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# INTERNATIONAL STANDARD



# 2941

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

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## Hydraulic fluid power — Filter elements — Verification of collapse/burst resistance

*Transmissions hydrauliques — Éléments filtrants — Vérification de la résistance à l'écrasement ou à l'éclatement*

First edition — 1974-03-01

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[ISO 2941:1974](https://standards.iteh.ai/catalog/standards/sist/c4cae1a5-f44d-4ee3-a6bd-6dfd8969beb0/iso-2941-1974)

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UDC 621.8.032 : 620.2

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**Descriptors** : hydraulic equipment, hydraulic fluid power, filters, tests, burst tests, crushing tests.

Price based on 2 pages

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 2941 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 :

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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 collapse/burst resistance

## 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.

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for verifying the collapse/burst rating of a hydraulic fluid power filter element, i.e. the capability of the filter element to withstand a designated differential pressure at the normal (intended direction of) flow.

## 2 REFERENCES

ISO/R 1219, *Graphical symbols for hydraulic and pneumatic equipment and accessories for fluid power transmission*.

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

ISO 2943, *Hydraulic fluid power — Filter elements — Verification of material compatibility*.

ISO 5598, *Fluid power systems and components — Vocabulary*.

## 3 DEFINITIONS

For definitions of terms used, see ISO 5598.

## 4 GRAPHICAL SYMBOLS

Graphical symbols used are in accordance with ISO/R 1219.

## 5 EQUIPMENT

5.1 Collapse/burst test stand as shown in the figure.

5.2 Test filter housing (recommended by the filter manufacturer) modified as needed to ensure that fluid cannot by-pass the filter element.

5.3 Fluid compatible with the filter element material, in accordance with ISO 2943.

5.4 For data accuracy, select and maintain measuring instruments so that data are accurate to within  $\pm 5\%$ .

## 6 PROCEDURE

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

6.2 Disqualify from further testing any element failing to exhibit a minimum bubble pressure as specified by the manufacturer.

6.3 Install the filter housing in the collapse/burst test stand shown in the figure.

6.4 Determine the pressure drop across the empty filter housing at the manufacturer's rated nominal flow at a test temperature in the range of 15 to 40 °C.

6.5 Install the filter element in a test filter housing.

6.6 Subject the filter element to the manufacturer's rated nominal flow at the test temperature selected in 6.4.

6.7 Inject into the system a controlled (continuous or intermittent) amount of any inert particulate contaminant that does not add to the strength of the test element, while maintaining the rated nominal flow and test temperature.

6.8 Record the pressure drop across the filter as a function of contaminant (grams) added until the pressure drop across the element (filter assembly pressure drop minus housing pressure drop) reaches collapse/burst pressure rating.

6.9 Subject the filter element, after removing it from the test filter housing, to a further fabrication integrity test in accordance with ISO 2942.

6.10 Report operating conditions, type of contaminant and type of pump.

6.11 Void the test if the contaminant fills the filter housing.

## 7 CRITERIA FOR ACCEPTANCE

7.1 No evidence of structural, seal, or filter medium failure, when tested by ISO 2942.

7.2 No decrease in slope of the "pressure drop versus contaminant added" curve.

## 8 DESIGNATED INFORMATION

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

- a) manufacturer's nominal rated flow;

- b) collapse/burst pressure rating;

- c) direction of flow through the filter element.

## 9 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 collapse/burst resistance determined in accordance with ISO 2941, *Hydraulic fluid power — Filter elements — Verification of collapse/burst resistance.*"

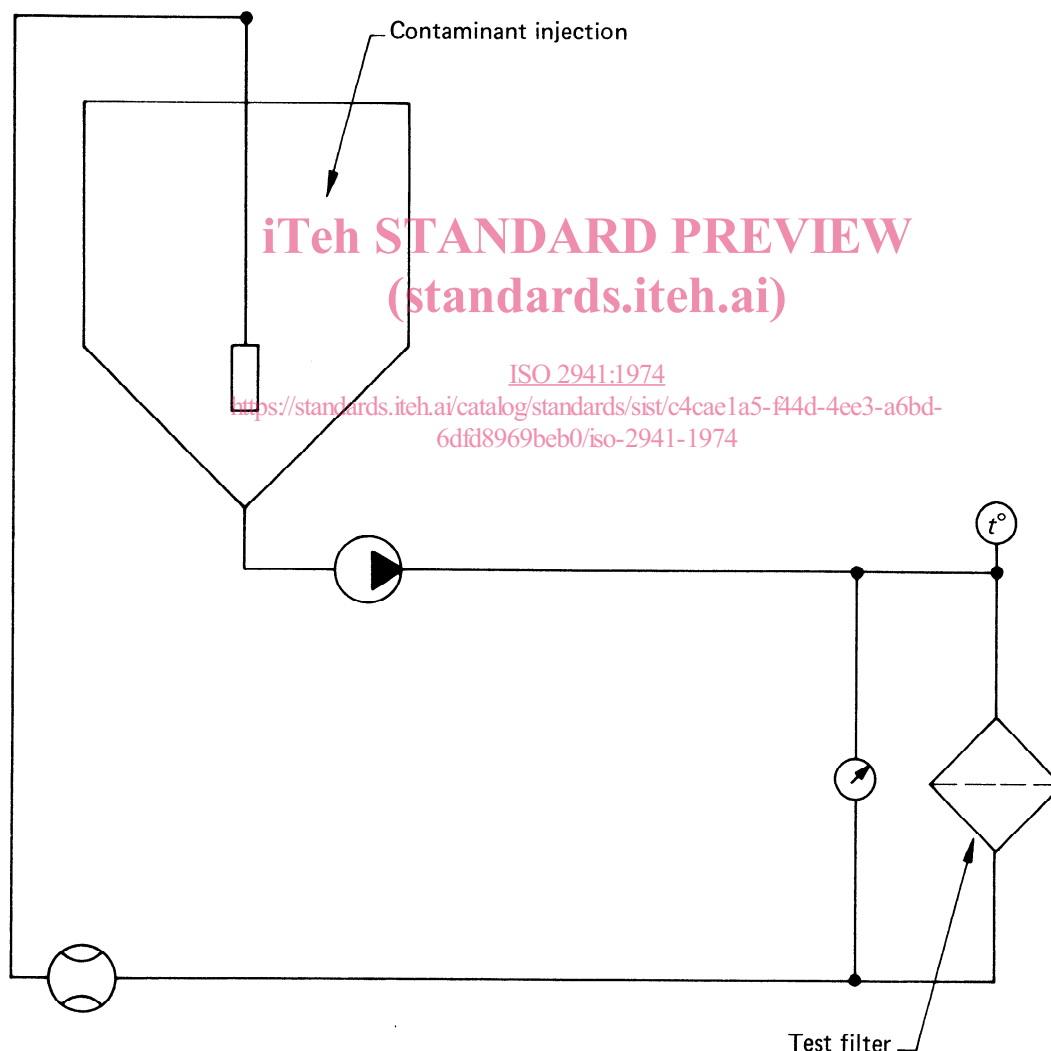


FIGURE — Sketch of typical collapse/burst test stand