



AEROSPACE STANDARD

AS5857™**REV. A**

Issued 2005-03
Revised 2010-11
Reaffirmed 2022-08

Superseding AS5857

Gland Design, O-Ring and Other Elastomeric Seals, Static Applications

RATIONALE

AS5857A has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Aerospace Standard (AS) provides standardized gland (groove) design criteria and dimensions for elastomeric seal glands for static applications. The glands have been specifically designed for applications using SAE AS568 size O-rings at pressures exceeding 1500 psi (10.3 MPa) utilizing one or two anti-extrusion (backup) rings and applications at pressures under 1500 psi (10.3 MPa) without backup rings. The glands have been sized to provide increased squeeze as compared to AS4716 for more effective sealing at low temperatures and low seal swell conditions. These glands are not recommended for dynamic use. Primary usage is for static external sealing.

The rod dimensions are the same as AS4716. The cylinder bore dimensions are the same as AS4716 except for sizes -001 thru -011 and -104 thru -113.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of the other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AS568	Aerospace Size Standard for O-rings
AS4716	Gland Design, O-ring and Other Elastomeric Seals
AS5860	Retainers, (Back-Up Rings), Hydraulic and Pneumatic, Polytetrafluoroethylene Resin, Single Turn, Static Gland
AS5861	Retainers, (Back-Up Rings), Hydraulic and Pneumatic, Polytetrafluoroethylene Resin, Solid, Static Gland
ARP4727	Gland Design, Computation of Squeeze and Gland Volume

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Documents

Document Sharing Hub

2.1.2 ASME Publications

Available from the American Society of Mechanical Engineers, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2900, Tel: 973-882-1170, www.asme.org.

ASME B46.1 Surface Texture (Surface roughness, waviness & lay)

2.1.3 National Aerospace Standard Publications

Available from Aerospace Industries Association, Inc., 1000 Wilson Boulevard, Suite 1700, Arlington, VA 22209-3928, Tel: 703-358-1000, www.aia-aerospace.org.

NAS 1611 Packing, Preformed O-Ring, Phosphate Ester Resistant

2.1.4 ISO Publications

Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO 4287 Geometrical Product Specifications (GPS) — Surface Texture: Profile Method — Terms, Definitions and Surface Texture Parameters

2.2 Order of Precedence

In the event of a conflict between the text of this document and the references cited herein, the text of this documents takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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 (10.3 MPa) 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 zero, one and two backup rings. The gland widths are designed to work with backup rings with maximum widths given in column 4 of Table 2.

For ease of manufacture it is recommended that piston style glands be used where possible. This also improves the assembly of the glands as the O-ring is less likely to be pinched.

3.1.2 Dimensions: The fits and tolerances are the same as those in AS4716 and also Figures 1 and 2 and Tables 3, 4 and 5 are the same. Rod OD (B) and Rod Bore (H) are the same as AS4716. Cylinder Bore (A) and Piston OD (C) are the same as AS4716 except for sizes -001 thru -011 and -104 thru -113 which are smaller to avoid excessive stretch. Changes have been made to the other gland dimensions to obtain a goal of 10% minimum squeeze at room temperature. This was achieved in the majority of the glands. See Table 1B. Changes have been made to the gland width dimensions to achieve 90% maximum gland occupancy at 275 °F (135 °C) in the zero backup gland width. The gland width of the one and two backup grooves is simply based on adding the maximum backup ring width to the width of the no backup groove plus an allowance for backup ring growth at 275 °F (135 °C). The additional allowance was added where needed to not exceed 90% fill of the space for the seal. A coefficient of thermal expansion of 7×10^{-5} unit length per °F (1.26×10^{-4} unit length per °C) was used for the backup ring material. A coefficient of thermal expansion of 1.5×10^{-4} unit length per °F (2.7×10^{-4} unit length per °C) was used for the elastomer. Gland wall angle and break edge dimensions have been included to permit these glands to be used at pressures up to 8000 psi (55.2 MPa).

