



AEROSPACE STANDARD

AS4832™**REV. B**

Issued 1994-06
Reaffirmed 2012-06
Revised 2023-06

Superseding AS4832A

Gland Design: Nominal 3/8 Inch Cross Section for
Compression-Type Seals

RATIONALE

Two corrections required on pg. 12; Table 6: The Cylinder Bore ØA or Piston Rod ØB, On Chrome, Uncoated Steel and Hard Anodized Surfaces, Elastomer Cell value is incorrect. Currently is 8-2 (µin), Correct values are: 8-12 (µin). Second correction, the top right cell in Table 6, Gases (Note 7), should read: Gases (Notes 5, 6).

1. SCOPE

This SAE Aerospace Standard (AS) offers gland details for a 0.364 inch (9.246 mm) cross-section gland (nominal 3/8 inch) with proposed gland lengths for compression-type seals with two backup rings over a range of 7 to 21 inches (178 to 533 mm) in diameter.

The dash number system used is similar to AS568A. A 600 series has been chosen as a logical extension of AS568A, and the 625 number has been selected for the initial number, since 300 and 400 series in MIL-G-5514 and AS4716 begin with 325 and 425 sizes.

Seal configurations and design are not a part of this document. This gland is for use with compression-type seals including, but not limited to, O-rings, T-rings, D-rings, cap seals, etc.

1.1 Purpose

The current O-ring gland design standard, AS4716, specifies gland dimensions for 0.070 to 0.275 inch (1.778 to 6.985 mm) cross-section O-rings. For landing gear and other large diameter applications, a larger cross-section seal has advantages in performance, and longer life. To address this need, this aerospace standard specifies gland dimensions and other pertinent criteria based on O-rings for nominal 3/8 inch (9.53 mm) cross-section glands.

2. REFERENCES

2.1 Applicable Documents

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

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For more information on this standard, visit
<https://www.sae.org/standards/content/AS4832B>

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2452	Superfinishing of HVOF Applied Tungsten Carbide Coatings
AIR6079	Selection of Metallic Spring Energized Seals for Aerospace
ARP5555	Recommendations for Installation of Seals in Standard Glands
ARP5935	Use of HVOF Thermal Spray Coatings for Hard Chrome Replacement in Landing Gear Applications
AS568	Aerospace Size Standard for O-Rings
AS4716	Gland Design, O-Ring and Other Seals

2.1.2 ASME Publications

Available from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), www.asme.org.

ASME B46.1-2009 Surface Texture (Surface Roughness, Waviness, and Lay)

2.1.3 ISO Publications

Available at <https://webstore.ansi.org/>.

ISO 4287-1 Geometrical Product Specifications (GPS) - Surface Texture: Profile Method - Terms, Definitions and Surface Texture Parameters

2.1.4 U.S. Government Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

MIL-G-5514G Gland Design, Packings, Hydraulic, General Requirements for (Inactive for New Design)

3. TECHNICAL REQUIREMENTS

3.1 General

3.1.1 The recommended seal (O-ring, T-ring, D-ring, cap seal, etc.) cross section is 0.418 inch $\pm$ 0.006 inch (10.617 mm $\pm$ 0.152 mm). This cross section and tolerance provide appropriate levels of squeeze and is the basis for the squeeze calculations and subsequent results provided in Tables 1A and 1B.

NOTE: Other cross-section sizes and squeeze levels may be suitable and/or required in application, depending on the seal type and/or seal assembly; in these instances, consult the seal supplier for more detailed squeeze and gland occupancy calculations.

3.1.2 Rod diameters are expanded from MIL-G-5514 and AS4716. In these size ranges, MIL-G-5514 and AS4716 list 1/2 inch (12.7 mm) increments, while 1/4 inch (6.35 mm) increments are provided in this document.

3.1.3 The hardware dimensions listed in Tables 1A and 1B ensure the seal squeeze will be limited to 5% minimum when using the recommended seal cross section listed in 3.1.1. Any “laydown” or lateral displacement of the rod/piston will typically reduce the seal squeeze on one side of the rod/piston, which may lead to increased rates of leakage, accelerated compression set, or seal wear damage. In the event wear rings are required, the maximum diametral clearance will be increased, however, the effective “laydown” or lateral displacement capable within the system will be reduced due to the wear rings incorporation. A minimum squeeze of 5% (0.020 inch [0.508 mm]) should be maintained on the seal assembly under worst case tolerance and laydown conditions. This minimum squeeze level is applicable for both elastomer-only assemblies, as well as cap-type elastomer energized seal assemblies. For cap-type seal assemblies, the 5% minimum squeeze value should be a combination of the stack-up tolerance associated with the energizer, hardware, and cap component.

