INTERNATIONAL STANDARD

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Fourth edition
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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
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Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 1, *Ignition equipment*.

This fourth edition cancels and replaces the third edition (ISO 6550-3:2009), 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*

— *Part 4: M8 × 1 glow-plugs*

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 documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

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

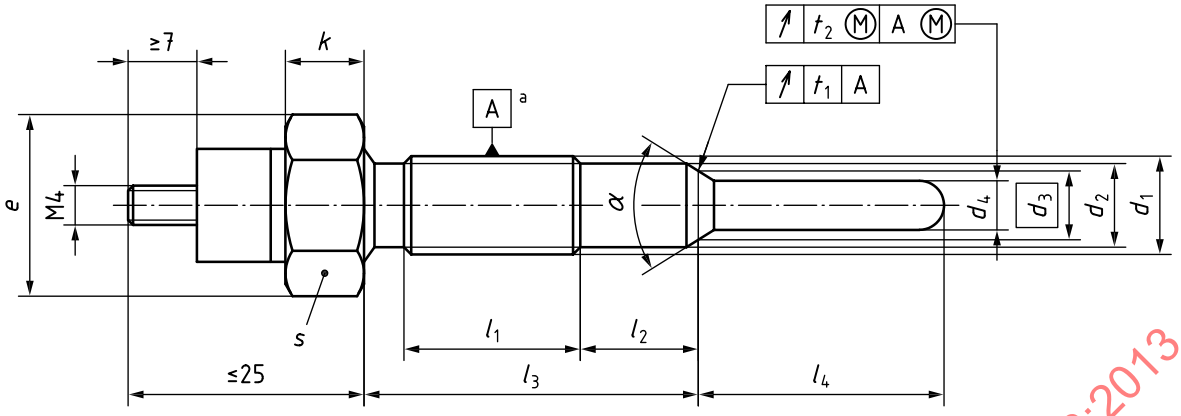
ISO 8092-4, *Road vehicles — Connections for on-board electrical wiring harnesses — Part 4: Pins for single- and multi-pole connections — Dimensions and specific requirements*

3 Dimensions and tolerances

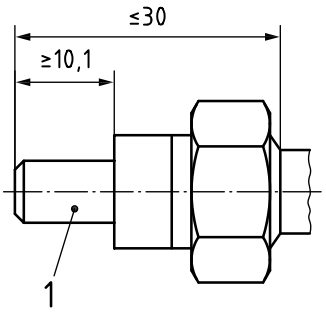
3.1 Glow-plugs

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

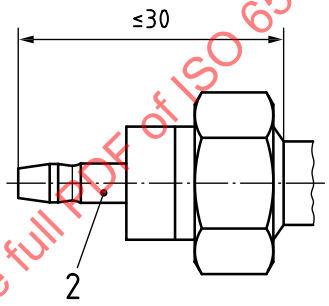
Dimensions in millimetres



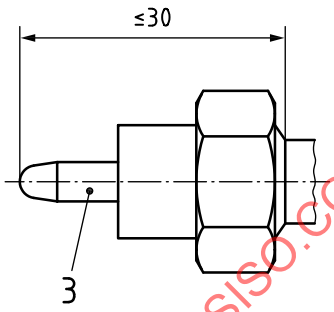
a) With threaded terminal (types A1 to A6 and C1 to C3)



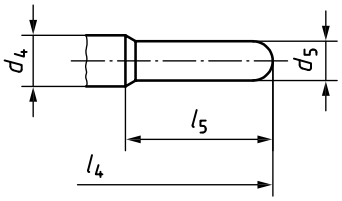
b) With blade terminal[b] (types B1 and B2)



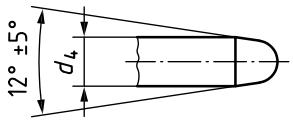
c) With pin terminal[b] (types B3 and B4)



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



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



f) with cone end diameter[b]

Key

1 tab ISO 8092-1, size 6,3 x 0,8

2 pin in accordance with Annex A

3 pin ISO 8092-4, size 4

a Major diameter, in accordance with ISO 1101.

b For other dimensions see Figure 1 a).

NOTE See Table 1 for dimensions.

