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Passenger cars and light commercial vehicles with 12 V systems — 13-pole connectors between towing vehicles and trailers — Dimensions and contact allocation

Voitures particulières et véhicules utilitaires légers équipés d'un système électrique 12 V — Connecteurs à 13 contacts pour liaison entre véhicules tracteurs et remorques — Dimensions et affectation des contacts

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Reference number
ISO 11446:1993(E)

Foreword

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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 11446 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrical and electronic equipment*.

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Passenger cars and light commercial vehicles with 12 V systems — 13-pole connectors between towing vehicles and trailers — Dimensions and contact allocation

1 Scope

This International Standard specifies dimensions and specific requirements for the 13-pole connector and its contact allocation to enable electrical connection between passenger cars or light commercial vehicles and their trailers equipped with 12 V systems to be made and to ensure interchangeability.

It further specifies a park socket used to receive and store the plug of the connector when it is disconnected.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 1103:1976, *Road vehicles — Caravans and light trailers — Coupling ball — Dimensional characteristics*.

ISO 4091:1992, *Road vehicles — Connectors for electrical connections between towing vehicles and trailers — Test methods and performance requirements*.

3 Dimensions and requirements

Dimensions and requirements of the socket, plug, park socket and surrounding free space shall be in accordance with 3.1, 3.2, 3.3 and 3.4 respectively.

Details not specified may be selected as appropriate.

3.1 Socket

Dimensions and other requirements of the socket shall be as shown in figure 1.

The cover is shown in the open position: it shall close automatically when the plug is removed.

The contacts shall be floating and shall align to the datum position when plug and socket are engaged.

The contact designation numbers shall be permanently marked on the inside of the socket cover in numbers at least 2 mm high. They shall also be marked on the terminal face, although reduced space available may require smaller size of contact designation numbers at the terminal side.

3.2 Plug

Dimensions and other requirements of the plug shall be as shown in figure 2.

The contact designation numbers shall be permanently marked on the terminal face, ideally in numbers at least 2 mm high, although reduced space available may require a smaller size.

The location of the contact components shall ensure that alignment to the nominal position is achieved, when engaging the plug with the socket.

3.3 Park socket

Dimensions and other requirements of the park socket shall be as shown in figure 3.

The cover is shown in the open position: it shall close automatically when the plug is removed.

3.4 Free space

The minimum free space around the connector is specified in figure 4. When the connector is installed on the towing vehicle, its position shall comply with

the dimensions necessary to ensure compatibility of mechanical coupling devices as specified in ISO 1103.

4 Contact allocation and conductor cross-section

Contact allocation and nominal conductor cross-sections shall be as specified in table 1.

5 Performance requirements

Connectors shall meet the performance requirements of ISO 4091.

Table 1

Contact No.	Circuit	Nominal cross-section of conductor mm ²
1	Left-hand direction indicator light	1,5
2	Rear fog light	
3 ¹⁾	Common return for contacts Nos. 1 to 8	2,5
4	Right-hand direction indicator light	1,5
5	Right-hand rear position and end-outline marker light, and rear registration-plate illumination device ²⁾	
6	Stop lights	
7	Left-hand rear position and end-outline marker light, and rear registration-plate illumination device ²⁾	
8	Reversing light	2,5
9	Continuous power supply	
10	Power supply controlled by ignition switch	
11 ¹⁾	Common return for contact No. 10	—
12	Coding for coupled trailer (on the plug, pin No. 12 shall be bridged to pin No. 3 to return to the towing vehicle the information whether a trailer is coupled or not)	
13 ¹⁾	Common return for contact No. 9	2,5

