SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

SAE AS1730C

Issued 1982-09
Reaffirmed 2007-08
Revised 2009-08

Superseding AS1730B

Coupling, Fuel, Rigid, Threaded Type

RATIONALE

This revision clarifies test schedules and sequences, adjusts bending strain based on a modulus of 9.9 x 10^6, and reduces total flexure cycles from 10 000 000 to 1 000 000.

1. SCOPE

This specification defines the requirements for a threaded rigid coupling assembly, which utilizes ferrule type machined tube end fittings, to join tubing and components in aircraft fuel, vent, and other systems. This coupling assembly is designed for use from -65 to 200 °F and at 125 psig operating pressure.

1.1 Classification

1.1.1 The coupling assemblies shall be of the following types:

a. Type I: without wrenching lugs

b. Type II: with wrenching lugs

2. 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 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.

AS567	Safety Cable, Safety Wire, Key Washers, and Cotter Pins for Propulsion Systems, General Practices for Use of
AS568	Aerospace Size Standard for O-rings
ARP1185	Flexure Testing of Hydraulic Tubing Joints and Fittings
AS1731	Coupling, Rigid, Fixed Cavity, Threaded Ferrule Type Tube Ends, Envelope Dimensions Design Standard

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

AS1732	Body, Coupling, Rigid, Fixed Cavity, Threaded, Ferrule Type Tube Ends, Type I
AS1733	Body, Coupling, Rigid, Fixed Cavity, Threaded, Ferrule Type Tube Ends, Type II
AS1734	Nut, Coupling, Rigid, Fixed Cavity, Threaded, Ferrule Type Tube Ends, Type I
AS1735	Nut, Coupling, Rigid, Fixed Cavity, Threaded, Ferrule Type Tube Ends, Type II
AS1736	Washer, Coupling, Rigid, Fixed Cavity, Threaded, Ferrule Type Tube Ends
AS1737	Ferrule, Coupling, Rigid, Fixed Cavity, Threaded, Ferrule Type Tube Ends
AS4060	Tube Fitting Swaged Joint, Roller Expander Manual Process, Requirements for
AS7003	Nadcap Program Requirements
ARP9013	Statistical Product Acceptance Requirements
AMS-WW-T-700/6	Tube, Aluminum Alloy, Drawn, Seamless, 6061

2.2 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/.

PPP-B-566	Boxes, Folding Paperboard
PPP-B-585	Boxes, Wood, Wirebound
PPP-B-676	Boxes, Set-Up
VV-P-236	Petrolatum, Technical
MIL-HDBK-831	PREPARATION OF TEST REPORTS
MIL-L-10547	Liners, Case and Sheet, Overwrap: Water-Vaporproof or Waterproof, Flexible
MIL-PRF-680	Performance Specification Degreasing Solvent
MIL-PRF-7024	Performance Specification Calibration Fluids, Aircraft Fuel System Components
MIL-R-25988/1	Rubber, Fluorosilicone Elastomer, Oil and Fuel-Resistant, O-Rings, Class 1, Grade 70
MIL-STD-129	Military Marking for Shipment and Storage
MIL-STD-130	Identification Marking of U.S. Military Property
MIL-STD-810	Environmental Engineering Considerations and Laboratory Tests
MIL-STD-889	Dissimilar Metals
FED-STD-H28/2	Screw Thread Standards for Federal Services Section 2: Unified Inch Screw Threads - UN and UNR Thread Forms

A-A-669 Box, Shelf, Stationary Storage (Cancelled; no superseding document)

A-A-2807 Box, File (Cancelled; no superseding document)

2.3 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B 117 Standard Practice for Operating Salt Spray (Fog) Apparatus

ASTM D 1974 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes

ASTM D 5118/D 5118M Standard Practice for Fabrication of Fiberboard Shipping Boxes

ASTM D 5486/D 5486M Standard Specification for Pressure Sensitive Tape for Packaging, Box Closure, and Sealing

ASTM D 6210 Standard Specification for Fully-Formulated Propylene Glycol-Base Engine Coolant for Heavy-Duty Engines

ASTM D 6251/D 6251M Standard Specification for Wood Cleated Panelboard Shipping Boxes

2.4 PRI Publications

Available from Performance Review Institute, 161 Thorn Hill Road, Warrendale, PA 15086-7527, Tel: 724-772-1616, www.pri-network.org.

