
**Agricultural wheeled tractors —
Front-mounted equipment —
Part 1:
Power take-off and three-point linkage**

*Tracteurs agricoles à roues — Équipement monté à l'avant —
Partie 1: Prise de force et attelage trois points*
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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8759-1 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 4, *Tractors*.

This second edition cancels and replaces the first edition (ISO 8759-1:1985), as well as ISO 8759-2:1985, of which it constitutes a technical revision.

ISO 8759 consists of the following parts, under the general title *Agricultural wheeled tractors — Front-mounted equipment*:

- *Part 1: Power take-off and three-point linkage*
- *Part 2: Stationary equipment connection*

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1 Scope

This part of ISO 8759 specifies dimensions and requirements for power take-off and for three-point linkages in association with a power lift for the attachment of implements or equipment to the front of agricultural wheeled tractors.

It is not applicable to tractors which are designed to run in two directions, where either end can be considered to be the front or the rear; in this case ISO 500 and ISO 730-1 apply.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8759. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8759 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 500:1991, *Agricultural tractors — Rear-mounted power take-off — Types 1, 2 and 3.*

ISO 730-1:1994, *Agricultural wheeled tractors — Rear-mounted three-point linkage — Part 1: Categories 1, 2, 3 and 4.*

3 Definitions

For the purposes of this part of ISO 8759, the following definition and those given in ISO 730-1:1994 apply, except for definitions 3.2.25¹⁾ and 3.2.26¹⁾ which concern convergence and are not applicable to front-mounted linkages. Additionally, pitch (3.2.21¹⁾) is considered positive when clockwise as viewed from the left-hand side of the tractor.

3.1 front of the tractor

leading end of the machine when moving in the normally accepted direction of travel on the road, as characterised by the relative positions of the seat, steering wheel, controls and road lighting equipment

4 Power take-off (PTO)

4.1 Type, rotational frequency and direction of rotation

The power take-off (PTO) shall conform to ISO 500. It shall be either of type 2 (∅ 35 mm, 21 splines) or type 3 (∅ 45 mm, 20 splines).

¹⁾ These references concern ISO 730-1:1994.

The rated rotational frequency shall be 100 min^{-1} and rotation shall be in the clockwise direction when viewed from the front of the tractor.

The direction of rotation shall be indicated by an arrow.

NOTE — If in special cases a power take off of type 1 ($\varnothing 35 \text{ mm}$, 6 splines) is provided, the rated rotational frequency is then be 540 min^{-1} or 1000 min^{-1} and rotation is in the anti-clockwise direction when viewed from the front of the tractor.

4.2 Location

The location of the axis of the power take-off shall lie within the shaded rectangle shown in figure 1.

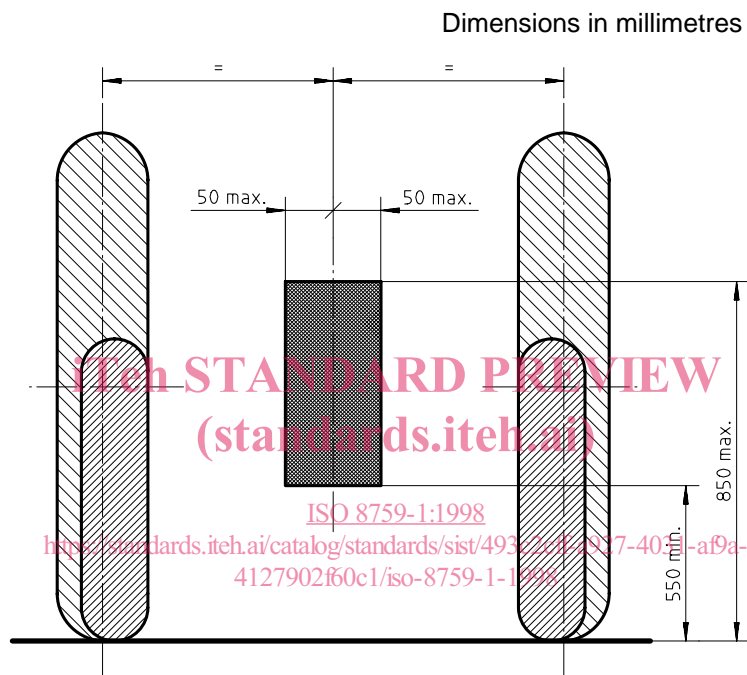
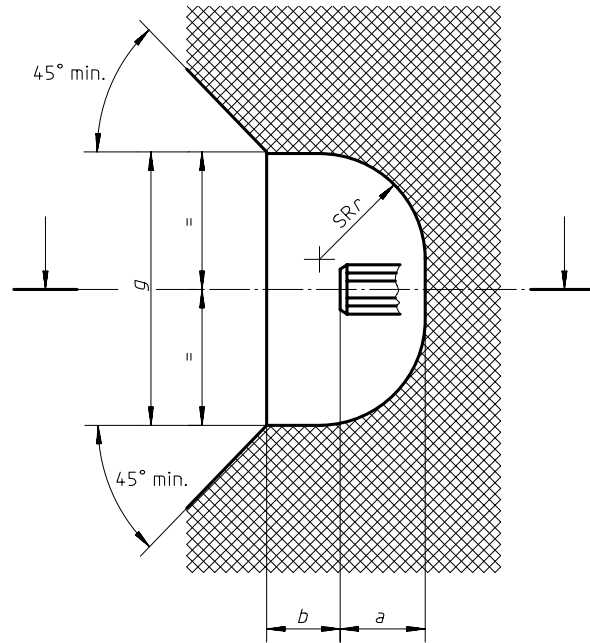


Figure 1 — Location of power take-off (viewed from the front of the tractor)

4.3 Clearance zone around PTO

The clearance zone around the power take-off shall be in accordance with figure 2 and table 1. The dimensions *g* and *i* may be transposed.



