



X-PAC® Loaded Straight-Lip - Symmetrical U-Cup

A product of MFP Seals.

MFPSEALS®
www.mfpseals.com

XP - X-PAC® STD-LIP

XP - X-PAC® LOADED STRAIGHT-LIP SYMMETRICAL U-CUP

X-PAC® U-Cups are a very versatile reciprocating seal design, for use up to 350 bar (5,000 psi). The rubber expander creates a compression style seal while still operating as a pressure actuated U-Cup design. The result is better low-pressure sealing and less startup leakage. The primary function of a Straight-Lip X-PAC® is for linear piston applications. MFP Seals' X-PAC® U-Cups feature a knife trimmed sealing lip for increased sealability.

*This seal is available in the following compounds:
U2145, U2150, U2151, U2162, U4150, H2155,
V7675, N6021, N6023, N6034, with an
Expander in N6014, V7100 or V7155.*



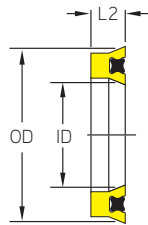
Straight Lip

MFP PART NUMBER

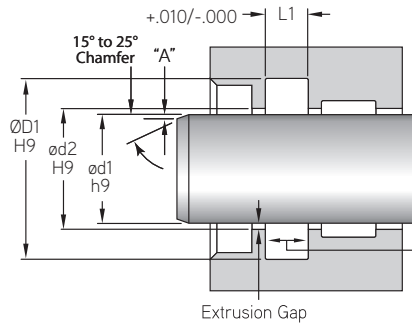
XP-375-01.100-375U2145

SEAL TYPE | $\phi d1$ | L2 | COMPOUND
CROSS SECTION

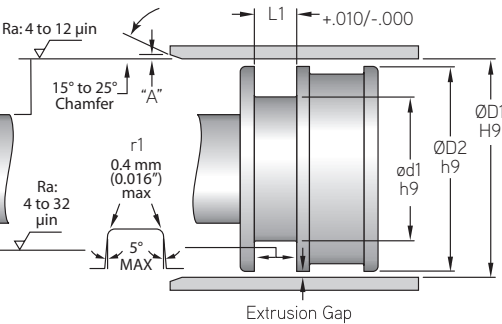
PROFILE



ROD APPLICATION



PISTON APPLICATION



Pressure: 350 bar (5,000 psi)

Max. Velocity: 0.5 m/s (< 1.6 ft./s)

