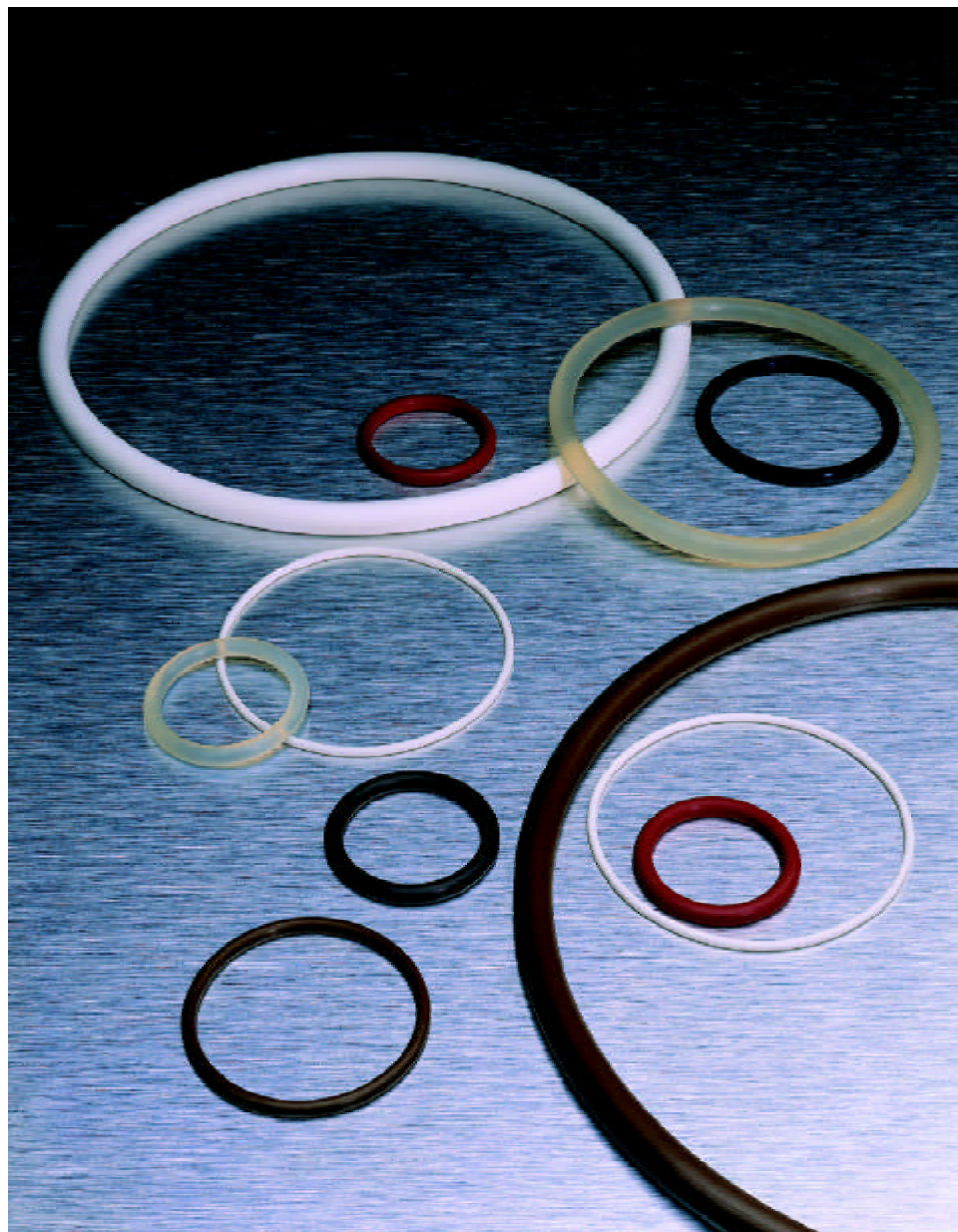




O-Ring Vacuum Sealing

ISO 9001 Certified

Catalog 5705B USA



Zatkoff
SEALS & PACKINGS

WARNING



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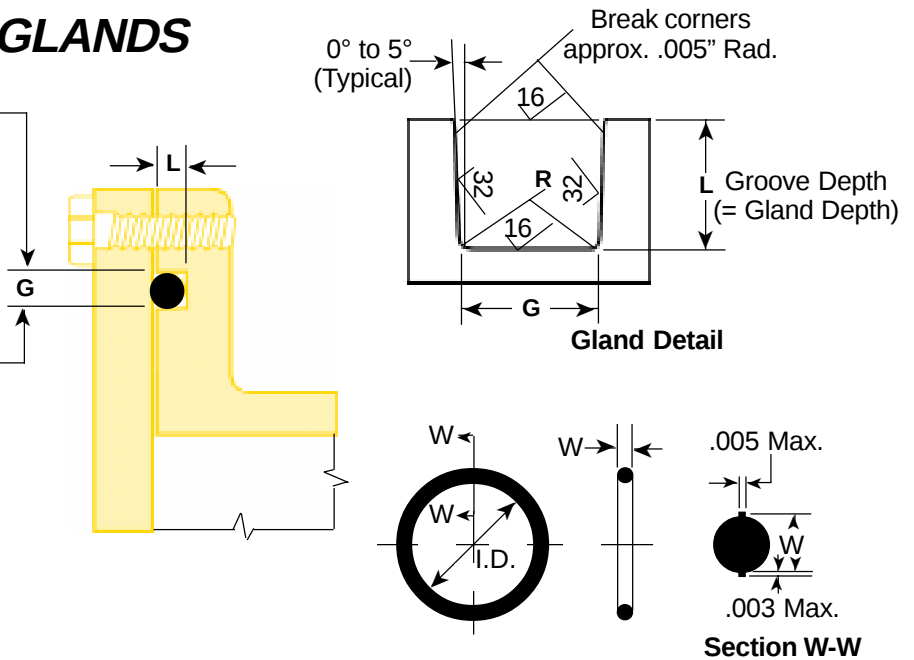
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O-Ring Seals for Vacuum Applications**DESIGN CHART FOR O-RING
VACUUM FACE SEAL GLANDS****FOR EXTERNAL VACUUM**

Dimension the groove by its outside diameter (H_o) and width:
