

1. The percent stretch of the O-Ring ID should not exceed 5%, as it can lead to loss of seal compression.
2. The percent squeeze for optimum performance should be between 10 and 35% for static applications, and not more than 30% for dynamic applications.
3. The gland "fill" should not exceed 90%. Beyond 90% will not allow enough room for the O-Ring to compress properly, and may lead to premature failure. Excessive fill will not allow for expansion of material and extrusion may result.
4. To create seal compression, the groove depth must be less than the cross section of the O-Ring.
5. O-Ring seals operated at above 1,500 p.s.i. should utilize back-up rings or other devices, to prevent the O-Ring from extruding.
6. The maximum volume of an O-Ring should never be greater than the minimum gland volume.
7. Static applications are more forgiving, for both material and design tolerance, than dynamic applications.
8. Reciprocating seals should never be allowed to pass over ports, as nibbling and premature failure will occur.
9. The closer to ambient temperature that the seal is used, the longer the life expectancy.
10. Applications using stainless steel glands and bores should not use graphite-loaded O-ring materials. Graphite has a tendency to "pit" stainless steel.
11. Assembly of the O-Ring into the gland and bore is extremely critical. A compatible lubricant should be used to coat the ring before assembly. The lubricant should be compatible with both the O-Ring material and the fluids to be sealed.
12. A minimum 20° lead in angle, chamfer, or radius should be used on both the gland and bore to prevent pinching or skiving to the O-Ring during assembly.
13. Do not use lubricants that are composed of the same material as the O-Ring (For example – a silicone lubricant on a silicone O-Ring).
14. When only one back-up ring is used on applications greater than 1,500 psi, the back-up ring should be applied to the low pressure side of the O-Ring.
15. Before choosing the elastomer for an application, it is critical to determine which material is compatible with the fluids to be sealed. You should consult Precix, inc.TM for help if there are any doubts or questions.

The following pages provide standardized gland design criteria and dimensions for elastomeric O-Ring seals utilized for both static and dynamic applications. The glands have been specifically designed for applications using AS568 size O-Rings at pressures of less than 1,500 p.s.i. without back-up rings, and over 1,500 p.s.i. utilizing back-up rings. The glands have been sized to provide sufficient squeeze for effective sealing, while allowing satisfactory operation in dynamic applications. Although specifically designed for standard AS568 size O-Rings, these glands can also be used with other elastomeric seals.

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3. TECHNICAL REQUIREMENTS:

3.1 Gland Configuration:

3.1.1 General: As a general rule, O-rings and other elastomeric seals operating above 1500 psi should utilize backup rings or other devices of this nature to prevent seal extrusion. O-ring seal glands designed for backup ring use must be increased in width. Therefore, this document depicts gland widths for applications using none, one and two backup rings. While these glands are sized based on standard O-rings, they are to be used with other elastomeric seals. These seals should be designed to perform in these standard size glands.

3.1.2 Dimensions: The dimensions listed in Tables 1 through 5 are similar to the dimensions in MIL-G-5514 Revision F. Changes have been made to the Gland OD (F) and the Gland ID (E) to obtain the desired O-ring squeeze dimensions listed in Table 1 (Also see Figures 1 and 2). Changes have been made to the gland width dimensions to achieve a design goal of 85% maximum gland occupancy. (This was achieved except for sizes -004, -008, -010, -013 and -110 in which the gland occupancy slightly exceeds 85%.) Also, gland wall angle and break edge dimensions have been included to permit these glands to be used at pressures up to 8000 psi.

3.1.3 Limitations: The design criteria and standard glands set forth in this document are intended for use in static and dynamic applications with SAE AS568 O-rings (excluding dash numbers 013 through 028, 117 through 149 and 223 through 247 which are intended for static applications only due to the possibility of spiral failure occurring in these larger diameter sizes of the smaller cross section O-rings). Also, glands conforming to the dimensions listed herein for dash numbers 001 through 007 do not meet the squeeze goal of an installed deflection of at least 0.005 in on the O-ring cross-section using the most adverse accumulation of tolerances and O-ring stretch (see Appendix A). Therefore, the -001 through -007 sizes may not be suitable for many applications. Glands are designed so that they will not have more than 85% gland occupancy (15% free space) at 75 °F (24 °C). (See Appendix B). The standard glands described herein are designed for 1500 up to 8000 psig applications and for use in seal applications where the free swell is limited to 15 to 20%.

NOTE: Glands for sizes -102 through -109 are under development and will be added when available.