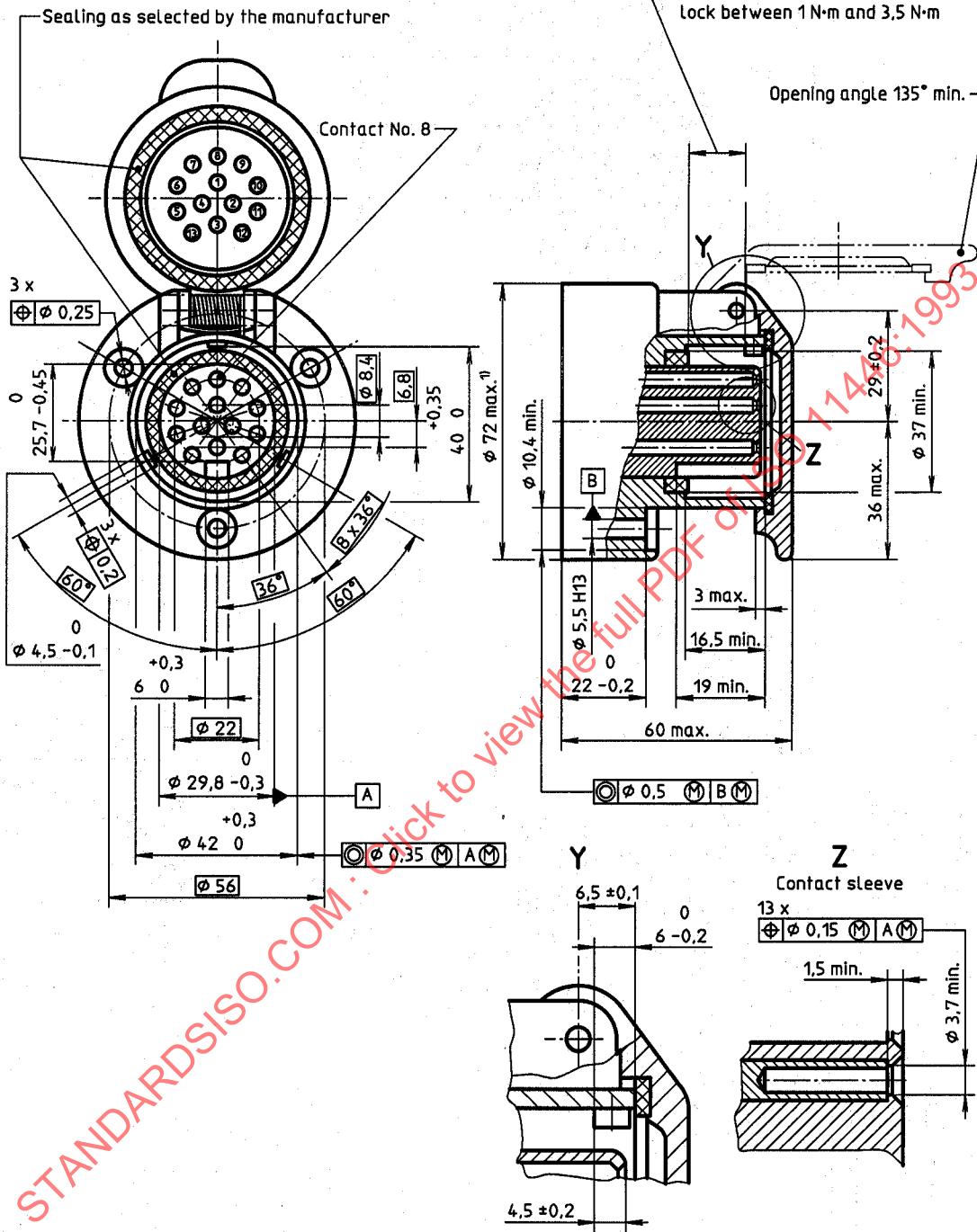
1) The three common return circuits shall not be connected electrically in the trailer.

2) The rear registration-plate illumination device shall be connected such that no lamp of the device has a common connection with either contact 5 or 7.

Dimensions in millimetres

- dimensions and torque of the twist lock between 1 N·m and 3,5 N·m

Opening angle 135° min.



1) Other housing designs are permitted as the dimensions are within the maximum diameter.

