



AEROSPACE STANDARD

AS5072™**REV. D**

Issued	1996-11
Revised	2002-05
Reaffirmed	2013-01
Stabilized	2026-02

Superseding AS5072C

Coupling Assemblies, Non-Locking Probe Style, Miniature
Self-Aligning, Self-Sealing Disconnects

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:

This SAE Aerospace Standard (AS) establishes the general requirements for a miniature probe type self-sealing, self-aligning, non-locking coupling intended for aerospace liquid cooling systems. The AS5072/slash sheets define the specific performance and dimensional requirements.

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, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

ARP868	Method - Pressure Drop Test for Fuel System Components
AS4251	Coupling Assemblies, Non-Locking Probe Style, Self-Aligning, Self-Sealing Disconnects
AS5072/1	Coupling Assemblies, .375 in Diameter, Non-Locking Probe Style, Miniature Self-Aligning, Self-Sealing Disconnect for Ethylene/Glycol/Water
AS5072/2	Coupling Assemblies, .375 in Diameter, Non-Locking Probe Style, Miniature Self-Aligning, Self-Sealing Disconnect for Polyalphaolefin
AS5072/3	Coupling Assemblies, .420 in Diameter, Non-Locking Probe Style, Miniature Self-Aligning, Self-Sealing Disconnect for Polyalphaolefin
AS8775	Hydraulic System Components, Aircraft and Missile Systems, General Specification for

2.2 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-HDBK-5400 Electrical Equipment, Aircraft, General Specifications for

MIL-STD-810 Environmental Test Methods

3. GENERAL REQUIREMENTS:

3.1 Qualification:

The couplings furnished under this document shall be a product which has been tested and has passed the qualification tests specified herein and approved by the procuring agency or prime contractor.

3.2 General Specification:

3.3 Materials:

The coupling shall be constructed of materials that will not change the composition of or be adversely affected by specific fluids. Materials, processes, and parts shall meet the requirements of MIL-E-5400 and this document. Fluids and material compatibility tests shall be conducted by the supplier to demonstrate the satisfactory performance of the couplings.

3.4 Design and Construction:

The configuration, dimensions, and other design details of the couplings shall conform to the appropriate slash sheets unless stated in a procurement control drawing.

The coupling shall contain radial, axial, and angular misalignment provisions in either or both halves as required (see Figure 1). When coupled, the coupling shall be designed so that it will permit fluid flow in either direction in accordance with the rated flow and pressure drop specified. Flow shall not be blocked under surge conditions. A thermal relief valve shall be incorporated in the module half.

3.4.1 Temperature Range: Couplings shall be designed to operate throughout the temperature range in accordance with the appropriate slash sheets.

3.4.2 Sealing and Fluid Loss: When disconnected, the couplings shall seal the end of the disconnected lines at the point of disconnection and shall not permit external leakage during any phase of connection or disconnection. Fluid loss (spillage) as specified on the slash sheet is not considered to be external leakage.

