



AEROSPACE STANDARD

AS5860™**REV. C**Issued 2006-04
Revised 2020-11

Superseding AS5860B

(R) Retainers (Backup Rings), Hydraulic and Pneumatic,
Polytetrafluoroethylene Resin, Single Turn, Scarf-Cut, For Use in AS5857 Static Glands

RATIONALE

This document has been revised to:

- Add the requirement that no resizing of parts during the manufacturing process is permitted
- Clarify the use in AS5857 glands
- Add the stabilized temperature at which measurements shall be taken
- Delete the dimensional stability test requirement of parts (since this test is performed on each lot of molded material as required by AMS3678)
- Add the dimensional stability requirement of material tubes to 4.1
- Include some editorial corrections and improvements
- Update references

1. SCOPE

This SAE Aerospace Standard (AS) specifies scarf-cut polytetrafluoroethylene (PTFE) retainers (backup rings) for use in static glands in accordance with AS5857. They are usually for use in hydraulic and pneumatic systems as anti-extrusion devices in conjunction with O-rings and other seals.

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

1.1 Field of Application

Backup rings to the dimensions in AS5860 are for use in glands to AS5857 only. They shall not be used in glands to MIL-G-5514 or AS4716, please refer to the Note below.

NOTE: Parts standard AS8791 (scarf-cut backup rings) for use in glands to MIL-G-5514 and parts standard AS5781 (scarf-cut backup rings) for use in AS4716 glands have been published.

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2020 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
http://www.sae.org

SAE WEB ADDRESS:

For more information on this standard, visit
<https://www.sae.org/standards/content/AS5860C/>

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.

2.1.1 SAE Publications

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

AMS3678	Polytetrafluoroethylene (PTFE) Moldings and Extrusions Unfilled, Pigmented, and Filled Components
AMS3678/9	Type 9, Virgin Polytetrafluoroethylene (PTFE) Moldings with Pigment for AS4716 and AS5857 Backup Rings
AMS3678/10	Type 10, Virgin Polytetrafluoroethylene (PTFE) Moldings or Extrusions with 15% Carbon Fiber
AS4716	Gland Design, O-ring and Other Seals
AS5781	Retainers (Backup Rings), Hydraulic and Pneumatic, Polytetrafluoroethylene Resin, Single Turn, Scarf-Cut, For Use in AS4716 Glands
AS5857	Gland Design, O-Ring and Other Elastomeric Seals, Static Applications
AS5861	Retainers, (Backup Rings), Hydraulic and Pneumatic, Polytetrafluoroethylene Resin, Solid, Static Gland
AS8791	Hydraulic and Pneumatic Retainers (Back-Up Rings), Polytetrafluoroethylene (PTFE) Resin

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 Y14.5-2009 Dimensioning and Tolerancing

2.1.3 U.S. Government Publications

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

MIL-G-5514 Gland Designs; Packings, Hydraulic, General Requirements for (Inactive for new design)

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

3. TECHNICAL REQUIREMENTS

3.1 Design

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 (20680 kPa) for code 09 material and 5000 psi (34370 kPa) for code 10 material. Material codes are based on AMS3678 material types.

Because of the construction of groove dimensions, backup rings specific to piston applications are designated "P" - Piston (Male) and backup rings specific to rod applications are designated "R" - Rod (Female).

3.2 Cylinder Breathing, Material Expansion and Contraction

Consideration has been made to accommodate cylinder breathing on piston applications, calculated at 0.002 in/in diameter/1000 psi (0.05 mm/mm diameter/6895 kPa) 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 of the scarf-cut at ambient temperature 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.

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 Application

3.3.1 Code 09, Virgin PTFE with Pigment

For operating pressures up to 3000 psi (20690 kPa) backup rings shall be made from material code 9 of this standard and shall conform to AMS3678/9 requirements.

- Parts made from material code 09 of this standard for “R” (Rod) applications shall be green per AMS3678/9.
- Parts made from material code 09 of this standard for “P” (piston) applications shall be brown per AMS3678/9.

3.3.2 Code 10, PTFE with 15% Carbon Fiber

For operating pressures up to 5000 psi (34500 kPa) backup rings shall be made to material code 10 of this standard and shall conform to AMS3678/10 requirements. Color shall be dark gray to black.

3.4 Dimensional Requirements

See Figure 1.

See Tables 1A, 1B, 2A, and 2B for dimensions.

Dimensions and Tolerancing per ASME Y-14.5-2009.

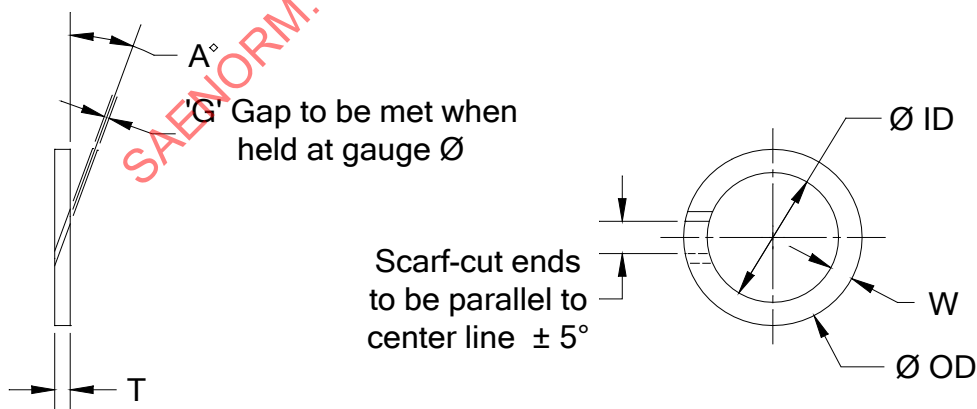


Figure 1 - Backup ring controlled features

3.5 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 1A, 1B, 2A, and 2B and as shown in Figure 2 below.

