



Society of Automotive Engineers, Inc.  
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# AEROSPACE RECOMMENDED PRACTICE

ARP 1232

Issued April 1973  
Revised

## GLAND DESIGN, ELASTOMERIC O-RING SEALS, STATIC RADIAL

### 1. PURPOSE

The purpose of this document is to provide the aerospace industry with standardized dimensional criteria for static radial elastomeric O-ring seal glands. It supplements ARP 1231, "Gland Design, Elastomeric O-ring Seals, General Considerations".

### 2. SCOPE

This document establishes standard gland dimensions for static radial O-ring seal applications and provides recommendations for modifying these glands in special applications. No provisions are made in this document for anti-extrusion devices. SI unit conversions for U.S. customary units have been provided for reference purposes.

### 3. GENERAL REQUIREMENTS

#### 3.1 Applicable Documents

- 3.1.1 ANSI B46.1 - 1962 - Surface Texture
- 3.1.2 AS 568 - Uniform Dash Numbering System for O-Rings
- 3.1.3 ARP 1231 - Gland Design, Elastomeric O-Ring Seals, General Considerations
- 3.1.4 ARP 1233 - Gland Design, Elastomeric O-Ring Seals, Dynamic Radial

#### 3.2 Gland Configurations

- 3.2.1 Standard Glands - Figure 1 depicts rod-mounted and bore-mounted radial O-ring seal glands. Standard dimensions for these glands are tabulated in Table 3. These dimensions are designed for use with seals conforming to AS 568, Class I or Class II tolerances. They are computed in accordance with the criteria defined in paragraph 4 of this document and in ARP 1231.
- 3.2.2 Exemption - Standard glands are not provided for the larger diameter bore-mounted applications. In these larger sizes, Diameter H becomes larger than the outside diameter of the O-ring seal. This condition makes the installation of a seal impractical. Bore-mounted seal glands have been provided up to those sizes where diameter H is equal to or greater than the seal ID plus 1/2 (seal O.D. - seal I.D.).
- 3.2.3 Modified Glands - The standard gland dimensions may be modified to achieve an optimum sealing configuration. In selecting or computing gland dimensions, the criteria defined in ARP 1231 and in paragraph 4 of this document should be consulted.

#### 3.3 Surface Texture

- 3.3.1 Figure 1 defines the preferred surface texture to be used with the glands described in this document. The 63 microinch (1.6 micrometre) texture is satisfactory for most static applications. A 32 microinch (0.8 micrometre) texture may be substituted if there is relative motion between seal and gland sealing surfaces during operation. However, if this relative motion be-

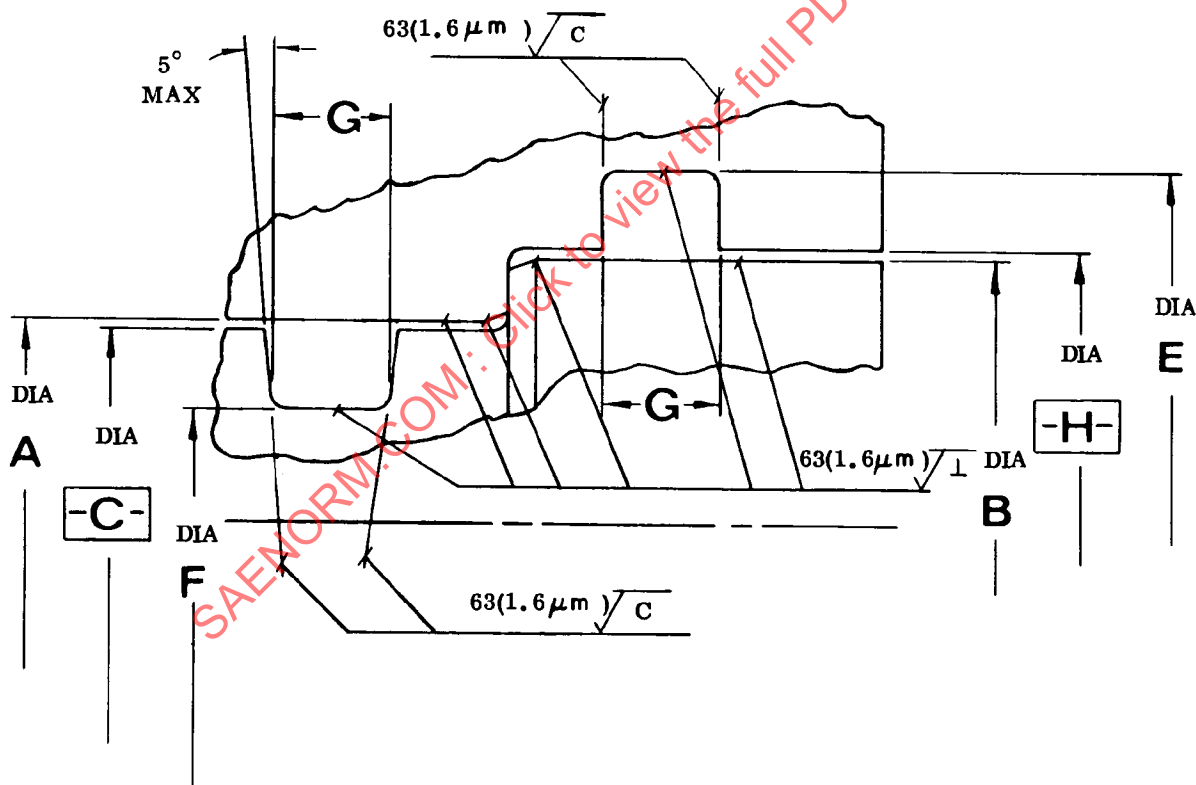
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comes excessive, the application should be considered dynamic and ARP 1233 consulted.

#### 4. DESIGN CRITERIA

##### 4.1 O-Ring Seal Stretch

- 4.1.1 Minimum Stretch - Static seals should be stretched a minimum of two percent as installed in the gland. This assures a snug fit in a short time for elastomers such as fluorocarbons which are slow to return to size after stretching.
- 4.1.2 Maximum Stretch - The as-installed seal stretch should be held to a low value consistent with the need for a two percent minimum stretch and with the gland dimensional tolerances needed for manufacture. Excessive stretches can cause stress cracking during operation particularly with nitrile seals. The maximum stretch resulting from the standard gland dimensions in table 3 varies from 2.5 % to 10% depending on size. Of the sizes listed, 85% have a maximum stretch of less than 5%. Consideration should be given to reducing the stretch where there is concern over possible stress cracking.



NOTE: SURFACE TEXTURE: ANSI B46.1-1962

GEOMETRIC TOLERANCES, EDGE BREAKS, CORNER RADII,  
AND LEAD-IN RAMP DIMENSIONS: SEE ARP 1231

DIMENSIONS IN ( ) ARE MICROMETRES

FIGURE 1. TYPICAL O-RING SEAL GLANDS

## 4.2 O-Ring Seal Squeeze

- 4.2.1 To avoid assembly problems and to avoid leakage, static O-ring seal glands should be designed to achieve nominal and minimum squeezes as listed in Table 1. These values have been used in computing the gland dimensions of Table 3. Minimum squeeze should be calculated by considering the following factors: a) diametral tolerances, b) eccentricities, c) offset, and d) seal cross section reduction due to stretch. Offset refers to the condition where the rod has shifted in the bore to the extent that the rod and bore are in contact.

TABLE 1  
O-Ring Seal Squeeze

| Nominal Cross<br>Section Diameter<br>Per AS 568 | Nominal<br>Squeeze %<br>of W Nominal | Minimum<br>Squeeze |
|-------------------------------------------------|--------------------------------------|--------------------|
| .070 in. (1.78 mm)                              | 21.0                                 | .003 in. (.076 mm) |
| .103 in. (2.62 mm)                              | 19.0                                 | .005 in. (.127 mm) |
| .139 in. (3.53 mm)                              | 18.5                                 | .007 in. (.178 mm) |
| .210 in. (5.33 mm)                              | 18.0                                 | .012 in. (.305 mm) |
| .275 in. (6.98 mm)                              | 17.5                                 | .018 in. (.457 mm) |

## 4.3 O-Ring Seal Swell

- 4.3.1 To accommodate O-ring seal swell, gland widths should be designed to achieve a minimum gland volume equal to 130% of the O-ring seal free state volume. This will permit glands to be used with several different seal materials and operating fluids. The glands in Table 3 provide a minimum gland volume which is 125% to 135% of the O-ring seal free state volume. If the adjacent structure is strong enough, these glands can be used with all material/fluid combinations, including those where the fully soaked O-ring seal volume exceeds the gland volume.

## 4.4 Diametral Clearances

- 4.4.1 The rod-to-bore diametral clearances must be controlled to prevent O-ring seal extrusion during operation. The diametral clearances listed in Table 2 are suitable for use with most elastomers at operating pressures up to 1500 psi (10 MPa). The glands in Table 3 incorporate these diametral clearances.

TABLE 2  
DIAMETRAL CLEARANCES  
IN INCHES

| Seal<br>Cross Section (W) | Bore to<br>Rod Clearances |
|---------------------------|---------------------------|
| .070 (I.D. $\leq$ .500)   | .001-.004                 |
| .070 (I.D. over .500)     | .001-.005                 |
| .103                      | .001-.006                 |
| .139                      | .002-.008                 |
| .210                      | .003-.009                 |
| .275                      | .004-.012                 |

TABLE 2  
DIAMETRAL CLEARANCES  
IN MILLIMETRES

| Seal<br>Cross Section (W) | Bore to<br>Rod Clearances |
|---------------------------|---------------------------|
| 1.78 (I.D. $\leq$ 12.7)   | .025-.102                 |
| 1.78 (I.D. over 12.7)     | .025-.127                 |
| 2.62                      | .025-.152                 |
| 3.53                      | .051-.203                 |
| 5.33                      | .076-.229                 |
| 6.98                      | .102-.305                 |

