INTERNATIONAL STANDARD

ISO 9902-2

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Textile machinery — Noise test code —

Part 2: Spinning preparatory and spinning machinery

Matériel pour l'industrie textile — Code d'essai acoustique —

Partie 2: Machines de préparation de filature et machines de filature

Reference number
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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 part of ISO 9902 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 9902-2 was prepared by Technical Committee ISO/TC 72, *Textile machinery and machinery for dry-cleaning and industrial laundering*, Subcommittee SC 8, *Safety requirements for textile machinery*.

This first edition of ISO 9902-2, together with ISO 9902-1, ISO 9902-3, ISO 9902-4, ISO 9902-5, ISO 9902-6 and ISO 9902-7, cancels and replaces ISO 9902:1993, which has been technically revised.

ISO 9902 consists of the following parts, under the general title *Textile machinery — Noise test code*:

— *Part 1: Common requirements*

— *Part 2: Spinning preparatory and spinning machinery*

— *Part 3: Nonwoven machinery*

— *Part 4: Yarn processing, cordage and rope manufacturing machinery*

— *Part 5: Weaving and knitting preparatory machinery*

— *Part 6: Fabric manufacturing machinery*

— *Part 7: Dyeing and finishing machinery*

Textile machinery — Noise test code —

Part 2:
Spinning preparatory and spinning machinery

1 Scope

This part of ISO 9902, taken together with ISO 9902-1, specifies the mounting, operating and measuring conditions required for the measurement, declaration and verification of noise emitted by spinning preparatory and spinning machinery.

It is applicable to engineering (grade 2) and survey (grade 3) methods, in accordance with the International Standards to which it makes normative reference, and to machines of different types used as defined in ISO 2187 for

— opening, cleaning and blending,

— wool scouring,

— baling,

— carding,

— tow cutting and stretch breaking,

— spinning preparation subsequent to carding, and

— spinning.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 9902. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 9902 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 2187:1990, *Spinning preparatory machinery, spinning and doubling (twisting) machinery — List of equivalent terms.*

ISO 3744:1994, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane.*

ISO 3746:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane.*

ISO 3747:2000, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Comparison method* in situ.

ISO 9614-1:1993, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points.*

ISO 9614-2:1996, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning.*

ISO 9902-1:2001, *Textile machinery — Noise test code — Part 1: Common requirements.*

ISO 11201:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane.*

ISO 11202:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Survey method* in situ.

ISO 11204:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Method requiring environmental corrections.*

3 Terms and definitions

For the purposes of this part of ISO 9902, the terms and definitions given in ISO 9902-1 apply.

4 Defining the test object

See Table 1 of this part of ISO 9902 and clause 4 of ISO 9902-1:2001.

5 Sound power level determination

5.1 International Standards required for basic measurements

5.1.1 General

See 5.1 of ISO 9902-1:2001.

5.1.2 Determination by measuring sound intensity

Determination of the A-weighted sound power level, L_{WA}, using sound intensity measurements shall be in accordance with ISO 9614-1 (discrete points) or ISO 9614-2 (scanning).

5.1.3 Determination using emission sound pressure levels on a measurement surface

Determination of the A-weighted sound power level, L_{WA}, by measurement of A-weighted emission sound pressure levels on a prescribed measurement surface shall be in accordance with one of the following:

— ISO 3744,

— ISO 3747, or

— ISO 3746, but only where use of ISO 3744 or ISO 3747 is not practicable.

5.2 Very large machines

See 5.2 of ISO 9902-1:2001. Very large machines are designated by the letter “L” in Table 1 of this part of ISO 9902.

6 Emission sound pressure level determination

6.1 International Standards required for basic measurements

See 6.1 of ISO 9902-1:2001.

The A-weighted emission sound pressure level, L_{pA}, shall be determined in accordance with one of the following:

— ISO 11201,

— ISO 11204, or

— ISO 11202, but only where use of ISO 11201 or 11204 is not practicable.

6.2 Selection of work station and other specified positions

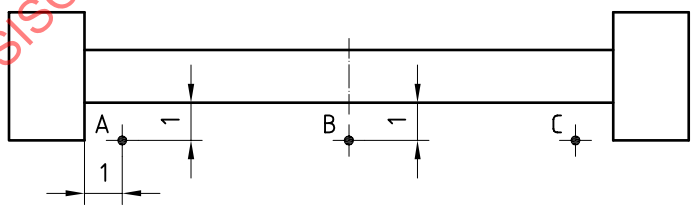
See 6.2 of ISO 9902-1:2001.

