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मानक

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Mazdoor Kisan Shakti Sangathan

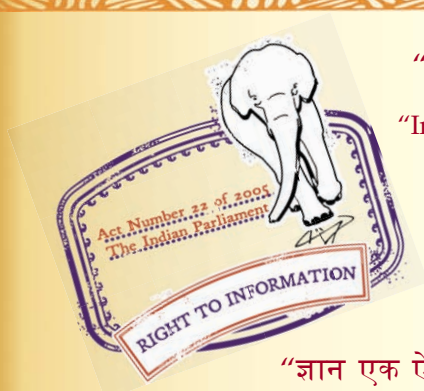
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

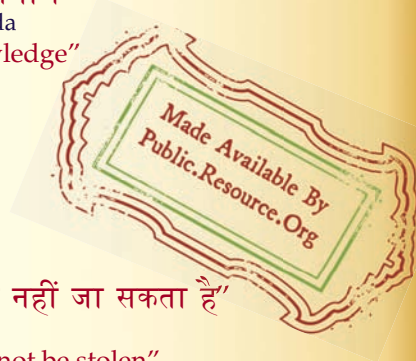
IS 15023-1 (2001): Technical Drawings - Simplified Representation of the Assembly of Parts with Fasteners, Part 1: General Principles [PGD 24: Drawings]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

तकनीकी ड्राइंग — बंधकों से पुर्जों के समुच्चय बनाने का
सरलीकृत प्रस्तुतीकरण
भाग 1 सामान्य सिद्धांत

Indian Standard

**TECHNICAL DRAWINGS — SIMPLIFIED
REPRESENTATION OF THE ASSEMBLY
OF PARTS WITH FASTENERS**

PART 1 GENERAL PRINCIPLES

ICS 01.100.20; 21.060.01

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NATIONAL FOREWORD

This Indian Standard (Part 1) which is identical with ISO 5845-1 : 1995 'Technical drawings — Simplified representation of the assembly of parts with fasteners — Part 1: General principles' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of Drawings Sectional Committee and approval of the Basic and Production Engineering Division Council.

This standard (Part 1) establishes general principles for the simplified representation of holes, bolts (screws), rivets, etc on technical drawings. Other part of this series is given as follows:

IS 15023 (Part 2) : Technical drawings — Simplified representation: Part 2 Rivets for 2001 aerospace equipment

The text of ISO standard has been approved as suitable for publication as Indian Standard without deviations. In this adopted standard, certain terminology and conventions are not identical to those used in the Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a full point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 128 : 1982	IS 10714 : 1983 General principles of presentation on technical drawings	Identical
ISO 129 : 1985	IS 11669 : 1986 General principles of dimensioning on technical drawings	do
ISO 5845-2 : 1995	IS 15023 (Part 2) : 2001 Technical drawings — Simplified representation: Part 2 Rivets for aerospace equipment	do
ISO 10209-1 : 1992	IS 8930 (Part 1) : 1995 Technical product documentation — Vocabulary: Part 1 Terms relating to technical drawings: General and types of drawings (<i>first revision</i>)	do
ISO 10209-2 : 1993	IS 8930 (Part 2) : 2001 Technical product documentation — Vocabulary: Part 2 Terms relating to projection methods	do

Indian Standard

**TECHNICAL DRAWINGS — SIMPLIFIED
REPRESENTATION OF THE ASSEMBLY
OF PARTS WITH FASTENERS**

PART 1 GENERAL PRINCIPLES

1 Scope

This part of ISO 5845 establishes general principles for the simplified representation of holes, bolts (screws), rivets, etc. on technical drawings.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 5845. 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 5845 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 128:1982, *Technical drawings — General principles of presentation*.

ISO 129:1985, *Technical drawings — Dimensioning — General principles, definitions, methods of execution and special indications*.

ISO 5845-2:1995, *Technical drawings — Simplified representation of the assembly of parts with fasteners — Part 2: Rivets for aerospace equipment*.

ISO 10209-1:1992, *Technical product documentation — Vocabulary — Part 1: Terms relating to technical drawings: general and types of drawings*.

ISO 10209-2:1993, *Technical product documentation — Vocabulary — Part 2: Terms relating to projection methods*.

3 Definitions

For the purposes of this part of ISO 5845, the definitions given in ISO 10209-1 and ISO 10209-2 apply.

