

International Standard



6302

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

Earth-moving machinery — Drain, fill and level plugs

Engins de terrassement — Bouchons de vidange, de remplissage et de contrôle des niveaux

Second edition — 1986-06-15

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Descriptors : earth moving equipment, stoppers, drain plugs, dimensions, screw threads.

Price based on 4 pages

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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6302 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*.

This second edition cancels and replaces the first edition (ISO 6302-1979) of which it constitutes a minor revision.

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Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Earth-moving machinery — Drain, fill and level plugs

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1 Scope

This International Standard establishes the types, shapes and sizes of the parts of the plugs used in connection with the hand tools listed in ISO 4510 to permit easy removal and installation of plugs at the work-site. It does not set requirements, i.e. dimensions and materials, for the manufacture of plugs.

2 Field of application

This International Standard applies to the drain, fill and level plugs required on earth-moving machines for the changing of lubricants, coolants, hydraulic oils and fuels.

3 References¹⁾

ISO 711, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Designation, dimensions and tolerances.*

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

ISO 263, *ISO inch screw threads — General plan and selection for screws, bolt and nuts — Diameter range 0.06 to 6 in.*

ISO 724, *Metric screw threads — Basic dimensions.*

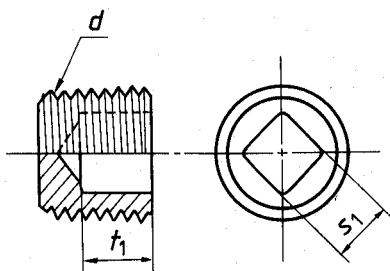
ISO 725, *ISO inch screw threads — Basic dimensions.*

ISO 4510, *Earth-moving machinery — Maintenance and adjustment tools.*

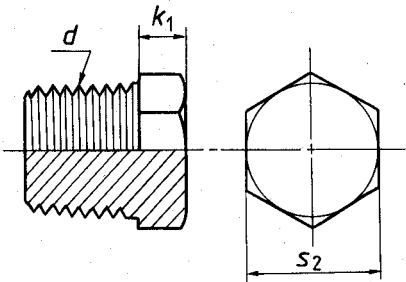
1) See also ANSI/B1.20.3-1976 (SAE J476), *Dryseal pipe threads.*

4 Types and principal dimensions

4.1 Types A and B



Type A
Square countersunk headless plugs



Type B
Hexagon outside head plugs

Table 1

Dimensions in millimetres (inches)

Taper pipe thread ¹⁾ (ISO 7/1) d	Type A		Type B	
	Socket width ²⁾ s_1	Socket depth t_1 (min.)	Head width ²⁾ s_2	Head height ³⁾ k_1
R 1/8 (1/8-27 NPTF)		ISO 6302:1986 https://standards.iteh.ai/catalog/standards/sist/2a34c48a-1b67-4667-b7d2-f9a4d07f3452/iso-6302-1986	12 (7/16)	5 (3/16)
R 1/4 (1/4-18 NPTF)			14 (9/16)	5 (3/16)
R 3/8 (3/8-18 NPTF)			19 (11/16)	6 (7/32)
R 1/2 (1/2-14 NPTF)			22 (7/8)	6 (7/32)
R 3/4 (3/4-14 NPTF)	12 (1/2)	8 (5/16)	27 (1 1/8)	8 (5/16)
R 1 (1-11 1/2 NPTF)	12 (1/2)	10 (3/8)	36 (1 5/16)	8 (5/16)
R 1 1/4 (1 1/4-11 1/2 NPTF)	20 (3/4)	12 (1/2)	46 (1 7/8)	10 (3/8)
R 1 1/2 (1 1/2-11 1/2 NPTF)	20 (3/4)	12 (1/2)	50 (1 7/8)	10 (3/8)
Corresponding hand tools (ISO 4510)	Handles, socket wrench		Combination or engineer's wrench	

1) See also ANSI/B1.20.3-1976 (SAE J476), *Dryseal pipe threads*.
2) The figures given are nominal tool sizes and not plug dimensions.
3) The dimensions given are nominal values.

