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**Textile machinery — Draw frame for  
cotton spinning — Vocabulary and  
principles of construction**

*Matériel pour l'industrie textile — Cadre pour la filature du coton —  
Vocabulaire et principes de construction*

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# Contents

Page

|                                                                                   |    |
|-----------------------------------------------------------------------------------|----|
| Foreword .....                                                                    | iv |
| Scope 1 .....                                                                     |    |
| Terms and definitions .....                                                       | 1  |
| 1 Basic terms .....                                                               | 1  |
| 2 Machine sides, dimensions (see <a href="#">Figure 1</a> ) .....                 | 1  |
| 3 Machine components (see <a href="#">Figures 2</a> and <a href="#">3</a> ) ..... | 2  |
| 4 Doubling and drafting .....                                                     | 4  |
| Annex A (normative) Principles of construction .....                              | 6  |
| Bibliography .....                                                                | 7  |

## 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.

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 72, *Textile machinery and machinery and accessories*, Subcommittee SC 1, *Spinning preparatory, spinning, twisting and winding machinery and accessories*.

This second edition cancels and replaces the first edition (ISO 21485:2006), which has been technically revised.

# Textile machinery — Draw frame for cotton spinning — Vocabulary and principles of construction

## Scope

This International Standard establishes a vocabulary of terms related to, and the principles of construction of, draw frames and their components, used for cotton spinning in the textile industry.

NOTE 1 The draw frame design is not required to conform with the figures shown in this International Standard, which are given only as examples of the different types.

NOTE 2 In addition to terms used in English, one of the three official ISO languages, this International Standard gives the equivalent terms in German; these are published under the responsibility of the member body for Germany (DIN). However, only the terms and definitions given in the official language can be considered as ISO terms and definitions.

## Terms and definitions

### 1 Basic terms

#### 1.1

##### **draw frame**

textile machinery consisting of a *delivery unit* (1.3) employed to straighten and parallelize the fibres by drafting, to homogenize the sliver by means of *doubling* (4.1) and to blend and de-dust the fibres

#### 1.2

##### **autoleveller draw frame**

textile machinery consisting of a *delivery unit* (1.3) employed to straighten and parallelize the fibres by drafting, to homogenize the sliver by *doubling* (4.1), to blend and de-dust, if applicable, the fibres and to compensate any measured deviation of the fibre mass by means of a variable draft superimposed on the nominal *draft* (4.2)

#### 1.3

##### **delivery unit**

working point for filling a *sliver can* (3.1)

### 2 Machine sides, dimensions (see [Figure 1](#))

#### 2.1

##### **right side**

**R**

textile machine side located to the right as seen facing toward the direction of fibre flow

Note 1 to entry: See ISO 92.

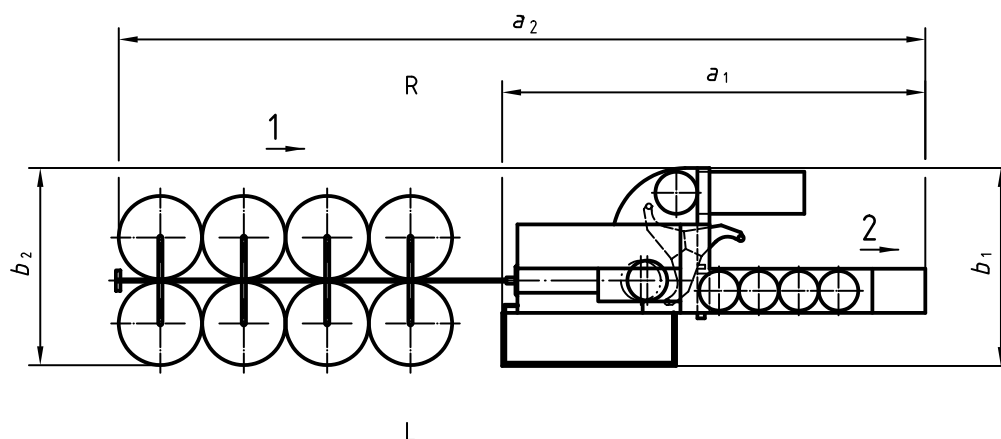
#### 2.2

##### **left side**

**L**

textile machine side located to the left as seen facing toward the direction of fibre flow

Note 1 to entry: See ISO 92.