Figure 1 — Socket

Dimensions in millimetres

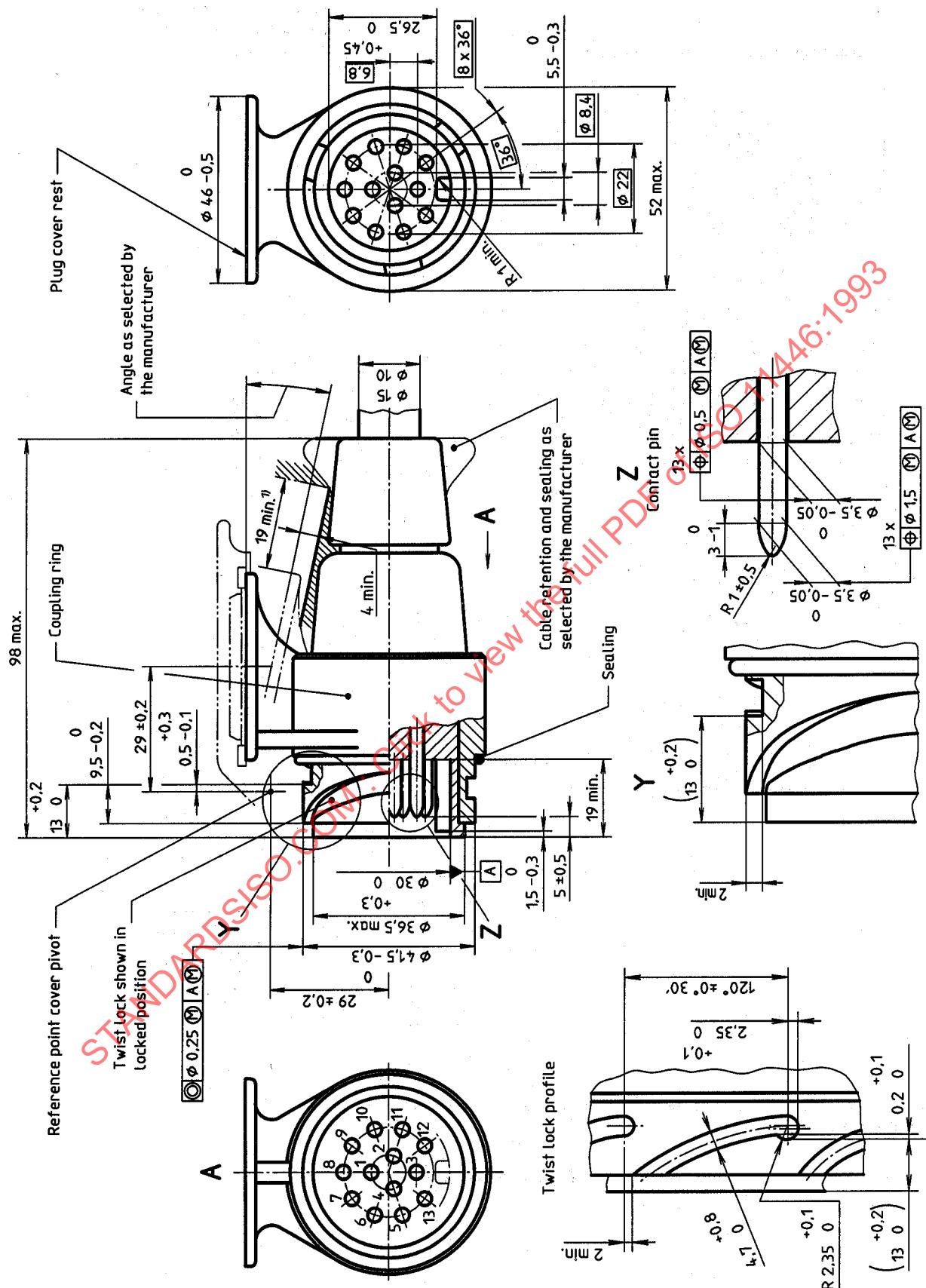


Figure 2 — Plug

1) Limiting line specifying the minimum space required for the socket cover to rest on the plug cover rest.

