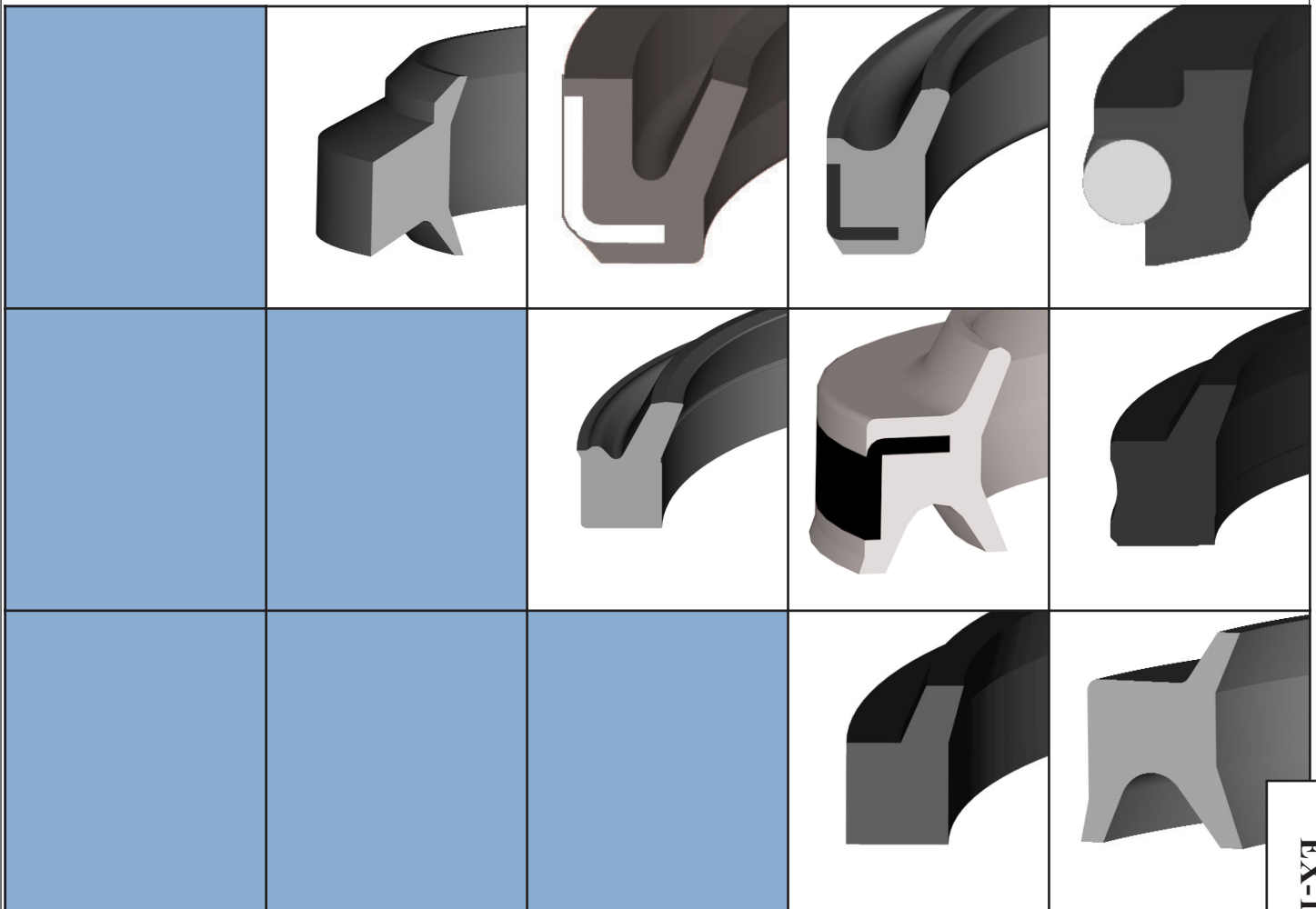




MACROTECH POLYSEAL, INC.

*Service, Solutions, Performance*

# Excluders Product Guide



EX-1000

REV #EX-1000-B

# Macrotech Polyseal, Inc.

## Excluders for Today's Industry Applications

Since 1973, MPI has been on the forefront of seal design and development for every conceivable hydraulic and pneumatic application.

MPI's commitment to increased reliability and performance is evident in all of our product lines. Our Excluder line is no exception. The Excluders offered in this line excel in all intended levels of operation. You can be assured when you use an MPI Excluder, you are using the highest quality, most successful excluder on the market.