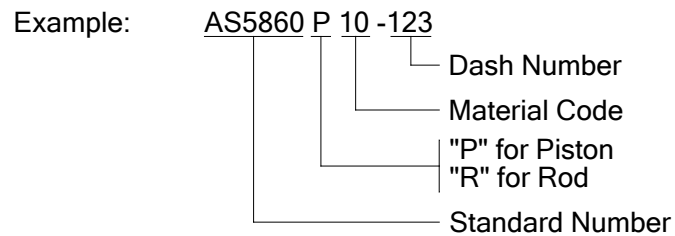


Figure 2 - Example part number

NOTES:

1. In the above example Part Number, "P" for Piston, Code 10 material, and dash 123 size are all used for example purposes only.
2. Spaces between characters in the above example Part Number are for illustration clarity only and are not used in the Part Number.

SAENORM.COM : Click to view the full PDF of as5860c

See Figures 1 and 2.

NOTE: The diameters, ID, or OD in Tables 1A and 1B refer to the ID or OD of the backup rings. The diameters listed are the gauge diameters by which backup rings are measured

Table 1A - Male (piston) applications - backup ring dimensions in inches and degrees

Part No.	Gauge ID ±0.001	T ±0.002	W ±0.001	G ±0.0025	A Degrees
AS5860P(XX)-004	0.079	0.054	0.052	0.0025	35-39
AS5860P(XX)-005	0.111	0.054	0.052	0.0025	32-36
AS5860P(XX)-006	0.124	0.054	0.052	0.0025	29-33
AS5860P(XX)-007	0.155	0.054	0.052	0.0025	24-27
AS5860P(XX)-008	0.187	0.054	0.052	0.0025	19-22
AS5860P(XX)-009	0.220	0.054	0.052	0.0025	19-22
AS5860P(XX)-010	0.251	0.054	0.052	0.0025	19-22
AS5860P(XX)-011	0.314	0.054	0.052	0.0025	19-22
AS5860P(XX)-012	0.379	0.054	0.052	0.0025	19-22
AS5860P(XX)-013	0.444	0.054	0.052	0.0025	19-22
AS5860P(XX)-014	0.507	0.054	0.052	0.0025	19-22
AS5860P(XX)-015	0.569	0.054	0.052	0.0025	19-22
AS5860P(XX)-016	0.632	0.054	0.052	0.0025	19-22
AS5860P(XX)-017	0.694	0.054	0.052	0.0025	19-22
AS5860P(XX)-018	0.757	0.054	0.052	0.0025	19-22
AS5860P(XX)-019	0.819	0.054	0.052	0.0025	19-22
AS5860P(XX)-020	0.885	0.054	0.052	0.0025	19-22
AS5860P(XX)-021	0.947	0.054	0.052	0.0025	19-22
AS5860P(XX)-022	1.010	0.054	0.052	0.0025	19-22
AS5860P(XX)-023	1.072	0.054	0.052	0.0025	19-22
AS5860P(XX)-024	1.135	0.054	0.052	0.0025	19-22
AS5860P(XX)-025	1.198	0.054	0.052	0.0025	19-22
AS5860P(XX)-026	1.262	0.054	0.052	0.0025	19-22
AS5860P(XX)-027	1.325	0.054	0.052	0.0025	19-22
AS5860P(XX)-028	1.388	0.054	0.052	0.0025	19-22

Table 1A - Male (piston) applications - backup ring dimensions in inches and degrees (continued)

Part No.	Gauge ID ±0.001	T ±0.002	W ±0.001	G ±0.003	A Degrees
AS5860P(XX)-104	0.122	0.058	0.081	0.003	31-35
AS5860P(XX)-105	0.153	0.058	0.081	0.003	26-29
AS5860P(XX)-106	0.185	0.058	0.081	0.003	23-26
AS5860P(XX)-107	0.218	0.058	0.081	0.003	19-22
AS5860P(XX)-108	0.250	0.058	0.081	0.003	19-22
AS5860P(XX)-109	0.313	0.058	0.081	0.003	19-22
AS5860P(XX)-110	0.378	0.058	0.081	0.003	19-22
AS5860P(XX)-111	0.441	0.058	0.081	0.003	19-22
AS5860P(XX)-112	0.505	0.058	0.081	0.003	19-22
AS5860P(XX)-113	0.571	0.058	0.081	0.003	19-22
AS5860P(XX)-114	0.637	0.058	0.081	0.003	19-22
AS5860P(XX)-115	0.700	0.058	0.081	0.003	19-22
AS5860P(XX)-116	0.762	0.058	0.081	0.003	19-22
AS5860P(XX)-117	0.828	0.058	0.081	0.003	19-22
AS5860P(XX)-118	0.890	0.058	0.081	0.003	19-22
AS5860P(XX)-119	0.953	0.058	0.081	0.003	19-22
AS5860P(XX)-120	1.015	0.058	0.081	0.003	19-22
AS5860P(XX)-121	1.078	0.058	0.081	0.003	19-22
AS5860P(XX)-122	1.140	0.058	0.081	0.003	19-22
AS5860P(XX)-123	1.203	0.058	0.081	0.003	19-22
AS5860P(XX)-124	1.265	0.058	0.081	0.003	19-22
AS5860P(XX)-125	1.329	0.058	0.081	0.003	19-22
AS5860P(XX)-126	1.392	0.058	0.081	0.003	19-22
AS5860P(XX)-127	1.455	0.058	0.081	0.003	19-22
	Gauge OD ±0.001				
AS5860P(XX)-128	1.678	0.058	0.081	0.003	12-15
AS5860P(XX)-129	1.741	0.058	0.081	0.003	12-15
AS5860P(XX)-130	1.805	0.058	0.081	0.003	12-15
AS5860P(XX)-131	1.867	0.058	0.081	0.003	12-15
AS5860P(XX)-132	1.930	0.058	0.081	0.003	12-15
AS5860P(XX)-133	1.992	0.058	0.081	0.003	12-15
AS5860P(XX)-134	2.055	0.058	0.081	0.003	12-15
AS5860P(XX)-135	2.118	0.058	0.081	0.003	12-15
AS5860P(XX)-136	2.180	0.058	0.081	0.003	12-15
AS5860P(XX)-137	2.243	0.058	0.081	0.003	12-15
AS5860P(XX)-138	2.305	0.058	0.081	0.003	12-15
AS5860P(XX)-139	2.368	0.058	0.081	0.003	12-15

