



AEROSPACE STANDARD

AS5781

Issued	2007-07
Reaffirmed	2013-11

Retainers (Backup Rings), Hydraulic and Pneumatic,
Polytetrafluoroethylene Resin,
Single Turn, Scarf-Cut, For Use in AS4716 Glands

RATIONALE

AS5781 has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE

This SAE Aerospace Standard (AS) covers scarf-cut polytetrafluoroethylene (PTFE) retainers (backup rings) for use in glands in accordance with AS4716. They are for use in hydraulic and pneumatic system components as anti-extrusion devices in conjunction with O-rings, packings and other elastomeric seals for static and dynamic applications.

Because of the construction of groove dimensions, backup rings specific to rod applications are designated "R" - Rod (Female), backup rings specific to piston applications are designated "P" - Piston (Male). Piston and rod types of virgin pigmented PTFE are also identified by color code which also distinguishes parts to this standard from those made from virgin PTFE to other standards.

Backup rings specified herein have been designed for a temperature range of -65 to 275 °F (-54 to 135 °C) and a nominal operating pressure of 3000 psi (20.7 MPa) for code 09 material (AMS 3678/9). Alternate materials to AMS 3678 are offered for more arduous operating conditions.

This specification includes material tests but does not include hydraulic or pneumatic performance tests.

1.1 Safety Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

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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2.1.1 SAE Publications

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

AS4716	Gland Design, O-Ring, Packings and Other Elastomeric Seals
AMS 3678	Polytetrafluoroethylene (PTFE) Moldings and Extrusions Unfilled, Pigmented, and Filled Components
AMS 3678/2	Type 2 - 15% Graphite Filled Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions
AMS 3678/3	Type 3 - 15% Glass, 5% Molybdenum Disulfide Filled Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions
AMS 3678/5	Type 5 - Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions with Pigment
AMS 3678/6	Type 6 - 60% Bronze Filled Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions (Not recommended for use in hydraulic systems)
AMS 3678/7	Type 7 - Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions with 25% Carbon and Graphite
AMS 3678/8	Type 8 - Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions with 10% Carbon Fiber
AMS 3678/9	Type 9 - Virgin Polytetrafluoroethylene (PTFE) Moldings with Pigment for AS4716 and AS5857 Backup Rings
AMS 3678/10	Type 10 - Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions with 15% Carbon Fiber

2.1.2 U.S. Government Publications

Available from the Document Automation and Production Service (DAPS), Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Tel: 215-697-6257, <http://assist.daps.dla.mil/quicksearch/>.

MIL-STD-2073-1 Standard Practice for Military Packaging

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

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

AS5857	Gland Design, O-ring and Other Elastomeric Seals, Static Applications
AS5860	Retainers, (Backup Rings), Hydraulic and Pneumatic, Polytetrafluoroethylene Resin, Single Turn, Static Gland
AS5861	Retainers, (Backup Rings), Hydraulic and Pneumatic, Polytetrafluoroethylene Resin, Solid, Static Gland
AMS 3678/1	Type 1 - Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions
AMS 3678/4	Type 4 - 25% Glass Filled Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions (Not to be used for backup rings)

3. TECHNICAL REQUIREMENTS

3.1 Cylinder Breathing, Material Contraction and Expansion

Consideration has been made to accommodate cylinder breathing on piston applications, calculated at 0.002 inch/inch diameter/1000 psi (0.051 mm/mm diameter/6.9 MPa) along with PTFE contraction to ensure a minimum 50% lap at the scarf-cut at -65 °F (-54 °C). This has required an increase in the diameter on certain larger sizes and a slight overlap at ambient will therefore be apparent. These parts have been designed such that the overlap at 275 °F (135 °C) will not result in axial compression of the O-rings local to the scarf-cut, even in the worst tolerance stack-up situation.

3.2 When thermal cycling is experienced under even moderate pressures, some circumferential shrinking may occur leading to the scarf cut gap increasing which could result in O-ring failure. Performance testing under these conditions is recommended.

3.3 Materials and Applications

3.3.1 Primary Material

Code 09, Virgin PTFE with pigment: Parts made to material code 09 of this standard shall conform to AMS 3678/9, Pigmented Virgin PTFE, Molded.

3.3.1.1 Parts made to material code 09 of this standard for "R" (Rod) applications shall be blue per AMS 3678/9.

3.3.1.2 Parts made to material code 09 of this standard for "P" (Piston) applications shall be yellow per AMS 3678/9.

INFORMATIONAL NOTE: Green pigmented material to AMS 3678/9 is for use for "R" (Rod) backup rings to AS5860 and AS5861. Brown pigmented material to AMS 3678/9 is for use for "P" (Piston) backup rings to AS5860 and AS5861.

Details of material specification, material code, color, composition, application and pressures for code 09 material applicable to this document are listed in Table 1. Other data is for alternate materials or for reference only

3.3.2 Alternate Materials

As indicated above, the AMS 3678/9 is the primary material recommended for these backup rings because of their pigmented colors for identification. The other materials listed in Table 1, except AMS 3678/1 and AMS 3678/4, can also be ordered by using the part identification numbers of this standard.

CAUTION NOTE: When alternate materials are selected it is recommended that adequate performance for the application be verified by operational testing.

TABLE 1 - MATERIALS AND APPLICATIONS

Material	Material Code ⁶	Color	Composition	Application	Max Pressure ⁵	
					psi	mPa
AMS 3678/1	N/A	White	Virgin PTFE ¹	Not to be used	N/A	
AMS 3678/2	02	Black	15% Graphite	Static & Dynamic	3000	20.7
AMS 3678/3	03	Gray	15% Glass, 5% M ₀ S ₂	Static	4000	27.6
AMS 3678/4	N/A	White	25% Glass ²	Not to be used	N/A	
AMS 3678/5	05	Per Supplier	Virgin, Pigmented ³	Static & Dynamic	2000	13.8
AMS 3678/6	06	Brown	60% Bronze ⁴	Static	5000	34.5
AMS 3678/7	07	Black	25% Carbon/Graphite	Static	5000	34.5
AMS 3678/8	08	Black	10% Carbon Fiber	Static & Dynamic	4000	27.6
AMS 3678/9	09	See 3.1.1	Virgin, Pigmented	Static & Dynamic	3000	20.7
AMS 3678/10	10	Black	15% Carbon Fiber	Static & Dynamic	5000	34.5

