INTERNATIONAL STANDARD

ISO 3731

Third edition
1997-11-01

Road vehicles — Electrical connections between towing and towed vehicles with 24 V systems — 7 pole connector type 24 S (supplementary)

Véhicules routiers — Connexions électriques entre véhicule tracteur et véhicule tracté équipés d'un circuit électrique de 24 V — Connecteur à 7 contacts de type 24 S (supplémentaire)

Reference number
ISO 3731:1997(E)

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 normallyl 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.

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 3731 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrical and electronic equipment*.

This third edition cancels and replaces the second edition (ISO 3731:1980), which has been technically revised and augmented by the inclusion of specific tests.

Annex A of this International Standard is for information only.

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Road vehicles — Electrical connections between towing and towed vehicles with 24 V systems — 7 pole connector type 24 S (supplementary)

1 Scope

This International Standard specifies dimensional characteristics and specific requirements of the 7 pole connector type 24 S and its contact allocation for the electrical connection between trucks and their towed vehicles equipped with 24 V systems, to ensure their interchangeability.

This connector is intended to be used in addition to a 24 N connector in accordance with ISO 1185 if more than 7 poles are required.

NOTE — As an alternative to the use of these two connectors, the 15 pole connector in accordance with ISO 12098 should be considered.

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 1185:1997, *Road vehicles — Electrical connections between towing and towed vehicles with 24 V systems — 7 pole connector type 24 N (normal).*

ISO 4009:1989, *Towing vehicles — Mounting of electrical connections on rear cross members.*

ISO 4091:1992 and Amendment 1:1997, *Road vehicles — Connectors for electrical connections between towing vehicles and trailers — Test methods and performance requirements.*

ISO 4141-1:—[1)], *Road vehicles — Multi-core connecting cables — Part 1: Test methods and requirements of basic performance sheathed cables.*

ISO 4141-2:—[1)], *Road vehicles — Multi-core connecting cables — Part 2: Test methods and requirements of high performance sheathed cables.*

ISO 4141-3:—[1)], *Road vehicles — Multi-core connecting cables — Part 3: Construction, dimensions and marking of uncreened sheathed low-tension cables.*

1) To be published. (Revision of ISO 4141:1988)

3 Dimensions

Unspecified details are to be selected as appropriate.

3.1 Socket

See figure 1.

