INTERNATIONAL STANDARD

ISO 6550-3

Second edition
2002-06-01

Road vehicles — Sheath-type glow-plugs with conical seating and their cylinder head housing —

Part 3: M10 glow-plugs

Véhicules routiers — Bougies de préchauffage à fourreau et à siège conique et leur logement dans la culasse —

Partie 3: Bougies M10

Reference number
ISO 6550-3:2002(E)

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this part of ISO 6550 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 6550-3 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 1, *Ignition equipment*.

This second edition cancels and replaces the first edition (ISO 6550-3:1996) which has been technically revised.

ISO 6550 consists of the following parts, under the general title *Road vehicles — Sheath-type glow-plugs with conical seating and their cylinder head housing*:

— *Part 1: M14 × 1,25 glow-plugs*

— *Part 2: M12 × 1,25 glow-plugs*

— *Part 3: M10 glow-plugs*

M8 × 1 glow-plugs will be the subject of a future part 4.

Annexes A and B form a normative part of of this part of ISO 6550.

Road vehicles — Sheath-type glow-plugs with conical seating and their cylinder head housing —

Part 3: M10 glow-plugs

1 Scope

This part of ISO 6550 specifies the main characteristics of M10 sheath-type glow-plugs with conical seating and their cylinder head housing, for use with diesel (compression-ignition) engines.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 6550. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 6550 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 68-1, *ISO general purpose screw threads — Basic profile — Part 1: Metric screw heads*

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 screw threads*

ISO 1101:—[1)], *Geometrical Product Specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

ISO 8092-1:1996, *Road vehicles — Connections for on-board electrical wiring harnesses — Part 1: Tabs for single-pole connections — Dimensions and specific requirements*

ISO 8092-4:1997, *Road vehicles — Connections for on-board electrical wiring harnesses — Part 4: Pins for single- and multi-pole connections — Dimensions and specific requirements*

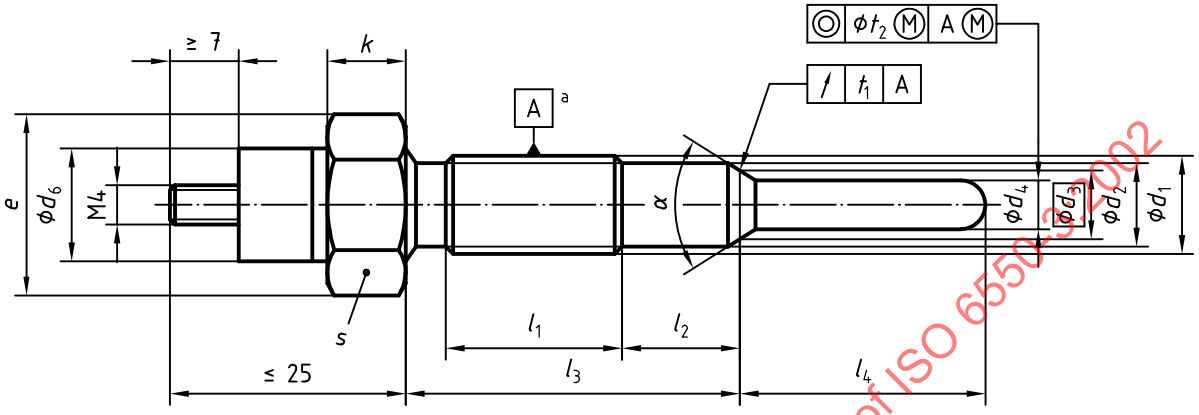
1) To be published. (Revision of ISO 1101:1983)

3 Dimensions and tolerances

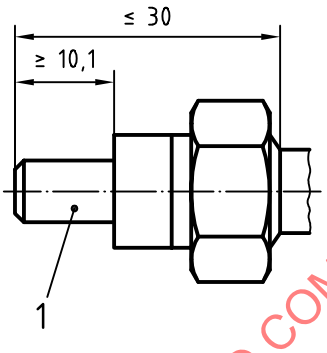
3.1 Glow-plugs

Sheath-type glow-plug dimensions and tolerances shall be as shown in Figure 1 and as given in Table 1.