Dimensions in millimetres

Position according to the plug
- dimensions and torque of the twist
lock between 1 N·m and 3,5 N·m

Opening angle 135° min. -

Sealings as selected by the manufacturer

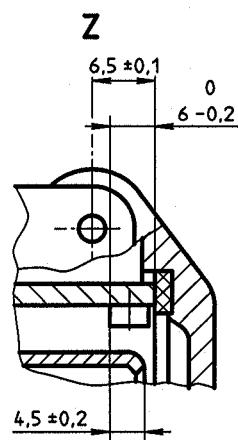
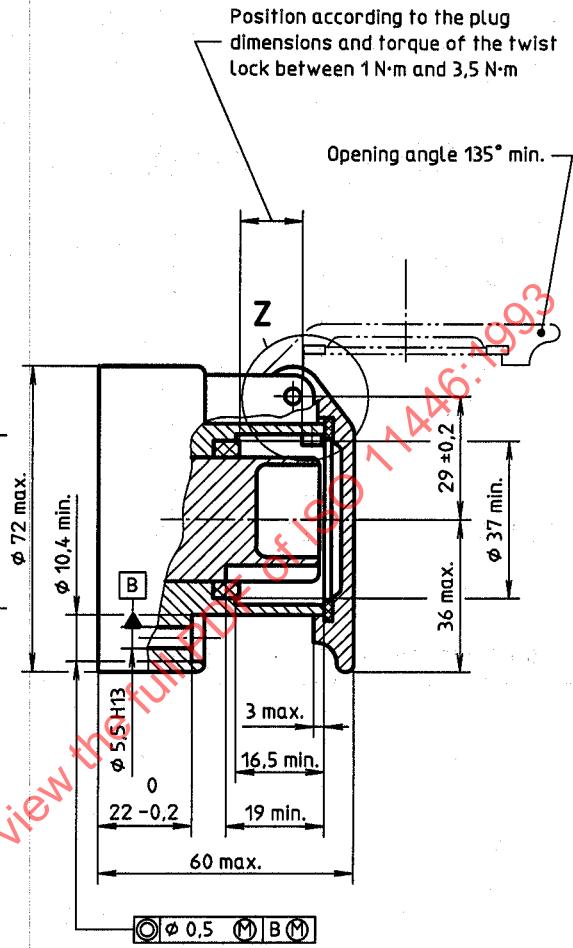
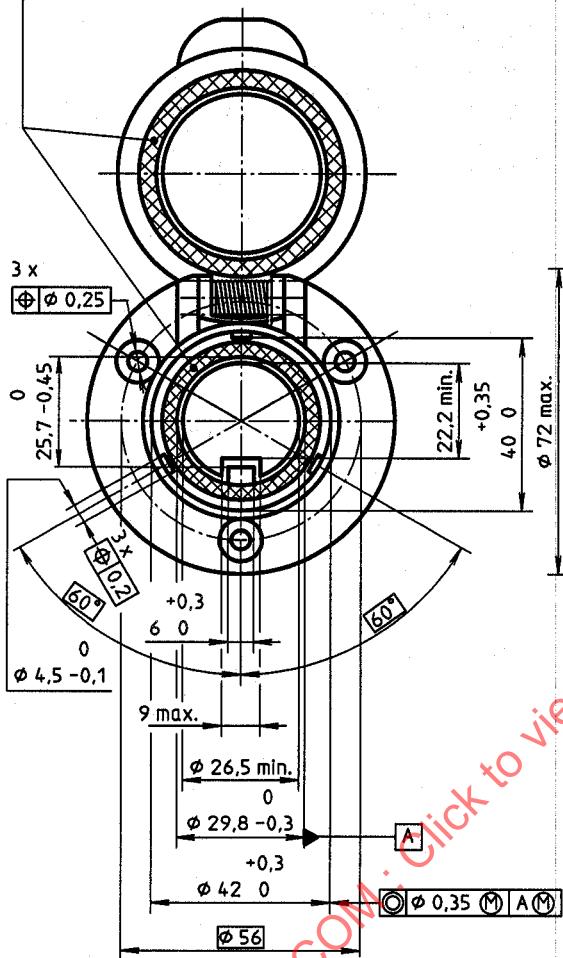


Figure 3 — Park socket