Dimensions in millimetres

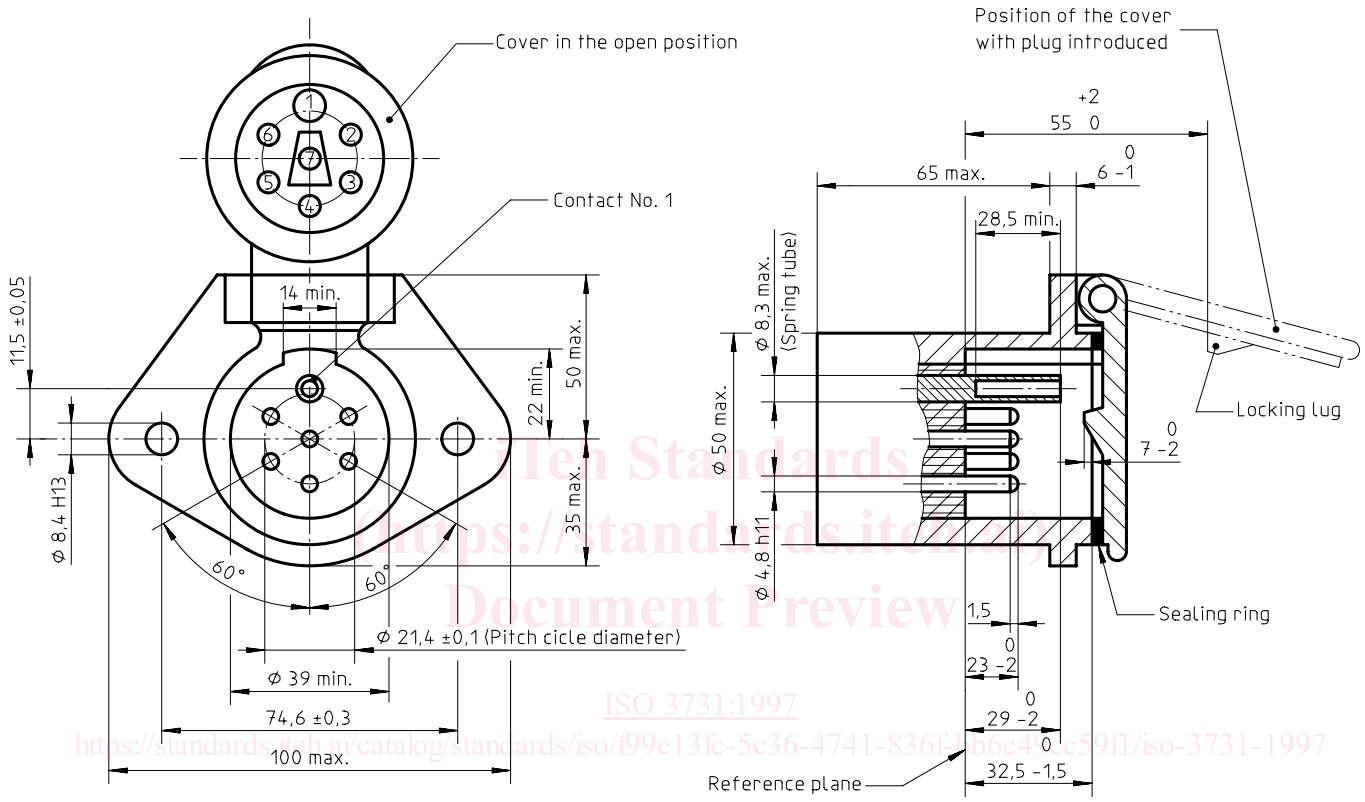


Figure 1 — Socket

The socket shall have six pins (Nos. 2 to 7) and one spring tube (No. 1) corresponding to pin No.1 of the plug.

The contact numbers shall be permanently marked on the inside of the socket cover and on the terminal face. The character size shall be not less than 2 mm. Reduced space available may require application of a smaller size on the terminal face.

3.2 Plug

See figure 2.