AC7112 National Aerospace and Defense Contractors Accreditation Program Requirements for Fluid System Components

AC7112/3 NADCAP Audit Criteria for Couplings and Formed Sheet Metal Products

PD2001 Qualified Product Management Council Procedures for Qualified Products Group

PD2101 Aerospace Quality Assurance, Product Standard, Qualification Procedures, Fluid Systems

2.5 ANSI Publications

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

ANSI/ASQ Z1.4 Sampling Procedures and Tables for Inspection by Attributes

3. REQUIREMENTS

3.1 Qualification

Coupling assemblies supplied in accordance with this procurement specification shall be manufactured by the same processes used to manufacture the couplings which have been subjected to and which have successfully passed the qualification tests specified herein.

3.1.1 Manufacturer Qualification

A manufacturer producing a product in conformance to this procurement specification shall be accredited in accordance with the requirements of PD2101, AS7003, AC7112 and AC7112/3, and shall be listed in a Performance Review Institute (PRI) Qualified Manufacturers List (QML).

3.1.2 Product Qualification

All products shall conform to the requirements of this procurement specification and shall be approved in accordance with the requirements of PD2001 and PD2101 for listing in a Performance Review Institute (PRI) Qualified Parts List (QPL).

3.1.3 Retention of Qualification

The manufacturer shall certify in intervals not exceeding two years that the products listed in PRI-QPL-AS1730 are still available from the listed plant. The manufacturer shall forward his certification letter to PRI for approval. PRI shall confirm retention of qualification.

3.2 Materials and Finishes

Materials and finishes for the components shall be those designated on standards and drawings. All materials and finishes shall be uniform in quality, free from defects, suitable for the purpose intended and consistent with good manufacturing practices.

3.2.1 Dissimilar Materials

Materials shall possess adequate corrosion-resistance characteristics or shall be suitably protected by the use of finishes to resist corrosion which may result from such conditions as dissimilar metal combinations, moisture, salt spray, and high-temperature deterioration. Dissimilar materials are defined by MIL-STD-889.

3.3 Design and Construction

The coupling assembly shall be a lightweight rigid connection for fuel, vent, and other system lines using the basic principles of O-ring sealing. It shall be designed for use at 125 psig operating pressure and at temperatures ranging from -65 to 200 °F. Types shall be in accordance with 1.1.1.

3.3.1 Coupling Components

The coupling assembly shall consist of the following components as shown in Table 1.

TABLE 1 - COUPLING ASSEMBLY

Type I - Without Wrenching Lugs	Type II - With Wrenching Lugs
One Body - AS1732 /1/	One Body - AS1733 /1/
One Ferrule - AS1737 /1/	One Ferrule - AS1737 /1/
One Nut - AS1734	One Nut - AS1735
One Washer - AS1736	One Washer - AS1736
One O-ring Seal /2/	One O-ring Seal /2/

/1/ Components attached to tubing by roller swaging.
/2/ Not part of assembly. Supplied by user.

3.3.2 Threads

Threads shall be in accordance with Federal Standard FED-STD-H28/2.

3.3.3 Seals

MIL-R-25988/1 O-ring seals with sizes in accordance with AS568 shall be used for all test specimens. O-rings are not considered a part of this specification except for coupling qualification test requirements. O-ring sizes for the couplings are given in Table 2.

