AEROSPACE STANDARD

MA2001 (ISO 6771)	REV. B

Issued 1981-07
Revised 1993-06
Reaffirmed 2015-08

Aerospace Fluid Systems and Components - Pressure and Temperature Classifications

RATIONALE

MA2001B has been reaffirmed to comply with the SAE five-year review policy.

FOREWORD

Aerospace fluid systems and components are generally designed and marked for a specific fluid pressure and temperature type. The operating pressures listed are selected from ISO 2944 as far as practical.

1. SCOPE AND FIELD OF APPLICATION:

This document establishes the temperature types and pressure classes that are commonly used in aerospace fluid systems.

2. REFERENCES:

2.1 U.S. Government Publications:

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

ISO 2944 Fluid Power Systems and Components-Nominal Pressures

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3. TEMPERATURE CLASSIFICATIONS:

System operating temperature ranges shall be classified as follows (see Table 1):

TABLE 1 - Temperature Type (°C)

TYPE I	-55 to 70
TYPE II	-55 to 135
TYPE III	-55 to 200
TYPE IV	-55 to 320
TYPE V	-55 to 400
TYPE VI	-55 to 650

4. NOMINAL PRESSURE CLASSIFICATIONS:

Nominal pressures shall be classified as follows (see Table 2):

TABLE 2 - Nominal Pressure Classes [kPa (bar)]

CLASS A	4000 kPa	(40 bar)
CLASS B	10500 kPa	(105 bar)
CLASS H	14000 kPa	(140 bar)
CLASS C	17500 kPa	(175 bar)
CLASS D	21000 kPa	(210 bar)
CLASS E	28000 kPa	(280 bar)
CLASS J	35000 kPa	(350 bar)
CLASS F	42000 kPa	(420 bar)
CLASS G	50000 kPa	(500 bar)
CLASS K	56000 kPa	(560 bar)

APPENDIX A
ISO/DIS 6771 AEROSPACE SYSTEM PRESSURES AND TEMPERATURES

A.1 ASSIGNMENT:

At the fifth meeting of ISO/TC 20/SC 10 in Paris in October 1976, the U.S. agreed to prepare a standard for fluid system pressures and temperatures.

A.2 BACKGROUND:

Initially, the proposal was discussed under a proposed specification for fittings (SC 10 - N.53, N.93). In accordance with SC 10 resolution No. 33, the subject proposal was then drafted as a separate document (SC 10 - N.203) because of its applicability to other areas.

Revision A changed the nominal pressure classes 10 000 and 20 000 kPa to 10 500 and 21 000 kPa respectively. The 10 000 and 20 000 kPa classes follow the ISO 2944 Renard Series for nominal pressures but would require redesign and changes to the currently used 1500 and 3000 psi hydraulic system components if they were to be used in metric systems. Revision A limits the changes to the fittings of the 1500 and 3000 psi components, and will avoid changes to wall thicknesses, bore dimensions, etc., allowing such components to be used in metric systems.

Revision B revises classes C and F similar to B and D of Revision A. It also adds 14 000, 35 000 and 56 000 kPa classes, accomodating through 8000 psi operating and all combinations for return pressures at a 1:2 ratio.

A.3 ACCEPTED STANDARDS, NATIONAL, INTERNATIONAL:

The temperature ranges are fairly common to European and U.S. aircraft fluid systems specifications. The pressure ranges proposed in the referenced documents are selected from ISO 2944, pr EN2245 (AECMA) and MIL-H-5540 (U.S.).