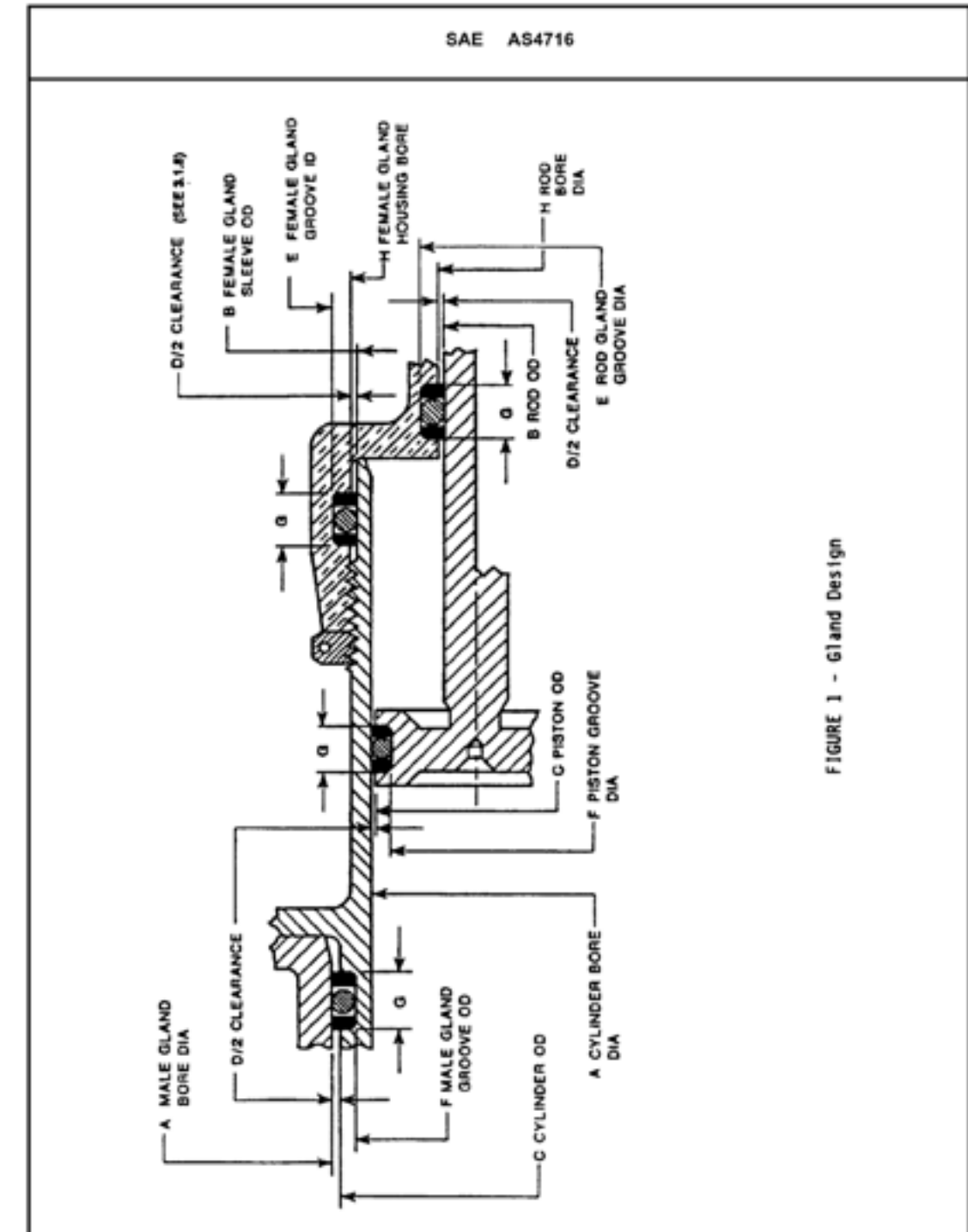


FIGURE 1 - Gland Design

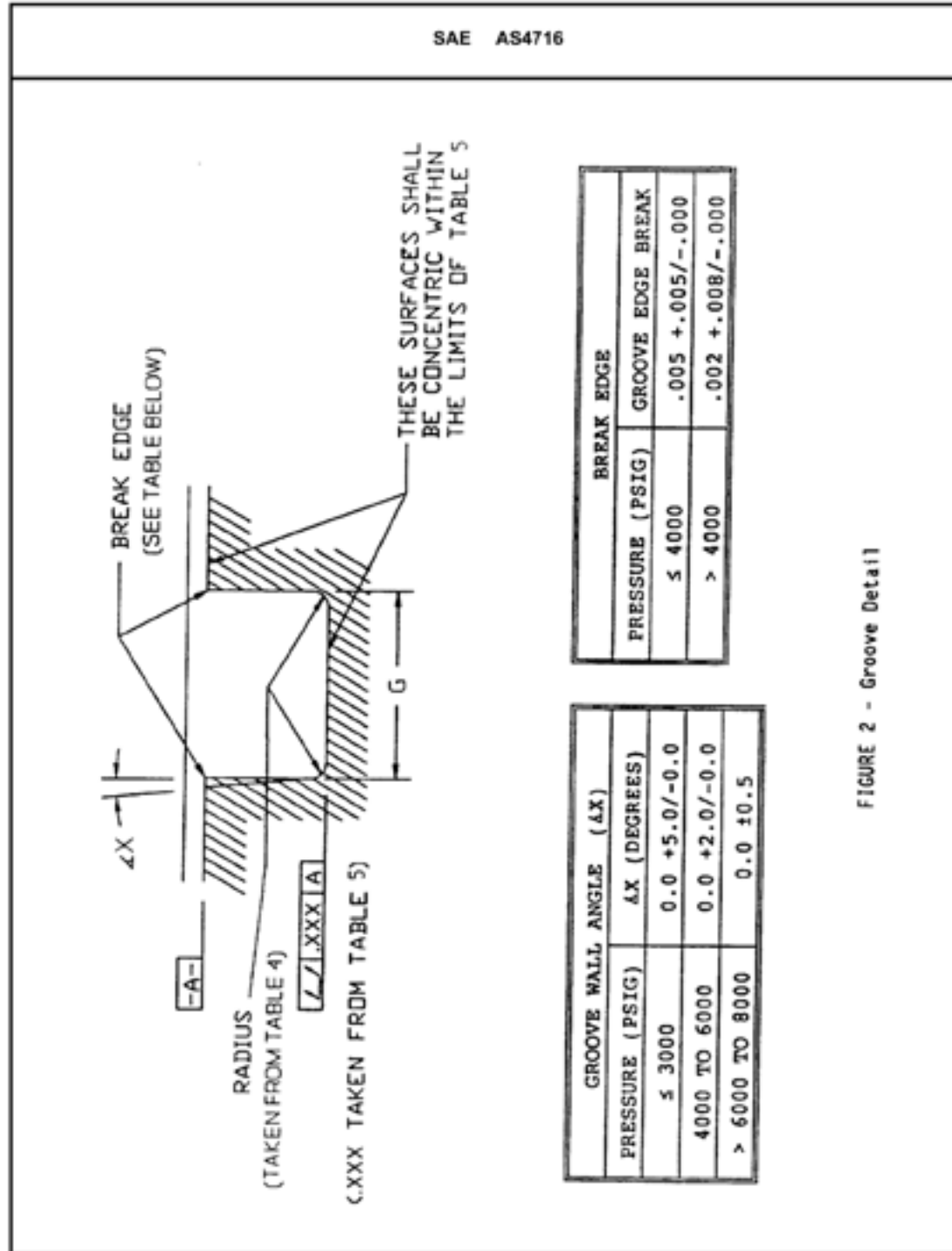


FIGURE 2 - Groove Detail

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TABLE 1 - Standard Gland Dimensions and O-ring Squeeze in Inches

Gland and AS568 Dash No.	Piston or Cylinder OD C	Cylinder Bore ID A	Gland OD F	Rod or Gland Sleeve OD B	Rod Bore ID H	Gland ID E	Actual Squeeze	
							Piston/Rod	Piston/Rod
001	.093 .092	.095 .096	.033 .032	.033 .032	.035 .036	.095 .096	.0000 .0000	.0145 .0145
002	.126 .125	.128 .129	.048 .047	.048 .047	.050 .051	.128 .129	.0000 .0000	.0139 .0139
003	.157 .156	.159 .160	.063 .062	.063 .062	.065 .066	.159 .160	.0000 .0000	.0154 .0154
004	.188 .187	.190 .191	.076 .075	.076 .075	.078 .079	.190 .191	.0003 .0003	.0176 .0176
005	.219 .218	.221 .222	.108 .107	.108 .107	.110 .111	.221 .222	.0020 .0020	.0178 .0178
006	.233 .232	.235 .236	.123 .122	.123 .122	.125 .126	.235 .236	.0023 .0023	.0177 .0177
007	.264 .263	.266 .267	.154 .153	.154 .153	.156 .157	.266 .267	.0032 .0032	.0179 .0179
008	.295 .294	.297 .298	.189 .188	.189 .188	.187 .188	.294 .295	.0050 .0053	.0193 .0196
