

# International Standard



# 5675

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

## **Agricultural tractors and machinery — Hydraulic couplers for general purposes — Specifications**

*Tracteurs et matériels agricoles — Coupleurs hydrauliques à usage général — Specifications*

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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 5675 was developed by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, and was circulated to the member bodies in January 1979.

It has been approved by the member bodies of the following countries :

|                |                        |                       |
|----------------|------------------------|-----------------------|
| Australia      | Germany, F. R.         | Portugal              |
| Austria        | India                  | Romania               |
| Belgium        | Israel                 | South Africa, Rep. of |
| Canada         | Italy                  | Spain                 |
| Chile          | Korea, Dem. P. Rep. of | Sweden                |
| Czechoslovakia | Libyan Arab Jamahiriya | Switzerland           |
| Denmark        | Mexico                 | Turkey                |
| Finland        | New Zealand            | United Kingdom        |
| France         | Poland                 | USSR                  |

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Bulgaria  
USA

# Agricultural tractors and machinery — Hydraulic couplers for general purposes — Specifications

## 1 Scope

This International Standard specifies the essential interface dimensions, the installation dimensions and the operating requirements for hydraulic couplers employed to transmit hydraulic power from agricultural tractors to agricultural machinery. The clearance zone for the attachment of the coupler to the rear of the tractor is also given.

## 2 Field of application

This International Standard applies to couplers used on hydraulic lines other than those used for the braking system which must be connected or disconnected frequently to allow the transference of machinery from one tractor to another.

## 3 Definitions

The couplers consist of two parts :

**3.1 female part :** The part which incorporates a spring-loaded sleeve and locking balls, and is provided with a cavity to receive the male part.

**3.2 male part :** The probe which fits and locks into the cavity in the female part.

## 4 Dimensional characteristics

The coupler shall comply with figure 1 and the data in the table.

## 5 Operating requirements

**5.1** The pressure drop through the coupler during operation

shall be not greater than 3,5 bar (0,35 MPa) with a flow of 45 l/min, using oil having a viscosity of 300 mm<sup>2</sup>/s\*.

**5.2** The working pressure of the coupler shall be based on a maximum relief valve pressure of 250 bar (25 MPa). The male part of the disconnected coupler shall withstand a minimum pressure of 700 bar (70 MPa).

**5.3** The coupler shall be capable of being connected by hand with a pressure of 7 bar (0,7 MPa) in either of the valves.

**5.4** The coupler shall be so constructed that, when suitably mounted, it will disconnect with a pull on the male part of not more than 1,7 kN applied longitudinally, when subjected to an internal pressure of 175 bar (17,5 MPa). On disconnection the amount of spill shall not exceed 2,5 ml.

**5.5** If the coupler is swivel-mounted, this shall allow a total angular deviation of 60° with respect to an axis parallel to the longitudinal axis of the tractor.

**5.6** The force required to fully open the valve in the male part, when there is no pressure in the coupler, shall not exceed 45 N.

**5.7** If a stop is not provided in the female part, the valve spring load shall be sufficient to prevent closure of the valve in the male part on rapid application of a high rate of flow.

## 6 Location zone of female part of coupler on tractor

The female part of the coupler shall be mounted on the tractor, facing rearwards, so that its face "X" (see figure 1) is within the zone shown on figure 2.