4.2 Types C and D

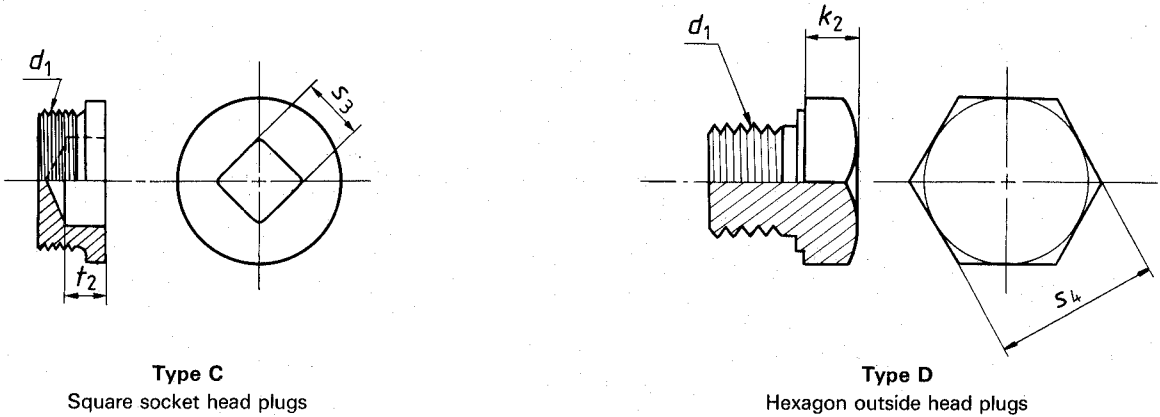


Table 2

Dimensions in millimetres (inches)

Thread (ISO 261, ISO 724) (ISO 263, ISO 725) d_1	Type C		Type D ¹⁾	
	Socket width ²⁾ s_3	Socket depth t_2 (min.)	Head width ²⁾ s_4	Head height ³⁾ k_2
M8 × 1 (5/16-24 UNF)			13 (9/16)	5 (3/16)
M10 × 1,25 (3/8-24 UNF)			17 (5/8)	5 (3/16)
M12 × 1,25 (1/2-20 UNF)			19 (3/4)	5 (3/16)
M16 × 1,5 (5/8-18 UNF)			24 (7/8)	7 (1/4)
M20 × 1,5 (3/4-16 UNF)			30 (1 1/8)	7 (1/4)
M24 × 1,5 (1-12 UNF)	12 (1/2)	8 (5/16)	32 (1 5/16)	7 (1/4)
M27 × 1,5 (1 1/16-12 UN)			32 (1 5/16)	8 (5/16)
M30 × 1,5 (1 1/4-12 UNF)	20 (3/4)	12 (1/2)	41 (1 1/2)	8 (5/16)
M33 × 1,5 (1 5/16-12 UN)			41 (1 1/2)	10 (3/8)
M36 × 1,5 (1 1/2-12 UNF)	20 (3/4)	12 (1/2)	46 (1 7/8)	10 (3/8)
(1 5/8-12 UN)			(1 7/8)	(3/8)
M42 × 1,5 (1 3/4-12 UN)	20 (3/4)	12 (1/2)	55 (2 1/16)	10 (3/8)
(1 7/8-12 UN)			(2 1/4)	(3/8)
M48 × 1,5 (2-12 UN)	20 (3/4)	12 (1/2)	60 (2 1/4)	10 (3/8)
Corresponding hand tools (ISO 4510)	Handles, socket wrench		Combination or engineer's wrench	

1) Some sizes of type D are compatible with standard hose and tube fitting threads : They are included in ISO 725 and ISO 263 for inch screw threads and allow a hose to be attached so that the drainage may be collected.

2) The figures given are nominal tool sizes and not plug dimensions.

3) The dimensions given are nominal values.

5 Application

Table 3 indicates the recommended use of plug types A, B, C and D.

Table 3

Application	Recommended plug type
Where physical damage is likely	A, C (C preferred)
Where there are clearance problems	A, C (C preferred)
Where periodic removal and reassembly is expected	D
Where minimum removal and reassembly is expected	B

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