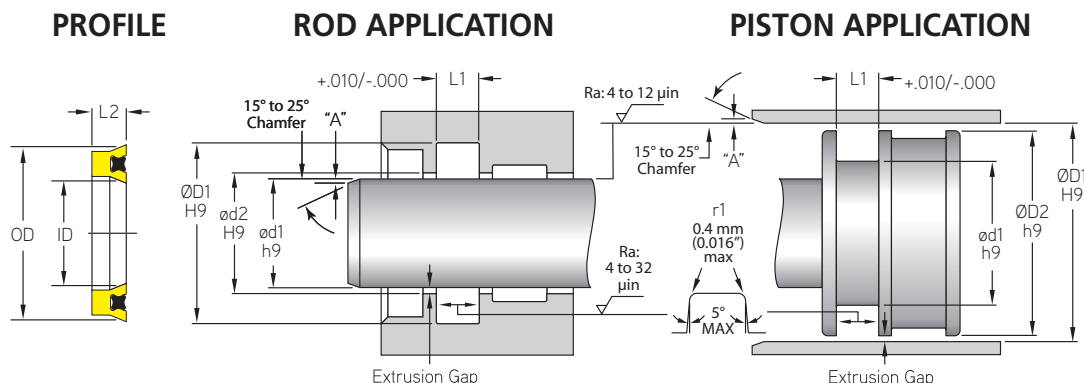
MAXIMUM EXTRUSION GAP RECOMMENDATION

MFP SERIES	ROD DIAMETER	GROOVE DIAMETER	GROOVE WIDTH	RADIAL CLEARANCE EXTRUSION GAP		
	$\phi d1$ h9	$\phi D1$ H9	L1 +.010	2300psi	3600psi	5800psi
XP-125	.750 - 2.750	$\phi d1$ + .250	.138 - .413	0.008	0.004	-
XP-156	1.375	$\phi d1$ + .312	.172	0.014	0.008	-
XP-187	0.625 - 3.750	$\phi d1$ + .375	.207 - .413	0.014	0.008	-
XP-250	0.500 - 6.500	$\phi d1$ + .500	.275 - .825	0.018	0.010	0.004
XP-312	0.875 - 5.500	$\phi d1$ + .624	.344 - .963	0.020	0.012	0.006
XP-375	1.250 - 8.750	$\phi d1$ + .750	.413 - .688	0.020	0.012	0.006
XP-500	2.750 - 3.000	$\phi d1$ + 1.000	.825	0.024	0.012	0.008

NOTE: The above data are maximum values for extrusion gap.

Material type, pressure, temperature, speed and extrusion gap will affect extrusion resistance.

Maximum values, pressure, speed, temperature and extrusion gap should not be applied continuously nor simultaneously.



MFP PART NUMBER	PROFILE STYLE	PISTON APPLICATION					
		Ød1	Ød2	ØD1	ØD2	L2	L1
.125" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-125-00.125-125	Straight Lip	0.125	0.126	0.375	0.374	0.125	0.138
XP-125-00.187-125	Straight Lip	0.187	0.188	0.437	0.436	0.125	0.138
XP-125-00.250-125	Straight Lip	0.250	0.251	0.500	0.499	0.125	0.138
XP-125-00.312-125	Straight Lip	0.312	0.313	0.562	0.561	0.125	0.138
XP-125-00.375-125	Straight Lip	0.375	0.376	0.625	0.624	0.125	0.138
XP-125-00.500-125	Straight Lip	0.500	0.501	0.750	0.749	0.125	0.138
XP-125-00.625-250	Straight Lip	0.625	0.626	0.875	0.874	0.250	0.275
XP-125-00.750-125	Straight Lip	0.750	0.751	1.000	0.999	0.125	0.138
XP-125-00.750-250	Straight Lip	0.750	0.751	1.000	0.999	0.250	0.275
XP-125-00.812-125	Straight Lip	0.812	0.813	1.062	1.061	0.125	0.138
XP-125-00.875-125	Straight Lip	0.875	0.876	1.125	1.124	0.125	0.138
XP-125-01.000-125	Straight Lip	1.000	1.001	1.250	1.249	0.125	0.138
XP-125-01.125-125	Straight Lip	1.125	1.126	1.375	1.374	0.125	0.138
XP-125-01.125-187	Straight Lip	1.125	1.126	1.375	1.374	0.187	0.207
XP-125-01.250-125	Straight Lip	1.250	1.251	1.500	1.499	0.125	0.138
XP-125-01.375-125	Straight Lip	1.375	1.376	1.625	1.624	0.125	0.138
XP-125-01.625-125	Straight Lip	1.625	1.626	1.875	1.874	0.125	0.138
XP-125-01.750-125	Straight Lip	1.750	1.751	2.000	1.999	0.125	0.138
XP-125-02.375-125	Straight Lip	2.375	2.376	2.625	2.624	0.125	0.138
XP-125-02.500-125	Straight Lip	2.500	2.501	2.750	2.749	0.125	0.138
.156" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-156-00.500-156	Straight Lip	0.500	0.501	0.812	0.811	0.156	0.172
XP-156-00.625-156	Straight Lip	0.625	0.626	0.938	0.937	0.156	0.172
.187" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-187-00.250-187	Straight Lip	0.250	0.251	0.625	0.624	0.187	0.207
XP-187-00.625-187	Straight Lip	0.625	0.626	1.000	0.999	0.187	0.207
XP-187-00.687-187	Straight Lip	0.687	0.688	1.063	1.062	0.187	0.207
XP-187-01.000-187	Straight Lip	1.000	1.001	1.375	1.374	0.187	0.207
XP-187-01.125-187	Straight Lip	1.125	1.126	1.500	1.499	0.187	0.207
XP-187-01.250-187	Straight Lip	1.250	1.251	1.625	1.624	0.187	0.207
XP-187-01.500-187	Straight Lip	1.500	1.501	1.875	1.874	0.187	0.207
XP-187-01.500-250	Straight Lip	1.500	1.501	1.875	1.874	0.25	0.275
XP-187-01.625-187	Straight Lip	1.625	1.626	2.000	1.999	0.187	0.207
XP-187-01.625-375	Straight Lip	1.625	1.626	2.000	1.999	0.375	0.413



