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Standard Terminology Relating to Open-End Spinning[1]

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1. Scope

1.1 This terminology covers those parts of a spinning machine which are specific to open-end yarn production.

2. Referenced Documents

2.1 *ASTM Standards:*
D 123 Terminology Relating to Textiles[2]
2.2 *Other Standards:*
ISO 2205 Terminology of Drafting Arrangements
ISO 447 Terminology Relative to Cone and Cheese Winders

3. Terminology

3.1 *Definitions:*

collecting surface, *n—in the rotor of an open-end spinning machine*, that portion of the internal surface of the rotor, often in the form of a groove, in which the fibers are condensed for assembly into yarn.

doffing tube, *n*—a component of an open-end spinning machine which is an extension to the navel and is used to guide the withdrawn yarn en route to the take-up rollers. (See also **navel.**)

feed unit, *n—in an open-end spinning machine*, the device which presents the feed stock to the opening roller by either a feed roller and feed plate combination or interacting feed rollers. (See also **opening device.**)

fiber channel, *n*—a component of an open-end spinning machine through which the fibers are conveyed by an air current from the opening device to the rotor. (*Syn.* fiber transport tube.) (See also **opening device.**)

navel, *n*—a component of an open-end spinning machine located on the axis of the rotor through which the yarn is withdrawn from the rotor and which modifies the twist of the yarn inside the rotor.

open-end spinning machine, *n*—a textile machine for converting staple fiber into spun yarn by a continuous process in which the individual fibers or groups of fibers are caused to assemble at the open end of the forming yarn. (See Fig. 1.) (See also **rotor-type open-end spinning machine.**)

open-end yarn, *n*—a continuous strand of fibers, produced directly from sliver or roving, in a single continuous operation, by opening and reassembling them in a spinning element to form the yarn.

opening device, *n—in open-end spinning*, either a drafting system or an opening roller which separates the feed stock into individual fibers or very small tufts prior to their reassembly into yarn.

opening roller, *n—a component of the opening device in open-end spinning machines*, a roller covered with pins or teeth or similar device used to separate the feed stock into individual fibers or very small tufts by a continuous combing action. (*Syn.* combing roll)

rotor, *n—in open-end spinning machines*, a device resembling a centrifuge, in which the fibers are assembled and in which, by virtue of its rotation, real twist is inserted in the forming yarn.

DISCUSSION—The rotor separates the fibers and the incoming air. The air is dissipated either through holes in the rotor, or over the rim of the rotor into the surrounding rotor housing and is exhausted through an outlet duct.

rotor-type open-end spinning machine, *n*—an open-end spinning machine wherein the assembly of individual fibers and the insertion of real twist are effected by a rotor. (See also **open-end spinning machine.**)

DISCUSSION—The fibers are separated from the feed stock and are conveyed to the rotor, where they are continuously deposited on the collecting surface. By the rotation of the rotor the fibers are twisted into yarn which is progressively withdrawn through the navel.

separator, *n*—a component of some open-end spinning machines located inside the rotor to direct the incoming fibers to the slide surface.

slide surface, *n—in the rotor of an open-end spinning machine*, that part of the internal surface of the rotor on which the fibers are deposited and are caused to slide to the collecting surface.

take-up rollers, *n—in open-end spinning machines*, a pair of closely set, continuously rotating cylinders which withdraw the spun yarn from the rotor.

trash removal device, *n—in open-end spinning machines*, a system for removing impurities from the opened feed stock before the fibers are conveyed to the rotor.

winding system, *n*—in open-end spinning machines, a device which forms the yarn package.

[1] This terminology is under the jurisdiction of ASTM Committee D-13 on Textiles and is the direct responsibility of Subcommittee D13.58 on Yarn Test Methods, General.

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[2] *Annual Book of ASTM Standards*, Vol 07.01.