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**Agricultural vehicles — Mechanical  
connections between towed and towing  
vehicles —**

Part 4:  
**Dimensions of piton-type coupling**

*Véhicules agricoles — Liaisons mécaniques entre véhicules  
remorqueurs et véhicules remorqués —*

*Partie 4: Dimensions des dispositifs d'attelage de type piton*



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## Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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.

ISO 6489-4 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 4, *Tractors*.

ISO 6489 consists of the following parts, under the general title *Agricultural vehicles — Mechanical connections between towed and towing vehicles*:

- *Part 1: Dimensions of hitch-hooks*
- *Part 2: Specifications for clevis coupling 40*
- *Part 3: Tractor drawbar*
- *Part 4: Dimensions of piton-type coupling*



# Agricultural vehicles — Mechanical connections between towed and towing vehicles —

## Part 4: Dimensions of piton-type coupling

### 1 Scope

This part of ISO 6489 specifies the dimensional requirements for the piton-type coupling devices used in the attachment to agricultural towing vehicles of towed, non-balanced trailers and implements equipped with a coupling ring specified in ISO 5692-1. Its purpose is to ensure the interchangeability of the mechanical connections on agricultural towing vehicles. It is applicable only in those cases where the vertical static load does not exceed 30 kN.

### 2 Normative references

The following referenced documents are indispensable for the application 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 500 (all parts), *Agricultural tractors — Rear-mounted power take-off types 1, 2 and 3*

ISO 5692-1:—<sup>1)</sup>, *Agricultural vehicles — Mechanical connections on towed vehicles — Part 1: Dimensions for hitch-rings*

### 3 Terms and definitions

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

#### 3.1

##### **piton-type coupling device**

coupling device consisting of a pin (see Figure 1), mounting part and keeper

#### 3.2

##### **mounting part**

part needed to mount the pin and the keeper to an agricultural vehicle or to its mounting frame

#### 3.3

##### **keeper**

part that prevents unintentional uncoupling of the hitch-ring

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1) To be published. (Revision of ISO 5692:1979)

## 4 Dimensions

4.1 The keeper location and piton-type coupling device dimensions shall be in accordance with Figures 1 and 2. The keeper shall be contained within the maximum metal outline.

4.2 No part of the keeper shall be allowed to extend beyond the hatched clearance lines (maximum metal condition illustrated) shown in Figure 2.

4.3 The manufacturer is responsible for both the design and the manufacturing quality of the piton-type coupling device. In order to prevent unintentional uncoupling of the hitch-ring when subjected to the maximum design load, the distance between the top of the pin and the keeper shall not exceed 10 mm (see Figure 2).

4.4 The yaw requirement of 60° according to ISO 5692-1 is applicable for the device. Large tyres and narrow track settings on the towing vehicle can restrict this angle in service: when smaller tyres and/or wide track settings are used on the towing vehicle, this angle may be exceeded. As this could result in interference, it should be indicated on a decal or decals on or near the assembly, and in the operator's manual.

Dimensions in millimetres

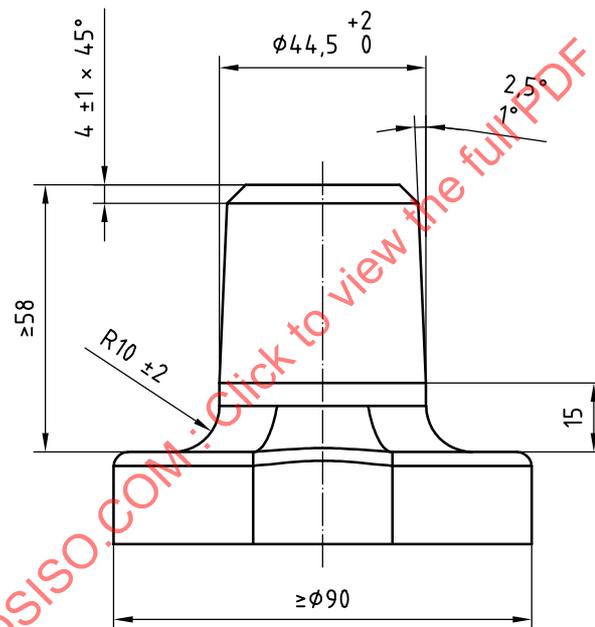


Figure 1 — Dimensions of pin

## 5 Location

5.1 The location of the piton-type coupling device shall be in accordance with Figure 3.

5.2 In order to allow for the travel angles defined in ISO 5692-1, the location of the piton-type coupling device shall be in accordance with the following:

- the piton-type coupling device shall be mounted in the plane of the tractor longitudinal axis;
- the pin shall be located as high as possible, without any part of the pin-type coupling or its construction, keeper-plate, etc. entering the clearance zone specified for the PTO (power take-off) according to ISO 500.

Dimensions in millimetres

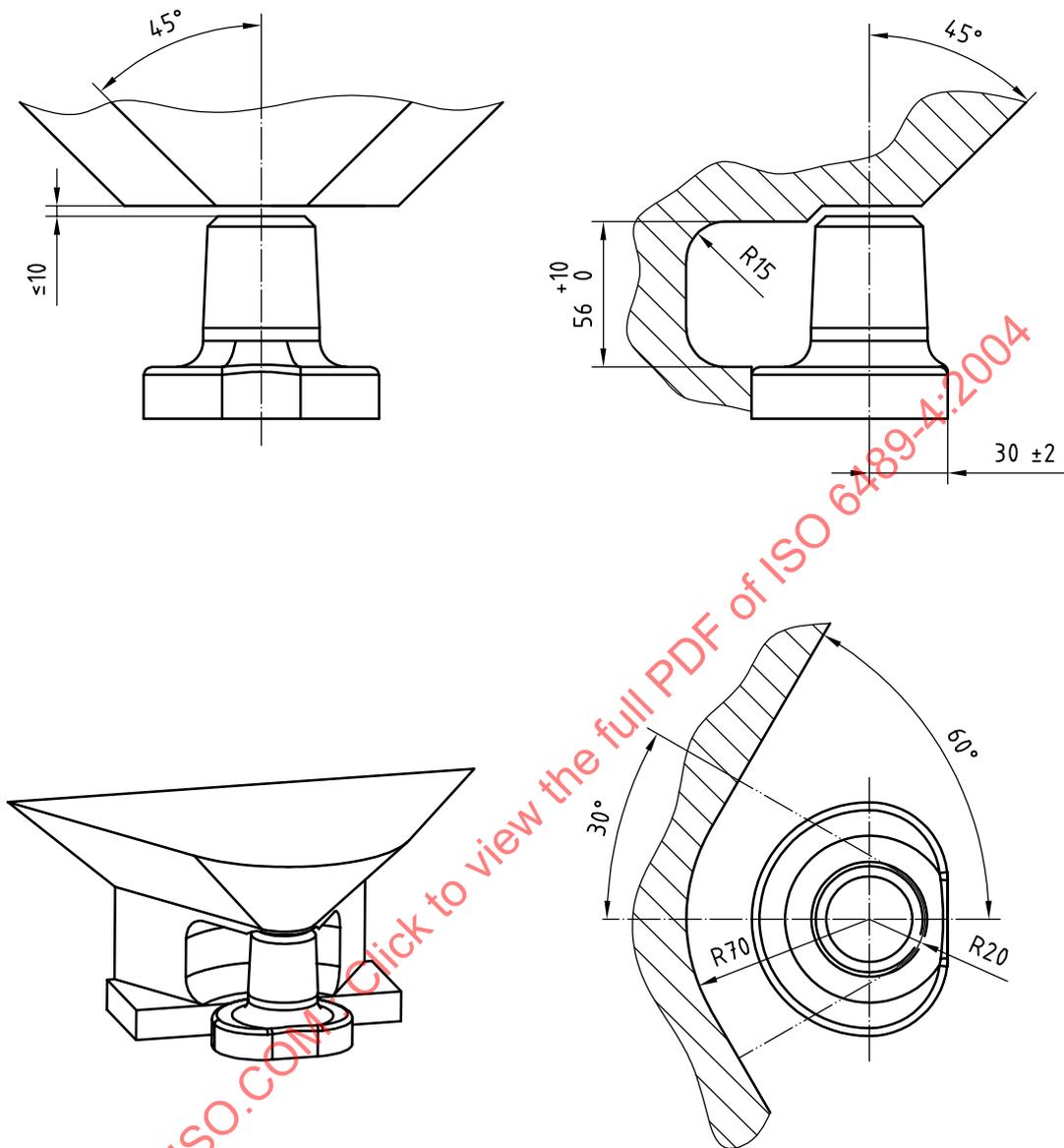
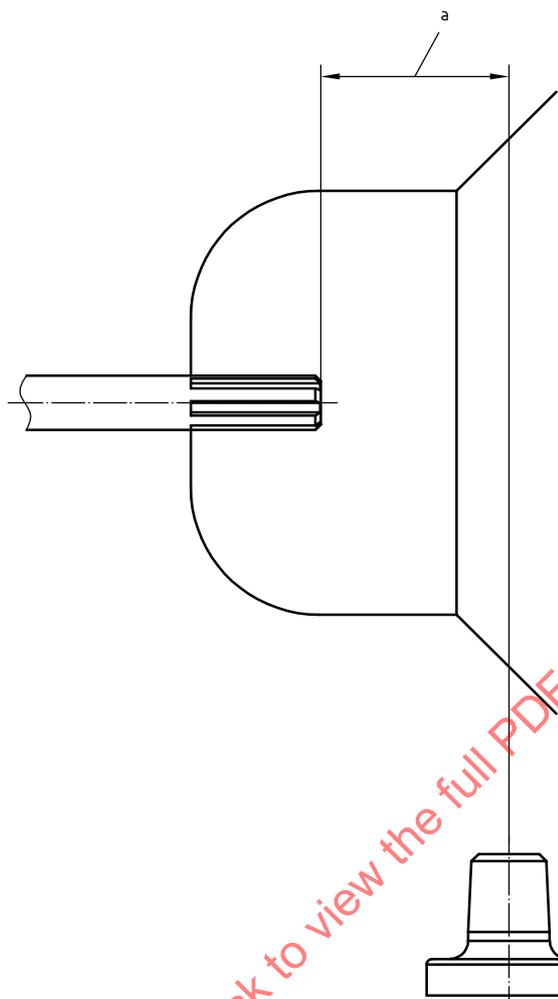