**Key**

- $a_1$  machine depth (without space requirement for deposited sliver cans)
- $a_2$  overall machine depth (including space requirement for deposited sliver cans)
- $b_1$  machine width (without space requirement for deposited sliver cans)
- $b_2$  overall width (including space requirement for deposited sliver cans)
- R right side
- L left side
- 1 feed
- 2 delivery

Space requirement:  $a_2 \times b_1$  for  $b_2 \leq b_1$   
 $a_2 \times b_2$  for  $b_2 > b_1$

**Figure 1 — Machine sides, dimensions**

**3 Machine components** (see [Figures 2](#) and [3](#))

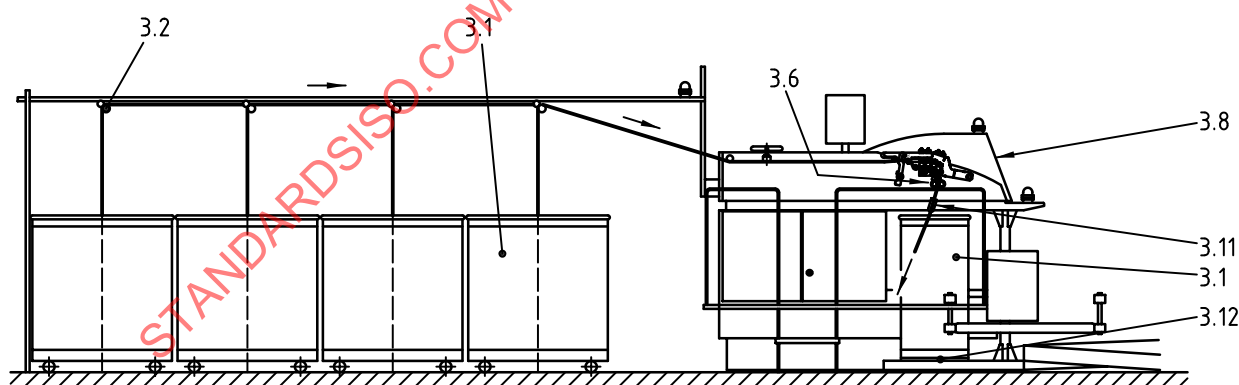


**Figure 2 — Machine components (I)**

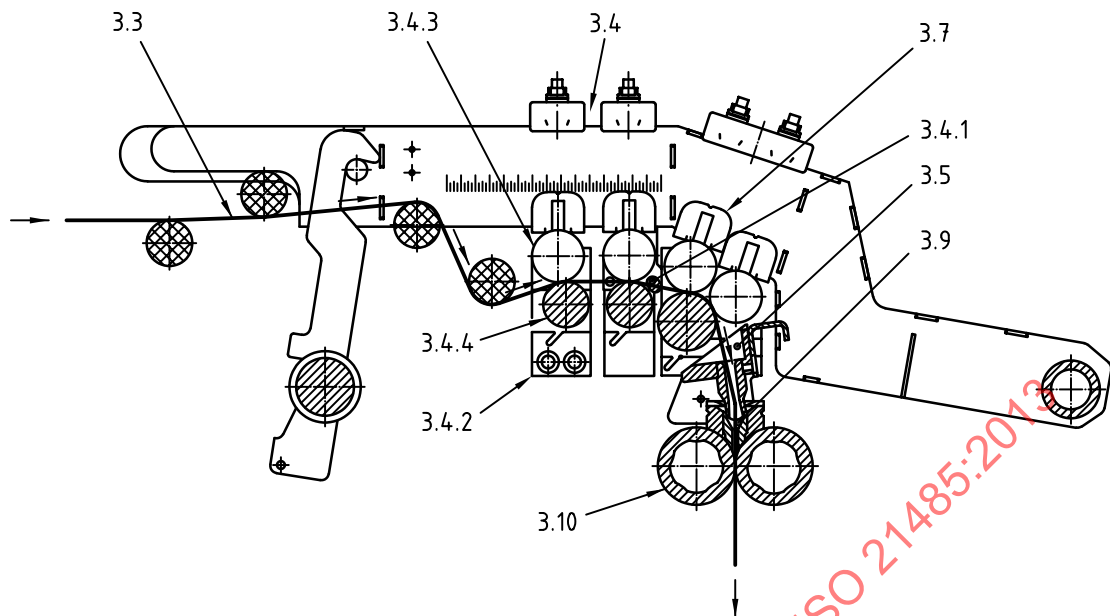


Figure 3 — Machine components (II)

### 3.1 sliver can

round or rectangular container for the deposit of card, comb or draw frame sliver

Note 1 to entry: Round sliver cans are defined in ISO 93-1 and ISO 93-2, rectangular cans in ISO 16853.

### 3.2 creel [feed]

positively driven rollers for pulling feed sliver from the *sliver can* (3.1) or [and] static sliver guides

### 3.3 sliver guide

device for guiding slivers at the entry to the *drafting system* (3.4)

### 3.4 drafting system

device with several consecutive roller pairs running at increasing speeds and a *pressure bar* (3.4.1) to draft the infed sliver

#### 3.4.1 pressure bar

static sliver guide component installed in the main drafting zone to guide floating fibres

#### 3.4.2 roll bearing

bearing for the *bottom rollers* (3.4.4) in the *drafting system* (3.4)

#### 3.4.3 top rollers

friction-driven or positively driven rollers, self-weighted or with additional load, resting on the bottom roller and gripping and carrying the sliver

[SOURCE: ISO 2205:1975]

3.4.4

**bottom rollers**

fluted, knurled or smooth rollers

[SOURCE: ISO 2205:1975]

3.5

**web guide**

device located at the exit of the *drafting system* (3.4) to guide the web into the *sliver funnel* (3.9)