- 3.1.3 Limitations: Some of the smaller sizes have the possibility of exceeding 5% stretch and/or 30% squeeze at worst case tolerances. See Table 1B. Those sizes should be avoided unless the designer is confident that the chosen elastomer will work under those conditions. Use of O-rings like NAS1611 which have tighter tolerances than AS568 will reduce the extremes of stretch and squeeze.

NOTE: The use of O-ring seals with a nominal cross section of less than 0.103 inch is problematic for two reasons: (1) The O-ring and gland tolerances are a large percentage of the nominal gland dimensions and the percentage increases as the O-ring cross section decreases. This causes a large range of resultant stretch and squeeze. (2) The ratio of area to volume of O-rings increases significantly as the O-ring cross section decreases. At the same time, the volume of the O-ring is decreasing. This makes the smaller cross section seals much more sensitive than large cross section seals to the rate of attack by the fluid to which they are exposed. Published data shows that some small cross section nitrile seals exposed to red oil have significantly more loss of swell and therefore loss of cross section diameter than larger cross section seals when exposed to the fluid for the same length of time at high temperature. Any seal material that suffers from loss of swell after exposure to a fluid will provide a more reliable seal if a larger cross section seal is used. Therefore, the use of O-ring sizes with a nominal cross section smaller than 0.103 inch or their equivalent proprietary shapes, is not recommended due to the increased possibility of leakage and the subsequent decrease in reliability of the installation.

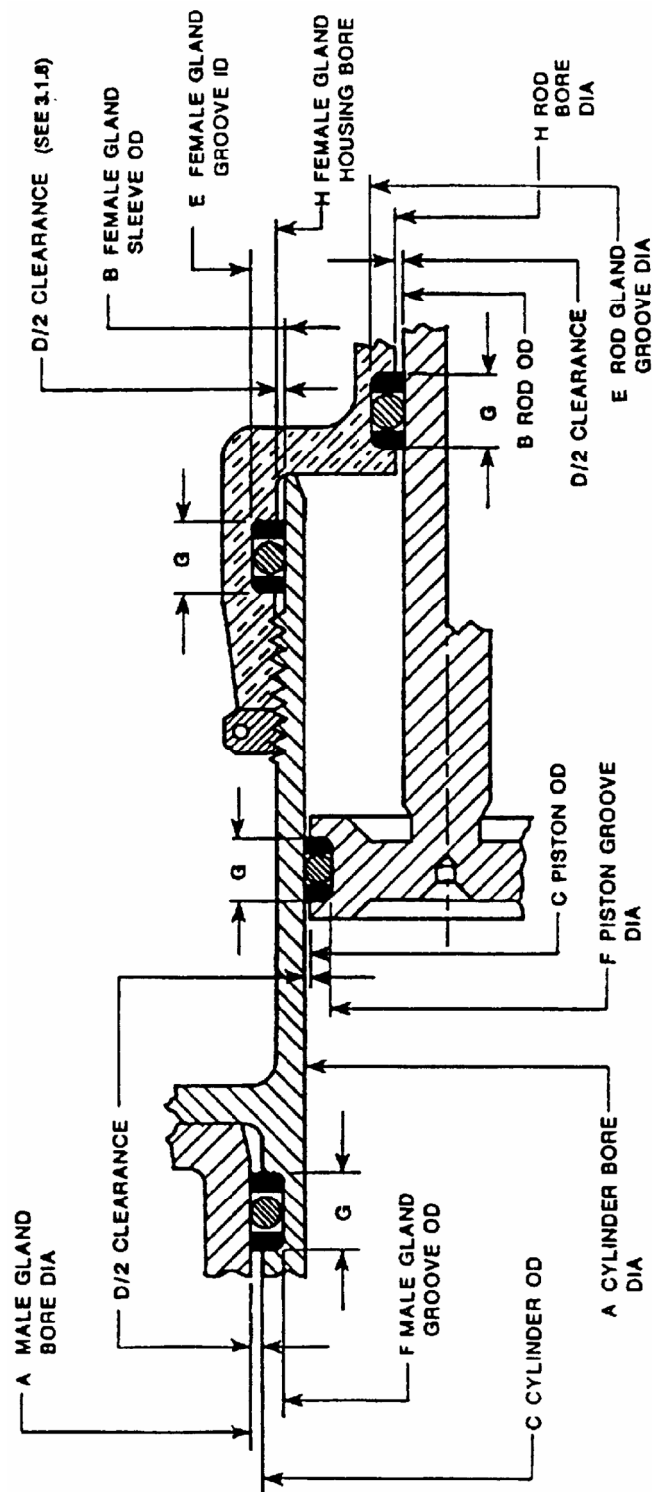
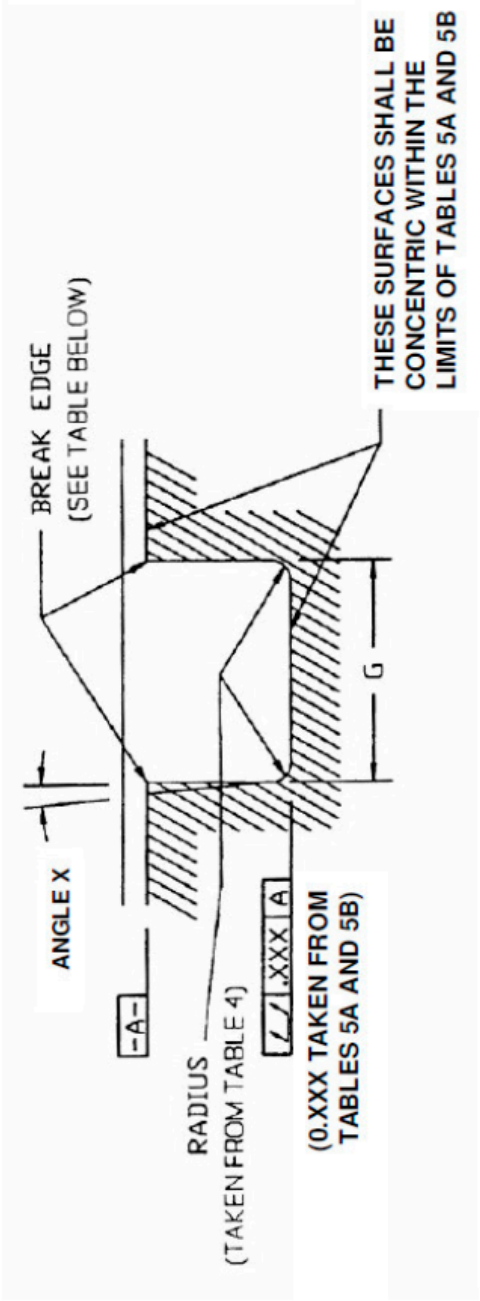