Table 1A - Male (piston) applications - backup ring dimensions in inches and degrees (continued)

Part No.	Gauge ID ±0.001	T ±0.002	W ±0.001	G ±0.003	A Degrees
AS5860P(XX)-210	0.768	0.062	0.111	0.003	19-22
AS5860P(XX)-211	0.830	0.062	0.111	0.003	19-22
AS5860P(XX)-212	0.893	0.062	0.111	0.003	19-22
AS5860P(XX)-213	0.955	0.062	0.111	0.003	19-22
AS5860P(XX)-214	1.018	0.062	0.111	0.003	19-22
AS5860P(XX)-215	1.080	0.062	0.111	0.003	19-22
AS5860P(XX)-216	1.143	0.062	0.111	0.003	19-22
AS5860P(XX)-217	1.205	0.062	0.111	0.003	19-22
AS5860P(XX)-218	1.268	0.062	0.111	0.003	19-22
AS5860P(XX)-219	1.331	0.062	0.111	0.003	19-22
AS5860P(XX)-220	1.395	0.062	0.111	0.003	19-22
AS5860P(XX)-221	1.457	0.062	0.111	0.003	19-22
	Gauge OD ±0.001				
AS5860P(XX)-222	1.741	0.062	0.111	0.003	19-22
AS5860P(XX)-223	1.867	0.062	0.111	0.003	12-15
AS5860P(XX)-224	1.992	0.062	0.111	0.003	12-15
AS5860P(XX)-225	2.118	0.062	0.111	0.003	12-15
AS5860P(XX)-226	2.243	0.062	0.111	0.003	12-15
AS5860P(XX)-227	2.368	0.062	0.111	0.003	12-15
AS5860P(XX)-228	2.493	0.062	0.111	0.003	12-15
AS5860P(XX)-229	2.618	0.062	0.111	0.003	12-15
AS5860P(XX)-230	2.743	0.062	0.111	0.003	12-15

Table 1A - Male (piston) applications - backup ring dimensions in inches and degrees (continued)

Part No.	Gauge OD ±0.001	T ±0.002	W ±0.001	G ±0.0035	A Degrees
AS5860P(XX)-325	1.867	0.088	0.171	0.0035	19-22
AS5860P(XX)-326	1.992	0.088	0.171	0.0035	19-22
AS5860P(XX)-327	2.118	0.088	0.171	0.0035	19-22
AS5860P(XX)-328	2.243	0.088	0.171	0.0035	19-22
AS5860P(XX)-329	2.368	0.088	0.171	0.0035	19-22
AS5860P(XX)-330	2.494	0.088	0.171	0.0035	19-22
AS5860P(XX)-331	2.620	0.088	0.171	0.0035	19-22
AS5860P(XX)-332	2.747	0.088	0.171	0.0035	19-22
AS5860P(XX)-333	2.873	0.088	0.171	0.0035	19-22
AS5860P(XX)-334	2.993	0.088	0.171	0.0035	12-15
AS5860P(XX)-335	3.118	0.088	0.171	0.0035	12-15
AS5860P(XX)-336	3.243	0.088	0.171	0.0035	12-15
AS5860P(XX)-337	3.368	0.088	0.171	0.0035	12-15
AS5860P(XX)-338	3.493	0.088	0.171	0.0035	12-15
AS5860P(XX)-339	3.618	0.088	0.171	0.0035	12-15
AS5860P(XX)-340	3.743	0.088	0.171	0.0035	12-15
AS5860P(XX)-341	3.868	0.088	0.171	0.0035	12-15
AS5860P(XX)-342	3.994	0.088	0.171	0.0035	12-15
AS5860P(XX)-343	4.120	0.088	0.171	0.0035	12-15
AS5860P(XX)-344	4.247	0.088	0.171	0.0035	12-15
AS5860P(XX)-345	4.373	0.088	0.171	0.0035	12-15
AS5860P(XX)-346	4.500	0.088	0.171	0.0035	12-15
AS5860P(XX)-347	4.626	0.088	0.171	0.0035	12-15
AS5860P(XX)-348	4.753	0.088	0.171	0.0035	12-15
AS5860P(XX)-349	4.879	0.088	0.171	0.0035	12-15

Table 1A - Male (piston) applications - backup ring dimensions in inches and degrees (continued)

Part No.	Gauge OD ±0.001	T ±0.002	W ±0.001	G ±0.004	A Degrees
AS5860P(XX)-425	4.974	0.128	0.226	0.004	12-15
AS5860P(XX)-426	5.099	0.128	0.226	0.004	12-15
AS5860P(XX)-427	5.224	0.128	0.226	0.004	12-15
AS5860P(XX)-428	5.349	0.128	0.226	0.004	12-15
AS5860P(XX)-429	5.474	0.128	0.226	0.004	12-15
AS5860P(XX)-430	5.599	0.128	0.226	0.004	12-15
AS5860P(XX)-431	5.724	0.128	0.226	0.004	12-15
AS5860P(XX)-432	5.849	0.128	0.226	0.004	12-15
AS5860P(XX)-433	5.975	0.128	0.226	0.004	12-15
AS5860P(XX)-434	6.102	0.128	0.226	0.004	12-15
AS5860P(XX)-435	6.228	0.128	0.226	0.004	12-15
AS5860P(XX)-436	6.355	0.128	0.226	0.004	12-15
AS5860P(XX)-437	6.481	0.128	0.226	0.004	12-15