NOTE: For seal assemblies which do not use the seal cross section listed in 3.1.1, consult the seal supplier for more detailed squeeze calculations to ensure proper levels of squeeze are maintained after the effects of “laydown.”

NOTE: The cap shall be considered incompressible.

3.1.4 The maximum diametral clearances between cylinder bore and piston, rod and rod gland are listed in Table 7 for convenience of the user (see 3.3). The maximum runouts are listed in Table 8 (see 3.4).

3.2 Gland and Groove Details

3.2.1 Gland Major Dimensions

The gland major dimensions are shown in Figure 1 and Tables 1A and 1B.

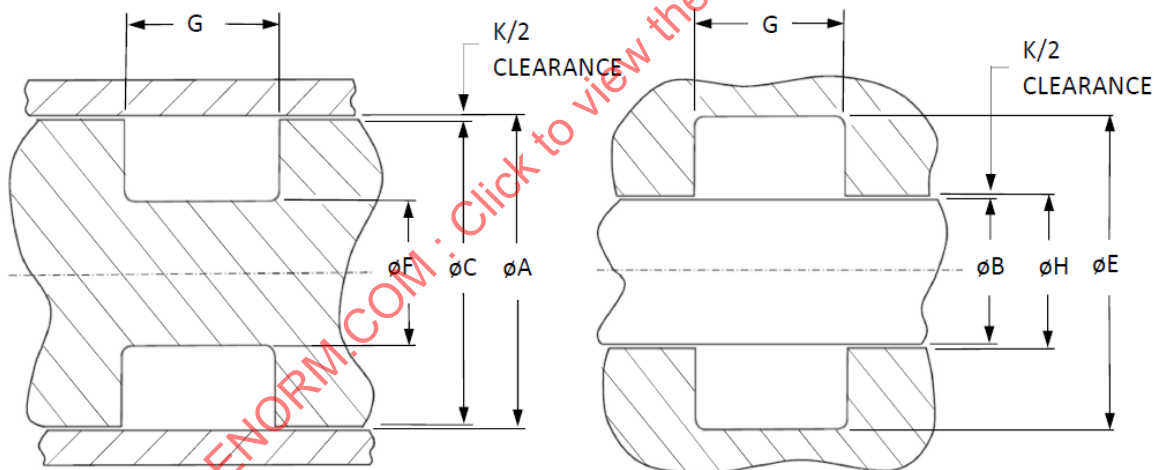


Figure 1 - Gland design

Examples of the gland configurations shown in Figure 1 are provided in Figure 2.