Prepared by

Committee E21 Design and General Standards for  
Aerospace Propulsion Systems

Committee G4 Elastic Seals

TABLE 3 STANDARD GLAND DIMENSIONS IN INCHES

| GLAND &<br>AS 568<br>DASH NO. | ROD MOUNTED      |                |                 | BORE MOUNTED  |                |                 | GLAND DIA.<br>F | ROD DIA.<br>R |                |                 | BORE DIA.<br>H |  |  | GLAND DIA.<br>E | GLAND WIDTH<br>G |
|-------------------------------|------------------|----------------|-----------------|---------------|----------------|-----------------|-----------------|---------------|----------------|-----------------|----------------|--|--|-----------------|------------------|
|                               | PISTON DIA.<br>C | BORE DIA.<br>A | GLAND DIA.<br>F | ROD DIA.<br>R | BORE DIA.<br>H | GLAND DIA.<br>E |                 | ROD DIA.<br>R | BORE DIA.<br>H | GLAND DIA.<br>E |                |  |  |                 |                  |
| (1) 001                       | 0.085 - 0.086    | 0.087 - 0.089  | 0.036 - 0.037   | 0.036 - 0.037 | 0.038 - 0.040  | 0.088 - 0.089   | 0.036 - 0.037   | 0.036 - 0.037 | 0.038 - 0.040  | 0.088 - 0.089   | .101-.111      |  |  |                 |                  |
| (1) 002                       | 0.118 - 0.119    | 0.120 - 0.122  | 0.049 - 0.050   | 0.049 - 0.050 | 0.051 - 0.053  | 0.121 - 0.122   | 0.049 - 0.050   | 0.049 - 0.050 | 0.051 - 0.053  | 0.121 - 0.122   | .101-.111      |  |  |                 |                  |
| (1) 003                       | 0.152 - 0.153    | 0.154 - 0.156  | 0.063 - 0.064   | 0.063 - 0.064 | 0.065 - 0.067  | 0.155 - 0.156   | 0.063 - 0.064   | 0.063 - 0.064 | 0.065 - 0.067  | 0.155 - 0.156   | .106-.116      |  |  |                 |                  |
| (1) 004                       | 0.186 - 0.187    | 0.188 - 0.190  | 0.078 - 0.079   | 0.078 - 0.079 | 0.080 - 0.082  | 0.188 - 0.190   | 0.078 - 0.079   | 0.078 - 0.079 | 0.080 - 0.082  | 0.188 - 0.190   | .114-.124      |  |  |                 |                  |
| (1) 005                       | 0.216 - 0.217    | 0.218 - 0.220  | 0.109 - 0.110   | 0.109 - 0.110 | 0.111 - 0.113  | 0.219 - 0.220   | 0.109 - 0.110   | 0.109 - 0.110 | 0.111 - 0.113  | 0.219 - 0.220   | .114-.124      |  |  |                 |                  |
| (1) 006                       | 0.230 - 0.231    | 0.232 - 0.234  | 0.122 - 0.123   | 0.122 - 0.123 | 0.124 - 0.126  | 0.233 - 0.234   | 0.122 - 0.123   | 0.122 - 0.123 | 0.124 - 0.126  | 0.233 - 0.234   | .110-.120      |  |  |                 |                  |
| (1) 007                       | 0.262 - 0.263    | 0.264 - 0.266  | 0.154 - 0.155   | 0.154 - 0.155 | 0.156 - 0.158  | 0.265 - 0.266   | 0.154 - 0.155   | 0.154 - 0.155 | 0.156 - 0.158  | 0.265 - 0.266   | .110-.120      |  |  |                 |                  |
| (1) 008                       | 0.294 - 0.295    | 0.296 - 0.298  | 0.186 - 0.187   | 0.186 - 0.187 | 0.188 - 0.190  | 0.297 - 0.298   | 0.186 - 0.187   | 0.186 - 0.187 | 0.188 - 0.190  | 0.297 - 0.298   | .105-.115      |  |  |                 |                  |
| (1) 009                       | 0.326 - 0.327    | 0.328 - 0.330  | 0.218 - 0.219   | 0.218 - 0.219 | 0.220 - 0.222  | 0.329 - 0.330   | 0.218 - 0.219   | 0.218 - 0.219 | 0.220 - 0.222  | 0.329 - 0.330   |                |  |  |                 |                  |
| (1) 010                       | 0.359 - 0.360    | 0.361 - 0.363  | 0.251 - 0.252   | 0.251 - 0.252 | 0.253 - 0.255  | 0.362 - 0.363   | 0.251 - 0.252   | 0.251 - 0.252 | 0.253 - 0.255  | 0.362 - 0.363   |                |  |  |                 |                  |
| (1) 011                       | 0.421 - 0.422    | 0.423 - 0.425  | 0.314 - 0.315   | 0.314 - 0.315 | 0.316 - 0.318  | 0.424 - 0.425   | 0.314 - 0.315   | 0.314 - 0.315 | 0.316 - 0.318  | 0.424 - 0.425   |                |  |  |                 |                  |
| (1) 012                       | 0.486 - 0.487    | 0.488 - 0.490  | 0.378 - 0.379   | 0.378 - 0.379 | 0.380 - 0.382  | 0.489 - 0.490   | 0.378 - 0.379   | 0.378 - 0.379 | 0.380 - 0.382  | 0.489 - 0.490   |                |  |  |                 |                  |
| (1) 013                       | 0.550 - 0.551    | 0.552 - 0.554  | 0.442 - 0.443   | 0.442 - 0.443 | 0.444 - 0.446  | 0.553 - 0.554   | 0.442 - 0.443   | 0.442 - 0.443 | 0.444 - 0.446  | 0.553 - 0.554   |                |  |  |                 |                  |
| (1) 014                       | 0.614 - 0.615    | 0.616 - 0.618  | 0.506 - 0.507   | 0.506 - 0.507 | 0.508 - 0.510  | 0.617 - 0.618   | 0.506 - 0.507   | 0.506 - 0.507 | 0.508 - 0.510  | 0.617 - 0.618   |                |  |  |                 |                  |
| (1) 015                       | 0.677 - 0.679    | 0.680 - 0.682  | 0.569 - 0.571   | 0.569 - 0.571 | 0.572 - 0.574  | 0.682 - 0.683   | 0.569 - 0.571   | 0.569 - 0.571 | 0.572 - 0.574  | 0.682 - 0.683   |                |  |  |                 |                  |
| (1) 016                       | 0.743 - 0.745    | 0.746 - 0.748  | 0.635 - 0.638   | 0.635 - 0.638 | 0.639 - 0.640  | 0.748 - 0.749   | 0.635 - 0.638   | 0.635 - 0.638 | 0.639 - 0.640  | 0.748 - 0.749   |                |  |  |                 |                  |
| (1) 017                       | 0.807 - 0.809    | 0.810 - 0.812  | 0.699 - 0.702   | 0.699 - 0.702 | 0.703 - 0.704  | 0.812 - 0.813   | 0.699 - 0.702   | 0.699 - 0.702 | 0.703 - 0.704  | 0.812 - 0.813   |                |  |  |                 |                  |
| (1) 018                       | 0.871 - 0.873    | 0.874 - 0.876  | 0.763 - 0.766   | 0.763 - 0.766 | 0.767 - 0.768  | 0.876 - 0.877   | 0.763 - 0.766   | 0.763 - 0.766 | 0.767 - 0.768  | 0.876 - 0.877   |                |  |  |                 |                  |
| (1) 019                       | 0.934 - 0.936    | 0.937 - 0.939  | 0.826 - 0.829   | 0.826 - 0.829 | 0.830 - 0.831  | 0.939 - 0.940   | 0.826 - 0.829   | 0.826 - 0.829 | 0.830 - 0.831  | 0.939 - 0.940   |                |  |  |                 |                  |
| (1) 020                       | 0.997 - 0.999    | 1.000 - 1.002  | 0.890 - 0.893   | 0.890 - 0.893 | 0.894 - 0.895  | 1.002 - 1.003   | 0.890 - 0.893   | 0.890 - 0.893 | 0.894 - 0.895  | 1.002 - 1.003   |                |  |  |                 |                  |
| (1) 021                       | 1.061 - 1.063    | 1.064 - 1.066  | 0.954 - 0.957   | 0.954 - 0.957 | 0.958 - 0.959  | 1.066 - 1.067   | 0.954 - 0.957   | 0.954 - 0.957 | 0.958 - 0.959  | 1.066 - 1.067   |                |  |  |                 |                  |
| (1) 022                       | 1.126 - 1.128    | 1.129 - 1.131  | 1.019 - 1.022   | 1.019 - 1.022 | 1.023 - 1.024  | 1.128 - 1.129   | 1.019 - 1.022   | 1.019 - 1.022 | 1.023 - 1.024  | 1.128 - 1.129   |                |  |  |                 |                  |
| (1) 023                       | 1.189 - 1.191    | 1.192 - 1.194  | 1.082 - 1.085   | 1.082 - 1.085 | 1.086 - 1.087  | 1.191 - 1.192   | 1.082 - 1.085   | 1.082 - 1.085 | 1.086 - 1.087  | 1.191 - 1.192   |                |  |  |                 |                  |
| (1) 024                       | 1.254 - 1.256    | 1.257 - 1.259  | 1.146 - 1.149   | 1.146 - 1.149 | 1.150 - 1.151  | 1.256 - 1.257   | 1.146 - 1.149   | 1.146 - 1.149 | 1.150 - 1.151  | 1.256 - 1.257   |                |  |  |                 |                  |
| (1) 025                       | 1.318 - 1.320    | 1.321 - 1.323  | 1.211 - 1.214   | 1.211 - 1.214 | 1.215 - 1.216  | 1.320 - 1.321   | 1.211 - 1.214   | 1.211 - 1.214 | 1.215 - 1.216  | 1.320 - 1.321   |                |  |  |                 |                  |
| (1) 026                       | 1.383 - 1.385    | 1.386 - 1.388  | 1.275 - 1.278   | 1.275 - 1.278 | 1.279 - 1.280  | 1.385 - 1.386   | 1.275 - 1.278   | 1.275 - 1.278 | 1.279 - 1.280  | 1.385 - 1.386   |                |  |  |                 |                  |
| (1) 027                       | 1.446 - 1.448    | 1.449 - 1.451  | 1.338 - 1.341   | 1.338 - 1.341 | 1.342 - 1.343  | 1.448 - 1.449   | 1.338 - 1.341   | 1.338 - 1.341 | 1.342 - 1.343  | 1.448 - 1.449   |                |  |  |                 |                  |
| (1) 028                       | 1.512 - 1.514    | 1.515 - 1.517  | 1.405 - 1.408   | 1.405 - 1.408 | 1.409 - 1.410  | 1.514 - 1.515   | 1.405 - 1.408   | 1.405 - 1.408 | 1.409 - 1.410  | 1.514 - 1.515   |                |  |  |                 |                  |
| (1) 029                       | 1.640 - 1.642    | 1.643 - 1.645  | 1.532 - 1.535   | 1.532 - 1.535 | 1.536 - 1.537  | 1.642 - 1.643   | 1.532 - 1.535   | 1.532 - 1.535 | 1.536 - 1.537  | 1.642 - 1.643   |                |  |  |                 |                  |
| (1) 030                       | 1.768 - 1.770    | 1.771 - 1.773  | 1.660 - 1.663   | 1.660 - 1.663 | 1.664 - 1.665  | 1.770 - 1.771   | 1.660 - 1.663   | 1.660 - 1.663 | 1.664 - 1.665  | 1.770 - 1.771   |                |  |  |                 |                  |
| (1) 031                       | 1.897 - 1.899    | 1.900 - 1.902  | 1.789 - 1.792   | 1.789 - 1.792 | 1.793 - 1.794  | 1.899 - 1.900   | 1.789 - 1.792   | 1.789 - 1.792 | 1.793 - 1.794  | 1.899 - 1.900   |                |  |  |                 |                  |
| (1) 032                       | 2.025 - 2.027    | 2.028 - 2.030  | 1.917 - 1.920   | 1.917 - 1.920 | 1.921 - 1.922  | 2.027 - 2.028   | 1.917 - 1.920   | 1.917 - 1.920 | 1.921 - 1.922  | 2.027 - 2.028   |                |  |  |                 |                  |
| (1) 033                       | 2.155 - 2.157    | 2.158 - 2.160  | 2.047 - 2.050   | 2.047 - 2.050 | 2.051 - 2.052  | 2.157 - 2.158   | 2.047 - 2.050   | 2.047 - 2.050 | 2.051 - 2.052  | 2.157 - 2.158   |                |  |  |                 |                  |
| (1) 034                       | 2.283 - 2.285    | 2.286 - 2.288  | 2.175 - 2.178   | 2.175 - 2.178 | 2.179 - 2.180  | 2.285 - 2.286   | 2.175 - 2.178   | 2.175 - 2.178 | 2.179 - 2.180  | 2.285 - 2.286   |                |  |  |                 |                  |
| (1) 035                       | 2.410 - 2.412    | 2.413 - 2.415  | 2.302 - 2.305   | 2.302 - 2.305 | 2.306 - 2.307  | 2.412 - 2.413   | 2.302 - 2.305   | 2.302 - 2.305 | 2.306 - 2.307  | 2.412 - 2.413   |                |  |  |                 |                  |
| (1) 036                       | 2.538 - 2.540    | 2.541 - 2.543  | 2.430 - 2.433   | 2.430 - 2.433 | 2.434 - 2.435  | 2.540 - 2.541   | 2.430 - 2.433   | 2.430 - 2.433 | 2.434 - 2.435  | 2.540 - 2.541   |                |  |  |                 |                  |
| (1) 037                       | 2.665 - 2.667    | 2.668 - 2.670  | 2.557 - 2.560   | 2.557 - 2.560 | 2.561 - 2.562  | 2.667 - 2.668   | 2.557 - 2.560   | 2.557 - 2.560 | 2.561 - 2.562  | 2.667 - 2.668   |                |  |  |                 |                  |
| (1) 038                       | 2.795 - 2.797    | 2.798 - 2.800  | 2.687 - 2.690   | 2.687 - 2.690 | 2.691 - 2.692  | 2.797 - 2.798   | 2.687 - 2.690   | 2.687 - 2.690 | 2.691 - 2.692  | 2.797 - 2.798   |                |  |  |                 |                  |
| (1) 039                       | 2.922 - 2.924    | 2.925 - 2.927  | 2.814 - 2.817   | 2.814 - 2.817 | 2.818 - 2.819  | 2.924 - 2.925   | 2.814 - 2.817   | 2.814 - 2.817 | 2.818 - 2.819  | 2.924 - 2.925   |                |  |  |                 |                  |
| (1) 040                       | 3.050 - 3.052    | 3.053 - 3.055  | 2.942 - 2.945   | 2.942 - 2.945 | 2.946 - 2.947  | 3.052 - 3.053   | 2.942 - 2.945   | 2.942 - 2.945 | 2.946 - 2.947  | 3.052 - 3.053   |                |  |  |                 |                  |
| (1) 041                       | 3.181 - 3.183    | 3.184 - 3.186  | 3.073 - 3.076   | 3.073 - 3.076 | 3.077 - 3.078  | 3.183 - 3.184   | 3.073 - 3.076   | 3.073 - 3.076 | 3.077 - 3.078  | 3.183 - 3.184   |                |  |  |                 |                  |
| (1) 042                       | 3.436 - 3.438    | 3.439 - 3.441  | 3.328 - 3.331   | 3.328 - 3.331 | 3.332 - 3.333  | 3.438 - 3.439   | 3.328 - 3.331   | 3.328 - 3.331 | 3.332 - 3.333  | 3.438 - 3.439   |                |  |  |                 |                  |
| (1) 043                       | 3.691 - 3.693    | 3.694 - 3.696  | 3.583 - 3.586   | 3.583 - 3.586 | 3.587 - 3.588  | 3.693 - 3.694   | 3.583 - 3.586   | 3.583 - 3.586 | 3.587 - 3.588  | 3.693 - 3.694   |                |  |  |                 |                  |
| (1) 044                       | 3.949 - 3.951    | 3.952 - 3.954  | 3.841 - 3.844   | 3.841 - 3.844 | 3.845 - 3.846  | 3.951 - 3.952   | 3.841 - 3.844   | 3.841 - 3.844 | 3.845 - 3.846  | 3.951 - 3.952   |                |  |  |                 |                  |
| (1) 045                       | 4.204 - 4.206    | 4.207 - 4.209  | 4.096 - 4.099   | 4.096 - 4.099 | 4.100 - 4.101  | 4.206 - 4.207   | 4.096 - 4.099   | 4.096 - 4.099 | 4.100 - 4.101  | 4.206 - 4.207   |                |  |  |                 |                  |