 H_o = mean O.D. of O-ring
 Tolerance = Minus 1% of Mean O.D., but not more than $-.060$ "

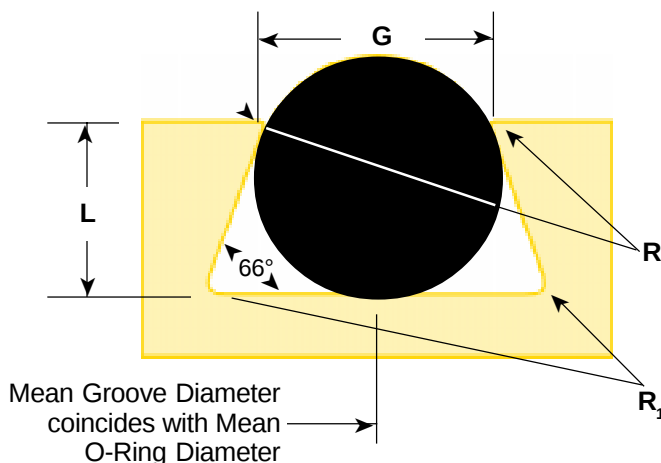
FOR INTERNAL VACUUM

Dimension the groove by its inside diameter (H_i) and width:
 H_i = mean I.D. of O-ring
 Tolerance = Plus 1% of Mean I.D., but not more than $+.060$ "

**Design Chart I For O-Ring Vacuum Face Seal Glands**

These dimensions are intended primarily for face type O-ring seals and low temperature applications.

