
**Textile machinery and accessories —
Pitches of knitting machines**

Matériel pour l'industrie textile — Pas des métiers à tricoter

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ISO 8188:2007

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Reference number
ISO 8188:2007(E)

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Published in Switzerland

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 8188 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 second edition cancels and replaces the first edition (ISO 8188:1986), which has been technically revised.

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Textile machinery and accessories — Pitches of knitting machines

1 Scope

This International Standard specifies the pitches for knitting machines used in the textile industry.

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 7839, *Textile machinery and accessories — Knitting machines — Vocabulary and classification*

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3 Terms and definitions (standards.iteh.ai)

For the purposes of this document, the terms and definitions given in ISO 7839 and the following apply.

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3.1 [pitch](https://standards.iteh.ai/catalog/standards/sist/3930979a-1eab-4a03-bd23-3d73f8befe2/iso-8188-2007)

t
distance between the centres of two adjacent needles in the same needle carrier, in millimetres, with full use of needles

3.2 gauge

3.2.1 gauge *E*

number of needles, *n*, per reference length of 25,4 mm with full use in the needle carrier:

$$E = \frac{n}{25,4 \text{ mm}}$$

3.2.2 gauge *F*

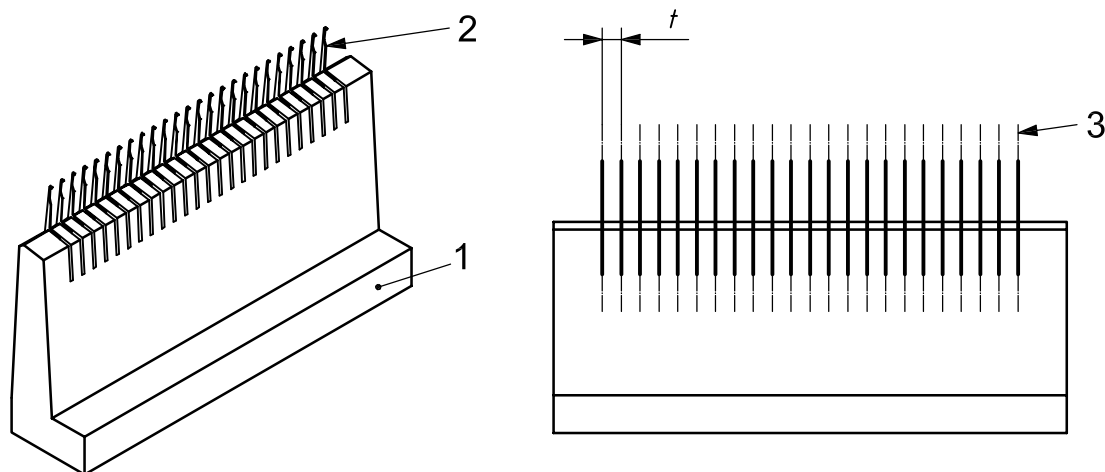
number of needles, *n*, per reference length of 25,0 mm with full use in the needle carrier:

$$F = \frac{n}{25,0 \text{ mm}}$$

4 Pitch according to machine type

4.1 Flat knitting machines

The pitch of a flat knitting machine shall be determined by measurement of the centreline spacing of two needles in the plane needle carrier (see Figure 1).



Key

- 1 needle carrier (e.g. needle bar, needle bed)
- 2 needle
- 3 centreline of needles
- t pitch

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 Figure 1 — Pitch of flat knitting machine