009	.327 .326	.329 .330	.220 .219	.217 .216	.219 .220	.327 .328	.0052 .0052	.0192 .0193
010	.358 .357	.360 .361	.250 .249	.248 .247	.250 .251	.359 .360	.0052 .0050	.0190 .0189
011	.420 .419	.422 .423	.312 .311	.310 .309	.312 .313	.421 .422	.0057 .0054	.0193 .0191
012	.483 .482	.485 .486	.375 .374	.373 .372	.375 .376	.484 .485	.0060 .0057	.0194 .0192
013	.548 .547	.550 .552	.441 .439	.435 .433	.437 .438	.545 .547	.0060 .0050	.0196 .0198
014	.611 .610	.613 .615	.504 .502	.498 .496	.500 .501	.608 .610	.0052 .0051	.0197 .0199
015	.673 .672	.675 .677	.566 .564	.560 .558	.562 .563	.670 .672	.0052 .0051	.0200 .0202
016	.736 .735	.738 .740	.629 .627	.623 .621	.625 .626	.733 .735	.0052 .0051	.0203 .0205
017	.798 .797	.800 .802	.691 .689	.685 .683	.687 .688	.795 .797	.0054 .0052	.0204 .0205
018	.861 .860	.863 .865	.753 .751	.748 .746	.750 .751	.858 .860	.0050 .0053	.0200 .0205
019	.923 .922	.925 .927	.815 .813	.810 .808	.812 .813	.920 .922	.0051 .0053	.0200 .0205
020	.989 .988	.991 .993	.881 .879	.873 .871	.875 .876	.983 .985	.0050 .0054	.0198 .0205
021	1.051 1.050	1.053 1.055	.943 .941	.935 .933	.937 .938	1.045 1.047	.0051 .0055	.0199 .0205