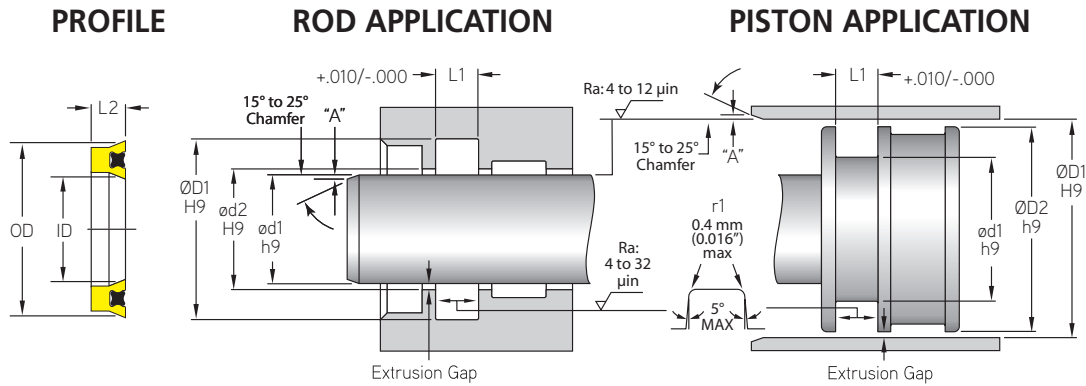
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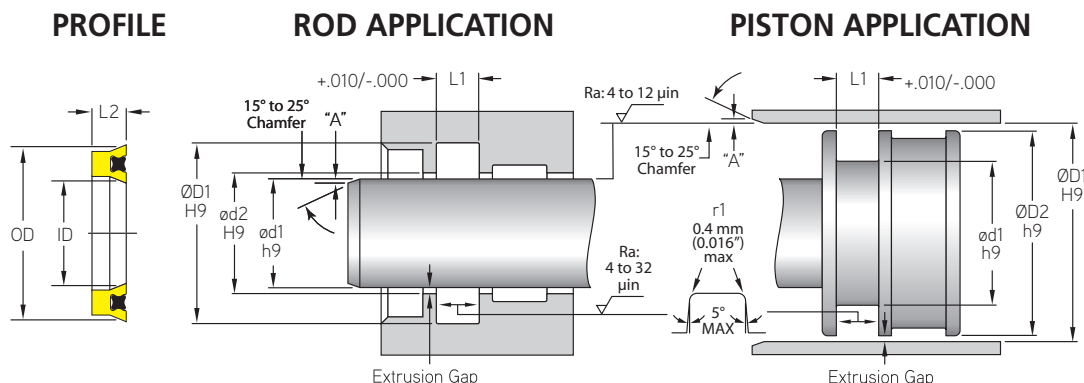
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XP - X-PAC® STD-LIP



