SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

SAE AS603B

Issued 2004-09
Revised 2009-02

Superseding AS603A

Impulse Testing of Hydraulic Hose, Tubing, and Fitting Assemblies

RATIONALE

A coordinated revision with ISO 6772

1. SCOPE

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. REFERENCES

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

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2009 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
http://www.sae.org

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AS603B

Copyright SAE International
Provided by IHS under license with SAE
No reproduction or networking permitted without license from IHS

Not for Resale

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. REQUIREMENTS

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.

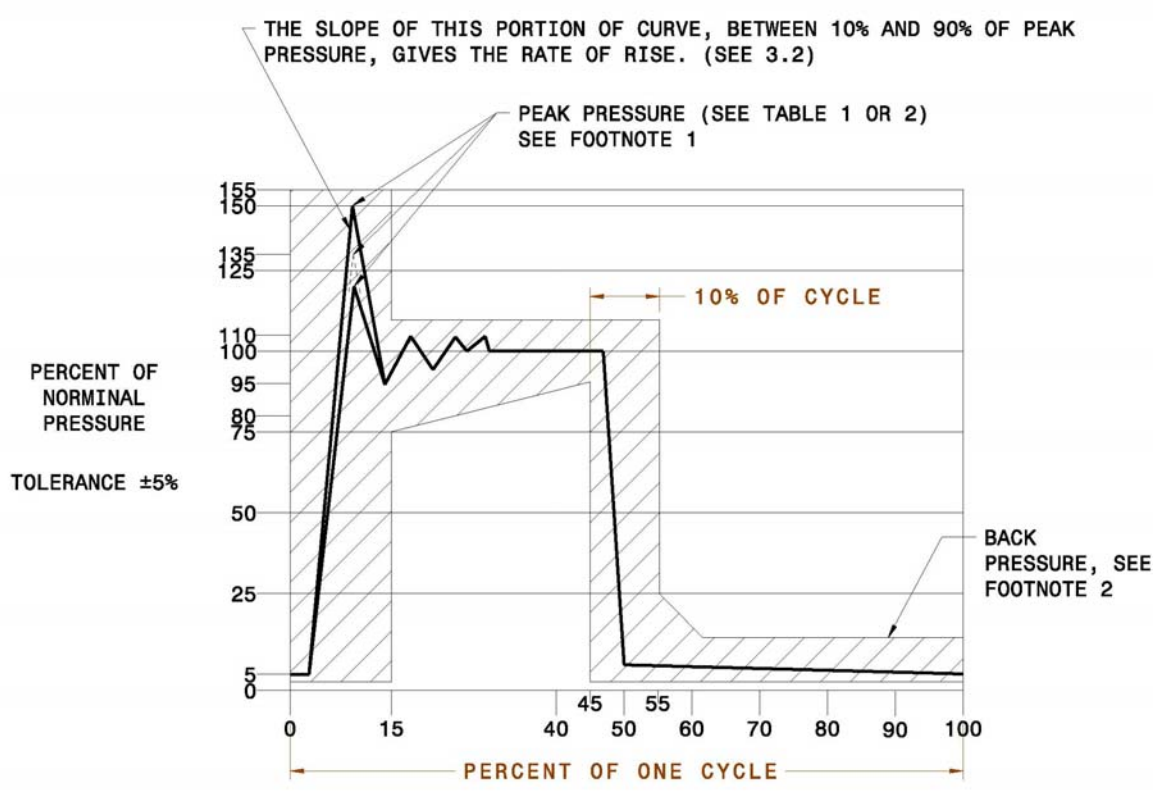

FIGURE 1 - IMPULSE TRACE

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 ± 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

Copyright SAE International
Provided by IHS under license with SAE
No reproduction or networking permitted without license from IHS Not for Resale