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TABLE 1 (Continued)

Gland and AS568 Dash No.	Piston or Cylinder OD C	Cylinder Bore ID A	Gland OD F	Rod or Gland Sleeve OD B	Rod Bore ID H	Gland ID E	Actual Minimum Squeeze		Actual Maximum Squeeze	
							Piston/ Rod	Piston/ Rod	Piston/ Rod	Piston/ Rod
022	1.114	1.116	1.006	.998	1.000	1.108	.0051	.0200		
	1.113	1.118	1.004	.996	1.001	1.110	.0055	.0205		
023	1.176	1.178	1.068	1.060	1.062	1.170	.0052	.0200		
	1.175	1.180	1.066	1.058	1.063	1.172	.0055	.0205		
024	1.239	1.241	1.131	1.123	1.125	1.233	.0052	.0200		
	1.238	1.243	1.129	1.121	1.126	1.235	.0056	.0205		
025	1.301	1.303	1.193	1.185	1.187	1.295	.0052	.0201		
	1.300	1.305	1.191	1.183	1.188	1.297	.0056	.0205		
026	1.384	1.386	1.256	1.248	1.250	1.358	.0053	.0201		
	1.383	1.388	1.254	1.246	1.251	1.360	.0056	.0205		
027	1.426	1.428	1.318	1.310	1.312	1.420	.0053	.0202		
	1.425	1.430	1.316	1.308	1.313	1.422	.0056	.0205		
028	1.489	1.491	1.381	1.373	1.375	1.483	.0053	.0203		
	1.488	1.493	1.379	1.371	1.376	1.485	.0056	.0205		
110	.548	.550	.379	.373	.375	.546	.0053	.0204		
	.547	.552	.377	.371	.376	.548	.0052	.0204		
111	.611	.613	.441	.435	.437	.609	.0052	.0202		
	.610	.615	.439	.433	.438	.611	.0050	.0201		
112	.673	.675	.502	.498	.500	.672	.0053	.0201		
	.672	.677	.500	.496	.501	.674	.0053	.0203		
113	.736	.738	.565	.560	.562	.734	.0052	.0204		
	.735	.740	.563	.558	.563	.736	.0052	.0207		
114	.798	.800	.627	.623	.625	.797	.0053	.0210		
	.797	.802	.625	.621	.626	.799	.0052	.0211		
115	.861	.863	.689	.685	.687	.859	.0050	.0206		
	.860	.865	.687	.683	.688	.861	.0054	.0212		
116	.923	.925	.751	.748	.750	.923	.0053	.0208		
	.922	.927	.749	.746	.751	.925	.0050	.0207		
117	.989	.991	.817	.810	.812	.985	.0050	.0205		
	.988	.993	.815	.808	.813	.987	.0050	.0209		
118	1.051	1.053	.879	.873	.875	1.048	.0052	.0207		
	1.050	1.055	.877	.871	.876	1.050	.0051	.0209		
119	1.114	1.116	.942	.935	.937	1.110	.0053	.0206		
	1.113	1.118	.940	.933	.938	1.112	.0052	.0209		
120	1.176	1.178	1.003	.998	1.000	1.173	.0050	.0204		
	1.175	1.180	1.001	.996	1.001	1.175	.0053	.0209		
121	1.239	1.241	1.066	1.060	1.062	1.235	.0050	.0203		
	1.238	1.243	1.064	1.058	1.063	1.237	.0054	.0209		
122	1.301	1.303	1.128	1.123	1.125	1.298	.0052	.0204		
	1.300	1.305	1.126	1.121	1.126	1.300	.0055	.0209		
123	1.384	1.386	1.191	1.185	1.187	1.380	.0051	.0205		
	1.383	1.388	1.189	1.183	1.188	1.382	.0054	.0210		

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TABLE 1 (Continued)