One of the major causes of premature system failure in fluid power systems is the absence of the proper rod excluder. Moisture, dust, grit, and other contaminants can foul the fluid environment, causing major damage to cylinder walls, rod surfaces, precision valves, seals, and other components. A proper rod excluder from MPI can eliminate these contaminants from modern fluid power systems.

MPI's complete family of rod excluders, together with superior technical support assures that you will get the proper excluder for your application. Your excluder will be made of the right material to provide the abrasion resistance, elasticity, resilience, and fluid compatibility needed for you application.

The following pages show MPI's excluder designs and their recommended operation parameters.



## Product Guide

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# Macrotech Polyseal, Inc. Excluder Selection Chart



Material	Fluid Compatibility							Recommended Temperature Range by Polymer							
	Water	Water Based Hydraulic Fluid	Petroleum Oil	Phosphate Ester Based Fluid	DOT 3 Brake Fluid	Silicon Based Fluid	Other								
	°C	°F	°C	°F	°C	°F	°C	°C	°F	°C	°F	°C	°F	°C	°F
Nitrile A-8503	R	R	R	N	N	R	C	-37°C -35°F	130°C 265°F						
POLY-VI V-7503	R	R	R	R	N	R	C	-29°C -20°F	204°C 400°F						
Standard Lubrithane U-1003	S	S	R	N	N	R	C	-54°C -65°F	93°C 200°F	105°C 220°F					
Extended Range Lubrithane U-1023	S	S	R	N	N	R	C	-54°C -65°F	105°C 220°F	120°C 250°F					
PTFE (Polytetrafluoroethylene)	R	R	R	R	R	R	C	-240°C -400°F						288°C 550°F	

■ = intermittent

- R** Recommended, little or no effect.
- S** Serviceable, moderate effect.
- N** Not recommended, severe effect.
- C** Contact Macrotech Polyseal Inc. for Specific Assistance

Refer to the Fluid Sealing Association technical handbook or contact Macrotech Polyseal Engineering for more specific information.

Excluder Types	Environment Compatibility
AN - 959	Light
D Wiper	Moderate
DS Wiper	Moderate
DT Wiper	Moderate
Standard Polyseal	Moderate/Heavy
H Wiper	Light
K Wiper	Light
Xcluder (DX)	Moderate/Heavy
DD Spectraseal Wiper	Severe
Metal Clad Wipers (MC)	Moderate/Heavy
Spring Loaded Wipers (MCS)	Heavy
Self Cleaning MC Wiper (SCMC)	Moderate/Heavy
SH Wiper	Moderate/Heavy




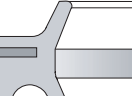
**Light Environments** Equipment will only be exposed to clean inside duty with light dust.

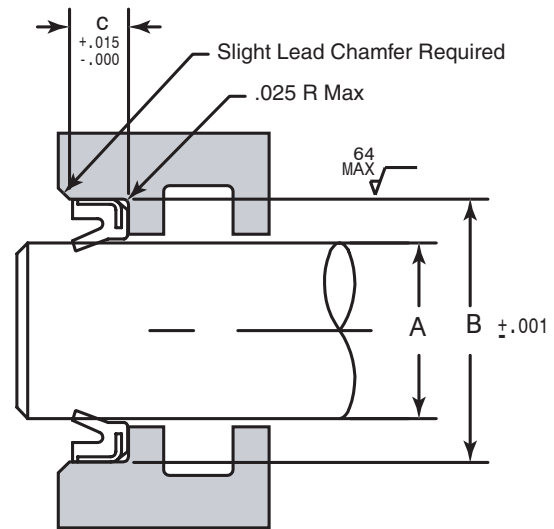
**Moderate Environments** Equipment will be exposed to both inside and outside duty.

**Heavy Environments** Equipment will be exposed to settings that include mud, cement and severe weather.

**Severe Environments** Equipment will be exposed to harsh chemicals or need to withstand extreme temperatures.

# MC, MCS, SC and SH Series

	<b>Metal Clad Wipers (MC)</b> Lubrithane element encased in a high quality steel metal retainer provides mechanical bonding as the element overlaps a portion of the retainer. A chemical bond is also provided. Rigid enough to handle tough scraping environments such as dry/wet mud and ice yet sensitive enough to exclude fine dust and moisture.
	<b>Metal Clad Spring Loaded Wiper (MCS)</b> Unique lip design permits installation of a stainless-steel spring, which excludes contaminants during the most severe service conditions such as temperature extremes.
	<b>SC (Self Cleaning) Wiper</b> Specially designed lip keeps mud, cement, and other similar substances from hardening in the wiper. A RL** wiper lip provides a reduction in apparent rod seal leakage while maintaining equivalent ingress resistance to a sharp lip wiper.
	<b>SH Wiper</b> One piece press-in type rod wiper designed for medium duty applications. Secondary U-Cup. RL** wiper lip provides a reduction in apparent rod seal leakage while maintaining equivalent ingress resistance to a sharp lip wiper.
**RL wiper lip is designed to resist ingress and reduce oil leakage ring.	