Three options, designated as d), e) and f)[1)], are used to define a work station for spinning preparatory and spinning machinery. For each machine family, select the option indicated in Table 1.

d) This option consists of several positions on a measurement line around the machine at a distance of 1 m from the surface of the machine and a height of 1,6 m above the floor or working platform. Where a centreline can be defined, both intersections between the centreline and the measurement line shall serve as measurement positions. In addition, sufficient further measurement positions equally spaced around the measurement line shall be used to ensure that the distance between any adjacent measurement positions does not exceed 2 m.

e) This option consists of three measurement positions at a height of 1,6 m, as shown in Figure 1.

Dimensions in metres



A, B and C are the measurement positions.

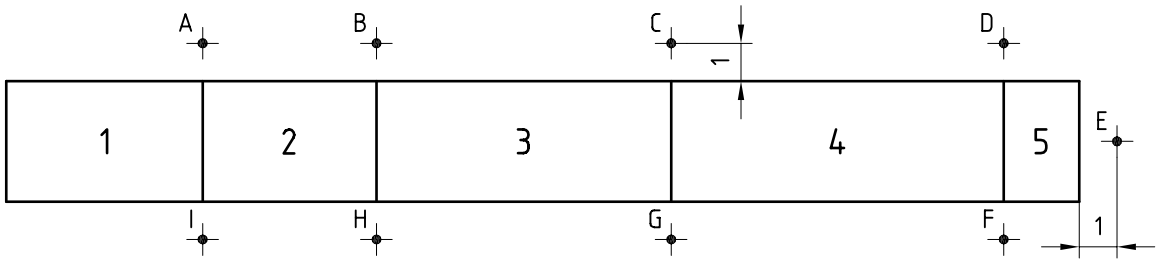
For single-sided machines the measurements shall be made on the operating side; for double-sided machines, they shall be made on one side only.

Figure 1 — Option e)

1) Continues the numeration begun in clause 4 of ISO 9902-1:2001.

f) This option consists of nine positions at a height of 1,6 m, as shown in Figure 2.

Dimensions in metres



Key

1 Can changing device
2 Coiler
3 Machine body
4 Creel
5 Suction box

A to I are the measurement positions.

Figure 2 — Option f)

For each of the three options, L_{pA} shall be calculated from the values measured at the defined positions (see 6.1 of ISO 9902-1:2001).

In areas where space is restricted, the measurement distance may be reduced to 0,5 m. In such cases the distance shall be reported.

7 Installation and mounting conditions

See clause 7 of ISO 9902-1:2001.

8 Operating conditions

See clause 8 of ISO 9902-1:2001 and Table 1 of this part of ISO 9902.

9 Measurement uncertainties

See clause 9 of ISO 9902-1:2001.

10 Information to be recorded

See clause 10 of ISO 9902-1:2001.

11 Information to be reported

See clause 11 of ISO 9902-1:2001: the information required to be reported includes that contained in Table 1 of this part of ISO 9902.

12 Declaration and verification of noise emission values

See clause 12 of ISO 9902-1:2001.

Table 1 — Measurement conditions for spinning preparatory and spinning machinery

Machine family	**Test object definition** (see clause 4)				**Very large machine** L (5.2)	**Work station** (see 6.2)	**Operating conditions** (see ISO 9902-1:2001, clause 8)		
	Equipment included for the test if applicable	Equipment excluded from the test[a]	Machine configuration (see ISO 9902-1:2001, clause 4)	Design features to be reported			Prescribed parameters	Variable parameters	Parameters to be reported
Automated blending bale opener	—	discharge fan fibre tunnel	b)	type and number of the milling rollers functional diameter of the milling roller(s) in millimetres	—	d)	without material nominal operating speed of the milling roller(s) in revolutions per minute	—	—
Teaser, willow	—	discharge fan condenser	b)	method of working (pre-teaser, compound-teaser, post-teaser) width of the drum(s) in millimetres diameter of the drum(s) in millimetres	—	automatic feeding: d) feeding by hand: in front of the feeding table, mid-position, 0,50 m distance, 1,60 m height	without material maximum operating speed of the drum(s) in revolutions per minute	—	—
Blending bale opener	integrated fan	discharge fan	b)	type of stripping and evener roller working width in millimetres type of integrated fan (constant speed or speed controlled)	—	d)	without material maximum operating speed of stripping and evener rollers in revolutions per minute	—	speed of pin-lattice in metres per minute speed of fan during the test in revolutions per minute
Opener	integrated fan	discharge fan	b)	type and number of the opening rollers working width in millimetres type of integrated fan (constant speed or speed controlled)	—	d)	without material maximum operating speed of the opening rollers in revolutions per minute	—	speed of fan during the test in revolutions per minute
Cleaner	integrated fan	discharge fan	b)	type and number of the cleaning rollers working width in millimetres type of integrated fan (constant speed or speed controlled)	—	d)	without material maximum operating speed of the cleaning rollers in revolutions per minute	—	speed of fan during the test in revolutions per minute