Gland and AS568 Dash No.	Piston or Cylinder OD C	Cylinder Bore ID A	Gland OD F	Rod or Gland Sleeve OD B	Rod Bore ID H	Gland ID E	Actual Minimum Squeeze		Actual Maximum Squeeze	
							Piston/ Rod	Piston/ Rod	Piston/ Rod	Piston/ Rod
124	1.426	1.428	1.253	1.248	1.250	1.423	.0052	.0206		
	1.425	1.430	1.251	1.246	1.251	1.425	.0055	.0210		
125	1.489	1.491	1.316	1.310	1.312	1.485	.0052	.0206		
	1.488	1.493	1.314	1.308	1.313	1.487	.0055	.0210		
126	1.551	1.553	1.378	1.373	1.375	1.548	.0053	.0207		
	1.550	1.555	1.376	1.371	1.376	1.550	.0056	.0210		
127	1.614	1.616	1.441	1.435	1.437	1.610	.0053	.0206		
	1.613	1.618	1.439	1.433	1.439	1.612	.0051	.0215		
128	1.676	1.678	1.503	1.498	1.500	1.673	.0054	.0207		
	1.675	1.680	1.501	1.496	1.502	1.675	.0052	.0215		
129	1.739	1.741	1.566	1.560	1.562	1.735	.0053	.0208		
	1.738	1.743	1.564	1.558	1.564	1.737	.0051	.0215		
130	1.802	1.805	1.631	1.623	1.625	1.798	.0053	.0217		
	1.801	1.807	1.629	1.621	1.627	1.800	.0051	.0215		
131	1.864	1.867	1.693	1.685	1.687	1.860	.0053	.0217		
	1.863	1.869	1.691	1.683	1.689	1.862	.0052	.0215		
132	1.927	1.930	1.756	1.748	1.750	1.923	.0054	.0217		
	1.926	1.932	1.754	1.746	1.752	1.925	.0052	.0215		
133	1.989	1.992	1.818	1.810	1.813	1.984	.0054	.0218		
	1.988	1.994	1.816	1.808	1.815	1.986	.0052	.0225		
134	2.052	2.055	1.881	1.873	1.876	2.047	.0055	.0218		
	2.051	2.057	1.879	1.871	1.878	2.049	.0053	.0225		
135	2.115	2.118	1.944	1.936	1.939	2.110	.0054	.0219		
	2.114	2.120	1.942	1.934	1.941	2.112	.0052	.0225		
136	2.177	2.180	2.006	1.998	2.001	2.172	.0055	.0219		
	2.176	2.182	2.004	1.996	2.003	2.174	.0053	.0225		
137	2.240	2.243	2.069	2.061	2.064	2.235	.0055	.0219		
	2.239	2.245	2.067	2.059	2.066	2.237	.0053	.0225		
138	2.302	2.305	2.131	2.123	2.126	2.297	.0055	.0219		
	2.301	2.307	2.129	2.121	2.128	2.299	.0053	.0225		
139	2.365	2.368	2.194	2.186	2.189	2.360	.0056	.0219		
	2.364	2.370	2.192	2.184	2.191	2.362	.0054	.0225		
140	2.427	2.430	2.256	2.248	2.251	2.422	.0056	.0219		
	2.426	2.432	2.254	2.246	2.253	2.424	.0054	.0225		
141	2.490	2.493	2.319	2.311	2.314	2.485	.0050	.0225		
	2.488	2.495	2.317	2.309	2.316	2.487	.0053	.0225		
142	2.552	2.555	2.381	2.373	2.376	2.547	.0051	.0225		
	2.550	2.557	2.379	2.371	2.378	2.549	.0053	.0225		
143	2.615	2.618	2.444	2.436	2.439	2.610	.0051	.0225		
	2.613	2.620	2.442	2.434	2.441	2.612	.0054	.0225		
144	2.677	2.680	2.506	2.498	2.501	2.672	.0051	.0225		
	2.675	2.682	2.504	2.496	2.503	2.674	.0054	.0225		

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TABLE 1 (Continued)

