.50X.375	2.000 +0.006/-0	0.375	0.394	1.500 +0.006/-0	1.999	9.61
PSU-2.00X1.62X.312	2.000 +0.004/-0	0.312	0.328	1.625 +0.004/-0	1.999	7.60
PSU-2.00X1.62X.375	2.000 +0.004/-0	0.375	0.394	1.625 +0.004/-0	1.999	8.74
PSU-2.25X1.87X.312	2.250 +0.004/-0	0.312	0.328	1.875 +0.004/-0	2.249	9.42
PSU-2.50X2.00X.375	2.500 +0.004/-0	0.375	0.394	2.000 +0.004/-0	2.499	9.42
PSU-2.50X2.12X.312	2.500 +0.004/-0	0.312	0.328	2.125 +0.004/-0	2.499	8.37
PSU-2.50X2.12X.375	2.500 +0.004/-0	0.375	0.394	2.125 +0.004/-0	2.499	9.34
PSU-2.75X2.37X.312	2.7500+0.004/-0	0.312	0.328	2.375+0.004/-0	2.749	9.18
PSU-3.00X2.50X.375	3.000 +0.006/-0	0.375	0.394	2.500 +0.006/-0	2.999	9.99
PSU-3.00X2.50X.500	3.000 +0.006/-0	0.500	0.550	2.500 +0.006/-0	2.999	20.37
PSU-3.00X2.62X.312	3.000 +0.004/-0	0.312	0.328	2.625 +0.004/-0	2.999	9.99
PSU-3.00X2.62X.375	3.000 +0.004/-0	0.375	0.394	2.625 +0.004/-0	2.999	9.99
PSU-3.25X2.75X.550	3.250 +0.004/-0	0.550	0.577	2.750 +0.004/-0	3.249	16.10
PSU-3.25X2.87X.312	3.250 +0.004/-0	0.312	0.328	2.875 +0.004/-0	3.249	10.23
PSU-3.50X3.00X.375	3.500 +0.006/-0	0.375	0.394	3.000 +0.006/-0	3.499	11.23
PSU-3.50X3.12X.312	3.500 +0.004/-0	0.312	0.328	3.125 +0.004/-0	3.499	10.53
PSU-3.50X3.12X.375	3.500 +0.004/-0	0.375	0.394	3.125 +0.004/-0	3.499	10.70
PSU-3.75X3.37X.312	3.750 +0.004/-0	0.312	0.328	3.375 +0.004/-0	3.749	10.92
PSU-4.00X3.50X.375	4.000 +0.006/-0	0.375	0.394	3.500 +0.006/-0	3.999	16.55



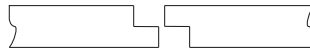
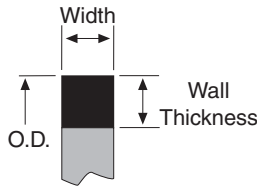
STYLE PSU PISTON SEALS

PISTON SEAL ASSEMBLIES

Part Number	A Bore Diameter	B Seal Height	D Groove Width Tol. +0.015/-0	E Groove Diameter	F Piston Diameter Tol. +0/-0.004	List Price
PSU-4.00X3.62X.375	4.000 +0.004/-0	0.375	0.394	3.625 +0.004/-0	3.999	\$ 11.39
PSU-4.50X4.00X.375	4.500 +0.006/-0	0.375	0.394	4.000 +0.006/-0	4.499	13.75
PSU-4.50X4.00X.562	4.500 +0.004/-0	0.562	0.591	4.000 +0.004/-0	4.499	19.58
PSU-5.00X4.37X.500	5.000 +0.006/-0	0.500	0.526	4.375 +0.006/-0	4.999	36.58
PSU-5.00X4.50X.375	5.000 +0.006/-0	0.375	0.394	4.500 +0.006/-0	4.999	14.99
PSU-5.00X4.50X.500	5.000 +0.006/-0	0.500	0.526	4.500 +0.006/-0	4.999	24.71
PSU-5.00X4.50X.562	5.000 +0.006/-0	0.562	0.591	4.500 +0.006/-0	4.999	24.71
PSU-5.25X4.75X.562	5.250 +0.006/-0	0.562	0.591	4.750 +0.006/-0	5.249	24.93
PSU-5.50X5.00X.375	5.500 +0.006/-0	0.375	0.394	5.000 +0.006/-0	5.499	31.42
PSU-6.00X5.50X.375	6.000 +0.006/-0	0.375	0.394	5.500 +0.006/-0	5.999	34.13
PSU-6.00X5.50X.562	6.000 +0.006/-0	0.562	0.591	5.500 +0.006/-0	5.999	34.13
PSU-6.50X6.00X.562	6.500 +0.006/-0	0.562	0.591	6.000 +0.006/-0	6.499	34.51

NOTE: Larger sizes are available. Please contact a Sales Representative for more information.

