
**Textile machinery and accessories —
Pattern disks and pattern chains for
warp knitting machines — Vocabulary
and symbols**

*Matériel pour l'industrie textile — Disques d'armature et chaînes
d'armature pour machines à tricoter à mailles jetées — Vocabulaire
et symboles*

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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
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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The committee responsible for this document is 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 11676:1994), which has been technically revised.

Textile machinery and accessories — Pattern disks and pattern chains for warp knitting machines — Vocabulary and symbols

1 Scope

This International Standard defines terms and marking of pattern disks and patterns chains for warp knitting machines.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8188, *Textile machinery and accessories — Pitches of knitting machines*

ISO 10223, *Textile machinery and accessories — Flat warp knitting machines — Numbering of guide bars*

3 Terms and definitions

3.1 Terms for pattern discs

3.1.1

pattern disc

disc cam for controlling the lateral motion of the guide bars and component of the mechanically controlled pattern drive

3.1.2

type of pattern disc

classification of the pattern disc to a corresponding type of pattern gear

Note 1 to entry: Usual are the types N (standard) and E (elongated).

3.1.3

gauge

number of needles in a needle bed per reference length

[SOURCE: ISO 11675:2005, 5.11]

3.1.4

number of courses

number of stitch rows controlled by one revolution of the pattern disc

3.1.5

direction of rotation

instructed assembly position of the pattern disc according to the direction of rotation of the pattern gear

3.1.6

starting of the notation

position of the pattern disc in the pattern gear for the starting position of the notation

3.1.7

fitting borehole

borehole for the relative positioning of the pattern discs to each other for the respective start of the notation

3.2 Terms for pattern chains

3.2.1

pattern chain

endless chain-links assembled of pattern chains and pins for control of the lateral motion of the guide bars, driven by the pattern drum of mechanically controlled pattern drives

[SOURCE: ISO 8640-3, modified]

3.2.2

chain-link

individual link of a pattern chain with variable execution in height and form

3.2.3

chain-link type

classification of the chain-link to a corresponding type of pattern gear

Note 1 to entry: Usual are the types N (standard) and E (elongated).

3.2.4

gauge

number of needles in a needle bed per reference length

[SOURCE: ISO 11675:2005, 5.11]

3.2.5

foot radius of the chain-link

radius of curvature of the bearing surface of the chain-link, which corresponds to the radius of the bearing surface of the pattern drum

Note 1 to entry: See [Figure 2](#) and [Figure 3](#).

3.2.6

chain-link height

size of the head radius of the chain-link, indicated as natural number, which corresponds to a multiple of the needle pitch above the minimum height

Note 1 to entry: See [Figure 2](#) and [Figure 3](#).

Note 2 to entry: The minimum chain-link height, 0, corresponds to the smallest head radius of the chain-link.

3.2.7

standard chain-link

chain-link with a certain chain-link height, either without tie or with straight tie

3.2.8

straight chain-link

standard chain-link with constant chain-link height, i.e. without tie

Note 1 to entry: See [Figure 2](#).

3.2.9

rising chain-link

standard chain-link with straight tie at the beginning

Note 1 to entry: See [Figure 2](#).

3.2.10**declining chain-link**

standard chain-link with straight tie at the end

Note 1 to entry: See [Figure 2](#).

3.2.11**rising and declining chain-link**

standard chain-link with straight tie at the beginning and at the end

Note 1 to entry: See [Figure 2](#).

3.2.12**standard chain**

pattern chain consisting of standard chain-links

Note 1 to entry: Standard chains can always be put together anew in different order of the standard chain-links to different notations.

3.2.13**profile chain-link**

chain-link of a certain chain-link height with curved transitions

Note 1 to entry: See [Figure 3](#).

3.2.14**profile chain**

pattern chain consisting of profile chain-links

Note 1 to entry: Profile chains should be used only in the predetermined order of the profile chain-links for certain notations.

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4 Marking**4.1 Marking of pattern discs**

Pattern discs are marked with the indication for machine type (see [4.1.1](#)), gauge (see [4.1.2](#)), stitch row number (see [4.1.3](#)), notation (see [4.1.4](#)), starting of the notation (see [4.1.5](#)), fitting borehole (see [4.1.6](#)), direction of rotation (see [4.1.7](#)), and classification of guide bars (see [4.1.8](#)).

The marking is illustrated in detail as follows:

4.1.1 Machine type

A pattern disc is intended for a certain machine type, which is indicated on the pattern disc.

4.1.2 Gauge

A pattern disc is intended for a certain gauge, which shall be indicated in accordance with ISO 8188 (see [Figure 1](#)).

NOTE 1 If a pattern disc is intended especially for a machine partly set with needles, a slash is indicated behind the gauge and the divider of the needle insert.

EXAMPLE 1 E6/3 means gauge E6 with the divider 3 for the needle insert 1 full/2 empty//in the needle bar and thus, existing gauge E2.