O-Ring Size AS568A-	W Cross Section		L Gland Depth	Squeeze		G Groove Width	R Groove Radius
	Nominal	Actual		Actual	%		
004 through 050	1/16	.070 $\pm .003$	.050 to .054	.013 to .023	19 to 32	.084 to .089	.005 to .015
102 through 178	3/32	.103 $\pm .003$	.074 to .080	.020 to .032	20 to 30	.120 to .125	.005 to .015
201 through 284	1/8	.139 $\pm .004$	.101 to .107	.028 to .042	20 to 30	.158 to .164	.010 to .025
309 through 395	3/16	.210 $\pm .005$	.152 to .162	.043 to .063	21 to 30	.239 to .244	.020 to .035
425 through 475	1/4	.275 $\pm .006$	.201 to .211	.058 to .080	21 to 29	.309 to .314	.020 to .035
Special	3/8	.375 $\pm .007$	.276	.082	22	.419	.030
			to .286	to .108	to 28	to .424	to .045
Special	1/2	.500 $\pm .008$	.370	.112	22	.560	.030
			to .380	to .138	to 27	to .565	to .045

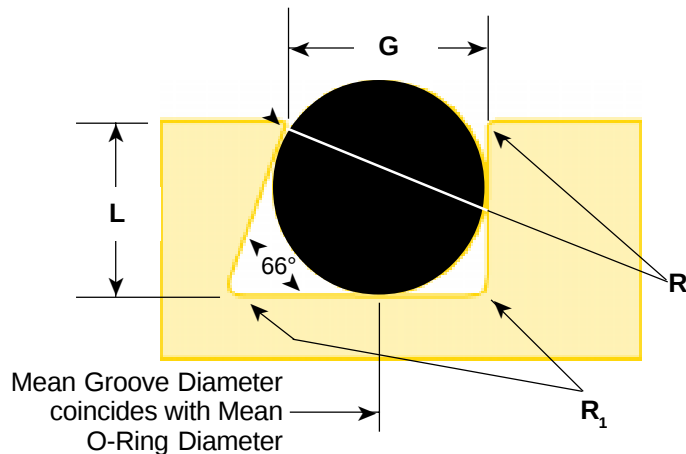
O-Ring Seals for Vacuum Applications**DESIGN CHART FOR
DOVETAIL GROOVES FOR VACUUM SERVICE****NOTE:**

These design recommendations require metal-to-metal contact. In special applications, for example in the semiconductor industry, deviation from these recommendations may be necessary. When designing with Parofluor™ elastomers, one should take into consideration that perfluorinated elastomers may require more squeeze than an FKM material to obtain optimum sealing performance. To increase squeeze, modifications of the design recommendations shown below are necessary.

Design Chart II For O-Ring Vacuum Dovetail Grooves

O-Ring Size AS568A-	W Cross Section Nominal	W Actual	L Gland Depth	Squeeze %	G Gland Width	R	R ₁
004 through 050	1/16	.070 ±.003	.050 to .052	27	.055 to .059	.005	1/64
102 through 178	3/32	.103 ±.003	.081 to .083	21	.083 to .087	.010	1/64
201 through 222	1/8	.139 ±.004	.111 to .113	20	.113 to .117	.010	1/32
309 through 349	3/16	.210 ±.005	.171 to .173	18	.171 to .175	.015	1/32
425 through 460	1/4	.275 ±.006	.231 to .234	16	.231 to .235	.015	1/16
Special	3/8	.375 ±.007	.315 to .319	16	.315 to .319	.020	3/32

Radius "R" is CRITICAL. Insufficient radius will potentially cause damage to the O-ring during installation, while excessive radius may contribute to extrusion.

O-Ring Seals for Vacuum Applications**DESIGN CHART FOR
HALF-DOVETAIL GROOVES FOR VACUUM SERVICE****NOTE:**

These design recommendations require metal-to-metal contact. In special applications, for example in the semiconductor industry, deviation from these recommendations may be necessary. When designing with Parofluor™ elastomers, one should take into consideration that perfluorinated elastomers may require more squeeze than an FKM material to obtain optimum sealing performance. To increase squeeze, modifications of the design recommendations shown below are necessary.

