
International Standard



5675

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

Tracteurs et matériels agricoles — Coupleurs hydrauliques à usage général — Spécifications

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Foreword

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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 mm²/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 mm²/s = 1 cSt

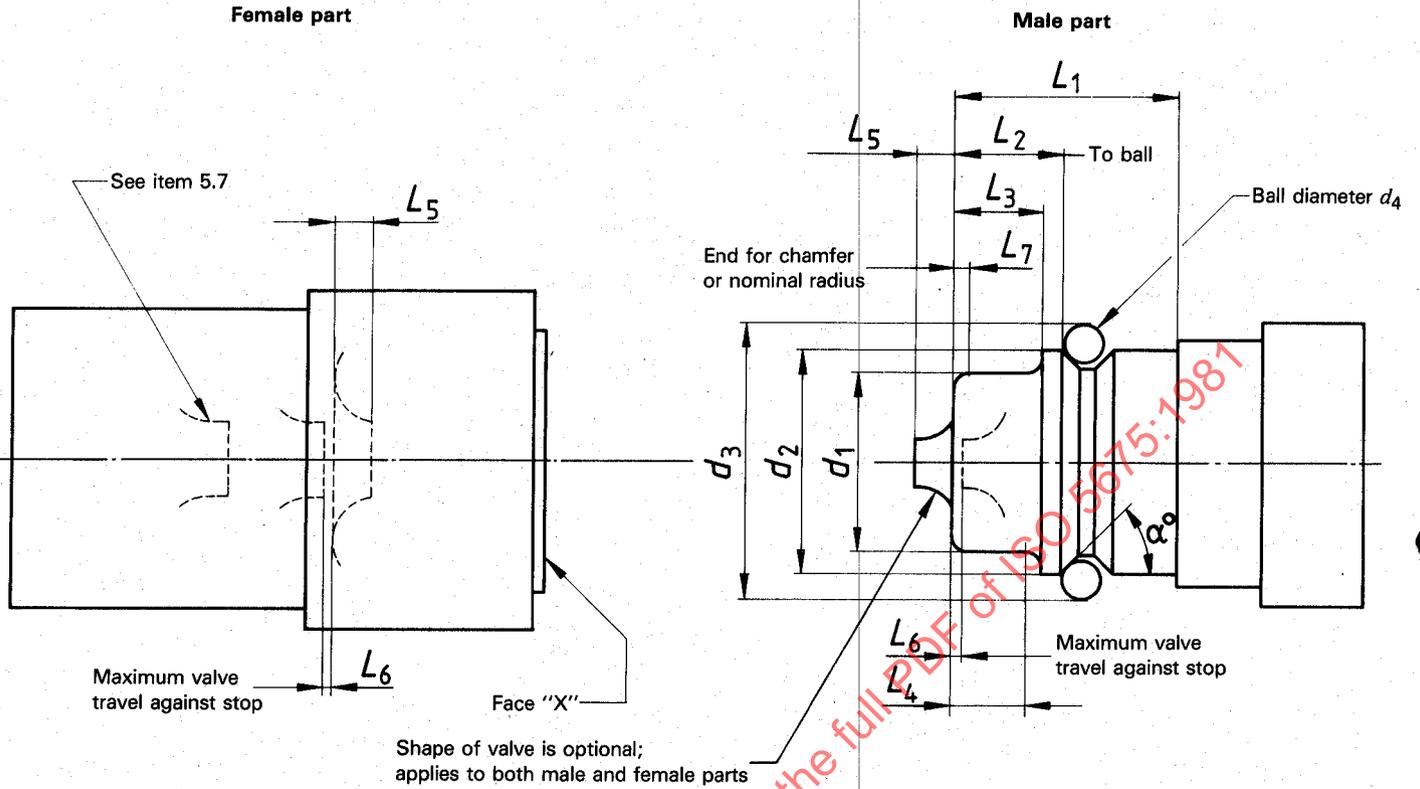
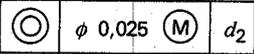


Figure 1 – Hydraulic coupler

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. min.	20,56 20,48	
d_2 max. min.	23,74 23,66	—
d_3	30,30	Gauge diameter (see note 2)
d_4	4,762	—
L_1 min.	24,00	—
L_2 max. min.	11,79 11,66	} See note 2
L_3 max. min.	9,4 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	—
α max. min.	46° 44°	—

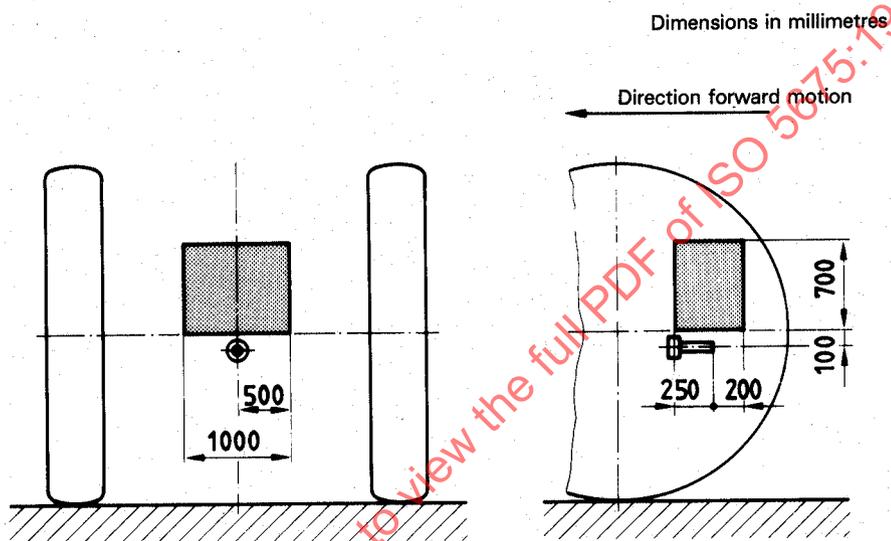


Figure 2 — Hydraulic coupler location zone

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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