Designation: F 1613 – 95 (Reapproved 2002)

Standard Specification for Surgical Tissue/Dressing/Pick-Up Forceps (Thumb Type)[1]

This standard is issued under the fixed designation F 1613; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers general workmanship aspects of spring-action, tissue, dressing, or pick-up forceps (thumb-type) intended for the retraction, grasping, or dissection of tissue during surgical procedures.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 *ASTM Standards:*

E 18 Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials[2]

E 92 Test Method for Vickers Hardness of Metallic Materials[2]

E 140 Hardness Conversion Tables for Metals[2]

F 899 Specification for Stainless Steels for Surgical Instruments[3]

F 921 Definitions of Terms Relating to Hemostatic Forceps[3]

F 1026 Specification for General Workmanship and Performance Measurements of Hemostatic Forceps[3]

F 1089 Test Method for Corrosion of Surgical Instruments[3]

F 1638 Terminology for Surgical Tissue/Dressing/Pick-Up Forceps (Thumb-Type)[3]

3. Terminology

3.1 *Definitions*—Definitions shall be in accordance with Terminology F 1638.

3.1.1 *modified working ends*—working surfaces possessing superior hardness characteristics that are the result of either depositing various materials on the base metal or securing an insert permanently (such as by brazing) to the base metal (see Note 3).

4. Material

4.1 All component parts of the instrument shall be fabricated from Class 4 martensitic stainless steel in accordance with Specification F 899. The modified working ends may be of stellite, tungsten carbide, or other suitable material.

5. Requirements

5.1 *Heat Treatment and Hardness for Component Parts*:

5.1.1 The stainless steel component parts shall be heat treated under conditions recommended for the material used.

5.1.2 The Rockwell hardness (HRC) of the instrument with the working end not modified shall be 40–49 HRC after appropriate processing. Instruments in which the working end has been modified shall have an HRC of A77.

5.2 *Corrosion Resistance*—Instruments shall be subjected to corrosion tests as specified in Test Method F 1089.

5.3 *Finish*:

5.3.1 *Surfaces*—Surfaces of the instruments shall be uniformly finished and free of burrs, sharp edges, cracks, coarse marks, and processing materials.

5.3.2 *Type*—The finish shall be one of the types specified in Definitions F 921 or as specified by the purchaser.

5.4 *Workmanship*:

5.4.1 *Symmetry*—Excluding functional differences, both forceps halves shall be symmetrical.

5.4.2 *Teeth*—Teeth shall be well formed, uniform in depth and spacing, and mesh without binding, unless designed otherwise.

5.4.3 *Handle Serrations*—Handle serrations shall be uniform in depth and spacing.

5.5 *Guide Pin and Guide Pin Hole*:

5.5.1 The guide pin shall pass through the guide pin hole without binding.

5.5.2 The guide pin length shall not protrude past the outside surface of the guide pin hole when the forceps' tips come in contact.

NOTE 1—Guide pin/guide pin holes are generally used on forceps 7½ in. (191 mm) or longer.

[1] This specification is under the jurisdiction of ASTM Committee F04 on Medical and Surgical Materials and Devices and is the direct responsibility of Subcommittee F04.33 on Medical/Surgical Instruments.

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[2] *Annual Book of ASTM Standards*, Vol 03.01.

[3] *Annual Book of ASTM Standards*, Vol 13.01.

6. Performance

6.1 *Alignment*—Scissoring shall be 0.015 in. (0.38 mm) or less upon closure.

7. Marking and Labeling

7.1 All marking and labeling shall be legible.

7.2 The instruments shall bear the following: (*1*) the manufacturer's (or contractor's) name or registered trademark; (*2*) the country of origin (when the instrument is not manufactured in the United States); and (*3*) other markings, as required, by the purchaser or the manufacturer (contractor).

7.3 The location of marking shall be on a suitable surface of the instrument.

NOTE 2—This specification is not intended to cover delicate tissue forceps such as those used in microsurgery or neurosurgery.

NOTE 3—Typical methods of modifying the working end of the forceps is to use jaw inserts or to plasma deposit (flame plate) materials with improved wear characteristics such as tungsten carbide or stellite. For the jaw insert methods, the insert is brazed to the jaw face with a uniform deposit of silver solder that is free of crevices at all interfaces. For the flame plating method, a uniform layer of material is deposited that is 0.004 ± 0.001 in. (0.1 ± 0.03 mm) thick.