MFP PART NUMBER	PROFILE STYLE	PISTON APPLICATION					
		ØD1	ØD2	ØD1	ØD2	L2	L1
.187" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-187-01.750-187	Straight Lip	1.750	1.751	2.125	2.124	0.187	0.207
XP-187-01.875-187	Straight Lip	1.875	1.876	2.250	2.249	0.187	0.207
XP-187-02.000-187	Straight Lip	2.000	2.001	2.375	2.374	0.187	0.207
XP-187-02.000-250	Straight Lip	2.000	2.001	2.375	2.374	0.25	0.275
XP-187-02.000-375	Straight Lip	2.000	2.001	2.375	2.374	0.375	0.413
XP-187-02.125-187	Straight Lip	2.125	2.126	2.500	2.499	0.187	0.207
XP-187-02.500-187	Straight Lip	2.500	2.501	2.875	2.874	0.187	0.207
XP-187-02.625-187	Straight Lip	2.625	2.626	3.000	2.999	0.187	0.207
XP-187-02.750-187	Straight Lip	2.750	2.751	3.125	3.124	0.187	0.207
XP-187-03.125-187	Straight Lip	3.125	3.126	3.500	3.499	0.187	0.207
XP-187-03.375-187	Straight Lip	3.375	3.376	3.750	3.749	0.187	0.207
XP-187-03.500-187	Straight Lip	3.500	3.501	3.875	3.874	0.187	0.207
XP-187-03.625-187	Straight Lip	3.625	3.626	4.000	3.999	0.187	0.207
XP-187-03.750-187	Straight Lip	3.750	3.751	4.125	4.124	0.187	0.207
XP-187-04.125-187	Straight Lip	4.125	4.126	4.500	4.499	0.187	0.207
XP-187-04.375-187	Straight Lip	4.375	4.376	4.750	4.749	0.187	0.207
XP-187-04.750-187	Straight Lip	4.750	4.751	5.125	5.124	0.187	0.207
XP-187-05.875-187	Straight Lip	5.875	5.876	6.250	6.249	0.187	0.207
.250" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-250-00.625-250	Straight Lip	0.625	0.626	1.125	1.124	0.25	0.275
XP-250-00.750-250	Straight Lip	0.750	0.751	1.250	1.249	0.250	0.275
XP-250-01.000-250	Straight Lip	1.000	1.001	1.500	1.499	0.250	0.275
XP-250-01.125-250	Straight Lip	1.125	1.126	1.625	1.624	0.250	0.275
XP-250-01.187-250	Straight Lip	1.187	1.188	1.687	1.686	0.250	0.275
XP-250-01.250-250	Straight Lip	1.250	1.251	1.750	1.749	0.250	0.275
XP-250-01.500-250	Straight Lip	1.500	1.501	2.000	1.999	0.25	0.275
XP-250-01.500-375	Straight Lip	1.500	1.501	2.000	1.999	0.375	0.413
XP-250-01.750-375	Straight Lip	1.750	1.751	2.250	2.249	0.375	0.413
XP-250-02.000-250	Straight Lip	2.000	2.001	2.500	2.499	0.25	0.275
XP-250-02.000-375	Straight Lip	2.000	2.001	2.500	2.499	0.375	0.413
XP-250-02.250-250	Straight Lip	2.250	2.251	2.750	2.749	0.250	0.275
XP-250-02.500-250	Straight Lip	2.500	2.501	3.000	2.999	0.250	0.275
XP-250-02.500-375	Straight Lip	2.500	2.501	3.000	2.999	0.375	0.413

