
International Standard



5676

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

Tractors and machinery for agriculture and forestry — Hydraulic coupling — Braking circuit

Tracteurs et matériels agricoles et forestiers — Coupleurs hydrauliques — Circuit de freinage

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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 developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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 5676 was developed by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, and was circulated to the member bodies in April 1982.

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

Australia	Germany, F. R.	Romania
Austria	India	South Africa, Rep. of
Belgium	Iran	Spain
China	Italy	Sweden
Czechoslovakia	Korea, Rep. of	Switzerland
Denmark	Mexico	Turkey
Egypt, Arab Rep. of	New Zealand	United Kingdom
Finland	Norway	USA
France	Portugal	

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

Canada
USSR

Tractors and machinery for agriculture and forestry — Hydraulic coupling — Braking circuit

1 Scope

This International Standard specifies the conditions for interchangeability, and the operating characteristics and lays down the technical specifications for tests, for the hydraulic couplings on braking systems for towed agriculture and forestry machinery.

2 Field of application

This International Standard applies solely to hydraulic brake couplings.

The braking system is of a regulatable type, operated by an increase in pressure within a service pressure range of between 10 and 15 MPa (100 and 150 bar).

These devices are used to connect or disconnect the braking circuit each time trailed agricultural or forestry machinery is hitched or unhitched.

3 References

ISO 2082, *Metallic coatings — Electroplated coatings of cadmium on iron or steel.*

ISO 3104, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity.*

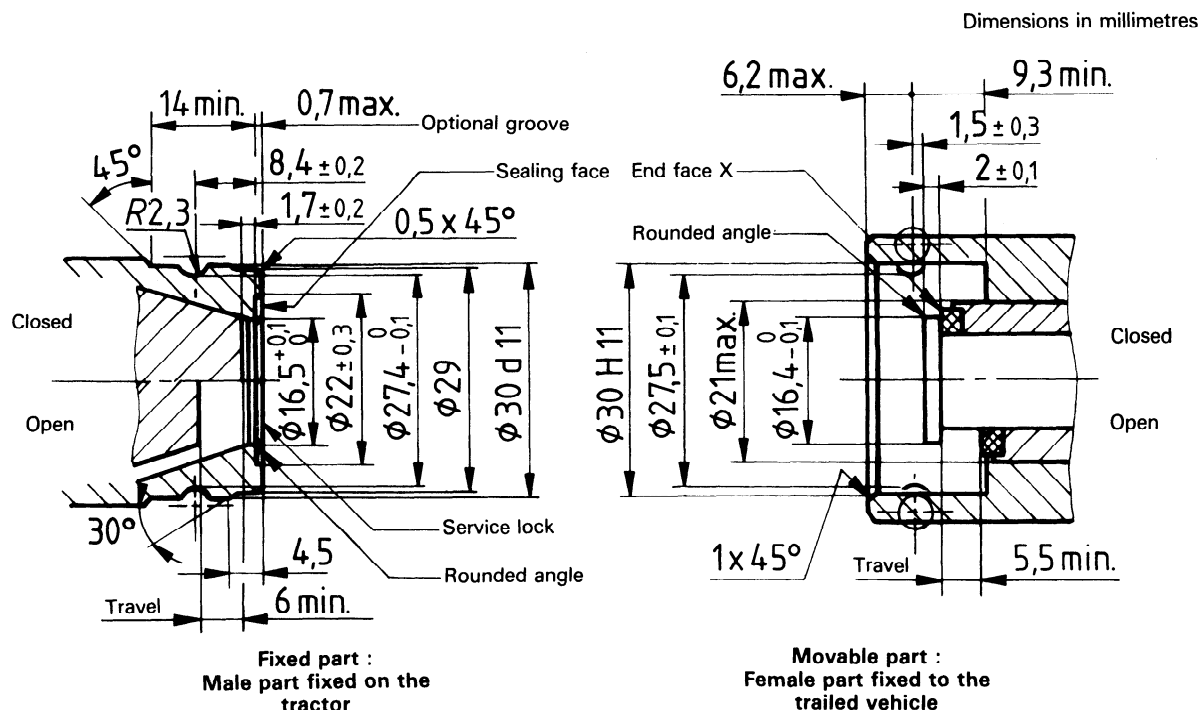
ISO 5675, *Agricultural tractors and machinery — Hydraulic couplers for general use — Specifications.*

4 Definitions

See ISO 5675.

5 Dimensional characteristics

The coupling shall conform with the figure.



NOTE — The sole aim of the configuration of the coupling is to illustrate and give the reference dimensions. It is not intended to convey design requirements.

Figure — Dimensions of the hydraulic coupler

6 Operating characteristics and technical specifications

6.1 Operating characteristics

6.1.1 Pressures

The normal service pressure shall be 15 MPa (150 bar) maximum.

When the tractor is operated without a trailer, the unconnected male part shall be able to withstand the maximum permissible service pressure of 15 MPa (150 bar).

Connection and disconnection of the coupling device should normally only be carried out without pressure in the circuit.

Under these conditions, the disconnecting force applied to the locking ring shall be less than 45 N. For connection, a force of less than 150 N shall be applied to the body of the female part.

6.1.2 Temperature

The operating temperatures shall be between $-30\text{ }^{\circ}\text{C}$ and $100\text{ }^{\circ}\text{C}$ with possible peaks at $140\text{ }^{\circ}\text{C}$ and shall last not more than 1 h.

6.2 Technical specifications

6.2.1 Seals

The seals shall be compatible with the oils used in agriculture and under the operating conditions specified in 6.1.

6.2.2 Protection

The external parts shall be protected by cadmium coating 8 to $12\text{ }\mu\text{m}$ thick or by any other material giving similar protection.

6.2.3 Testing of the male and female parts with hydraulic fluid

The following tests shall be carried out using a hydraulic fluid of high fluidity with viscosity of

- not less than $10\text{ mm}^2/\text{s}$ (10 cSt^1) at $54,4\text{ }^{\circ}\text{C}$,
- not greater than $500\text{ mm}^2/\text{s}$ (500 cSt) at $-40\text{ }^{\circ}\text{C}$ (see ISO 3104).

6.2.3.1 Hydraulic test pressure

Apply a pressure of 22,5 MPa (225 bar) for 5 min :

- to the male part,
- to the female part alone,
- to the connected male and female parts.

No leakage, permanent distortion or disconnection shall be observed.

6.2.3.2 Loss of oil and intake of air on coupling

Connect the male part and female part to the testing bench by flexible tubing and subject them to a pressure of 0,01 MPa (0,1 bar).

After coupling and uncoupling 100 times in the horizontal position at a temperature of $20 \pm 5\text{ }^{\circ}\text{C}$, it shall be verified that :

- total oil loss has not exceeded 5 ml.

6.2.3.3 Loss of pressure

For an output of 20 l/min under a pressure of 15 MPa (150 bar) at a temperature of $20 \pm 5\text{ }^{\circ}\text{C}$, the loss of pressure shall not exceed 0,2 MPa (2 bar).

7 Fixing of the male half of the coupling

The male part of the coupling shall be mounted on the tractor facing backwards.

1) 1 cSt (centistokes) = $1\text{ mm}^2/\text{s}$