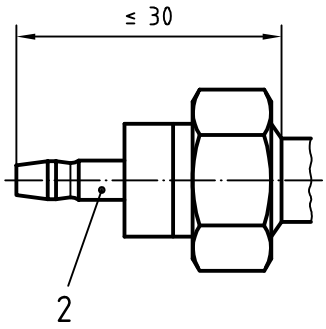
Dimensions in millimetres



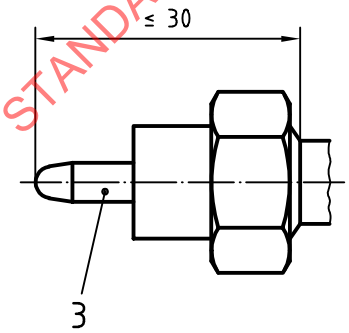
a) With threaded terminal (types A1 to A6 and C1 to C3)



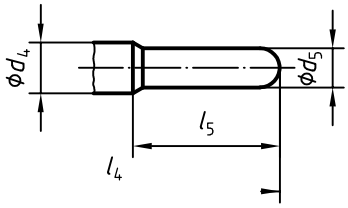
b) With flat tab terminal [b] (types B1 and B2)



c) With pin terminal [b] (types B3 and B4)

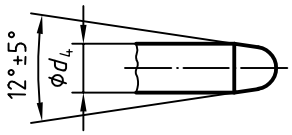


d) With pin terminal [b] (type C4)



e) With reduced tip end diameter at sheathed glow element [b]

Figure 1 — M10 sheath-type glow-plugs



f) With cone end diameter

Key

1 Tab ISO 8092-1: 6,3 × 0,8
2 Pin (see annex A)
3 Pin ISO 8092-4 4

a MD is the major diameter, in accordance with ISO 1101.

b For other dimensions see a).

Figure 1 — M10 sheath-type glow-plugs (*continued*)

Table 1 — Glow-plug dimensions

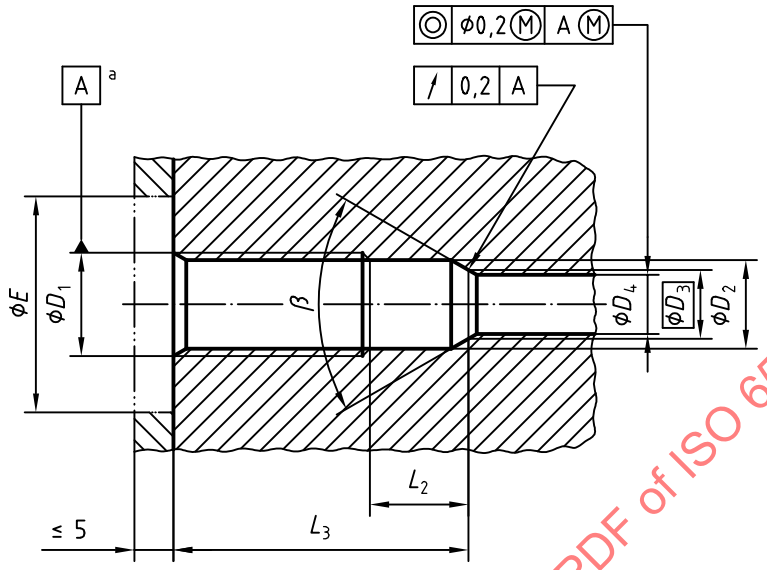
Type	Terminal	Thread		Hexagon			Body						Glow pin				
		d_1	l_1 min.	s	e min.	k min.	α	d_2	d_3 ref.	t_1	l_2	l_3	d_4 ± 0,2	d_5 $^{0}_{-0,2}$	l_4	l_5 min.	t_2
A1	M4	M10 × 1,25-6e	22,0	12,0 h 13	13,3	4,0	123° ± 1°	$8,2\,^{0}_{-0,2}$	7,0	0,2	$10,0\,^{+1}_{0}$	35,0 ± 1	5,0	—	20,0 ± 1	—	0,7
A2															25,0 ± 1		
A3															30,0 ± 1		
A4											$20,0\,^{+1}_{0}$	45,0 ± 1			20,0 ± 1		
A5															25,0 ± 1		
A6															30,0 ± 1		
B1	blade	M10 × 1-6g [b]	10,0	9,6 h 14	10,7	7,0	93° ± 2°	8,3 ± 0,13	6,4	0,18	7,0 ± 0,25	20,0 ± 0,25	5,0	—	28,5 ± 0,5	—	0,7
B2											9,1 ± 0,25	25,9 ± 0,25			27,0 ± 0,5		
B3	pin[a]																
B4											7,0 ± 0,25	26,7 ± 0,25			28,5 ± 0,5		
C1	M4	M10 × 1-6g [b]	10,0	10,0 h 13	11,0	7,0	63° ± 1°	$8,5\,^{0}_{-0,2}$	7,0	0,2	11,5 min.	33,0 min.	5,0	—	25,0 ± 0,5	—	0,7
C2														4,0		5,0	0,4
C3														—	30,0 ± 0,5		0,7
C4	Pin ISO 8092-4 4													4,0	25,0 ± 0,5		0,4

a See annex A.

b For existing designs, tolerance class 6e is also permitted. New designs shall be to 6g.

3.2 Cylinder head housing

The dimensions and tolerances of the cylinder head housing for sheath-type glow-plugs shall be as shown in Figure 2 and as given in Table 2.



a MD is the major diameter, in accordance with ISO 1101.

