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IS 11270 (1985): Technical requirements for ring-type  
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*Indian Standard*

TECHNICAL REQUIREMENTS FOR  
RING-TYPE HITCHES FOR AGRICULTURAL  
TRAILERS

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**INDIAN STANDARDS INSTITUTION,**  
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NEW DELHI 110002

# Indian Standard

## TECHNICAL REQUIREMENTS FOR RING-TYPE HITCHES FOR AGRICULTURAL TRAILERS

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**IS : 11270 - 1985**

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## *Indian Standard*

# TECHNICAL REQUIREMENTS FOR RING-TYPE HITCHES FOR AGRICULTURAL TRAILERS

### 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 31 May 1985, after the draft finalized by the Farm Transport Equipment Sectional Committee had been approved by the Agricultural and Food Products Division Council.

**0.2** Use of ring-type hitches is very common in agricultural trailers for attaching with towing tractors. A need was felt to prepare this standard in order to provide necessary dimensions and other characteristics for interchangeability and quality production.

**0.3** Hitch specified in this standard may be used on all balanced and semi-trailers used in agricultural work, provided that they are made of appropriate material and have adequate strength and wear resistance for the type, size and load characteristics of the trailers to which they are fitted.

**0.4** This standard is complimentary to IS : 8213-1983\*.

**0.5** This standard is based on the ISO 5692-1979 Agricultural vehicles mechanical connections on towed vehicles hitch rings — Specification, issued by International Organization for Standardization.

**0.6** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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### 1. SCOPE

**1.1** This standard covers the dimensions and other requirements for ring-type hitches for agricultural trailers.

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\*Specification for agricultural trailer (*first revision*).

†Rules for rounding off numerical values (*revised*).

## **2. TERMINOLOGY**

**2.0** For the purpose of this standard, the following definitions shall apply.

**2.1 Angle of Pitch** — Rotation around a horizontal axis passing through the coupling point and perpendicular to the longitudinal plane of symmetry of the vehicle ( *see  $\alpha$  in Fig. 1* ).

**2.2 Angle of Roll** — Rotation around a horizontal axis passing through the coupling point and located in the plane of symmetry of the vehicle ( *see  $\alpha$  in Fig. 2* ).

**2.3 Angle of Yaw** — Rotation around a vertical axis passing through the coupling point ( *see  $\alpha$  in Fig. 3* ).

## **3. DIMENSIONS**

**3.1** The dimensions of the ring shall be as shown in Fig. 4. The portion shown by fine lines in Fig. 4 is left to the choice of the manufacturer.

## **4. OTHER REQUIREMENTS**

**4.1** The ring, which shall be substantially toroidal, shall be forged and the shank shall be forged and/or machined.

**4.2** The trailer tow bar with hitch ring when coupled to the tractor attachment, the tow bar shall be free to turn so that the angles formed with the horizontal situated in the plane of symmetry of the tractor and passing through the coupling point, shall have the following values :

- a) Minimum value of angle of pitch as  $20^\circ$  on top and bottom,
- b) Minimum value of angle of roll as  $20^\circ$  on top and bottom, and
- c) Minimum value of angle of yaw as  $60^\circ$  on both sides.

**NOTE** — It is understood that the ring is fixed on the tow bar and that the towing attachment on the tractor shall be designed to allow for above travel angles.



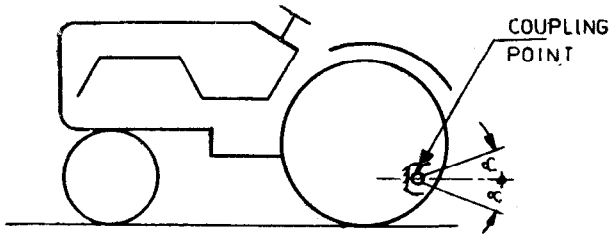


FIG. 1 ANGLE OF PITCH

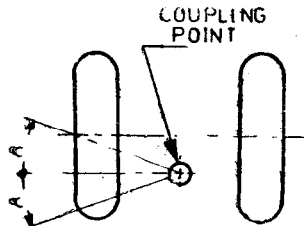


FIG. 2 ANGLE OF ROLL

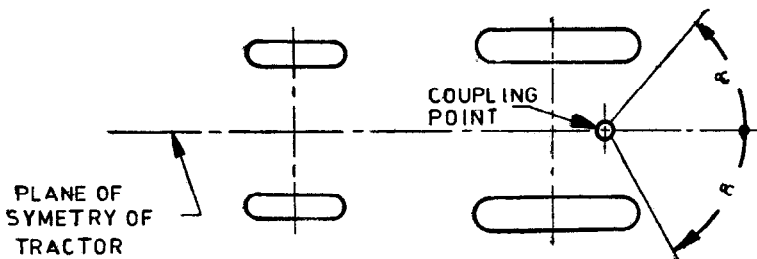
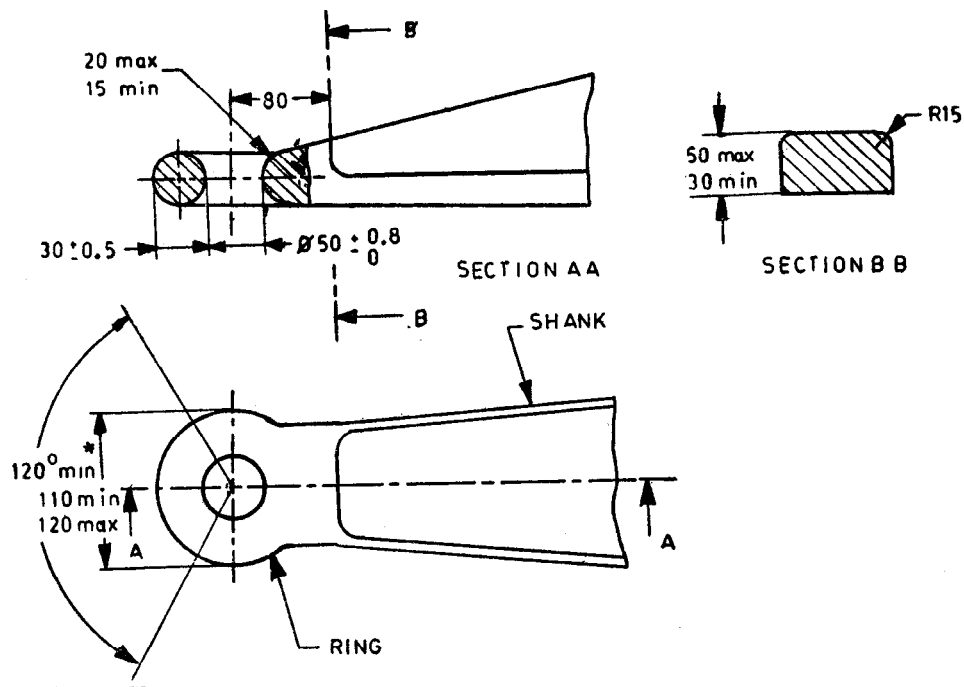


FIG. 3 ANGLE OF YAW



All dimensions in millimetres.

FIG. 4 DIMENSIONS OF RING

\*Zone of ring having a constant section of diameter 30 to permit a turning angle of  $60^\circ$  either side of the longitudinal centre line.