FIGURE 1 - GLAND DESIGN

Note: Dynamic applications are shown to illustrate the concept of rod and piston glands. This is not to imply that this standard is to be used for dynamic applications.



BREAK EDGE		
PRESSURE (PSIG)	PRESSURE (MPa)	GROOVE EDGE BREAK (inches)
≤ 4,000	≤ 27.6	.005 ±.005/-0.000
> 4,000	> 27.6	.002 ±.008/-0.000

GROOVE WALL ANGLE (Angle X)		
PRESSURE (PSIG)	PRESSURE (MPa)	Angle X (DEGREES)
≤ 3,000	≤ 20.7	0.0 ±5.0/-0.0
4,000 TO 6,000	27.6 TO 41.3	0.0 ±2.0/-0.0
> 6,000 TO 8,000	> 41.3 TO 55.1	0.0 ±0.5

FIGURE 2 - GLAND DETAILS

TABLE 1A - STANDARD GLAND DIMENSIONS 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
001	0.084 0.083	0.087 0.086	0.035 0.034	0.033 0.032	0.036 0.035	0.087 0.086
002	0.116 0.115	0.119 0.118	0.048 0.047	0.048 0.047	0.051 0.050	0.119 0.118
003	0.149 0.148	0.152 0.151	0.063 0.062	0.063 0.062	0.066 0.065	0.152 0.151
004	0.183 0.182	0.186 0.185	0.078 0.077	0.076 0.075	0.079 0.078	0.185 0.184
005	0.215 0.214	0.218 0.217	0.110 0.109	0.108 0.107	0.111 0.110	0.217 0.216
006	0.228 0.227	0.231 0.230	0.123 0.122	0.123 0.122	0.126 0.125	0.232 0.231
007	0.259 0.258	0.262 0.261	0.154 0.153	0.154 0.153	0.157 0.156	0.263 0.262
008	0.291 0.290	0.294 0.293	0.186 0.185	0.185 0.184	0.188 0.187	0.294 0.293
009	0.324 0.323	0.327 0.326	0.219 0.218	0.217 0.216	0.220 0.219	0.326 0.325
010	0.355 0.354	0.358 0.357	0.250 0.249	0.248 0.247	0.251 0.250	0.357 0.356
011	0.418 0.417	0.421 0.420	0.313 0.312	0.310 0.309	0.313 0.312	0.419 0.418
012	0.483 0.482	0.486 0.485	0.378 0.377	0.373 0.372	0.376 0.375	0.482 0.481
013	0.548 0.547	0.552 0.550	0.443 0.441	0.435 0.433	0.438 0.437	0.545 0.543
014	0.611 0.610	0.615 0.613	0.506 0.504	0.498 0.496	0.501 0.500	0.608 0.606
015	0.673 0.672	0.677 0.675	0.568 0.566	0.560 0.558	0.563 0.562	0.670 0.668
016	0.736 0.735	0.740 0.738	0.631 0.629	0.623 0.621	0.626 0.625	0.733 0.731

TABLE 1A - STANDARD GLAND DIMENSIONS IN INCHES (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
017	0.798 0.797	0.802 0.800	0.693 0.691	0.685 0.683	0.688 0.687	0.795 0.793
018	0.861 0.860	0.865 0.863	0.756 0.754	0.748 0.746	0.751 0.750	0.858 0.856
019	0.923 0.922	0.927 0.925	0.818 0.816	0.810 0.808	0.813 0.812	0.920 0.918
020	0.989 0.988	0.993 0.991	0.884 0.882	0.873 0.871	0.876 0.875	0.983 0.981
021	1.051 1.050	1.055 1.053	0.946 0.944	0.935 0.933	0.938 0.937	1.045 1.043
022	1.114 1.113	1.118 1.116	1.009 1.007	0.998 0.996	1.001 1.000	1.108 1.106
023	1.176 1.175	1.180 1.178	1.071 1.069	1.060 1.058	1.063 1.062	1.170 1.168
024	1.239 1.238	1.243 1.241	1.134 1.132	1.123 1.121	1.126 1.125	1.233 1.231
025	1.301 1.300	1.305 1.303	1.196 1.194	1.185 1.183	1.188 1.187	1.295 1.293
026	1.364 1.363	1.368 1.366	1.259 1.257	1.248 1.246	1.251 1.250	1.358 1.356
027	1.426 1.425	1.430 1.428	1.321 1.319	1.310 1.308	1.313 1.312	1.420 1.418
028	1.489 1.488	1.493 1.491	1.384 1.382	1.373 1.371	1.376 1.375	1.483 1.481
104	0.284 0.283	0.287 0.286	0.121 0.120	0.123 0.122	0.126 0.125	0.289 0.288
105	0.315 0.314	0.318 0.317	0.152 0.151	0.154 0.153	0.157 0.156	0.320 0.319
106	0.347 0.346	0.350 0.349	0.184 0.183	0.185 0.184	0.188 0.187	0.351 0.350
107	0.380 0.379	0.383 0.382	0.217 0.216	0.217 0.216	0.220 0.219	0.383 0.382