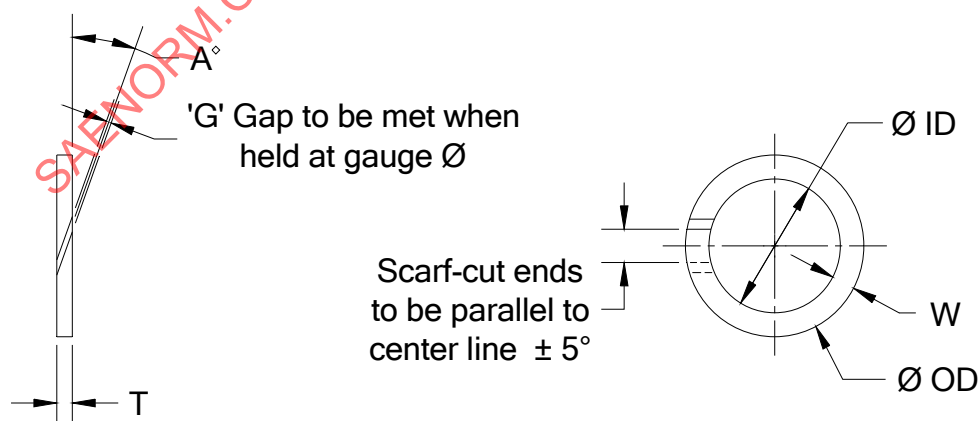
NOTES:

1. Material to AMS 3678/1 Grade A and Grade B is not to be used because both have lower physical properties and, therefore, lower performance than AMS 3678/9.
2. Glass fibers can be abrasive, particularly in dynamic applications and against soft surfaces such as aluminum and some grades of titanium and stainless steels.
3. Usually used for manufacturer's proprietary pigment colors.
4. Not usually recommended for hydraulic systems as bronze particles can clog filters.
5. Maximum pressures indicated are for guidance purposes only and for pressures above 3000 psi (20.7 MPa) testing is recommended.
6. Material 'Designation Codes' are derived from the appropriate slash sheets of AMS 3678.

3.3.3 Color Identification for Materials Other Than Code 09

Color pigmentation for material to AMS 3678/5 is usually proprietary per manufacturer. There is no color pigmentation applied to materials to AMS 3678/1, AMS 3678/2, AMS 3678/3, AMS 3678/4, AMS 3678/6, AMS 3678/7, AMS 3678/8, and AMS 3678/10.

3.4 Dimensional Requirements

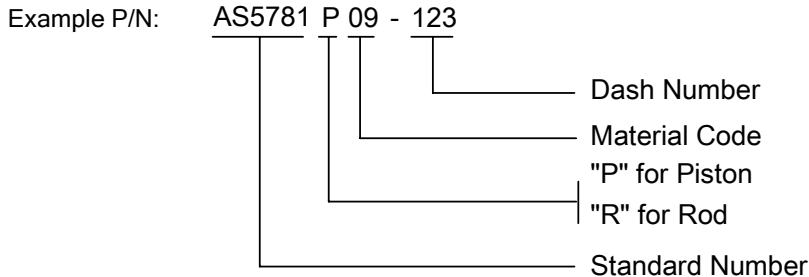


See Tables 2A, 2B, 2C, and 2D for dimensions.

FIGURE 1 - CONTROLLED FEATURES

3.4.1 Part Number

The part number consists of the standard number, the piston (P) or rod (R) code, the material code followed by the appropriate three digit dash number taken from Tables 2A, 2B, 2C, and 2D.



NOTES:

1. In the above example Part Number, "P" for Piston, Code 09 material, and dash 123 size are all used for example purposes only.
2. Spacings between characters in the above example Part Number are for illustration clarity only and are not used in the Part Number.

3.4.2 Parts shall conform to Figure 1 and the dimensions listed in Tables 2A, 2B, 2C, and 2D. These measurements are to be made at a stabilized temperature of $73^{\circ}\text{F} \pm 2^{\circ}\text{F}$ ($23^{\circ}\text{C} \pm 1^{\circ}\text{C}$).

NOTE 1: Refer to A, B, and F dimensions from AS4716 in the following note. In general, dimensions are based on nominal ring "OD" equal to minimum A for piston backup rings over 1.5 inches (38.1 mm). For piston backup rings under 1.5 inches (38.1 mm), the "ID" is equal to maximum F plus 0.001 inch (0.025 mm). For rod backup rings the nominal ring "ID" is equal to maximum B. In certain sizes some adjustments are made to these rules to obtain the desired minimum 50% lap length at the scarf cut over the full range of temperature and breathing conditions. Radial width "W" is based on a net fit in the gland at maximum material condition with all features concentric.

NOTE 2: In order to minimize expense of gauges by allowing commonality of backups used for glands that follow similar design principles as AS4716 (bore sizes and rod sizes generally identical to MIL-G-5514F, e.g., AS5860) the method of measuring piston type backups above 1.500 inches (38.1 mm) ID to this specification is by the outside diameter (see Figure 1) which differs compared to previous practices. Coincidentally, this also offers better dimensional accuracy and fit through a reduction in tolerance stack-up.

NOTE 3: Because a feeler gauge is required to measure the gap "G" at the scarf-cut, difficulty would be experienced in performing this measurement on sizes below 1.500 inches (38.1 mm) diameter which are, therefore, measured by placing the part on a male mandrel and measuring the gap "G" with the inside diameter restrained (see Figure 1) per previous practices.

NOTE 4: Gage sizes identical to AS5860 are as follows:

Piston types measured on ID, -009, -111

Piston types measured on OD, -128 thru -139, -222 thru -230, -325 thru -349, -425 thru -437

Rod types measured on ID, -004 thru -028, -104 thru -139, -210 thru -230, -325 thru -349, -425 thru -437

Dash sizes other than those listed above to AS5860 and this standard do not match and require unique inspection gauges.

3.4.3 Surfaces and Edges

Surfaces shall be smooth and free from irregularities. Edges shall be clean and sharp.

3.4.4 Scarf-cut

The scarf cut gap shall not exceed dimension "G" listed in Table 3, when measured with a gage mandrel diameter ± 0.001 inches (0.025 mm). These measurements are to be made at a stabilized temperature of 73 °F ± 2 °F (23 °C ± 1 °C).

