



# AEROSPACE STANDARD

AS1895™

REV. E

Issued	1985-12
Reaffirmed	2007-08
Revised	2020-03

Superseding AS1895D

(R) Coupling Assembly, V-Retainer, High Pressure  
High Temperature, Pneumatic Tube

## RATIONALE

AS1895/1, /4, /7, /20, /22, and /23 have QPL requirements manufacturers are having difficulty qualifying as the specification is written. The seal (/7 and /23) test requirements were interpreted differently for the seal manufacturers and the QPG. The specification needs to define the way to qualify the seals and clarify coupling qualification. The bolt callout in the procurement spec and the coupling parts standards versus the AS4108 spec needs to be consistent. Define rotational movement for the torsional moment tests and allow equivalent axial plug load test for ATP.

### 1. SCOPE

1.1 This SAE Aerospace Standard establishes the requirements for a V-retainer coupling, flanges, and seal suitable for joining high pressure and high temperature ducting in aircraft bleed air systems. The rigid coupling joint assembly, hereafter referred to as "the joint," shall operate within the temperature range of -65 to +1200 °F.

#### 1.2 Types

The joint shall be classified into two basic flange profiles:

##### 1.2.1 Type I

Standard Profile - Per AS24563 Type 2 (1.50 to 7.50 inch duct size), AS1895/12, and AS1895/13

##### 1.2.2 Type II

Low Profile - Per AS24563 Type 1 (1.00 to 7.50 inch duct size), AS1895/14, and AS1895/15

### 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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<https://www.sae.org/standards/content/AS1895E/>

### 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](http://www.sae.org).

- AIR869 V-Couplings, Including V-Band and V-Retainer Coupling Assemblies, Flange and Seal Design, Application of
- ARP699 High Temperature Pneumatic Duct Systems for Aircraft
- AS478 Identification Marking Methods
- AS4108 T-Bolt and Eye Bolt, A-286 CRES, 1000 °F Fatigue Rated
- AS8879 Screw Threads - UNJ Profile, Inch Controlled Radius Root with Increased Minor Diameter
- AS24563 Flange Profiles, V-Coupling, Design Standard

### 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](http://www.asme.org).

- ASME Y14.100 Engineering Drawing Practices

### 2.1.3 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](http://www.astm.org).

- ASTM D3951 Standard Practice for Commercial Packaging

### 2.1.4 AWS Publications

Available from American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33166-6672, Tel: 1-800-443-9353 or 305-443-9353, [www.aws.org](http://www.aws.org).

- AWS D17.1 Specification for Fusion Welding for Aerospace Applications
- AWS D17.2 Specification for Resistance Welding for Aerospace Applications

### 2.1.5 NAS Publications

Available from Aerospace Industries Association, 1000 Wilson Boulevard, Suite 1700, Arlington, VA 22209-3928, Tel: 703-358-1000, [www.aia-aerospace.org](http://www.aia-aerospace.org).

- NASM7873 Nut, Self-Locking, 1200 °F

## 2.1.6 PRI Publications

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

PD1100	NADCAP Program Requirements
PD2001	Qualified Product Management Council Procedures for Qualified Products Group
PD2101	Aerospace Quality Assurance, Product Standards, Qualification Procedure, Fluid Systems
AC7112	Fluid Systems Manufactures Audit Criteria

## 2.1.7 U.S. Government Publications

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

MIL-STD-129	Military Marking for Shipment and Storage
MIL-STD-130	Identification Marking of U.S. Military Property

## 2.2 Definitions

### 2.2.1 OPERATING LOAD

The highest ambient temperature load per inch of circumference as defined in 3.5.2.1 due to the combined effects of pressure, bending, and axial loading. The operating load is calculated using the highest operating temperature, pressure, bending, and axial loading values corrected to an ambient temperature equivalent load using the temperature correction factors specified herein.

### 2.2.2 LIMIT LOAD

Limit load is two times operating load. Permanent deformation in excess of 0.2% residual strain of parts is not allowed except for dimensional increase across coupling retainer legs, and allowable leakage rate of air shall not exceed 0.06 SCFM per inch diameter.

### 2.2.3 ULTIMATE LOAD

Ultimate load is three times operating load. Allowable leakage of air may be exceeded, deformation of parts may occur, but the joint shall remain connected.

### 2.2.4 BREAK LOOSE TORQUE

The torque required to produce nut rotation from the seated condition.

### 2.2.5 BREAKAWAY TORQUE

The torque required to produce nut rotation in the unseated condition. Usually one full turn minimum from the seated condition.

### 2.2.6 RUNNING TORQUE

Sometimes called prevailing torque, is the torque required to produce continuous nut rotation. This torque is used to measure nut drag caused by the self-locking device.

### 2.2.7 MAXIMUM SELF-LOCKING TORQUE

The maximum acceptable running torque value (40 lb-in).