STYLE SPR IRON PISTON RINGS

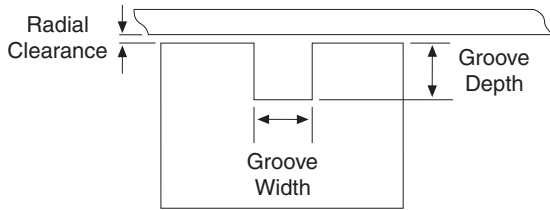


BC = Butt Cut
H = Hook Joint

SEAL INFORMATION	
MATERIAL	IRON
PART NUMBER	(Prefix) - (OD)

END CLEARANCE

End clearance on piston rings depends on ring design, material and application. The following end clearances are provided as a standard for hydraulic cylinder applications.



DIAMETER	BUTT & ANGLE CUT END CLEARANCE	OVERLAPPING JOINT & STEP CUT END CLEARANCE
.500-4.561	.003/.010	.005/.015
4.562-19.970	.005/.015	.010/.020
19.971-30.500	.010/.025	.015/.030

When using iron piston rings, it is crucial to use the correct groove design for proper performance of the cylinder. Please use the following guidelines when cutting an iron piston ring groove.

GROOVE WIDTH: To permit the ring to slide freely into the groove, the groove must be at least 0.001" wider than the maximum piston ring width with a tolerance of +0.003"/-0.000".

GROOVE DEPTH: Grooves must be at least 0.015" deeper than the maximum radial wall thickness of the piston ring with a tolerance of +0.003"/-0.000". This is to avoid any possibility of the ring bottoming in the groove when the ring is compressed to its working diameter.

RADIAL CLEARANCE: The radial clearance between the cylinder bore and piston should be less than 1/3 of the radial wall thickness of the piston ring to ensure sealing effectiveness.

Part Number	OD	Width	Wall Thickness	List Price
SPR-1000	1.000	.123/.124	.045/.055	\$ 10.68
SPR-1001	1.000	.093/.094	.045/.055	16.07
SPR-1375-H	1.375	.097/.096	.050/.060	28.19
SPR-1500	1.500	.124	.055/.060	6.44
SPR-1501	1.500	.092/.093	.060/.075	20.85
SPR-1530	1.530	.123/.124	.050/.060	8.24
SPR-1750	1.750	.123/.124	.060/.075	9.10
SPR-1751	1.750	.092/.093	.060/.075	9.10
SPR-1875	1.875	.123/.124	.060/.075	14.12
SPR-2000	2.000	.123/.124	.060/.075	9.74
SPR-2001	2.000	.186/.187	.065/.075	9.43
SPR-2002	2.000	.248/.249	.060/.075	11.77
SPR-2003	2.000	.092/.093	.082/.097	11.34
SPR-2006	2.000	.123/.124	.077/.087	11.34
SPR-2030	2.030	.123/.124	.065/.090	11.34

Part Number	OD	Width	Wall Thickness	List Price
SPR-2125	2.125	.186/.187	.060/.075	\$ 11.12
SPR-2126	2.125	.123/.124	.060/.070	11.45
SPR-2250	2.250	.186/.187	.070/.085	11.45
SPR-2251	2.250	.123/.124	.077/.085	11.10
SPR-2254	2.250	.248/.249	.085/.070	12.32
SPR-2376	2.375	.185/.186	.076/.091	12.32
SPR-2500	2.500	.123/.124	.082/.097	9.14
SPR-2501	2.500	.186/.187	.082/.097	9.14
SPR-2502	2.500	.248/.249	.103/.118	9.50
SPR-2503	2.500	.123/.124	.103/.118	12.81
SPR-2530	2.530	.123/.124	.087/.107	9.50
SPR-2625	2.625	.185/.186	.087/.102	11.28
SPR-2750	2.750	.186/.187	.091/.106	11.34
SPR-2752	2.750	.155/.156	.100/.125	9.63
SPR-2754	2.750	.186/.187	.103/.118	16.07