SAENORM.COM : Click to view the full PDF of AS5860C

Table 1B - Female (rod) applications - backup ring dimensions in inches and degrees

Part No.	Gauge ID ±0.001	T ±0.002	W ±0.001	G ±0.0025	A Degrees
AS5860R(XX)-004	0.076	0.054	0.053	0.0025	35-39
AS5860R(XX)-005	0.108	0.054	0.053	0.0025	32-36
AS5860R(XX)-006	0.123	0.054	0.053	0.0025	29-33
AS5860R(XX)-007	0.154	0.054	0.053	0.0025	24-27
AS5860R(XX)-008	0.185	0.054	0.053	0.0025	19-22
AS5860R(XX)-009	0.217	0.054	0.053	0.0025	19-22
AS5860R(XX)-010	0.248	0.054	0.053	0.0025	19-22
AS5860R(XX)-011	0.310	0.054	0.053	0.0025	19-22
AS5860R(XX)-012	0.373	0.054	0.053	0.0025	19-22
AS5860R(XX)-013	0.435	0.054	0.053	0.0025	19-22
AS5860R(XX)-014	0.498	0.054	0.053	0.0025	19-22
AS5860R(XX)-015	0.560	0.054	0.053	0.0025	19-22
AS5860R(XX)-016	0.623	0.054	0.053	0.0025	19-22
AS5860R(XX)-017	0.685	0.054	0.053	0.0025	19-22
AS5860R(XX)-018	0.748	0.054	0.053	0.0025	19-22
AS5860R(XX)-019	0.810	0.054	0.053	0.0025	19-22
AS5860R(XX)-020	0.873	0.054	0.053	0.0025	19-22
AS5860R(XX)-021	0.935	0.054	0.053	0.0025	19-22
AS5860R(XX)-022	0.998	0.054	0.053	0.0025	19-22
AS5860R(XX)-023	1.060	0.054	0.053	0.0025	19-22
AS5860R(XX)-024	1.123	0.054	0.053	0.0025	19-22
AS5860R(XX)-025	1.185	0.054	0.053	0.0025	19-22
AS5860R(XX)-026	1.248	0.054	0.053	0.0025	19-22
AS5860R(XX)-027	1.311	0.054	0.053	0.0025	19-22
AS5860R(XX)-028	1.374	0.054	0.053	0.0025	19-22

Table 1B - Female (rod) applications - backup ring dimensions in inches and degrees (continued)

Part No.	Gauge ID ±0.001	T ±0.002	W ±0.001	G ±0.003	A Degrees
AS5860R(XX)-104	0.123	0.058	0.081	0.003	31-35
AS5860R(XX)-105	0.154	0.058	0.081	0.003	26-29
AS5860R(XX)-106	0.185	0.058	0.081	0.003	23-26
AS5860R(XX)-107	0.217	0.058	0.081	0.003	19-22
AS5860R(XX)-108	0.248	0.058	0.081	0.003	19-22
AS5860R(XX)-109	0.310	0.058	0.081	0.003	19-22
AS5860R(XX)-110	0.373	0.058	0.081	0.003	19-22
AS5860R(XX)-111	0.435	0.058	0.081	0.003	19-22
AS5860R(XX)-112	0.498	0.058	0.081	0.003	19-22
AS5860R(XX)-113	0.560	0.058	0.081	0.003	19-22
AS5860R(XX)-114	0.623	0.058	0.081	0.003	19-22
AS5860R(XX)-115	0.685	0.058	0.081	0.003	19-22
AS5860R(XX)-116	0.748	0.058	0.081	0.003	19-22
AS5860R(XX)-117	0.810	0.058	0.081	0.003	19-22
AS5860R(XX)-118	0.873	0.058	0.081	0.003	19-22
AS5860R(XX)-119	0.935	0.058	0.081	0.003	19-22
AS5860R(XX)-120	0.998	0.058	0.081	0.003	19-22
AS5860R(XX)-121	1.060	0.058	0.081	0.003	19-22
AS5860R(XX)-122	1.123	0.058	0.081	0.003	19-22
AS5860R(XX)-123	1.185	0.058	0.081	0.003	19-22
AS5860R(XX)-124	1.248	0.058	0.081	0.003	19-22
AS5860R(XX)-125	1.311	0.058	0.081	0.003	19-22
AS5860R(XX)-126	1.374	0.058	0.081	0.003	19-22
AS5860R(XX)-127	1.437	0.058	0.081	0.003	19-22
AS5860R(XX)-128	1.501	0.058	0.081	0.003	19-22
AS5860R(XX)-129	1.563	0.058	0.081	0.003	19-22
AS5860R(XX)-130	1.627	0.058	0.081	0.003	19-22
AS5860R(XX)-131	1.689	0.058	0.081	0.003	19-22
AS5860R(XX)-132	1.753	0.058	0.081	0.003	19-22
AS5860R(XX)-133	1.816	0.058	0.081	0.003	19-22
AS5860R(XX)-134	1.879	0.058	0.081	0.003	19-22
AS5860R(XX)-135	1.943	0.058	0.081	0.003	19-22
AS5860R(XX)-136	2.005	0.058	0.081	0.003	19-22
AS5860R(XX)-137	2.069	0.058	0.081	0.003	19-22
AS5860R(XX)-138	2.123	0.058	0.081	0.003	12-15
AS5860R(XX)-139	2.186	0.058	0.081	0.003	12-15

Table 1B - Female (rod) applications - backup ring dimensions in inches and degrees (continued)