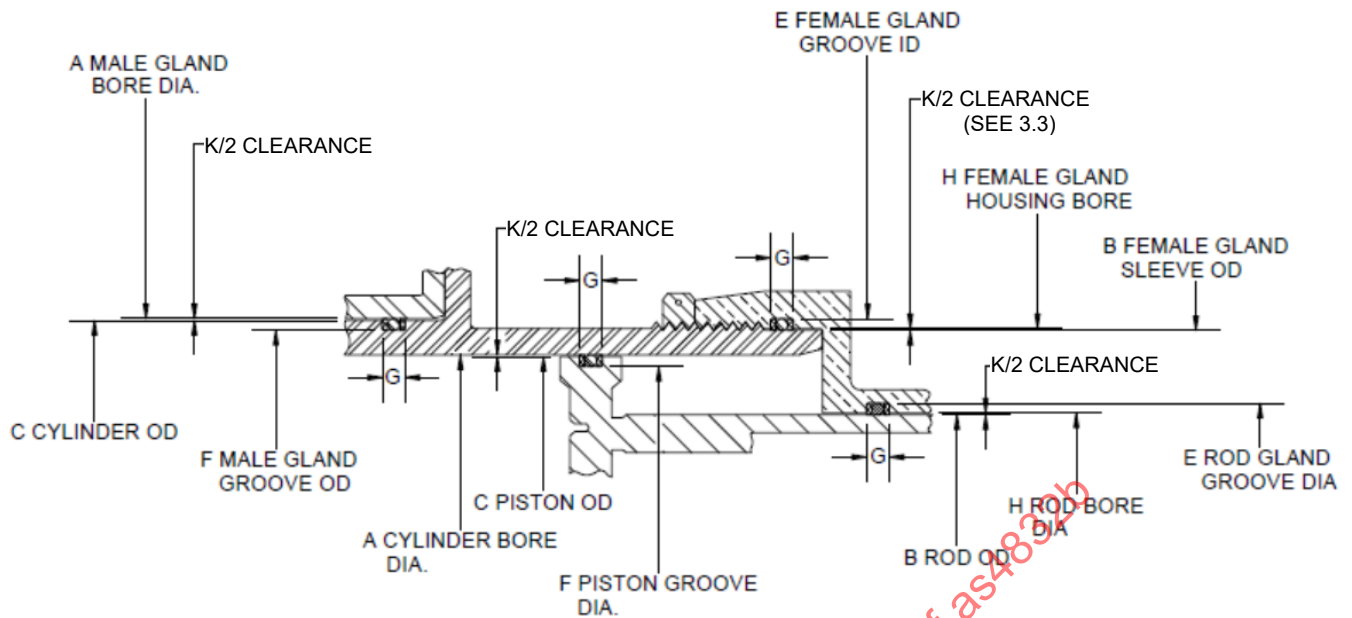


Figure 2 - Gland configuration examples

Table 1A - Gland dimensions and O-ring squeeze, in inches

Gland Dash No.	ØC Piston Diameter	ØA Cylinder Bore	ØF Piston Groove Diameter	ØB Rod Diameter	ØH Rod Gland Bore	ØE Rod Groove Diameter	Actual Minimum Squeeze	Actual Maximum Squeeze
	Max Min	Min Max	Max Min	Max Min	Min Max	Min Max	Piston Rod	Piston Rod
625	7.968	7.974	7.247	7.247	7.253	7.974	0.0313	0.0685
	7.965	7.977	7.244	7.244	7.256	7.977	0.0313	0.0685
626	8.218	8.224	7.497	7.497	7.503	8.224	0.0314	0.0685
	8.215	8.227	7.494	7.494	7.506	8.227	0.0314	0.0685
627	8.468	8.474	7.747	7.747	7.753	8.474	0.0315	0.0685
	8.465	8.477	7.744	7.744	7.756	8.477	0.0315	0.0685
628	8.718	8.724	7.997	7.997	8.003	8.724	0.0317	0.0685
	8.715	8.727	7.994	7.994	8.006	8.727	0.0317	0.0685
629	8.968	8.974	8.247	8.247	8.253	8.974	0.0309	0.0685
	8.965	8.977	8.244	8.244	8.256	8.977	0.0309	0.0685
630	9.218	9.224	8.497	8.497	8.503	9.224	0.0311	0.0685
	9.215	9.227	8.494	8.494	8.506	9.227	0.0311	0.0685
631	9.469	9.474	8.747	8.747	8.753	9.474	0.0302	0.0685
	9.466	9.478	8.744	8.744	8.756	9.478	0.0307	0.0685
632	9.719	9.724	8.997	8.997	9.003	9.724	0.0308	0.0680
	9.716	9.728	8.994	8.994	9.006	9.728	0.0308	0.0685
633	9.969	9.974	9.247	9.247	9.253	9.974	0.0309	0.0680
	9.966	9.978	9.244	9.244	9.256	9.978	0.0309	0.0685
634	10.219	10.224	9.497	9.497	9.503	10.224	0.0307	0.0680
	10.216	10.228	9.494	9.494	9.506	10.228	0.0307	0.0685
635	10.469	10.474	9.747	9.747	9.753	10.474	0.0308	0.0680
	10.466	10.478	9.744	9.744	9.756	10.478	0.0308	0.0685
636	10.719	10.724	9.997	9.997	10.003	10.724	0.0309	0.0680
	10.716	10.728	9.994	9.994	10.006	10.728	0.0309	0.0685