TABLE 3 STANDARD GLAND DIMENSIONS IN INCHES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | PISTON MOUNTED   |                | BORE MOUNTED    |               | BORE MOUNTED   |                 | BORE MOUNTED     |                 | GLAND DIA.<br>E | GLAND WIDTH<br>G |
|-------------------------------|------------------|----------------|-----------------|---------------|----------------|-----------------|------------------|-----------------|-----------------|------------------|
|                               | PISTON DIA.<br>C | BORE DIA.<br>A | GLAND DIA.<br>F | ROD DIA.<br>3 | BORE DIA.<br>H | GLAND DIA.<br>E | GLAND WIDTH<br>G | GLAND DIA.<br>E |                 |                  |
| 046                           | 4.462 - 4.464    | 4.465 - 4.467  | 4.354 - 4.357   |               |                |                 |                  |                 |                 |                  |
| 047                           | 4.717 - 4.719    | 4.720 - 4.722  | 4.609 - 4.612   |               |                |                 |                  |                 |                 |                  |
| 048                           | 4.972 - 4.974    | 4.975 - 4.977  | 4.864 - 4.867   |               |                |                 |                  |                 |                 |                  |
| 049                           | 5.235 - 5.237    | 5.238 - 5.240  | 5.127 - 5.130   |               |                |                 |                  |                 |                 |                  |
| 050                           | 5.490 - 5.492    | 5.493 - 5.495  | 5.382 - 5.385   |               |                |                 |                  |                 |                 |                  |
| (1) 102                       | 0.214 - 0.216    | 0.217 - 0.220  | 0.056 - 0.060   | 0.056 - 0.058 | 0.059 - 0.062  | 0.216 - 0.220   | .182-.192        |                 |                 |                  |
| (1) 103                       | 0.253 - 0.255    | 0.256 - 0.259  | 0.089 - 0.093   | 0.089 - 0.091 | 0.092 - 0.095  | 0.255 - 0.259   | .165-.175        |                 |                 |                  |
| (1) 104                       | 0.284 - 0.286    | 0.287 - 0.290  | 0.120 - 0.124   | 0.120 - 0.122 | 0.123 - 0.126  | 0.286 - 0.290   | .158-.168        |                 |                 |                  |
| (1) 105                       | 0.316 - 0.318    | 0.319 - 0.322  | 0.152 - 0.156   | 0.152 - 0.154 | 0.155 - 0.158  | 0.318 - 0.322   | .158-.168        |                 |                 |                  |
| (1) 106                       | 0.348 - 0.350    | 0.351 - 0.354  | 0.184 - 0.188   | 0.184 - 0.186 | 0.187 - 0.190  | 0.350 - 0.354   | .153-.163        |                 |                 |                  |
| 107                           | 0.380 - 0.382    | 0.383 - 0.386  | 0.216 - 0.220   | 0.216 - 0.218 | 0.219 - 0.222  | 0.382 - 0.386   | .153-.163        |                 |                 |                  |
| 108                           | 0.413 - 0.415    | 0.416 - 0.419  | 0.249 - 0.253   | 0.249 - 0.251 | 0.252 - 0.255  | 0.415 - 0.419   | .153-.163        |                 |                 |                  |
| 109                           | 0.476 - 0.478    | 0.479 - 0.482  | 0.312 - 0.316   | 0.312 - 0.314 | 0.315 - 0.318  | 0.478 - 0.482   | .146-.156        |                 |                 |                  |
| 110                           | 0.540 - 0.542    | 0.543 - 0.546  | 0.376 - 0.380   | 0.376 - 0.378 | 0.379 - 0.382  | 0.542 - 0.546   |                  |                 |                 |                  |
| 111                           | 0.604 - 0.606    | 0.607 - 0.610  | 0.440 - 0.444   | 0.440 - 0.442 | 0.443 - 0.446  | 0.606 - 0.610   |                  |                 |                 |                  |
| 112                           | 0.668 - 0.670    | 0.671 - 0.674  | 0.504 - 0.508   | 0.504 - 0.506 | 0.507 - 0.510  | 0.670 - 0.674   |                  |                 |                 |                  |
| 113                           | 0.731 - 0.733    | 0.734 - 0.737  | 0.567 - 0.571   | 0.567 - 0.569 | 0.570 - 0.573  | 0.733 - 0.737   |                  |                 |                 |                  |
| 114                           | 0.797 - 0.799    | 0.800 - 0.803  | 0.633 - 0.637   | 0.633 - 0.635 | 0.636 - 0.639  | 0.799 - 0.803   |                  |                 |                 |                  |
| 115                           | 0.861 - 0.863    | 0.864 - 0.867  | 0.697 - 0.701   | 0.697 - 0.699 | 0.700 - 0.703  | 0.863 - 0.867   |                  |                 |                 |                  |
| 116                           | 0.926 - 0.928    | 0.929 - 0.932  | 0.761 - 0.765   | 0.761 - 0.763 | 0.764 - 0.767  | 0.928 - 0.932   |                  |                 |                 |                  |
| 117                           | 0.990 - 0.992    | 0.993 - 0.996  | 0.825 - 0.829   | 0.825 - 0.827 | 0.828 - 0.831  | 0.992 - 0.996   |                  |                 |                 |                  |
| 118                           | 1.053 - 1.055    | 1.056 - 1.059  | 0.889 - 0.893   | 0.889 - 0.891 | 0.892 - 0.895  | 1.055 - 1.059   |                  |                 |                 |                  |
| 119                           | 1.117 - 1.119    | 1.120 - 1.123  | 0.953 - 0.957   | 0.953 - 0.955 | 0.956 - 0.959  | 1.119 - 1.123   |                  |                 |                 |                  |
| 120                           | 1.181 - 1.183    | 1.184 - 1.187  | 1.017 - 1.021   | 1.017 - 1.019 | 1.020 - 1.023  | 1.183 - 1.187   |                  |                 |                 |                  |
| 121                           | 1.244 - 1.246    | 1.247 - 1.250  | 1.080 - 1.084   | 1.080 - 1.082 | 1.083 - 1.086  | 1.246 - 1.250   |                  |                 |                 |                  |
| 122                           | 1.308 - 1.310    | 1.311 - 1.314  | 1.144 - 1.148   | 1.144 - 1.146 | 1.147 - 1.150  | 1.310 - 1.314   |                  |                 |                 |                  |
| 123                           | 1.374 - 1.376    | 1.377 - 1.380  | 1.210 - 1.214   | 1.210 - 1.212 | 1.213 - 1.216  | 1.376 - 1.380   |                  |                 |                 |                  |
| 124                           | 1.438 - 1.440    | 1.441 - 1.444  | 1.274 - 1.278   | 1.274 - 1.276 | 1.277 - 1.280  | 1.440 - 1.444   |                  |                 |                 |                  |
| 125                           | 1.503 - 1.505    | 1.504 - 1.507  | 1.337 - 1.341   | 1.337 - 1.339 | 1.340 - 1.343  | 1.503 - 1.507   |                  |                 |                 |                  |
| 126                           | 1.565 - 1.567    | 1.568 - 1.571  | 1.401 - 1.405   | 1.401 - 1.403 | 1.404 - 1.407  | 1.567 - 1.571   |                  |                 |                 |                  |
| 127                           | 1.630 - 1.632    | 1.633 - 1.636  | 1.465 - 1.469   | 1.465 - 1.467 | 1.468 - 1.471  | 1.632 - 1.636   |                  |                 |                 |                  |
| 128                           | 1.693 - 1.695    | 1.696 - 1.699  | 1.529 - 1.533   | 1.529 - 1.531 | 1.532 - 1.535  | 1.695 - 1.699   |                  |                 |                 |                  |
| 129                           | 1.759 - 1.761    | 1.762 - 1.765  | 1.595 - 1.599   | 1.595 - 1.597 | 1.598 - 1.601  | 1.761 - 1.765   |                  |                 |                 |                  |
| 130                           | 1.824 - 1.826    | 1.827 - 1.830  | 1.660 - 1.664   | 1.660 - 1.662 | 1.663 - 1.666  | 1.826 - 1.830   |                  |                 |                 |                  |
| 131                           | 1.887 - 1.889    | 1.890 - 1.893  | 1.723 - 1.727   | 1.723 - 1.725 | 1.726 - 1.729  | 1.889 - 1.893   |                  |                 |                 |                  |
| 132                           | 1.951 - 1.953    | 1.954 - 1.957  | 1.787 - 1.791   | 1.787 - 1.789 | 1.790 - 1.793  | 1.953 - 1.957   |                  |                 |                 |                  |
| 133                           | 2.015 - 2.017    | 2.018 - 2.021  | 1.850 - 1.854   | 1.850 - 1.852 | 1.853 - 1.856  | 2.017 - 2.021   |                  |                 |                 |                  |
| 134                           | 2.080 - 2.082    | 2.083 - 2.086  | 1.915 - 1.919   | 1.915 - 1.917 | 1.918 - 1.921  | 2.082 - 2.086   |                  |                 |                 |                  |
| 135                           | 2.145 - 2.147    | 2.148 - 2.151  | 1.981 - 1.985   | 1.981 - 1.983 | 1.984 - 1.987  | 2.147 - 2.151   |                  |                 |                 |                  |

TABLE 3 STANDARD GLAND DIMENSIONS IN INCHES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | RCD MOUNTED      |                 |                 | BORE MOUNTED  |                |                 | GLAND WIDTH<br>G |
|-------------------------------|------------------|-----------------|-----------------|---------------|----------------|-----------------|------------------|
|                               | PISTON DIA.<br>C | BORE DIA.<br>A  | GLAND DIA.<br>F | POD DIA.<br>R | BORE DIA.<br>H | GLAND DIA.<br>E |                  |
| 136                           | 2.208 - 2.210    | 2.211 - 2.214   | 2.044 - 2.048   | 2.044 - 2.046 | 2.047 - 2.050  | 2.210 - 2.214   | .146-.156        |
| 137                           | 2.273 - 2.275    | 2.276 - 2.279   | 2.108 - 2.112   | 2.108 - 2.110 | 2.111 - 2.114  | 2.275 - 2.279   |                  |
| 138                           | 2.337 - 2.339    | 2.340 - 2.343   | 2.172 - 2.176   | 2.172 - 2.174 | 2.175 - 2.178  | 2.339 - 2.343   |                  |
| 139                           | 2.400 - 2.402    | 2.403 - 2.406   | 2.236 - 2.240   | 2.236 - 2.238 | 2.239 - 2.242  | 2.402 - 2.406   |                  |
| 140                           | 2.463 - 2.465    | 2.466 - 2.469   | 2.299 - 2.303   | 2.299 - 2.301 | 2.302 - 2.305  | 2.465 - 2.469   |                  |
| 141                           | 2.530 - 2.532    | 2.533 - 2.536   | 2.366 - 2.370   | 2.366 - 2.368 | 2.369 - 2.372  | 2.532 - 2.536   |                  |
| 142                           | 2.594 - 2.596    | 2.597 - 2.600   | 2.430 - 2.434   | 2.430 - 2.432 | 2.433 - 2.436  | 2.596 - 2.600   |                  |
| 143                           | 2.659 - 2.661    | 2.662 - 2.665   | 2.494 - 2.498   | 2.494 - 2.496 | 2.497 - 2.500  | 2.661 - 2.665   |                  |
| 144                           | 2.721 - 2.723    | 2.724 - 2.727   | 2.557 - 2.561   | 2.557 - 2.559 | 2.560 - 2.563  | 2.723 - 2.727   |                  |
| 145                           | 2.785 - 2.787    | 2.788 - 2.791   | 2.621 - 2.625   | 2.621 - 2.623 | 2.624 - 2.627  | 2.787 - 2.791   |                  |
| 146                           | 2.849 - 2.851    | 2.852 - 2.855   | 2.685 - 2.689   | 2.685 - 2.687 | 2.688 - 2.691  | 2.851 - 2.855   |                  |
| 147                           | 2.916 - 2.918    | 2.919 - 2.922   | 2.751 - 2.755   | 2.751 - 2.753 | 2.754 - 2.757  | 2.918 - 2.922   |                  |
| 148                           | 2.978 - 2.980    | 2.981 - 2.984   | 2.814 - 2.818   | 2.814 - 2.816 | 2.817 - 2.820  | 2.980 - 2.984   |                  |
| 149                           | 3.042 - 3.044    | 3.045 - 3.048   | 2.878 - 2.882   | 2.878 - 2.880 | 2.881 - 2.884  | 3.044 - 3.048   |                  |
| 150                           | 3.106 - 3.108    | 3.109 - 3.112   | 2.942 - 2.946   | 2.942 - 2.944 | 2.945 - 2.948  | 3.108 - 3.112   |                  |
| 151                           | 3.235 - 3.237    | 3.238 - 3.241   | 3.071 - 3.075   | 3.071 - 3.073 | 3.074 - 3.077  | 3.237 - 3.241   |                  |
| 152                           | 3.490 - 3.492    | 3.493 - 3.496   | 3.326 - 3.330   | 3.326 - 3.330 |                |                 |                  |
| 153                           | 3.745 - 3.747    | 3.748 - 3.751   | 3.581 - 3.585   | 3.581 - 3.585 |                |                 |                  |
| 154                           | 4.004 - 4.006    | 4.007 - 4.010   | 3.840 - 3.844   | 3.840 - 3.844 |                |                 |                  |
| 155                           | 4.259 - 4.261    | 4.262 - 4.265   | 4.095 - 4.099   | 4.095 - 4.099 |                |                 |                  |
| 156                           | 4.516 - 4.518    | 4.519 - 4.522   | 4.352 - 4.356   | 4.352 - 4.356 |                |                 |                  |
| 157                           | 4.771 - 4.773    | 4.774 - 4.777   | 4.607 - 4.611   | 4.607 - 4.611 |                |                 |                  |
| 158                           | 5.026 - 5.028    | 5.029 - 5.032   | 4.862 - 4.866   | 4.862 - 4.866 |                |                 |                  |
| 159                           | 5.286 - 5.288    | 5.289 - 5.292   | 5.122 - 5.126   | 5.122 - 5.126 |                |                 |                  |
| 160                           | 5.541 - 5.543    | 5.544 - 5.547   | 5.377 - 5.381   | 5.377 - 5.381 |                |                 |                  |
| 161                           | 5.796 - 5.798    | 5.799 - 5.802   | 5.632 - 5.636   | 5.632 - 5.636 |                |                 |                  |
| 162                           | 6.051 - 6.053    | 6.054 - 6.057   | 5.887 - 5.891   | 5.887 - 5.891 |                |                 |                  |
| 163                           | 6.306 - 6.308    | 6.309 - 6.312   | 6.142 - 6.146   | 6.142 - 6.146 |                |                 |                  |
| 164                           | 6.567 - 6.569    | 6.570 - 6.573   | 6.403 - 6.407   | 6.403 - 6.407 |                |                 |                  |
| 165                           | 6.822 - 6.824    | 6.825 - 6.828   | 6.658 - 6.662   | 6.658 - 6.662 |                |                 |                  |
| 166                           | 7.077 - 7.079    | 7.080 - 7.083   | 6.913 - 6.917   | 6.913 - 6.917 |                |                 |                  |
| 167                           | 7.332 - 7.334    | 7.335 - 7.338   | 7.168 - 7.172   | 7.168 - 7.172 |                |                 |                  |
| 168                           | 7.592 - 7.594    | 7.595 - 7.598   | 7.428 - 7.432   | 7.428 - 7.432 |                |                 |                  |
| 169                           | 7.847 - 7.849    | 7.850 - 7.853   | 7.683 - 7.687   | 7.683 - 7.687 |                |                 |                  |
| 170                           | 8.102 - 8.104    | 8.105 - 8.108   | 7.938 - 7.942   | 7.938 - 7.942 |                |                 |                  |
| 171                           | 8.357 - 8.359    | 8.360 - 8.363   | 8.193 - 8.197   | 8.193 - 8.197 |                |                 |                  |
| 172                           | 8.617 - 8.619    | 8.620 - 8.623   | 8.453 - 8.457   | 8.453 - 8.457 |                |                 |                  |
| 173                           | 8.872 - 8.874    | 8.875 - 8.878   | 8.708 - 8.712   | 8.708 - 8.712 |                |                 |                  |
| 174                           | 9.127 - 9.129    | 9.130 - 9.133   | 8.963 - 8.967   | 8.963 - 8.967 |                |                 |                  |
| 175                           | 9.382 - 9.384    | 9.385 - 9.388   | 9.218 - 9.222   | 9.218 - 9.222 |                |                 |                  |
| 176                           | 9.642 - 9.644    | 9.645 - 9.648   | 9.478 - 9.482   | 9.478 - 9.482 |                |                 |                  |
| 177                           | 9.897 - 9.899    | 9.900 - 9.903   | 9.733 - 9.737   | 9.733 - 9.737 |                |                 |                  |
| 178                           | 10.152 - 10.154  | 10.155 - 10.158 | 9.988 - 9.992   | 9.988 - 9.992 |                |                 |                  |