Dimensions in millimetres

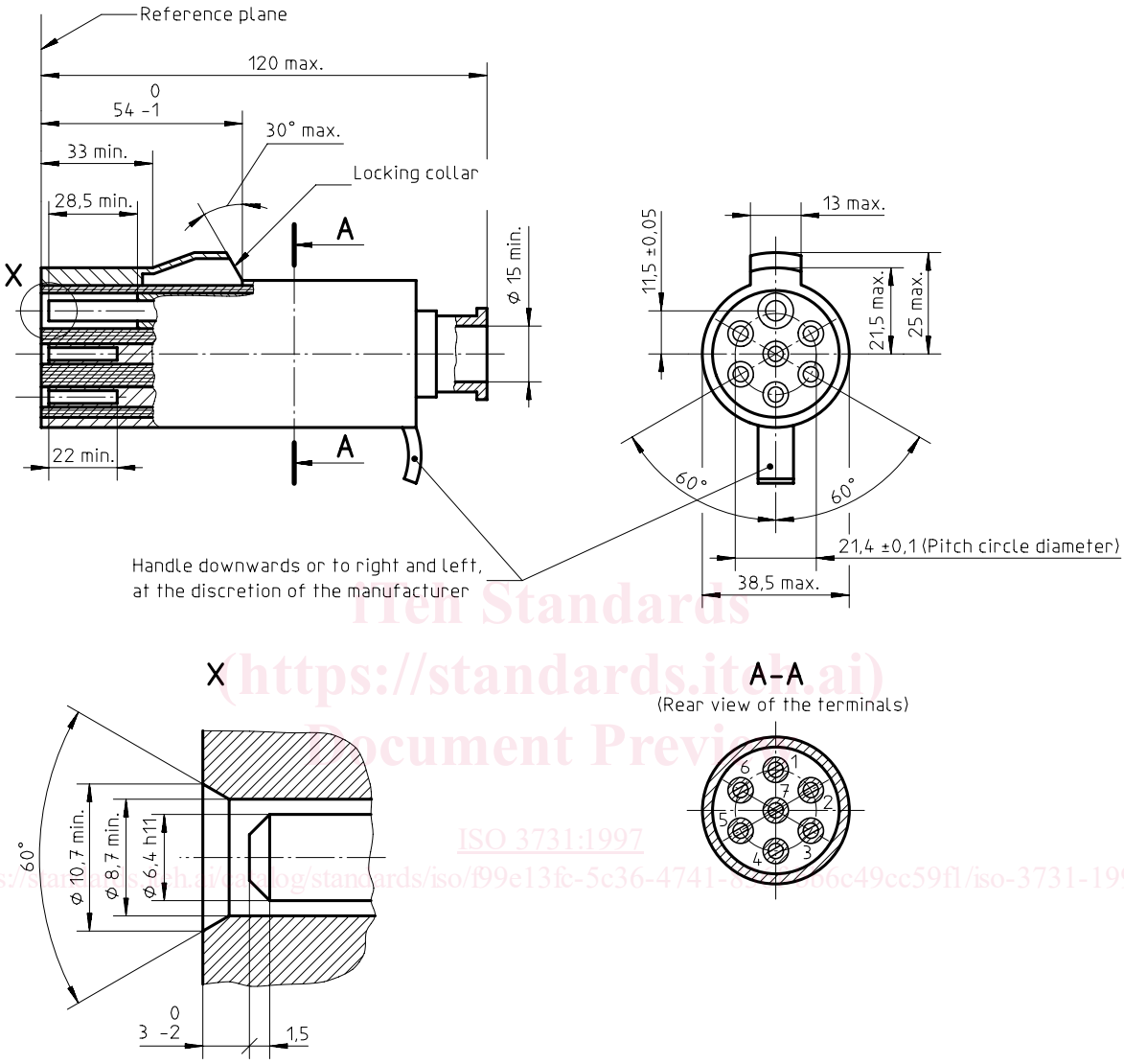


Figure 2 — Plug

The plug shall have six spring tubes (Nos. 2 to 7) and one pin (No. 1).

The contact numbers shall be permanently marked on the terminal face. The character size shall be not less than 2 mm. Reduced space available may require application of a smaller size on the terminal face.

It shall be impossible to make contact between tube No. 1 of the socket and tubes Nos. 2 to 7 of the plug.

4 Application of the connector

4.1 Socket and plug position on vehicles

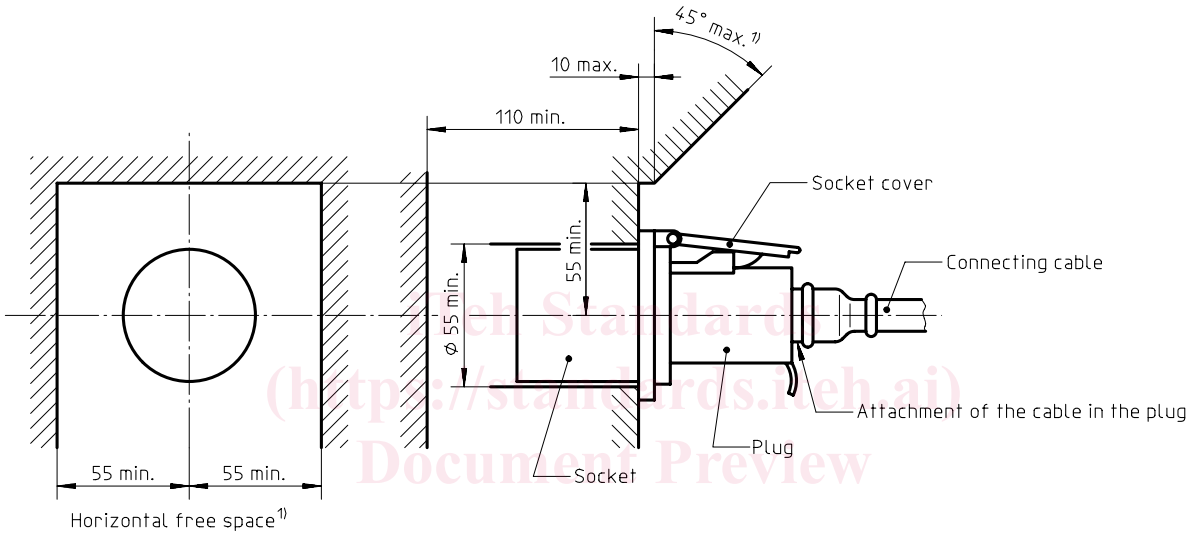
A socket shall be mounted at the rear of a towing vehicle and the position shall meet the requirements of ISO 4009.

NOTE — If desired, a socket may also be mounted on the front of the trailer and on the towing vehicle in the case of an articulated road train.

4.2 Free space

The minimum free space for the connector is specified in figure 3.

Dimensions in millimetres



1) The angle of maximum 45° shall extend across the horizontal free space.

Figure 3 — Free space

4.3 Contact allocation

The allocation of the seven contacts provided shall be as shown in table 1.

Table 1 — Contact allocation

Contact No.	Function	Core insulation colour (for information)
1	Common return	white
2	No allocation[1)]	black
3	Reversing light	yellow
4	Power supply (steady)	red
5	Sensing device with common return	green
6	Power supply (controlled by ignition switch)	brown
7	Rear fog light	blue

1) This contact shall be kept free pending future ISO decisions.