TABLE 1A - STANDARD GLAND DIMENSIONS IN INCHES (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
108	0.412 0.411	0.415 0.414	0.249 0.248	0.248 0.247	0.251 0.250	0.414 0.413
109	0.475 0.474	0.478 0.477	0.312 0.311	0.310 0.309	0.313 0.312	0.476 0.475
110	0.539 0.538	0.543 0.541	0.377 0.375	0.373 0.371	0.376 0.375	0.540 0.538
111	0.602 0.601	0.606 0.604	0.440 0.438	0.435 0.433	0.438 0.437	0.602 0.600
112	0.666 0.665	0.670 0.668	0.504 0.502	0.498 0.496	0.501 0.500	0.665 0.663
113	0.732 0.731	0.736 0.734	0.570 0.568	0.560 0.558	0.563 0.562	0.727 0.725
114	0.798 0.797	0.802 0.800	0.636 0.634	0.623 0.621	0.626 0.625	0.790 0.788
115	0.861 0.860	0.865 0.863	0.699 0.697	0.685 0.683	0.688 0.687	0.852 0.850
116	0.923 0.922	0.927 0.925	0.761 0.759	0.748 0.746	0.751 0.750	0.915 0.913
117	0.989 0.988	0.993 0.991	0.827 0.825	0.810 0.808	0.813 0.812	0.977 0.975
118	1.051 1.050	1.055 1.053	0.889 0.887	0.873 0.871	0.876 0.875	1.040 1.038
119	1.114 1.113	1.118 1.116	0.952 0.950	0.935 0.933	0.938 0.937	1.102 1.100
120	1.176 1.175	1.180 1.178	1.014 1.012	0.998 0.996	1.001 1.000	1.165 1.163
121	1.239 1.238	1.243 1.241	1.077 1.075	1.060 1.058	1.063 1.062	1.227 1.225
122	1.301 1.300	1.305 1.303	1.139 1.137	1.123 1.121	1.126 1.125	1.290 1.288
123	1.364 1.363	1.368 1.366	1.202 1.200	1.185 1.183	1.188 1.187	1.352 1.350

TABLE 1A - STANDARD GLAND DIMENSIONS IN INCHES (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
124	1.426 1.425	1.430 1.428	1.264 1.262	1.248 1.246	1.251 1.250	1.415 1.413
125	1.489 1.488	1.493 1.491	1.327 1.325	1.310 1.308	1.313 1.312	1.477 1.475
126	1.551 1.550	1.555 1.553	1.389 1.387	1.373 1.371	1.376 1.375	1.540 1.538
127	1.614 1.613	1.618 1.616	1.452 1.450	1.435 1.433	1.439 1.437	1.602 1.600
128	1.676 1.675	1.680 1.678	1.514 1.512	1.498 1.496	1.502 1.500	1.665 1.663
129	1.739 1.738	1.743 1.741	1.577 1.575	1.560 1.558	1.564 1.562	1.727 1.725
130	1.802 1.801	1.807 1.805	1.641 1.639	1.623 1.621	1.627 1.625	1.790 1.788
131	1.864 1.863	1.869 1.867	1.703 1.701	1.685 1.683	1.689 1.687	1.852 1.850
132	1.927 1.926	1.932 1.930	1.766 1.764	1.748 1.746	1.752 1.750	1.915 1.913
133	1.989 1.988	1.994 1.992	1.828 1.826	1.810 1.808	1.815 1.813	1.977 1.975
134	2.052 2.051	2.057 2.055	1.891 1.889	1.873 1.871	1.878 1.876	2.040 2.038
135	2.115 2.114	2.120 2.118	1.954 1.952	1.936 1.934	1.941 1.939	2.103 2.101
136	2.177 2.176	2.182 2.180	2.016 2.014	1.998 1.996	2.003 2.001	2.165 2.163
137	2.240 2.239	2.245 2.243	2.079 2.077	2.061 2.059	2.066 2.064	2.228 2.226
138	2.302 2.301	2.307 2.305	2.141 2.139	2.123 2.121	2.128 2.126	2.290 2.288
139	2.365 2.364	2.370 2.368	2.204 2.202	2.186 2.184	2.191 2.189	2.353 2.351