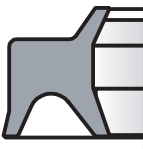


Part Number	A Rod Diameter	B Groove Diameter	C Groove Width
*-0500	0.500	1.000	0.250
*-0625	0.625	1.125	0.312
*-0750	0.750	1.250	0.312
*-0875	0.875	1.375	0.312
*-1000	1.000	1.500	0.312
*-1125	1.125	1.625	0.312
*-1250	1.250	1.750	0.312
*-1375	1.375	1.875	0.312
*-1500	1.500	2.000	0.312
*-1625	1.625	2.125	0.312
*-1750	1.750	2.250	0.312
*-1875	1.875	2.375	0.312
*-2000	2.000	2.500	0.312
*-2125	2.125	2.625	0.312
*-2250	2.250	2.750	0.312
*-2375	2.375	2.875	0.312
*-2500	2.500	3.000	0.312
*-2625	2.625	3.125	0.312
*-2750	2.750	3.250	0.312
*-2875	2.875	3.375	0.312
*-3000	3.000	3.500	0.312

Part Number	A Rod Diameter	B Groove Diameter	C Groove Width
*-3125	3.125	3.750	0.312
*-3250	3.250	3.875	0.312
*-3375	3.375	4.000	0.312
*-3500	3.500	4.125	0.312
*-3625	3.625	4.250	0.312
*-3750	3.750	4.375	0.312
*-3875	3.875	4.500	0.312
*-4000	4.000	4.625	0.312
*-4125	4.125	4.750	0.312
*-4250	4.250	4.875	0.312
*-4375	4.375	5.000	0.312
*-4500	4.500	5.125	0.312
*-4750	4.750	5.375	0.312
*-5000	5.000	5.625	0.312
*-5250	5.250	5.875	0.312
*-5500	5.500	6.125	0.375
*-5750	5.750	6.375	0.375
*-6000	6.000	6.625	0.375
*-6750	6.750	7.375	0.375

\* is MC, MCS, SC or SH depending on style.

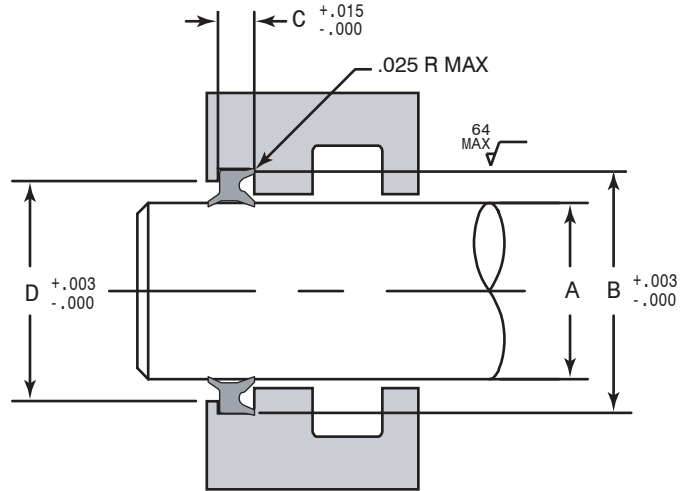
# H Series



**H Style Wiper** One piece snap-in type rod wiper designed for light duty application. Secondary U-Cup. RL\* lip provides a reduction in apparent rod seal leakage while maintaining equivalent ingress resistance to a sharp lip wiper.

\*RL wiper lip is designed to resist ingress and reduce oil leakage ring.

