



AEROSPACE STANDARD

AS5355™**REV. C**

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Superseding AS5355B

Couplings, Clamp, Grooved, V-Band

RATIONALE

This technical report is being stabilized because it covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

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**Documents**

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1. SCOPE

1.1 This SAE Aerospace Standard (AS) establishes the requirements for a V-band grooved clamp couplings that are intended for use on fluid-line tubing joints, tailpipe joints, and accessory mount joints, on flight vehicles or other attachments. The semi-rigid coupling joint assemblies, hereafter referred to as “the joint”, shall operate within the temperature ranges specified in their applicable part standards.

1.2 Types

The coupling shall be classified as single or double latch couplings:

1.2.1 Single Latch Couplings

Type B - Basic T-bolt (Bolt)

Type R - Quick release (Release)

Type BL - Basic T-bolt with secondary safety latch (Bolt-Latch)

Type RL - Quick release with secondary safety latch (Release-Latch)

1.2.2 Double Latch Coupling (-21 minimum size)

Type BR - Basic T-bolt and quick release (Bolt-Release)

Type BRL - Basic T-bolt and quick release with secondary safety latches (Bolt-Release-Latch)

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.

AMS 2700	Passivation of Corrosion Resistant Steels
AMS 5731	Steel, Corrosion and Heat Resistant, Bars, Wire, Forgings, Tubing, and Rings 15Cr 25.5Ni 1.2Mo 2.1Ti 0.006B 0.30V, Consumable Electrode Melted, 1800°F (982°C) Solution Heat Treated
AMS 5732	Steel, Corrosion and Heat Resistant, Bars, Wire, Forgings, Tubing, and Rings 15Cr 25.5Ni 1.2Mo 2.1Ti 0.006B 0.30V, Consumable Electrode Melted, 1800°F (982°C) Solution and Precipitation Heat Treated
AMS 5737	Steel, Corrosion and Heat Resistant, Bars, Wire, Forgings, and Tubing 15Cr 25.5Ni 1.2Mo 2.1Ti 0.006B 0.30V, Consumable Electrode Melted, 1650°F (899°C), Solution and Precipitation Heat Treated
AMS-W-6858	Welding, Resistance: Spot and Seam
AS478	Identification Marking Methods
AS7479	Bolts and Screws, Steel, UNS S66286, 1650 °F Solution Heat Treated, Precipitation Heat Treated Before Roll Threaded
AS7003	Nadcap Program Requirements
AS7112	National Aerospace and Defense Contractors Accreditation Program (NADCAP) Requirements for Fluid System Components
AS24563	Flange Profiles, V-Coupling, Design Standard

2.2 ANSI Publications

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

ASME B46.1	Surface Texture (Surface Roughness, Waviness and Lay)
ANSI/ASQ Z1.4	Sampling Procedures and Tables for Inspection by Attributes

2.3 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-810	Environmental Test Methods
MIL- HDBK-831	Preparation of Test Reports

2.4 American Welding Society Publications

Available from American Welding Society, 550 NW LeJeune Road, Miami, FL 33126, Tel: 1-800-443-9353, www.aws.org

AWS D17.1	Specification for Fusion Welding for Aerospace Applications
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2.5 PRI Publications

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

PD2001 Qualified Product Management Council Procedures for Qualified Products Group

PD2101 Aerospace Quality Assurance, Product Standards, Qualification Procedure, Fluid Systems

3. TECHNICAL REQUIREMENTS

3.1 Qualification

Couplings supplied in accordance with this document shall be representative of products which have been subjected to and which have successfully passed the qualification tests specified in this standard.

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 and AS7112, 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). When this procurement specification is specified on design activity controlled drawings, the approved source(s) of supply shall be defined by the design activity.

3.2 Materials

The joint component materials shall be uniform in quality, free from defects, suitable for service, consistent with good manufacturing practices, and in conformance with the applicable specifications and requirements stated herein.

3.2.1 Metals

Metals shall be corrosion-resistant steel and passivated in accordance with AS2700 to resist corrosion in fuels, water-alcohol, salt spray, or atmospheric conditions to which the coupling shall be subjected when in storage or during normal service use. Materials shall not be used that are known to be highly susceptible to stress corrosion. V-band couplings shall be made of high-yield corrosion-resistant steel alloy, except that free machining steel shall not be used.

3.3 Design

The coupling shall be designed to conform to the various sizes, types, temperatures, and loads in accordance with applicable AS standard drawing. The flanges shall be in accordance with AS24563, Type 2.

The coupling shall consist of the following components:

- a. Latching member or members.
- b. Retaining member or members.

The latch of the quick-release type (Type R) shall be positive locking but easily released when the nut is backed off. All component parts of the quick-release couplings shall remain as an assembly during installation or removal. The basic T-bolt latches (Type B) may require removal of latch components such as the nut. Type L latches shall provide a secondary safety latch to preclude complete separation of the mated flanges in the event of failure of the primary T-bolt or nut.