

---

---

**Textile machinery and accessories —  
Beams for winding —**

Part 3:  
**Weaver's beams**

*Matériel pour l'industrie textile — Ensembles pour enroulement —  
Partie 3: Ensembles de tissage*

STANDARDSISO.COM : Click to view the full PDF of ISO 8116-3:2008



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

STANDARDSISO.COM : Click to view the full PDF of ISO 8116-3:2008



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## 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.

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 8116-3 was prepared by Technical Committee ISO/TC 72, *Textile machinery and accessories*, Subcommittee SC 3, *Machinery for fabric manufacturing including preparatory machinery and accessories*.

This third edition cancels and replaces the second edition (ISO 8116-3:1995), and ISO 13553, of which it constitutes a technical revision.

ISO 8116 consists of the following parts, under the general title *Textile machinery and accessories — Beams for winding*:

- *Part 1: General vocabulary*
- *Part 2: Warper's beams*
- *Part 3: Weaver's beams*
- *Part 4: Test methods and quality classification of flanges for weaver's beams, warper's beams and sectional beams*
- *Part 5: Sectional beams for warp knitting machines*
- *Part 6: Beams for ribbon weaving and ribbon knitting*
- *Part 7: Beams for dyeing slivers, rovings and yarns*
- *Part 8: Definitions of run-out tolerances and methods of measurement*
- *Part 9: Dyeing beams for textile fabrics*

STANDARDSISO.COM : Click to view the full PDF of ISO 8116-3:2008

# Textile machinery and accessories — Beams for winding —

## Part 3: Weaver's beams

### 1 Scope

This part of ISO 8116 specifies the main dimensions, mechanical strength and permissible tolerances of form and position for weaver's beams that are used for weaving preparation as well as for weaving. The main dimensions of the profile threads for weaver's beams and the specifications for connections for automation of beam changing are also given.

### 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 109, *Textile machinery — Working widths of weaving machines*

ISO 286-2, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

ISO 8116-4, *Textile machinery and accessories — Beams for winding — Part 4: Test methods and quality classification of flanges for weaver's beams, warper's beams and sectional beams*

ISO 8116-8, *Textile machinery and accessories — Beams for winding — Part 8: Definitions of run-out tolerances and methods of measurement*

### 3 Types and main dimensions

Weaver's beams are divided into three types:

- Type A weaver's beams with shafts;
- Type B weaver's beams with end plates having square holes;
- Type C weaver's beams for automation of beam changing.

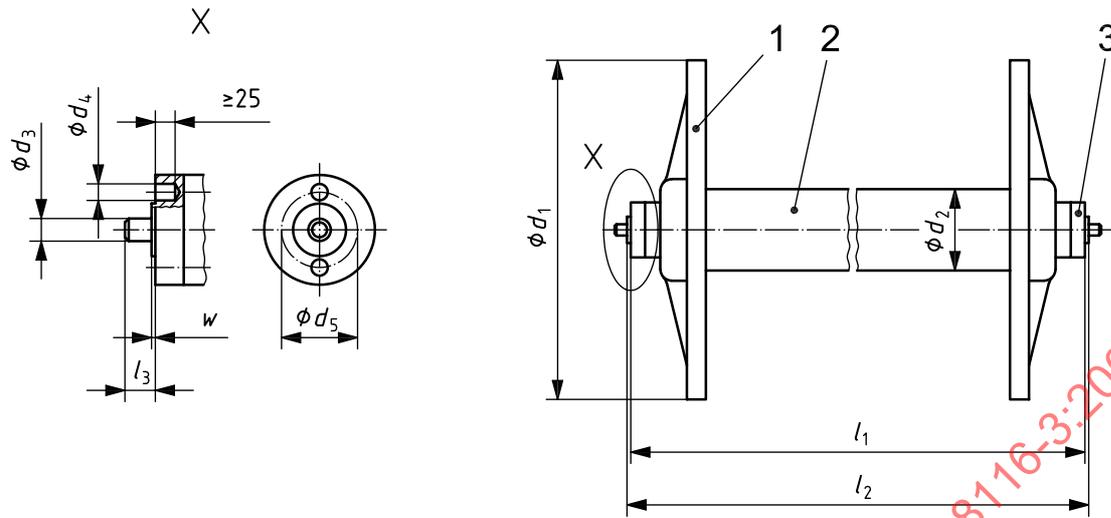
The main dimensions of weaver's beams, Type A and Type B, are given and explained in Figure 1 and Figure 2.

The main dimensions of weaver's beams, Type C, are shown and explained in Figure 3.

The main dimensions of weaver's beams, Type A and Type B, as given in Table 1 and Table 3, shall be met.