TABLE 2 - PHYSICAL REQUIREMENTS

Coupling Size (Ref)	Tube Size (Ref) inches	Negative Operating Pressure In Hg	Positive Operating Pressure psig	Negative Proof Pressure in Hg	Positive Proof Pressure psig	Minimum Burst Pressure psig	AS568 O-ring Dash No. (Ref)
04	.250	24	125	28	250	375	-012
05	.312	24	125	28	250	375	-013
06	.375	24	125	28	250	375	-014
08	.500	24	125	28	250	375	-016
10	.625	24	125	28	250	375	-018
12	.750	24	125	28	250	375	-020
16	1.000	24	125	28	250	375	-024
20	1.250	24	125	28	250	375	-028
24	1.500	24	125	28	250	375	-030
28	1.750	24	125	28	250	375	-032
32	2.000	24	125	28	250	375	-034
36	2.250	10	125	12	250	375	-036
40	2.500	10	125	12	250	375	-038
44	2.750	10	125	12	250	375	-040
48	3.000	10	125	12	250	375	-042
56	3.500	10	125	12	250	375	-044
64	4.000	10	125	12	250	375	-046
72	4.500	10	125	12	250	375	-048
80	5.000	10	125	12	250	375	-050

3.4 Dimensions

The coupling assembly envelope dimensions shall be as specified in AS1731. Part dimensions shall be specified in applicable part standards.

3.4.1 Coupling Weight

The coupling assembly and components nominal weights are listed on the applicable standard or drawing.

3.5 Performance

The coupling assembly shall meet the following performance requirements.

3.5.1 Proof Pressure

The coupling assembly shall meet the negative and positive proof pressures listed in Table 2. A decrease in negative pressure exceeding .5 inches Hg within 5 minutes, any visible leakage when pressurized for a minimum of 5 minutes or evidence of any malfunction or yielding shall be cause for rejection. Testing is specified in 4.6.2.

3.5.2 Repeated Assembly

The coupling assemblies shall show no evidence of permanent deformation, damage, or material degradation and shall withstand, without evidence of leaking (sufficient to form a drop), the proof pressure requirements of 3.5.1 after 100 repeated assembly operations. Testing is specified in 4.6.3.

3.5.3 Salt Fog

The coupling assembly shall show no evidence of excessive corrosion, peeling, chipping, or blistering of the finish or exposure of base metal and shall meet the electrical resistance requirement of 3.5.6 and the proof pressure requirements of 3.5.1 after being exposed to salt fog for 168 hours. Test method is specified in 4.6.4.

3.5.4 Rotary Flexure

The coupling assembly shall meet the electrical resistance requirement of 3.5.6 and proof pressure requirements of 3.5.1 after being subjected to 1 000 000 planar or rotary flexure cycles. Half of the flexure cycles shall be conducted at room temperature. The remaining flexure cycles shall be equally divided between flexure testing at 200 °F and -65 °F. Specimen lengths and deflections shall be in accordance with Tables 3 and 4. Testing is specified in 4.6.5.

3.5.5 Burst

The coupling assembly shall not rupture nor show evidence of leakage (sufficient to form a drop) at any pressure up to the Table 2 burst pressures. Testing is specified in 4.6.6.

3.5.6 Electrical Bonding

The electrical resistance of the coupling when measured from tube-to-tube shall not exceed 1.0 Ω at any time. Testing is specified in 4.6.7.

3.6 Identification of Product

Coupling assemblies and parts shall be marked for identification in accordance with the applicable standard or drawing and with applicable parts of MIL-STD-130.

3.7 Cleaning

The coupling assemblies as supplied shall be free of oil, grease, dirt or any other foreign material both internally and externally.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection and test requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to PRI for the performance of the inspection and test requirements. PRI reserves the right to witness any of the inspections and tests set forth in the specification, where such inspections and tests are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.2 Classification of Inspections

The examining and testing of assemblies shall be classified as:

a. Qualification inspections (see 4.3)

b. Quality conformance inspections (see 4.4)

4.3 Qualification Inspections

4.3.1 Qualification Test Specimens

Test specimens shall be in accordance with Figures 1 or 2 and Table 3. The number of specimens are specified in 4.3.2. Tubing for fabrication of the test specimens shall be 6061-T4 in accordance with AMS-WW-T-700/6 with wall thickness as shown in Table 4. Attachment of ferrule and body to tubing shall be in accordance with AS4060.

