
**Agricultural tractors and
machinery — General purpose quick-
action hydraulic couplers**

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

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Published in Switzerland

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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 normally 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 4, *Tractors*.

This fourth edition cancels and replaces the third edition (ISO 5675:2008), which has been technically revised.

The main changes compared to the previous edition are as follows:

- the normative references have been updated;
- the coupler mounting zone for side couplers has been increased to match industry practice;
- a zone for rear couplers has been added when more than three sets of couplers are used on the rear.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Agricultural tractors and machinery — General purpose quick-action hydraulic couplers

1 Scope

This document specifies the essential interface dimensions and the operating requirements for hydraulic couplers employed to transmit hydraulic power from agricultural tractors to agricultural machinery. It is applicable to couplers used in hydraulic lines other than those used for braking circuits.

NOTE All hydraulic couplers are intended to be connected and disconnected frequently to allow the transfer of machinery from one tractor to another without the use of tools or special devices.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7241:2014, *Hydraulic fluid power — Dimensions and requirements of quick-action couplings*

ISO 18869:2017, *Hydraulic fluid power — Test methods for couplings actuated with or without tools*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

coupler female part **female part**

part that has a cavity to receive the male part

3.2

coupler male part **male part**

probe that fits and locks into the cavity of the female part

4 Requirements

4.1 General

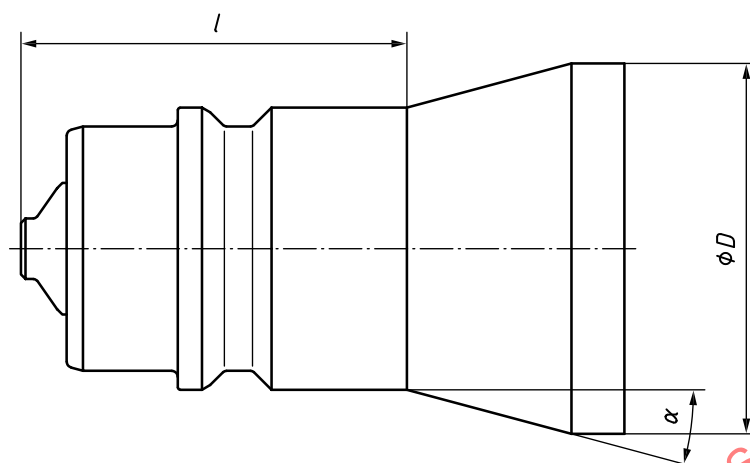
The requirements of this document are applicable if conical style and ball style couplers are coupled together. Care should be taken to ensure that these requirements are fulfilled.

4.2 Dimensional requirements

The dimensions of the coupler male part shall be in accordance with ISO 7241:2014, Table 1 and Figure 1, “Series A”, for sizes 12,5 and 20. The coupler male part dimension shall also be in accordance with

Figure 1 and Table 1 of this document. Additionally, a 15° angle shall be added in order to be compatible with dust protection devices.

Any coupler female part shall couple with any coupler male part when both conform to this document.



Key

ϕD see Table 1

α see Table 1

l dimensions in accordance with ISO 7241: 2014, "Series A"

Figure 1 — Coupler male part dimensions

Table 1 — Coupler male part dimensions

Dimensions in millimetres

Nominal size (according to ISO 7241)	Dimension ϕD	Angle α
12,5	≤ 31	$15^\circ \pm 3^\circ$
20	≤ 38	$15^\circ \pm 3^\circ$

NOTE 1 The nominal size designation corresponds to the nominal inside diameter of the hose recommended for use with the coupling, as specified in ISO 4397.

NOTE 2 Similar couplers are described in ISO 7241; however, couplers conforming to ISO 7241 might not conform to this document.

NOTE 3 Coupler size 20 according to ISO 7241 is compatible to hose size 19 per ISO 4397.

4.3 Operating requirements

4.3.1 The coupler shall be in accordance with the operating requirements of ISO 7241:2014, "Series A" including the additional requirements for "Series A" in ISO 7241:2014, 6.2.

4.3.2 The pressure drop through the coupler shall not be greater than 0,35 MPa with a flow of 45 l/min for size 12,5 and 70 l/min for size 20. The pressure drop shall be measured in accordance with ISO 18869.

4.3.3 The fluid loss at an internal pressure of 0,1 MPa shall be in accordance with Table 2. A fluid loss test shall be conducted in accordance with ISO 18869.

4.3.4 The fluid loss when disconnecting with an internal pressure of 17,5 MPa shall be in accordance with [Table 2](#).

Table 2 — Fluid loss on disconnect with pressure

Nominal size (according to ISO 7241:2014)	Fluid loss when disconnecting at	
	0,1 MPa	17,5 MPa
12,5	2,5 ml	4,0 ml ^a
20	9,0 ml ^a	12,5 ml