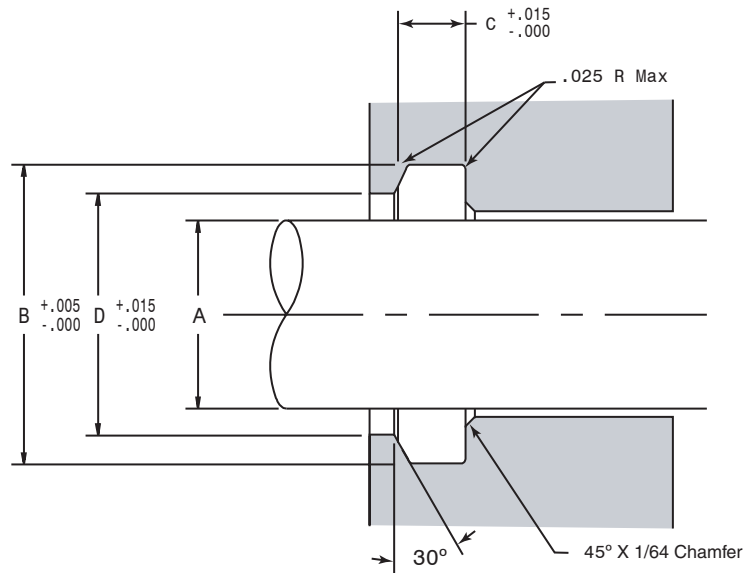
H style wiper is not intended as a high pressure seal.



Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter	Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter
H-0250	0.250	0.552	0.203	.370	H-1875	1.875	2.240	0.218	2.010
H-0312	0.312	0.615	0.203	.432	H-1937	1.937	2.302	0.218	2.072
H-0375	0.375	0.677	0.203	.495	H-2000	2.000	2.365	0.218	2.135
H-0437	0.437	0.740	0.203	.557	H-2062	2.062	2.427	0.218	2.197
H-0500	0.500	0.802	0.203	.620	H-2125	2.125	2.490	0.218	2.260
H-0562	0.562	0.865	0.203	.682	H-2187	2.188	2.683	0.281	2.323
H-0625	0.625	0.927	0.203	.745	H-2250	2.250	2.745	0.281	2.385
H-0687	0.688	0.990	0.203	.808	H-2312	2.312	2.807	0.281	2.447
H-0750	0.750	1.052	0.203	.870	H-2375	2.375	2.870	0.281	2.510
H-0812	0.812	1.177	0.218	.947	H-2437	2.437	2.932	0.281	2.572
H-0875	0.875	1.240	0.218	1.010	H-2500	2.500	2.995	0.281	2.635
H-0937	0.937	1.302	0.218	1.072	H-2562	2.562	3.057	0.281	2.697
H-1000	1.000	1.365	0.218	1.135	H-2625	2.625	3.120	0.281	2.760
H-1062	1.062	1.427	0.218	1.197	H-2687	2.688	3.183	0.281	2.823
H-1125	1.125	1.490	0.218	1.260	H-2750	2.750	3.245	0.281	2.885
H-1187	1.187	1.552	0.218	1.322	H-2812	2.812	3.307	0.281	2.947
H-1250	1.250	1.615	0.218	1.385	H-2875	2.875	3.370	0.281	3.010
H-1312	1.312	1.702	0.218	1.447	H-2937	2.938	3.433	0.281	3.073
H-1375	1.375	1.740	0.218	1.510	H-3000	3.000	3.495	0.281	3.135
H-1437	1.437	1.802	0.218	1.572	H-3125	3.125	3.620	0.281	3.260
H-1500	1.500	1.865	0.218	1.635	H-3250	3.250	3.745	0.281	3.385
H-1562	1.562	1.927	0.218	1.697	H-3375	3.375	3.870	0.281	3.510
H-1625	1.625	1.990	0.218	1.760	H-3500	3.500	3.995	0.281	3.635
H-1687	1.688	2.052	0.218	1.823	H-3625	3.625	4.120	0.281	3.760
H-1750	1.750	2.115	0.218	1.885	H-3750	3.750	4.245	0.281	3.885
H-1812	1.812	2.177	0.218	1.947	H-3875	3.875	4.370	0.281	4.010





Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter	Type Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter
H-4000	4.000	4.495	0.281	4.135	H-6250	6.250	6.745	0.281	6.385
H-4125	4.125	4.620	0.281	4.260	H-6500	6.500	6.995	0.281	6.635
H-4250	4.250	4.745	0.281	4.385	H-6750	6.750	7.245	0.281	6.885
H-4375	4.375	4.870	0.281	4.510	H-7000	7.000	7.495	0.281	7.135
H-4500	4.500	4.995	0.281	4.635	H-7250	7.250	7.745	0.281	7.385
H-4625	4.625	5.120	0.281	4.760	H-7500	7.500	7.995	0.281	7.635
H-4750	4.750	5.245	0.281	4.885	H-7750	7.750	8.245	0.281	7.885
H-4875	4.875	5.370	0.281	5.010	H-8000	8.000	8.495	0.281	8.135
H-5000	5.000	5.495	0.281	5.135	H-8250	8.250	8.745	0.281	8.385
H-5125	5.125	5.620	0.281	5.260	H-8500	8.500	8.995	0.281	8.635
H-5250	5.250	5.745	0.281	5.385	H-8750	8.750	9.245	0.281	8.885
H-5375	5.375	5.870	0.281	5.510	H-9000	9.000	9.495	0.281	9.135
H-5500	5.500	5.995	0.281	5.635	H-9250	9.250	9.745	0.281	9.385
H-5625	5.625	6.120	0.281	5.760	H-9500	9.500	9.995	0.281	9.635
H-5750	5.750	6.245	0.281	5.885	H-9750	9.750	10.245	0.281	9.885
H-5875	5.875	6.370	0.281	6.010	H-10000	10.000	10.495	0.281	10.135
H-6000	6.000	6.495	0.281	6.135					

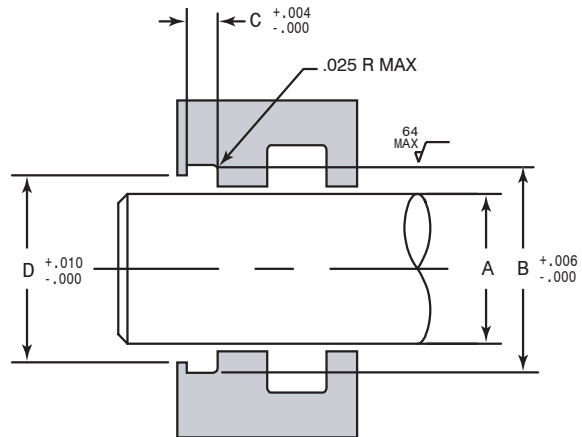
# K Series



Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter	Type Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter
K-0500	0.500	0.760	.155	.625	K-3000	3.000	3.510	.255	3.157
K-0562	0.562	0.822	.155	.687	K-3125	3.125	3.635	.255	3.282
K-0625	0.625	0.885	.155	.750	K-3250	3.250	3.760	.255	3.407
K-0687	0.688	0.947	.155	.812	K-3375	3.375	3.885	.255	3.532
K-0750	0.750	1.135	.195	.832	K-3500	3.500	4.010	.255	3.657
K-0812	0.812	1.197	.195	.894	K-3625	3.625	4.135	.255	3.782
K-0875	0.875	1.260	.195	.957	K-3750	3.750	4.260	.255	3.907
K-0937	0.938	1.322	.195	1.019	K-3875	3.875	4.385	.255	4.032
K-1000	1.000	1.385	.195	1.082	K-4000	4.000	4.510	.255	4.157
K-1062	1.063	1.447	.195	1.144	K-4125	4.125	4.635	.255	4.282
K-1125	1.125	1.510	.195	1.207	K-4250	4.250	4.760	.255	4.407
K-1187	1.188	1.572	.195	1.269	K-4375	4.375	4.885	.255	4.532
K-1250	1.250	1.635	.195	1.332	K-4500	4.500	5.010	.255	4.657
K-1312	1.313	1.697	.195	1.394	K-4625	4.625	5.135	.255	4.782
K-1375	1.375	1.760	.195	1.457	K-4750	4.750	5.260	.255	4.907
K-1437	1.138	1.822	.195	1.519	K-4875	4.875	5.385	.255	5.032
K-1500	1.500	1.885	.195	1.582	K-5000	5.000	5.510	.255	5.157
K-1562	1.563	1.947	.195	1.644	K-5250	5.250	5.760	.255	5.407
K-1625	1.625	2.010	.195	1.707	K-5500	5.500	6.010	.255	5.657
K-1687	1.688	2.072	.195	1.769	K-5750	5.750	6.260	.255	5.907
K-1750	1.750	2.135	.195	1.832	K-6000	6.000	6.510	.255	6.157
K-1812	1.813	2.197	.195	1.894	K-6250	6.250	6.760	.255	6.407
K-1875	1.875	2.260	.195	1.957	K-6500	6.500	7.010	.255	6.657
K-1937	1.938	2.322	.195	2.019	K-6750	6.750	7.260	.255	6.907
K-2000	2.000	2.385	.195	2.082	K-7000	7.000	7.510	.255	7.157
K-2125	2.125	2.510	.195	2.207	K-7500	7.500	8.010	.255	7.657
K-2250	2.250	2.760	.255	2.407	K-8000	8.000	8.510	.255	8.157
K-2375	2.375	2.885	.255	2.532	K-8500	8.500	9.010	.255	8.657
K-2500	2.500	3.010	.255	2.657	K-9000	9.000	9.510	.255	9.157
K-2625	2.625	3.135	.255	2.782	K-9500	9.500	10.010	.255	9.657
K-2750	2.750	3.260	.255	2.907	K-10000	10.000	10.510	.255	10.157
K-2875	2.875	3.385	.255	3.032					