3.6

**drafting system support**

**drafting roller stand**

base (e.g. of cast iron) on which the *drafting system* (3.4) is mounted

3.7

**cleaning device with suction system**

cleaner lips and wipers operating in conjunction with the suction system for cleaning measuring devices and other elements

3.8

**drafting system hood**

hood for covering the *drafting system* (3.4)

3.9

**sliver funnel**

device for compressing the sliver

3.10

**draw rollers**

positively driven roller pair for drawing off and compressing the sliver

3.11

**coiler**

**deposit plate**

device for depositing the drafted sliver into the *sliver can* (3.1)

3.12

**can plate**

device for supporting and rotating the *sliver can* (3.1)

## 4 Doubling and drafting

4.1

**doubling**

*D*

simultaneous feeding of several slivers in order to bring them near each other and compensate the deviation in the mass

4.2

**draft**

*V*

attenuation of a fibre structure consisting of one or more individual slivers gripped between pairs of rollers by drawing off at increasing speed, expressed by the relationship of delivery speed  $v_A$  to entry speed  $v_E$  (Example 1) or by the relationship of the entry sliver weight of the fibre structure  $Tt_E$  to its delivery sliver weight  $Tt_A$  (Example 2)

EXAMPLE 1  $v_E = 60 \text{ m/min}$ ,  $v_A = 360 \text{ m/min}$ :  $V_{\text{drafting system}} = \frac{v_A}{v_E} = \frac{360}{60} = 6$

EXAMPLE 2  $Tt_E$  of the individual slivers = 6 ktex,  $D = 6$ ,  $Tt_A = 6$  ktex:  $V_{\text{machine}} = \frac{Tt_E \times D}{Tt_A} = \frac{6 \times 6}{6} = 6$

#### 4.3

##### **autoleveller**

device for measuring and compensating sliver weight variations by superimposing a variable draft on the nominal *draft* (4.2) of the frame

Note 1 to entry: The desired change in draft to compensate sliver weight variations of the incoming slivers takes effect in the main drafting zone.