Figure 2 — Cylinder head housing for M10 glow-plugs

Table 2 — Housing dimensions

Dimensions in millimetres

Glow-plug type	D_1 6H	β ± 1°	D_2 min.	D_3 ref.	D_4 [a] min.	E min.	L_2 $^{0}_{-1}$	L_3 max.
A1 to A3	M10 × 1,25	120°	8,7	7,0	6,5	23	9,0	31,0
A4 to A6							19,0	41,0
B1 and B4	M10 × 1	90°	8,8	6,4	5,5	20	5,0	17,0
B2 and B3							7,0	23,0
C1 to C4	M10 × 1	60°	8,8	7,0	6,5	21	10,0	31,0

a The determination of the exact dimension (above the minimum) is left to the manufacturer. The clearance between the probe and the cylinder head shall be kept to a minimum.

3.3 Threads

3.3.1 General

The threads of M10 glow-plugs and the corresponding tapped holes in cylinder heads shall be in accordance with ISO 68-1, ISO 261, ISO 965-1 and ISO 965-3.

The thread M10 × 1,25-6e shall be used for glow-plugs of type A. The thread in the corresponding tapped holes in the cylinder heads shall be M10 × 1,25-6H.

The thread M10 × 1-6g (but see 3.3.3) shall be used for glow-plugs of types B and C. The thread in the corresponding tapped holes in the cylinder heads shall be M10 × 1-6H.

3.3.2 Dimension limits of thread M10 × 1,25-6e

Dimension limits of thread M10 × 1,25-6e shall be as given in Table 3.

Table 3 — Dimension limits M10 × 1,25

Dimensions in millimetres

Dimensions		Plug thread (on finished plug)	Tapped hole in cylinder head
Major diameter	max.	9,937	not specified
	min.	9,725	10,000
Pitch diameter	max.	9,125	9,348
	min.	9,007	9,188
Minor diameter	max.	8,404	8,912
	min.	8,237 [a]	8,647

[a] With a root radius ⩾ 0,125 mm (0,1 P).

3.3.3 Dimension limits of thread M10 × 1-6g

Dimension limits of thread M10 × 1-6g shall be as given in Table 4. For existing designs, tolerance class 6e is also permitted. New designs shall be to class 6g.

Table 4 — Dimension limits M10 × 1

Dimensions in millimetres

Dimensions		Plug thread (on finished plug)	Tapped hole in cylinder head
Major diameter	max.	9,974	not specified
	min.	9,794	10,000
Pitch diameter	max.	9,324	9,500
	min.	9,212	9,350
Minor diameter	max.	8,747	9,153
	min.	8,563 [a]	8,917

[a] With a root radius ⩾ 0,100 mm (0,1 P).

4 Installation tightening torque

The installation torque values shall be as given in Table 5. The values apply to new sheath-type glow-plugs without lubricant on the threads. If threads are lubricated, the torque value shall be reduced by approximately one-third to avoid overstressing.

Table 5 — Tightening torque

Dimensions in millimetres

Glow-plug type	Tightening torque N·m	
	Thread M10 [a]	Thread M4 [b]
A	10 to 20	0,8 to 1,5
B		—
C	10 to 15	2,5 max.

[a] Engine manufacturers may specify a different torque for the first installation.

[b] Differing specifications apply to the admissible tightening torque according to the nut used.

Annex A
(normative)

Pin dimensions

The dimensions of the pin used as the terminal with glow-plug types B3 and B4 shall be as shown in Figure A.1.

Dimensions in millimetres

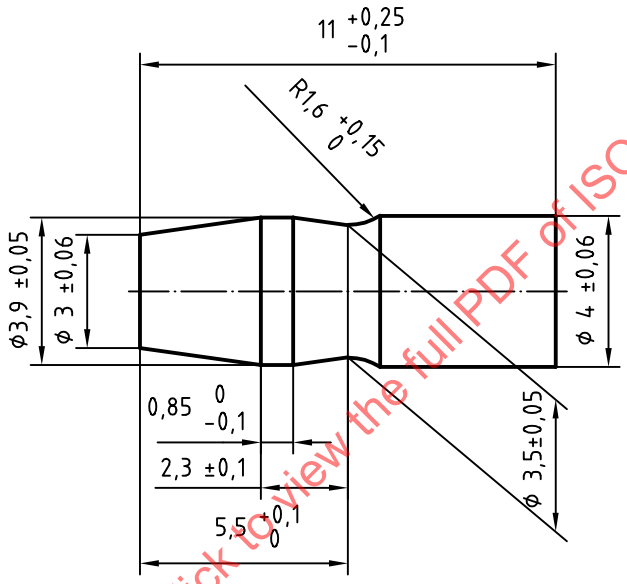


Figure A.1 — Pin dimensions