4 Simplified representation of fasteners

4.1 Representation on projection planes normal to the axes of the fasteners

In order to represent holes, bolts and rivets on projection planes normal to their axes, the symbolic representation shall be drawn in continuous thick lines, type A, in accordance with ISO 128. The position of the fastener is indicated by a cross (see figure 1).

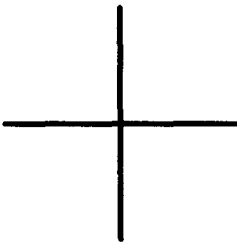


Figure 1

Additional information should be indicated in accordance with tables 1 and 2 or in accordance with ISO 5845-2.

A prominent dot may be placed in the centre of the cross in order to facilitate the use of drawing copies as a template (see example in figure 2). The diameter of the dot shall be five times the thickness of the line used for indicating the cross.

Table 1 — Symbolic representation of holes, bolts and rivets to fit in holes

Hole ¹⁾ and bolt or rivet	Hole			
	without countersinking	countersunk on near side	countersunk on far side	countersunk on both sides
Drilled and fitted in the workshop				
Drilled in the workshop and fitted on site				
Drilled and fitted on site				
1) To distinguish bolts and rivets from holes, the correct designation of the hole or fastener shall be given in accordance with the relevant International Standard.				
EXAMPLE				
The designation for a hole of diameter 13 mm is Ø 13, the designation for a bolt with metric screw thread of diameter 12 mm and length 50 mm is M12 × 50, while that for a rivet of diameter 12 mm and length 50 mm is Ø 12 × 50.				

4.2 Representation on projection planes parallel to the axes of the fastener

In order to represent holes, bolts and rivets on projection planes parallel to their axes, the symbolic representation shown in tables 2 and 3 shall be adopted. The horizontal line of this symbolic representation shall be drawn in a continuous thin line, type B; all other parts shall be drawn in a thick line, type A, in accordance with ISO 128.

Table 2 — Symbolic representation of holes

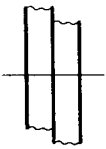
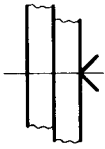
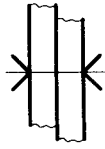
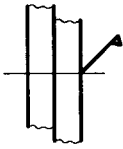
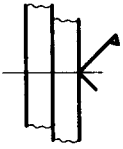
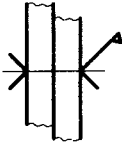
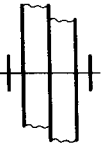
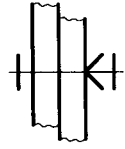
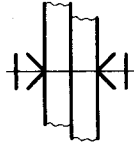
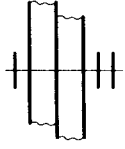
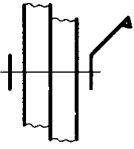
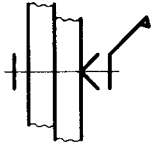
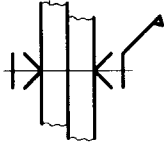
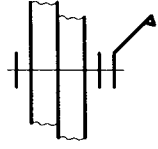
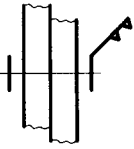
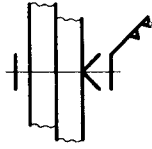
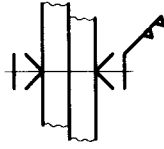
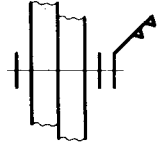
Hole	Hole		
	without countersinking	countersunk on one side only	countersunk on both sides
Drilled in the workshop			
Drilled on site			

Table 3 — Symbolic representation of bolts or rivets to fit in holes

Bolt or rivet ¹⁾	Hole			Bolt with designated nut position
	without countersinking	countersunk on one side only	countersunk on both sides	
Fitted in the workshop				
Fitted on site				
Hole drilled on site and bolt or rivet fitted on site				

1) To distinguish bolts from rivets, the correct designation of the fastener shall be given in accordance with the relevant International Standard.

EXAMPLE

The designation for a bolt with metric screw thread of diameter 12 mm and length 50 mm is M12 × 50, while that for a rivet of diameter 12 mm and length 50 mm is Ø 12 × 50.

5 Dimensioning

Dimension lines shall be terminated in accordance with ISO 129.

- 5.1 The extension lines shall be separated from the symbolic representation of holes, bolts and rivets on projection planes parallel to their axes (see figure 2).
- 5.2 The diameter of holes shall be indicated on a leader line pointing to the symbolic representation of a hole (see figure 3).