Gland and AS568 Dash No.	Piston or Cylinder OD C	Cylinder Bore ID A	Gland OD F	Rod or Gland Sleeve OD B	Rod Bore ID H	Gland ID E	Actual Minimum Squeeze ----- Piston/ Rod	Actual Maximum Squeeze ----- Piston/ Rod
145	2.740 2.738	2.743 2.745	2.569 2.567	2.561 2.559	2.564 2.566	2.735 2.737	.0052 .0054	.0225 .0225
146	2.802 2.800	2.805 2.807	2.631 2.629	2.623 2.621	2.626 2.628	2.797 2.799	.0052 .0054	.0225 .0225
147	2.865 2.863	2.868 2.870	2.694 2.692	2.686 2.684	2.689 2.691	2.860 2.862	.0051 .0054	.0225 .0225
148	2.927 2.925	2.930 2.932	2.756 2.754	2.748 2.746	2.751 2.753	2.922 2.924	.0052 .0054	.0225 .0225
149	2.990 2.988	2.993 2.995	2.819 2.817	2.811 2.809	2.814 2.816	2.985 2.987	.0052 .0054	.0225 .0225
210	.989 .988	.991 .993	.750 .748	.748 .746	.750 .751	.989 .991	.0052 .0054	.0244 .0247
211	1.051 1.050	1.053 1.055	.812 .810	.810 .808	.812 .813	1.051 1.053	.0054 .0055	.0244 .0248
212	1.114 1.113	1.116 1.118	.874 .872	.873 .871	.875 .876	1.115 1.117	.0051 .0052	.0242 .0243
213	1.176 1.175	1.178 1.180	.936 .934	.935 .933	.937 .938	1.177 1.179	.0052 .0053	.0242 .0244
214	1.239 1.238	1.241 1.243	.999 .997	.998 .996	1.000 1.001	1.240 1.242	.0054 .0054	.0243 .0244
215	1.301 1.300	1.303 1.305	1.064 1.062	1.060 1.058	1.062 1.063	1.302 1.304	.0067 .0056	.0254 .0244
216	1.364 1.363	1.366 1.368	1.124 1.122	1.123 1.121	1.125 1.126	1.365 1.367	.0054 .0055	.0246 .0247
217	1.426 1.425	1.428 1.430	1.186 1.184	1.185 1.183	1.187 1.188	1.427 1.429	.0055 .0056	.0246 .0247
218	1.489 1.488	1.491 1.493	1.249 1.247	1.248 1.246	1.250 1.251	1.490 1.492	.0056 .0057	.0246 .0247
219	1.551 1.550	1.553 1.555	1.311 1.309	1.310 1.308	1.312 1.313	1.552 1.554	.0057 .0058	.0246 .0248
220	1.614 1.613	1.616 1.618	1.374 1.372	1.373 1.371	1.375 1.376	1.615 1.617	.0058 .0059	.0247 .0248
221	1.676 1.675	1.678 1.680	1.436 1.434	1.435 1.433	1.437 1.438	1.677 1.679	.0059 .0059	.0247 .0248
222	1.739 1.738	1.741 1.743	1.499 1.497	1.498 1.496	1.500 1.501	1.740 1.742	.0057 .0058	.0250 .0250
223	1.864 1.863	1.867 1.869	1.625 1.623	1.623 1.621	1.625 1.627	1.865 1.867	.0053 .0054	.0254 .0255
224	1.989 1.988	1.992 1.994	1.750 1.748	1.748 1.746	1.750 1.752	1.990 1.992	.0055 .0056	.0254 .0255
225	2.115 2.114	2.118 2.120	1.876 1.874	1.873 1.871	1.876 1.878	2.115 2.117	.0054 .0050	.0255 .0260

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TABLE 1 (Continued)