4.2 Circular knitting machines

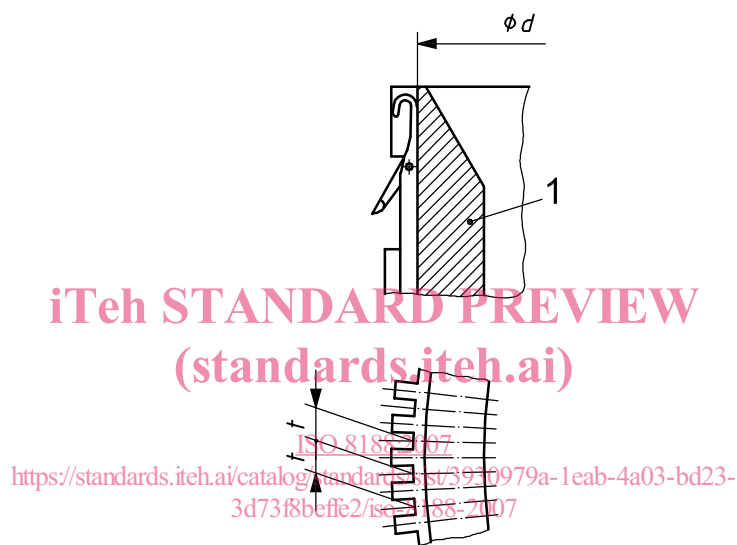
The pitch, t , of a circular knitting machine shall be calculated using Equation (1) (see Figure 2):

$$t = \frac{d \times \pi}{n_{\max}} \quad (1)$$

where

d is the nominal diameter, expressed in millimetres (mm);

n_{\max} is the maximum number of needles in the needle carrier.



Key

1 needle carrier (e.g. needle cylinder)

d nominal diameter of machine

Figure 2 — Pitch of circular knitting machine

5 Dimensions

For flat knitting machines, the pitches and gauges shall be in accordance with Tables 1 or 2, as applicable.

For circular knitting machines, the pitches and gauges given in Table 1 are to be considered as guide values, since construction-dependant deviations are possible.

Table 1 — Pitch t — Gauge E

| Pitch t mm | Gauge E | Pitch t mm | Gauge E |
|--------------------|--------------|--------------------|--------------|
| 0,508 | 50 | 1,588 | 16 |
| 0,529 | 48 | 1,693 | 15 |
| 0,552 | 46 | 1,814 | 14 |
| 0,577 | 44 | 1,954 | 13 |
| 0,605 | 42 | 2,117 | 12 |
| 0,635 | 40 | 2,309 | 11 |
| 0,668 | 38 | 2,54 | 10 |
| 0,706 | 36 | 2,822 | 9 |
| 0,747 | 34 | 3,175 | 8 |
| 0,794 | 32 | 3,629 | 7 |
| 0,847 | 30 | 4,233 | 6 |
| 0,907 | 28 | 5,08 | 5 |
| 0,977 | 26 | 5,644 | 4,5 |
| 1,058 | 24 | 6,35 | 4 |
| 1,154 | 22 | 7,257 | 3,5 |
| 1,21 | 21 | 8,467 | 3 |
| 1,27 | 20 | 10,16 | 2,5 |
| 1,337 | 19 | 12,7 | 2 |
| 1,411 | 18 | 16,933 | 1,5 |
| 1,494 | 17 | 25,4 | 1 |

Table 2 — Pitch t — Gauge F

| Pitch t mm | Gauge F |
|--------------------|--------------|
| 1,042 | 24 |
| 1,136 | 22 |
| 1,25 | 20 |
| 1,389 | 18 |
| 1,563 | 16 |
| 1,786 | 14 |
| 2,083 | 12 |
| 2,5 | 10 |
| 2,778 | 9 |
| 3,125 | 8 |
| 3,571 | 7 |
| 4,167 | 6 |
| 5 | 5 |
| 5,556 | 4,5 |
| 6,25 | 4 |
| 7,143 | 3,5 |
| 8,333 | 3 |
| 10 | 2,5 |
| 12,5 | 2 |
| 16,667 | 1,5 |
| 25 | 1 |

6 Notation, designation

The notation of the gauge of a knitting machine shall be given, depending on its reference length, as either E or F , together with the gauge number.

EXAMPLE A gauge 14 of nominal length of 25,4 mm is given as $E14$.

When reference is made in commercial transactions to the pitch or gauge of a circular knitting machine, the total number of needles in the needle carrier shall also be specified.