Gland Dash No.	ØC Piston Diameter	ØA Cylinder Bore	ØF Piston Groove Diameter	ØB Rod Diameter	ØH Rod Gland Bore	ØE Rod Groove Diameter	Actual Minimum Squeeze	Actual Maximum Squeeze
	Max Min	Min Max	Max Min	Max Min	Min Max	Min Max	Piston Rod	Piston Rod
637	10.969	10.974	10.247	10.247	10.253	10.974	0.0310	0.0680
	10.966	10.978	10.244	10.244	10.256	10.978	0.0310	0.0685
638	11.219	11.224	10.497	10.497	10.503	11.224	0.0311	0.0680
	11.216	11.228	10.494	10.494	10.506	11.228	0.0311	0.0685
639	11.469	11.474	10.747	10.747	10.753	11.474	0.0312	0.0680
	11.466	11.478	10.744	10.744	10.756	11.478	0.0312	0.0685
640	11.719	11.724	10.997	10.997	11.003	11.724	0.0312	0.0680
	11.716	11.728	10.994	10.994	11.006	11.728	0.0312	0.0685
641	11.969	11.974	11.247	11.247	11.253	11.974	0.0313	0.0680
	11.966	11.978	11.244	11.244	11.256	11.978	0.0313	0.0685
642	12.219	12.224	11.497	11.497	11.503	12.224	0.0314	0.0680
	12.216	12.228	11.494	11.494	11.506	12.228	0.0314	0.0685
643	12.469	12.474	11.747	11.747	11.753	12.474	0.0315	0.0680
	12.466	12.478	11.744	11.744	11.756	12.478	0.0315	0.0685
644	12.719	12.724	11.997	11.997	12.003	12.724	0.0316	0.0680
	12.716	12.728	11.994	11.994	12.006	12.728	0.0316	0.0685
645	12.969	12.974	12.247	12.247	12.253	12.974	0.0316	0.0680
	12.966	12.978	12.244	12.244	12.256	12.978	0.0316	0.0685
646	13.219	13.224	12.497	12.497	12.503	13.224	0.0311	0.0680
	13.216	13.228	12.494	12.494	12.506	13.228	0.0311	0.0685
647	13.469	13.474	12.747	12.747	12.753	13.474	0.0312	0.0680
	13.466	13.478	12.744	12.744	12.756	13.478	0.0312	0.0685
648	13.719	13.724	12.997	12.997	13.003	13.724	0.0313	0.0680
	13.716	13.728	12.994	12.994	13.006	13.728	0.0313	0.0685
649	13.969	13.974	13.247	13.247	13.253	13.974	0.0313	0.0680
	13.966	13.978	13.244	13.244	13.256	13.978	0.0313	0.0685
650	14.219	14.224	13.497	13.497	13.503	14.224	0.0314	0.0680
	14.216	14.228	13.494	13.494	13.506	14.228	0.0314	0.0685
651	14.469	14.474	13.747	13.747	13.753	14.474	0.0315	0.0680
	14.466	14.478	13.744	13.744	13.756	14.478	0.0315	0.0685
652	14.719	14.724	13.997	13.997	14.003	14.724	0.0315	0.0680
	14.716	14.728	13.994	13.994	14.006	14.728	0.0315	0.0685
653	14.969	14.974	14.247	14.247	14.253	14.974	0.0316	0.0680
	14.966	14.978	14.244	14.244	14.256	14.978	0.0316	0.0685
654	15.219	15.224	14.497	14.497	14.503	15.224	0.0317	0.0680
	15.216	15.228	14.494	14.494	14.506	15.228	0.0317	0.0685
655	15.469	15.474	14.747	14.747	14.753	15.474	0.0317	0.0680
	15.466	15.478	14.744	14.744	14.756	15.478	0.0317	0.0685
656	15.719	15.724	14.997	14.997	15.003	15.724	0.0315	0.0680
	15.716	15.728	14.994	14.994	15.006	15.728	0.0315	0.0685
657	15.969	15.974	15.247	15.247	15.253	15.974	0.0316	0.0680
	15.966	15.978	15.244	15.244	15.256	15.978	0.0316	0.0685
658	16.219	16.224	15.497	15.497	15.503	16.224	0.0317	0.0680
	16.216	16.228	15.494	15.494	15.506	16.228	0.0317	0.0685
659	16.469	16.474	15.747	15.747	15.753	16.474	0.0317	0.0680
	16.466	16.478	15.744	15.744	15.756	16.478	0.0317	0.0685