STYLE SPR IRON PISTON RINGS

IRON PISTON RINGS

Part Number	OD	Width	Wall Thickness	List Price	Part Number	OD	Width	Wall Thickness	List Price
SPR-2755	2.755	.118/.119	.109/.124	\$ 12.95	SPR-4520-BC	4.520	.184/.186	.150/.180	\$ 11.09
SPR-2875	2.875	.186/.187	.100/.105	9.63	SPR-4540	4.540	.184/.187	.155/.170	11.21
SPR-3000	3.000	.186/.187	.100/.125	9.51	SPR-4751	4.750	.248/.249	.152/.167	11.23
SPR-3001	3.000	.248/.249	.103/.118	9.87	SPR-4876-BC	4.875	.372/.373	.109/.124	32.93
SPR-3003	3.000	.310/.311	.095/.110	9.93	SPR-5000	5.000	.248/.249	.140/.150	11.57
SPR-3120	3.125	.185/.186	.100/.115	11.70	SPR-5001	5.000	.186/.187	.160/.175	11.57
SPR-3250	3.250	.186/.187	.103/.118	9.51	SPR-5002	5.000	.248/.249	.165/.180	11.57
SPR-3251	3.250	.123/.124	.103/.118	9.51	SPR-5003	5.000	.372/.373	.155/.165	15.33
SPR-3252	3.250	.248/.249	.103/.118	9.63	SPR-5004	5.000	.310/.311	.165/.180	17.84
SPR-3253	3.250	.154/.155	.121/.134	10.00	SPR-5005	5.000	.123/.124	.165/.175	15.09
SPR-3260	3.260	.248/.249	.115/.130	11.79	SPR-5030	5.030	.248/.249	.165/.185	13.33
SPR-3280	3.280	.185/.186	.109/.130	10.00	SPR-5120	5.125	.248/.249	.166/.172	16.72
SPR-3375	3.375	.185/.186	.106/.121	15.67	SPR-5121	5.125	.248/.249	.145/.160	23.95
SPR-3497	3.497	.186/.187	.109/.124	10.00	SPR-5251	5.250	.248/.249	.166/.181	17.98
SPR-3500	3.500	.123/.124	.109/.124	10.00	SPR-5260	5.260	.248/.249	.180/.195	14.45
SPR-3502	3.500	.248/.249	.109/.124	10.00	SPR-5496	5.496	.248/.249	.140/.160	15.42
SPR-3503	3.500	.372/.374	.109/.124	15.84	SPR-5500	5.500	.310/.311	.175/.190	15.63
SPR-3505	3.500	.186/.187	.109/.124	10.00	SPR-5501	5.500	.186/.187	.168/.187	15.63
SPR-3520-BC	3.520	.185	.130/.140	10.88	SPR-5502	5.500	.248/.249	.175/.190	15.63
SPR-3625	3.625	.248/.249	.155/.160	13.42	SPR-5503	5.500	.372/.373	.165/.177	20.71
SPR-3626	3.625	.248/.249	.170/.185	19.89	SPR-5520-BC	5.520	.184/.186	.180/.210	15.64
SPR-3750	3.750	.186/.187	.115/.130	10.29	SPR-5540	5.540	.184/.186	.180/.210	15.46
SPR-3751	3.750	.248/.249	.109/.124	10.29	SPR-5750	5.750	.185/.186	.184/.199	19.84
SPR-3752	3.750	.185/.186	.190/.175	66.32	SPR-5751	5.750	.248/.249	.184/.199	21.03
SPR-3875	3.875	.249/.250	.132/.137	10.39	SPR-5752	5.750	.310/.311	.175/.195	22.71
SPR-3990	3.990	.248/.249	.127/.142	10.39	SPR-6000	6.000	.248/.249	.140/.160	15.80
SPR-4000	4.000	.248/.249	.127/.142	10.39	SPR-6001	6.000	.122/.124	.191/.206	21.23
SPR-4002	4.000	.186/.187	.127/.142	10.01	SPR-6002	6.000	.248/.249	.191/.206	15.79
SPR-4003	4.000	.310/.311	.135/.145	10.39	SPR-6004	6.000	.310/.311	.191/.206	15.79
SPR-4007	4.000	.186/.185	.199/.184	66.32	SPR-6005	6.000	.371/.373	.191/.206	18.57
SPR-4020	4.020	.310/.311	.127/.142	13.10	SPR-6006	6.000	.184/.185	.195/.205	19.82
SPR-4030	4.030	.248/.249	.127/.142	10.39	SPR-6030	6.030	.247/.249	.191/.206	19.82
SPR-4250	4.250	.248/.249	.135/.150	10.99	SPR-6040	6.040	.185/.186	.190/.205	22.80
SPR-4251	4.250	.249/.248	.181/.166	68.44	SPR-6120	6.125	.248/.249	.190/.205	24.34
SPR-4252-BC	4.250	.248/.249	.167/.177	17.25	SPR-6250	6.250	.185/.186	.202/.217	24.75
SPR-4260	4.260	.248/.249	.152/.167	10.99	SPR-6251	6.250	.310/.311	.205/.220	24.75
SPR-4496	4.496	.248/.249	.140/.160	11.23	SPR-6252	6.250	.248/.249	.202/.217	27.86
SPR-4500	4.500	.310/.311	.145/.160	11.21	SPR-6260	6.260	.248/.249	.191/.206	17.05
SPR-4501	4.500	.185/.186	.145/.160	10.99	SPR-6496	6.496	.248/.249	.140/.160	18.51
SPR-4502	4.500	.248/.249	.145/.160	11.34	SPR-6500	6.500	.310/.311	.210/.225	18.07
SPR-4503	4.500	.372/.373	.145/.160	18.73	SPR-6501	6.501	.185/.186	.211/.226	29.54
SPR-4504	4.500	.249/.248	.199/.184	68.44	SPR-6502	6.500	.248/.249	.210/.225	18.07