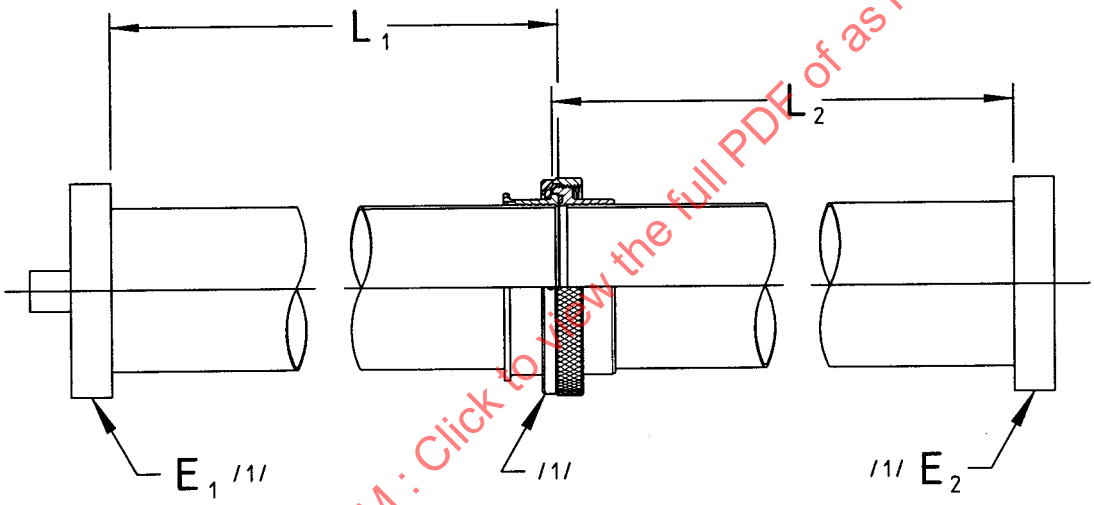

FIGURE 1 - TEST SPECIMEN CONFIGURATION

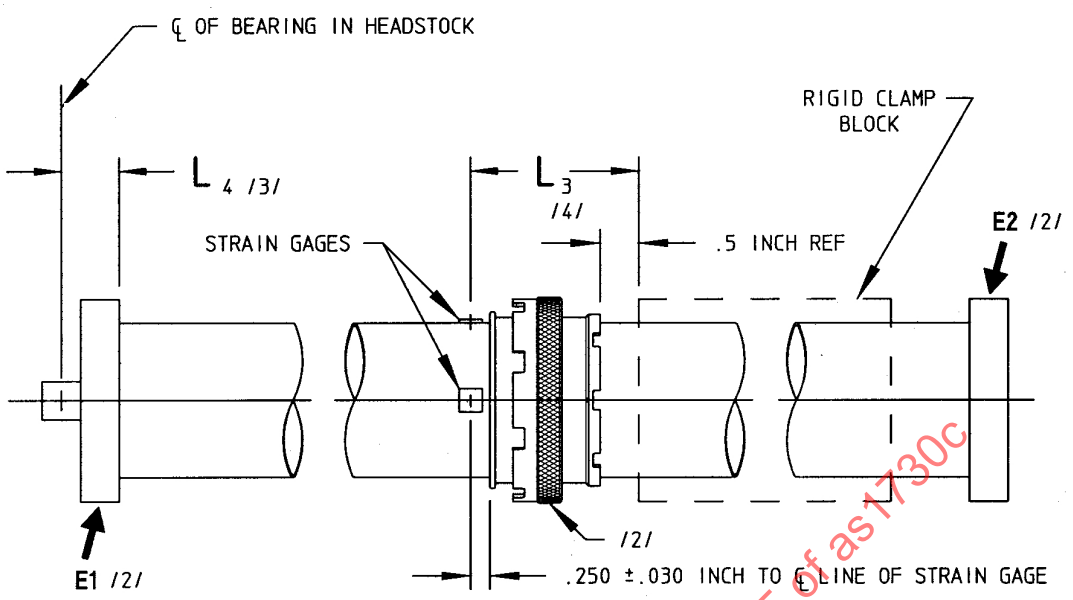

FIGURE 2 - FLEXURE TEST SPECIMEN CONFIGURATION

TABLE 3 - TEST SPECIMEN LENGTHS AND END FITTING CONFIGURATIONS

Coupling Size	Specimens				
	1, 2, 5, & 6 /1/		3 & 4 /2/		
	L1 inches ± .2	L2 inches ± .2	L1 inches ± .060	L2 inches ± .2	L4 /3/ inches ± .2
04	6	6			
05	6	6			
06	6	6	8.0	9	2.3
08	6	6			
10	6	6			
12	6	6	10.1	9	2.3
16	6	6	13.2	9	2.3
20	9	9			
24	9	9			
28	9	9			
32	9	9	16.8	9	2.4
36	9	9			
40	9	9			
44	9	9			
48	9	9	19.5	9	2.3
56	12	12			
64	12	12	23.7	9	2.3
72	12	12			
80	12	12	27.8	9	2.5

/1/ Specimens 1, 2, 5 and 6 shall use Type I components. E1 and E2 specimen ends shall be compatible with the test requirements and shall otherwise be at the discretion of the supplier.

/2/ Specimens 3 and 4 shall use Type II components. The E1, and E2 specimen ends shall be compatible with the test requirements and shall otherwise be at the discretion of the supplier.

/3/ The L4 length of E1 includes the length of an AS1733 type II body and a 1.7 inch adapter that connects the AS1733 end to the Figure 3 headstock. The E1 specimen end shall be compatible with the test requirements and shall otherwise be at the discretion of the supplier.

/4/ Dimension L3 is defined on Table 4.