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TABLE 3 STANDARD GLAND DIMENSIONS IN INCHES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | PISTON DIA.<br>C | BORE DIA.<br>A | GLAND DIA.<br>F | ROD DIA.<br>3 | BORE DIA.<br>H | GLAND DIA.<br>E | GLAND WIDTH<br>G |
|-------------------------------|------------------|----------------|-----------------|---------------|----------------|-----------------|------------------|
|                               |                  |                |                 |               |                |                 |                  |
| (1) 201                       | 0.403 -          | 0.406          | 0.403 -         | 0.411         | 0.181 -        | 0.184           | 0.186 -          |
| (1) 202                       | 0.469 -          | 0.472          | 0.474 -         | 0.477         | 0.246 -        | 0.252           | 0.251 -          |
| 203                           | 0.532 -          | 0.535          | 0.537 -         | 0.540         | 0.309 -        | 0.312           | 0.314 -          |
| 204                           | 0.556 -          | 0.559          | 0.561 -         | 0.564         | 0.373 -        | 0.376           | 0.378 -          |
| 205                           | 0.659 -          | 0.662          | 0.664 -         | 0.667         | 0.437 -        | 0.440           | 0.442 -          |
| 206                           | 0.724 -          | 0.727          | 0.729 -         | 0.732         | 0.501 -        | 0.504           | 0.506 -          |
| 207                           | 0.787 -          | 0.790          | 0.792 -         | 0.795         | 0.564 -        | 0.567           | 0.569 -          |
| 208                           | 0.853 -          | 0.856          | 0.855 -         | 0.861         | 0.630 -        | 0.633           | 0.635 -          |
| 209                           | 0.916 -          | 0.919          | 0.921 -         | 0.924         | 0.694 -        | 0.697           | 0.699 -          |
| 210                           | 0.981 -          | 0.984          | 0.986 -         | 0.989         | 0.759 -        | 0.762           | 0.764 -          |
| 211                           | 1.045 -          | 1.048          | 1.050 -         | 1.053         | 0.822 -        | 0.825           | 0.827 -          |
| 212                           | 1.109 -          | 1.112          | 1.114 -         | 1.117         | 0.886 -        | 0.889           | 0.891 -          |
| 213                           | 1.172 -          | 1.175          | 1.177 -         | 1.180         | 0.950 -        | 0.953           | 0.955 -          |
| 214                           | 1.237 -          | 1.240          | 1.242 -         | 1.245         | 1.014 -        | 1.017           | 1.019 -          |
| 215                           | 1.300 -          | 1.303          | 1.305 -         | 1.308         | 1.077 -        | 1.080           | 1.082 -          |
| 216                           | 1.365 -          | 1.368          | 1.370 -         | 1.373         | 1.143 -        | 1.146           | 1.148 -          |
| 217                           | 1.430 -          | 1.433          | 1.435 -         | 1.438         | 1.207 -        | 1.210           | 1.212 -          |
| 218                           | 1.494 -          | 1.497          | 1.499 -         | 1.502         | 1.271 -        | 1.274           | 1.276 -          |
| 219                           | 1.557 -          | 1.560          | 1.562 -         | 1.565         | 1.334 -        | 1.337           | 1.339 -          |
| 220                           | 1.621 -          | 1.624          | 1.626 -         | 1.629         | 1.398 -        | 1.401           | 1.403 -          |
| 221                           | 1.685 -          | 1.688          | 1.690 -         | 1.693         | 1.462 -        | 1.465           | 1.467 -          |
| 222                           | 1.752 -          | 1.755          | 1.757 -         | 1.760         | 1.529 -        | 1.532           | 1.534 -          |
| 223                           | 1.819 -          | 1.822          | 1.824 -         | 1.827         | 1.596 -        | 1.599           | 1.601 -          |
| 224                           | 2.007 -          | 2.010          | 2.012 -         | 2.015         | 1.784 -        | 1.787           | 1.789 -          |
| 225                           | 2.138 -          | 2.141          | 2.143 -         | 2.146         | 1.915 -        | 1.918           | 1.920 -          |
| 226                           | 2.265 -          | 2.268          | 2.270 -         | 2.273         | 2.042 -        | 2.045           | 2.047 -          |
| 227                           | 2.393 -          | 2.396          | 2.398 -         | 2.401         | 2.170 -        | 2.173           | 2.175 -          |
| 228                           | 2.522 -          | 2.525          | 2.527 -         | 2.530         | 2.299 -        | 2.302           | 2.304 -          |
| 229                           | 2.650 -          | 2.653          | 2.655 -         | 2.658         | 2.427 -        | 2.430           | 2.432 -          |
| 230                           | 2.776 -          | 2.779          | 2.781 -         | 2.784         | 2.554 -        | 2.557           | 2.559 -          |
| 231                           | 2.904 -          | 2.907          | 2.909 -         | 2.912         | 2.682 -        | 2.685           | 2.687 -          |
| 232                           | 3.036 -          | 3.039          | 3.041 -         | 3.044         | 2.813 -        | 2.816           | 2.818 -          |
| 233                           | 3.164 -          | 3.167          | 3.169 -         | 3.172         | 2.941 -        | 2.944           | 2.946 -          |
| 234                           | 3.290 -          | 3.293          | 3.295 -         | 3.298         | 3.068 -        | 3.071           | 3.073 -          |
| 235                           | 3.418 -          | 3.421          | 3.423 -         | 3.426         | 3.196 -        | 3.199           | 3.201 -          |
| 236                           | 3.546 -          | 3.549          | 3.551 -         | 3.554         | 3.323 -        | 3.326           | 3.328 -          |
| 237                           | 3.674 -          | 3.677          | 3.679 -         | 3.682         | 3.451 -        | 3.454           | 3.456 -          |
| 238                           | 3.801 -          | 3.804          | 3.806 -         | 3.809         | 3.578 -        | 3.581           | 3.583 -          |
| 239                           | 3.932 -          | 3.935          | 3.937 -         | 3.940         | 3.710 -        | 3.713           | 3.715 -          |
| 240                           | 4.060 -          | 4.063          | 4.065 -         | 4.068         | 3.837 -        | 3.840           | 3.842 -          |
| 241                           | 4.188 -          | 4.191          | 4.193 -         | 4.196         | 3.965 -        | 3.968           | 3.970 -          |
| 242                           | 4.315 -          | 4.318          | 4.320 -         | 4.323         | 4.092 -        | 4.095           | 4.097 -          |
| 243                           | 4.443 -          | 4.446          | 4.448 -         | 4.451         | 4.220 -        | 4.223           | 4.225 -          |
| 244                           | 4.572 -          | 4.575          | 4.577 -         | 4.580         | 4.349 -        | 4.352           | 4.354 -          |
| 245                           | 4.700 -          | 4.703          | 4.705 -         | 4.708         | 4.477 -        | 4.480           | 4.482 -          |

TABLE 3 STANDARD GLAND DIMENSIONS IN INCHES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | PISTON DIA.<br>C | ROCK MOUNTED<br>BORE DIA.<br>A | GLAND DIA.<br>F | ROCK DIA.<br>J | ROCK MOUNTED<br>BORE DIA.<br>H | GLAND DIA.<br>E | GLAND WIDTH<br>G |
|-------------------------------|------------------|--------------------------------|-----------------|----------------|--------------------------------|-----------------|------------------|
| 246                           | 4.827 - 4.930    | 4.832 - 4.835                  | 4.604 - 4.610   |                |                                |                 | .195-.205        |
| 247                           | 4.955 - 4.958    | 4.960 - 4.963                  | 4.732 - 4.738   |                |                                |                 |                  |
| 248                           | 5.082 - 5.085    | 5.087 - 5.090                  | 4.859 - 4.865   |                |                                |                 |                  |
| 249                           | 5.215 - 5.218    | 5.220 - 5.223                  | 4.992 - 4.998   |                |                                |                 |                  |
| 250                           | 5.342 - 5.345    | 5.347 - 5.350                  | 5.119 - 5.125   |                |                                |                 |                  |
| 251                           | 5.470 - 5.473    | 5.475 - 5.478                  | 5.247 - 5.253   |                |                                |                 |                  |
| 252                           | 5.597 - 5.600    | 5.602 - 5.605                  | 5.374 - 5.380   |                |                                |                 |                  |
| 253                           | 5.725 - 5.728    | 5.730 - 5.733                  | 5.502 - 5.508   |                |                                |                 |                  |
| 254                           | 5.852 - 5.855    | 5.857 - 5.860                  | 5.629 - 5.635   |                |                                |                 |                  |
| 255                           | 5.980 - 5.983    | 5.985 - 5.988                  | 5.757 - 5.763   |                |                                |                 |                  |
| 256                           | 6.107 - 6.110    | 6.112 - 6.115                  | 5.884 - 5.890   |                |                                |                 |                  |
| 257                           | 6.235 - 6.238    | 6.240 - 6.243                  | 6.012 - 6.018   |                |                                |                 |                  |
| 258                           | 6.362 - 6.365    | 6.367 - 6.370                  | 6.140 - 6.145   |                |                                |                 |                  |
| 259                           | 6.490 - 6.493    | 6.495 - 6.498                  | 6.268 - 6.273   |                |                                |                 |                  |
| 260                           | 6.617 - 6.620    | 6.622 - 6.625                  | 6.396 - 6.401   |                |                                |                 |                  |
| 261                           | 6.745 - 6.748    | 6.750 - 6.753                  | 6.524 - 6.529   |                |                                |                 |                  |
| 262                           | 6.872 - 6.875    | 6.877 - 6.880                  | 6.652 - 6.657   |                |                                |                 |                  |
| 263                           | 6.999 - 7.002    | 7.004 - 7.007                  | 6.780 - 6.785   |                |                                |                 |                  |
| 264                           | 7.127 - 7.130    | 7.132 - 7.135                  | 6.908 - 6.913   |                |                                |                 |                  |
| 265                           | 7.254 - 7.257    | 7.259 - 7.262                  | 7.036 - 7.041   |                |                                |                 |                  |
| 266                           | 7.382 - 7.385    | 7.387 - 7.390                  | 7.164 - 7.169   |                |                                |                 |                  |
| 267                           | 7.509 - 7.512    | 7.514 - 7.517                  | 7.292 - 7.297   |                |                                |                 |                  |
| 268                           | 7.637 - 7.640    | 7.642 - 7.645                  | 7.420 - 7.425   |                |                                |                 |                  |
| 269                           | 7.764 - 7.767    | 7.769 - 7.772                  | 7.548 - 7.553   |                |                                |                 |                  |
| 270                           | 7.892 - 7.895    | 7.897 - 7.900                  | 7.676 - 7.681   |                |                                |                 |                  |
| 271                           | 8.019 - 8.022    | 8.024 - 8.027                  | 7.804 - 7.809   |                |                                |                 |                  |
| 272                           | 8.147 - 8.150    | 8.152 - 8.155                  | 7.932 - 7.937   |                |                                |                 |                  |
| 273                           | 8.274 - 8.277    | 8.279 - 8.282                  | 8.060 - 8.065   |                |                                |                 |                  |
| 274                           | 8.402 - 8.405    | 8.407 - 8.410                  | 8.188 - 8.193   |                |                                |                 |                  |
| 275                           | 8.529 - 8.532    | 8.534 - 8.537                  | 8.316 - 8.321   |                |                                |                 |                  |
| 276                           | 8.657 - 8.660    | 8.662 - 8.665                  | 8.444 - 8.449   |                |                                |                 |                  |
| 277                           | 8.784 - 8.787    | 8.789 - 8.792                  | 8.572 - 8.577   |                |                                |                 |                  |
| 278                           | 8.912 - 8.915    | 8.917 - 8.920                  | 8.700 - 8.705   |                |                                |                 |                  |
| 279                           | 9.039 - 9.042    | 9.044 - 9.047                  | 8.828 - 8.833   |                |                                |                 |                  |
| 280                           | 9.167 - 9.170    | 9.172 - 9.175                  | 8.956 - 8.961   |                |                                |                 |                  |
| 281                           | 9.294 - 9.297    | 9.299 - 9.302                  | 9.084 - 9.089   |                |                                |                 |                  |
| 282                           | 9.422 - 9.425    | 9.427 - 9.430                  | 9.212 - 9.217   |                |                                |                 |                  |
| 283                           | 9.549 - 9.552    | 9.554 - 9.557                  | 9.340 - 9.345   |                |                                |                 |                  |
| 284                           | 9.677 - 9.680    | 9.682 - 9.685                  | 9.468 - 9.473   |                |                                |                 |                  |