Part No.	Gauge ID ±0.001	T ±0.002	W ±0.001	G ±0.003	A Degrees
AS5860R(XX)-210	0.748	0.062	0.112	0.003	19-22
AS5860R(XX)-211	0.810	0.062	0.112	0.003	19-22
AS5860R(XX)-212	0.873	0.062	0.112	0.003	19-22
AS5860R(XX)-213	0.935	0.062	0.112	0.003	19-22
AS5860R(XX)-214	0.998	0.062	0.112	0.003	19-22
AS5860R(XX)-215	1.060	0.062	0.112	0.003	19-22
AS5860R(XX)-216	1.123	0.062	0.112	0.003	19-22
AS5860R(XX)-217	1.185	0.062	0.112	0.003	19-22
AS5860R(XX)-218	1.248	0.062	0.112	0.003	19-22
AS5860R(XX)-219	1.310	0.062	0.112	0.003	19-22
AS5860R(XX)-220	1.373	0.062	0.112	0.003	19-22
AS5860R(XX)-221	1.435	0.062	0.112	0.003	19-22
AS5860R(XX)-222	1.499	0.062	0.112	0.003	19-22
AS5860R(XX)-223	1.623	0.062	0.112	0.003	12-15
AS5860R(XX)-224	1.748	0.062	0.112	0.003	12-15
AS5860R(XX)-225	1.873	0.062	0.112	0.003	12-15
AS5860R(XX)-226	1.998	0.062	0.112	0.003	12-15
AS5860R(XX)-227	2.123	0.062	0.112	0.003	12-15
AS5860R(XX)-228	2.248	0.062	0.112	0.003	12-15
AS5860R(XX)-229	2.373	0.062	0.112	0.003	12-15
AS5860R(XX)-230	2.498	0.062	0.112	0.003	12-15

Table 1B - Female (rod) applications - backup ring dimensions in inches and degrees (continued)

Part No.	Gauge ID ±0.001	T ±0.002	W ±0.001	G ±0.0035	A Degrees
AS5860R(XX)-325	1.498	0.088	0.173	0.0035	19-22
AS5860R(XX)-326	1.623	0.088	0.173	0.0035	19-22
AS5860R(XX)-327	1.748	0.088	0.173	0.0035	19-22
AS5860R(XX)-328	1.873	0.088	0.173	0.0035	19-22
AS5860R(XX)-329	1.998	0.088	0.173	0.0035	19-22
AS5860R(XX)-330	2.123	0.088	0.173	0.0035	19-22
AS5860R(XX)-331	2.248	0.088	0.173	0.0035	19-22
AS5860R(XX)-332	2.373	0.088	0.173	0.0035	19-22
AS5860R(XX)-333	2.498	0.088	0.173	0.0035	19-22
AS5860R(XX)-334	2.623	0.088	0.173	0.0035	19-22
AS5860R(XX)-335	2.748	0.088	0.173	0.0035	12-15
AS5860R(XX)-336	2.873	0.088	0.173	0.0035	12-15
AS5860R(XX)-337	2.997	0.088	0.173	0.0035	12-15
AS5860R(XX)-338	3.122	0.088	0.173	0.0035	12-15
AS5860R(XX)-339	3.247	0.088	0.173	0.0035	12-15
AS5860R(XX)-340	3.372	0.088	0.173	0.0035	12-15
AS5860R(XX)-341	3.497	0.088	0.173	0.0035	12-15
AS5860R(XX)-342	3.622	0.088	0.173	0.0035	12-15
AS5860R(XX)-343	3.747	0.088	0.173	0.0035	12-15
AS5860R(XX)-344	3.872	0.088	0.173	0.0035	12-15
AS5860R(XX)-345	3.997	0.088	0.173	0.0035	12-15
AS5860R(XX)-346	4.122	0.088	0.173	0.0035	12-15
AS5860R(XX)-347	4.247	0.088	0.173	0.0035	12-15
AS5860R(XX)-348	4.372	0.088	0.173	0.0035	12-15
AS5860R(XX)-349	4.497	0.088	0.173	0.0035	12-15

Table 1B - Female (rod) applications - backup ring dimensions in inches and degrees (continued)

Part No.	Gauge ID ±0.001	T ±0.002	W ±0.001	G ±0.004	A Degrees
AS5860R(XX)-425	4.497	0.128	0.228	0.004	12-15
AS5860R(XX)-426	4.622	0.128	0.228	0.004	12-15
AS5860R(XX)-427	4.747	0.128	0.228	0.004	12-15
AS5860R(XX)-428	4.872	0.128	0.228	0.004	12-15
AS5860R(XX)-429	4.997	0.128	0.228	0.004	12-15
AS5860R(XX)-430	5.122	0.128	0.228	0.004	12-15
AS5860R(XX)-431	5.247	0.128	0.228	0.004	12-15
AS5860R(XX)-432	5.372	0.128	0.228	0.004	12-15
AS5860R(XX)-433	5.497	0.128	0.228	0.004	12-15
AS5860R(XX)-434	5.622	0.128	0.228	0.004	12-15
AS5860R(XX)-435	5.747	0.128	0.228	0.004	12-15
AS5860R(XX)-436	5.872	0.128	0.228	0.004	12-15
AS5860R(XX)-437	5.997	0.128	0.228	0.004	12-15

SAENORM.COM : Click to view the full PDF of AS5860C

See Figures 1 and 2.

NOTE: The diameters, ID, or OD in Tables 2A and 2B refer to the ID or OD of the backup rings. The diameters listed are the gauge diameters by which backup rings are measured.