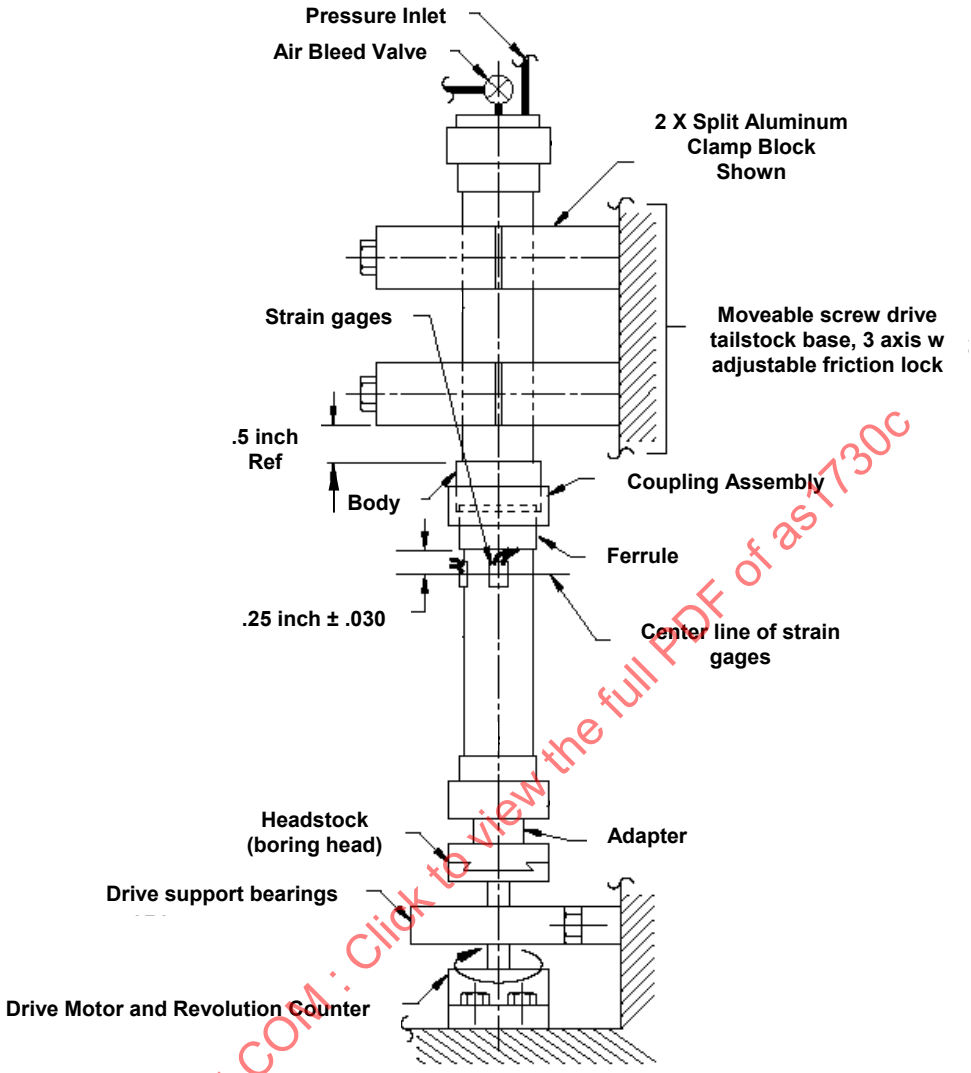

FIGURE 3 - TYPICAL ROTARY FLEXURE TEST SCHEMATIC

TABLE 4 - ASSEMBLY TORQUE AND FLEXURE TEST REQUIREMENTS

Coupling Size (Ref)	Tube Diameter inches	Tube Wall Thickness /1/ inches	Type II Coupling Tightening Torque inch-lb	L3 - Distance from the Clamp Block to the Strain Gage Center Line inches ± .030	Bending Stress in Tube at Clamp Block /2/ psi Ref	Bending Stress in Tube at Strain Gage /2/ psi Min	Bending Strain at Strain Gage Min /4/ μ inch/inch
04	.250	.028	20- 30	-	-	-	-
05	.312	.028	25- 35	-	-	-	-
06	.375	.028	30- 40	2.01	3200	2600	262.6
08	.500	.028	40- 50	-	-	-	-
10	.625	.028	50- 65	-	-	-	-
12	.750	.028	60- 84	2.03	3200	2700	272.7
16	1.000	.035	84-120	2.03	3200	2800	282.8
20	1.250	.035	120-156	-	-	-	-
24	1.500	.049	180-216	-	-	-	-
28	1.750	.049	204-240	-	-	-	-
32	2.000	.049	240-276	2.18	3200	2850	287.9
36	2.250	.058 /3/	264-300	-	-	-	-
40	2.500	.058 /3/	288-324	-	-	-	-
44	2.750	.058 /3/	312-360	-	-	-	-
48	3.000	.058 /3/	360-396	2.13	3200	2900	292.9
56	3.500	.058 /3/	432-468	-	-	-	-
64	4.000	.065	504-540	2.12	3200	2950	298.0
72	4.500	.065	576-612	-	-	-	-
80	5.000	.065	648-684	2.45	3200	2950	298.0

/1/ Aluminum drawn tubing 6061-T4 in accordance with AMS-WW-T-700/6.

/2/ The tube stress at the clamp is difficult to measure due to variable and asymmetric clamping superimposed on the bending load. The required bending stress at the clamp is developed by achieving the strain at the L3 position of the strain gage.

/3/ Substitution of tubing with .065 wall thickness is acceptable if .058 wall thickness tubing is unavailable. Bending strain will remain the same.

/4/ Strain values were adjusted because of a modulus change to 9.9×10^6 instead of 10×10^6.

4.3.2 Test Schedule and Sequence

4.3.2.1 Sizes 06, 12, 16, 32, 48, 64, and 80

Four test specimens for each of the coupling sizes 06, 12, 16, 32, 48, 64, and 80 shall be subjected to test sequences as shown in Table 5A. Test specimens 1 and 2 shall be Type I coupling assemblies and specimens 3 and 4 shall be Type II coupling assemblies. MIL-R-25988/1 O-rings shall be used on all test specimens.