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TABLE 3 STANDARD GLAND DIMENSIONS IN INCHES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | BORE MOUNTED     |                |                 | BORE MOUNTED  |                |                 | GLAND DIA.<br>E | GLAND WIDTH<br>G |
|-------------------------------|------------------|----------------|-----------------|---------------|----------------|-----------------|-----------------|------------------|
|                               | PISTON DIA.<br>C | BORE DIA.<br>A | GLAND DIA.<br>F | ROD DIA.<br>R | BORE DIA.<br>H | GLAND DIA.<br>E |                 |                  |
| 309                           | 0.768 - 0.771    | 0.774 - 0.777  | 0.427 - 0.435   | 0.427 - 0.430 | 0.433 - 0.436  | 0.769 - 0.777   | .285 - .295     |                  |
| 310                           | 0.832 - 0.835    | 0.838 - 0.841  | 0.492 - 0.500   | 0.492 - 0.495 | 0.498 - 0.501  | 0.833 - 0.841   |                 |                  |
| 311                           | 0.895 - 0.898    | 0.901 - 0.904  | 0.555 - 0.563   | 0.555 - 0.558 | 0.561 - 0.564  | 0.896 - 0.904   |                 |                  |
| 312                           | 0.961 - 0.964    | 0.967 - 0.970  | 0.621 - 0.629   | 0.621 - 0.624 | 0.627 - 0.630  | 0.962 - 0.970   |                 |                  |
| 313                           | 1.024 - 1.027    | 1.030 - 1.033  | 0.684 - 0.692   | 0.684 - 0.687 | 0.690 - 0.693  | 1.025 - 1.033   |                 |                  |
| 314                           | 1.091 - 1.094    | 1.097 - 1.100  | 0.750 - 0.758   | 0.750 - 0.753 | 0.756 - 0.759  | 1.092 - 1.100   |                 |                  |
| 315                           | 1.153 - 1.156    | 1.159 - 1.162  | 0.813 - 0.821   | 0.813 - 0.816 | 0.819 - 0.822  | 1.154 - 1.162   |                 |                  |
| 316                           | 1.218 - 1.221    | 1.224 - 1.227  | 0.877 - 0.885   | 0.877 - 0.880 | 0.883 - 0.886  | 1.219 - 1.227   |                 |                  |
| 317                           | 1.280 - 1.283    | 1.285 - 1.289  | 0.940 - 0.948   | 0.940 - 0.943 | 0.946 - 0.949  | 1.281 - 1.289   |                 |                  |
| 318                           | 1.346 - 1.349    | 1.352 - 1.355  | 1.005 - 1.013   | 1.005 - 1.008 | 1.011 - 1.014  | 1.347 - 1.355   |                 |                  |
| 319                           | 1.409 - 1.412    | 1.415 - 1.418  | 1.068 - 1.076   | 1.068 - 1.071 | 1.074 - 1.077  | 1.410 - 1.418   |                 |                  |
| 320                           | 1.474 - 1.477    | 1.480 - 1.483  | 1.134 - 1.142   | 1.134 - 1.137 | 1.140 - 1.143  | 1.475 - 1.483   |                 |                  |
| 321                           | 1.538 - 1.541    | 1.544 - 1.547  | 1.197 - 1.205   | 1.197 - 1.200 | 1.203 - 1.206  | 1.539 - 1.547   |                 |                  |
| 322                           | 1.603 - 1.606    | 1.609 - 1.612  | 1.262 - 1.270   | 1.262 - 1.265 | 1.268 - 1.271  | 1.604 - 1.612   |                 |                  |
| 323                           | 1.665 - 1.668    | 1.671 - 1.674  | 1.325 - 1.333   | 1.325 - 1.328 | 1.331 - 1.334  | 1.666 - 1.674   |                 |                  |
| 324                           | 1.729 - 1.732    | 1.735 - 1.738  | 1.389 - 1.397   | 1.389 - 1.392 | 1.395 - 1.398  | 1.730 - 1.738   |                 |                  |
| 325                           | 1.861 - 1.864    | 1.867 - 1.870  | 1.520 - 1.528   | 1.520 - 1.523 | 1.526 - 1.529  | 1.862 - 1.870   |                 |                  |
| 326                           | 1.987 - 1.990    | 1.993 - 1.996  | 1.647 - 1.655   | 1.647 - 1.650 | 1.653 - 1.656  | 1.988 - 1.996   |                 |                  |
| 327                           | 2.115 - 2.118    | 2.121 - 2.124  | 1.775 - 1.783   | 1.775 - 1.778 | 1.781 - 1.784  | 2.116 - 2.124   |                 |                  |
| 328                           | 2.243 - 2.246    | 2.249 - 2.252  | 1.902 - 1.910   | 1.902 - 1.905 | 1.908 - 1.911  | 2.244 - 2.252   |                 |                  |
| 329                           | 2.371 - 2.376    | 2.379 - 2.382  | 2.033 - 2.041   | 2.033 - 2.036 | 2.039 - 2.042  | 2.374 - 2.382   |                 |                  |
| 330                           | 2.501 - 2.504    | 2.507 - 2.510  | 2.160 - 2.168   | 2.160 - 2.163 | 2.166 - 2.169  | 2.502 - 2.510   |                 |                  |
| 331                           | 2.629 - 2.632    | 2.635 - 2.638  | 2.288 - 2.296   | 2.288 - 2.291 | 2.294 - 2.297  | 2.630 - 2.638   |                 |                  |
| 332                           | 2.756 - 2.759    | 2.762 - 2.765  | 2.415 - 2.423   | 2.415 - 2.418 | 2.421 - 2.424  | 2.757 - 2.765   |                 |                  |
| 333                           | 2.886 - 2.889    | 2.892 - 2.895  | 2.545 - 2.553   | 2.545 - 2.548 | 2.551 - 2.554  | 2.887 - 2.895   |                 |                  |
| 334                           | 3.013 - 3.016    | 3.019 - 3.022  | 2.672 - 2.680   | 2.672 - 2.675 | 2.678 - 2.681  | 3.014 - 3.022   |                 |                  |
| 335                           | 3.140 - 3.143    | 3.146 - 3.149  | 2.800 - 2.808   | 2.800 - 2.803 | 2.806 - 2.809  | 3.141 - 3.149   |                 |                  |
| 336                           | 3.267 - 3.270    | 3.273 - 3.276  | 2.927 - 2.935   | 2.927 - 2.930 | 2.933 - 2.936  | 3.268 - 3.276   |                 |                  |
| 337                           | 3.400 - 3.403    | 3.406 - 3.409  | 3.059 - 3.067   | 3.059 - 3.062 | 3.065 - 3.068  | 3.401 - 3.409   |                 |                  |
| 338                           | 3.527 - 3.530    | 3.533 - 3.536  | 3.186 - 3.194   | 3.186 - 3.189 | 3.192 - 3.195  | 3.528 - 3.536   |                 |                  |
| 339                           | 3.654 - 3.657    | 3.660 - 3.663  | 3.314 - 3.322   | 3.314 - 3.317 | 3.320 - 3.323  | 3.655 - 3.663   |                 |                  |
| 340                           | 3.781 - 3.784    | 3.787 - 3.790  | 3.441 - 3.449   | 3.441 - 3.444 | 3.447 - 3.450  | 3.782 - 3.790   |                 |                  |
| 341                           | 3.909 - 3.912    | 3.915 - 3.918  | 3.569 - 3.577   | 3.569 - 3.572 | 3.575 - 3.578  | 3.910 - 3.918   |                 |                  |
| 342                           | 4.042 - 4.045    | 4.048 - 4.051  | 3.701 - 3.709   | 3.701 - 3.704 | 3.707 - 3.710  | 4.043 - 4.051   |                 |                  |
| 343                           | 4.168 - 4.171    | 4.174 - 4.177  | 3.828 - 3.836   | 3.828 - 3.831 | 3.834 - 3.837  | 4.169 - 4.177   |                 |                  |
| 344                           | 4.296 - 4.299    | 4.302 - 4.305  | 3.956 - 3.964   | 3.956 - 3.959 | 3.962 - 3.965  | 4.297 - 4.305   |                 |                  |
| 345                           | 4.423 - 4.426    | 4.429 - 4.432  | 4.083 - 4.091   | 4.083 - 4.086 | 4.089 - 4.092  | 4.424 - 4.432   |                 |                  |
| 346                           | 4.551 - 4.554    | 4.557 - 4.560  | 4.211 - 4.219   | 4.211 - 4.214 | 4.217 - 4.220  | 4.552 - 4.560   |                 |                  |
| 347                           | 4.680 - 4.683    | 4.686 - 4.689  | 4.340 - 4.348   | 4.340 - 4.343 | 4.346 - 4.349  | 4.681 - 4.689   |                 |                  |
| 348                           | 4.808 - 4.811    | 4.814 - 4.817  | 4.468 - 4.476   | 4.468 - 4.471 | 4.474 - 4.477  | 4.809 - 4.817   |                 |                  |
| 349                           | 4.936 - 4.939    | 4.942 - 4.945  | 4.595 - 4.603   | 4.595 - 4.598 | 4.601 - 4.604  | 4.937 - 4.945   |                 |                  |
| 350                           | 5.064 - 5.067    | 5.067 - 5.070  | 4.707 - 4.715   | 4.707 - 4.710 | 4.713 - 4.716  | 5.064 - 5.070   |                 |                  |

TABLE 3 STANDARD GLAND DIMENSIONS IN INCHES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | ROD MOUNTED      |                |                 | CORE MOUNTED  |                |                 | CORE MOUNTED  |                |                 | GLAND WIDTH<br>G |
|-------------------------------|------------------|----------------|-----------------|---------------|----------------|-----------------|---------------|----------------|-----------------|------------------|
|                               | PISTON DIA.<br>C | BORE DIA.<br>A | GLAND DIA.<br>F | ROD DIA.<br>D | BORE DIA.<br>H | GLAND DIA.<br>E | ROD DIA.<br>D | BORE DIA.<br>H | GLAND DIA.<br>E |                  |
| 351                           | 5.176 -          | 5.179          | 5.182 -         | 5.185         | 4.835 -        | 4.838           | 4.835 -       | 4.838          | 5.177 -         | .285-.295        |
| 352                           | 5.303 -          | 5.306          | 5.309 -         | 5.312         | 4.962 -        | 4.970           | 4.962 -       | 4.971          | 5.304 -         |                  |
| 353                           | 5.431 -          | 5.434          | 5.437 -         | 5.440         | 5.090 -        | 5.098           | 5.090 -       | 5.099          | 5.432 -         |                  |
| 354                           | 5.566 -          | 5.569          | 5.572 -         | 5.575         | 5.225 -        | 5.233           | 5.225 -       | 5.234          | 5.567 -         |                  |
| 355                           | 5.694 -          | 5.697          | 5.700 -         | 5.703         | 5.353 -        | 5.361           | 5.353 -       | 5.362          | 5.695 -         |                  |
| 356                           | 5.821 -          | 5.824          | 5.827 -         | 5.830         | 5.480 -        | 5.488           | 5.480 -       | 5.489          | 5.822 -         | 5.830-           |
| 357                           | 5.949 -          | 5.952          | 5.955 -         | 5.958         | 5.608 -        | 5.616           | 5.608 -       | 5.617          | 5.950 -         |                  |
| 358                           | 6.075 -          | 6.078          | 6.081 -         | 6.084         | 5.735 -        | 5.743           | 5.735 -       | 5.744          | 6.076 -         |                  |
| 359                           | 6.203 -          | 6.206          | 6.209 -         | 6.212         | 5.863 -        | 5.871           | 5.863 -       | 5.872          | 6.204 -         |                  |
| 360                           | 6.330 -          | 6.333          | 6.336 -         | 6.339         | 5.990 -        | 5.998           | 5.990 -       | 5.999          | 6.331 -         |                  |
| 361                           | 6.458 -          | 6.461          | 6.464 -         | 6.467         | 6.118 -        | 6.126           | 6.118 -       | 6.127          | 6.459 -         | 6.467            |
| 362                           | 6.585 -          | 6.588          | 6.589 -         | 6.592         | 6.246 -        | 6.254           | 6.246 -       | 6.255          | 6.586 -         |                  |
| 363                           | 6.713 -          | 6.716          | 6.719 -         | 6.722         | 6.373 -        | 6.381           | 6.373 -       | 6.382          | 6.714 -         |                  |
| 364                           | 6.841 -          | 6.844          | 6.847 -         | 6.850         | 6.501 -        | 6.509           | 6.501 -       | 6.510          | 6.842 -         |                  |
| 365                           | 6.969 -          | 6.972          | 6.975 -         | 6.978         | 6.629 -        | 6.637           | 6.629 -       | 6.638          | 6.970 -         |                  |
| 366                           | 7.097 -          | 7.100          | 7.099 -         | 7.102         | 6.757 -        | 6.765           | 6.757 -       | 6.766          | 7.098 -         | 7.100            |
| 367                           | 7.225 -          | 7.228          | 7.229 -         | 7.232         | 6.885 -        | 6.893           | 6.885 -       | 6.894          | 7.226 -         |                  |
| 368                           | 7.353 -          | 7.356          | 7.357 -         | 7.360         | 7.013 -        | 7.021           | 7.013 -       | 7.022          | 7.354 -         |                  |
| 369                           | 7.481 -          | 7.484          | 7.485 -         | 7.488         | 7.141 -        | 7.149           | 7.141 -       | 7.142          | 7.482 -         |                  |
| 370                           | 7.609 -          | 7.612          | 7.613 -         | 7.616         | 7.269 -        | 7.277           | 7.269 -       | 7.278          | 7.610 -         |                  |
| 371                           | 7.737 -          | 7.740          | 7.741 -         | 7.744         | 7.397 -        | 7.405           | 7.397 -       | 7.406          | 7.738 -         | 7.400            |
| 372                           | 7.865 -          | 7.868          | 7.869 -         | 7.872         | 7.525 -        | 7.533           | 7.525 -       | 7.534          | 7.866 -         |                  |
| 373                           | 7.993 -          | 7.996          | 7.997 -         | 7.999         | 7.653 -        | 7.661           | 7.653 -       | 7.662          | 7.994 -         |                  |
| 374                           | 8.121 -          | 8.124          | 8.125 -         | 8.128         | 7.781 -        | 7.789           | 7.781 -       | 7.790          | 8.122 -         |                  |
| 375                           | 8.249 -          | 8.252          | 8.253 -         | 8.256         | 7.909 -        | 7.917           | 7.909 -       | 7.918          | 8.250 -         |                  |
| 376                           | 8.377 -          | 8.380          | 8.381 -         | 8.384         | 8.037 -        | 8.045           | 8.037 -       | 8.046          | 8.378 -         | 8.000            |
| 377                           | 8.505 -          | 8.508          | 8.509 -         | 8.512         | 8.165 -        | 8.173           | 8.165 -       | 8.174          | 8.506 -         |                  |
| 378                           | 8.633 -          | 8.636          | 8.637 -         | 8.640         | 8.293 -        | 8.301           | 8.293 -       | 8.302          | 8.634 -         |                  |
| 379                           | 8.761 -          | 8.764          | 8.765 -         | 8.768         | 8.421 -        | 8.429           | 8.421 -       | 8.430          | 8.762 -         |                  |
| 380                           | 8.889 -          | 8.892          | 8.893 -         | 8.896         | 8.549 -        | 8.557           | 8.549 -       | 8.558          | 8.890 -         |                  |
| 381                           | 9.017 -          | 9.020          | 9.021 -         | 9.024         | 8.677 -        | 8.685           | 8.677 -       | 8.686          | 9.018 -         | 8.600            |
| 382                           | 9.145 -          | 9.148          | 9.149 -         | 9.152         | 8.805 -        | 8.813           | 8.805 -       | 8.814          | 9.146 -         |                  |
| 383                           | 9.273 -          | 9.276          | 9.277 -         | 9.280         | 8.933 -        | 8.941           | 8.933 -       | 8.942          | 9.274 -         |                  |
| 384                           | 9.401 -          | 9.404          | 9.405 -         | 9.408         | 9.061 -        | 9.069           | 9.061 -       | 9.070          | 9.402 -         |                  |
| 385                           | 9.529 -          | 9.532          | 9.533 -         | 9.536         | 9.189 -        | 9.197           | 9.189 -       | 9.198          | 9.530 -         |                  |
| 386                           | 9.657 -          | 9.660          | 9.661 -         | 9.664         | 9.317 -        | 9.325           | 9.317 -       | 9.326          | 9.658 -         | 9.300            |
| 387                           | 9.785 -          | 9.788          | 9.789 -         | 9.792         | 9.445 -        | 9.453           | 9.445 -       | 9.454          | 9.786 -         |                  |
| 388                           | 9.913 -          | 9.916          | 9.917 -         | 9.920         | 9.573 -        | 9.581           | 9.573 -       | 9.582          | 9.914 -         |                  |
| 389                           | 10.041 -         | 10.044         | 10.045 -        | 10.048        | 9.701 -        | 9.709           | 9.701 -       | 9.710          | 10.042 -        |                  |
| 390                           | 10.169 -         | 10.172         | 10.173 -        | 10.176        | 9.829 -        | 9.837           | 9.829 -       | 9.840          | 10.170 -        |                  |
| 391                           | 10.297 -         | 10.300         | 10.299 -        | 10.302        | 9.957 -        | 9.965           | 9.957 -       | 9.966          | 10.298 -        | 9.900            |
| 392                           | 10.425 -         | 10.428         | 10.429 -        | 10.432        | 10.085 -       | 10.093          | 10.085 -      | 10.094         | 10.426 -        |                  |
| 393                           | 10.553 -         | 10.556         | 10.557 -        | 10.560        | 10.213 -       | 10.221          | 10.213 -      | 10.222         | 10.554 -        |                  |
| 394                           | 10.681 -         | 10.684         | 10.685 -        | 10.688        | 10.341 -       | 10.349          | 10.341 -      | 10.350         | 10.682 -        |                  |
| 395                           | 10.809 -         | 10.812         | 10.813 -        | 10.816        | 10.469 -       | 10.477          | 10.469 -      | 10.480         | 10.810 -        |                  |