Table 2A - Male (piston) applications - backup ring dimensions in millimeters and degrees

Part No.	Gauge ID ±0.03	T ±0.05	W ±0.03	G ±0.06	A Degrees
AS5860P(XX)-004	2.01	1.37	1.32	0.06	35-39
AS5860P(XX)-005	2.82	1.37	1.32	0.06	32-36
AS5860P(XX)-006	3.15	1.37	1.32	0.06	29-33
AS5860P(XX)-007	3.94	1.37	1.32	0.06	24-27
AS5860P(XX)-008	4.75	1.37	1.32	0.06	19-22
AS5860P(XX)-009	5.59	1.37	1.32	0.06	19-22
AS5860P(XX)-010	6.38	1.37	1.32	0.06	19-22
AS5860P(XX)-011	7.98	1.37	1.32	0.06	19-22
AS5860P(XX)-012	9.63	1.37	1.32	0.06	19-22
AS5860P(XX)-013	11.28	1.37	1.32	0.06	19-22
AS5860P(XX)-014	12.88	1.37	1.32	0.06	19-22
AS5860P(XX)-015	14.45	1.37	1.32	0.06	19-22
AS5860P(XX)-016	16.05	1.37	1.32	0.06	19-22
AS5860P(XX)-017	17.63	1.37	1.32	0.06	19-22
AS5860P(XX)-018	19.23	1.37	1.32	0.06	19-22
AS5860P(XX)-019	20.80	1.37	1.32	0.06	19-22
AS5860P(XX)-020	22.48	1.37	1.32	0.06	19-22
AS5860P(XX)-021	24.05	1.37	1.32	0.06	19-22
AS5860P(XX)-022	25.65	1.37	1.32	0.06	19-22
AS5860P(XX)-023	27.23	1.37	1.32	0.06	19-22
AS5860P(XX)-024	28.83	1.37	1.32	0.06	19-22
AS5860P(XX)-025	30.43	1.37	1.32	0.06	19-22
AS5860P(XX)-026	32.06	1.37	1.32	0.06	19-22
AS5860P(XX)-027	33.66	1.37	1.32	0.06	19-22
AS5860P(XX)-028	35.26	1.37	1.32	0.06	19-22

Table 2A - Male (piston) applications - backup ring dimensions in millimeters and degrees (continued)

Part No.	Gauge ID ±0.03	T ±0.05	W ±0.03	G ±0.08	A Degrees
AS5860P(XX)-104	3.10	1.47	2.06	0.08	31-35
AS5860P(XX)-105	3.89	1.47	2.06	0.08	26-29
AS5860P(XX)-106	4.70	1.47	2.06	0.08	23-26
AS5860P(XX)-107	5.54	1.47	2.06	0.08	19-22
AS5860P(XX)-108	6.35	1.47	2.06	0.08	19-22
AS5860P(XX)-109	7.95	1.47	2.06	0.08	19-22
AS5860P(XX)-110	9.60	1.47	2.06	0.08	19-22
AS5860P(XX)-111	11.20	1.47	2.06	0.08	19-22
AS5860P(XX)-112	12.83	1.47	2.06	0.08	19-22
AS5860P(XX)-113	14.50	1.47	2.06	0.08	19-22
AS5860P(XX)-114	16.18	1.47	2.06	0.08	19-22
AS5860P(XX)-115	17.78	1.47	2.06	0.08	19-22
AS5860P(XX)-116	19.36	1.47	2.06	0.08	19-22
AS5860P(XX)-117	21.03	1.47	2.06	0.08	19-22
AS5860P(XX)-118	22.61	1.47	2.06	0.08	19-22
AS5860P(XX)-119	24.21	1.47	2.06	0.08	19-22
AS5860P(XX)-120	25.78	1.47	2.06	0.08	19-22
AS5860P(XX)-121	27.38	1.47	2.06	0.08	19-22
AS5860P(XX)-122	28.96	1.47	2.06	0.08	19-22
AS5860P(XX)-123	30.56	1.47	2.06	0.08	19-22
AS5860P(XX)-124	32.13	1.47	2.06	0.08	19-22
AS5860P(XX)-125	33.76	1.47	2.06	0.08	19-22
AS5860P(XX)-126	35.36	1.47	2.06	0.08	19-22
AS5860P(XX)-127	36.96	1.47	2.06	0.08	19-22
	Gauge OD ±0.03				
AS5860P(XX)-128	42.62	1.47	2.06	0.08	12-15
AS5860P(XX)-129	44.22	1.47	2.06	0.08	12-15
AS5860P(XX)-130	45.85	1.47	2.06	0.08	12-15
AS5860P(XX)-131	47.42	1.47	2.06	0.08	12-15
AS5860P(XX)-132	49.02	1.47	2.06	0.08	12-15
AS5860P(XX)-133	50.60	1.47	2.06	0.08	12-15
AS5860P(XX)-134	52.20	1.47	2.06	0.08	12-15
AS5860P(XX)-135	53.80	1.47	2.06	0.08	12-15
AS5860P(XX)-136	55.37	1.47	2.06	0.08	12-15
AS5860P(XX)-137	56.97	1.47	2.06	0.08	12-15
AS5860P(XX)-138	58.55	1.47	2.06	0.08	12-15
AS5860P(XX)-139	60.15	1.47	2.06	0.08	12-15

Table 2A - Male (piston) applications - backup ring dimensions in millimeters and degrees (continued)