U-CUP SYMMETRICAL



MFP PART NUMBER	PROFILE STYLE	PISTON APPLICATION					
		Ød1	Ød2	ØD1	ØD2	L2	L1
.250" - C/S		h9	H9	H9	h9		+.010/- .000
XP-250-02.750-250	Straight Lip	2.750	2.751	3.250	3.249	0.250	0.275
XP-250-03.000-250	Straight Lip	3.000	3.001	3.500	3.499	0.250	0.275
XP-250-03.000-375	Straight Lip	3.000	3.001	3.500	3.499	0.375	0.413
XP-250-03.250-375	Straight Lip	3.250	3.251	3.750	3.749	0.375	0.413
XP-250-03.500-250	Straight Lip	3.500	3.501	4.000	3.999	0.250	0.275
XP-250-04.000-250	Straight Lip	4.000	4.001	4.500	4.499	0.250	0.275
XP-250-04.000-375	Straight Lip	4.000	4.001	4.500	4.499	0.375	0.413
XP-250-04.500-250	Straight Lip	4.500	4.501	5.000	4.999	0.250	0.275
XP-250-04.750-250	Straight Lip	4.750	4.751	5.250	5.249	0.250	0.275
XP-250-04.750-562	Straight Lip	4.750	4.751	5.250	5.249	0.562	0.619
XP-250-05.000-250	Straight Lip	5.000	5.001	5.500	5.499	0.250	0.275
XP-250-05.000-375	Straight Lip	5.000	5.001	5.500	5.499	0.375	0.413
XP-250-05.500-250	Straight Lip	5.500	5.501	6.000	5.999	0.250	0.275
XP-250-05.500-375	Straight Lip	5.500	5.501	6.000	5.999	0.375	0.413
XP-250-05.500-625	Straight Lip	5.500	5.501	6.000	5.999	0.625	0.688
XP-250-06.000-375	Straight Lip	6.000	6.001	6.500	6.499	0.375	0.413
XP-250-06.500-562	Straight Lip	6.500	6.501	7.000	6.999	0.562	0.619
XP-250-07.000-375	Straight Lip	7.000	7.001	7.500	7.499	0.375	0.413
XP-250-07.500-250	Straight Lip	7.500	7.501	8.000	7.999	0.250	0.275
XP-250-07.750-250	Straight Lip	7.750	7.751	8.250	8.249	0.250	0.275
XP-250-08.000-375	Straight Lip	8.000	8.001	8.500	8.499	0.375	0.413
XP-250-08.500-250	Straight Lip	8.500	8.501	9.000	8.999	0.250	0.275
XP-250-09.000-250	Straight Lip	9.000	9.001	9.500	9.499	0.250	0.275
.312" - C/S		h9	H9	H9	h9		+.010/- .000
XP-312-01.125-312	Straight Lip	1.125	1.126	1.750	1.749	0.312	0.344
XP-312-01.187-312	Straight Lip	1.187	1.188	1.812	1.813	0.312	0.344
XP-312-01.250-312	Straight Lip	1.250	1.251	1.875	1.874	0.312	0.344
XP-312-02.375-312	Straight Lip	2.375	2.376	3.000	2.999	0.312	0.344
XP-312-02.500-312	Straight Lip	2.500	2.501	3.125	3.124	0.312	0.344
XP-312-03.625-312	Straight Lip	3.625	3.626	4.250	4.249	0.312	0.344
XP-312-05.375-312	Straight Lip	5.375	5.376	6.000	5.999	0.312	0.344
XP-312-06.375-312	Straight Lip	6.375	6.376	7.000	6.999	0.312	0.344
XP-312-07.375-312	Straight Lip	7.375	7.376	8.000	7.999	0.312	0.344



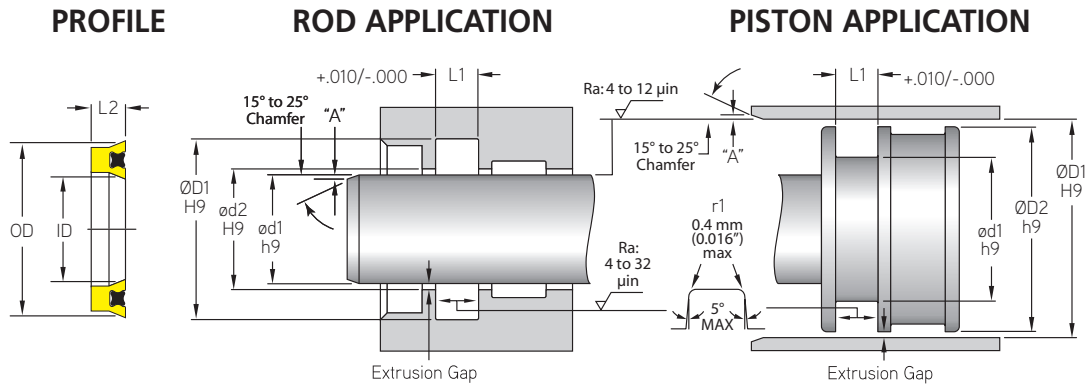
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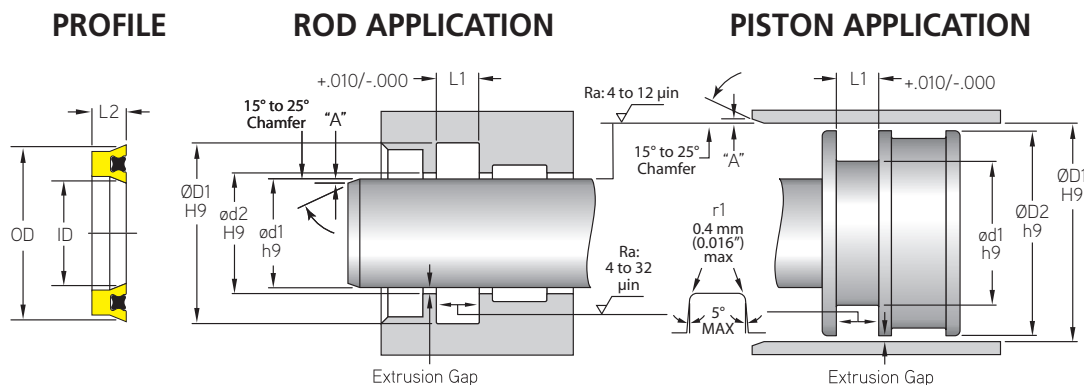
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XP - X-PAC® STD-LIP



