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**INTERNATIONAL STANDARD**



**5241**

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**Textile machinery and accessories — Weaver's beams —  
Terminology and main dimensions**

*Matériel pour l'industrie textile — Ensouples de tissage — Terminologie et dimensions de base*

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**Descriptors** : textile machinery, beams (textile machinery), vocabulary, dimensions.

## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (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 set up 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 5241 was developed by Technical Committee ISO/TC 72, *Textile machinery and accessories*, and was circulated to the member bodies in February 1977.

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

Australia	Kenya	Spain
Belgium	Korea, Rep. of	Switzerland
Czechoslovakia	Mexico	Turkey
France	Netherlands	United Kingdom
Germany	Philippines	U.S.S.R.
India	Poland	Yugoslavia
Italy	Romania	
Japan	South Africa, Rep. of	

No member body expressed disapproval of the document.

# Textile machinery and accessories – Weaver's beams – Terminology and main dimensions

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard defines the basic terms and lays down the main dimensions and the variations of form and position for weaver's beams that are used for weaving preparation as well as for weaving.

## 2 REFERENCES

ISO/R 109, *Standard working widths of weaving looms.*<sup>1)</sup>

ISO 6176, *Warp sizing machines – Maximum usable widths.*<sup>2)</sup>

1) At present in revision.

2) At present at the stage of draft.