Table 1 *(continued)*

Machine family	Test object definition (see clause 4)				Very large machine L (5.2)	Work station (see 6.2)	Operating conditions (see ISO 9902-1:2001, clause 8)		
	Equipment included for the test if applicable	Equipment excluded from the test [a]	Machine configuration (see ISO 9902-1:2001, clause 4)	Design features to be reported			Prescribed parameters	Variable parameters	Parameters to be reported
Multiple chamber blender	complete chambers integrated fan	discharge fan	b)	number of chambers working width in millimetres type of integrated fan (constant speed or speed controlled)	L	d)	measurement only in discharge phase without material maximum operating speed of opening rollers in revolutions per minute	—	speed of fan during the test in revolutions per minute
Moving bin emptier	integrated fan	chamber discharge fan	b)	working width in millimetres	—	d)	measurement only in discharge phase without material maximum operating speed of stripping roller in revolutions per minute	—	speed of the needle lattice in metres per minute
Bunker emptier	integrated fan	chamber discharge fan	b)	working width in millimetres	—	d)	measurement only in discharge phase without material maximum operating speed of stripping roller in revolutions per minute	—	speed of the needle lattice in metres per minute
Condenser	drive integrated fan delivery device	—	b)	working width in millimetres type of integrated fan (constant speed or speed controlled)	—	d)	without material maximum operating speed of the delivery device in metres per minute	pressure in Pa volume flow in cubic metres per minute	speed of fan during the test in revolutions per minute
Fan	drive	—	b)	—	—	d)	without material [b]	pressure in Pa volume flow in cubic metres per minute	rotational speed in revolutions per minute
Wool scouring machine	complete plant	—	a)	—	L	d)	without material maximum operating speed in metres per minute	—	—

Table 1 *(continued)*

Machine family	**Test object definition** (see clause 4)				**Very large machine** L (5.2)	**Work station** (see 6.2)	**Operating conditions** (see ISO 9902-1:2001, clause 8)		
	Equipment included for the test if applicable	Equipment excluded from the test[a]	Machine configuration (see ISO 9902-1:2001, clause 4)	Design features to be reported			Prescribed parameters	Variable parameters	Parameters to be reported
Baling press	feeding and precompressing press box change-over	—	a)	—	L	d)	with material maximum pressing operations per hour	—	pressure in pascals
Flat card	chute coiler integrated suction device	can doffer	b)	working width in millimetres diameter of the rollers in millimetres type and number of pretearing rollers type of integrated fan (constant speed or speed controlled)	—	d)	without material maximum speed of drum in revolutions per minute	delivery speed in m/min	speed of fan during the test in revolutions per minute
Roller and clearer card	feeding device delivery device (coiler, divider tape condenser) integrated suction device can doffer (without cans)	cross lapper (if fitted)	a), b)	working width in millimetres diameter of the drums in millimetres number of worker/stripper pairs type of feed type of web detaching device (e.g. comb, doffing cylinder) type of card (delivery by, e.g., coiler deviser, tape condenser, cross-lapper) type of integrated fan (constant speed or speed controlled)	L (only for sets of rollers and clearer cards)	d)	without material maximum speed of drum(s) in rpm 80 % to 85 % of maximum doffer speed in metres per minute	—	doffing comb strokes per minute rubber strokes per minute if tape condenser fitted speed of fan during the test in revolutions per minute

Table 1 *(continued)*

Machine family	**Test object definition** (see clause 4)				**Very large machine** L (5.2)	**Work station** (see 6.2)	**Operating conditions** (see ISO 9902-1:2001, clause 8)		
	Equipment included for the test if applicable	Equipment excluded from the test[a]	Machine configuration (see ISO 9902-1:2001, clause 4)	Design features to be reported			Prescribed parameters	Variable parameters	Parameters to be reported
Crush cutting converter	integrated suction device intersecting or chain gill box delivery devices (coiler and can changeover or sliver winder)	creel	a)	type of parallelization (needle field, drafting mechanism) feed mechanism delivery device (coiler can changeover, sliver winder) type of integrated fan (constant speed or speed controlled)	L	d)	without material 80 % to 85 % of maximum delivery speed in metres per minute	—	speed of fan during the test in revolutions per minute
Stretch breaking converter	integrated suction device delivery devices (coiler and can changeover or sliver winder)	creel	a)	feed mechanism delivery device (coiler, can changeover, sliver winder) type of integrated fan (constant speed or speed controlled)	L	d)	with material maximum delivery speed in metres per minute	—	speed of fan during the test in revolutions per minute material data fineness in tex production in kilograms per hour
Drawing machine without needle field for cotton type processing	integrated suction device coiler	feeding device can doffer	a)	number of heads type of integrated fan (constant speed or speed controlled)	—	d)	with material	delivery speed in metres per minute	material data production in kilograms per hour doubling speed of fan during the test in revolutions per minute