Part No.	Gauge ID ±0.03	T ±0.05	W ±0.03	G ±0.08	A Degrees
AS5860P(XX)-210	19.51	1.58	2.82	0.08	19-22
AS5860P(XX)-211	21.08	1.58	2.82	0.08	19-22
AS5860P(XX)-212	22.68	1.58	2.82	0.08	19-22
AS5860P(XX)-213	24.26	1.58	2.82	0.08	19-22
AS5860P(XX)-214	25.86	1.58	2.82	0.08	19-22
AS5860P(XX)-215	27.43	1.58	2.82	0.08	19-22
AS5860P(XX)-216	29.03	1.58	2.82	0.08	19-22
AS5860P(XX)-217	30.61	1.58	2.82	0.08	19-22
AS5860P(XX)-218	32.21	1.58	2.82	0.08	19-22
AS5860P(XX)-219	33.81	1.58	2.82	0.08	19-22
AS5860P(XX)-220	35.43	1.58	2.82	0.08	19-22
AS5860P(XX)-221	37.01	1.58	2.82	0.08	19-22
	Gauge OD ±0.03				
AS5860P(XX)-222	44.22	1.58	2.82	0.08	19-22
AS5860P(XX)-223	47.42	1.58	2.82	0.08	12-15
AS5860P(XX)-224	50.60	1.58	2.82	0.08	12-15
AS5860P(XX)-225	53.80	1.58	2.82	0.08	12-15
AS5860P(XX)-226	56.97	1.58	2.82	0.08	12-15
AS5860P(XX)-227	60.15	1.58	2.82	0.08	12-15
AS5860P(XX)-228	63.32	1.58	2.82	0.08	12-15
AS5860P(XX)-229	66.50	1.58	2.82	0.08	12-15
AS5860P(XX)-230	69.67	1.58	2.82	0.08	12-15

Table 2A - Male (piston) applications - backup ring dimensions in millimeters and degrees (continued)

Part No.	Gauge OD ±0.03	T ±0.05	W ±0.03	G ±0.09	A Degrees
AS5860P(XX)-325	47.42	2.24	4.34	0.09	19-22
AS5860P(XX)-326	50.60	2.24	4.34	0.09	19-22
AS5860P(XX)-327	53.80	2.24	4.34	0.09	19-22
AS5860P(XX)-328	56.97	2.24	4.34	0.09	19-22
AS5860P(XX)-329	60.15	2.24	4.34	0.09	19-22
AS5860P(XX)-330	63.35	2.24	4.34	0.09	19-22
AS5860P(XX)-331	66.55	2.24	4.34	0.09	19-22
AS5860P(XX)-332	69.77	2.24	4.34	0.09	19-22
AS5860P(XX)-333	72.97	2.24	4.34	0.09	19-22
AS5860P(XX)-334	76.02	2.24	4.34	0.09	12-15
AS5860P(XX)-335	79.20	2.24	4.34	0.09	12-15
AS5860P(XX)-336	82.37	2.24	4.34	0.09	12-15
AS5860P(XX)-337	85.55	2.24	4.34	0.09	12-15
AS5860P(XX)-338	88.72	2.24	4.34	0.09	12-15
AS5860P(XX)-339	91.90	2.24	4.34	0.09	12-15
AS5860P(XX)-340	95.07	2.24	4.34	0.09	12-15
AS5860P(XX)-341	98.25	2.24	4.34	0.09	12-15
AS5860P(XX)-342	101.45	2.24	4.34	0.09	12-15
AS5860P(XX)-343	104.65	2.24	4.34	0.09	12-15
AS5860P(XX)-344	107.87	2.24	4.34	0.09	12-15
AS5860P(XX)-345	111.07	2.24	4.34	0.09	12-15
AS5860P(XX)-346	114.30	2.24	4.34	0.09	12-15
AS5860P(XX)-347	117.50	2.24	4.34	0.09	12-15
AS5860P(XX)-348	120.73	2.24	4.34	0.09	12-15
AS5860P(XX)-349	123.93	2.24	4.34	0.09	12-15

Table 2A - Male (piston) applications - backup ring dimensions in millimeters and degrees (continued)

Part No.	Gauge OD ±0.03	T ±0.05	W ±0.03	G ±0.10	A Degrees
AS5860P(XX)-425	126.34	3.25	5.74	0.10	12-15
AS5860P(XX)-426	129.52	3.25	5.74	0.10	12-15
AS5860P(XX)-427	132.69	3.25	5.74	0.10	12-15
AS5860P(XX)-428	135.87	3.25	5.74	0.10	12-15
AS5860P(XX)-429	139.04	3.25	5.74	0.10	12-15
AS5860P(XX)-430	142.22	3.25	5.74	0.10	12-15
AS5860P(XX)-431	145.39	3.25	5.74	0.10	12-15
AS5860P(XX)-432	148.57	3.25	5.74	0.10	12-15
AS5860P(XX)-433	151.77	3.25	5.74	0.10	12-15
AS5860P(XX)-434	155.00	3.25	5.74	0.10	12-15
AS5860P(XX)-435	158.19	3.25	5.74	0.10	12-15
AS5860P(XX)-436	161.42	3.25	5.74	0.10	12-15
AS5860P(XX)-437	164.62	3.25	5.74	0.10	12-15

SAENORM.COM : Click to view the full PDF of AS5860C

Table 2B - Female (rod) applications - backup ring dimensions in millimeters and degrees

Part No.	Gauge ID ±0.03	T ±0.05	W ±0.03	G ±0.06	A Degrees
AS5860R(XX)-004	1.93	1.37	1.35	0.06	35-39
AS5860R(XX)-005	2.74	1.37	1.35	0.06	32-36
AS5860R(XX)-006	3.12	1.37	1.35	0.06	29-33
AS5860R(XX)-007	3.91	1.37	1.35	0.06	24-27
AS5860R(XX)-008	4.70	1.37	1.35	0.06	19-22
AS5860R(XX)-009	5.51	1.37	1.35	0.06	19-22
AS5860R(XX)-010	6.30	1.37	1.35	0.06	19-22
AS5860R(XX)-011	7.87	1.37	1.35	0.06	19-22
AS5860R(XX)-012	9.47	1.37	1.35	0.06	19-22
AS5860R(XX)-013	11.05	1.37	1.35	0.06	19-22
AS5860R(XX)-014	12.65	1.37	1.35	0.06	19-22
AS5860R(XX)-015	14.22	1.37	1.35	0.06	19-22
AS5860R(XX)-016	15.82	1.37	1.35	0.06	19-22
AS5860R(XX)-017	17.40	1.37	1.35	0.06	19-22
AS5860R(XX)-018	19.00	1.37	1.35	0.06	19-22
AS5860R(XX)-019	20.57	1.37	1.35	0.06	19-22
AS5860R(XX)-020	22.17	1.37	1.35	0.06	19-22
AS5860R(XX)-021	23.75	1.37	1.35	0.06	19-22
AS5860R(XX)-022	25.35	1.37	1.35	0.06	19-22
AS5860R(XX)-023	26.92	1.37	1.35	0.06	19-22
AS5860R(XX)-024	28.52	1.37	1.35	0.06	19-22
AS5860R(XX)-025	30.10	1.37	1.35	0.06	19-22
AS5860R(XX)-026	31.70	1.37	1.35	0.06	19-22
AS5860R(XX)-027	33.30	1.37	1.35	0.06	19-22
AS5860R(XX)-028	34.90	1.37	1.35	0.06	19-22