# D, DS DT and DX Series

	<b>D Wiper</b> Used most often on rod diameters of 6-inches or larger. Step up from the AN959 wiper and is ideal for large-diameter applications and more contaminated environments.
	<b>DS Wiper</b> The DS Wiper is the same as the D wiper but includes a slot which eliminates back pressure. Raised portions on OD heel provide improved OD ingression resistance.
	<b>DT Wiper</b> One piece snap-in type rod wiper designed for medium duty applications. OD lip provides improved OD ingression resistance. RL wiper lip reduces apparent rod seal leakage with equivalent ingression resistance to a sharp lip wiper.
	<b>Xcluder (DX)</b> Retrofits a standard D Wiper groove. Used in applications with severe side deflections. RL wiper lip reduces apparent rod seal leakage with equivalent ingression resistance to a sharp lip wiper. O-ring must be installed for proper performance.



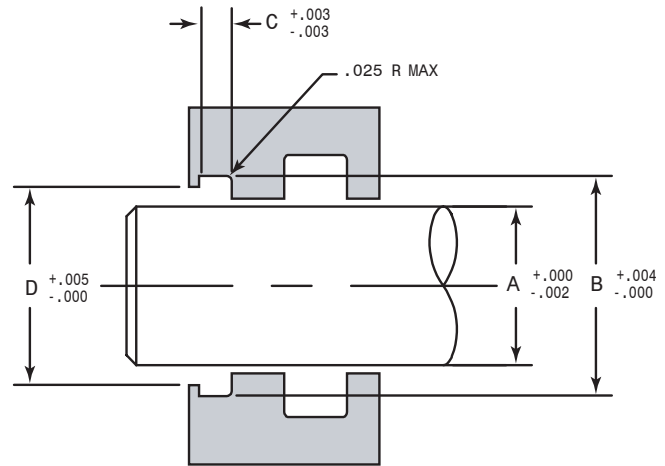
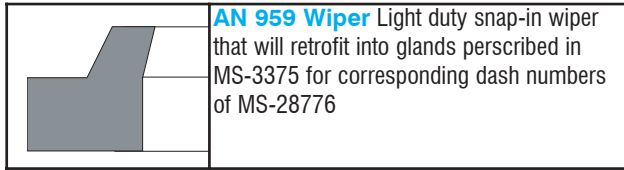
Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter	Type Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter
*-0250	0.250	.497	.124	.410	*-2062	2.063	2.560	.249	2.390
*-0312	0.313	.560	.124	.475	*-2125	2.125	2.622	.249	2.452
*-0375	0.375	.622	.124	.535	*-2187	2.188	2.685	.249	2.515
*-0437	0.438	.685	.124	.600	*-2250	2.250	2.747	.249	2.577
*-0500	0.500	.747	.124	.660	*-2312	2.313	2.810	.249	2.640
*-0562	0.563	.810	.124	.725	*-2375	2.375	2.872	.249	2.702
*-0625	0.625	.872	.124	.785	*-2437	2.438	2.935	.249	2.765
*-0687	0.688	.935	.124	.850	*-2500	2.500	2.997	.249	2.827
*-0750	0.750	1.122	.187	.995	*-2562	2.563	3.060	.249	2.890
*-0812	0.813	1.185	.187	1.060	*-2625	2.625	3.122	.249	2.952
*-0875	0.875	1.247	.187	1.120	*-2687	2.688	3.185	.249	3.015
*-0937	0.938	1.310	.187	1.185	*-2750	2.750	3.247	.249	3.077
*-1000	0.100	1.372	.187	1.245	*-2812	2.823	3.310	.249	3.140
*-1062	1.063	1.435	.187	1.310	*-2875	2.875	3.372	.249	3.202
*-1125	1.125	1.497	.187	1.370	*-2937	2.938	3.435	.249	3.265
*-1187	1.188	1.560	.187	1.435	*-3000	3.000	3.497	.249	3.327
*-1250	1.250	1.622	.187	1.495	*-3125	3.125	3.622	.249	3.452
*-1312	1.313	1.685	.187	1.560	*-3250	3.250	3.747	.249	3.577
*-1375	1.375	1.747	.187	1.620	*-3375	3.375	3.872	.249	3.702
*-1437	1.438	1.810	.187	1.685	*-3500	3.500	3.997	.249	3.827
*-1500	1.500	1.872	.187	1.745	*-3625	3.625	4.122	.249	3.952
*-1562	1.563	1.935	.187	1.810	*-3750	3.750	4.247	.249	4.077
*-1625	1.625	1.997	.187	1.870	*-3875	3.875	4.372	.249	4.202
*-1687	1.688	2.060	.187	1.935	*-4000	4.000	4.497	.249	4.327
*-1750	1.750	2.122	.187	1.995	*-4125	4.125	4.622	.249	4.452
*-1812	1.813	2.185	.187	2.060	*-4250	4.250	4.747	.249	4.577
*-1875	1.875	2.247	.187	2.120	*-4375	4.375	4.872	.249	4.702
*-1937	1.938	2.310	.187	2.185	*-4500	4.500	5.247	.374	4.993
*-2000	2.00	2.497	.249	2.327	*-4625	4.625	5.372	.374	5.118