TABLE 5A - TEST SCHEDULE AND SEQUENCE

Order of Tests		TEST SPECIMEN NUMBER			
		1	2	3	4
1	Test Para-graphs	4.6.1	4.6.1	4.6.1	4.6.1
2		4.6.7	4.6.7	4.6.7	4.6.7
3		4.6.2	4.6.2	4.6.2	4.6.2
4		4.6.3	4.6.3	4.6.5	4.6.5
5		4.6.4	4.6.4	4.6.2	4.6.2
6		4.6.2	4.6.2	4.6.7	4.6.7
7		4.6.7	4.6.7	4.6.6	
8		4.6.6			

4.3.2.2 Sizes 04, 05, 08, 10, 20, 24, 28, 36, 40, 44, 56, and 72

Two test specimens for each of the coupling sizes 04, 05, 08, 10, 20, 24, 28, 36, 40, 44, 56, and 72 shall be subjected to test sequences as shown in Table 5B. Type I coupling assemblies shall be used. MIL-R-25988/1 O-rings shall be used on all test specimens.

TABLE 5B - TEST SCHEDULE AND SEQUENCE

Order of Tests		TEST SPECIMEN NUMBER	
		5	6
1	Test Para-graphs	4.6.1	4.6.1
2		4.6.7	4.6.7
3		4.6.3	4.6.3
4		4.6.2	4.6.2
5		4.6.6	4.6.6

4.3.3 Test Report, Test Samples and Data in Support of PRI QPL Listing

The following data shall be furnished to PRI by the supplier:

a. Test Report: One digital copy or three written copies of a test report in accordance with MIL-HDBK-831, which shall include a report of all tests and an outline description of the tests and conditions. As a minimum, the below information shall be included in the report:

1. The place of testing.

2. The date of testing.

3. The identification of the test technician or engineer responsible for the observing and recording of the measured or observed data.

4. An identification serial number of each test sample with the description of the test samples traceable to design drawings, and revisions, the material and processing records and the production inspection records for the samples.

5. The identification of the test or measuring equipment and the next date of calibration of instruments or measuring equipment used for determination of quantitative data.

6. The ambient temperature of the testing location.

7. The temperature of the test sample or the immediate area around the test sample during testing if other than ambient temperature.

8. The type of fluid used in testing if applicable.

9. Actual measured quantitative data shall be recorded. Any revisions or deletions shall be done by crossing out the original data, not erasing it, so that it is still legible. Revisions or deletions should be signed and dated by the person making the changes. Calculated data shall be presented with the formula used for calculation and with the identification of all terms.

10. Photographs of test equipment and examples of tested samples shall be included if applicable.

11. The identification of the agency responsible for the test report with the name or title and address of a point of contact person or persons who can provide technical information or answer questions concerning the testing and the report.

b. Test Samples: Samples subjected to qualification testing shall not be shipped as part of a contract or order and shall be retained for at least 3 years after the manufacturer is listed in PRI QPL.

c. Drawings: One set of assembly and subassembly drawings shall be provided with each test report. The assembly drawings shall have a cutaway section showing all details in their normal assembly position and shall carry part numbers of all details and subassemblies.

4.3.4 Qualification Inspection Methods

Qualification inspection methods shall consist of all the examinations and tests specified under 4.6.

4.4 Quality Conformance Inspections

Quality conformance inspections shall be in accordance with ARP9013 and applicable slash sheet(s) with an acceptance number zero.

NOTE: ARP9013 allows for the use of a variety of statistical methods for product acceptance, including ANSI/ASQ Z1.4, Squeglia C=0 tables, continuous sampling for lot size = 1 applications, and SPC, each with appropriate controls as documented in the various ARP9013 slash-numbered documents.

4.4.1 Impact Classes

Impact classification and the required Initial Reliability Requirement (IRR) are defined in Table 6.

TABLE 6 - IMPACT CLASSIFICATION AND REQUIRED IRR

Class	Minimum IRR	Impact
Major	98%	Likely to result in failure or to reduce materially the usability of the part for its intended purpose
Minor A	95%	May have a slight affect on usability
Minor B	92%	Essentially no affect on usability

4.4.2 Sample Sizes for Isolated Lots

Sample sizes for isolated lots shall be in accordance with Tables 7A, 7B or 7C as required by the aspect classifications of Table 8.