The main dimensions of weaver's beams, Type C, as given in Table 2 and Table 3, shall be met.

Dimensions in millimetres

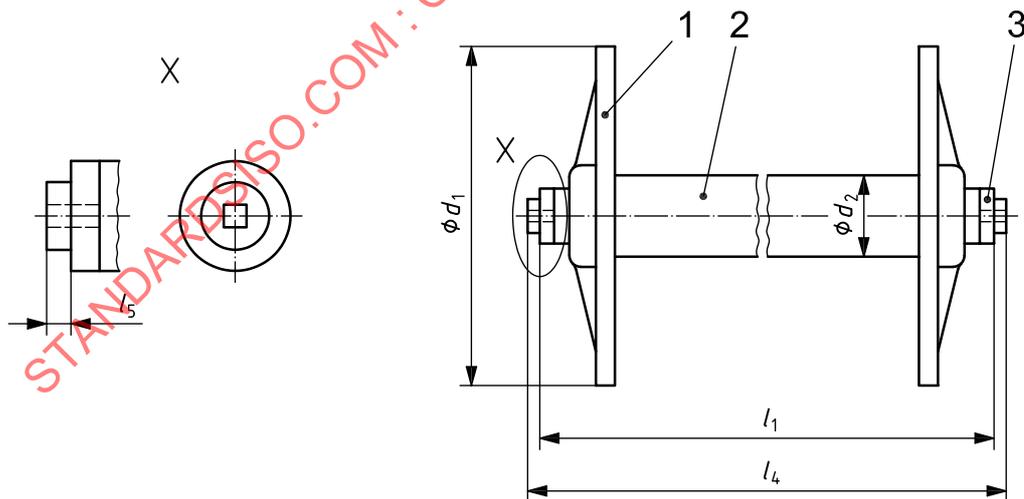


**Key**

- 1 beam flange
- 2 beam barrel
- 3 end plate

- $d_1$  flange diameter
- $d_2$  barrel diameter
- $d_3$  shaft diameter
- $d_4$  driving hole diameter
- $d_5$  diameter between driving hole centres
- $l_1$  barrel length, including end plates
- $l_2$  length, including bosses
- $l_3$  length of shaft, including boss
- $w$  width of boss

