



AEROSPACE STANDARD

AS603

REV. B

Issued 2004-09
Revised 2009-02
Reaffirmed 2015-06

Superseding AS603A

Impulse Testing of Hydraulic Hose, Tubing, and Fitting Assemblies

RATIONALE

AS603B has been reaffirmed to comply with the SAE five-year review policy.

1. SCO

This SAE Aerospace Standard (AS) establishes the requirements and procedures for impulse testing of hose, tubing, and fitting assemblies for use in aerospace hydraulic systems of 8000 psi nominal operating pressure or less. It also refers to standard impulse test equipment to be used in conducting these impulse tests.

2. REFERENC

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.

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 724-776-4970 (outside USA), www.sae.org.

AIR1228 Standard Impulse Machine Equipment and Operation

MA2002 Impulse Testing of Hydraulic Hose, Tubing and Fitting Assemblies

2.1.2 U.S. Government Publications

Available from the Document Automation and Production Service (DAPS), Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Tel: 215-697-6257, <http://assist.daps.dla.mil/quicksearch/>.

MIL-PRF-7808 Lubrication, Oil Aircraft Turbine Engine, Synthetic Base

MIL-PRF-83282 Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, Aircraft, NATO Code Number H-537

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2.1.3 ISO Publications

Available from International Organization for Standardization, 1, rue de Varembe, Case postale 56, CH-1211 Geneva 20, Switzerland, Tel: +41-22-749-011, www.iso.org.

ISO 6772 Aerospace Fluid Systems, Impulse Testing of Hydraulic Hose, Tubing, Fitting Assemblies

2.1.4 ASME Publications

Available from American Society of Mechanical Engineers, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900, Tel:973-882-1170, www.asme.org.

ASME Y14.38 Abbreviation For the Use On Drawings and Text

3. REQUIREMEN

3.1 Shape of the Impulse Trace

When observed on an oscilloscope, the impulse traces show as approximate pressure-time cycles. It is mandatory that these pressure-time curves be confined to the shaded area indicated in Figure 1, and that the dynamic impulse trace produced by the test machine shall be in conformance with the trace illustrated in Figure 1.

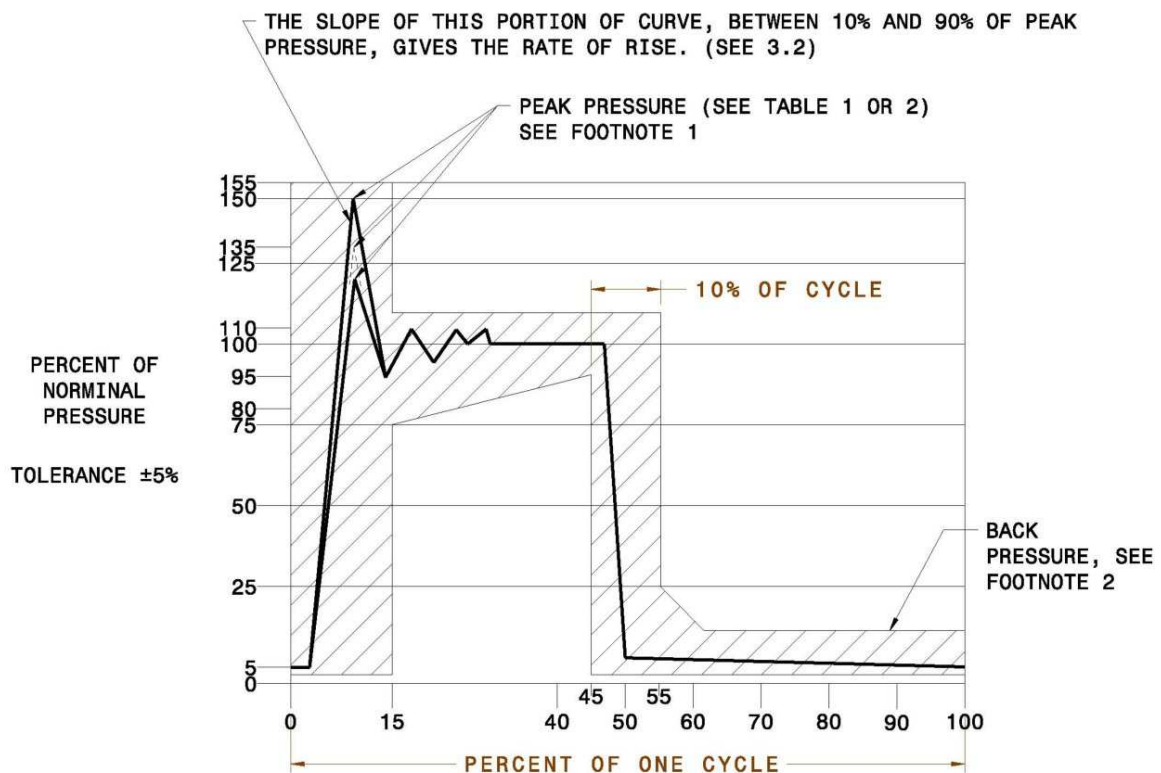


FIGURE 1 - IMPULSE TRACE

Key

1. Only one pressure peak is allowed above 110% of operating pressure and it must be within the first 15% of cycle
2. Percentage of nominal pressure $\pm 5\%$
3. The slope of this portion of curve, between 10% and 90% of peak pressure, gives the rate of rise (see 2.2)
4. Peak pressure (see Table 1 or 2)
5. Back pressure in pressure classes B, D, E: (345 ± 170) kPa / (50 ± 25) psi.
6. Back pressure in pressure classes J, K: (700 ± 350) kPa / (100 ± 50) psi