

Impact of changes in ISO fluid power particle counting — Contamination control and filter test standards

ICS 23.100.60

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Summary of pages

This document comprises a front cover, an inside front cover, the ISO/TR title page, pages ii to iv, pages 1 to 11 and a back cover.

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This British Standard, having been prepared under the direction of the Engineering Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 April 2000

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ISBN 0 580 34655 2

Amendments issued since publication

Amd. No.	Date	Comments

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*Conséquences des changements survenus dans les normes ISO relatives
au comptage des particules — Contrôle de la contamination et essais de
filtres*



Reference number
ISO/TR 16386:1999(E)

Foreword

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ISO/TR 16386 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 6, *Contamination control and hydraulic fluids*.

This Technical Report has been prepared as an information document to give users an understanding into the background and implications of a number of new and revised contamination control standards, ISO 11171, ISO 11943, ISO 16889 and ISO 4406:1999.

Introduction

The adoption of four revised and updated contamination control standards, ISO 11171, ISO 11943, ISO 16889, and ISO 4406:1999, has produced significant changes in terms of how solid contamination levels and filter performance are reported. With ISO 11171, the AC Fine Test Dust (ACFTD) particle counter calibration method used since the early 1970s has been replaced with a new National Institute of Standards and Technology (NIST) traceable particle counter calibration method. As a result, contaminant sizes previously referred to as 2 µm, 5 µm, 10 µm and 15 µm, will become approximately 4,6 µm(c); 6,4 µm(c); 9,8 µm(c) and 13,6 µm(c), respectively, where (c) refers to calibration per ISO 11171. ISO 11943 is a new standard for calibrating on-line particle counters, primarily used to evaluate filter performance. With the ISO 16889 multi-pass filter test, which replaces the original ISO 4572 method, ISO Medium Test Dust (ISO MTD) replaces ACFTD as the test dust and the new traceable particle counter calibration method is used. In ISO 4406:1999, the new calibration method is used and a new 4 µm(c) size class has been added to the solid contamination code for particle counts made with an automatic particle counter. These improvements in particle counting and filter testing have a significant impact on contamination control activities. However, it is important to note that there has been no change in the actual contamination levels nor in the performance of filters, or their effectiveness in protecting the reliability of components. This report discusses what the changes are, why they have been made, how they will impact contamination levels and filter ratings, and how they benefit the industry.