TABLE 7A - 98% IRR SAMPLE SIZES

Lot Size up to 25	All
26 - 52	25
53 - 57	26
58 - 63	27
64 - 74	28
75 - 104	29
105 - 126	30
127 - 181	31
182 - 303	32
304 - 693	33
694 or Larger	34

TABLE 7B - 95% IRR SAMPLE SIZES

Lot Size up to 10	All
11 - 22	10
23 - 33	11
34 - 80	12
81 - 4371	13
4372 or Larger	14

TABLE 7C - 92% IRR SAMPLE SIZES

Lot Size up to 6	All
7 - 12	6
13 - 32	7
33 or Larger	8

4.4.3 Classification of Aspects

Classification of dimensional aspects shall be in accordance with Table 8.

TABLE 8 - CLASSIFICATION OF ASPECTS

Part	Class	Aspects /1/
Body AS1732, AS1733	Major 98% IRR	B Dia, H Dim, K Dim, S Dim, T Thread
	Minor A 95% IRR	D Dia, M Dim, W Depth, X Dim
	Minor B 92% IRR	Remainder
Nut Assembly AS1734, AS1735	Major 98% IRR	D Dia, T Thread
	Minor A 95% IRR	C Dia
	Minor B 92% IRR	Remainder
Washer AS1736	Major 98% IRR	C Dim
	Minor A 95% IRR	A Dia
	Minor B 92% IRR	B Thickness
Ferrule AS1737	Major 98% IRR	A Dia, K Depth
	Minor A 95% IRR	E Dia
	Minor B 92% IRR	Remainder

/1/ See applicable standard page for dimensions.

4.4.4 Rejection and Retest

Where one or more items selected from a lot fails to meet the specification, all items in the lot shall be inspected.

4.4.4.1 Resubmitted Lots

Once a lot (or part of a lot) has been rejected, before it can be resubmitted for tests, full particulars concerning the cause of the rejection and the action taken to correct the defect(s) in the lot shall be submitted, in writing, to PRI.

4.5 Test Conditions

4.5.1 Assembly of Test Specimens

For flexure testing, Type II coupling assemblies shall be tightened to applicable torque values tabulated in Table 4. Additional lockwire may be used if necessary to prevent tube rotation during flexure testing. For all other tests, Type I coupling assemblies shall be hand tight. Lockwire all coupling assemblies in accordance with AS567. An additional antirotation device may be used, if necessary, to prevent tube rotation during flexure testing as long as it does not affect strain values. O-ring and threads shall be lubricated with VV-P-236 petrolatum, USP Grade or equivalent.

4.5.2 Test Fluids

Test fluids shall be propylene glycol in accordance with ASTM D 6210 or equivalent, mixed in a 65% or greater solution with deionized water, or Stoddard solvent per MIL-PRF-680 or MIL-PRF-7024.

4.5.3 Pressure Measurements

Unless otherwise specified, positive pressure measurements shall have a tolerance of +20, -0 psi. Negative pressures shall be equal to or greater than specified value.

4.5.4 Temperature Measurements

Unless otherwise specified, the test specimens and fluid shall be maintained within ±5 °F. Ambient temperature measurements shall be taken within 6 in of the specimen.

4.5.5 Test Setup

Test setups shall be in accordance with Figures 1, 2, 3, and 4. Deviations from these setups require approval of PRI prior to the start of testing.

4.6 Inspection Methods

4.6.1 Examination of Product

Each assembly or part shall be visually and dimensionally inspected to determine compliance with the applicable standard or drawing with respect to material, size, workmanship, and IRR level specified in Table 8. Inspection reports shall be provided if requested by PRI.

4.6.2 Proof Pressure Test

Test specimens 1 through 6 shall be subjected to the Table 2 positive and negative proof pressure as specified or in conjunction with other tests.