INTERNATIONAL STANDARD ISO 3731

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Road vehicles — Electrical connections between towing vehicles and trailers with 24 V electrical equipment — Type 24 S (supplementary)

Véhicules routiers — Liaisons électriques entre véhicules tracteurs et véhicules remorqués avec équipement électrique 24 V — Type 24 S (supplémentaire)

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

International Standard ISO 3731 was drawn up by Technical Committee ISO/TC 22, *Road vehicles,* and circulated to the Member Bodies in November 1974.

It has been approved by the Member Bodies of the following countries :

Austria	India	Romania
Belgium	Iran	South Africa, Rep. of
Bulgaria	Ireland	Spain
Chile	Italy	Sweden
Finland	Japan	Switzerland
France	Netherlands	Turkey
Germany	Poland	Yugoslavia
Hungary	Portugal	

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Czechoslovakia
United Kingdom

Printed in Switzerland

Road vehicles — Electrical connections between towing vehicles and trailers with 24 V electrical equipment — Type 24 S (supplementary)

1 SCOPE

This International Standard establishes specifications which will permit, by means of a socket and a plug, type 24 S, interchangeability of supplementary electrical connections between towing vehicles and towed vehicles (see figure 3).

These sockets and plugs are not interchangeable with type 24 N (normal) sockets and plugs. (See ISO 1185.)

2 FIELD OF APPLICATION

These specifications apply to vehicles fitted with electrical equipment operating at a nominal voltage of 24 V.

3 GENERAL REQUIREMENTS

3.1 Number of necessary contacts

The functions of the seven contacts are as follows :

1 Common return.

2 No allocation.[1)]

3 Reversing light.

4 Power supply.

5 Sensing device with common return.

6 No allocation.[1)]

7 Rear fog light.

3.2 Arrangement of the contacts

The arrangement of the contacts is shown in figures 1 (socket) and 2 (plug).

The numbers designating the contacts correspond to those indicated in 3.1.

3.3 Socket

The socket shall be mounted on the rear of the towing vehicle in the case of a road train. It shall be mounted on the semi-trailer in the case of an articulated road train.[2)]

The socket is provided with :

— 6 contact pins (Nos. 2 to 7);

— 1 spring tube (No. 1) corresponding to pin No. 1 of the plug.

Contact No. 1 shall be insulated, as are the other contacts. After fitting, contact No. 1 may be connected to the common return of the vehicle.

The internal diameter of tube No. 1 shall be such that the corresponding pin of the plug can be connected with a moderate push, but it shall ensure a good electrical contact.

The rear terminals shall each be capable of receiving two conductors of at least 1,5 mm^2 cross-section.

The contact designations shall be permanently marked on the inside of the socket cover and on the terminal face in symbols not less than 2 mm high. These symbols, which are not necessarily numbers, may be different from those indicated in figure 1, provided that the specified pin locations of the different functions are complied with.

The socket shall be provided with a splashproof cover which shall close automatically when the plug is disengaged. The hinged cover on the socket shall be provided with a locking lug to retain the plug when it is engaged.

All metallic parts of the sockets shall be made of corrosion-resistant material or shall be adequately protected against corrosion.

1) These contacts shall be kept free pending further ISO decisions.

2) If desired, a socket may also be mounted on the front of the trailer or on the towing vehicle in the case of an articulated road train.

3.4 Plug

The plug shall be attached to the trailer in the case of a road train and to the towing vehicle in the case of an articulated road train.[1)]

The plug is provided with :

- 6 spring tubes corresponding to pins Nos. 2 to 7;
- 1 contact pin (No. 1).

The internal diameter of tubes Nos. 2 to 7 shall be such that the corresponding pins of the socket can be connected with a moderate push, but they shall ensure a good electrical contact.

The rear terminals shall each be capable of receiving one conductor of at least 2,5 mm^2 cross-section.

The contact designations shall be permanently marked on the terminal face in symbols not less than 2 mm high. These symbols, which are not necessarily numbers, may be different from those indicated in figure 2, provided that the specified pin locations of the different functions are complied with.

All metallic parts of the plug shall be made of corrosion-resistant material or be adequately protected against corrosion.

The manufacturer shall provide means for fixing and sealing the cable.