Gland Dash No.	ØC Piston Diameter	ØA Cylinder Bore	ØF Piston Groove Diameter	ØB Rod Diameter	ØH Rod Gland Bore	ØE Rod Groove Diameter	Actual Minimum Squeeze	Actual Maximum Squeeze
	Max Min	Min Max	Max Min	Max Min	Min Max	Min Max	Piston Rod	Piston Rod
660	16.719	16.724	15.997	15.997	16.003	16.724	0.0318	0.0680
	16.716	16.728	15.994	15.994	16.006	16.728	0.0318	0.0685
661	16.969	16.974	16.247	16.247	16.253	16.974	0.0318	0.0680
	16.966	16.978	16.244	16.244	16.256	16.978	0.0318	0.0685
662	17.219	17.224	16.497	16.497	16.503	17.224	0.0319	0.0680
	17.216	17.228	16.494	16.494	16.506	17.228	0.0319	0.0685
663	17.469	17.474	16.747	16.747	16.753	17.474	0.0317	0.0680
	17.466	17.478	16.744	16.744	16.756	17.478	0.0317	0.0685
664	17.719	17.724	16.997	16.997	17.003	17.724	0.0317	0.0680
	17.716	17.728	16.994	16.994	17.006	17.728	0.0317	0.0685
665	17.969	17.974	17.247	17.247	17.253	17.974	0.0318	0.0680
	17.966	17.978	17.244	17.244	17.256	17.978	0.0318	0.0685
666	18.219	18.224	17.497	17.497	17.503	18.224	0.0316	0.0680
	18.216	18.228	17.494	17.494	17.506	18.228	0.0316	0.0685
667	18.469	18.474	17.747	17.747	17.753	18.474	0.0317	0.0680
	18.466	18.478	17.744	17.744	17.756	18.478	0.0317	0.0685
668	18.719	18.724	17.997	17.997	18.003	18.724	0.0317	0.0680
	18.716	18.728	17.994	17.994	18.006	18.728	0.0317	0.0685
669	18.969	18.974	18.247	18.247	18.253	18.974	0.0318	0.0680
	18.966	18.978	18.244	18.244	18.256	18.978	0.0318	0.0685
670	19.219	19.224	18.497	18.497	18.503	19.224	0.0318	0.0680
	19.216	19.228	18.494	18.494	18.506	19.228	0.0318	0.0685
671	19.469	19.474	18.747	18.747	18.753	19.474	0.0319	0.0680
	19.466	19.478	18.744	18.744	18.756	19.478	0.0319	0.0685
672	19.719	19.724	18.997	18.997	19.003	19.724	0.0317	0.0680
	19.716	19.728	18.994	18.994	19.006	19.728	0.0317	0.0685
673	19.969	19.974	19.247	19.247	19.253	19.974	0.0318	0.0680
	19.966	19.978	19.244	19.244	19.256	19.978	0.0318	0.0685
676 *	20.219	20.224	19.497	19.497	19.503	20.224	0.0318	0.0680
	20.216	20.228	19.494	19.494	19.506	20.228	0.0318	0.0685
674	20.469	20.474	19.747	19.747	19.753	20.474	0.0318	0.0680
	20.466	20.478	19.744	19.744	19.756	20.478	0.0318	0.0685
675	20.719	20.724	19.997	19.997	20.003	20.724	0.0317	0.0680
	20.716	20.728	19.994	19.994	20.006	20.728	0.0317	0.0685

* Diametral size previously omitted from initial release. The 674 and 675 dash sizes are per initial release to align with historical dash size diametral callouts.