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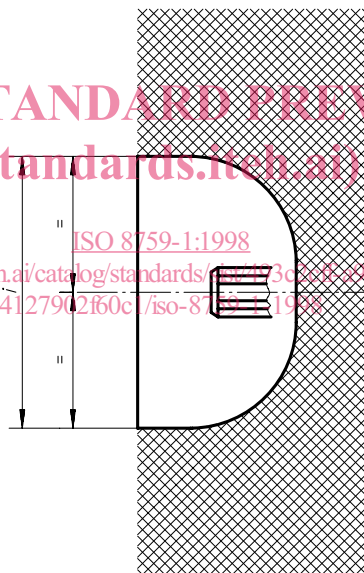


Figure 2 — Clearance zone

Table 1 — Dimensions of the clearance zone

PTO type	a min.	b max.	g min.	i min.	r max.
1	76	48 ¹⁾	240 ¹⁾	200 ¹⁾	76
2	76	48 ¹⁾	240 ¹⁾	200 ¹⁾	76
3	89	100	290	295	89

¹⁾ On tractors with a minimum track setting of 1 150 mm or less, dimensions may be reduced to $b = 40$ mm, $g = 190$ mm, $i = 175$ mm.

4.4 Protection of PTO

A protective device in accordance with figure 3 and table 2 shall be supplied by the manufacturer and shall be fixed at the tractor, unless an equivalent protective device ensures the same degree of protection.

Two options are specified; the first provides minimum protection and the second maximum protection.

If the protective device is not designed to be used as a step, it may be flexible.

Provision shall be made for anchoring the power take-off drive shaft guard. Fully closed protective devices may be used.

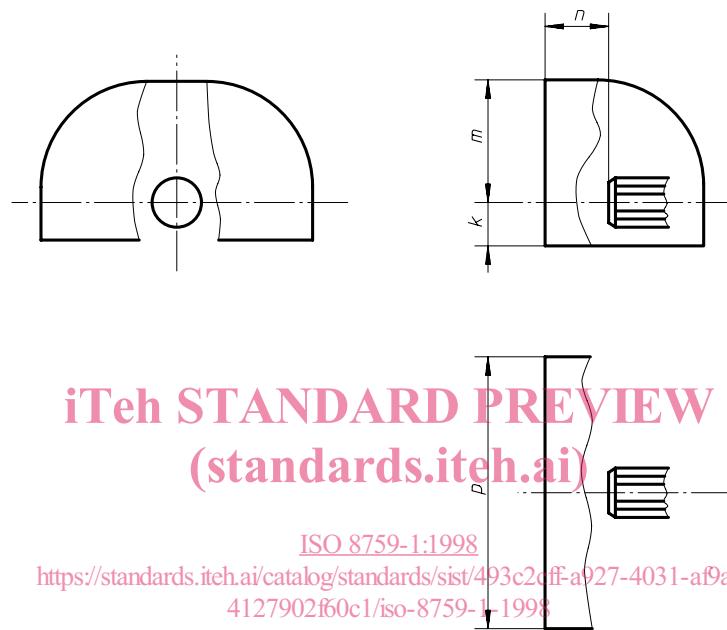


Figure 3 — Protective device

Table 2 — Dimension of the protective device

Dimensions in millimetres

	Minimum protection				Maximum protection			
			+5 0	k min.	n ± 5	m ± 5	p +5 0	k min.
1	90 1)	130 1)	290 1)	70	60 1)	120 1)	200 1)	70
2	90 1)	130 1)	290 1)	70	60 1)	120 1)	200 1)	70
3	130	155	390	80	100	145	295	80

1) On tractors with a minimum track setting of 1 150 mm or less, dimensions may be reduced to n = 40 mm, m = 100 mm, p = 175 mm.

4.5 Operation of controls

The rated rotational frequency of the PTO shall be indicated at the level of the driver's work place or at the level of the control itself. Unintentional engagement shall be avoided. If more than one rotational frequency is provided, unintentional change-over to a higher frequency shall be avoided.

5 Three-point linkage

The dimensions specified in ISO 730-1: 1994, clauses 4.1 and 5.1, apply with the exception of the following:

- a) hitch points (ISO 730-1:1994, subclause 4.1.1): the dimensions of the hitch points shall be in accordance with those indicated for categories 2 and 3;
- b) upper link point arrangements (ISO 730-1:1994, subclause 4.1.2): the arrangement of an upper link point shall allow an inclination of the mast between -3° to $+3^{\circ}$ from the vertical and a transport pitch of 8° to 12° where both are related to the vertical mast position;
- c) torsional free float and levelling adjustment (ISO 730-1:1994, subclause 4.1.3 and 4.1.4): these provisions are not required for a front-mounted linkage;
- d) transport height (ISO 730-1:1994, table 3): the minimum transport height shall be 850 mm for category 2 and 965 mm for category 3;
- e) lower hitch point clearance (ISO 730-1:1994, table 3): in order to allow oscillation to the front axle and turning of the front tyre, the lower hitch point clearance shall be at least 250 mm relative to the straight ahead position of the front tyres.

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