



AEROSPACE STANDARD

AS5467™

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General Requirements for Hydraulic Fuse - Flow Rate

RATIONALE

Currently, there is no standard for hydraulic fuses that close when sensing excessive flow rate, although these devices are used in aerospace hydraulic systems. This document has been written to provide a standard to address this need.

AS5467 has been reaffirmed to comply with the SAE Five-Year Review policy.

TABLE OF CONTENTS

1.	SCOPE.....	3
1.1	Product Classification.....	3
1.1.1	Types.....	3
1.1.2	Classes.....	3
2.	REFERENCES.....	3
2.1	Applicable Documents	3
2.1.1	SAE Publications.....	3
2.1.2	U.S. Government Publications	4
2.1.3	Other Documents	4
2.2	Definitions.....	4
3.	REQUIREMENTS	4
3.1	General Design Requirements.....	4
3.1.1	Standard Hydraulic Component Requirements.....	4
3.1.2	Hydraulic Fluid.....	4
3.1.3	Identification and Marking	5
3.2	Specific Design Requirements	5
3.2.1	Functional.....	5
3.2.2	Performance.....	5
3.2.3	Physical	7
3.2.4	Structural	7
3.2.5	Environmental	8
4.	QUALITY ASSURANCE PROVISIONS	8
4.1	General.....	8
4.1.1	Test Requirements and Options	8
4.1.2	Classification of Tests	8
4.2	Acceptance Tests.....	8
4.2.1	Examination of Product	8
4.2.2	Proof Pressure Test	8
4.2.3	Pressure Drop Test.....	9
4.2.4	Internal Leakage Test	9
4.2.5	Minimum Flow Test.....	9

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Documents

Document Sharing Hub

4.2.6	Reset Test.....	9
4.2.7	Closing Time Test	9
4.2.8	Manual Bypass Test.....	9
4.3	Qualification Tests.....	10
4.3.1	Qualification Unit Inspection.....	10
4.3.2	Qualification Unit Functional Check	10
4.3.3	Weight	10
4.3.4	Extended Minimum Flow Test	10
4.3.5	Temperature Test.....	10
4.3.6	Operating Attitude Test	11
4.3.7	Endurance Test	11
4.3.8	Pressure Impulse Test	11
4.3.9	Altitude	11
4.3.10	Mechanical Shock	11
4.3.11	Vibration	11
4.3.12	Icing.....	12
4.3.13	Rain	12
4.3.14	Humidity	12
4.3.15	Fungus	12
4.3.16	Salt Spray.....	12
4.3.17	Sand and Dust.....	12
4.3.18	Burst Pressure Test	12
5.	PREPARATION FOR DELIVERY	12
6.	NOTES	12
6.1	Revision Indicator	12
FIGURE 1	CLOSING FLOW REQUIREMENTS	6
FIGURE 2	TEST SETUP	9
TABLE 1	CLOSING FLOW RATES	6
TABLE 2	TEMPERATURE TEST TEMPERATURES AND PRESSURES	10

1. SCOPE

This specification establishes the design, performance, and test requirements for hydraulic flow rate fuses intended to be used for hydraulic circuit protection on aircraft.

1.1 Product Classification

1.1.1 Types

- Type 1 Self-Resetting without manual bypass
- Type 2 Self-Resetting with manual bypass
- Type 3 Non Self-Resetting

1.1.2 Classes

- Class 1500 1500 psi (10345 kPa) nominal system pressure
- Class 3000 3000 psi (20690 kPa) nominal system pressure
- Class 4000 4000 psi (27580 kPa) nominal system pressure
- Class 5000 5000 psi (34475 kPa) nominal system pressure

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 +1 724-776-4970 (outside USA), www.sae.org.

- AS1241 Fire Resistant Phosphate Ester Hydraulic Fluid for Aircraft
- ARP1383 Aerospace - Impulse Testing of Hydraulic Components
- ARP4386 Terminology and Definitions for Aerospace Fluid Power, Actuation and Control Technologies
- AS4716 Gland Design, O-ring and Other Elastomeric Seals
- AS4941 Aerospace - General Requirements for Commercial Aircraft Hydraulic Components
- AS5857 Gland Design, O-ring and Other Elastomeric Seals, Static Applications
- AS8775 Hydraulic System Components, Aircraft and Missiles, General Specification For

2.1.2 U.S. Government Publications

Copies of these documents are available online at <http://quicksearch.dla.mil>.

MIL-PRF-5606	Hydraulic Fluid, Petroleum Base, Aircraft and Ordnance
MIL-PRF-83282	Hydraulic Fluid, Fire Resistant; Synthetic Hydrocarbon Base, Aircraft and Missile
MIL-PRF-87257	Hydraulic Fluid, Fire Resistant; Low Temperature Synthetic Hydrocarbon Base, Aircraft and Missile
MIL-STD-810	Environmental Test Methods and Engineering Guidelines

2.1.3 Other Documents

Available from RTCA, Inc., 1150 18th Street, NW, Suite 910, Washington, DC 20036, Tel: 202-833-9339, www.rtca.org.

RTCA/DO-160	Environmental Conditions and Test Procedures for Airborne Equipment
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2.2 Definitions

HYDRAULIC FLOW RATE FUSE: A Flow Rate Hydraulic Fuse is a hydraulic component that will only permit up to a defined flow rate of fluid through it in a single operation. If this defined flow rate of fluid passes through the fuse, it will close, thereby isolating the pipeline downstream of it.

NOTE: Hydraulic Flow Rate Fuses are sometimes referred to as Velocity Fuses.

RATED FLOW: The rated flow of the fuse is the minimum flow rate passing through the fuse above 40 °F before it closes. This is flow rate "B" in Figure 1.

RESETTING: This is the means of opening the fuse after it has closed to permit the fuse to be used again. Resetting can be either automatic (self-resetting) or manual via a mechanical lever.

NORMAL OPERATION: The normal operation of the fuse occurs when fluid passes through the fuse at 80% of flow rate "B" of Figure 1 (see 3.2.2.2).

FULL FUSING CYCLE: A full fusing cycle occurs when fluid passes through the fuse at flow rate "C" of Figure 1 and Table 1 (see 3.2.2.2) until the fuse shuts off the flow then allowing the fuse to reset by either reducing the delta pressure to zero (Types 1 and 2 only) or passing fluid through the fuse in the reverse direction.

For other definitions and terms refer to ARP4386.

3. REQUIREMENTS

3.1 General Design Requirements

3.1.1 Standard Hydraulic Component Requirements

The fuse shall meet the requirements of AS4941 for commercial applications or AS8775 for military applications.

3.1.2 Hydraulic Fluid

The applicable standard for the hydraulic fluid, for example, AS1241, MIL-PRF-5606, MIL-PRF-83282, or MIL-PRF-87257 shall be specified by the procuring agency.