MFP PART NUMBER	PROFILE STYLE	PISTON APPLICATION					
		Ød1	Ød2	ØD1	ØD2	L2	L1
.375" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-375-00.625-375	Straight Lip	0.625	0.626	1.375	1.374	0.375	0.413
XP-375-01.000-375	Straight Lip	1.000	1.001	1.750	1.749	0.375	0.413
XP-375-01.250-375	Straight Lip	1.250	1.251	2.000	1.999	0.375	0.413
XP-375-01.500-375	Straight Lip	1.500	1.501	2.250	2.249	0.375	0.413
XP-375-01.562-375	Straight Lip	1.562	1.563	2.312	2.311	0.375	0.413
XP-375-01.625-375	Straight Lip	1.625	1.626	2.375	2.374	0.375	0.413
XP-375-02.000-375	Straight Lip	2.000	2.001	2.750	2.749	0.375	0.413
XP-375-02.500-375	Straight Lip	2.500	2.501	3.250	3.249	0.375	0.413
XP-375-04.000-375	Straight Lip	4.000	4.001	4.750	4.749	0.375	0.413
XP-375-04.250-500	Straight Lip	4.250	4.251	5.000	4.999	0.500	0.550
XP-375-04.375-375	Straight Lip	4.375	4.376	5.125	5.124	0.375	0.413
XP-375-04.500-375	Straight Lip	4.500	4.501	5.250	5.249	0.375	0.413
XP-375-04.500-500	Straight Lip	4.500	4.501	5.250	5.249	0.500	0.550
XP-375-05.000-375	Straight Lip	5.000	5.001	5.750	5.749	0.375	0.413
XP-375-05.000-625	Straight Lip	5.000	5.001	5.750	5.749	0.625	0.688
XP-375-05.250-500	Straight Lip	5.250	5.251	6.000	5.999	0.500	0.550
XP-375-05.250-625	Straight Lip	5.250	5.251	6.000	5.999	0.625	0.688
XP-375-05.750-625	Straight Lip	5.750	5.751	6.500	6.499	0.625	0.688
XP-375-06.000-625	Straight Lip	6.000	6.001	6.750	6.749	0.625	0.688
XP-375-08.000-375	Straight Lip	8.000	8.001	8.750	8.749	0.375	0.413
XP-375-08.500-375	Straight Lip	8.500	8.501	9.250	9.249	0.375	0.413
XP-375-09.250-375	Straight Lip	9.250	9.251	10.000	9.999	0.375	0.413
XP-375-10.250-625	Straight Lip	10.250	10.251	11.000	10.999	0.625	0.688
XP-375-11.250-375	Straight Lip	11.250	11.251	12.000	11.999	0.375	0.413
XP-375-11.250-625	Straight Lip	11.250	11.251	12.000	11.999	0.625	0.688
XP-375-13.250-375	Straight Lip	13.250	13.251	14.000	13.999	0.375	0.413
XP-375-14.000-375	Straight Lip	14.000	14.001	14.750	14.749	0.375	0.413
XP-375-15.000-375	Straight Lip	15.000	15.001	15.750	15.749	0.375	0.413
XP-375-19.500-375	Straight Lip	19.500	19.501	20.250	20.249	0.375	0.413
.500" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-500-02.000-500	Straight Lip	2.000	2.001	3.000	2.999	0.500	0.550
XP-500-02.250-500	Straight Lip	2.250	2.251	3.250	3.249	0.500	0.550
XP-500-06.000-750	Straight Lip	6.000	6.001	7.000	6.999	0.750	0.825