TABLE 2A - PISTON (MALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES

Part No.	ID Dia. ± 0.001	T ± 0.002	W ± 0.001	G ± 0.0025	A Degrees
AS5781P(XX)-004	0.075	0.050	0.056	0.0025	39-35
AS5781P(XX)-005	0.114	0.050	0.052	0.0025	36-32
AS5781P(XX)-006	0.128	0.050	0.052	0.0025	33-29
AS5781P(XX)-007	0.157	0.050	0.053	0.0025	27-24
AS5781P(XX)-008	0.189	0.050	0.053	0.0025	22-19
AS5781P(XX)-009	0.220	0.050	0.053	0.0025	22-19
AS5781P(XX)-010	0.250	0.050	0.054	0.0025	22-19
AS5781P(XX)-011	0.312	0.050	0.054	0.0025	22-19
AS5781P(XX)-012	0.375	0.050	0.054	0.0025	22-19
AS5781P(XX)-013	0.441	0.050	0.053	0.0025	22-19
AS5781P(XX)-014	0.504	0.050	0.053	0.0025	22-19
AS5781P(XX)-015	0.566	0.050	0.053	0.0025	22-19
AS5781P(XX)-016	0.629	0.050	0.053	0.0025	22-19
AS5781P(XX)-017	0.691	0.050	0.053	0.0025	22-19
AS5781P(XX)-018	0.753	0.050	0.054	0.0025	22-19
AS5781P(XX)-019	0.815	0.050	0.054	0.0025	22-19
AS5781P(XX)-020	0.881	0.050	0.054	0.0025	22-19
AS5781P(XX)-021	0.943	0.050	0.054	0.0025	22-19
AS5781P(XX)-022	1.007	0.050	0.054	0.0025	22-19
AS5781P(XX)-023	1.069	0.050	0.054	0.0025	22-19
AS5781P(XX)-024	1.133	0.050	0.054	0.0025	22-19
AS5781P(XX)-025	1.196	0.050	0.054	0.0025	22-19
AS5781P(XX)-026	1.260	0.050	0.054	0.0025	22-19
AS5781P(XX)-027	1.323	0.050	0.054	0.0025	22-19
AS5781P(XX)-028	1.386	0.050	0.054	0.0025	22-19

TABLE 2A - PISTON (MALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES (CONTINUED)

Dash No.	ID Dia. ±0.001	T ±0.002	W ±0.001	G ±0.003	A Degrees
AS5781P(XX)-104	0.128	0.058	0.084	0.003	35-31
AS5781P(XX)-105	0.158	0.058	0.084	0.003	29-26
AS5781P(XX)-106	0.187	0.058	0.085	0.003	26-23
AS5781P(XX)-107	0.215	0.058	0.087	0.003	22-19
AS5781P(XX)-108	0.246	0.058	0.087	0.003	22-19
AS5781P(XX)-109	0.308	0.058	0.087	0.003	22-19
AS5781P(XX)-110	0.379	0.058	0.084	0.003	22-19
AS5781P(XX)-111	0.441	0.058	0.085	0.003	22-19
AS5781P(XX)-112	0.502	0.058	0.085	0.003	22-19
AS5781P(XX)-113	0.565	0.058	0.085	0.003	22-19
AS5781P(XX)-114	0.627	0.058	0.085	0.003	22-19
AS5781P(XX)-115	0.689	0.058	0.086	0.003	22-19
AS5781P(XX)-116	0.751	0.058	0.086	0.003	22-19
AS5781P(XX)-117	0.817	0.058	0.086	0.003	22-19
AS5781P(XX)-118	0.879	0.058	0.086	0.003	22-19
AS5781P(XX)-119	0.942	0.058	0.086	0.003	22-19
AS5781P(XX)-120	1.003	0.058	0.086	0.003	22-19
AS5781P(XX)-121	1.066	0.058	0.086	0.003	22-19
AS5781P(XX)-122	1.129	0.058	0.086	0.003	22-19
AS5781P(XX)-123	1.192	0.058	0.086	0.003	22-19
AS5781P(XX)-124	1.255	0.058	0.086	0.003	22-19
AS5781P(XX)-125	1.319	0.058	0.086	0.003	22-19
AS5781P(XX)-126	1.382	0.058	0.086	0.003	22-19
AS5781P(XX)-127	1.445	0.058	0.086	0.003	22-19
	OD Dia. ±0.001				
AS5781P(XX)-128	1.678	0.058	0.086	0.003	15-12
AS5781P(XX)-129	1.741	0.058	0.086	0.003	15-12
AS5781P(XX)-130	1.805	0.058	0.086	0.003	15-12
AS5781P(XX)-131	1.867	0.058	0.086	0.003	15-12
AS5781P(XX)-132	1.930	0.058	0.086	0.003	15-12
AS5781P(XX)-133	1.992	0.058	0.086	0.003	15-12
AS5781P(XX)-134	2.055	0.058	0.086	0.003	15-12

TABLE 2A - PISTON (MALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES (CONTINUED)

Dash No.	OD Dia. ±0.001	T ±0.002	W ±0.001	G ±0.003	A Degrees
AS5781P(XX)-135	2.118	0.058	0.086	0.003	15-12
AS5781P(XX)-136	2.180	0.058	0.086	0.003	15-12
AS5781P(XX)-137	2.243	0.058	0.086	0.003	15-12
AS5781P(XX)-138	2.305	0.058	0.086	0.003	15-12
AS5781P(XX)-139	2.368	0.058	0.086	0.003	15-12
	ID Dia. ±0.001				
AS5781P(XX)-210	0.750	0.062	0.119	0.003	22-19
AS5781P(XX)-211	0.812	0.062	0.119	0.003	22-19
AS5781P(XX)-212	0.874	0.062	0.119	0.003	22-19
AS5781P(XX)-213	0.937	0.062	0.119	0.003	22-19
AS5781P(XX)-214	0.999	0.062	0.119	0.003	22-19
AS5781P(XX)-215	1.061	0.062	0.119	0.003	22-19
AS5781P(XX)-216	1.124	0.062	0.119	0.003	22-19
AS5781P(XX)-217	1.186	0.062	0.119	0.003	22-19
AS5781P(XX)-218	1.250	0.062	0.119	0.003	22-19
AS5781P(XX)-219	1.313	0.062	0.119	0.003	22-19
AS5781P(XX)-220	1.377	0.062	0.119	0.003	22-19
AS5781P(XX)-221	1.439	0.062	0.119	0.003	22-19
	OD Dia. ±0.001				
AS5781P(XX)-222	1.743	0.062	0.119	0.003	22-19
AS5781P(XX)-223	1.867	0.062	0.119	0.003	15-12
AS5781P(XX)-224	1.992	0.062	0.119	0.003	15-12
AS5781P(XX)-225	2.118	0.062	0.119	0.003	15-12
AS5781P(XX)-226	2.243	0.062	0.119	0.003	15-12
AS5781P(XX)-227	2.368	0.062	0.119	0.003	15-12
AS5781P(XX)-228	2.493	0.062	0.119	0.003	15-12
AS5781P(XX)-229	2.618	0.062	0.119	0.003	15-12
AS5781P(XX)-230	2.745	0.062	0.119	0.003	15-12