Gland and AS568 Dash No.	Piston or Cylinder OD C	Cylinder Bore ID A	Gland OD F	Rod or Gland Sleeve OD B	Rod Bore ID H	Gland ID E	Actual Minimum Squeeze ----- Piston/ Rod	Actual Maximum Squeeze ----- Piston/ Rod
226	2.240 2.239	2.243 2.245	2.001 1.999	1.998 1.996	2.001 2.003	2.240 2.242	.0055 .0051	.0255 .0260
227	2.365 2.364	2.368 2.370	2.126 2.124	2.123 2.121	2.126 2.128	2.365 2.367	.0056 .0052	.0255 .0260
228	2.490 2.488	2.493 2.495	2.251 2.249	2.248 2.246	2.251 2.253	2.490 2.492	.0051 .0052	.0260 .0260
229	2.615 2.613	2.618 2.620	2.376 2.374	2.373 2.371	2.376 2.378	2.615 2.617	.0051 .0053	.0260 .0260
230	2.740 2.738	2.743 2.745	2.501 2.499	2.498 2.496	2.501 2.503	2.740 2.742	.0052 .0054	.0260 .0260
231	2.865 2.863	2.868 2.870	2.626 2.624	2.623 2.621	2.626 2.628	2.865 2.867	.0053 .0054	.0260 .0260
232	2.990 2.988	2.993 2.995	2.751 2.749	2.748 2.746	2.751 2.753	2.990 2.992	.0052 .0053	.0260 .0260
233	3.115 3.113	3.118 3.120	2.876 2.874	2.873 2.871	2.876 2.878	3.115 3.117	.0053 .0054	.0260 .0260
234	3.240 3.238	3.243 3.245	3.001 2.999	2.997 2.995	3.000 3.002	3.239 3.241	.0053 .0055	.0260 .0260
235	3.365 3.363	3.368 3.370	3.126 3.124	3.122 3.120	3.125 3.127	3.364 3.366	.0054 .0055	.0260 .0260
236	3.490 3.488	3.493 3.495	3.251 3.249	3.247 3.245	3.250 3.252	3.489 3.491	.0054 .0056	.0260 .0260
237	3.615 3.613	3.618 3.620	3.376 3.374	3.372 3.370	3.375 3.377	3.614 3.616	.0055 .0056	.0260 .0260
238	3.740 3.738	3.743 3.745	3.501 3.499	3.497 3.495	3.500 3.502	3.739 3.741	.0055 .0057	.0260 .0260
239	3.865 3.863	3.868 3.870	3.626 3.624	3.622 3.620	3.625 3.627	3.864 3.866	.0055 .0056	.0260 .0260
240	3.990 3.988	3.993 3.995	3.751 2.749	3.747 3.745	3.750 3.752	3.989 3.991	.0055 .0056	.0260 .0260
241	4.115 4.113	4.118 4.120	3.876 3.874	3.872 3.870	3.875 3.877	4.114 4.116	.0056 .0057	.0260 .0260
242	4.240 4.238	4.243 4.245	4.001 3.999	3.997 3.995	4.000 4.002	4.239 4.241	.0056 .0057	.0260 .0260
243	4.365 4.363	4.368 4.370	4.126 4.124	4.122 4.120	4.125 4.127	4.364 4.366	.0056 .0057	.0260 .0260
244	4.489 4.487	4.493 4.495	4.251 4.249	4.247 4.245	4.250 4.252	4.489 4.491	.0051 .0057	.0265 .0260
245	4.614 4.612	4.618 4.620	4.376 4.374	4.372 4.370	4.375 4.377	4.614 4.616	.0051 .0058	.0265 .0260
246	4.739 4.737	4.743 4.745	4.501 4.499	4.497 4.495	4.501 4.503	4.739 4.741	.0052 .0053	.0265 .0265

O-RING GLAND DESIGN

SAE AS4716

TABLE 1 (Continued)

Gland and AS568 Dash No.	Piston or Cylinder OD C	Cylinder Bore ID A	Gland OD F	Rod or Gland Sleeve OD B	Rod Bore ID H	Gland ID E	Actual Minimum Squeeze Piston/Rod	Actual Maximum Squeeze Piston/Rod
247	4.964 4.862	4.868 4.870	4.626 4.624	4.622 4.620	4.626 4.626	4.864 4.866	.0052 .0053	.0265 .0265
325	1.864 1.863	1.867 1.869	1.495 1.493	1.496 1.496	1.500 1.502	1.870 1.872	.0081 .0079	.0322 .0318
326	1.989 1.988	1.992 1.994	1.620 1.618	1.623 1.621	1.625 1.627	1.995 1.997	.0083 .0081	.0323 .0319
327	2.115 2.114	2.118 2.120	1.746 1.744	1.748 1.746	1.750 1.752	2.120 2.122	.0085 .0083	.0322 .0320
328	2.240 2.239	2.243 2.245	1.871 1.869	1.873 1.871	1.876 1.876	2.245 2.247	.0087 .0080	.0323 .0325
329	2.365 2.364	2.368 2.370	1.996 1.994	1.998 1.996	2.001 2.003	2.370 2.372	.0086 .0080	.0326 .0329
330	2.490 2.488	2.493 2.495	2.121 2.119	2.123 2.121	2.126 2.128	2.495 2.497	.0083 .0081	.0332 .0330
331	2.615 2.613	2.618 2.620	2.246 2.244	2.248 2.246	2.251 2.253	2.620 2.622	.0084 .0083	.0332 .0330
332	2.740 2.738	2.743 2.745	2.371 2.369	2.373 2.371	2.376 2.378	2.745 2.747	.0085 .0084	.0332 .0330
333	2.865 2.863	2.868 2.870	2.496 2.494	2.498 2.496	2.501 2.503	2.870 2.872	.0085 .0084	.0334 .0332
334	2.990 2.988	2.993 2.995	2.621 2.619	2.623 2.621	2.626 2.628	2.995 2.997	.0087 .0085	.0334 .0332
335	3.115 3.113	3.118 3.120	2.746 2.744	2.748 2.746	2.751 2.753	3.120 3.122	.0088 .0087	.0334 .0332
336	3.240 3.238	3.243 3.245	2.871 2.869	2.873 2.871	2.876 2.878	3.245 3.247	.0089 .0088	.0334 .0332
337	3.365 3.363	3.368 3.370	2.996 2.994	2.997 2.995	3.000 3.002	3.369 3.371	.0087 .0087	.0335 .0335
338	3.490 3.488	3.493 3.495	3.121 3.119	3.122 3.120	3.125 3.127	3.494 3.496	.0088 .0088	.0335 .0335
339	3.615 3.613	3.618 3.620	3.246 3.244	3.247 3.245	3.250 3.252	3.619 3.621	.0089 .0089	.0335 .0335
340	3.740 3.738	3.743 3.745	3.371 3.369	3.372 3.370	3.375 3.377	3.744 3.746	.0090 .0090	.0335 .0335
341	3.865 3.863	3.868 3.870	3.496 3.494	3.497 3.495	3.500 3.502	3.869 3.871	.0091 .0090	.0335 .0335
342	3.990 3.988	3.993 3.995	3.621 3.619	3.622 3.620	3.625 3.627	3.994 3.996	.0090 .0089	.0335 .0335
343	4.115 4.113	4.118 4.120	3.746 3.744	3.747 3.745	3.750 3.752	4.119 4.121	.0090 .0090	.0335 .0335
344	4.240 4.238	4.243 4.245	3.871 3.869	3.872 3.870	3.875 3.877	4.244 4.246	.0091 .0091	.0335 .0335