\* is D, DS, DT or DX depending on style.

Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter	Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter
*-4750	4.750	5.497	.374	5.243	*-8250	8.125	8.997	.374	8.743
*-4875	4.875	5.622	.374	5.368	*-8500	8.500	9.247	.374	8.993
*-5000	5.000	5.747	.374	5.493	*-8750	8.750	9.497	.374	9.243
*-5125	5.125	5.872	.374	5.618	*-9000	9.000	9.747	.374	9.493
*-5250	5.250	5.997	.374	5.743	*-9250	9.125	9.997	.374	9.743
*-5375	5.375	6.122	.374	5.868	*-9500	9.500	10.247	.374	9.993
*-5500	5.500	6.247	.374	5.993	*-9750	9.750	10.497	.374	10.243
*-5625	5.625	6.372	.374	6.118	*-10000	10.000	10.997	.499	10.659
*-5750	5.750	6.497	.374	6.243	*-10250	10.125	11.247	.499	10.909
*-5875	5.875	6.622	.374	6.368	*-10500	10.500	11.497	.499	11.159
*-6000	6.000	6.747	.374	6.493	*-10750	10.750	11.747	.499	11.409
*-6250	6.250	6.997	.374	6.743	*-11000	11.000	11.997	.499	11.659
*-6500	6.500	7.247	.374	6.993	*-11250	11.250	12.247	.499	11.909
*-6750	6.250	7.497	.374	7.243	*-11500	11.500	12.497	.499	12.159
*-7000	7.000	7.747	.374	7.493	*-11750	11.750	12.747	.499	12.409
*-7250	7.250	7.997	.374	7.743	*-12000	12.000	12.997	.499	12.659
*-7500	7.500	8.247	.374	7.993	*-12500	12.500	13.497	.499	13.159
*-7750	7.750	8.497	.374	8.243	*-13000	13.000	13.997	.499	13.659
*-8000	8.000	8.747	.374	8.493					

\* is D, DS, DT or DX depending on style.