Table 1B - Gland dimensions and O-ring squeeze, in millimeters

Gland Dash No.	ØC Piston Diameter	ØA Cylinder Bore	ØF Piston Groove Diameter	ØB Rod Diameter	ØH Rod Gland Bore	ØE Rod Groove Diameter	Actual Minimum Squeeze	Actual Maximum Squeeze
	Max Min	Min Max	Max Min	Max Min	Min Max	Min Max	Piston Rod	Piston Rod
625	202.387	202.540	184.074	184.074	184.226	202.540	0.795	1.740
	202.311	202.616	183.998	183.998	184.302	202.616	0.795	1.740
626	208.737	208.890	190.424	190.424	190.576	208.890	0.798	1.740
	208.661	208.966	190.348	190.348	190.652	208.966	0.798	1.740
627	215.087	215.240	196.774	196.774	196.926	215.240	0.800	1.740
	215.011	215.316	196.698	196.698	197.002	215.316	0.800	1.740
628	221.437	221.590	203.124	203.124	203.276	221.590	0.805	1.740
	221.361	221.666	203.048	203.048	203.352	221.666	0.805	1.740
629	227.787	227.940	209.474	209.474	209.626	227.940	0.785	1.740
	227.711	228.016	209.398	209.398	209.702	228.016	0.785	1.740
630	234.137	234.290	215.824	215.824	215.976	234.290	0.790	1.740
	234.061	234.366	215.748	215.748	216.052	234.366	0.790	1.740
631	240.513	240.640	222.174	222.174	222.326	240.640	0.767	1.740
	240.436	240.741	222.098	222.098	222.402	240.741	0.780	1.740
632	246.863	246.990	228.524	228.524	228.676	246.990	0.782	1.727
	246.786	247.091	228.448	228.448	228.752	247.091	0.782	1.740
633	253.213	253.340	234.874	234.874	235.026	253.340	0.785	1.727
	253.136	253.441	234.798	234.798	235.102	253.441	0.785	1.740
634	259.563	259.690	241.224	241.224	241.376	259.690	0.780	1.727
	259.486	259.791	241.148	241.148	241.452	259.791	0.780	1.740
635	265.913	266.040	247.574	247.574	247.726	266.040	0.782	1.727
	265.836	266.141	247.498	247.498	247.802	266.141	0.782	1.740
636	272.263	272.390	253.924	253.924	254.076	272.390	0.785	1.727
	272.186	272.491	253.848	253.848	254.152	272.491	0.785	1.740
637	278.613	278.740	260.274	260.274	260.426	278.740	0.787	1.727
	278.536	278.841	260.198	260.198	260.502	278.841	0.787	1.740
638	284.963	285.090	266.624	266.624	266.776	285.090	0.790	1.727
	284.886	285.191	266.548	266.548	266.852	285.191	0.790	1.740
639	291.313	291.440	272.974	272.974	273.126	291.440	0.792	1.727
	291.236	291.541	272.898	272.898	273.202	291.541	0.792	1.740
640	297.663	297.790	279.324	279.324	279.476	297.790	0.792	1.727
	297.586	297.891	279.248	279.248	279.552	297.891	0.792	1.740
641	304.013	304.140	285.674	285.674	285.826	304.140	0.795	1.727
	303.936	304.241	285.598	285.598	285.902	304.241	0.795	1.740
642	310.363	310.490	292.024	292.024	292.176	310.490	0.798	1.727
	310.286	310.591	291.948	291.948	292.252	310.591	0.798	1.740
643	316.713	316.840	298.374	298.374	298.526	316.840	0.800	1.727
	316.636	316.941	298.298	298.298	298.602	316.941	0.800	1.740
644	323.063	323.190	304.724	304.724	304.876	323.190	0.803	1.727
	322.986	323.291	304.648	304.648	304.952	323.291	0.803	1.740