STYLE SPR IRON PISTON RINGS

Part Number	OD	Width	Wall Thickness	List Price
SPR-6503	6.500	.186/.187	.211/.226	\$ 36.48
SPR-6505	6.500	.497/.499	.210/.225	56.75
SPR-6520-BC	6.520	.185	.225	36.20
SPR-6540	6.540	.248/.249	.230/.240	48.40
SPR-6750	6.750	.248/.249	.175/.190	23.16
SPR-6751	6.750	.305/.311	.219/.234	27.10
SPR-6752	6.750	.248/.249	.219/.234	28.30
SPR-7000	7.000	.248/.249	.140/.160	20.81
SPR-7002	7.000	.248/.249	.228/.243	20.81
SPR-7003	7.000	.371/.373	.228/.243	28.47
SPR-7004	7.000	.240	.237/.252	24.16
SPR-7005	7.000	.311/.312	.228/.243	28.47
SPR-7006	7.000	.497/.498	.228/.243	44.91
SPR-7030	7.030	.309/.311	.233/.263	28.47
SPR-7125	7.125	.247/.249	.237/.252	35.32
SPR-7250	7.250	.248/.249	.160/.175	31.65
SPR-7255	7.250	.310/.311	.230/.240	31.65
SPR-7260	7.260	.248/.249	.253/.268	25.26
SPR-7375	7.375	.371/.373	.191/.206	41.49
SPR-7496	7.496	.248/.249	.140/.160	28.06
SPR-7500	7.500	.310/.311	.210/.225	38.59
SPR-7501	7.500	.247/.249	.245/.260	26.74
SPR-7505	7.500	.311/.312	.244/.259	31.28
SPR-7520-BC	7.520	.184/.186	.249/.279	46.13
SPR-7750	7.750	.310/.311	.252/.267	38.59
SPR-8000	8.000	.310/.311	.210/.225	29.77
SPR-8001	8.000	.434/.435	.255/.270	52.60
SPR-8005	8.000	.310/.311	.260/.275	31.65
SPR-8006	8.000	.373/.374	.260/.275	31.65
SPR-8030	8.030	.309/.311	.265/.295	33.50
SPR-8125	8.125	.434/.435	.255/.270	56.85
SPR-8250	8.250	.373/.374	.268/.283	43.66

Part Number	OD	Width	Wall Thickness	List Price
SPR-8370	8.375	.247/.249	.268/.283	\$ 46.14
SPR-8420	8.420	.248/.249	.291/.306	35.09
SPR-8496	8.496	.248/.249	.140/.160	39.28
SPR-8500	8.500	.310/.311	.210/.225	43.03
SPR-8502	8.500	.373/.374	.270/.285	51.91
SPR-8503	8.500	.310/.311	.294/.309	43.03
SPR-8520-BC	8.520	.185/.186	.280/.310	50.55
SPR-8751	8.750	.374/.376	.300/.305	50.53
SPR-9000	9.000	.373/.374	.294/.309	51.21
SPR-9001	9.000	.310/.311	.294/.309	54.72
SPR-9004	9.000	.433/.435	.244/.259	74.16
SPR-9005	9.000	.496/.498	.175/.190	90.25
SPR-9025	9.025	.247/.248	.313/.328	81.58
SPR-9170	9.170	.310/.311	.298/308	59.24
SPR-9250	9.250	.248/.249	.160/.175	59.72
SPR-9251	9.250	.309/.311	.300/.315	59.24
SPR-9500	9.500	.310/.311	.305/.320	133.12
SPR-9501	9.500	.248/.249	.317/.318	127.08
SPR-9502	9.500	.371/.373	.305/.320	61.74
SPR-9746	9.746	.248/.249	.140/.160	62.42
SPR-9885	9.885	.248/.249	.325/.340	73.99
SPR-10000	10.000	.310/.311	.320/.330	64.93
SPR-10001	10.000	.371/.373	.317/.332	73.64
SPR-10030	10.030	.310/.311	.335/.345	79.99
SPR-10501	10.500	.371/.373	.317/.332	95.03
SPR-10502	10.500	.623/.624	.235/.248	122.76
SPR-10503	10-1/2	.248/.249	.365/.380	144.54
SPR-11000	11.000	.472/.474	.302/.317	118.97
SPR-11001	11.000	.496/.498	.175/.190	145.62
SPR-12001	12.000	.434/.435	.358/.373	166.53
SPR-12030	12.030	.371/.373	.386/.401	136.55