TABLE 1A - STANDARD GLAND DIMENSIONS IN INCHES (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
140	2.427 2.426	2.432 2.430	2.266 2.264	2.248 2.246	2.253 2.251	2.415 2.413
141	2.490 2.488	2.495 2.493	2.329 2.327	2.311 2.309	2.316 2.314	2.478 2.476
142	2.552 2.550	2.557 2.555	2.391 2.389	2.373 2.371	2.378 2.376	2.540 2.538
143	2.615 2.613	2.620 2.618	2.454 2.452	2.436 2.434	2.441 2.439	2.603 2.601
144	2.677 2.675	2.682 2.680	2.516 2.514	2.498 2.496	2.503 2.501	2.665 2.663
145	2.740 2.738	2.745 2.743	2.579 2.577	2.561 2.559	2.566 2.564	2.728 2.726
146	2.802 2.800	2.807 2.805	2.641 2.639	2.623 2.621	2.628 2.626	2.790 2.788
147	2.865 2.863	2.870 2.868	2.704 2.702	2.686 2.684	2.691 2.689	2.853 2.851
148	2.927 2.925	2.932 2.930	2.766 2.764	2.748 2.746	2.753 2.751	2.915 2.913
149	2.990 2.988	2.995 2.993	2.829 2.827	2.811 2.809	2.816 2.814	2.978 2.976
210	0.989 0.988	0.993 0.991	0.767 0.765	0.748 0.746	0.751 0.750	0.976 0.974
211	1.051 1.050	1.055 1.053	0.829 0.827	0.810 0.808	0.813 0.812	1.038 1.036
212	1.114 1.113	1.118 1.116	0.892 0.890	0.873 0.871	0.876 0.875	1.101 1.099
213	1.176 1.175	1.180 1.178	0.954 0.952	0.935 0.933	0.938 0.937	1.163 1.161
214	1.239 1.238	1.243 1.241	1.017 1.015	0.998 0.996	1.001 1.000	1.226 1.224
215	1.301 1.300	1.305 1.303	1.079 1.077	1.060 1.058	1.063 1.062	1.288 1.286

TABLE 1A - STANDARD GLAND DIMENSIONS IN INCHES (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
216	1.364 1.363	1.368 1.366	1.142 1.140	1.123 1.121	1.126 1.125	1.351 1.349
217	1.426 1.425	1.430 1.428	1.204 1.202	1.185 1.183	1.188 1.187	1.413 1.411
218	1.489 1.488	1.493 1.491	1.267 1.265	1.248 1.246	1.251 1.250	1.476 1.474
219	1.551 1.550	1.555 1.553	1.329 1.327	1.310 1.308	1.313 1.312	1.538 1.536
220	1.614 1.613	1.618 1.616	1.392 1.390	1.373 1.371	1.376 1.375	1.601 1.599
221	1.676 1.675	1.680 1.678	1.454 1.452	1.435 1.433	1.438 1.437	1.663 1.661
222	1.739 1.738	1.743 1.741	1.517 1.515	1.498 1.496	1.501 1.500	1.726 1.724
223	1.864 1.863	1.869 1.867	1.643 1.641	1.623 1.621	1.627 1.625	1.851 1.849
224	1.989 1.988	1.994 1.992	1.768 1.766	1.748 1.746	1.752 1.750	1.976 1.974
225	2.115 2.114	2.120 2.118	1.894 1.892	1.873 1.871	1.878 1.876	2.101 2.099
226	2.240 2.239	2.245 2.243	2.019 2.017	1.998 1.996	2.003 2.001	2.226 2.224
227	2.365 2.364	2.370 2.368	2.144 2.142	2.123 2.121	2.128 2.126	2.351 2.349
228	2.490 2.488	2.495 2.493	2.269 2.267	2.248 2.246	2.253 2.251	2.476 2.474
229	2.615 2.613	2.620 2.618	2.394 2.392	2.373 2.371	2.378 2.376	2.601 2.599
230	2.740 2.738	2.745 2.743	2.519 2.517	2.498 2.496	2.503 2.501	2.726 2.724
231	2.865 2.863	2.870 2.868	2.644 2.642	2.623 2.621	2.628 2.626	2.851 2.849