Gland Dash No.	ØC Piston Diameter	ØA Cylinder Bore	ØF Piston Groove Diameter	ØB Rod Diameter	ØH Rod Gland Bore	ØE Rod Groove Diameter	Actual Minimum Squeeze	Actual Maximum Squeeze
	Max Min	Min Max	Max Min	Max Min	Min Max	Min Max	Piston Rod	Piston Rod
645	329.413	329.540	311.074	311.074	311.226	329.540	0.803	1.727
	329.336	329.641	310.998	310.998	311.302	329.641	0.803	1.740
646	335.763	335.890	317.424	317.424	317.576	335.890	0.790	1.727
	335.686	335.991	317.348	317.348	317.652	335.991	0.790	1.740
647	342.113	342.240	323.774	323.774	323.926	342.240	0.792	1.727
	342.036	342.341	323.698	323.698	324.002	342.341	0.792	1.740
648	348.463	348.590	330.124	330.124	330.276	348.590	0.795	1.727
	348.386	348.691	330.048	330.048	330.352	348.691	0.795	1.740
649	354.813	354.940	336.474	336.474	336.626	354.940	0.795	1.727
	354.736	355.041	336.398	336.398	336.702	355.041	0.795	1.740
650	361.163	361.290	342.824	342.824	342.976	361.290	0.798	1.727
	361.086	361.391	342.748	342.748	343.052	361.391	0.798	1.740
651	367.513	367.640	349.174	349.174	349.326	367.640	0.800	1.727
	367.436	367.741	349.098	349.098	349.402	367.741	0.800	1.740
652	373.863	373.990	355.524	355.524	355.676	373.990	0.800	1.727
	373.786	374.091	355.448	355.448	355.752	374.091	0.800	1.740
653	380.213	380.340	361.874	361.874	362.026	380.340	0.803	1.727
	380.136	380.441	361.798	361.798	362.102	380.441	0.803	1.740
654	386.563	386.690	368.224	368.224	368.376	386.690	0.805	1.727
	386.486	386.791	368.148	368.148	368.452	386.791	0.805	1.740
655	392.913	393.040	374.574	374.574	374.726	393.040	0.805	1.727
	392.836	393.141	374.498	374.498	374.802	393.141	0.805	1.740
656	399.263	399.390	380.924	380.924	381.076	399.390	0.800	1.727
	399.186	399.491	380.848	380.848	381.152	399.491	0.800	1.740
657	405.613	405.740	387.274	387.274	387.426	405.740	0.803	1.727
	405.536	405.841	387.198	387.198	387.502	405.841	0.803	1.740
658	411.963	412.090	393.624	393.624	393.776	412.090	0.805	1.727
	411.886	412.191	393.548	393.548	393.852	412.191	0.805	1.740
659	418.313	418.440	399.974	399.974	400.126	418.440	0.805	1.727
	418.236	418.541	399.898	399.898	400.202	418.541	0.805	1.740
660	424.663	424.790	406.324	406.324	406.476	424.790	0.808	1.727
	424.586	424.891	406.248	406.248	406.552	424.891	0.808	1.740
661	431.013	431.140	412.674	412.674	412.826	431.140	0.808	1.727
	430.936	431.241	412.598	412.598	412.902	431.241	0.808	1.740
662	437.363	437.490	419.024	419.024	419.176	437.490	0.810	1.727
	437.286	437.591	418.948	418.948	419.252	437.591	0.810	1.740
663	443.713	443.840	425.374	425.374	425.526	443.840	0.805	1.727
	443.636	443.941	425.298	425.298	425.602	443.941	0.805	1.740
664	450.063	450.190	431.724	431.724	431.876	450.190	0.805	1.727
	449.986	450.291	431.648	431.648	431.952	450.291	0.805	1.740
665	456.413	456.540	438.074	438.074	438.226	456.540	0.808	1.727
	456.336	456.641	437.998	437.998	438.302	456.641	0.808	1.740
666	462.763	462.890	444.424	444.424	444.576	462.890	0.803	1.727
	462.686	462.991	444.348	444.348	444.652	462.991	0.803	1.740
667	469.113	469.240	450.774	450.774	450.926	469.240	0.805	1.727
	469.036	469.341	450.698	450.698	451.002	469.341	0.805	1.740

Gland Dash No.	ØC Piston Diameter	ØA Cylinder Bore	ØF Piston Groove Diameter	ØB Rod Diameter	ØH Rod Gland Bore	ØE Rod Groove Diameter	Actual Minimum Squeeze	Actual Maximum Squeeze
	Max Min	Min Max	Max Min	Max Min	Min Max	Min Max	Piston Rod	Piston Rod
668	475.463	475.590	457.124	457.124	457.276	475.590	0.805	1.727
	475.386	475.691	457.048	457.048	457.352	475.691	0.805	1.740
669	481.813	481.940	463.474	463.474	463.626	481.940	0.808	1.727
	481.736	482.041	463.398	463.398	463.702	482.041	0.808	1.740
670	488.163	488.290	469.824	469.824	469.976	488.290	0.808	1.727
	488.086	488.391	469.748	469.748	470.052	488.391	0.808	1.740
671	494.513	494.640	476.174	476.174	476.326	494.640	0.810	1.727
	494.436	494.741	476.098	476.098	476.402	494.741	0.810	1.740
672	500.863	500.990	482.524	482.524	482.676	500.990	0.805	1.727
	500.786	501.091	482.448	482.448	482.752	501.091	0.805	1.740
673	507.213	507.340	488.874	488.874	489.026	507.340	0.808	1.727
	507.136	507.441	488.798	488.798	489.102	507.441	0.808	1.740
676 *	513.563	513.690	495.224	495.224	495.376	513.690	0.808	1.727
	513.486	513.791	495.148	495.148	495.452	513.791	0.808	1.740
674	519.913	520.040	501.574	501.574	501.726	520.040	0.808	1.727
	519.836	520.141	501.498	501.498	501.802	520.141	0.808	1.740
675	526.263	526.390	507.924	507.924	508.076	526.390	0.805	1.727
	526.186	526.491	507.848	507.848	508.152	526.491	0.805	1.740

* Diametral size previously omitted from initial release. The 674 and 675 dash sizes are per initial release to align with historical dash size diametral callouts.

3.2.2 Groove Widths

The groove width shall be in accordance with Figure 1 and Table 2.