NOTE 2 For indirectly controlled pattern gear, an equivalent gauge results from the gauge and the lever ratio of the shog lever for the pattern disc, which is additionally indicated in brackets.

EXAMPLE 2 E8 (E12) means a gauge E8 and an equivalent gauge E12, which results from the lever ratio 1,5 of the shog lever.

4.1.3 Stitch row number

The stitch row number can be indicated for pattern discs with the index C, for RR flat warp knitting machines with the index DC. Besides as alternative, the stitch row number can be indicated as transmission ratio in form X:1, whereas, X is the number of machine revolutions per pattern disc revolution.

NOTE 1 For RL flat warp knitting machines, the number of machine revolutions per pattern disc revolution corresponds to the number of stitch rows.

NOTE 2 16C respectively 16:1 means that the RL stitch row number is 16, i.e. for 16 machine revolutions the pattern disc turns once.

NOTE 3 12DC respectively 12:1 means that the RR stitch row number is 12, i.e. for 12 machine revolutions the pattern disc turns once.

4.1.4 Notation

The notation steered by the pattern disc is indicated in form of the lapping notation. At the same time, the numbering starting from zero is to be applied with the increment 1 (see [Figure 1](#)).

NOTE In [4.1.2](#) Note 1, the lapping notation corresponds with the needle insert in the needle bar, i.e. for the machine partly set with needles the notation will be indicated according to this needle setting and not in regard to the maximum possible needle setting.

EXAMPLE 1 1-0/1-2// refers to the tricot notation with full needle setting.

EXAMPLE 2 0-0/3-3// with the needle setting 1 full/2 empty// (E6/3) refers to the inlay below 3 set needles, which results in a weft notation below 9 pitches and not below 3 pitches.

4.1.5 Starting of the notation

The start of the notation is identified on the pattern disc by means of a marking.

4.1.6 Fitting borehole

When several fitting boreholes exist on a pattern disc (see [Figure 1](#)), these individually have to be marked in regard to the lapping notation.

4.1.7 Direction of rotation

The required direction of rotation of the pattern disc is indicated by means of an arrow (see [Figure 1](#)).

4.1.8 Classification of guide bars

If a pattern disc is not applicable on all guide bar positions, then the guide bar positions on which the pattern disc shall be used shall be indicated in accordance with ISO 10223 (see [Figure 1](#)).

NOTE The indication "only GB1" means that the pattern disc is suitable only for GB1.

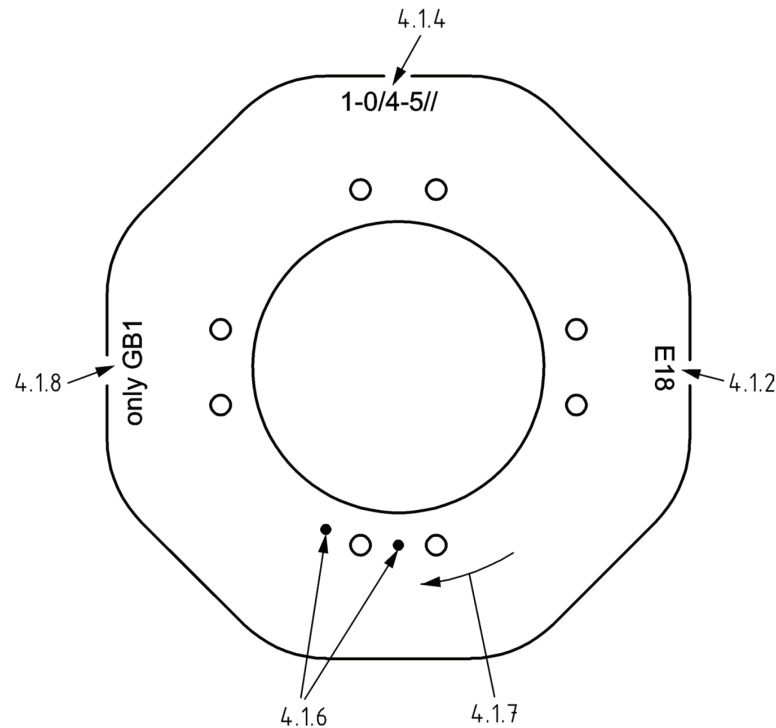


Figure 1 — Pattern disc in gauge E18 with two fitting boreholes for notation 1-0/4-5// or 4-5/1-0//, only for GB1

4.2 Marking of standard chain-links

4.2.1 Gauge

A chain-link is intended for a certain gauge. This gauge is indicated on the chain-link only as a number without indicating the code letter E or F.

NOTE For indirectly controlled pattern drives, the adequate gauge results from the gauge of the chain-link and the lever ratio of the shog lever, which is not indicated on the chain-link.

4.2.2 Chain-link height

The chain-link height is indicated as whole number (see [Figure 2](#)).

NOTE After the number for the chain-link height, the code letter can be indicated as a for a straight, b for a rising, c for a falling, and d for a rising and falling chain-link.