#### 4.4

##### **measuring instrument**

device for continuously registering the sliver weight of the incoming slivers

#### 4.5

##### **actuator**

device for calculating and implementing a control speed that effects a change in *draft* (4.2) in the main drafting zone and thus compensates the sliver weight variations of the incoming slivers

## **Annex A** (normative)

### **Principles of construction**

#### **A.1 Drive**

##### **A.1.1 Main drive**

###### **A.1.1.1 Variable speed drive**

#### **A.2 Drafting system**

Roller drafting system. See [Figure 3](#).

##### **A.2.1 Bottom rollers**

Fluted, knurled or smooth rollers. See [Figure 3](#).

##### **A.2.2 Top rollers**

Smooth, rubber-coated rollers. See [Figure 3](#).

##### **A.2.3 Top roller pressure**

Spring-loaded or pneumatic pressuring systems.

#### **A.3 Stop motions**

Mechanical or electrical.

#### **A.4 Position of rotary can plate**

Directly on the floor or embedded in the floor or in a base-plate of the machine frame. See [Figure 2](#).

#### **A.5 Dimensions of the spinning cans**

NOTE See ISO 93-1 and ISO 93-2, and ISO 16853.

#### **A.6 Sliver**

EXAMPLE One sliver per delivery (single-sliver delivery).

## Bibliography

- [1] ISO 92, *Textile machinery and accessories — Spinning machinery — Definition of side (left or right)*
- [2] ISO 93-1, *Textile machinery and accessories — Cylindrical sliver cans — Part 1: Main dimensions*
- [3] ISO 93-2, *Textile machinery and accessories — Cylindrical sliver cans — Part 2: Spring bottoms*
- [4] ISO 2205, *Textile machinery and accessories — Drafting arrangements for spinning machines — Terminology*
- [5] ISO 16853, *Textile machinery — Sliver cans, rectangular — Main dimensions and tolerances*

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## Begriffe und Definitionen

### 1 Grundbegriffe

#### 1.1

##### **Strecke**

Textilmaschine, Maschine, bestehend aus einer *Ablieferung* (1.3), zur Ausstreckung und Parallelisierung des Fasergutes durch *Verzug* (4.2), zum Vergleichmäßigen des Bandes durch *Doublieren* (4.1), zum Mischen und Entstauben des Fasergutes

#### 1.2

##### **Regulierstrecke**

Textilmaschine, bestehend aus einer *Ablieferung* (1.3), zur Ausstreckung und Parallelisierung des Fasergutes durch *Verzug* (4.2), zum Vergleichmäßigen des Bandes durch *Doublieren* (4.1), zum Mischen und ggf. Entstauben, des Fasergutes sowie zum Ausgleich einer gemessenen Abweichung der Bandmasse durch einen dem Nominalverzug überlagerten veränderlichen Verzug

#### 1.3

##### **Ablieferung**

Arbeitsstelle zum Befüllen einer *Spinnkanne* (3.1)

### 2 Seitenbezeichnung, Maßangaben (siehe Bild 1)

#### 2.1

##### **rechte Seite**

##### **R**

Seite der Textilmaschine, die gegen den Faserfluss gesehen, rechts liegt

Anmerkung 1 zum Begriff: Siehe ISO 92.