TABLE 2A - PISTON (MALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES (CONTINUED)

Part No.	OD Dia. ±0.001	T ±0.002	W ±0.001	G ±0.0035	A Degrees
AS5781P(XX)-325	1.867	0.088	0.185	0.0035	22-19
AS5781P(XX)-326	1.992	0.088	0.185	0.0035	22-19
AS5781P(XX)-327	2.118	0.088	0.185	0.0035	22-19
AS5781P(XX)-328	2.243	0.088	0.185	0.0035	22-19
AS5781P(XX)-329	2.368	0.088	0.185	0.0035	22-19
AS5781P(XX)-330	2.494	0.088	0.185	0.0035	22-19
AS5781P(XX)-331	2.620	0.088	0.185	0.0035	22-19
AS5781P(XX)-332	2.747	0.088	0.185	0.0035	22-19
AS5781P(XX)-333	2.873	0.088	0.185	0.0035	22-19
AS5781P(XX)-334	2.993	0.088	0.185	0.0035	15-12
AS5781P(XX)-335	3.118	0.088	0.185	0.0035	15-12
AS5781P(XX)-336	3.243	0.088	0.185	0.0035	15-12
AS5781P(XX)-337	3.368	0.088	0.185	0.0035	15-12
AS5781P(XX)-338	3.493	0.088	0.185	0.0035	15-12
AS5781P(XX)-339	3.618	0.088	0.185	0.0035	15-12
AS5781P(XX)-340	3.743	0.088	0.185	0.0035	15-12
AS5781P(XX)-341	3.868	0.088	0.185	0.0035	15-12
AS5781P(XX)-342	3.994	0.088	0.185	0.0035	15-12
AS5781P(XX)-343	4.120	0.088	0.185	0.0035	15-12
AS5781P(XX)-344	4.247	0.088	0.185	0.0035	15-12
AS5781P(XX)-345	4.373	0.088	0.185	0.0035	15-12
AS5781P(XX)-346	4.500	0.088	0.185	0.0035	15-12
AS5781P(XX)-347	4.626	0.088	0.185	0.0035	15-12
AS5781P(XX)-348	4.753	0.088	0.185	0.0035	15-12
AS5781P(XX)-349	4.879	0.088	0.185	0.0035	15-12

TABLE 2A - PISTON (MALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES (CONTINUED)

Part No.	OD Dia. ± 0.001	T ± 0.002	W ± 0.001	G ± 0.004	A Degrees
AS5781P(XX)-425	4.974	0.129	0.237	0.004	15-12
AS5781P(XX)-426	5.099	0.129	0.237	0.004	15-12
AS5781P(XX)-427	5.224	0.129	0.237	0.004	15-12
AS5781P(XX)-428	5.349	0.129	0.237	0.004	15-12
AS5781P(XX)-429	5.474	0.129	0.237	0.004	15-12
AS5781P(XX)-430	5.599	0.129	0.237	0.004	15-12
AS5781P(XX)-431	5.725	0.129	0.237	0.004	15-12
AS5781P(XX)-432	5.851	0.129	0.237	0.004	15-12
AS5781P(XX)-433	5.978	0.129	0.237	0.004	15-12
AS5781P(XX)-434	6.104	0.129	0.237	0.004	15-12
AS5781P(XX)-435	6.231	0.129	0.237	0.004	15-12
AS5781P(XX)-436	6.357	0.129	0.237	0.004	15-12
AS5781P(XX)-437	6.484	0.129	0.237	0.004	15-12

TABLE 2B - ROD (FEMALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES

Part No.	ID Dia. ±0.001	T ±0.002	W ±0.001	G ±0.0025	A Degrees
AS5781R(XX)-004	0.076	0.050	0.057	0.0025	39-35
AS5781R(XX)-005	0.108	0.050	0.054	0.0025	36-32
AS5781R(XX)-006	0.123	0.050	0.055	0.0025	33-29
AS5781R(XX)-007	0.154	0.050	0.055	0.0025	27-24
AS5781R(XX)-008	0.185	0.050	0.054	0.0025	22-19
AS5781R(XX)-009	0.217	0.050	0.055	0.0025	22-19
AS5781R(XX)-010	0.248	0.050	0.055	0.0025	22-19
AS5781R(XX)-011	0.310	0.050	0.055	0.0025	22-19
AS5781R(XX)-012	0.373	0.050	0.055	0.0025	22-19
AS5781R(XX)-013	0.435	0.050	0.055	0.0025	22-19
AS5781R(XX)-014	0.498	0.050	0.055	0.0025	22-19
AS5781R(XX)-015	0.560	0.050	0.055	0.0025	22-19
AS5781R(XX)-016	0.623	0.050	0.055	0.0025	22-19
AS5781R(XX)-017	0.685	0.050	0.055	0.0025	22-19
AS5781R(XX)-018	0.748	0.050	0.055	0.0025	22-19
AS5781R(XX)-019	0.810	0.050	0.055	0.0025	22-19
AS5781R(XX)-020	0.873	0.050	0.055	0.0025	22-19
AS5781R(XX)-021	0.935	0.050	0.055	0.0025	22-19
AS5781R(XX)-022	0.998	0.050	0.055	0.0025	22-19
AS5781R(XX)-023	1.060	0.050	0.055	0.0025	22-19
AS5781R(XX)-024	1.123	0.050	0.055	0.0025	22-19
AS5781R(XX)-025	1.185	0.050	0.055	0.0025	22-19
AS5781R(XX)-026	1.248	0.050	0.055	0.0025	22-19
AS5781R(XX)-027	1.311	0.050	0.055	0.0025	22-19
AS5781R(XX)-028	1.374	0.050	0.055	0.0025	22-19

TABLE 2B - ROD (FEMALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES (CONTINUED)