\* 1 mm<sup>2</sup>/s = 1 cSt

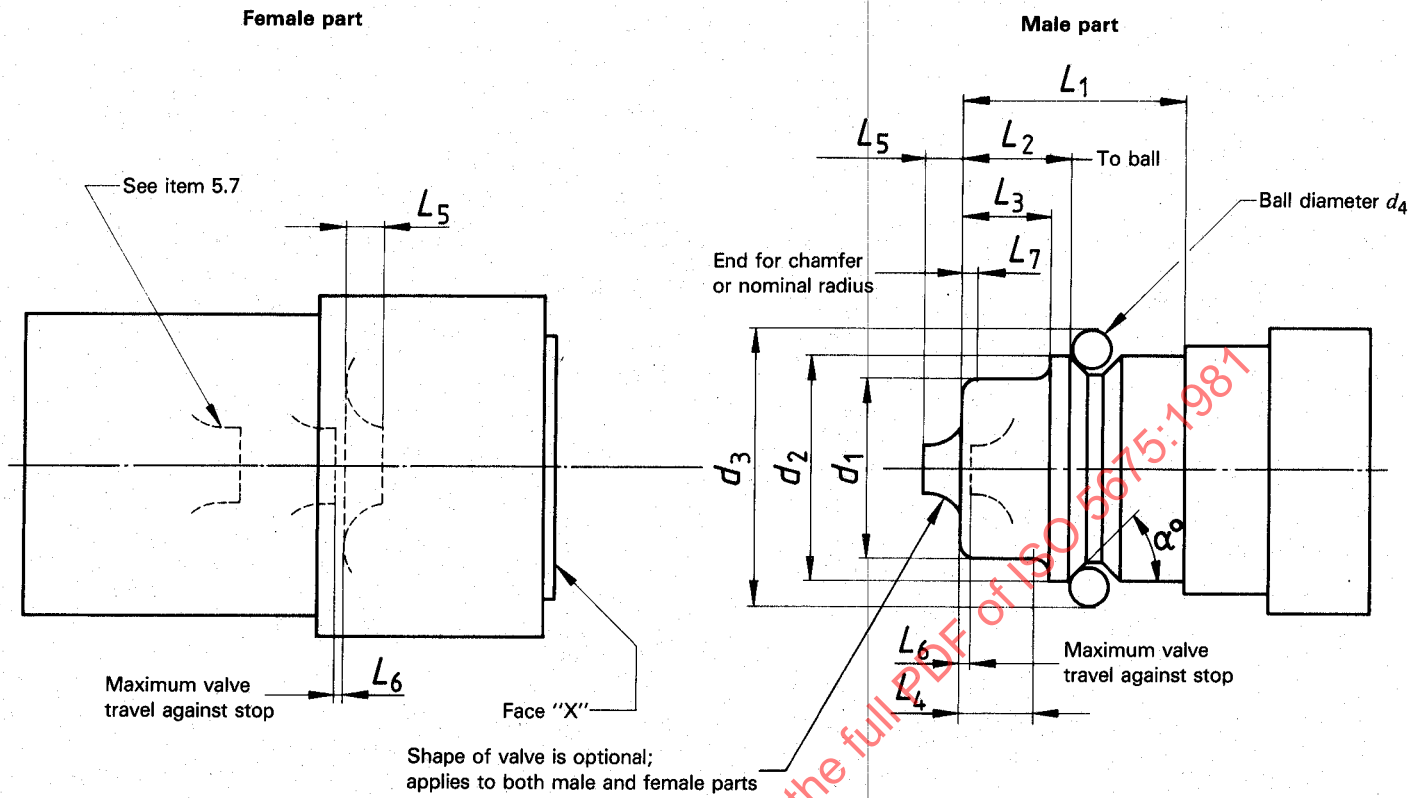


Figure 1 — Hydraulic coupler

NOTES

- 1 The configuration of the coupler shown is solely for the purpose of illustration and to give dimensional references. It is not intended to give design requirements.
- 2 Dimension  $L_2$  applies when the balls of diameter  $d_4$  are held at a gauge diameter of  $d_3$  and also against the flank of the ball groove nearest the nose of the valve.

Table — Dimensional characteristics of hydraulic coupler

| Detail                    | Size           | Remarks                                                                                                                                                                                    |
|---------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions in millimetres |                |                                                                                                                                                                                            |
| $d_1$ max.<br>min.        | 20,56<br>20,48 |  $\phi$ 0,025  $d_2$ |
| $d_2$ max.<br>min.        | 23,74<br>23,66 | —                                                                                                                                                                                          |
| $d_3$                     | 30,30          | Gauge diameter (see note 2)                                                                                                                                                                |
| $d_4$                     | 4,762          | —                                                                                                                                                                                          |
| $L_1$ min.                | 24,00          | —                                                                                                                                                                                          |
| $L_2$ max.<br>min.        | 11,79<br>11,66 | } See note 2                                                                                                                                                                               |
| $L_3$ max.<br>min.        | 9,4<br>9,2     |                                                                                                                                                                                            |
| $L_4$ min.                | 8,50           | Length of diameter $d_1$                                                                                                                                                                   |
| $L_5$ max.                | 4,00           | Valve protrusion                                                                                                                                                                           |
| $L_6$                     | 0,0 — 0,5      | —                                                                                                                                                                                          |
| $L_7$ max.                | 1,5            | —                                                                                                                                                                                          |
| $\alpha$ max.<br>min.     | 46°<br>44°     | —                                                                                                                                                                                          |

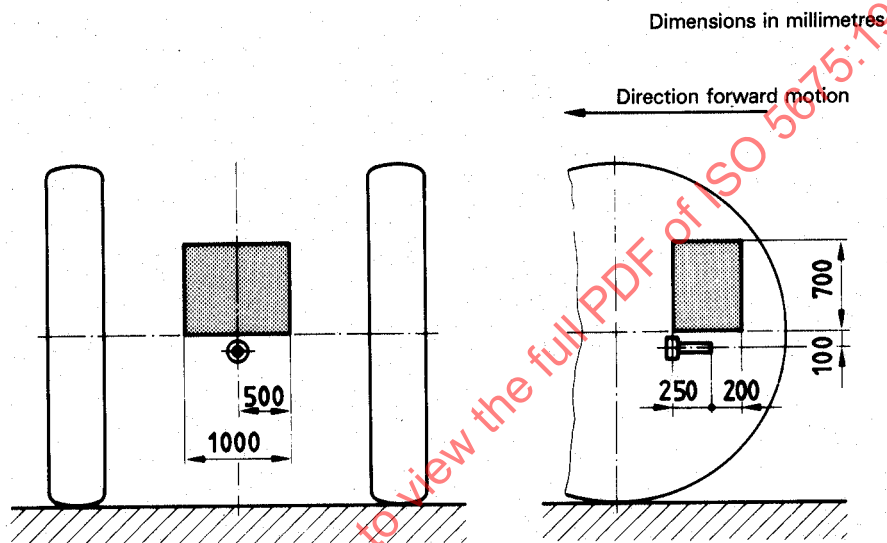


Figure 2 — Hydraulic coupler location zone

NOTE — The configuration of the tractor shown is solely for the purpose of illustration and to give dimensional references. It is not intended to give design requirements.

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