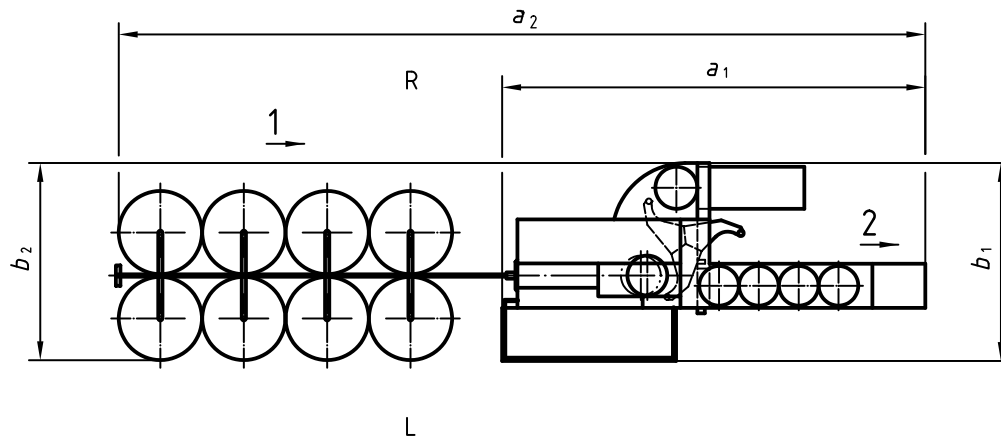
#### 2.2

##### **linke Seite**

##### **L**

Seite der Textilmaschine, die gegen den Faserfluss gesehen, links liegt

Anmerkung 1 zum Begriff: Siehe ISO 92.



### Key

- $a_1$  Maschinentiefe (ohne Platzbedarf der vorgelegten Spinnkannen)
- $a_2$  Gesamttiefe (einschließlich Platzbedarf der vorgelegten Spinnkannen)
- $b_1$  Maschinenbreite (ohne Platzbedarf der vorgelegten Spinnkannen)
- $b_2$  Gesamtbreite (einschließlich Platzbedarf der vorgelegten Spinnkannen)
- R rechte Seite
- L linke Seite
- 1 Einlauf
- 2 Maschinentiefe (ohne Platzbedarf der vorgelegten Spinnkannen)

Platzbedarf:  $a_2 \times b_1$  for  $b_2 \leq b_1$   
 $a_2 \times b_2$  for  $b_2 > b_1$

**Bild 1 — Seitenbezeichnung, Maßangaben**

### 3 Bauteile (siehe Bilder 2 und 3)

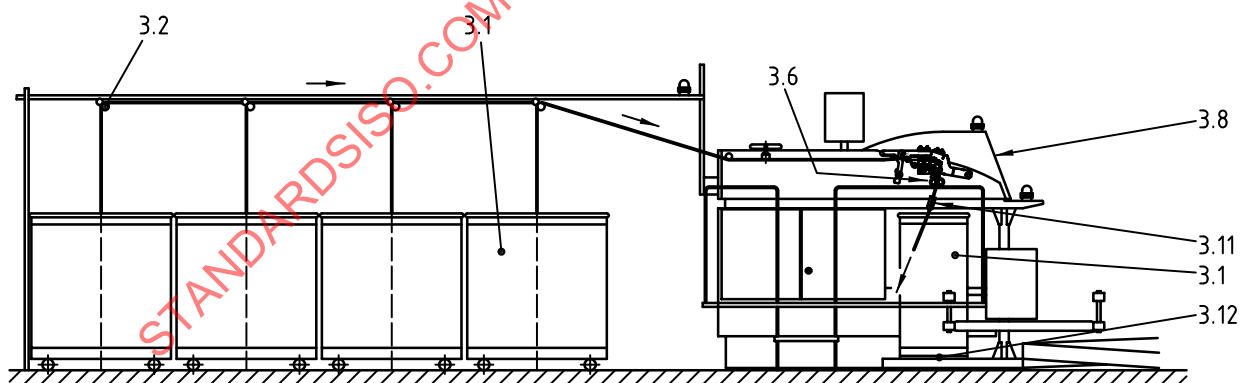


**Bild 2 — Bauteile (I)**