3.5 Allocation of cable colours

The cable colours of the seven-core connecting cable are allocated to the different circuits as follows :

Contact No.	Circuit	Cable colour
1	Common return	white
2	No allocation	black
3	Reversing light	yellow
4	Power supply	red
5	Sensing device with common return	green
6	No allocation	brown
7	Rear fog light	blue

3.6 Distinguishing marking

The 24 S connector shall be distinguished from the 24 N connector (see ISO 1185) by means of a different colouring at least of the insulating parts.

A white and permanent colour shall be used for the 24 S connector.

1) If desired, a socket may also be mounted on the front of the trailer or on the towing vehicle in the case of an articulated road train.

Dimensions in millimetres

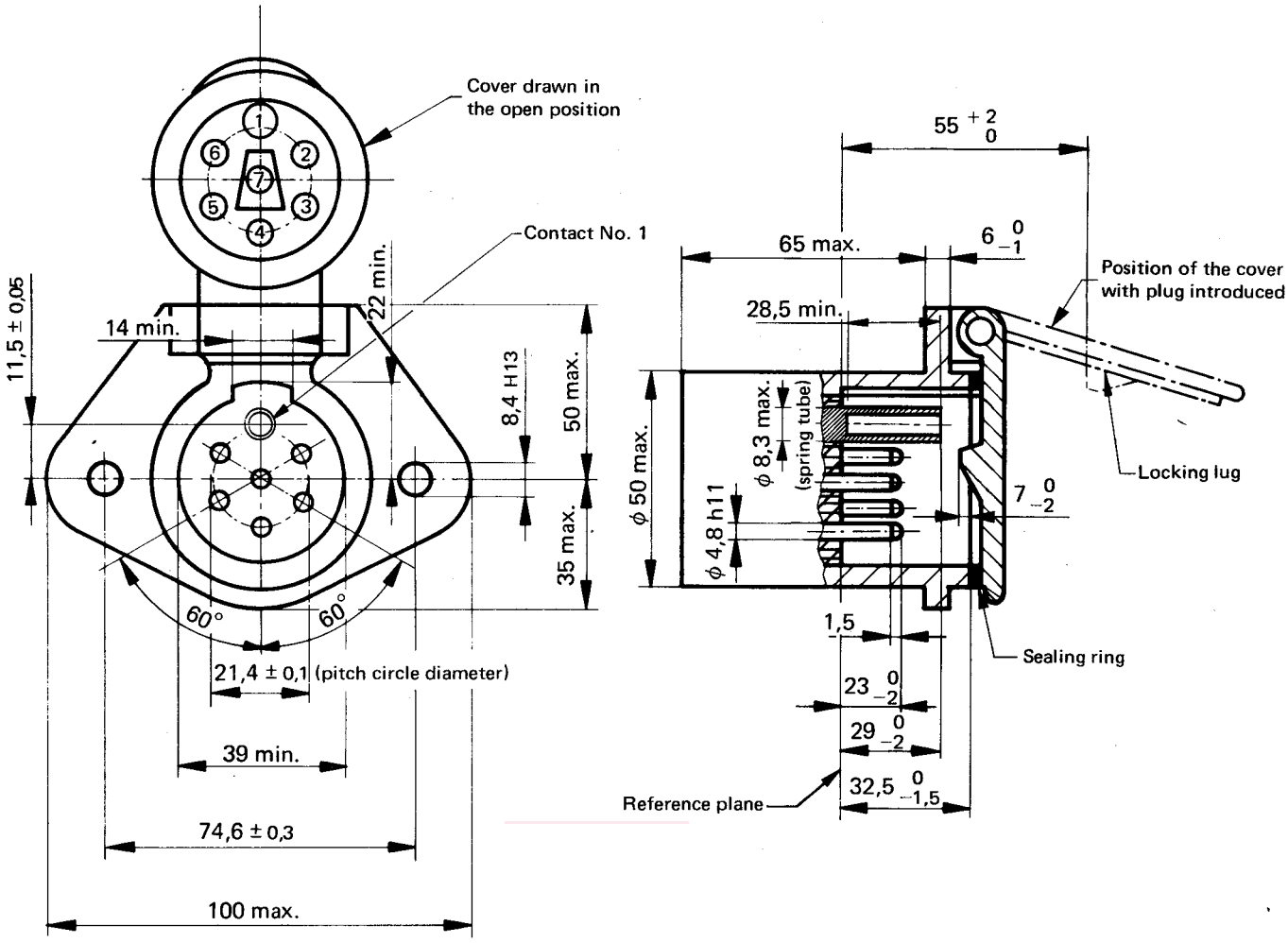

FIGURE 1 — **Socket**