International Standard ISO 6415

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

Internal combustion engines — Spin-on filters for lubricating oil — Dimensions

Moteurs à combustion interne — Filtres à huile vissés — Dimensions

First edition — 1981-02-15

UDC 629.113-729.3 **Ref. No. ISO 6415-1981 (E)**

Descriptors : road vehicles, internal combustion engines, lubrication systems, filters, characteristics, dimensions, designation, marking, interchangeability.

Price based on 4 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 6415 was developed by Technical Committee ISO/TC 22, *Road vehicles*, and was circulated to the member bodies in January 1979.

It has been approved by the member bodies of the following countries :

Australia	Italy	Spain
Austria	Japan	Sweden
Belgium	Korea, Rep. of	Switzerland
Brazil	Libyan Arab Jamahiriya	Turkey
Chile	Mexico	United Kingdom
Czechoslovakia	Netherlands	USA
France	Poland	USSR
Germany, F. R.	Romania	
India	South Africa, Rep. of	

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Bulgaria
New Zealand

Printed in Switzerland

Internal combustion engines — Spin-on filters for lubricating oil — Dimensions

1 Scope and field of application

This International Standard specifies the essential dimensional characteristics necessary for the interchangeability of spin-on filters of the full flow type for the filtration of lubricating oil for internal combustion engines and also the designation and the marking of these filters.

2 References

ISO 3, *Preferred numbers — Series of preferred numbers.*

ISO 68, *ISO general purpose screw threads — Basic profile.*

ISO 261, *ISO general purpose metric screw threads — General plan.*

ISO 965/1, *ISO general purpose metric screw threads — Tolerances — Part 1 : Principles and basic data.*

ISO 965/3, *ISO general purpose metric screw threads — Tolerances — Part 3 : Deviations for constructional threads.*

3 Required characteristics

3.1 Connection thread[1], sealing surface

(see figure 1)

The dimensions of the male and female connection thread and of the sealing surface are specified in table 1. The thread shall conform to ISO 68, ISO 261, ISO 965/1 and ISO 965/3.

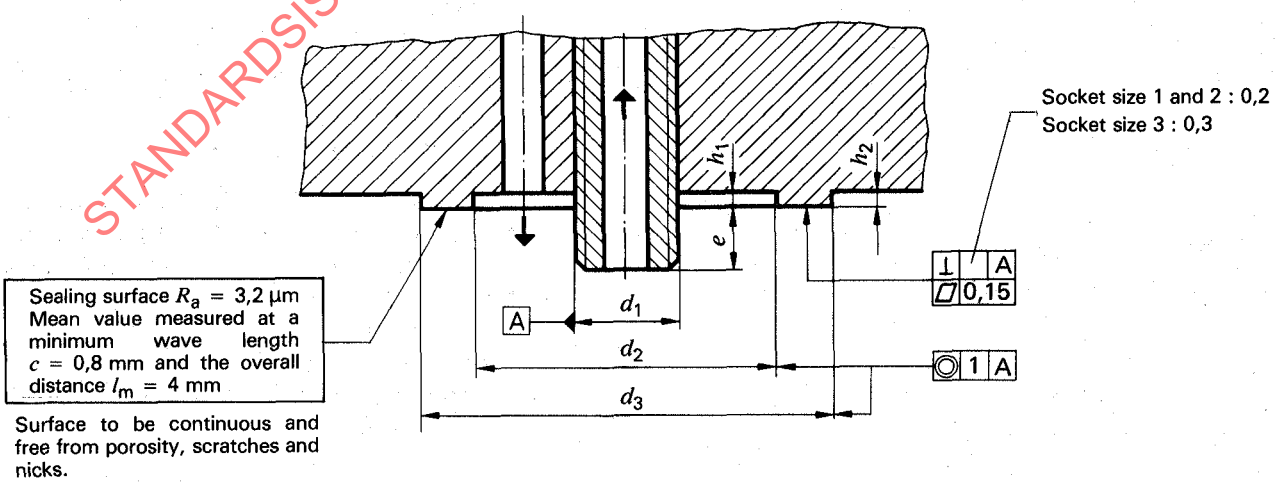

Figure 1 — Connection and sealing surface

1) The effective canister diameter is not specified but will be inserted in the designation by the filter manufacturer.

note 1 de page 4 SVP

Table 1 — Dimensions of connection threads and sealing surface

Values in millimetres

Socket size	Connection thread					Sealing surface			
	d_1	Tolerance		e		d_2	d_3	h_1	h_2
		Stud thread	Filter thread	min.	max.	max.	min.	min.	min.
1	M 20 × 1,5	6 g	6 H	14	20	58	76	2	0
2	M 24 × 2	6 g	6 H	14	20	58	76	2	0
3	M 30 × 2	6 g	6 H	16	20	90	113	4	0

The stud must be threaded full distance e. When the filter has been tightened, at least three full threads shall be in contact.

M 16 × 1,5 has been reserved for spin-on filters for fuel.

3.2 Filter diameter and length (see figure 2)

The maximum dimensions for filter diameter and length are specified in table 2. The maximum dimensions for the diameter conform to ISO 3.

Four diameters (code letter A, B, C, D) and different lengths (identification figure 1, 2, 3, 4, 5) are specified. The combination of both codes designates the filter size.

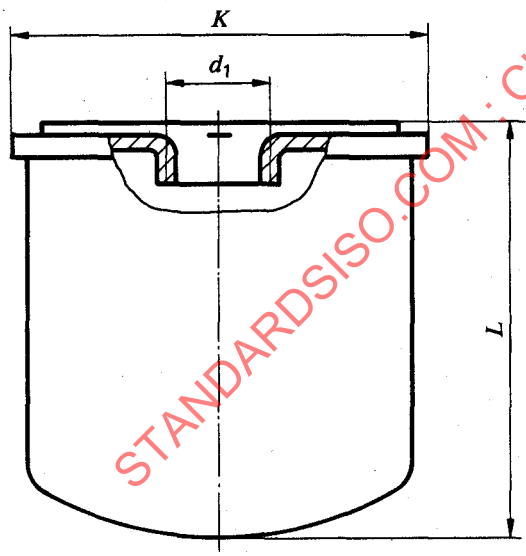

Figure 2 — Filter

Table 2 — Filter dimensions

Values in millimetres

Diameter K max.		A 80	B 90	C 100	D 112
Length L max.	1	80	90	100	115
	2	95	115	125	140
	3	120	135	150	180
	4	—	160	210	230
	5	—	—	—	265

D can use each socket size specified in table 1.

A, B, C can use socket sizes 1 and 2 of table 1.

3.3 By-pass valve

For equipment protection, each spin-on filter type shall be fitted with a by-pass valve or an equivalent device unless a by-pass valve has been incorporated in the engine design. By-pass valves fitted to the spin-on filter shall operate at one of the following pressures :

100 ± 20 kPa
160 ± 30 kPa
250 ± 40 kPa

The opening pressure shall appear in the designation.

3.4 Design of the canister base

In order to facilitate removal and the installation of the filter, the canister base shall incorporate one of the following features :

— a curved surface i.e. without any impressions as specified in figure 3 — type X
— grooves as specified in figure 4 — type Y
— flats as specified in figure 5 — type Z

The type of canister base shall appear in the designation.