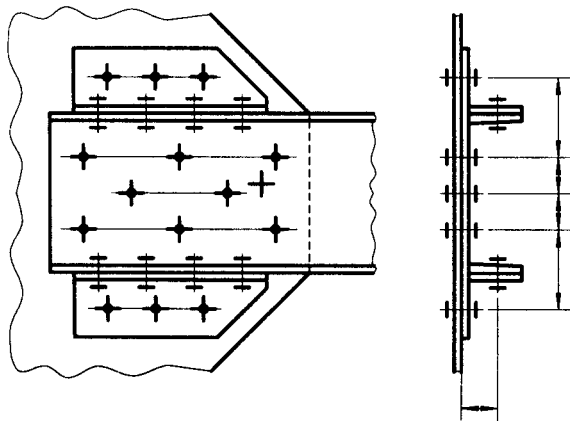


Figure 2

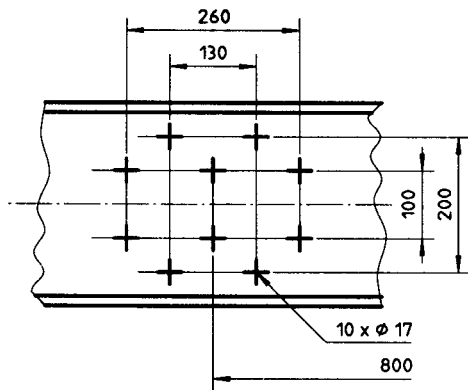


Figure 3

- 5.3** To indicate the characteristics of bolts and rivets, their designation shall be given on a leader line pointing to the symbolic representation in accordance with the relevant International Standard or other specification in use (see figure 4).
- 5.4** The designation of holes, bolts and rivets, when referring to a group of identical elements, can be restricted to one exterior element. In this case the designation shall be preceded by the number of holes, bolts or rivets constituting the group (see figures 3 and 4).
- 5.5** Holes, bolts and rivets equidistant from a centreline may be dimensioned as shown in figures 3 to 5.

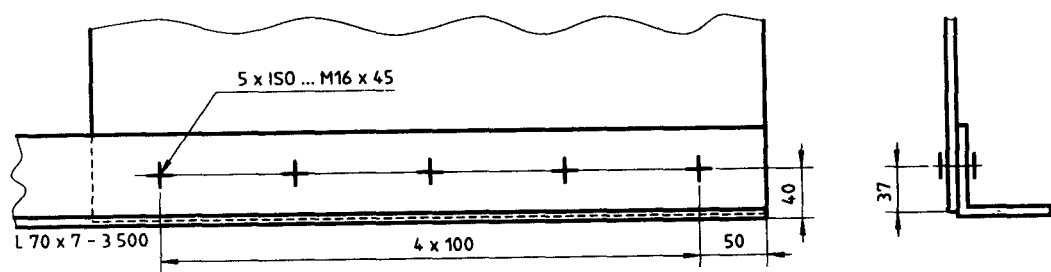


Figure 4

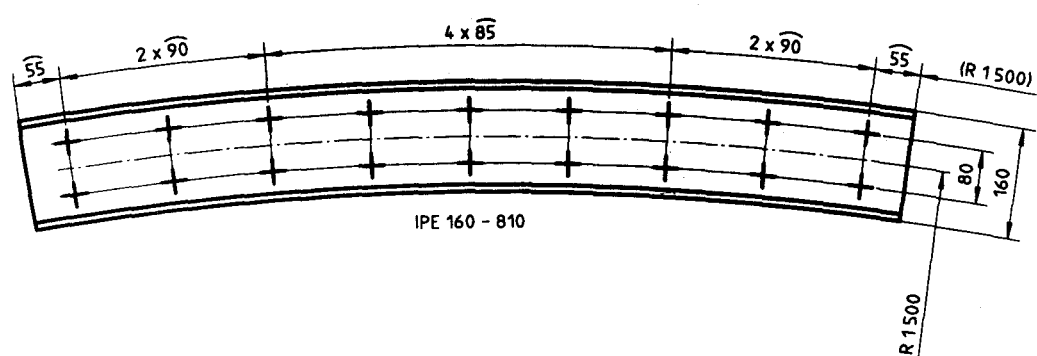


Figure 5

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc : No. BP 24 (0145).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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