Figure 2 — Dimensions of keeper limiting surface (maximum metal)



a 50 mm to 160 mm.

Figure 3 — Pin PTO relations

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## Annex A (informative)

### Recommended mechanical connection combinations between towing and towed vehicles

Towing vehicle	Towed vehicle
ISO 6489-1:1991 hook type	ISO 5692:1979/ISO 5692-1:— <sup>c</sup> hitch-ring (50 mm hole centre, 30 mm ring diameter)
ISO 6489-1:2001 hook type <sup>a</sup>	ISO 5692:1979/ISO 5692-1:— <sup>c</sup> hitch-ring (50 mm hole centre, 30 mm ring diameter)
	ISO 20019:2001 hitch-ring (50 mm hole centre, 30 mm to 41 mm ring diameter)
ISO 6489-2:2002 bolt type	ISO 5692-2:2002 coupling ring (40 mm socket)
	ISO 8755:1986 40 mm drawbar coupling <sup>b</sup>
	ISO 1102:1986 50 mm drawbar coupling <sup>b</sup>
ISO 6489-4:2004 piton type	ISO 5692:1979/ISO 5692-1:— <sup>c</sup> hitch-ring (50 mm hole centre, 30 mm ring diameter)
ISO 24347 ball type	ISO 24347 <sup>d</sup> (80 mm ball diameter)
<p>Only these combinations are recommended.</p> <p><sup>a</sup> Connecting a ISO 6489-1:2001 hook, manufactured in accordance with the maximum sizes permitted, to hitch-rings in accordance with ISO 5692-1 and of minimum dimensions (30 mm ring diameter) according to ISO 20019 could result in a “jerky” connection between the tractor and the trailer and result in less driving comfort.</p> <p><sup>b</sup> Primarily used on trailers towed behind trucks (on-road).</p> <p><sup>c</sup> To be published. (Revision of ISO 5692:1979)</p> <p><sup>d</sup> Under preparation.</p>	