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Standard Specification for Tracheal Tube Connectors¹

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1. Scope

1.1 This specification covers the general objectives, terminology, dimensions and tolerances, labeling, and materials for nominal 15-mm connectors utilized in joining tracheal tubes to breathing systems.

1.2 The purpose of this standard is to specify minimum and performance and safety requirements and to further promote interchangeability of components for tracheal tube connections.

1.3 The values stated in SI units are to be regarded as standard.

2. Referenced Documents

2.1 *ASTM Standards:*

F 1054 Specification for Conical Fittings of 15-mm and 22-mm Sizes²

3. Terminology

3.1 *Definitions:*

3.1.1 *machine end*—the end of the connector nearest the machine.

3.1.2 *patient end*—the end of the connector nearest the patient.

3.1.3 *tracheal tube connector*—a straight or curved connector that inserts directly into a tracheal tube.

4. Materials and Manufacture

4.1 The connector should be light in weight and be of sufficient strength to resist deformation under normal conditions of use.

4.2 Connectors should be made of materials suitable for the intended use and function satisfactorily in the presence of anesthetic agents and gases commonly used.

5. General Requirements

5.1 Connectors described in this specification should be designed primarily for patient safety and only secondarily for the convenience of the anesthesiologist and manufacturer.

5.2 Connectors described in this specification should be designed to have a minimum of dead space and cause a

minimum of turbulence, consistent with other requirements in this specification.

5.3 Connections with components specified in this specification should not leak and should have sufficient stability to resist accidental disconnection during ordinary usage. Ordinarily the security of the connection may be increased by twisting (or turning) the mating components during engagement.

5.4 By visual inspection there shall be no shoulder within the lumen and transitions in the internal diameter shall be tapered to give an adequate lead-in for smooth passage of a suction catheter.

5.5 For connection and disconnection, tracheal tube fittings should provide a means to facilitate grasping.

5.6 The connectors may be provided with lugs, knobs, or other protrusions to which elastic bands or other devices may be attached to resist accidental separations.

5.7 The machine end shall conform with applicable requirements of Specification F 1054.

6. Dimensions and Tolerances of Tracheal Tube Connectors

6.1 *Measurement System*—Dimensions shall be stated in the International System of Units (SI).

TABLE 1 Size Designation, Tolerance, and Length of Patient End, mm

Size Designation	Tolerance	Suggested Length	Length of L ^A	
			min	max
2.0	±0.15	11	9.0	19.0
2.5	±0.15	11	9.0	19.0
3.0	±0.15	11	11.0	19.0
3.5	±0.15	13	11.0	19.5
4.0	±0.15	13	12.0	19.5
4.5	±0.15	14	12.0	20.0
5.0	±0.15	14	13.0	20.0
5.5	±0.15	15	13.0	20.5
6.0	±0.15	15	16.0	20.5
6.5	±0.15	18	16.0	21.0
7.0	±0.15	18	16.0	21.0
7.5	±0.15	18	16.0	21.5
8.0	±0.15	18	16.0	21.5
8.5	±0.15	18	16.0	22.0
9.0	±0.15	18	16.0	22.0
9.5	±0.15	18	16.0	22.5
10.0	±0.15	18	16.0	22.5
11.0	±0.15	18	16.0	23.0

^A See Figs. 1-3.

6.2 *Size*—The size of the tracheal tube connectors shall be

¹ This specification is under the jurisdiction of ASTM Committee F-29 on Anesthetic and Respiratory Equipment and is the direct responsibility of Subcommittee F29.12 on Airways.

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² *Annual Book of ASTM Standards*, Vol 13.01.