Table 2B - Female (rod) applications - backup ring dimensions in millimeters and degrees (continued)

Part No.	Gauge ID ±0.03	T ±0.05	W ±0.03	G ±0.08	A Degrees
AS5860R(XX)-104	3.12	1.47	2.06	0.08	31-35
AS5860R(XX)-105	3.91	1.47	2.06	0.08	26-29
AS5860R(XX)-106	4.70	1.47	2.06	0.08	23-26
AS5860R(XX)-107	5.51	1.47	2.06	0.08	19-22
AS5860R(XX)-108	6.30	1.47	2.06	0.08	19-22
AS5860R(XX)-109	7.87	1.47	2.06	0.08	19-22
AS5860R(XX)-110	9.47	1.47		0.08	19-22
AS5860R(XX)-111	11.05	1.47	2.06	0.08	19-22
AS5860R(XX)-112	12.65	1.47	2.06	0.08	19-22
AS5860R(XX)-113	14.22	1.47	2.06	0.08	19-22
AS5860R(XX)-114	15.82	1.47	2.06	0.08	19-22
AS5860R(XX)-115	17.40	1.47	2.06	0.08	19-22
AS5860R(XX)-116	19.00	1.47	2.06	0.08	19-22
AS5860R(XX)-117	20.57	1.47	2.06	0.08	19-22
AS5860R(XX)-118	22.17	1.47	2.06	0.08	19-22
AS5860R(XX)-119	23.75	1.47	2.06	0.08	19-22
AS5860R(XX)-120	25.35	1.47	2.06	0.08	19-22
AS5860R(XX)-121	26.92	1.47	2.06	0.08	19-22
AS5860R(XX)-122	28.52	1.47	2.06	0.08	19-22
AS5860R(XX)-123	30.10	1.47	2.06	0.08	19-22
AS5860R(XX)-124	31.70	1.47	2.06	0.08	19-22
AS5860R(XX)-125	33.30	1.47	2.06	0.08	19-22
AS5860R(XX)-126	34.90	1.47	2.06	0.08	19-22
AS5860R(XX)-127	36.50	1.47	2.06	0.08	19-22
AS5860R(XX)-128	38.13	1.47	2.06	0.08	19-22
AS5860R(XX)-129	39.70	1.47	2.06	0.08	19-22
AS5860R(XX)-130	41.33	1.47	2.06	0.08	19-22
AS5860R(XX)-131	42.90	1.47	2.06	0.08	19-22
AS5860R(XX)-132	44.53	1.47	2.06	0.08	19-22
AS5860R(XX)-133	46.13	1.47	2.06	0.08	19-22
AS5860R(XX)-134	47.73	1.47	2.06	0.08	19-22
AS5860R(XX)-135	49.35	1.47	2.06	0.08	19-22
AS5860R(XX)-136	50.93	1.47	2.06	0.08	19-22
AS5860R(XX)-137	52.55	1.47	2.06	0.08	19-22
AS5860R(XX)-138	53.92	1.47	2.06	0.08	12-15
AS5860R(XX)-139	55.52	1.47	2.06	0.08	12-15

Table 2B - Female (rod) applications - Dimensions in millimeters and degrees (continued)

Part No.	Gauge ID ±0.025	T ±0.051	W ±0.025	G ±0.076	A Degrees
AS5860R(XX)-210	19.00	1.58	2.85	0.08	19-22
AS5860R(XX)-211	20.57	1.58	2.85	0.08	19-22
AS5860R(XX)-212	22.17	1.58	2.85	0.08	19-22
AS5860R(XX)-213	23.75	1.58	2.85	0.08	19-22
AS5860R(XX)-214	25.35	1.58	2.85	0.08	19-22
AS5860R(XX)-215	26.92	1.58	2.85	0.08	19-22
AS5860R(XX)-216	28.52	1.58	2.85	0.08	19-22
AS5860R(XX)-217	30.10	1.58	2.85	0.08	19-22
AS5860R(XX)-218	31.70	1.58	2.85	0.08	19-22
AS5860R(XX)-219	33.27	1.58	2.85	0.08	19-22
AS5860R(XX)-220	34.87	1.58	2.85	0.08	19-22
AS5860R(XX)-221	36.45	1.58	2.85	0.08	19-22
AS5860R(XX)-222	38.08	1.58	2.85	0.08	19-22
AS5860R(XX)-223	41.22	1.58	2.85	0.08	12-15
AS5860R(XX)-224	44.40	1.58	2.85	0.08	12-15
AS5860R(XX)-225	47.57	1.58	2.85	0.08	12-15
AS5860R(XX)-226	50.75	1.58	2.85	0.08	12-15
AS5860R(XX)-227	53.92	1.58	2.85	0.08	12-15
AS5860R(XX)-228	57.10	1.58	2.85	0.08	12-15
AS5860R(XX)-229	60.27	1.58	2.85	0.08	12-15
AS5860R(XX)-230	63.45	1.58	2.85	0.08	12-15