**Figure 1 — Weaver's beam with shafts — Type A**

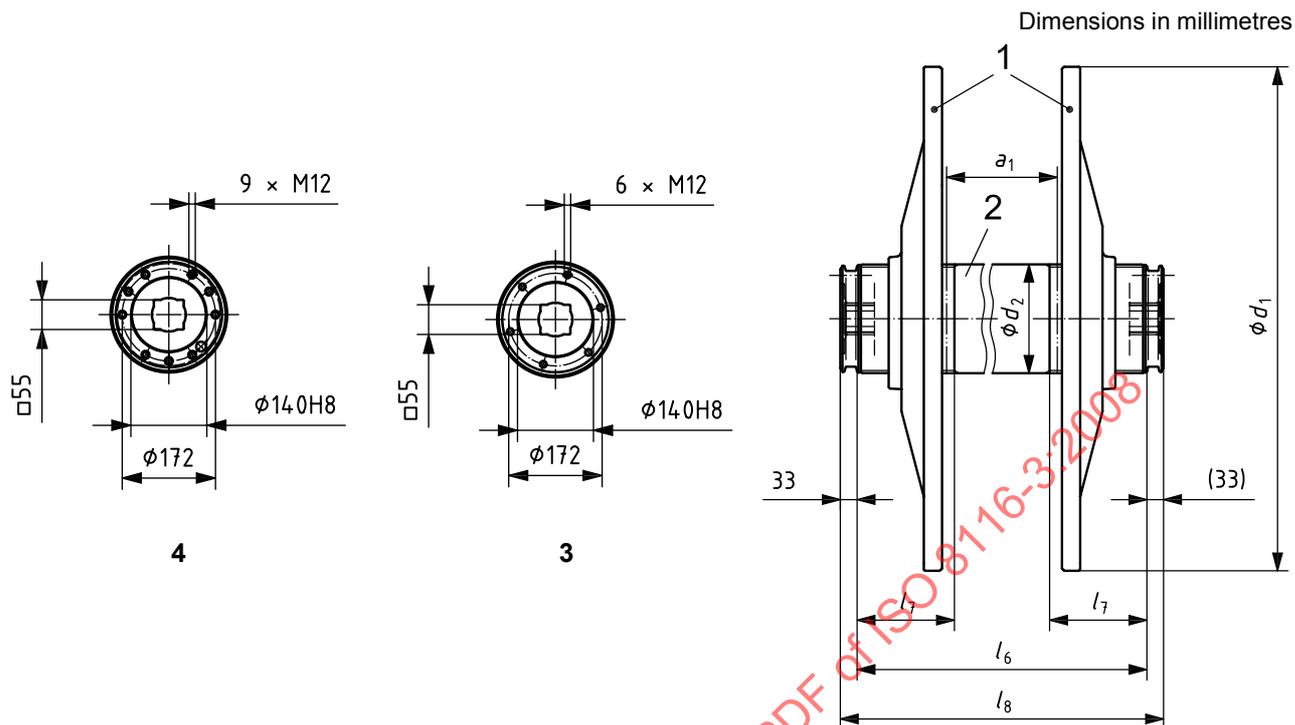


**Key**

- 1 beam flange
- 2 beam barrel
- 3 end plate

- $d_1$  flange diameter
- $d_2$  barrel diameter
- $l_1$  barrel length, including end plates
- $l_4$  length, including bosses (related to designs with end plates with square hole)
- $l_5$  length of boss

**Figure 2 — Weaver's beam with end plates having square holes — Type B**



**Key**

- 1 beam flange
- 2 beam barrel
- 3 execution C2
- 4 execution C1

- $a_1$  maximum working width
- $d_1$  flange diameter
- $d_2$  barrel diameter
- $l_6$  length of beam barrel
- $l_7$  length of profile thread
- $l_8$  total length

**Figure 3 — Weaver's beam for automation of beam changing — Type C, executions C1 and C2**

**Table 1 — Main dimensions of weaver's beams — Types A and B**

Dimensions in millimetres

$d_2$	$d_3$ h11 <sup>a</sup>	$l_1$	$l_2$ 0 -2	$l_3$	$l_4$	$l_5$	$w$	$d_4$	$d_5$
150	30	> 1 000 in steps of 100	$l_1 + 2 w^b$	40	$l_1 + 2 l_5$	32 68	5 (50) <sup>b</sup>	22	100
150	38							—	—
216	45							—	—
269	50							—	—
269	—	—	—	—	—	—	—	—	

NOTE For very long beam barrels, the values of the barrel diameters  $d_2$  indicated in Table 1 are no longer sufficient. In this case it is recommended that the shaft diameter and the barrel diameter next in size to that indicated for flange diameter  $d_1$  of the beam (see Table 3) be selected. There is no fixed relationship among the diameters of shaft, barrel and flange, and the barrel length.

<sup>a</sup> Standard tolerance grades and limit deviations in accordance with ISO 286-2.

<sup>b</sup> In the case of special designs of end plates (for example, shaft with square shank), dimension  $w$  should be either 5 mm or 50 mm.

**Table 2 — Main dimensions of weaver’s beams for automation of beam changing — Type C, executions C1 and C2**

Dimensions in millimetres

Barrel diameter $d_2$		216 269
Length of profile thread $l_7$	Maximum working width $a_1^a$	
	$a_1 \leq 1\ 800$	600
	$1\ 800 < a_1 \leq 2\ 500$	885
	$a_1 > 2\ 500$	1 150
Length of beam barrel $l_6$		$a_1 + 300$
Total length $l_8 \pm 1$		$a_1 + 366$
<sup>a</sup> Term in accordance with ISO 109.		

**Table 3 — Flange geometry for weaver’s beams — Types A, B and C**

Type	$d_1$ mm	$d_2$ mm
A B	500	150
	600	150
	700	150
	750	150
	800	150
C	800	216
	850	216
	900	216
	950	216
	1 000	269
	1 250	269
	1 400	269
	1 500	269

#### 4 Mechanical strength

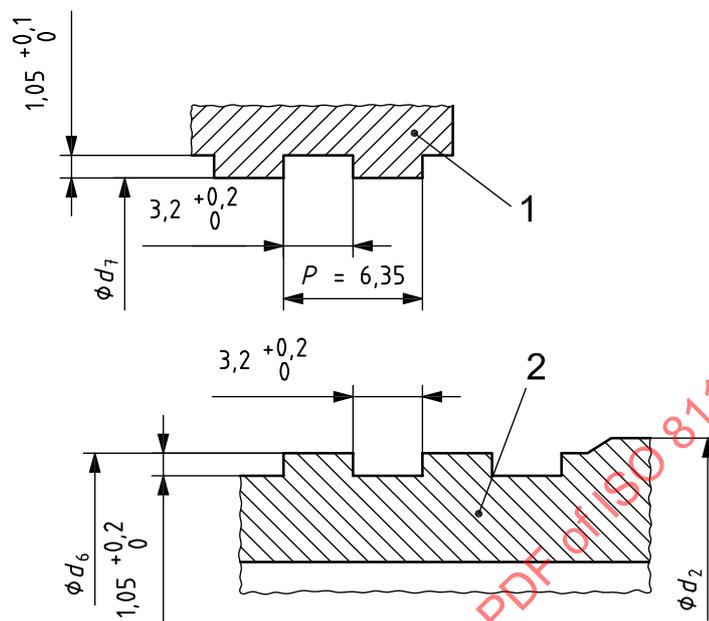
The mechanical strength of weaver’s beam flanges is classified in accordance with the quality classes defined in ISO 8116-4. The mechanical strength of the weaver’s beam flanges shall be verified, depending on the quality class, using the test method described in ISO 8116-4.