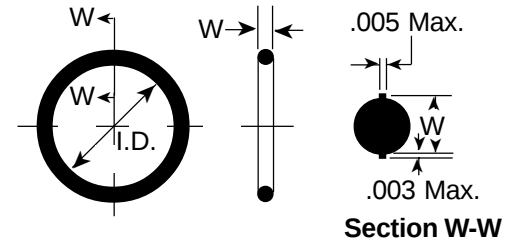
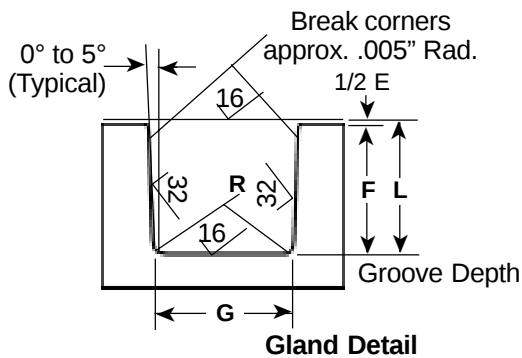
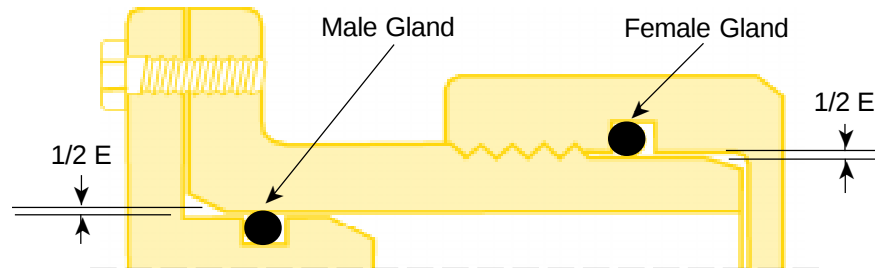
Design Chart III For O-ring Vacuum Half-dovetail grooves

O-Ring Size AS568A-	W Cross Section Nominal	Actual	L Gland Depth	Squeeze %	G Gland Width	R	R ₁
004 through 050	1/16	.070 ±.003	.052 to .054	25	.064 to .066	.005	1/64
102 through 178	3/32	.103 ±.003	.083 to .085	19	.095 to .097	.010	1/64
201 through 222	1/8	.139 ±.004	.113 to .115	18	.124 to .128	.010	1/32
309 through 349	3/16	.210 ±.005	.173 to .176	17	.171 to .175	.015	1/32
425 through 460	1/4	.275 ±.006	.234 to .238	15	.255 to .257	.015	1/16
Special	3/8	.375 ±.007	.319 to .323	14	.350 to .358	.020	3/32

Radius "R" is CRITICAL. Insufficient radius will potentially cause damage to the O-ring during installation, while excessive radius may contribute to extrusion.