Part No.	ID Dia. ±0.001	T ±0.002	W ±0.001	G ±0.003	A Degrees
AS5781R(XX)-104	0.123	0.058	0.085	0.003	35-31
AS5781R(XX)-105	0.154	0.058	0.085	0.003	29-26
AS5781R(XX)-106	0.185	0.058	0.086	0.003	26-23
AS5781R(XX)-107	0.217	0.058	0.086	0.003	22-19
AS5781R(XX)-108	0.248	0.058	0.086	0.003	22-19
AS5781R(XX)-109	0.310	0.058	0.087	0.003	22-19
AS5781R(XX)-110	0.373	0.058	0.085	0.003	22-19
AS5781R(XX)-111	0.435	0.058	0.086	0.003	22-19
AS5781R(XX)-112	0.498	0.058	0.086	0.003	22-19
AS5781R(XX)-113	0.560	0.058	0.086	0.003	22-19
AS5781R(XX)-114	0.623	0.058	0.086	0.003	22-19
AS5781R(XX)-115	0.685	0.058	0.086	0.003	22-19
AS5781R(XX)-116	0.748	0.058	0.086	0.003	22-19
AS5781R(XX)-117	0.810	0.058	0.086	0.003	22-19
AS5781R(XX)-118	0.873	0.058	0.086	0.003	22-19
AS5781R(XX)-119	0.935	0.058	0.086	0.003	22-19
AS5781R(XX)-120	0.998	0.058	0.086	0.003	22-19
AS5781R(XX)-121	1.060	0.058	0.086	0.003	22-19
AS5781R(XX)-122	1.123	0.058	0.086	0.003	22-19
AS5781R(XX)-123	1.185	0.058	0.086	0.003	22-19
AS5781R(XX)-124	1.248	0.058	0.086	0.003	22-19
AS5781R(XX)-125	1.311	0.058	0.086	0.003	22-19
AS5781R(XX)-126	1.374	0.058	0.086	0.003	22-19
AS5781R(XX)-127	1.437	0.058	0.086	0.003	22-19
AS5781R(XX)-128	1.501	0.058	0.086	0.003	22-19
AS5781R(XX)-129	1.563	0.058	0.086	0.003	22-19
AS5781R(XX)-130	1.627	0.058	0.086	0.003	22-19
AS5781R(XX)-131	1.689	0.058	0.086	0.003	22-19
AS5781R(XX)-132	1.753	0.058	0.086	0.003	22-19
AS5781R(XX)-133	1.816	0.058	0.086	0.003	22-19
AS5781R(XX)-134	1.879	0.058	0.086	0.003	22-19
AS5781R(XX)-135	1.943	0.058	0.086	0.003	22-19
AS5781R(XX)-136	2.005	0.058	0.086	0.003	22-19
AS5781R(XX)-137	2.069	0.058	0.086	0.003	22-19
AS5781R(XX)-138	2.123	0.058	0.086	0.003	15-12
AS5781R(XX)-139	2.186	0.058	0.086	0.003	15-12

TABLE 2B - ROD (FEMALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES (CONTINUED)

Part No.	ID Dia. ±0.001	T ±0.002	W ±0.001	G ±0.003	A Degrees
AS5781R(XX)-210	0.748	0.062	0.120	0.003	22-19
AS5781R(XX)-211	0.810	0.062	0.120	0.003	22-19
AS5781R(XX)-212	0.873	0.062	0.120	0.003	22-19
AS5781R(XX)-213	0.935	0.062	0.120	0.003	22-19
AS5781R(XX)-214	0.998	0.062	0.120	0.003	22-19
AS5781R(XX)-215	1.060	0.062	0.120	0.003	22-19
AS5781R(XX)-216	1.123	0.062	0.120	0.003	22-19
AS5781R(XX)-217	1.185	0.062	0.120	0.003	22-19
AS5781R(XX)-218	1.248	0.062	0.120	0.003	22-19
AS5781R(XX)-219	1.310	0.062	0.120	0.003	22-19
AS5781R(XX)-220	1.373	0.062	0.120	0.003	22-19
AS5781R(XX)-221	1.435	0.062	0.120	0.003	22-19
AS5781R(XX)-222	1.499	0.062	0.120	0.003	22-19
AS5781R(XX)-223	1.623	0.062	0.120	0.003	15-12
AS5781R(XX)-224	1.748	0.062	0.120	0.003	15-12
AS5781R(XX)-225	1.873	0.062	0.120	0.003	15-12
AS5781R(XX)-226	1.998	0.062	0.120	0.003	15-12
AS5781R(XX)-227	2.123	0.062	0.120	0.003	15-12
AS5781R(XX)-228	2.248	0.062	0.120	0.003	15-12
AS5781R(XX)-229	2.373	0.062	0.120	0.003	15-12
AS5781R(XX)-230	2.498	0.062	0.120	0.003	15-12

TABLE 2B - ROD (FEMALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES (CONTINUED)

Part No.	ID Dia. ±0.001	T ±0.002	W ±0.001	G ±0.0035	A Degrees
AS5781R(XX)-325	1.498	0.088	0.185	0.0035	22-19
AS5781R(XX)-326	1.623	0.088	0.185	0.0035	22-19
AS5781R(XX)-327	1.748	0.088	0.185	0.0035	22-19
AS5781R(XX)-328	1.873	0.088	0.185	0.0035	22-19
AS5781R(XX)-329	1.998	0.088	0.185	0.0035	22-19
AS5781R(XX)-330	2.123	0.088	0.185	0.0035	22-19
AS5781R(XX)-331	2.248	0.088	0.185	0.0035	22-19
AS5781R(XX)-332	2.373	0.088	0.185	0.0035	22-19
AS5781R(XX)-333	2.498	0.088	0.185	0.0035	22-19
AS5781R(XX)-334	2.624	0.088	0.185	0.0035	22-19
AS5781R(XX)-335	2.748	0.088	0.185	0.0035	15-12
AS5781R(XX)-336	2.873	0.088	0.185	0.0035	15-12
AS5781R(XX)-337	2.997	0.088	0.185	0.0035	15-12
AS5781R(XX)-338	3.122	0.088	0.185	0.0035	15-12
AS5781R(XX)-339	3.247	0.088	0.185	0.0035	15-12
AS5781R(XX)-340	3.372	0.088	0.185	0.0035	15-12
AS5781R(XX)-341	3.497	0.088	0.185	0.0035	15-12
AS5781R(XX)-342	3.622	0.088	0.185	0.0035	15-12
AS5781R(XX)-343	3.747	0.088	0.185	0.0035	15-12
AS5781R(XX)-344	3.872	0.088	0.185	0.0035	15-12
AS5781R(XX)-345	3.997	0.088	0.185	0.0035	15-12
AS5781R(XX)-346	4.122	0.088	0.185	0.0035	15-12
AS5781R(XX)-347	4.247	0.088	0.185	0.0035	15-12
AS5781R(XX)-348	4.373	0.088	0.185	0.0035	15-12
AS5781R(XX)-349	4.499	0.088	0.185	0.0035	15-12