# AN, 940 and 959 Series



Dash Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter	Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter
1	0.498	0.760	0.107	.647	22.5	2.186	2.490	0.107	2.366
2	0.560	0.823	0.107	.710	23	2.248	2.552	0.107	2.428
3	0.623	0.885	0.107	.772	23.5	2.311	2.615	0.107	2.491
4	0.685	0.948	0.107	.834	24	2.373	2.677	0.107	2.553
5	0.748	1.010	0.107	.897	24.5	2.436	2.740	0.107	2.616
6	0.810	1.084	0.107	.960	25	2.498	2.802	0.107	2.678
7	0.873	1.147	0.107	1.023	25.5	2.561	2.865	0.107	2.741
8	0.935	1.209	0.107	1.085	26	2.623	2.989	0.122	2.834
9	0.998	1.272	0.107	1.148	26.5	2.686	3.052	0.122	2.897
10	1.060	1.334	0.107	1.210	27	2.748	3.114	0.122	2.959
11	1.123	1.397	0.107	1.273	27.5	2.811	3.177	0.122	3.022
12	1.185	1.459	0.107	1.335	28	2.873	3.239	0.122	3.084
13	1.248	1.522	0.107	1.398	29	2.997	3.364	0.122	3.209
14	1.310	1.614	0.107	1.480	30	3.122	3.489	0.122	3.334
15	1.373	1.677	0.107	1.542	31	3.247	3.614	0.122	3.459
16	1.435	1.739	0.107	1.605	32	3.372	3.729	0.122	3.584
17	1.498	1.802	0.107	1.668	33	3.497	3.864	0.122	3.709
17.5	1.561	1.865	0.107	1.731	34	3.622	3.989	0.122	3.834
18	1.623	1.927	0.107	1.793	35	3.747	4.114	0.122	3.959
18.5	1.686	1.990	0.107	1.856	36	3.872	4.239	0.122	4.084
19	1.748	2.052	0.107	1.918	37	3.997	4.427	0.138	4.240
19.5	1.811	2.115	0.107	1.981	38	4.122	4.552	0.138	4.365
20	1.873	2.177	0.107	2.043	39	4.247	4.677	0.138	4.490
20.5	1.936	2.240	0.107	2.106	40	4.372	4.802	0.138	4.615
21	1.998	2.302	0.107	2.178	41	4.497	4.927	0.138	4.740
21.5	2.061	2.365	0.107	2.241	42	4.622	5.052	0.138	4.865
22	2.123	2.427	0.107	2.303	43	4.747	5.177	0.138	4.990

Series 940 and 959 Wiper Rings will function in a gland as perscribed in MS-33675 for corresponding dash numbers of MS-28776.

Dash Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter	Part Number	A Rod Diameter	B Groove Diameter	C Groove Width	D Shoulder Diameter
44	4.872	5.302	0.138	5.115	62	8.497	8.989	0.154	8.772
45	4.997	5.427	0.138	5.240	62.5	8.747	9.239	0.154	9.022
46	5.122	5.552	0.138	5.365	63	8.997	9.489	0.154	9.272
47	5.247	5.677	0.138	5.490	63.5	9.247	9.739	0.154	9.522
48	5.372	5.802	0.138	5.615	64	9.497	9.989	0.154	9.772
49	5.497	5.927	0.138	5.740	64.5	9.747	10.239	0.154	10.022
50	5.622	6.114	0.154	5.896	65	9.997	10.489	0.154	10.272
51	5.747	6.239	0.154	6.022	65.5	10.247	10.739	0.154	10.522
52	5.872	6.364	0.154	6.146	66	10.497	10.989	0.154	10.772
53	5.997	6.489	0.154	6.272	66.5	10.747	11.239	0.154	11.022
54	6.247	6.739	0.154	6.522	67	10.997	11.489	0.154	11.272
55	6.497	6.989	0.154	6.772	67.5	11.247	11.739	0.169	11.522
56	6.747	7.239	0.154	7.022	68	11.497	11.989	0.169	11.772
57	6.997	7.489	0.154	7.272	68.5	11.747	12.239	0.169	12.022
58	7.247	7.739	0.154	7.522	69	11.997	12.489	0.169	12.272
59	7.497	7.989	0.154	7.772	69.5	12.247	12.739	0.169	12.522
60	7.747	8.239	0.154	8.022	70	12.497	12.989	0.169	12.772
61	7.997	8.489	0.154	8.272	70.5	12.747	13.239	0.169	13.022
61.5	8.247	8.739	0.154	8.522	71	12.997	13.489	0.169	13.272

## **Important Notice**

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Requests for more information are welcome. In particular, we will be glad to provide samples for you to inspect and test in your assemblies and plant before you make a final decision for your application.

## **Notice of Exclusive Warranty and Remedy**

Briefly, our exclusive warranty is against defects in materials and workmanship at the time of shipment. It is in lieu of all other warranties. There is no implied warranty of merchantability or fitness for a particular purpose. The exclusive remedy is replacement of defective products, or at our option, refund of their purchase price. All damages exceeding the purchase price are excluded, whether consequential or otherwise and regardless of cause. The terms and conditions on our printed quotation contain a much more complete statement of our Exclusive Warranty and Remedy.



Macrotech Polyseal, Inc.  
1750 West 500 South  
Salt Lake City, UT 84104

(801)973-9171  
(801)973-9188 FAX

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