#### 5 Thread profiles

The threads are divided into two main types, which are given and dimensioned in Figure 4 and Figure 5.

The dimensions given in Table 4 and Table 5 shall be met.

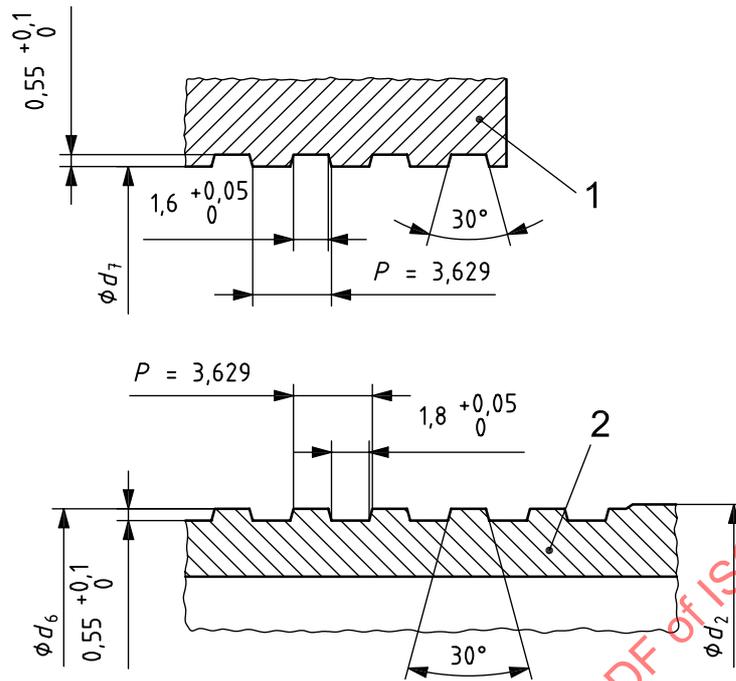
Dimensions in millimetres



**Key**

- 1 flange
- 2 barrel
- $d_2$  barrel diameter
- $d_6$  outer diameter of barrel thread
- $d_7$  inner diameter of flange thread
- $P$  pitch of the thread

Figure 4 — Type 1 threads



**Key**

- 1 flange
- 2 barrel
- $d_2$  barrel diameter
- $d_6$  outer diameter of barrel thread
- $d_7$  inner diameter of flange thread
- $P$  pitch of the thread

**Figure 5 — Type 2 threads**

**Table 4 — Type 1 threads**

Dimensions in millimetres

$d_2$	$d_6$ 0 -0,2	$d_7$ +0,15 0
150	149,35	147,45
216	215,35	213,45
269	268,35	266,45

Table 5 — Type 2 threads

Dimensions in millimetres

$d_2$	$d_6$ 0 -0,2	$d_7$ +0,15 0
150	149,9	149,2
216	215,9	215,2
269	268,9	268,2

NOTE Threads of type 2 are primarily used as adjusted threads. Flanges are usually secured to the barrel by separate means.

## 6 Circular axial run-out tolerance, $T_a$ , of flanges

The permissible circular axial run-out tolerances,  $T_a$ , of flanges given in Table 6 shall be met. The run-out tolerances shall be measured in accordance with ISO 8116-8.

Table 6 — Permissible circular axial run-out tolerance of flanges

$d_1$ mm	$T_a$ mm
$d_1 \leq 600$	0,5
$600 < d_1 \leq 800$	0,75
$800 < d_1 \leq 1\,000$	1
$1\,000 < d_1 \leq 1\,250$	1,25
$d_1 > 1\,250$	1,5

## 7 Total run-out tolerance, $T_r$ , of the barrel

The permissible total run-out tolerances,  $T_r$ , of the barrel shall be measured in millimetres and calculated using Equation (1):

$$T_r = \frac{0,25 l_1}{1000} \quad (1)$$

The run-out tolerance shall be measured in accordance with ISO 8116-8.