Figure 1 — M10 sheath-type glow-plugs

Table 1 — Glow-plugs dimensions

Dimensions in millimetres

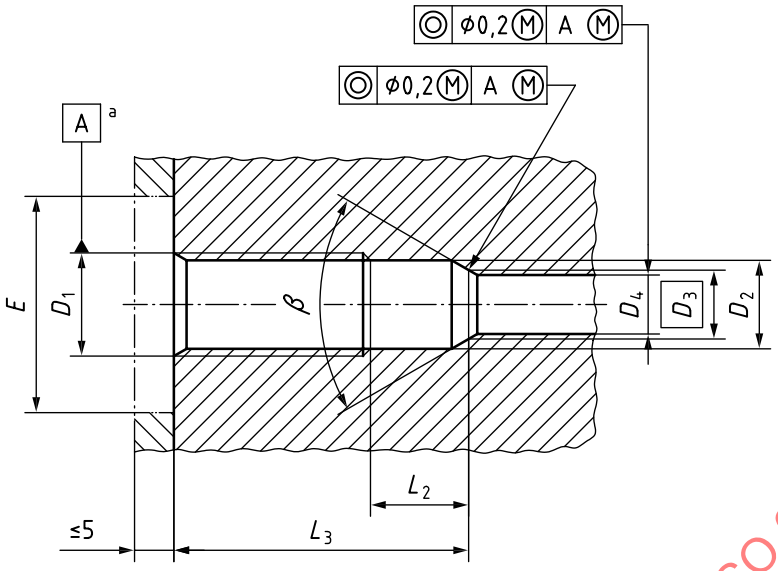
Type	Terminal	Thread		Hexagon			Body						Glow tube				
		d_1	l_1	s	E	K	α	d_2	d_3 ref.	t_1	l_2	l_3	d_4 ±0,2	d_5 0 -0,2	l_4	l_5	t_2
A1	M4	M10× 1,25- 6g	≥ 22,0	12,0 h 13	≥ 13,3	≥ 4,0	123°±2°	$8{,}2^{0}_{-0{,}2}$	7,0	0,2	10^{+1}_{0}	35,0 ± 1	5,0	-	20,0 ± 1	-	0,7
A2															25,0 ± 1		
A3															30,0 ± 1		
A4											20^{+1}_{0}	45,0 ± 1			20,0 ± 1		
A5															25,0 ± 1		
A6															30,0 ± 1		
B1	blade	M10× 1-6g	≥ 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	≥ 10,0	10,0 h 13	≥ 11,0	≥ 7,0	63°±2°	$8{,}5^{0}_{-0{,}2}$	7,0	0,2	≥ 11,5	≥ 33,0	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, size 4													4,0	25,0 ± 0,5		0,4

a See Annex A.

3.2 Cylinder head housing

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

Dimensions in millimetres



Key

a Pitch diameter in accordance with ISO 965-1 or ISO 965-3.

NOTE See Table 2 for dimensions.

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	D_3 ref.	D_4[a]	E	L_2 $^{0}_{-1}$	L_3
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 to be agreed between glow-plug and engine manufacturers. 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 - 6g shall be used for glow-plugs of type A (but see 3.3.2). The thread in the corresponding tapped holes in the cylinder heads shall be M10 × 1,25 - 6H.

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

3.3.2 Dimensions limits of thread M10 × 1,25

Dimension limits of thread M10 × 1,25 - 6g are given in Table 3. For existing designs, tolerance class 6e is also permitted. New designs shall be to class 6g.

Table 3 — Dimension limits M10 × 1,25

Dimensions in millimetres

Dimensions		Plug thread (on finished plug) 6g	Tapped hole in cylinder head 6H
Major diameter	max.	9,972	not specified
	min.	9,760	10,000
Pitch diameter	max.	9,160	9,348
	min.	9,042	9,188
Minor diameter	max.	8,439	8,912
	min.	8,251[a]	8,647

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

3.3.3 Dimensions limits of thread M10 × 1

Dimension limits of thread M10 × 1 - 6g are 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) 6g	Tapped hole in cylinder head 6H
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 tightening torque 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 shall be reduced by approximately one-third to avoid overstressing.

Table 5 — Tightening torque

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

[a] The engine manufacturers can specify a different torque for the first installation.

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

Annex A
(normative)

Pin terminal 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

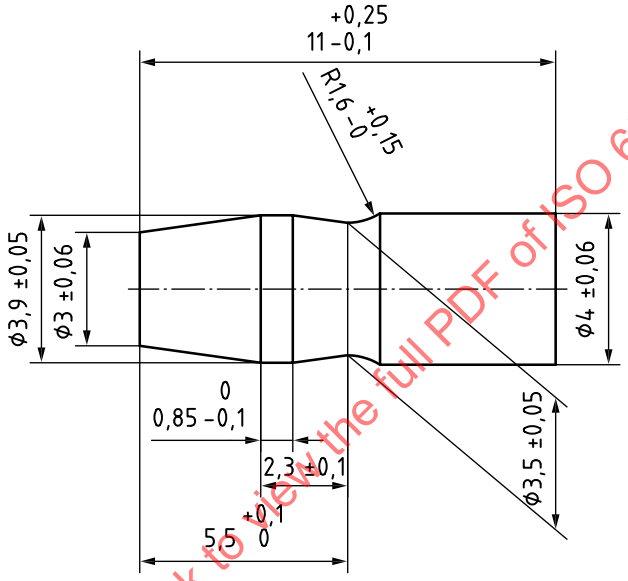


Figure A.1 — Pin terminal dimensions