3 TERMINOLOGY

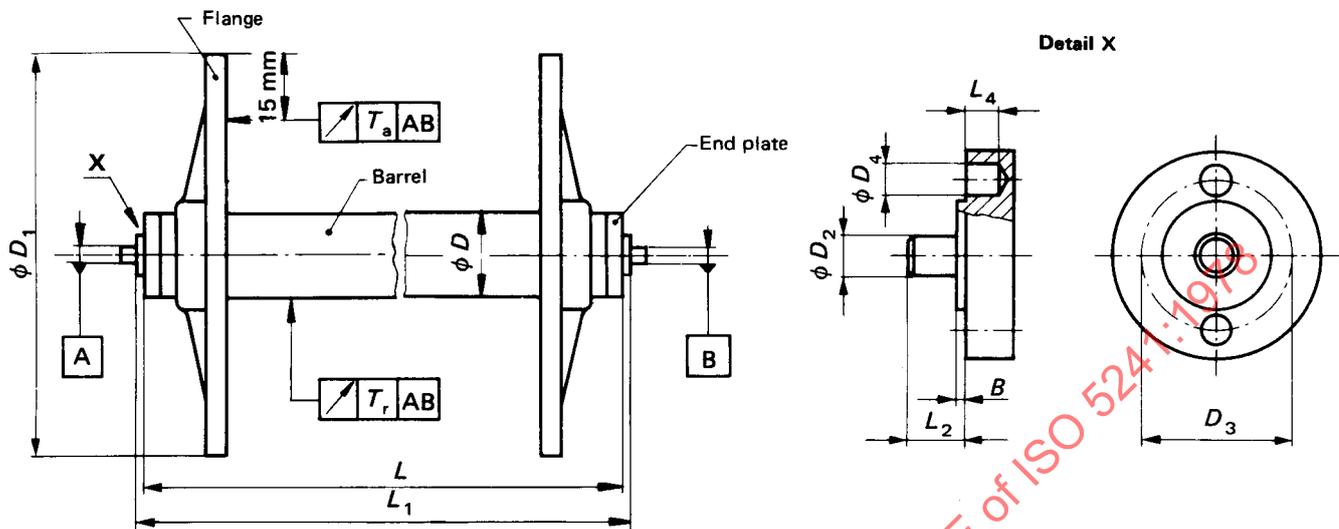


FIGURE 1 – Weaver's beams with shafts

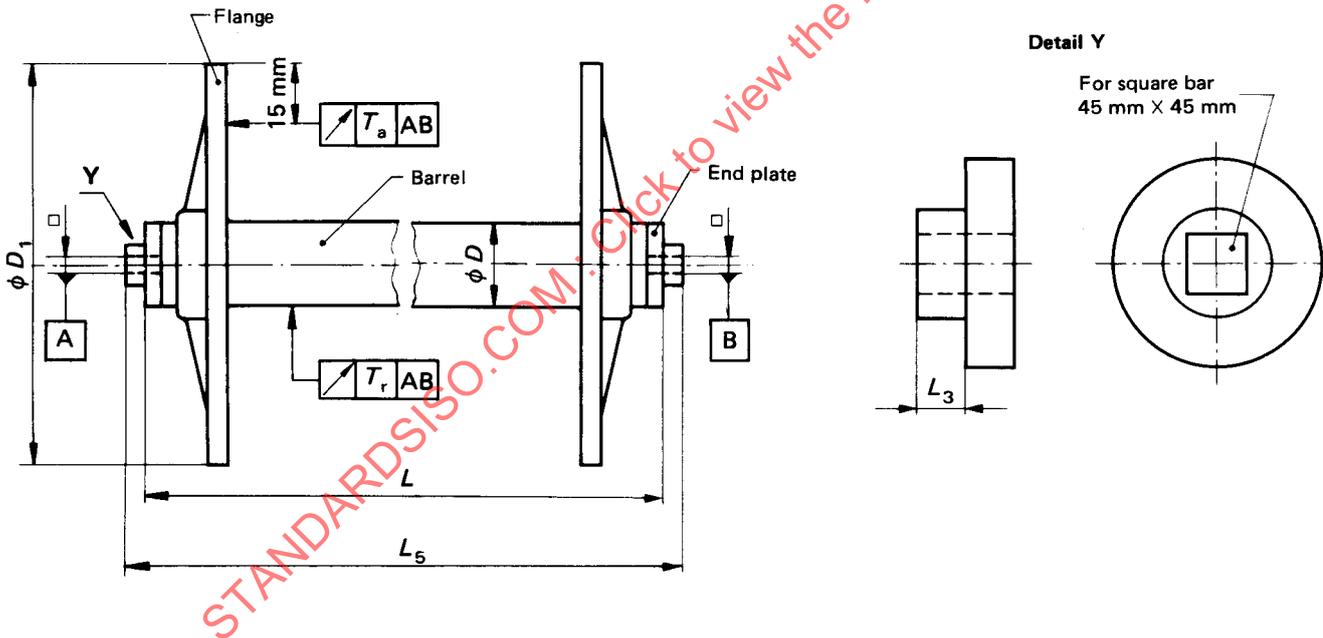


FIGURE 2 – Weaver's beams with end plates having square hole

$D$  = Outside barrel diameter

$D_1$  = Flange diameter

$D_2$  = Diameter of shaft

$D_3$  = Diameter of pitch circle

$D_4$  = Diameter of driving hole

$L$  = Barrel length including end plates

$L_1$  = Length over bosses (collar to collar)

$L_2$  = Length of shaft, boss included

$L_3$  = Length of boss

$L_4$  = Depth of driving hole

$L_5$  = Length over bosses (collar to collar) (related to designs with end plates with square hole)

$B$  = Width of boss

4 MAIN DIMENSIONS

TABLE 1 – Main dimensions

Values in millimetres

Completely machined	Partly machined	D				L	L <sub>1-2</sub> <sup>0</sup>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub> min.	L <sub>5</sub> **	B
		D <sub>1</sub>	D <sub>2</sub> h 11	D <sub>3</sub>	D <sub>4</sub>							
150	152,4	500	30 38 45	100	22	Over 1 000, step = 100	L + 2 B*	40	32 68	25	L + 2 L <sub>3</sub>	5 (50)*
		600										
		700										
		750										
		800										
215	219,1	850										
265	273	900										
		950										
		1 000										

\* In case of special designs of end plates (for example shaft with square shank), dimension B should be either 5 mm or 50 mm.

\*\* This length is related to designs with end plates with square hole.

NOTE – For very long beam barrels, the values of the barrel diameters D indicated in the table are no longer sufficient. In this case it is recommended to select the diameter of shaft and the barrel diameter next in size to that indicated for the flange diameter D<sub>1</sub> of the beam. There is no fixed relationship between the diameters of shaft, barrel, flange, and the barrel length.

5 ADMISSIBLE AXIAL RUN-OUT OF FLANGES

The admissible axial run-out of each flange, T<sub>a</sub>, is measured following the indications on figures 1 and 2.

TABLE 2 – Admissible axial run-out of flanges

Values in millimetres

D	T <sub>a</sub>	
	Quality grade 1	Quality grade 2
up to 600	0,50	1,00
over 600 up to 800	0,75	1,50
over 800 up to 1 000	1,00	2,00

6 ADMISSIBLE BARREL RUN-OUT FOR COMPLETELY MACHINED BARRELS

The admissible barrel run-out, T<sub>r</sub>, for completely machined barrels, measured at any point of the barrel, is given, in millimetres, by the formula

$$T_r = \frac{0,25 \times L}{1\ 000}$$

7 OTHER SPECIFICATIONS

The following details should be specified as appropriate :

- a) materials of barrel, end plates and flanges;
- b) nature of material to be wound;
- c) surface finish of the inner sides of the flanges and the exterior surface of the barrel;
- d) end plates with shafts on both sides as an alternative to the use of different shaft diameters;
- e) fastening of the end plates on the barrel;
- f) holes in the barrel for fastening the warp (care should be taken when winding highly elastic yarns, as holes for fastening the warp cause a weakening of the cross-section of the barrel).
- g) design of flanges;
- h) fastening of the flanges on the barrel;
- j) maximum and minimum lengths of barrel between flanges ("dress width");
- k) driving hole in the barrel;
- l) use of ruffles.

For standard working widths of weaving looms, see ISO/R 109.

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