TABLE 2B - ROD (FEMALE) APPLICATIONS - DIMENSIONS IN INCHES AND DEGREES (CONTINUED)

Part No.	ID Dia. ± 0.001	T ± 0.002	W ± 0.001	G ± 0.004	A Degrees
AS5781R(XX)-425	4.497	0.129	0.237	0.004	15-12
AS5781R(XX)-426	4.622	0.129	0.237	0.004	15-12
AS5781R(XX)-427	4.747	0.129	0.237	0.004	15-12
AS5781R(XX)-428	4.872	0.129	0.237	0.004	15-12
AS5781R(XX)-429	4.997	0.129	0.237	0.004	15-12
AS5781R(XX)-430	5.122	0.129	0.237	0.004	15-12
AS5781R(XX)-431	5.247	0.129	0.237	0.004	15-12
AS5781R(XX)-432	5.372	0.129	0.237	0.004	15-12
AS5781R(XX)-433	5.497	0.129	0.237	0.004	15-12
AS5781R(XX)-434	5.622	0.129	0.237	0.004	15-12
AS5781R(XX)-435	5.747	0.129	0.237	0.004	15-12
AS5781R(XX)-436	5.872	0.129	0.237	0.004	15-12
AS5781R(XX)-437	5.997	0.129	0.237	0.004	15-12

TABLE 2C - PISTON (MALE) APPLICATIONS - DIMENSIONS IN MILLIMETERS AND DEGREES

Part No.	ID Dia. ± 0.03	T ± 0.05	W ± 0.03	G ± 0.08	A Degrees
AS5781P(XX)-004	1.91	1.27	1.42	0.08	39-35
AS5781P(XX)-005	2.90	1.27	1.32	0.08	36-32
AS5781P(XX)-006	3.25	1.27	1.32	0.08	33-29
AS5781P(XX)-007	3.99	1.27	1.35	0.08	27-24
AS5781P(XX)-008	4.80	1.27	1.35	0.08	22-19
AS5781P(XX)-009	5.59	1.27	1.35	0.08	22-19
AS5781P(XX)-010	6.35	1.27	1.37	0.08	22-19
AS5781P(XX)-011	7.92	1.27	1.37	0.08	22-19
AS5781P(XX)-012	9.53	1.27	1.37	0.08	22-19
AS5781P(XX)-013	11.20	1.27	1.35	0.08	22-19
AS5781P(XX)-014	12.80	1.27	1.35	0.08	22-19
AS5781P(XX)-015	14.38	1.27	1.35	0.08	22-19
AS5781P(XX)-016	15.98	1.27	1.35	0.08	22-19
AS5781P(XX)-017	17.55	1.27	1.35	0.08	22-19
AS5781P(XX)-018	19.13	1.27	1.37	0.08	22-19
AS5781P(XX)-019	20.70	1.27	1.37	0.08	22-19
AS5781P(XX)-020	22.38	1.27	1.37	0.08	22-19
AS5781P(XX)-021	23.95	1.27	1.37	0.08	22-19
AS5781P(XX)-022	25.58	1.27	1.37	0.08	22-19
AS5781P(XX)-023	27.15	1.27	1.37	0.08	22-19
AS5781P(XX)-024	28.78	1.27	1.37	0.08	22-19
AS5781P(XX)-025	30.38	1.27	1.37	0.08	22-19
AS5781P(XX)-026	32.00	1.27	1.37	0.08	22-19
AS5781P(XX)-027	33.60	1.27	1.37	0.08	22-19
AS5781P(XX)-028	35.20	1.27	1.37	0.08	22-19

TABLE 2C - PISTON (MALE) APPLICATIONS - DIMENSIONS IN MILLIMETERS AND DEGREES (CONTINUED)

Part No.	ID Dia. ±0.03	T ±0.05	W ±0.03	G ±0.08	A Degrees
AS5781P(XX)-104	3.25	1.47	2.13	0.08	35-31
AS5781P(XX)-105	4.01	1.47	2.13	0.08	29-26
AS5781P(XX)-106	4.75	1.47	2.16	0.08	26-23
AS5781P(XX)-107	5.46	1.47	2.21	0.08	22-19
AS5781P(XX)-108	6.25	1.47	2.21	0.08	22-19
AS5781P(XX)-109	7.82	1.47	2.21	0.08	22-19
AS5781P(XX)-110	9.63	1.47	2.13	0.08	22-19
AS5781P(XX)-111	11.20	1.47	2.16	0.08	22-19
AS5781P(XX)-112	12.75	1.47	2.16	0.08	22-19
AS5781P(XX)-113	14.35	1.47	2.16	0.08	22-19
AS5781P(XX)-114	15.93	1.47	2.16	0.08	22-19
AS5781P(XX)-115	17.50	1.47	2.18	0.08	22-19
AS5781P(XX)-116	19.08	1.47	2.18	0.08	22-19
AS5781P(XX)-117	20.75	1.47	2.18	0.08	22-19
AS5781P(XX)-118	22.33	1.47	2.18	0.08	22-19
AS5781P(XX)-119	23.93	1.47	2.18	0.08	22-19
AS5781P(XX)-120	25.48	1.47	2.18	0.08	22-19
AS5781P(XX)-121	27.08	1.47	2.18	0.08	22-19
AS5781P(XX)-122	28.68	1.47	2.18	0.08	22-19
AS5781P(XX)-123	30.28	1.47	2.18	0.08	22-19
AS5781P(XX)-124	31.88	1.47	2.18	0.08	22-19
AS5781P(XX)-125	33.50	1.47	2.18	0.08	22-19
AS5781P(XX)-126	35.10	1.47	2.18	0.08	22-19
AS5781P(XX)-127	36.70	1.47	2.18	0.08	22-19
	OD Dia. ±0.03				
AS5781P(XX)-128	42.62	1.47	2.18	0.08	15-12
AS5781P(XX)-129	44.22	1.47	2.18	0.08	15-12
AS5781P(XX)-130	45.85	1.47	2.18	0.08	15-12
AS5781P(XX)-131	47.42	1.47	2.18	0.08	15-12
AS5781P(XX)-132	49.02	1.47	2.18	0.08	15-12
AS5781P(XX)-133	50.60	1.47	2.18	0.08	15-12
AS5781P(XX)-134	52.20	1.47	2.18	0.08	15-12

TABLE 2C - PISTON (MALE) APPLICATIONS - DIMENSIONS IN MILLIMETERS AND DEGREES (CONTINUED)

