

FED. SUPPLY CLASS

4720

1.0 SCOPE

This specification establishes the requirements for a coupling for use with low pressure, low and medium high temperature, air ducts.

1.1 Types. Couplings shall be of two types as follows:

Type I – 450 °F, NAS520
Type II – 250 °F, NAS521

1.2 Sizes. Couplings shall be of the sizes specified on the applicable NAS drawing.

2.0 APPLICABLE DOCUMENTS

2.1 Publications. The following publications of the issue in effect on the date of invitation for bids shall form a part of this specification to the extent specified herein:

2.1.1 Governmental Specifications

MIL-STD-810 Environmental Test Methods and Engineering Guidelines
MIL-PRF-5606 Hydraulic Fluid, Petroleum Base: Aircraft, Missile and Ordnance
MIL-DTL-5624 Turbine Fuel, Aviation, Grades JP-4, JP-5
MIL-PRF-6083 Hydraulic Fluid, Petroleum Base, for Preservation and Operation
MIL-PRF-6085 Lubricating Oil: Instrument, Aircraft, Low Volatility
MIL-PRF-83282 Hydraulic Fluid, Fire Resistant, Synthetic Base: Aircraft, Metric

Copies of Federal and Military Standards and Specifications can be obtained from the Department of Defense Single Stock Point (DODSSP) <http://dodssp.daps.dla.mil>.

2.1.2 Non-governmental Specifications

AS5131 Tubing End, Hose Connection, Standard Dimensions For
AS5132 Fitting End, Hose Connection, Standard Dimensions For
ASTM D 910 Standard Specification For Aviation Gasolines
ASTM D 4060 Standard Test Method For Abrasion Resistance Of Organic Coatings by the Taber Abraser
ASTM D 471 Standard Test Fluids, Hydrocarbon
NAS520 Coupling – Flexible, Low Pressure 450° Air Line
NAS521 Coupling – Flexible, Low Pressure 250° Air Line
NAS1924 Clamp, Hose

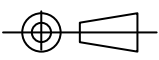
Copies of AS standards can be obtained from SAE International, 400 Commonwealth Dr., Warrendale, PA 15096-0001 www.sae.org

Copies of ASTM standards can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959 USA www.astm.org

Copies of NAS standards can be obtained from the Aerospace Industries Association, 1000 Wilson Blvd., Suite 1700, Arlington, VA 22209 www.aia-aerospace.org

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REVISION
2

PROCUREMENT
SPECIFICATION

TITLE

②

CLASSIFICATION
SPECIFICATION

NONE

COUPLING, FLEXIBLE, LOW PRESSURE AIR LINE



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3.0 REQUIREMENTS

3.1 Material, Workmanship and Marking

3.1.1 Material. The material used shall be uniform in quality and free from defects and shall be suitable for the purpose intended.

3.1.2 Workmanship. Couplings shall be made in conformance with aircraft quality manufacturing practices.

3.1.3 Marking. Parts shall be legibly and permanently identified along the longitudinal axis with the basic NAS drawing number, first dash number, date of manufacture and the manufacturer's trademark.

3.2 Detail Requirements

3.2.1 Design and Construction

3.2.2 The entire coupling shall easily slip over fitting ends of corresponding sizes in accordance with AS5132 and AS5131.

3.2.3 Weight of couplings shall not exceed .003 psi of external surface.

3.3 Physical Properties

3.3.1 Leakage. Couplings must withstand application of proof pressure specified in 4.6 and 4.7 without showing leakage in excess of .0015 CFM standard air per inch of coupling inside diameter or .005 CFM, whichever is greater. Couplings shall not rupture at burst pressure.

3.3.2 Temperature Resistance. At no time shall the coupling give off smoke, offensive odors, or toxic fumes when heated in accordance with the provisions of 4.6

3.3.3 Fungus Resistance. Materials used in construction shall be tested in accordance with 4.4 and shall not be fungi nutrients.

3.3.4 Fluid Splash Resistance. Couplings, when tested with the following fluids in accordance with 4.3 shall show no evidence of ply separation or excessive tackiness:

- (a) Standard Test Fluids, Hydrocarbons, ASTM D 471, Types I & II
- (b) Hydraulic Fluid, Petroleum base: Aircraft, Missile and Ordnance, MIL-PRF-5606
- (c) Hydraulic Fluid, Petroleum Base, for Preservation and Operation, MIL-PRF-6083
- (d) Hydraulic Fluid, Fire Resistant, Synthetic Base, Aircraft, Metric, MIL-PRF-83282
- (e) Industrial Methanol
- (f) Kerosene, Commercial
- (g) Turbine Fuel, Aviation Grades, JP-4, JP-5, & JP-5/JP-8 ST per MIL-DTL-5624
- (h) Aviation fuels per ASTM D 910
- (i) Lubricating Oil: Instrument, Low Volatility, MIL-PRF-6085
- (j) Tap Water

3.3.5 Vibration. Coupling shall not fail when subjected to the vibration test specified in 4.8.

3.3.6 Abrasion. Couplings shall withstand the abrasion test in 4.9 without a through break in the coupling wall.

4.0 QUALITY ASSURANCE PROVISIONS

4.1 General. All tests specified herein shall be accomplished by the coupling manufacturer.

4.2 All couplings shall be examined carefully to insure conformance with the requirements of this specification with respect to materials, workmanship, size, construction and marking.

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