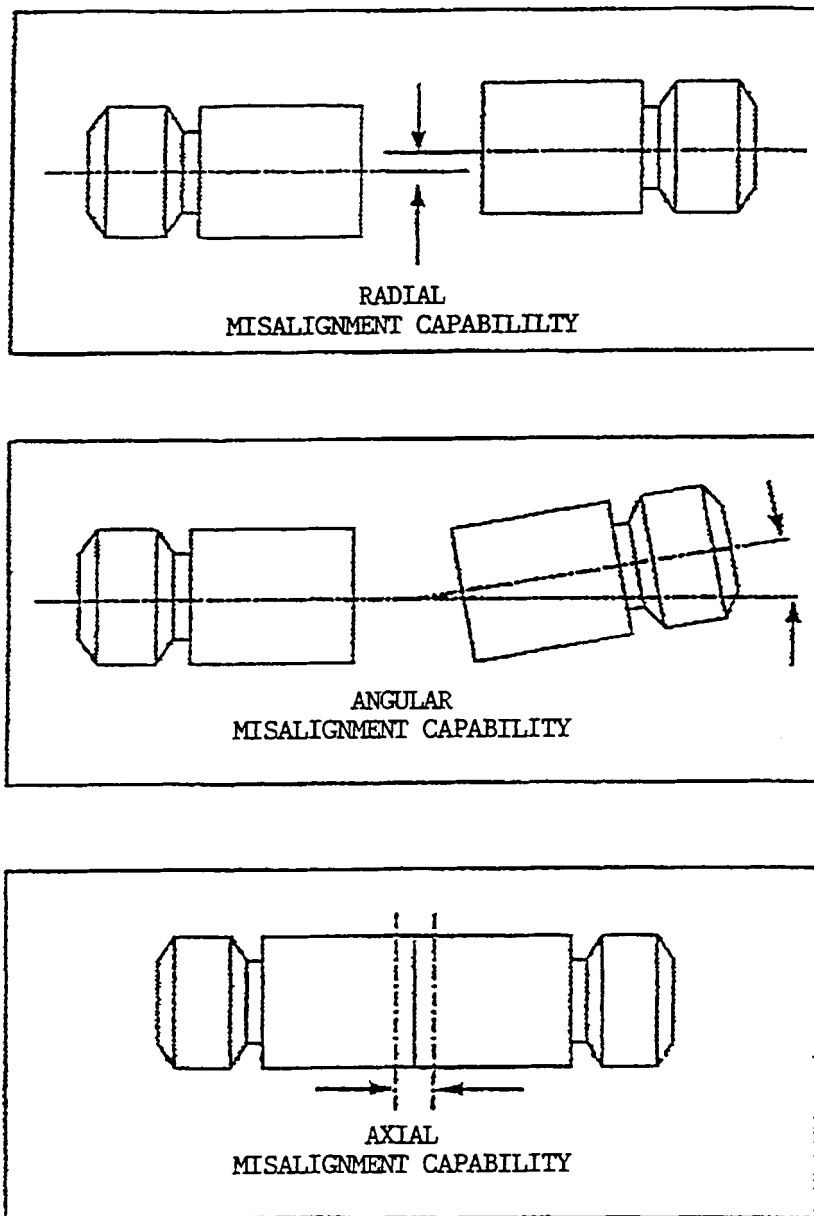


FIGURE 1 - Misalignment Capabilities

3.4.3 Seals: Packing and retainer materials shall be compatible with the fluid listed on the appropriate slash sheets. The supplier shall perform material compatibility tests to demonstrate satisfactory performance of the coupling.

3.4.4 Operation: The couplings shall be designed so that they can be connected and disconnected while mounted in their respective manifolds or fixtures. It shall be possible to connect and disconnect with an internal pressure, as shown in the applicable slash sheet, applied to both halves and to each half respectively.

3.5 Interchangeability:

It shall be impossible to interconnect different line sizes. Coupling halves of the same part number shall be interchangeable and cross-couple all reference mating halves of the same manufacturer.

3.6 Performance:

The miniature self-sealing couplings furnished under the slash sheet shall perform satisfactorily to the following performance requirements.

3.6.1 Envelope, Weight Materials: Each coupling half must conform to applicable slash sheet and/or supplier envelope dimensions, weight control, materials, and finishes.

3.6.2 Proof Pressure: Each coupling half must meet operational and leakage requirements after being subjected to proof pressure test of 4.6.2.

3.6.3 Extreme Temperature Functioning: Each coupling half shall show no malfunctioning or leakage during or after being cycled through extreme temperature.

3.6.4 Leakage:

3.6.4.1 Low Pressure: The connected coupling and the disconnected halves shall be capable of withstanding an internal pressure equal to a 30 in head of fluid for 12 min. There shall be no leakage from the connected coupling. Leakage from the disconnected halves shall not exceed one drop in 10 min, after a 2 min waiting period.

3.6.4.2 High Pressure: The connected coupling and the disconnected halves shall be capable of withstanding an internal pressure equal to the applicable rated pressure (as specified on the applicable slash sheet) for 15 min. There shall be no leakage from the connected coupling. Leakage from the disconnected halves shall not exceed a trace (insufficient to form a drop). Fluid loss (spillage), as specified in the applicable slash sheet, is not considered to be external leakage.