Part No.	OD Dia. ±0.03	T ±0.05	W ±0.03	G ±0.08	A Degrees
AS5781P(XX)-135	53.80	1.47	2.18	0.08	15-12
AS5781P(XX)-136	55.37	1.47	2.18	0.08	15-12
AS5781P(XX)-137	56.97	1.47	2.18	0.08	15-12
AS5781P(XX)-138	58.55	1.47	2.18	0.08	15-12
AS5781P(XX)-139	60.15	1.47	2.18	0.08	15-12
	ID Dia. ±0.03				
AS5781P(XX)-210	19.05	1.57	3.02	0.08	22-19
AS5781P(XX)-211	20.62	1.57	3.02	0.08	22-19
AS5781P(XX)-212	22.20	1.57	3.02	0.08	22-19
AS5781P(XX)-213	23.80	1.57	3.02	0.08	22-19
AS5781P(XX)-214	25.37	1.57	3.02	0.08	22-19
AS5781P(XX)-215	26.95	1.57	3.02	0.08	22-19
AS5781P(XX)-216	28.55	1.57	3.02	0.08	22-19
AS5781P(XX)-217	30.12	1.57	3.02	0.08	22-19
AS5781P(XX)-218	31.75	1.57	3.02	0.08	22-19
AS5781P(XX)-219	33.35	1.57	3.02	0.08	22-19
AS5781P(XX)-220	34.98	1.57	3.02	0.08	22-19
AS5781P(XX)-221	36.55	1.57	3.02	0.08	22-19
	OD Dia. ±0.03				
AS5781P(XX)-222	44.27	1.57	3.02	0.08	22-19
AS5781P(XX)-223	47.42	1.57	3.02	0.08	15-12
AS5781P(XX)-224	50.60	1.57	3.02	0.08	15-12
AS5781P(XX)-225	53.80	1.57	3.02	0.08	15-12
AS5781P(XX)-226	56.97	1.57	3.02	0.08	15-12
AS5781P(XX)-227	60.15	1.57	3.02	0.08	15-12
AS5781P(XX)-228	63.32	1.57	3.02	0.08	15-12
AS5781P(XX)-229	66.50	1.57	3.02	0.08	15-12
AS5781P(XX)-230	69.72	1.57	3.02	0.08	15-12

TABLE 2C - PISTON (MALE) APPLICATIONS - DIMENSIONS IN MILLIMETERS AND DEGREES (CONTINUED)

Part No.	OD Dia. ±0.03	T ±0.05	W ±0.03	G ±0.09	A Degrees
AS5781P(XX)-325	47.42	2.24	4.70	0.09	22-19
AS5781P(XX)-326	50.60	2.24	4.70	0.09	22-19
AS5781P(XX)-327	53.80	2.24	4.70	0.09	22-19
AS5781P(XX)-328	56.97	2.24	4.70	0.09	22-19
AS5781P(XX)-329	60.15	2.24	4.70	0.09	22-19
AS5781P(XX)-330	63.35	2.24	4.70	0.09	22-19
AS5781P(XX)-331	66.55	2.24	4.70	0.09	22-19
AS5781P(XX)-332	69.77	2.24	4.70	0.09	22-19
AS5781P(XX)-333	72.97	2.24	4.70	0.09	22-19
AS5781P(XX)-334	76.02	2.24	4.70	0.09	15-12
AS5781P(XX)-335	79.20	2.24	4.70	0.09	15-12
AS5781P(XX)-336	82.37	2.24	4.70	0.09	15-12
AS5781P(XX)-337	85.55	2.24	4.70	0.09	15-12
AS5781P(XX)-338	88.72	2.24	4.70	0.09	15-12
AS5781P(XX)-339	91.90	2.24	4.70	0.09	15-12
AS5781P(XX)-340	95.07	2.24	4.70	0.09	15-12
AS5781P(XX)-341	98.25	2.24	4.70	0.09	15-12
AS5781P(XX)-342	101.45	2.24	4.70	0.09	15-12
AS5781P(XX)-343	104.65	2.24	4.70	0.09	15-12
AS5781P(XX)-344	107.87	2.24	4.70	0.09	15-12
AS5781P(XX)-345	111.07	2.24	4.70	0.09	15-12
AS5781P(XX)-346	114.30	2.24	4.70	0.09	15-12
AS5781P(XX)-347	117.50	2.24	4.70	0.09	15-12
AS5781P(XX)-348	120.73	2.24	4.70	0.09	15-12
AS5781P(XX)-349	123.93	2.24	4.70	0.09	15-12

TABLE 2C - PISTON (MALE) APPLICATIONS - DIMENSIONS IN MILLIMETERS AND DEGREES (CONTINUED)

Part No.	OD Dia. ±0.03	T ±0.05	W ±0.03	G ±0.10	A Degrees
AS5781P(XX)-425	126.34	3.28	6.02	0.10	15-12
AS5781P(XX)-426	129.51	3.28	6.02	0.10	15-12
AS5781P(XX)-427	132.69	3.28	6.02	0.10	15-12
AS5781P(XX)-428	135.86	3.28	6.02	0.10	15-12
AS5781P(XX)-429	139.04	3.28	6.02	0.10	15-12
AS5781P(XX)-430	142.21	3.28	6.02	0.10	15-12
AS5781P(XX)-431	145.39	3.28	6.02	0.10	15-12
AS5781P(XX)-432	148.56	3.28	6.02	0.10	15-12
AS5781P(XX)-433	151.77	3.28	6.02	0.10	15-12
AS5781P(XX)-434	154.99	3.28	6.02	0.10	15-12
AS5781P(XX)-435	158.19	3.28	6.02	0.10	15-12
AS5781P(XX)-436	161.42	3.28	6.02	0.10	15-12
AS5781P(XX)-437	164.62	3.28	6.02	0.10	15-12