TABLE 1A - STANDARD GLAND DIMENSIONS IN INCHES (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
232	2.990 2.988	2.995 2.993	2.769 2.767	2.748 2.746	2.753 2.751	2.976 2.974
233	3.115 3.113	3.120 3.118	2.894 2.892	2.873 2.871	2.878 2.876	3.101 3.099
234	3.240 3.238	3.245 3.243	3.019 3.017	2.997 2.995	3.002 3.000	3.225 3.223
235	3.365 3.363	3.370 3.368	3.144 3.142	3.122 3.120	3.127 3.125	3.350 3.348
236	3.490 3.488	3.495 3.493	3.269 3.267	3.247 3.245	3.252 3.250	3.475 3.473
237	3.615 3.613	3.620 3.618	3.394 3.392	3.372 3.370	3.377 3.375	3.600 3.598
238	3.740 3.738	3.745 3.743	3.519 3.517	3.497 3.495	3.502 3.500	3.725 3.723
239	3.865 3.863	3.870 3.868	3.644 3.642	3.622 3.620	3.627 3.625	3.850 3.848
240	3.990 3.988	3.995 3.993	3.769 3.767	3.747 3.745	3.752 3.750	3.975 3.973
241	4.115 4.113	4.120 4.118	3.894 3.892	3.872 3.870	3.877 3.875	4.100 4.098
242	4.240 4.238	4.245 4.243	4.019 4.017	3.997 3.995	4.002 4.000	4.225 4.223
243	4.365 4.363	4.370 4.368	4.144 4.142	4.122 4.120	4.127 4.125	4.350 4.348
244	4.489 4.487	4.495 4.493	4.269 4.267	4.247 4.245	4.252 4.250	4.475 4.473
245	4.614 4.612	4.620 4.618	4.394 4.392	4.372 4.370	4.377 4.375	4.600 4.598
246	4.739 4.737	4.745 4.743	4.519 4.517	4.497 4.495	4.503 4.501	4.725 4.723
247	4.864 4.862	4.870 4.868	4.644 4.642	4.622 4.620	4.628 4.626	4.850 4.848

TABLE 1A - STANDARD GLAND DIMENSIONS IN INCHES (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
325	1.864 1.863	1.869 1.867	1.523 1.521	1.498 1.496	1.502 1.500	1.848 1.846
326	1.989 1.988	1.994 1.992	1.648 1.646	1.623 1.621	1.627 1.625	1.973 1.971
327	2.115 2.114	2.120 2.118	1.774 1.772	1.748 1.746	1.752 1.750	2.098 2.096
328	2.240 2.239	2.245 2.243	1.899 1.897	1.873 1.871	1.878 1.876	2.223 2.221
329	2.365 2.364	2.370 2.368	2.024 2.022	1.998 1.996	2.003 2.001	2.348 2.346
330	2.490 2.488	2.495 2.493	2.149 2.147	2.123 2.121	2.128 2.126	2.473 2.471
331	2.615 2.613	2.620 2.618	2.274 2.272	2.248 2.246	2.253 2.251	2.598 2.596
332	2.740 2.738	2.745 2.743	2.399 2.397	2.373 2.371	2.378 2.376	2.723 2.721
333	2.865 2.863	2.870 2.868	2.524 2.522	2.498 2.496	2.503 2.501	2.848 2.846
334	2.990 2.988	2.995 2.993	2.649 2.647	2.623 2.621	2.628 2.626	2.973 2.971
335	3.115 3.113	3.120 3.118	2.774 2.772	2.748 2.746	2.753 2.751	3.098 3.096
336	3.240 3.238	3.245 3.243	2.899 2.897	2.873 2.871	2.878 2.876	3.223 3.221
337	3.365 3.363	3.370 3.368	3.024 3.022	2.997 2.995	3.002 3.000	3.347 3.345
338	3.490 3.488	3.495 3.493	3.149 3.147	3.122 3.120	3.127 3.125	3.472 3.470
339	3.615 3.613	3.620 3.618	3.274 3.272	3.247 3.245	3.252 3.250	3.597 3.595
340	3.740 3.738	3.745 3.743	3.399 3.397	3.372 3.370	3.377 3.375	3.722 3.720