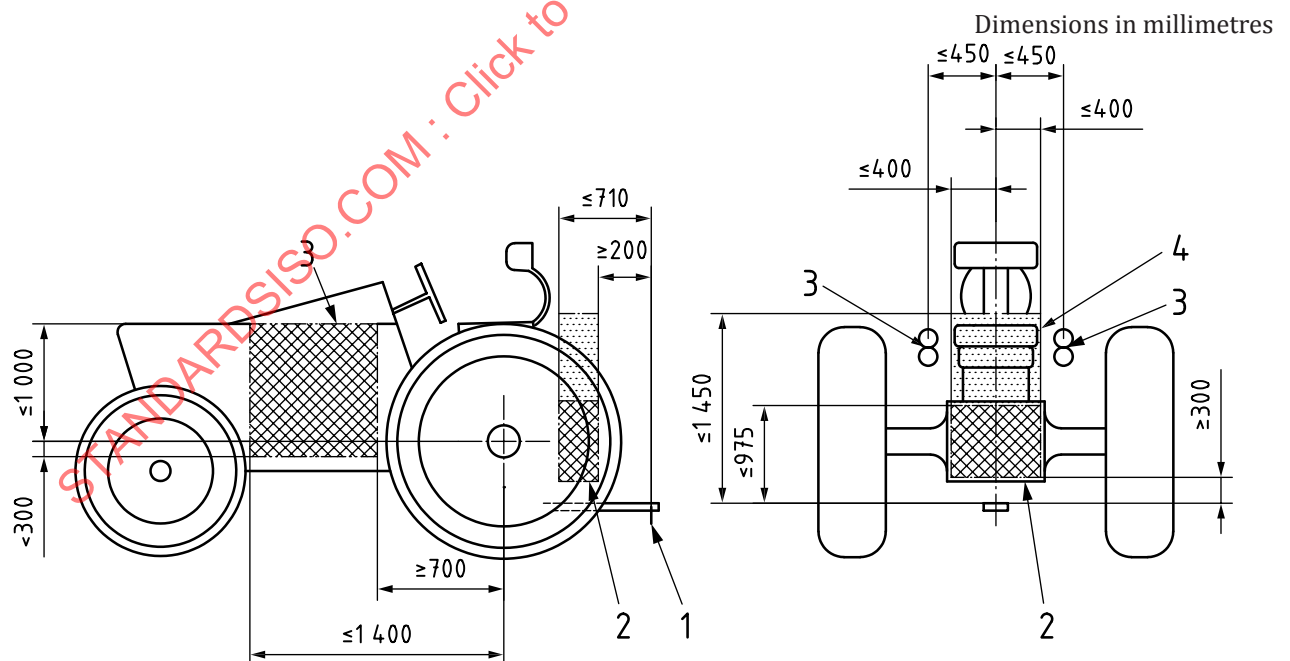
^a These values are transposed from ISO 7241:2014, Table 7.

4.3.5 The force required to fully open the valve in the coupler male part, when there is no internal pressure in the coupler male part, shall not exceed 45 N for size 12,5 and 70 N for size 20.

4.3.6 The coupling shall not check-off (closure of the valve) when oil flows in the male-to-female direction at flow rates less than 190 l/min for size 12,5 and less than 250 l/min for size 20. Fluid viscosity for this requirement shall be in accordance with ISO 18869:2017, 5.4 and 13.4.

5 Location on tractor

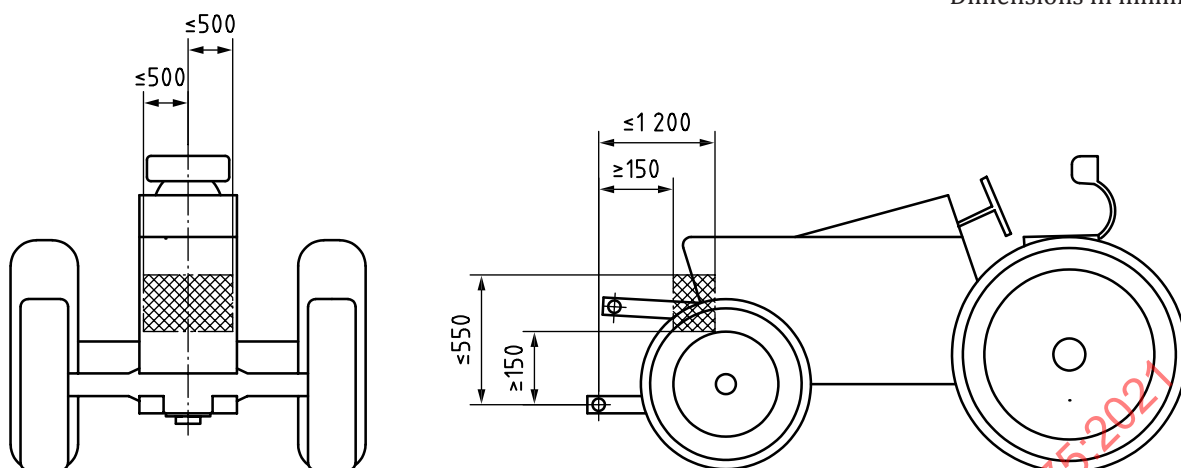
The coupler shall be mounted within the area described in [Figure 2](#) for rear- and side-mounted couplers and [Figure 3](#) for front-mounted couplers. Female couplers shall be used for rear- and front-mounted couplers. Female or male couplers may be used for side-mounted couplers. Tractors with three or less rear-mounted couplers shall place the rear-mounted couplers in area 2 described in [Figure 2](#). Tractors with more than three rear-mounted couplers shall place three in area 2 and may place the additional rear-mounted couplers in area 4 described in [Figure 2](#).



Key

- 1 tractor drawbar, located per nominal dimensions given in ISO 6489-3
- 2 area of location of rear-mounted couplers
- 3 area of location of side-mounted couplers
- 4 area of location of additional rear-mounted couplers

Figure 2 — Location of rear-mounted and side-mounted coupler



NOTE The dimensions based on lower hitch point are taken when the hitch point is horizontal with the draft arm pivot point.

Figure 3 — Location of front-mounted coupler