O-Ring Seals for Vacuum Applications

DESIGN CHART FOR O-RING STATIC VACUUM SEAL GLANDS



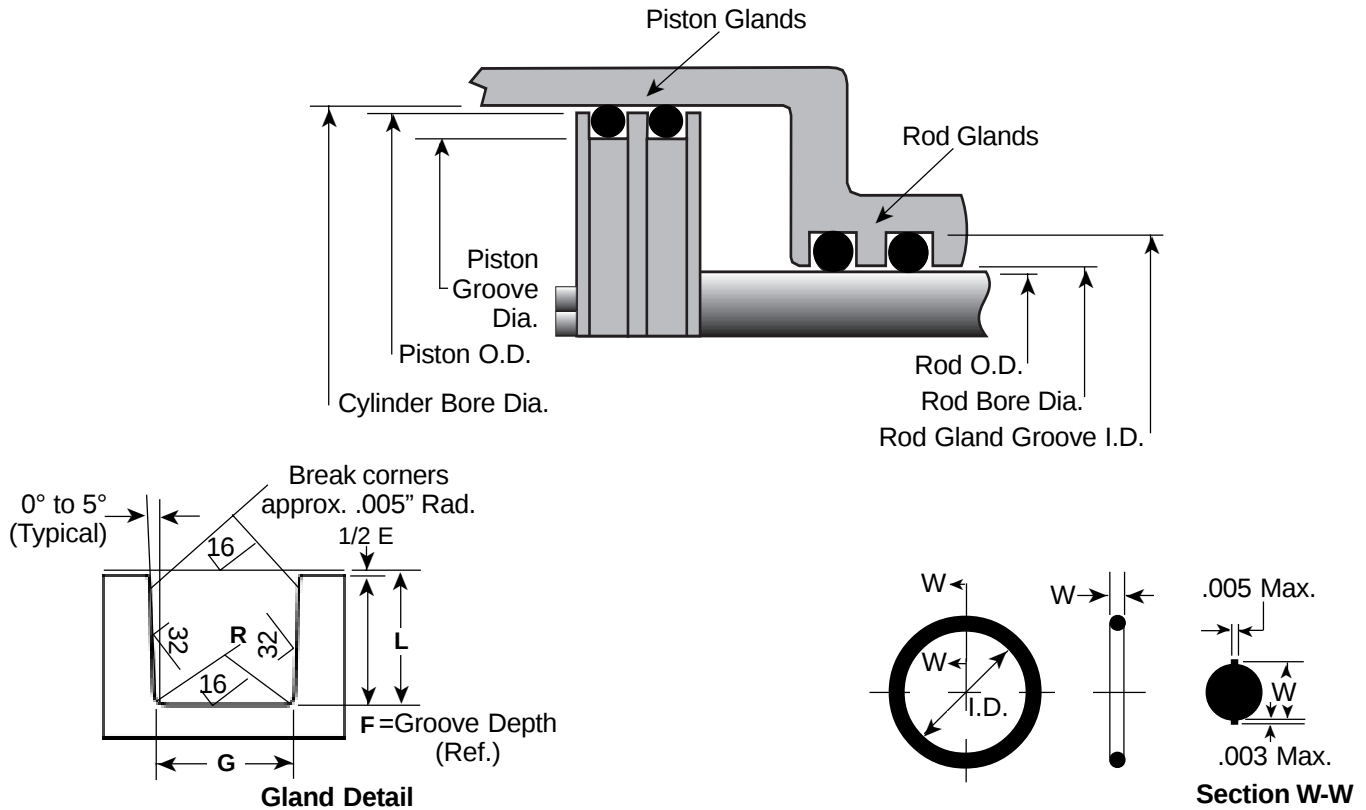
Design Chart IV For O-Ring Static Vacuum Seal Glands

O-Ring Size AS568A-	W Cross Section Nominal	W Actual	L Gland Depth	Squeeze Actual	Squeeze %	E Diametral Clearance	G Groove Width	R Groove Radius	MAX. *Eccentricity
004 through 050	1/16	.070 ±.003	.050 to .052	.015 to .023	22 to 32	.002 to .005	.093 to .098	.005 to .015	.002
102 through 178	3/32	.103 ±.003	.081 to .083	.017 to .025	17 to 24	.002 to .005	.140 to .145	.005 to .015	.002
201 through 284	1/8	.139 ±.004	.111 to .113	.022 to .032	16 to 23	.003 to .006	.187 to .192	.010 to .025	.003
309 through 395	3/16	.210 ±.005	.170 to .173	.032 to .045	15 to 21	.003 to .006	.281 to .286	.020 to .035	.004
425 through 475	1/4	.275 ±.006	.226 to .229	.040 to .055	15 to 20	.004 to .007	.375 to .380	.020 to .035	.005

* Total indicator reading between groove and adjacent bearing surface.

O-Ring Seals for Vacuum Applications

DESIGN CHART FOR RECIPROCATING VACUUM PACKING GLANDS



Design Chart V For Reciprocating O-Ring Vacuum Packing Glands

O-Ring Size AS568A-	W Cross Section		L Gland Depth	Squeeze		E Diametral Clearance	G Groove Width	R Groove Radius	MAX. *Eccentricity
	Nominal	Actual		Actual	%				
006 through 012	1/16	.070 ±.003	.055 to .057	.010 to .018	15 to 25	.002 to .005	.093 to .098	.005 to .015	.002
014 through 116	3/32	.103 ±.003	.088 to .090	.010 to .018	10 to 17	.002 to .005	.140 to .145	.005 to .015	.002
201 through 222	1/8	.139 ±.004	.121 to .123	.012 to .022	9 to 16	.003 to .006	.187 to .192	.010 to .025	.003
309 through 349	3/16	.210 ±.005	.185 to .188	.017 to .030	8 to 14	.003 to .006	.281 to .286	.020 to .035	.004
425 through 460	1/4	.275 ±.006	.237 to .240	.029 to .044	11 to 16	.004 to .007	.375 to .380	.020 to .035	.005

* Total indicator reading between groove and adjacent bearing surface.