TABLE 1A - STANDARD GLAND DIMENSIONS IN INCHES (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
341	3.865 3.863	3.870 3.868	3.524 3.522	3.497 3.495	3.502 3.500	3.847 3.845
342	3.990 3.988	3.995 3.993	3.649 3.647	3.622 3.620	3.627 3.625	3.972 3.970
343	4.115 4.113	4.120 4.118	3.774 3.772	3.747 3.745	3.752 3.750	4.097 4.095
344	4.240 4.238	4.245 4.243	3.899 3.897	3.872 3.870	3.877 3.875	4.222 4.220
345	4.365 4.363	4.370 4.368	4.024 4.022	3.997 3.995	4.002 4.000	4.347 4.345
346	4.489 4.487	4.495 4.493	4.149 4.147	4.122 4.120	4.127 4.125	4.472 4.470
347	4.614 4.612	4.620 4.618	4.274 4.272	4.247 4.245	4.252 4.250	4.597 4.595
348	4.739 4.737	4.745 4.743	4.399 4.397	4.372 4.370	4.377 4.375	4.722 4.720
349	4.864 4.862	4.870 4.868	4.524 4.522	4.497 4.495	4.502 4.500	4.847 4.845
425	4.970 4.968	4.977 4.974	4.519 4.516	4.497 4.494	4.503 4.501	4.959 4.956
426	5.095 5.093	5.102 5.099	4.644 4.641	4.622 4.619	4.628 4.626	5.084 5.081
427	5.220 5.218	5.227 5.224	4.769 4.766	4.747 4.744	4.753 4.751	5.209 5.206
428	5.345 5.343	5.352 5.349	4.894 4.891	4.872 4.869	4.878 4.876	5.334 5.331
429	5.470 5.468	5.477 5.474	5.019 5.016	4.997 4.994	5.003 5.001	5.459 5.456
430	5.595 5.593	5.602 5.599	5.144 5.141	5.122 5.119	5.128 5.126	5.584 5.581
431	5.720 5.718	5.727 5.724	5.269 5.266	5.247 5.244	5.253 5.251	5.709 5.706

TABLE 1A - STANDARD GLAND DIMENSIONS IN INCHES (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
432	5.845 5.843	5.852 5.849	5.394 5.391	5.372 5.369	5.378 5.376	5.834 5.831
433	5.970 5.968	5.977 5.974	5.519 5.516	5.497 5.494	5.503 5.501	5.959 5.956
434	6.095 6.093	6.102 6.099	5.644 5.641	5.622 5.619	5.628 5.626	6.084 6.081
435	6.220 6.218	6.227 6.224	5.769 5.766	5.747 5.744	5.753 5.751	6.209 6.206
436	6.345 6.343	6.352 6.349	5.894 5.891	5.872 5.869	5.878 5.876	6.334 6.331
437	6.470 6.468	6.477 6.474	6.019 6.016	5.997 5.994	6.003 6.001	6.459 6.456
438	6.720 6.718	6.727 6.724	6.269 6.266	6.247 6.244	6.253 6.251	6.709 6.706
439	6.970 6.968	6.977 6.974	6.519 6.516	6.497 6.494	6.504 6.501	6.959 6.956
440	7.220 7.218	7.227 7.224	6.769 6.766	6.747 6.744	6.754 6.751	7.209 7.206
441	7.470 7.468	7.477 7.474	7.019 7.016	6.997 6.994	7.004 7.001	7.459 7.456
442	7.720 7.718	7.727 7.724	7.269 7.266	7.247 7.244	7.254 7.251	7.709 7.706
443	7.970 7.968	7.977 7.974	7.519 7.516	7.497 7.494	7.504 7.501	7.959 7.956
444	8.220 8.218	8.227 8.224	7.769 7.766	7.747 7.744	7.754 7.751	8.209 8.206
445	8.470 8.468	8.477 8.474	8.019 8.016	7.997 7.994	8.004 8.001	8.459 8.456
446	8.970 8.967	8.977 8.974	8.519 8.516	8.497 8.494	8.504 8.501	8.959 8.956
447	9.470 9.467	9.478 9.474	9.020 9.017	8.997 8.994	9.004 9.001	9.460 9.456