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Aerospace series — Hydraulic filter elements — Test methods —

Part 5: Resistance to flow fatigue

*Série aérospatiale — Éléments filtrants hydrauliques — Méthode
d'essais —*

Partie 5: Résistance aux variations cycliques de débit



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Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Graphic symbols and circuit diagrams	2
5 Test equipment and supplies	2
6 Accuracy of measurements and test conditions	4
7 Test procedure	4
8 Acceptance criteria	6
9 Data presentation	6
10 Identification statement	6
Annex A (informative) Flow fatigue test data report form	7

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 10, *Aerospace fluid systems and components*.

ISO 14085 consists of the following parts, under the general title *Aerospace series — Hydraulic Filter elements — Test methods*:

- *Part 1: Test sequence*
- *Part 2: Conditioning*
- *Part 3: Filtration efficiency and retention capacity*
- *Part 4: Verification of collapse/burst pressure rating*
- *Part 5: Resistance to flow fatigue*
- *Part 6: Cleanliness Level*

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Introduction

In aerospace hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure. The liquid is both a lubricant and power-transmitting medium. The presence of solid contaminant particles in the liquid interferes with the ability of the hydraulic fluid to lubricate and causes wear and malfunction of the components. The extent of contamination in the fluid has a direct bearing in the performance, reliability, and safety of the system, and needs to be controlled to levels that are considered appropriate for the system concerned.

Different principles are used to control the contamination level of the fluid by removing solid contaminant particles; one of them uses a filter element enclosed in a filter housing. The filter element is the porous device that performs the actual process of filtration. The complete assembly is designated as a filter.

The effectiveness of the filter element in controlling contaminants is dependent on its design and its sensitivity to any dynamic operating conditions that may stress the filter element and cause damage to it, especially as it becomes clogged and the differential pressure rises.

This part of ISO 14085 provides a procedure to determine the ability of a filter element, under increasing differential pressures, to withstand dynamic operating conditions by evaluating its remaining integrity and performance after being subjected to cyclic flow variations.