Table 2 - Standard groove width dimensions, in inches and millimeters

Gland Dash No.	Inches		Millimeters	
	Groove Width G Min	Groove Width G Max	Groove Width G Min	Groove Width G Max
625 to 676	0.750	0.760	19.050	19.304

3.2.3 Standard Gland Design Details

Details for the standard gland design, including groove wall angle and groove edge break requirements, are depicted in Figures 3A and 3B and Tables 3 and 4.

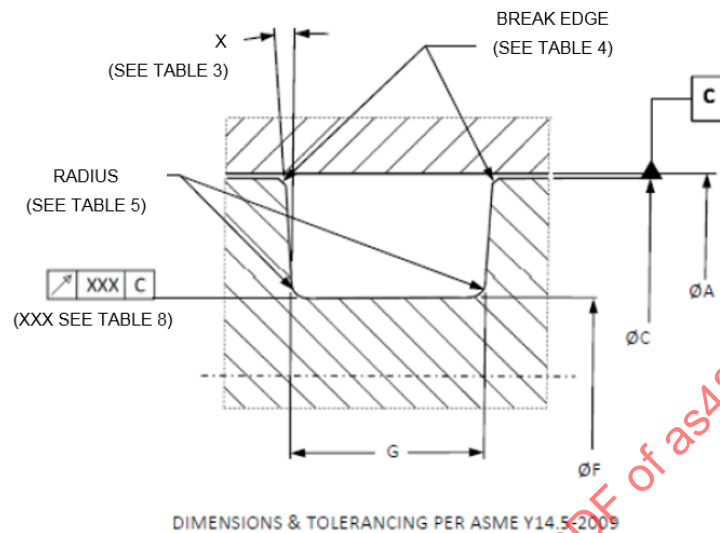


Figure 3A - Groove details, piston gland

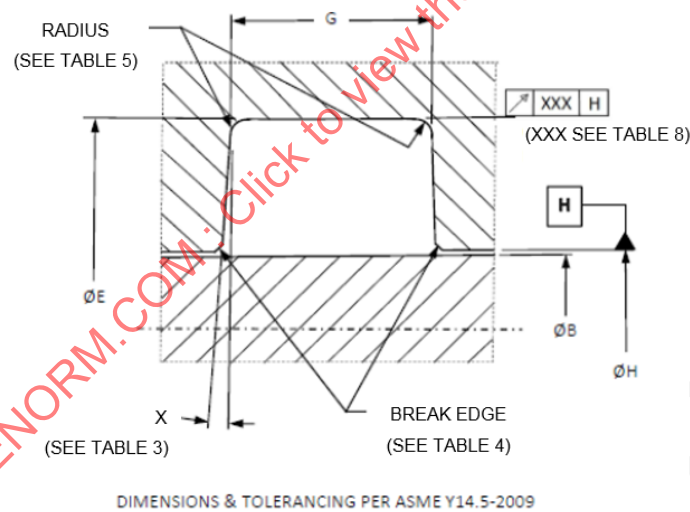


Figure 3B - Groove details, rod gland

Table 3 - Groove wall angle details

Groove Wall Angle ($\angle X$)		
Pressure (psi)	Pressure (kPa)	$\angle X$ Degrees
≤ 4000	≤ 27580	$0.0 + 5.0/-0.0$
>4000 to 6000	>27580 to 41370	$0.0 + 2.0/-0.0$
>6000 to 8000	>41370 to 55160	0.0 ± 0.5

Table 4 - Groove break edge detail

System Pressure		Break Edge Requirements	
Pressure (psi)	Pressure (kPa)	Groove Edge Break (Inches)	Groove Edge Break (Millimeters)
≤ 4000	≤ 27580	$0.005 + 0.005/-0.000$	$0.127 + 0.127/-0.000$
>4000	>27580	$0.002 + 0.005/-0.000$	$0.051 + 0.127/-0.000$

3.2.3.1 Groove Corner Radius

The groove corner radius shall be in accordance with Figures 3A and 3B and Table 5.

Table 5 - Standard groove corner radius dimensions, in inches and millimeters

Gland Dash No.	Inches		Millimeters	
	Corner Radius Max	Corner Radius Min	Corner Radius Max	Corner Radius Min
625 to 676	0.040	0.025	1.016	0.635

- 3.2.4 The surface finishes in Table 6 (indicated as surface roughness as defined in ASME B46.1-2009 (ISO4287-1) shall be used in units containing O-rings and other elastomeric/plastic (non-elastomer) contact interface seals.