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TABLE 3 STANDARD GLAND DIMENSIONS IN INCHES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | ROD MOUNTED      |                 | BORE MOUNTED    |               | GLAND DIA.<br>F | ROD DIA.<br>B | BORE DIA.<br>H | GLAND DIA.<br>E | GLAND WIDTH<br>G |
|-------------------------------|------------------|-----------------|-----------------|---------------|-----------------|---------------|----------------|-----------------|------------------|
|                               | PISTON DIA.<br>C | BORE DIA.<br>A  |                 |               |                 |               |                |                 |                  |
| 425                           | 5.047 - 5.050    | 5.054 - 5.058   | 4.598 - 4.608   | 4.606 - 4.610 | 5.048 - 5.058   |               |                |                 | .360-.370        |
| 426                           | 5.175 - 5.178    | 5.182 - 5.186   | 4.726 - 4.736   | 4.734 - 4.738 | 5.176 - 5.186   |               |                |                 |                  |
| 427                           | 5.303 - 5.306    | 5.310 - 5.314   | 4.853 - 4.863   | 4.861 - 4.865 | 5.304 - 5.314   |               |                |                 |                  |
| 428                           | 5.431 - 5.434    | 5.438 - 5.442   | 4.981 - 4.991   | 4.989 - 4.993 | 5.432 - 5.442   |               |                |                 |                  |
| 429                           | 5.561 - 5.564    | 5.568 - 5.572   | 5.112 - 5.122   | 5.120 - 5.124 | 5.562 - 5.572   |               |                |                 |                  |
| 430                           | 5.689 - 5.692    | 5.696 - 5.700   | 5.240 - 5.250   | 5.248 - 5.252 | 5.690 - 5.700   |               |                |                 |                  |
| 431                           | 5.817 - 5.820    | 5.824 - 5.828   | 5.367 - 5.377   | 5.375 - 5.379 | 5.818 - 5.828   |               |                |                 |                  |
| 432                           | 5.945 - 5.948    | 5.952 - 5.956   | 5.495 - 5.505   | 5.503 - 5.507 | 5.946 - 5.956   |               |                |                 |                  |
| 433                           | 6.072 - 6.075    | 6.079 - 6.083   | 5.622 - 5.632   | 5.630 - 5.634 | 6.073 - 6.083   |               |                |                 |                  |
| 434                           | 6.200 - 6.203    | 6.207 - 6.211   | 5.750 - 5.760   | 5.758 - 5.762 | 6.201 - 6.211   |               |                |                 |                  |
| 435                           | 6.326 - 6.329    | 6.333 - 6.337   | 5.877 - 5.887   | 5.885 - 5.889 | 6.327 - 6.337   |               |                |                 |                  |
| 436                           | 6.454 - 6.457    | 6.461 - 6.465   | 6.005 - 6.015   | 6.013 - 6.017 | 6.455 - 6.465   |               |                |                 |                  |
| 437                           | 6.581 - 6.584    | 6.588 - 6.592   | 6.132 - 6.142   | 6.140 - 6.144 | 6.582 - 6.592   |               |                |                 |                  |
| 438                           | 6.709 - 6.712    | 6.716 - 6.720   | 6.260 - 6.270   | 6.258 - 6.262 | 6.710 - 6.720   |               |                |                 |                  |
| 439                           | 6.837 - 6.840    | 6.844 - 6.848   | 6.388 - 6.398   | 6.396 - 6.400 | 6.839 - 6.849   |               |                |                 |                  |
| 440                           | 6.965 - 6.968    | 6.972 - 6.976   | 6.516 - 6.526   | 6.514 - 6.518 | 6.966 - 6.976   |               |                |                 |                  |
| 441                           | 7.093 - 7.096    | 7.099 - 7.103   | 6.644 - 6.654   | 6.642 - 6.646 | 7.094 - 7.104   |               |                |                 |                  |
| 442                           | 7.221 - 7.224    | 7.225 - 7.229   | 6.772 - 6.782   | 6.770 - 6.774 | 7.222 - 7.232   |               |                |                 |                  |
| 443                           | 7.349 - 7.352    | 7.356 - 7.360   | 6.900 - 6.910   | 6.898 - 6.902 | 7.350 - 7.360   |               |                |                 |                  |
| 444                           | 7.477 - 7.480    | 7.481 - 7.485   | 7.028 - 7.038   | 7.026 - 7.030 | 7.478 - 7.488   |               |                |                 |                  |
| 445                           | 7.605 - 7.608    | 7.612 - 7.616   | 7.156 - 7.166   | 7.154 - 7.158 | 7.606 - 7.616   |               |                |                 |                  |
| 446                           | 7.733 - 7.736    | 7.740 - 7.744   | 7.284 - 7.294   | 7.282 - 7.286 | 7.734 - 7.744   |               |                |                 |                  |
| 447                           | 7.861 - 7.864    | 7.867 - 7.871   | 7.412 - 7.422   | 7.410 - 7.414 | 7.862 - 7.872   |               |                |                 |                  |
| 448                           | 7.989 - 8.122    | 8.126 - 8.130   | 7.540 - 7.550   | 7.538 - 7.542 | 7.990 - 8.123   |               |                |                 |                  |
| 449                           | 8.374 - 8.377    | 8.381 - 8.385   | 7.668 - 7.678   | 7.666 - 7.670 | 8.375 - 8.385   |               |                |                 |                  |
| 450                           | 8.630 - 8.633    | 8.637 - 8.641   | 7.800 - 7.810   | 7.798 - 7.802 | 8.631 - 8.641   |               |                |                 |                  |
| 451                           | 9.150 - 9.153    | 9.157 - 9.161   | 8.308 - 8.318   | 8.306 - 8.310 | 9.151 - 9.161   |               |                |                 |                  |
| 452                           | 9.660 - 9.663    | 9.667 - 9.671   | 8.701 - 8.711   | 8.699 - 8.703 | 9.661 - 9.671   |               |                |                 |                  |
| 453                           | 10.170 - 10.173  | 10.177 - 10.181 | 9.211 - 9.221   | 9.209 - 9.213 |                 |               |                |                 |                  |
| 454                           | 10.681 - 10.684  | 10.688 - 10.692 | 9.721 - 9.731   |               |                 |               |                |                 |                  |
| 455                           | 11.195 - 11.198  | 11.202 - 11.206 | 10.231 - 10.241 |               |                 |               |                |                 |                  |
| 456                           | 11.706 - 11.709  | 11.713 - 11.717 | 10.746 - 10.756 |               |                 |               |                |                 |                  |
| 457                           | 12.216 - 12.219  | 12.223 - 12.227 | 11.256 - 11.266 |               |                 |               |                |                 |                  |
| 458                           | 12.725 - 12.728  | 12.732 - 12.736 | 11.766 - 11.776 |               |                 |               |                |                 |                  |
| 459                           | 13.235 - 13.238  | 13.242 - 13.246 | 12.276 - 12.286 |               |                 |               |                |                 |                  |
| 460                           | 13.745 - 13.749  | 13.752 - 13.756 | 12.786 - 12.796 |               |                 |               |                |                 |                  |
| 461                           | 14.265 - 14.268  | 14.272 - 14.276 | 13.296 - 13.306 |               |                 |               |                |                 |                  |
| 462                           | 14.775 - 14.778  | 14.782 - 14.786 | 13.816 - 13.826 |               |                 |               |                |                 |                  |
| 463                           | 15.285 - 15.288  | 15.292 - 15.296 | 14.326 - 14.336 |               |                 |               |                |                 |                  |
| 464                           | 15.795 - 15.798  | 15.802 - 15.806 | 14.836 - 14.846 |               |                 |               |                |                 |                  |
| 465                           | 16.305 - 16.308  | 16.312 - 16.316 | 15.346 - 15.356 |               |                 |               |                |                 |                  |
| 466                           | 16.770 - 16.773  | 16.777 - 16.781 | 15.856 - 15.866 |               |                 |               |                |                 |                  |
| 467                           | 17.280 - 17.283  | 17.287 - 17.291 | 16.320 - 16.330 |               |                 |               |                |                 |                  |
| 468                           | 17.790 - 17.793  | 17.797 - 17.801 | 16.830 - 16.840 |               |                 |               |                |                 |                  |
| 469                           | 18.300 - 18.303  | 18.307 - 18.311 | 17.340 - 17.350 |               |                 |               |                |                 |                  |
| 470                           | 18.810 - 18.813  | 18.817 - 18.821 | 17.850 - 17.860 |               |                 |               |                |                 |                  |
| 471                           |                  |                 | 18.360 - 18.370 |               |                 |               |                |                 |                  |

TABLE 3 STANDARD GLAND DIMENSIONS IN INCHES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | ROD MOUNTED      |                 | BORE MOUNTED    |  | GLAND DIA.<br>F | ROD DIA.<br>R | BORE DIA.<br>H | GLAND DIA.<br>E | GLAND WIDTH<br>G |
|-------------------------------|------------------|-----------------|-----------------|--|-----------------|---------------|----------------|-----------------|------------------|
|                               | PISTON DIA.<br>C | BORE DIA.<br>A  |                 |  |                 |               |                |                 |                  |
| 466                           | 19.320 - 19.323  | 19.327 - 19.331 | 18.870 - 18.880 |  |                 |               |                |                 | .360-.370<br>↓   |
| 467                           | 19.829 - 19.832  | 19.836 - 19.840 | 19.380 - 19.390 |  |                 |               |                |                 |                  |
| 468                           | 20.339 - 20.342  | 20.346 - 20.350 | 19.890 - 19.900 |  |                 |               |                |                 |                  |
| 469                           | 20.849 - 20.852  | 20.856 - 20.860 | 20.400 - 20.410 |  |                 |               |                |                 |                  |
| 470                           | 21.869 - 21.872  | 21.876 - 21.880 | 21.420 - 21.430 |  |                 |               |                |                 |                  |
| 471                           | 22.889 - 22.892  | 22.896 - 22.900 | 22.440 - 22.450 |  |                 |               |                |                 |                  |
| 472                           | 23.910 - 23.913  | 23.917 - 23.921 | 23.460 - 23.470 |  |                 |               |                |                 |                  |
| 473                           | 24.930 - 24.933  | 24.937 - 24.941 | 24.480 - 24.490 |  |                 |               |                |                 |                  |
| 474                           | 25.950 - 25.953  | 25.957 - 25.961 | 25.500 - 25.510 |  |                 |               |                |                 |                  |
| 475                           | 26.969 - 26.972  | 26.976 - 26.980 | 26.520 - 26.530 |  |                 |               |                |                 |                  |

(1) The standard gland dimensions for these sizes have been provided for reference purposes only. Due to their small size, a gland cannot be designed which will meet all the stated criteria. The dimensions given in this table will result in max seal stretch, max and min seal squeeze and min gland volume that differ significantly from the desirable values.

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TABLE 3 STANDARD GLAND DIMENSIONS IN MILLIMETRES

| GLAND &<br>AS 568<br>DASH NO. | POD MOUNTED      |                |                 | BORE MOUNTED  |                |                 | GLAND MOUNTED    |           |  |
|-------------------------------|------------------|----------------|-----------------|---------------|----------------|-----------------|------------------|-----------|--|
|                               | PISTON DIA.<br>C | BORE DIA.<br>A | GLAND DIA.<br>F | ROD DIA.<br>R | BORE DIA.<br>H | GLAND DIA.<br>E | GLAND WIDTH<br>G |           |  |
| 001                           | 2.159            | 2.184          | 2.210           | 0.914         | 0.940          | 0.965           | 2.235            | 2.56-2.82 |  |
| 002                           | 2.997            | 3.023          | 3.048           | 1.245         | 1.270          | 1.295           | 3.073            | 2.56-2.82 |  |
| 003                           | 3.886            | 3.912          | 3.937           | 1.600         | 1.626          | 1.651           | 3.937            | 2.69-2.95 |  |
| 004                           | 4.724            | 4.750          | 4.775           | 1.981         | 2.007          | 2.032           | 4.801            | 4.826     |  |
| 005                           | 5.486            | 5.512          | 5.537           | 2.769         | 2.794          | 2.819           | 5.563            | 2.90-3.15 |  |
| 006                           | 5.942            | 5.967          | 5.992           | 3.099         | 3.124          | 3.150           | 5.918            | 2.79-3.05 |  |
| 007                           | 6.655            | 6.680          | 6.706           | 3.912         | 3.937          | 3.962           | 6.731            | 2.79-3.05 |  |
| 008                           | 7.458            | 7.483          | 7.508           | 4.724         | 4.750          | 4.775           | 7.544            | 2.67-2.92 |  |
| 009                           | 8.280            | 8.306          | 8.331           | 5.537         | 5.563          | 5.588           | 8.357            |           |  |
| 010                           | 9.119            | 9.144          | 9.169           | 6.375         | 6.401          | 6.426           | 9.195            |           |  |
| 011                           | 10.693           | 10.719         | 10.744          | 7.976         | 8.001          | 8.026           | 10.770           |           |  |
| 012                           | 12.344           | 12.370         | 12.395          | 9.601         | 9.627          | 9.652           | 12.421           |           |  |
| 013                           | 13.970           | 13.995         | 14.021          | 11.227        | 11.252         | 11.278          | 14.046           |           |  |
| 014                           | 15.556           | 15.581         | 15.606          | 12.852        | 12.878         | 12.903          | 15.672           |           |  |
| 015                           | 17.196           | 17.221         | 17.247          | 14.453        | 14.529         | 14.525          | 17.247           |           |  |
| 016                           | 18.872           | 18.897         | 18.923          | 16.129        | 16.205         | 16.205          | 18.923           |           |  |
| 017                           | 20.498           | 20.523         | 20.549          | 17.755        | 17.831         | 17.831          | 20.549           |           |  |
| 018                           | 22.124           | 22.149         | 22.174          | 19.380        | 19.456         | 19.456          | 22.174           |           |  |
| 019                           | 23.724           | 23.749         | 23.774          | 20.980        | 21.057         | 21.057          | 23.774           |           |  |
| 020                           | 25.324           | 25.349         | 25.375          | 22.606        | 22.682         | 22.682          | 25.375           |           |  |
| 021                           | 26.949           | 27.000         | 27.076          | 24.232        | 24.308         | 24.308          | 27.000           |           |  |
| 022                           | 28.600           | 28.651         | 28.677          | 25.883        | 25.959         | 25.959          | 28.651           |           |  |
| 023                           | 30.200           | 30.251         | 30.277          | 27.483        | 27.559         | 27.559          | 30.251           |           |  |
| 024                           | 31.851           | 31.902         | 31.928          | 29.108        | 29.185         | 29.185          | 31.902           |           |  |
| 025                           | 33.477           | 33.528         | 33.553          | 30.759        | 30.836         | 30.835          | 33.528           |           |  |
| 026                           | 35.128           | 35.179         | 35.204          | 32.385        | 32.461         | 32.461          | 35.179           |           |  |
| 027                           | 36.728           | 36.775         | 36.804          | 33.985        | 34.061         | 34.061          | 36.779           |           |  |
| 028                           | 38.405           | 38.455         | 38.481          | 35.687        | 35.763         | 35.763          | 38.455           |           |  |
| 029                           | 41.656           | 41.707         | 41.732          | 38.913        | 38.989         | 38.989          | 41.707           |           |  |
| 030                           | 44.907           | 44.958         | 44.983          | 42.164        | 42.240         | 42.240          | 44.958           |           |  |
| 031                           | 48.184           | 48.234         | 48.260          | 45.440        | 45.517         | 45.517          | 48.234           |           |  |
| 032                           | 51.435           | 51.486         | 51.511          | 48.692        | 48.768         | 48.768          | 51.486           |           |  |
| 033                           | 54.737           | 54.788         | 54.813          | 51.994        | 52.070         |                 |                  |           |  |
| 034                           | 57.988           | 58.039         | 58.064          | 55.245        | 55.321         |                 |                  |           |  |
| 035                           | 61.214           | 61.265         | 61.290          | 58.471        | 58.547         |                 |                  |           |  |
| 036                           | 64.465           | 64.516         | 64.541          | 61.722        | 61.798         |                 |                  |           |  |
| 037                           | 67.691           | 67.742         | 67.767          | 64.948        | 65.024         |                 |                  |           |  |
| 038                           | 70.993           | 71.044         | 71.069          | 68.250        | 68.326         |                 |                  |           |  |
| 039                           | 74.219           | 74.269         | 74.295          | 71.476        | 71.552         |                 |                  |           |  |
| 040                           | 77.470           | 77.521         | 77.546          | 74.727        | 74.803         |                 |                  |           |  |
| 041                           | 80.797           | 80.848         | 80.873          | 78.054        | 78.130         |                 |                  |           |  |
| 042                           | 87.274           | 87.325         | 87.350          | 84.531        | 84.607         |                 |                  |           |  |
| 043                           | 93.751           | 93.802         | 93.827          | 91.008        | 91.084         |                 |                  |           |  |
| 044                           | 100.304          | 100.355        | 100.381         | 97.561        | 97.637         |                 |                  |           |  |
| 045                           | 106.781          | 106.832        | 106.858         | 104.038       | 104.115        |                 |                  |           |  |