SAE AS4716

TABLE 1 (Continued)

Gland and AS568 Dash No.	Piston or Cylinder OD C	Cylinder Bore ID A	Gland OD F	Rod or Gland Sleeve OD B	Rod Bore ID H	Gland ID E	Actual Minimum Squeeze Piston/Rod	Actual Maximum Squeeze Piston/Rod
345	4.365 4.363	4.368 4.370	3.996 3.994	3.997 3.995	4.000 4.002	4.369 4.371	.0092 .0091	.0335 .0335
346	4.489 4.487	4.493 4.495	4.121 4.119	4.122 4.120	4.125 4.127	4.494 4.496	.0087 .0092	.0340 .0335
347	4.614 4.612	4.618 4.620	4.246 4.244	4.247 4.245	4.250 4.252	4.619 4.621	.0087 .0092	.0340 .0335
348	4.739 4.737	4.743 4.745	4.371 4.369	4.372 4.370	4.375 4.377	4.744 4.746	.0088 .0092	.0340 .0335
349	4.864 4.862	4.868 4.870	4.496 4.494	4.497 4.495	4.500 4.502	4.869 4.871	.0088 .0093	.0340 .0335
425	4.970 4.968	4.974 4.977	4.497 4.494	4.497 4.494	4.501 4.503	4.974 4.977	.0175 .0175	.0480 .0480
426	5.095 5.093	5.099 5.102	4.622 4.619	4.622 4.619	4.626 4.628	5.099 5.102	.0176 .0176	.0480 .0480
427	5.220 5.218	5.224 5.227	4.747 4.744	4.747 4.744	4.751 4.753	5.224 5.227	.0176 .0176	.0480 .0480
428	5.345 5.343	5.349 5.352	4.872 4.869	4.872 4.869	4.876 4.878	5.349 5.352	.0177 .0177	.0480 .0480
429	5.470 5.468	5.474 5.477	4.997 4.994	4.997 4.994	5.001 5.003	5.474 5.477	.0176 .0176	.0480 .0480
430	5.595 5.593	5.599 5.602	5.122 5.119	5.122 5.119	5.126 5.128	5.599 5.602	.0176 .0176	.0480 .0480
431	5.720 5.718	5.724 5.727	5.247 5.244	5.247 5.244	5.251 5.253	5.724 5.727	.0177 .0177	.0480 .0480
432	5.845 5.843	5.849 5.852	5.372 5.369	5.372 5.369	5.376 5.378	5.849 5.852	.0178 .0178	.0480 .0480
433	5.970 5.968	5.974 5.977	5.497 5.494	5.497 5.494	5.501 5.503	5.974 5.977	.0178 .0178	.0480 .0480
434	6.095 6.093	6.099 6.102	5.622 5.619	5.622 5.619	5.626 5.628	6.099 6.102	.0179 .0179	.0480 .0480
435	6.220 6.218	6.224 6.227	5.747 5.744	5.747 5.744	5.751 5.753	6.224 6.227	.0179 .0179	.0480 .0480
436	6.345 6.343	6.349 6.352	5.872 5.869	5.872 5.869	5.876 5.878	6.349 6.352	.0180 .0180	.0480 .0480
437	6.470 6.468	6.474 6.477	5.997 5.994	5.997 5.994	6.001 6.003	6.474 6.477	.0180 .0180	.0480 .0480
438	6.720 6.718	6.724 6.727	6.247 6.244	6.247 6.244	6.251 6.253	6.724 6.727	.0180 .0180	.0480 .0480
439	6.970 6.968	6.974 6.977	6.497 6.494	6.497 6.494	6.501 6.504	6.974 6.977	.0181 .0176	.0480 .0485
440	7.220 7.218	7.224 7.227	6.747 6.744	6.747 6.744	6.751 6.754	7.224 7.227	.0182 .0177	.0480 .0485