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Standard Specification for Intramedullary Reamers¹

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1. Scope

1.1 This specification provides requirements for material, dimensions and tolerances, finish and marking, and care and handling for reamers intended to cut a cylindrical path along the medullary canal of diaphyseal bone.

1.2 Intramedullary reamers are commonly used to prepare the medullary canal for the insertion of intramedullary fixation devices (IMFD). As such, the relationship between the intramedullary reamer diameter and the IMFD's diameter are considered.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

[A564/A564M](#) Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes

[A693](#) Specification for Precipitation-Hardening Stainless and Heat-Resisting Steel Plate, Sheet, and Strip

[A705/A705M](#) Specification for Age-Hardening Stainless Steel Forgings

[F86](#) Practice for Surface Preparation and Marking of Metallic Surgical Implants

[F565](#) Practice for Care and Handling of Orthopedic Implants and Instruments

[F899](#) Specification for Wrought Stainless Steels for Surgical Instruments

[F983](#) Practice for Permanent Marking of Orthopaedic Implant Components

[F1264](#) Specification and Test Methods for Intramedullary Fixation Devices

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *cutting head, n*—the portion of the reamer, which consists of flutes, or edges, which cut the bone.

3.1.2 *reamer diameter, n*—the diameter of the circumscribed circle of the cutting head's cross-section (shown in [Fig. 1](#)).

3.1.3 *reamer shaft diameter, n*—the diameter of the circumscribed circle of the long portion of the reamer, which connects the cutting portion of the reamer to the drill.

4. Classification

4.1 In general, intramedullary reamers consist of two types:

4.1.1 *One-piece reamer*—A design where the reamer shaft and cutting head are permanently attached to each other.

4.1.2 *Modular Reamer*—A design where the reamer shaft and cutting head are two separate components, fixed to each other temporarily at the time of use via a geometric connection, for example, dovetail joint.

5. Dimensions and Tolerances

5.1 The reamer diameter shall be measured at the largest portion of the cutting head's cross section and reported to the nearest 0.2 mm. The reamer diameter shall be measured using a micrometer or an appropriate ring gage. When using a micrometer to

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.