INTERNATIONAL STANDARD

ISO 5782-1

Second edition
1997-12-15

Pneumatic fluid power — Compressed air filters —

Part 1:
Main characteristics to be included in supplier's literature and product-marking requirements

Transmissions pneumatiques — Filtres pour air comprimé —
Partie 1: Principales caractéristiques à inclure dans la documentation des fournisseurs et exigences de marquage du produit

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 5782-1 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 5, *Control products and components*.

This second edition cancels and replaces the first edition (ISO 5782-1:1990), of which it constitutes a technical revision.

ISO 5782 consists of the following parts, under the general title *Pneumatic fluid power — Compressed air filters*:

— *Part 1: Main characteristics to be included in supplier's literature and product-marking requirements*

— *Part 2: Test methods to determine the main characteristics to be included in supplier's literature*

Annex A of this part of ISO 5782 is for information only.

International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet central@iso.ch
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

Printed in Switzerland

Introduction

In pneumatic fluid power systems, power is transmitted and controlled through air under pressure within a circuit. Where mechanical filtration of the air media is desired, filters are components designed to remove solid and liquid contaminants from compressed air.

Pneumatic fluid power — Compressed air filters —

Part 1:
Main characteristics to be included in supplier's literature and product-marking requirements

1 Scope

This part of ISO 5782 specifies which characteristics of compressed air filters are to be included in the supplier's literature.

It also specifies product-marking requirements.

This part of ISO 5782 applies to compressed air filters, constructed from light alloys (aluminium, etc.), zinc diecast alloys, brass, steel and plastic, with a rated pressure of up to 1 600 kPa (16 bar) and a maximum temperature of 80 °C, designed to remove solid and liquid contaminants from compressed air by mechanical means.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 5782. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 5782 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2944:1974, *Fluid power systems and components — Nominal pressures.*

ISO 5598:1985, *Fluid power systems and components — Vocabulary.*

ISO 5782-2:1997, *Pneumatic fluid power — Compressed air filters — Part 2: Test methods to determine the main characteristics to be included in supplier's literature.*

3 Definitions

For the purposes of this part of ISO 5782, the definitions given in ISO 5598 apply, together with the following:

3.1 rated pressure: Pressure, confirmed through testing, at which a component or piping is designed to operate for a number of repetitions sufficient to assure adequate service life.

4 Technical requirements

Descriptive literature covering compressed air filters shall include the following characteristics.

4.1 General characteristics

4.1.1 General dimensions

The dimensions shown on figure 1 shall be given, in millimetres. For ports, see 4.1.2.

4.1.2 Port forms

Port forms should be selected from ISO 228-1 for ports with pipe parallel threads, or ISO 7-1 for ports with pipe tapered threads.

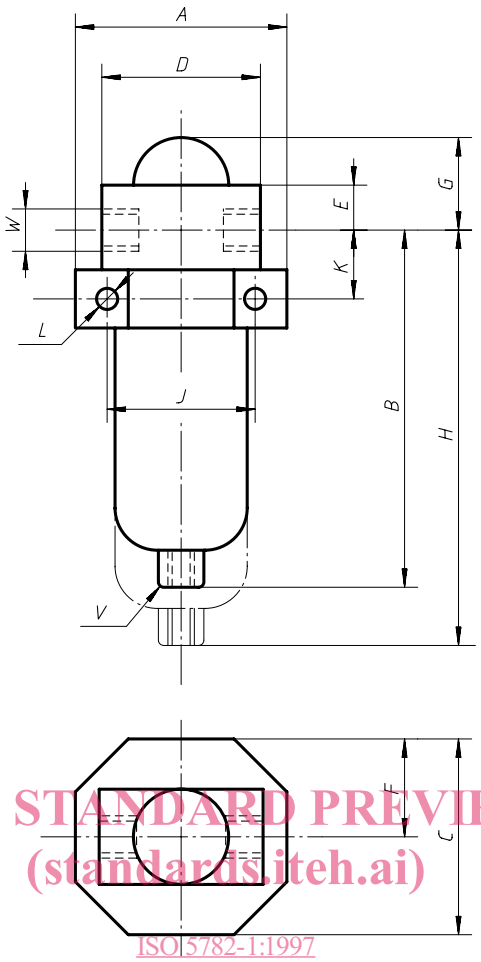
The connecting interface for flange-mounted designs may be plain ported and counterbored to accept O-rings.

For certain applications and connections, other port forms may be employed.

4.1.3 Rated pressure

Compressed air filters shall be classified according to a pressure selected from the preferred pressures listed in ISO 2944.

The rated pressure shall be verified using the test procedure specified in ISO 5782-2:1997, clause 6.