U-CUP SYMMETRICAL



MFP PART NUMBER	PROFILE STYLE	PISTON APPLICATION					
		Ød1	Ød2	ØD1	ØD2	L2	L1
.500" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-500-09.000-500	Straight Lip	9.000	9.001	10.000	9.999	0.500	0.550
XP-500-09.000-750	Straight Lip	9.000	9.001	10.000	9.999	0.750	0.825
XP-500-10.000-500	Straight Lip	10.000	10.001	11.000	10.999	0.500	0.550
XP-500-11.000-500	Straight Lip	11.000	11.001	12.000	11.999	0.500	0.550
XP-500-12.500-750	Straight Lip	12.500	12.501	13.500	13.499	0.750	0.825
XP-500-13.250-500	Straight Lip	13.250	13.251	14.250	14.249	0.500	0.550
XP-500-15.000-500	Straight Lip	15.000	15.001	16.000	15.999	0.500	0.550
XP-500-15.000-750	Straight Lip	15.000	15.001	16.000	15.999	0.750	0.825
XP-500-17.500-750	Straight Lip	17.500	17.501	18.500	18.499	0.750	0.825
XP-500-18.000-500	Straight Lip	18.000	18.001	19.000	18.999	0.500	0.550
XP-500-21.000-500	Straight Lip	21.000	21.001	22.000	21.999	0.500	0.550
XP-500-22.000-500	Straight Lip	22.000	22.001	23.000	22.999	0.500	0.550
XP-500-22.500-750	Straight Lip	22.500	22.501	23.500	23.4999	0.750	0.825
XP-500-23.500-500	Straight Lip	23.500	23.501	24.500	24.499	0.500	0.550
XP-500-26.500-500	Straight Lip	26.500	26.501	27.500	27.499	0.500	0.550
XP-500-27.000-500	Straight Lip	27.000	27.001	28.000	27.999	0.500	0.550
XP-500-28.500-500	Straight Lip	28.500	28.501	29.500	29.499	0.500	0.550
XP-500-31.000-500	Straight Lip	31.000	31.001	32.000	31.999	0.500	0.550
XP-500-32.000-500	Straight Lip	32.000	32.001	33.000	32.999	0.500	0.550
XP-500-36.000-500	Straight Lip	36.000	36.001	37.000	36.999	0.500	0.550
XP-500-40.000-500	Straight Lip	40.000	40.001	41.000	40.999	0.500	0.550
.625" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-625-12.750-625	Straight Lip	12.750	12.751	14.000	13.999	0.625	0.688
XP-625-13.750-1000	Straight Lip	13.750	13.751	15.000	14.999	1.000	1.1
XP-625-24.000-625	Straight Lip	24.000	24.001	25.250	25.249	0.625	0.688
.750" - C/S		h9	H9	H9	h9		+.010/-0.000
XP-750-08.500-750	Straight Lip	8.500	8.501	10.000	9.999	0.750	0.825
XP-750-09.500-750	Straight Lip	9.500	9.501	11.000	10.999	0.750	0.825
XP-750-10.500-750	Straight Lip	10.500	10.501	12.000	11.999	0.750	0.825
XP-750-14.000-750	Straight Lip	14.000	14.001	15.500	15.499	0.750	0.825