TABLE 3 STANDARD GLAND DIMENSIONS IN MILLIMETRES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | ROD MOUNTED       |                   |                   | BORF MOUNTED    |                 |                 | GLAND WIDTH<br>G |
|-------------------------------|-------------------|-------------------|-------------------|-----------------|-----------------|-----------------|------------------|
|                               | PISTON DIA.<br>C  | BORE DIA.<br>A    | GLAND DIA.<br>F   | ROD DIA.<br>B   | BORE DIA.<br>H  | GLAND DIA.<br>E |                  |
| 046                           | 113.335 - 113.385 | 113.411 - 113.462 | 110.592 - 110.668 |                 |                 |                 | 2.67-2.92        |
| 047                           | 119.812 - 119.862 | 119.888 - 119.939 | 117.068 - 117.145 |                 |                 |                 |                  |
| 048                           | 126.289 - 126.339 | 126.365 - 126.416 | 123.545 - 123.622 |                 |                 |                 |                  |
| 049                           | 132.969 - 133.020 | 133.045 - 133.096 | 130.226 - 130.302 |                 |                 |                 |                  |
| 050                           | 139.446 - 139.497 | 139.522 - 139.573 | 136.703 - 136.779 |                 |                 |                 |                  |
| (1)102                        | 5.436 - 5.486     | 5.512 - 5.588     | 1.42 - 1.52       | 1.422 - 1.473   | 1.499 - 1.575   | 5.49 - 5.59     | 4.62-4.88        |
| (1)103                        | 6.426 - 6.477     | 6.502 - 6.579     | 2.26 - 2.36       | 2.261 - 2.311   | 2.337 - 2.413   | 6.48 - 6.58     | 4.19-4.44        |
| (1)104                        | 7.214 - 7.264     | 7.290 - 7.366     | 3.05 - 3.15       | 3.048 - 3.099   | 3.124 - 3.200   | 7.26 - 7.37     | 4.01-4.27        |
| (1)105                        | 8.026 - 8.077     | 8.103 - 8.179     | 3.86 - 3.96       | 3.861 - 3.912   | 3.937 - 4.013   | 8.08 - 8.18     | 4.01-4.27        |
| (1)106                        | 8.839 - 8.890     | 8.915 - 8.992     | 4.67 - 4.78       | 4.674 - 4.724   | 4.750 - 4.826   | 8.89 - 8.99     | 3.89-4.14        |
| 107                           | 9.652 - 9.703     | 9.728 - 9.804     | 5.49 - 5.59       | 5.486 - 5.537   | 5.563 - 5.639   | 9.70 - 9.80     | 3.89-4.14        |
| 108                           | 10.490 - 10.541   | 10.566 - 10.643   | 6.32 - 6.43       | 6.325 - 6.375   | 6.401 - 6.477   | 10.54 - 10.64   | 3.89-4.14        |
| 109                           | 12.090 - 12.141   | 12.167 - 12.243   | 7.92 - 8.03       | 7.925 - 7.976   | 8.001 - 8.077   | 12.14 - 12.24   | 3.71-3.96        |
| 110                           | 13.716 - 13.767   | 13.792 - 13.868   | 9.55 - 9.65       | 9.550 - 9.601   | 9.627 - 9.703   | 13.77 - 13.87   |                  |
| 111                           | 15.342 - 15.392   | 15.418 - 15.494   | 11.18 - 11.28     | 11.176 - 11.227 | 11.252 - 11.328 | 15.39 - 15.49   |                  |
| 112                           | 16.967 - 17.018   | 17.043 - 17.120   | 12.80 - 12.90     | 12.802 - 12.852 | 12.878 - 12.954 | 17.02 - 17.12   |                  |
| 113                           | 18.567 - 18.618   | 18.644 - 18.720   | 14.40 - 14.50     | 14.402 - 14.453 | 14.478 - 14.554 | 18.62 - 18.72   |                  |
| 114                           | 20.244 - 20.295   | 20.320 - 20.396   | 16.08 - 16.18     | 16.076 - 16.129 | 16.154 - 16.231 | 20.29 - 20.40   |                  |
| 115                           | 21.869 - 21.920   | 21.946 - 22.022   | 17.70 - 17.81     | 17.704 - 17.755 | 17.780 - 17.856 | 21.92 - 22.02   |                  |
| 116                           | 23.520 - 23.571   | 23.597 - 23.673   | 19.33 - 19.43     | 19.329 - 19.380 | 19.406 - 19.482 | 23.57 - 23.67   |                  |
| 117                           | 25.146 - 25.197   | 25.222 - 25.298   | 20.95 - 21.06     | 20.955 - 21.006 | 21.031 - 21.107 | 25.20 - 25.30   |                  |
| 118                           | 26.746 - 26.797   | 26.822 - 26.898   | 22.58 - 22.68     | 22.581 - 22.631 | 22.657 - 22.733 | 26.80 - 26.90   |                  |
| 119                           | 28.372 - 28.423   | 28.448 - 28.524   | 24.21 - 24.31     | 24.206 - 24.257 | 24.282 - 24.359 | 28.42 - 28.52   |                  |
| 120                           | 29.997 - 30.048   | 30.074 - 30.150   | 25.83 - 25.93     | 25.832 - 25.883 | 25.908 - 25.984 | 30.05 - 30.15   |                  |
| 121                           | 31.598 - 31.648   | 31.674 - 31.750   | 27.43 - 27.53     | 27.432 - 27.483 | 27.508 - 27.584 | 31.65 - 31.75   |                  |
| 122                           | 33.223 - 33.274   | 33.299 - 33.376   | 29.06 - 29.16     | 29.058 - 29.108 | 29.134 - 29.210 | 33.27 - 33.38   |                  |
| 123                           | 34.899 - 34.950   | 34.976 - 35.052   | 30.73 - 30.84     | 30.734 - 30.785 | 30.810 - 30.886 | 34.95 - 35.05   |                  |
| 124                           | 36.525 - 36.576   | 36.601 - 36.678   | 32.36 - 32.46     | 32.360 - 32.410 | 32.436 - 32.512 | 36.58 - 36.68   |                  |
| 125                           | 38.125 - 38.176   | 38.202 - 38.278   | 33.96 - 34.06     | 33.960 - 34.011 | 34.036 - 34.112 | 38.18 - 38.28   |                  |
| 126                           | 39.751 - 39.802   | 39.827 - 39.903   | 35.59 - 35.69     | 35.585 - 35.636 | 35.661 - 35.738 | 39.80 - 39.90   |                  |
| 127                           | 41.402 - 41.453   | 41.478 - 41.554   | 37.21 - 37.31     | 37.211 - 37.262 | 37.287 - 37.363 | 41.45 - 41.55   |                  |
| 128                           | 43.002 - 43.053   | 43.078 - 43.155   | 38.84 - 38.94     | 38.837 - 38.887 | 38.913 - 38.989 | 43.05 - 43.15   |                  |
| 129                           | 44.678 - 44.729   | 44.755 - 44.831   | 40.51 - 40.61     | 40.513 - 40.564 | 40.589 - 40.665 | 44.73 - 44.83   |                  |
| 130                           | 46.329 - 46.380   | 46.406 - 46.482   | 42.16 - 42.27     | 42.164 - 42.215 | 42.240 - 42.316 | 46.38 - 46.48   |                  |
| 131                           | 47.930 - 47.980   | 48.006 - 48.082   | 43.76 - 43.87     | 43.764 - 43.815 | 43.840 - 43.916 | 47.98 - 48.08   |                  |
| 132                           | 49.555 - 49.606   | 49.631 - 49.708   | 45.39 - 45.49     | 45.390 - 45.440 | 45.466 - 45.542 | 49.61 - 49.71   |                  |
| 133                           | 51.181 - 51.232   | 51.257 - 51.333   | 46.99 - 47.09     | 46.990 - 47.041 | 47.066 - 47.142 | 51.23 - 51.33   |                  |
| 134                           | 52.832 - 52.883   | 52.908 - 52.984   | 48.64 - 48.74     | 48.641 - 48.692 | 48.717 - 48.793 | 52.88 - 52.98   |                  |
| 135                           | 54.483 - 54.534   | 54.559 - 54.635   | 50.32 - 50.42     | 50.317 - 50.368 | 50.393 - 50.470 | 54.53 - 54.64   |                  |

TABLE 3 STANDARD GLAND DIMENSIONS IN MILLIMETRES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | PISTON DIA.<br>C |         | ROD MOUNTED<br>BORE DIA.<br>A |         | GLAND DIA.<br>F |        | ROD DIA.<br>3 |         | BORE MOUNTED<br>BORE DIA.<br>H |         | GLAND DIA.<br>E |        | GLAND WIDTH<br>G |
|-------------------------------|------------------|---------|-------------------------------|---------|-----------------|--------|---------------|---------|--------------------------------|---------|-----------------|--------|------------------|
|                               |                  |         |                               |         |                 |        |               |         |                                |         |                 |        |                  |
| 136                           | 56.083           | 56.134  | 56.159                        | 56.236  | 51.92           | 52.02  | 51.917        | 51.968  | 51.994                         | 52.070  | 56.13           | 56.24  | 3.71-3.96        |
| 137                           | 57.734           | 57.785  | 57.810                        | 57.887  | 53.54           | 53.64  | 53.543        | 53.594  | 53.619                         | 53.695  | 57.78           | 57.89  |                  |
| 138                           | 59.360           | 59.411  | 59.436                        | 59.512  | 55.17           | 55.27  | 55.169        | 55.219  | 55.245                         | 55.321  | 59.41           | 59.51  |                  |
| 139                           | 60.960           | 61.011  | 61.036                        | 61.112  | 56.79           | 56.90  | 56.794        | 56.845  | 56.870                         | 56.947  | 61.01           | 61.11  |                  |
| 140                           | 62.560           | 62.611  | 62.636                        | 62.713  | 58.39           | 58.50  | 58.395        | 58.445  | 58.471                         | 58.547  | 62.61           | 62.71  |                  |
| 141                           | 64.262           | 64.313  | 64.338                        | 64.414  | 60.10           | 60.20  | 60.096        | 60.147  | 60.173                         | 60.249  | 64.31           | 64.41  |                  |
| 142                           | 65.888           | 65.938  | 65.964                        | 66.040  | 61.72           | 61.82  | 61.722        | 61.773  | 61.798                         | 61.874  | 65.94           | 66.04  |                  |
| 143                           | 67.539           | 67.589  | 67.615                        | 67.691  | 63.35           | 63.45  | 63.348        | 63.398  | 63.424                         | 63.500  | 67.59           | 67.69  |                  |
| 144                           | 69.113           | 69.164  | 69.190                        | 69.266  | 64.95           | 65.05  | 64.948        | 64.999  | 65.024                         | 65.100  | 69.16           | 69.27  |                  |
| 145                           | 70.739           | 70.790  | 70.815                        | 70.891  | 66.57           | 66.67  | 66.573        | 66.624  | 66.650                         | 66.726  | 70.79           | 70.89  |                  |
| 146                           | 72.365           | 72.415  | 72.441                        | 72.517  | 68.20           | 68.30  | 68.199        | 68.250  | 68.275                         | 68.351  | 72.42           | 72.52  | 3.71-3.96        |
| 147                           | 74.066           | 74.117  | 74.143                        | 74.219  | 69.88           | 69.98  | 69.875        | 69.926  | 69.952                         | 70.028  | 74.12           | 74.22  |                  |
| 148                           | 75.641           | 75.692  | 75.717                        | 75.794  | 71.48           | 71.58  | 71.476        | 71.526  | 71.552                         | 71.628  | 75.69           | 75.79  |                  |
| 149                           | 77.267           | 77.317  | 77.343                        | 77.419  | 73.10           | 73.20  | 73.101        | 73.152  | 73.177                         | 73.254  | 77.32           | 77.42  |                  |
| 150                           | 78.892           | 78.943  | 78.969                        | 79.045  | 74.73           | 74.83  | 74.727        | 74.778  | 74.803                         | 74.879  | 78.94           | 79.04  |                  |
| 151                           | 82.169           | 82.220  | 82.245                        | 82.321  | 78.00           | 78.10  | 78.003        | 78.054  | 78.079                         | 78.156  | 82.22           | 82.32  |                  |
| 152                           | 88.644           | 88.697  | 88.722                        | 88.798  | 84.48           | 84.58  | 84.476        | 84.526  | 84.552                         | 84.628  | 88.69           | 88.79  |                  |
| 153                           | 95.123           | 95.174  | 95.199                        | 95.275  | 90.96           | 91.06  | 90.954        | 91.005  | 91.030                         | 91.106  | 95.17           | 95.27  |                  |
| 154                           | 101.701          | 101.752 | 101.778                       | 101.854 | 97.54           | 97.64  | 97.536        | 97.587  | 97.613                         | 97.689  | 101.75          | 101.85 |                  |
| 155                           | 108.178          | 108.229 | 108.255                       | 108.331 | 104.01          | 104.11 | 104.003       | 104.054 | 104.079                        | 104.156 | 108.23          | 108.33 |                  |
| 156                           | 114.706          | 114.757 | 114.783                       | 114.859 | 110.54          | 110.64 | 110.536       | 110.587 | 110.613                        | 110.689 | 114.76          | 114.86 | 3.71-3.96        |
| 157                           | 121.183          | 121.234 | 121.259                       | 121.336 | 117.02          | 117.12 | 117.014       | 117.065 | 117.091                        | 117.167 | 121.23          | 121.33 |                  |
| 158                           | 127.660          | 127.711 | 127.736                       | 127.813 | 123.49          | 123.60 | 123.482       | 123.533 | 123.559                        | 123.635 | 127.71          | 127.81 |                  |
| 159                           | 134.264          | 134.315 | 134.340                       | 134.417 | 130.10          | 130.20 | 130.092       | 130.143 | 130.169                        | 130.245 | 134.31          | 134.41 |                  |
| 160                           | 140.741          | 140.792 | 140.817                       | 140.894 | 136.58          | 136.68 | 136.570       | 136.621 | 136.647                        | 136.723 | 140.79          | 140.89 |                  |
| 161                           | 147.218          | 147.269 | 147.294                       | 147.371 | 143.05          | 143.15 | 143.042       | 143.093 | 143.119                        | 143.195 | 147.27          | 147.37 |                  |
| 162                           | 153.695          | 153.746 | 153.771                       | 153.848 | 149.53          | 149.63 | 149.525       | 149.576 | 149.602                        | 149.678 | 153.74          | 153.84 |                  |
| 163                           | 160.172          | 160.223 | 160.248                       | 160.325 | 156.01          | 156.11 | 156.003       | 156.054 | 156.080                        | 156.156 | 160.22          | 160.32 |                  |
| 164                           | 166.802          | 166.852 | 166.878                       | 166.954 | 162.64          | 162.74 | 162.636       | 162.687 | 162.713                        | 162.789 | 166.85          | 166.95 |                  |
| 165                           | 173.279          | 173.329 | 173.355                       | 173.431 | 169.11          | 169.21 | 169.103       | 169.154 | 169.180                        | 169.256 | 173.33          | 173.43 |                  |
| 166                           | 179.756          | 179.806 | 179.832                       | 179.908 | 175.59          | 175.69 | 175.582       | 175.633 | 175.659                        | 175.735 | 179.81          | 179.91 | 3.71-3.96        |
| 167                           | 186.233          | 186.283 | 186.309                       | 186.385 | 182.07          | 182.17 | 182.069       | 182.120 | 182.146                        | 182.222 | 186.28          | 186.38 |                  |
| 168                           | 192.837          | 192.887 | 192.913                       | 192.989 | 188.67          | 188.77 | 188.669       | 188.720 | 188.746                        | 188.822 | 192.89          | 192.99 |                  |
| 169                           | 199.313          | 199.364 | 199.390                       | 199.466 | 195.15          | 195.25 | 195.147       | 195.198 | 195.224                        | 195.300 | 199.36          | 199.46 |                  |
| 170                           | 205.790          | 205.841 | 205.867                       | 205.943 | 201.62          | 201.73 | 201.614       | 201.665 | 201.691                        | 201.767 | 205.84          | 205.94 |                  |
| 171                           | 212.267          | 212.318 | 212.344                       | 212.420 | 208.10          | 208.20 | 208.092       | 208.143 | 208.169                        | 208.245 | 212.32          | 212.42 |                  |
| 172                           | 218.871          | 218.922 | 218.948                       | 219.024 | 214.71          | 214.81 | 214.703       | 214.754 | 214.780                        | 214.856 | 218.92          | 219.02 |                  |
| 173                           | 225.348          | 225.399 | 225.425                       | 225.501 | 221.18          | 221.28 | 221.170       | 221.221 | 221.247                        | 221.323 | 225.40          | 225.50 |                  |
| 174                           | 231.825          | 231.876 | 231.902                       | 231.978 | 227.66          | 227.76 | 227.658       | 227.709 | 227.735                        | 227.811 | 231.88          | 231.98 |                  |
| 175                           | 238.303          | 238.353 | 238.379                       | 238.455 | 234.14          | 234.24 | 234.136       | 234.187 | 234.213                        | 234.289 | 238.35          | 238.45 |                  |
| 176                           | 244.907          | 244.957 | 244.983                       | 245.059 | 240.74          | 240.84 | 240.736       | 240.787 | 240.813                        | 240.889 | 244.96          | 245.06 | 3.71-3.96        |
| 177                           | 251.383          | 251.434 | 251.460                       | 251.536 | 247.22          | 247.32 | 247.214       | 247.265 | 247.291                        | 247.367 | 251.43          | 251.53 |                  |
| 178                           | 257.860          | 257.911 | 257.936                       | 258.013 | 253.69          | 253.80 | 253.682       | 253.733 | 253.759                        | 253.835 | 257.91          | 258.01 |                  |