Key

A = Maximum overall width
B = Maximum installation height below the port centreline
C = Maximum overall depth, excluding pressure gauge
D = Distance between the faces of the compressed air connection (inlet/outlet)
E = Maximum height above the port centreline (excluding optional pressure-drop indicator)
F[1)] = Maximum installation depth from the port centreline
G = Optional pressure-drop indicator
H = Minimum clearance from the port centreline to permit dismantling
J[2)] = Distance between mounting holes
K[2)] = Distance between the port centreline and mounting holes
L[2)] = Minimum diameter and length of mounting holes or recommended mounting bolts
V = Drain hole description
W = Port description

1) Applies also for mounting brackets.
2) Dimensions *J*, *K* and *L* shall be indicated only if the device has provisions for mounting.

Figure 1 — Dimensions of filters

4.1.4 Range of operating temperatures

4.1.4.1 The temperature range in which the material and the operation of the filter are not impaired shall be stated.

4.1.4.2 Alternate combinations of constant maximum operating pressure and temperature ratings when optional designs may require a different rating shall be specified.

4.2 Particular requirements

The data provided by the supplier shall assist the user in selecting the compressed air filter which is best suited for the particular application.

4.2.1 Pressure drop — Air flow rate

The pressure drop at three inlet pressure levels of 250 kPa; 630 kPa; 1 000 kPa (2,5 bar; 6,3 bar; 10 bar) or rated pressure, if different from 1 000 kPa (10 bar), shall be measured in accordance with ISO 5782-2:1997, clause 7, for each port size, filter element type (clean and dry) and reservoir size. The pressure drop at additional inlet pressures, such as described in ISO 2944, or elsewhere, may also be recorded. Results shall be presented in either graphical or tabular form. Typical examples are given in figure 2 and table 1.

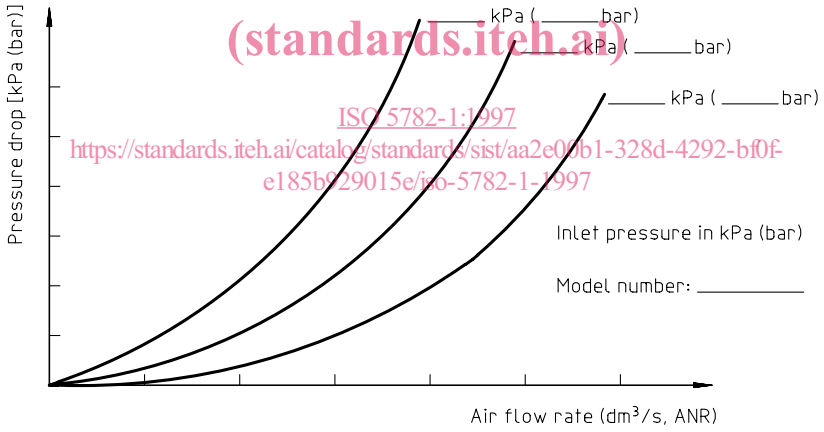


Figure 2 — Filter performance

Table 1 — Air flow rate at a pressure drop which equals 5 % of inlet pressure for filter model number____

Inlet pressure kPa (bar)	Size of port						
	Air flow rate (dm³/s, ANR)						
250 (2,5)							
630 (6,3)							
1 000[1)] (10)							
1) or rated pressure if different from 1 000 kPa (10 bar).							

4.2.2 Useful retention capacity of the reservoir

The useful retention capacity of the reservoir shall be measured in accordance with ISO 5782-2:1997, clause 8, for every reservoir size. Results shall be published with other descriptive specifications for filters.

4.2.3 Draining devices

The type of drain fitted for manual, automatic or any other operation shall be stated.

4.2.4 Materials of construction

The generic materials of construction (e.g. body, spring cage, bottom plug and internal parts, elastomers and bowl) shall be listed.

5 Operation and maintenance

Information required for application, operation, examination and maintenance, shall be provided and include

a) the value of pressure drop at which the filter element should be replaced in order to prevent malfunction;

b) the products that can be used for cleaning the air filter parts (e.g. element, reservoir, etc.);

c) the minimum temperature that can be used, with a suitable warning of the effects of condensate freezing, if applicable;

d) the minimum pressure at which the drain mechanism starts to operate.

6 Marking

The compressed air filters shall be marked with the following information:

a) the manufacturer's or supplier's name or trademark;

b) the manufacturer's or supplier's model or type number;

c) rated pressure;

d) maximum temperature;

e) warning about cleaning products, if applicable;

f) direction of flow;

g) maximum fluid levels (if practical);

h) code to indicate date of manufacture;

i) nominal micron rating of the filter element.