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Aerospace series — Hydraulic filter elements — Test methods —

Part 2:
Conditioning

Série aérospatiale — Eléments filtrants hydrauliques — Méthode d'essais —

Partie 2: Vieillissement accéléré

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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: Initial cleanliness level*

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 on 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.

Filter elements are designed to withstand a range of thermal stresses, such as low and high temperature extremes, and system demands at low temperature (cold starts) whereby hydraulic fluid passes through the element at a greatly increased viscosity. These thermal stresses test both the chemical and thermal stability of the filter element. These cold starts test the ability of the filter element to withstand the high differential pressures and potential weakness at low temperatures without subsequent loss of integrity or performance.

These stresses will be encountered within the lifetime of any filter element fitted in an aerospace hydraulic system. It is, therefore, necessary to check that having been subjected to such conditions; the filter element continues to provide adequate filtration, while also maintaining structural integrity.

This part of ISO 14085 provides a procedure by which to introduce such thermal stresses and to condition a filter element prior to any subsequent qualification testing. This enables the purchaser of the filter element to be secure in the knowledge that the product will withstand such thermal stresses in addition to other qualification requirements without failure.