TABLE 2D - ROD (FEMALE) APPLICATIONS - DIMENSIONS IN MILLIMETERS AND DEGREES

Part No.	ID Dia. ±0.03	T ±0.05	W ±0.03	G ±0.08	A Degrees
AS5781R(XX)-004	1.93	1.27	1.45	0.08	39-35
AS5781R(XX)-005	2.74	1.27	1.37	0.08	36-32
AS5781R(XX)-006	3.12	1.27	1.40	0.08	33-29
AS5781R(XX)-007	3.91	1.27	1.40	0.08	27-24
AS5781R(XX)-008	4.70	1.27	1.37	0.08	22-19
AS5781R(XX)-009	5.51	1.27	1.40	0.08	22-19
AS5781R(XX)-010	6.30	1.27	1.40	0.08	22-19
AS5781R(XX)-011	7.87	1.27	1.40	0.08	22-19
AS5781R(XX)-012	9.47	1.27	1.40	0.08	22-19
AS5781R(XX)-013	11.05	1.27	1.40	0.08	22-19
AS5781R(XX)-014	12.65	1.27	1.40	0.08	22-19
AS5781R(XX)-015	14.22	1.27	1.40	0.08	22-19
AS5781R(XX)-016	15.82	1.27	1.40	0.08	22-19
AS5781R(XX)-017	17.40	1.27	1.40	0.08	22-19
AS5781R(XX)-018	19.00	1.27	1.40	0.08	22-19
AS5781R(XX)-019	20.57	1.27	1.40	0.08	22-19
AS5781R(XX)-020	22.17	1.27	1.40	0.08	22-19
AS5781R(XX)-021	23.75	1.27	1.40	0.08	22-19
AS5781R(XX)-022	25.35	1.27	1.40	0.08	22-19
AS5781R(XX)-023	26.92	1.27	1.40	0.08	22-19
AS5781R(XX)-024	28.52	1.27	1.40	0.08	22-19
AS5781R(XX)-025	30.10	1.27	1.40	0.08	22-19
AS5781R(XX)-026	31.70	1.27	1.40	0.08	22-19
AS5781R(XX)-027	33.30	1.27	1.40	0.08	22-19
AS5781R(XX)-028	34.90	1.27	1.40	0.08	22-19

TABLE 2D - ROD (FEMALE) APPLICATIONS - DIMENSIONS IN MILLIMETERS AND DEGREES (CONTINUED)

Part No.	ID Dia. ±0.03	T ±0.05	W ±0.03	G ±0.08	A Degrees
AS5781R(XX)-104	3.12	1.47	2.16	0.08	35-31
AS5781R(XX)-105	3.91	1.47	2.16	0.08	29-26
AS5781R(XX)-106	4.70	1.47	2.18	0.08	26-23
AS5781R(XX)-107	5.51	1.47	2.18	0.08	23-20
AS5781R(XX)-108	6.30	1.47	2.18	0.08	22-19
AS5781R(XX)-109	7.87	1.47	2.21	0.08	22-19
AS5781R(XX)-110	9.47	1.47	2.16	0.08	22-19
AS5781R(XX)-111	11.05	1.47	2.18	0.08	22-19
AS5781R(XX)-112	12.65	1.47	2.18	0.08	22-19
AS5781R(XX)-113	14.22	1.47	2.18	0.08	22-19
AS5781R(XX)-114	15.82	1.47	2.18	0.08	22-19
AS5781R(XX)-115	17.40	1.47	2.18	0.08	22-19
AS5781R(XX)-116	19.00	1.47	2.18	0.08	22-19
AS5781R(XX)-117	20.57	1.47	2.18	0.08	22-19
AS5781R(XX)-118	22.17	1.47	2.18	0.08	22-19
AS5781R(XX)-119	23.75	1.47	2.18	0.08	22-19
AS5781R(XX)-120	25.35	1.47	2.18	0.08	22-19
AS5781R(XX)-121	26.92	1.47	2.18	0.08	22-19
AS5781R(XX)-122	28.52	1.47	2.18	0.08	22-19
AS5781R(XX)-123	30.10	1.47	2.18	0.08	22-19
AS5781R(XX)-124	31.70	1.47	2.18	0.08	22-19
AS5781R(XX)-125	33.30	1.47	2.18	0.08	22-19
AS5781R(XX)-126	34.90	1.47	2.18	0.08	22-19
AS5781R(XX)-127	36.50	1.47	2.18	0.08	22-19
AS5781R(XX)-128	38.13	1.47	2.18	0.08	22-19
AS5781R(XX)-129	39.70	1.47	2.18	0.08	22-19
AS5781R(XX)-130	41.33	1.47	2.18	0.08	22-19
AS5781R(XX)-131	42.90	1.47	2.18	0.08	22-19
AS5781R(XX)-132	44.53	1.47	2.18	0.08	22-19
AS5781R(XX)-133	46.13	1.47	2.18	0.08	22-19
AS5781R(XX)-134	47.73	1.47	2.18	0.08	22-19
AS5781R(XX)-135	49.35	1.47	2.18	0.08	22-19
AS5781R(XX)-136	50.93	1.47	2.18	0.08	22-19
AS5781R(XX)-137	52.55	1.47	2.18	0.08	22-19
AS5781R(XX)-138	53.92	1.47	2.18	0.08	15-12
AS5781R(XX)-139	55.52	1.47	2.18	0.08	15-12

TABLE 2D - ROD (FEMALE) APPLICATIONS - DIMENSIONS IN MILLIMETERS AND DEGREES (CONTINUED)

Part No.	ID Dia. ±0.03	T ±0.05	W ±0.03	G ±0.08	A Degrees
AS5781R(XX)-210	19.00	1.57	3.05	0.08	22-19
AS5781R(XX)-211	20.57	1.57	3.05	0.08	22-19
AS5781R(XX)-212	22.17	1.57	3.05	0.08	22-19
AS5781R(XX)-213	23.75	1.57	3.05	0.08	22-19
AS5781R(XX)-214	25.35	1.57	3.05	0.08	22-19
AS5781R(XX)-215	26.92	1.57	3.05	0.08	22-19
AS5781R(XX)-216	28.52	1.57	3.05	0.08	22-19
AS5781R(XX)-217	30.10	1.57	3.05	0.08	22-19
AS5781R(XX)-218	31.70	1.57	3.05	0.08	22-19
AS5781R(XX)-219	33.27	1.57	3.05	0.08	22-19
AS5781R(XX)-220	34.87	1.57	3.05	0.08	22-19
AS5781R(XX)-221	36.45	1.57	3.05	0.08	22-19
AS5781R(XX)-222	38.07	1.57	3.05	0.08	22-19
AS5781R(XX)-223	41.22	1.57	3.05	0.08	15-12
AS5781R(XX)-224	44.40	1.57	3.05	0.08	15-12
AS5781R(XX)-225	47.57	1.57	3.05	0.08	15-12
AS5781R(XX)-226	50.75	1.57	3.05	0.08	15-12
AS5781R(XX)-227	53.92	1.57	3.05	0.08	15-12
AS5781R(XX)-228	57.10	1.57	3.05	0.08	15-12
AS5781R(XX)-229	60.27	1.57	3.05	0.08	15-12
AS5781R(XX)-230	63.45	1.57	3.05	0.08	15-12