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TABLE 3 STANDARD GLAND DIMENSIONS IN MILLIMETRES (CONTINUED)

| GLAND &<br>AS 568<br>DASH NO. | ROD MOUNTED      |                |                 | BORE MOUNTED  |                |               | BORE MOUNTED   |                 |                 | GLAND WIDTH<br>G |          |        |
|-------------------------------|------------------|----------------|-----------------|---------------|----------------|---------------|----------------|-----------------|-----------------|------------------|----------|--------|
|                               | PISTON DIA.<br>C | BORE DIA.<br>A | GLAND DIA.<br>F | ROD DIA.<br>B | BORE DIA.<br>H | ROD DIA.<br>B | BORE DIA.<br>H | GLAND DIA.<br>E | GLAND DIA.<br>E | GLAND WIDTH<br>G |          |        |
| (1)201                        | 10.236 -         | 10.312         | 10.363 -        | 10.439        | 4.60 -         | 4.75          | 4.597 -        | 4.674           | 4.724 -         | 4.801            | 10.29 -  | 10.44  |
| (1)202                        | 11.913 -         | 11.989         | 12.040 -        | 12.116        | 6.25 -         | 6.40          | 6.248 -        | 6.325           | 6.375 -         | 6.452            | 11.96 -  | 12.12  |
| 203                           | 13.513 -         | 13.589         | 13.640 -        | 13.716        | 7.85 -         | 8.00          | 7.849 -        | 7.925           | 7.976 -         | 8.052            | 13.56 -  | 13.72  |
| 204                           | 15.138 -         | 15.215         | 15.265 -        | 15.342        | 9.47 -         | 9.63          | 9.474 -        | 9.550           | 9.601 -         | 9.677            | 15.19 -  | 15.34  |
| 205                           | 16.739 -         | 16.815         | 16.866 -        | 16.942        | 11.10 -        | 11.25         | 11.100 -       | 11.176          | 11.227 -        | 11.303           | 16.79 -  | 16.94  |
| 206                           | 18.390 -         | 18.466         | 18.517 -        | 18.593        | 12.73 -        | 12.88         | 12.725 -       | 12.802          | 12.852 -        | 12.929           | 18.44 -  | 18.59  |
| 207                           | 19.990 -         | 20.066         | 20.117 -        | 20.193        | 14.33 -        | 14.48         | 14.326 -       | 14.402          | 14.453 -        | 14.529           | 20.04 -  | 20.19  |
| 208                           | 21.666 -         | 21.742         | 21.793 -        | 21.869        | 16.00 -        | 16.15         | 16.002 -       | 16.078          | 16.129 -        | 16.205           | 21.72 -  | 21.87  |
| 209                           | 23.266 -         | 23.343         | 23.393 -        | 23.469        | 17.63 -        | 17.78         | 17.628 -       | 17.704          | 17.755 -        | 17.831           | 23.32 -  | 23.47  |
| 210                           | 24.917 -         | 24.994         | 25.044 -        | 25.120        | 19.28 -        | 19.43         | 19.279 -       | 19.355          | 19.406 -        | 19.482           | 24.97 -  | 25.12  |
| 211                           | 26.543 -         | 26.619         | 26.670 -        | 26.746        | 20.88 -        | 21.03         | 20.879 -       | 20.955          | 21.006 -        | 21.082           | 26.59 -  | 26.75  |
| 212                           | 28.169 -         | 28.245         | 28.296 -        | 28.372        | 22.50 -        | 22.65         | 22.504 -       | 22.580          | 22.631 -        | 22.708           | 28.22 -  | 28.37  |
| 213                           | 29.769 -         | 29.845         | 29.896 -        | 29.972        | 24.13 -        | 24.28         | 24.130 -       | 24.206          | 24.257 -        | 24.333           | 29.82 -  | 29.97  |
| 214                           | 31.420 -         | 31.496         | 31.547 -        | 31.623        | 25.76 -        | 25.91         | 25.756 -       | 25.832          | 25.883 -        | 25.959           | 31.47 -  | 31.62  |
| 215                           | 33.020 -         | 33.096         | 33.147 -        | 33.223        | 27.36 -        | 27.51         | 27.356 -       | 27.432          | 27.483 -        | 27.559           | 33.07 -  | 33.22  |
| 216                           | 34.671 -         | 34.747         | 34.798 -        | 34.874        | 29.03 -        | 29.18         | 29.032 -       | 29.108          | 29.159 -        | 29.235           | 34.72 -  | 34.87  |
| 217                           | 36.322 -         | 36.398         | 36.449 -        | 36.525        | 30.66 -        | 30.81         | 30.658 -       | 30.734          | 30.785 -        | 30.861           | 36.37 -  | 36.53  |
| 218                           | 37.947 -         | 38.024         | 38.075 -        | 38.151        | 32.28 -        | 32.43         | 32.283 -       | 32.359          | 32.410 -        | 32.487           | 38.00 -  | 38.15  |
| 219                           | 39.548 -         | 39.624         | 39.675 -        | 39.751        | 33.88 -        | 34.04         | 33.884 -       | 33.960          | 34.011 -        | 34.087           | 39.60 -  | 39.75  |
| 220                           | 41.173 -         | 41.249         | 41.300 -        | 41.377        | 35.51 -        | 35.66         | 35.509 -       | 35.585          | 35.636 -        | 35.712           | 41.22 -  | 41.38  |
| 221                           | 42.799 -         | 42.875         | 42.926 -        | 43.002        | 37.13 -        | 37.29         | 37.135 -       | 37.211          | 37.262 -        | 37.338           | 42.85 -  | 43.00  |
| 222                           | 44.501 -         | 44.577         | 44.628 -        | 44.704        | 38.84 -        | 38.99         | 38.837 -       | 38.913          | 38.963 -        | 39.040           | 44.55 -  | 44.70  |
| 223                           | 47.726 -         | 47.803         | 47.853 -        | 47.930        | 42.06 -        | 42.21         | 42.062 -       | 42.138          | 42.189 -        | 42.265           | 47.78 -  | 47.93  |
| 224                           | 50.978 -         | 51.054         | 51.105 -        | 51.181        | 45.31 -        | 45.47         | 45.313 -       | 45.390          | 45.440 -        | 45.517           | 51.03 -  | 51.18  |
| 225                           | 54.305 -         | 54.381         | 54.432 -        | 54.508        | 48.64 -        | 48.79         | 48.641 -       | 48.717          | 48.768 -        | 48.844           | 54.36 -  | 54.51  |
| 226                           | 57.531 -         | 57.607         | 57.658 -        | 57.734        | 51.87 -        | 52.02         | 51.867 -       | 51.943          | 51.994 -        | 52.070           | 57.58 -  | 57.73  |
| 227                           | 60.782 -         | 60.858         | 60.909 -        | 60.985        | 55.12 -        | 55.27         | 55.118 -       | 55.194          | 55.245 -        | 55.321           | 60.83 -  | 60.99  |
| 228                           | 64.059 -         | 64.135         | 64.186 -        | 64.262        | 58.39 -        | 58.55         | 58.395 -       | 58.471          | 58.521 -        | 58.598           | 64.11 -  | 64.26  |
| 229                           | 67.310 -         | 67.386         | 67.437 -        | 67.513        | 61.65 -        | 61.80         | 61.646 -       | 61.722          | 61.773 -        | 61.849           | 67.36 -  | 67.51  |
| 230                           | 70.510 -         | 70.587         | 70.637 -        | 70.714        | 64.87 -        | 65.02         | 64.872 -       | 64.948          | 64.999 -        | 65.075           | 70.56 -  | 70.71  |
| 231                           | 73.762 -         | 73.838         | 73.889 -        | 73.965        | 68.12 -        | 68.28         | 68.123 -       | 68.199          | 68.250 -        | 68.326           | 73.81 -  | 73.96  |
| 232                           | 77.114 -         | 77.190         | 77.241 -        | 77.318        | 71.45 -        | 71.60         | 71.450 -       | 71.526          | 71.577 -        | 71.653           | 77.17 -  | 77.32  |
| 233                           | 80.365 -         | 80.442         | 80.493 -        | 80.569        | 74.70 -        | 74.85         | 74.701 -       | 74.778          | 74.828 -        | 74.905           | 80.42 -  | 80.57  |
| 234                           | 83.566 -         | 83.642         | 83.693 -        | 83.769        | 77.93 -        | 78.08         | 77.927 -       | 78.003          | 78.054 -        | 78.130           | 83.62 -  | 83.77  |
| 235                           | 86.817 -         | 86.893         | 86.944 -        | 87.020        | 81.18 -        | 81.33         | 81.178 -       | 81.254          | 81.305 -        | 81.381           | 86.87 -  | 87.02  |
| 236                           | 90.068 -         | 90.144         | 90.195 -        | 90.271        | 84.40 -        | 84.56         | 84.404 -       | 84.480          | 84.531 -        | 84.607           | 90.12 -  | 90.27  |
| 237                           | 93.319 -         | 93.396         | 93.446 -        | 93.523        | 87.66 -        | 87.81         | 87.655 -       | 87.731          | 87.782 -        | 87.858           | 93.37 -  | 93.52  |
| 238                           | 96.545 -         | 96.621         | 96.672 -        | 96.748        | 90.88 -        | 91.03         | 90.881 -       | 90.957          | 91.008 -        | 91.084           | 96.60 -  | 96.75  |
| 239                           | 99.873 -         | 99.949         | 100.000 -       | 100.076       | 94.23 -        | 94.39         | 94.234 -       | 94.310          | 94.361 -        | 94.437           | 99.92 -  | 100.08 |
| 240                           | 103.124 -        | 103.200        | 103.251 -       | 103.327       | 97.46 -        | 97.61         | 97.460 -       | 97.536          | 97.587 -        | 97.663           | 103.17 - | 103.33 |
| 241                           | 106.375 -        | 106.451        | 106.502 -       | 106.578       | 100.71 -       | 100.86        | 102.711 -      | 102.787         | 102.838 -       | 102.914          | 106.43 - | 106.58 |
| 242                           | 109.601 -        | 109.677        | 109.728 -       | 109.804       | 103.94 -       | 104.09        | 103.937 -      | 104.013         | 104.064 -       | 104.140          | 109.65 - | 109.80 |
| 243                           | 112.852 -        | 112.928        | 112.979 -       | 113.055       | 107.19 -       | 107.34        | 107.188 -      | 107.264         | 107.315 -       | 107.391          | 112.90 - | 113.06 |
| 244                           | 116.129 -        | 116.205        | 116.256 -       | 116.332       | 110.46 -       | 110.62        | 110.465 -      | 110.541         | 110.592 -       | 110.668          | 116.18 - | 116.33 |
| 245                           | 119.380 -        | 119.456        | 119.507 -       | 119.583       | 113.72 -       | 113.87        |                |                 |                 |                  |          |        |