
INTERNATIONAL STANDARD



2943

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Hydraulic fluid power — Filter elements — Verification of material compatibility with fluids

Transmissions hydrauliques — Éléments filtrants — Vérification de la compatibilité des matériaux avec les fluides

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Descriptors : hydraulic equipment, hydraulic fluid power, filters, tests, materials, compatibility.

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2943 was drawn up by Technical Committee ISO/TC 131, *Fluid power systems and components*, and circulated to the Member Bodies in November 1972.

It has been approved by the Member Bodies of the following countries:

Australia	Hungary	Romania
Austria	India	South Africa, Rep. of
Belgium	Italy	Sweden
Brazil	Japan	Switzerland
Bulgaria	Mexico	Thailand
Czechoslovakia	Netherlands	Turkey
Finland	New Zealand	United Kingdom
France	Poland	U.S.A.
Germany	Portugal	U.S.S.R.

No Member Body expressed disapproval of the document.

Hydraulic fluid power – Filter elements – Verification of material compatibility with fluids

0 INTRODUCTION

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. Filters maintain fluid cleanliness by removing insoluble contaminants.

The filter element is the porous device which performs the actual process of filtration.

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1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for verifying the compatibility of the materials comprising a hydraulic fluid power filter element with a designated fluid, by verifying the ability of the filter element to maintain its collapse/burst rating after being subjected to the designated system fluid at an elevated temperature.

The filter element mounting seal will not be included as part of the element.

2 REFERENCES

ISO 2941, *Hydraulic fluid power – Filter elements – Verification of collapse/burst resistance.*

ISO 2942, *Hydraulic fluid power – Filter elements – Determination of fabrication integrity.*

ISO . . . , *Fluid power – Vocabulary.*¹⁾

3 DEFINITIONS

For definitions of terms used, see ISO

4 EQUIPMENT

4.1 **Temperature bath** constant to within ± 5 °C.

4.2 **Hydraulic fluid** appropriate to the system.

4.3 **Temperature instrumentation** ensuring that data are accurate to within ± 1 °C.

5 PROCEDURE

5.1 Subject the filter element to the fabrication integrity test in accordance with ISO 2942.

5.2 Failure of the filter element to exhibit a minimum bubble pressure as designated by the filter manufacturer shall disqualify the element from further testing.

5.3 Immerse the filter element in the designated system fluid for at least 72 h; the fluid shall be maintained for 72 h, either continuously or intermittently, at a temperature 15 °C above the manufacturer's recommended maximum operating temperature. Do not remove the element from the fluid until 72 h has been accumulated. Refer to local safety requirements.

NOTE – The 72 h soak at 15 °C above the hydraulic system manufacturer's recommended operating temperature is a practical compromise to achieve an accelerated test rather than a long test at rated temperature.

CAUTION – Do not exceed the safe temperature of the fluid for this high temperature test. This International Standard does not apply in such cases.

5.4 Afterwards subject the filter element to the collapse or burst resistance test in accordance with ISO 2941.

5.5 The operating procedure shall be reported.

1) In preparation.

6 CRITERIA FOR ACCEPTANCE

6.1 No visual evidence of structural failure or functional deterioration.

6.2 Successful completion of the collapse/burst test specified in ISO 2941.

7 DESIGNATED INFORMATION

Include the following designated information in documents referring to this International Standard :

a) maximum operating temperature of the filter element;

b) system fluid.

8 IDENTIFICATION STATEMENT (Reference to this International Standard)

The use of the following statement in catalogues and sales literature prepared by those electing to comply with this International Standard is strongly recommended.

"Filter element material compatibility with fluids determined in accordance with ISO 2943, *Hydraulic fluid power – Filter elements – Verification of material compatibility with fluids*".

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