Table 1 *(continued)*

Machine family	**Test object definition** (see clause 4)				**Very large machine** L (5.2)	**Work station** (see 6.2)	**Operating conditions** (see ISO 9902-1:2001, clause 8)		
	Equipment included for the test if applicable	Equipment excluded from the test[a]	Machine configuration (see ISO 9902-1:2001, clause 4)	Design features to be reported			Prescribed parameters	Variable parameters	Parameters to be reported
Drawing machine with needle field and drawing machine without needle field for woollen processing	integrated suction device feeding device delivery device	—	a)	type of drawing machine number of heads type of integrated fan (constant speed or speed controlled)	L	d) f), where suction device is at the end of the creel	without material In case of screw gills: 80 % to 85 % of maximum draft 80 % to 85 % of maximum faller speed in drops per minute For other drafting techniques: 80 % to 85 % of maximum delivery speed in metres per minute	—	speed of fan during the test in revolutions per minute For screw gills: delivery speed in metres per minute
Sliver and ribbon lap machine, lap former	integrated suction device	feeding device	a)	type of machine type of integrated fan (constant speed or speed controlled)	—	d)	with material	delivery speed in metres per minute	material data production in kilograms per hour doubling speed of fan during the test in revolutions per minute
Back washer	—	—	a)	working width in millimetres	L	d)	with material maximum delivery speed in metres per minute	—	—
Cotton comber	coiler integrated suction device	—	a)	number of heads gauge in millimetres type of integrated fan (constant speed or speed controlled)	L	e)	with material	speed in nips per minute	material data speed of fan during the test in revolutions per minute
Rectilinear comb	integrated suction device feeding device delivery device	—	a)	working width in millimetres type of integrated fan (constant speed or speed controlled)	L	d) f), where suction device is at the end of the creel	without material maximum speed in nips per minute	—	speed of fan during the test in revolutions per minute

Table 1 *(continued)*

Machine family	**Test object definition** (see clause 4)				**Very large machine** L (5.2)	**Work station** (see 6.2)	**Operating conditions** (see ISO 9902-1:2001, clause 8)		
	Equipment included for the test if applicable	Equipment excluded from the test[a]	Machine configuration (see ISO 9902-1:2001, clause 4)	Design features to be reported			Prescribed parameters	Variable parameters	Parameters to be reported
Speedframe	integrated suction device	feeding device travelling vacuum cleaner take-off device	a)	number of spindles gauge in millimetres type of drafting equipment size of bobbin type of bobbin coupling type of flyer type of integrated fan (constant speed or speed controlled)	L	e)	without material 80 % to 85 % of maximum flyer speed in revolutions per minute 80 % to 85 % of maximum delivery speed in metres per minute	—	speed of fan during the test in revolutions per minute
High draft finisher (rubbing finisher)	integrated suction device	feeding device	a)	number of heads gauge in millimetres type of integrated fan (constant speed or speed controlled)	L	e)	without material 80 % to 85 % of maximum delivery speed in metres per minute 80 % to 85 % of maximum rubber strokes per minute	—	traverses of take-off device per minute speed of fan during the test in revolutions per minute

Table 1 *(continued)*

Machine family	**Test object definition** (see clause 4)				**Very large machine** L (5.2)	**Work station** (see 6.2)	**Operating conditions** (see ISO 9902-1:2001, clause 8)		
	Equipment included for the test if applicable	Equipment excluded from the test[a]	Machine configuration (see ISO 9902-1:2001, clause 4)	Design features to be reported			Prescribed parameters	Variable parameters	Parameters to be reported
Ring spinning machine	integrated suction device integrated doffing device	for use of compound machinery: winding machine and external transporting equipment travelling vacuum cleaner device travelling piecing unit	a)	single or double sided number of spindles gauge in millimetres cop size ring diameter in millimetres type of ring type of traveller spindle type type of spindle drive (e.g. belt, single drive) type of integrated fan (constant speed or speed controlled) drive for one side or both sides with balloon, with reduced balloon or balloonless tube length in millimetres type of tube coupling description of drive belt (surface, new belt) if applicable	L	e)	with material cop half-full For woollen ring spinning machines: 80 % to 85 % of maximum spindle speed in revolutions per minute	For cotton ring spinning machines: spindle speed in revolutions per minute	delivery speed in metres per minute traveller speed in metres per second material data production rate in grams per spindle hour speed of fan during the test in revolutions per minute