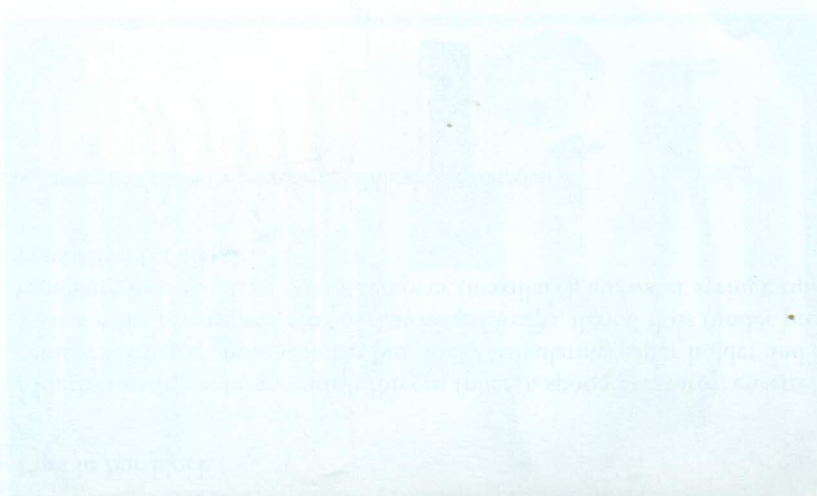


10. Growth and Development: Restorative Treatment



left to right) -
bottom row (flow
left to right) -
top row (flow

Flow and Growth Development

11

Endodontic Instruments



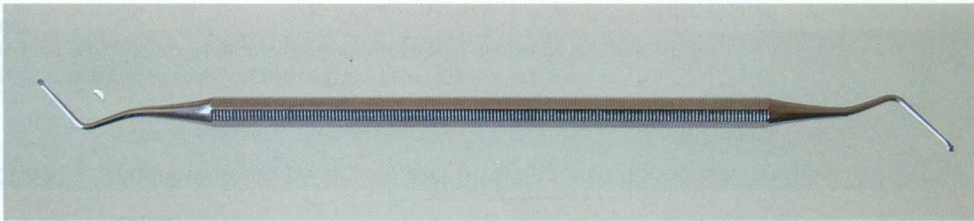


■ INSTRUMENT Endodontic Explorer

- Function ▶** To locate opening of small canal orifices for endodontic procedure
- Characteristics ▶** Double ended
Working end—Longer than regular Explorer to reach opening of canals
- Practice Note ▶** Endodontic Explorer is used exclusively on endodontic tray setups.

S Endodontic Explorer must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping.





■ INSTRUMENT

Endodontic Long-Shank Spoon Excavator

Function ▶ To curet inside of tooth to base of pulp chamber

Characteristics ▶ Long shank to reach deep into cavity preparation
Double ended
Range of sizes available

Practice Note ▶ Endodontic Long-Shank Spoon is used exclusively on endodontic tray setups.

S Endodontic Long-Shank Spoon Excavator must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping.



■ INSTRUMENT

Endodontic Locking Forceps (Pliers)

- Function** ▶ To grasp and lock material for transfer into and out of oral cavity
- Characteristic** ▶ Similar to regular cotton forceps except for locking mechanism to secure material on the working end of the forceps (pliers)
- Practice Note** ▶ Endodontic Locking Forceps are used on endodontic tray setup and could also be used on restorative tray setups.

S Endodontic Locking Forceps must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping. Hinged instruments should be processed open and unlocked.



Photo courtesy SybronEndo, Orange, CA.

■ INSTRUMENT Vitalometer/Pulp Tester

Function ▶ To test vitality of pulp in teeth

Characteristics ▶ Two types—Electronic, digital (digital readout)
Electric or battery operated

Practice Notes ▶ The tester sends an impulse of electric current to the pulp, causing a reaction. The current is increased by small increments until the patient indicates feeling a sensation. Toothpaste is applied to the tip of the electrode to conduct electricity. The tip is placed on the coronal part (facial or lingual) of a natural tooth. Each root/pulp on the tooth is tested. Vitalometer is used exclusively with endodontic tray setups.

S Vitalometer tip must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping. Barriers should be used on the unit and/or the manufacturer's recommendation for sterilization of Vitalometer tip and disinfection of unit should be followed.





■ INSTRUMENT Broach

- Function** ▶ To remove pulp tissue from canal(s)
- Characteristics** ▶ Working end—Barbed wire protrusions on shaft grab and remove vital or nonvital pulp fibers.
 Handles—Color coded according to size
 Range of sizes—Diameter increases with size.
- Practice Note** ▶ Broach is used exclusively on endodontic tray setups.



Endodontic Broach must be disposed of in a Sharps container. For single use only.

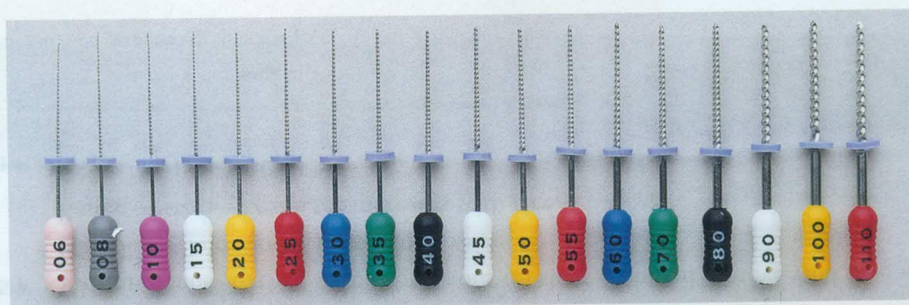


Photo courtesy Premier Dental, Plymouth Meeting, PA.

■ INSTRUMENT Endodontic File—K Type

Functions ▶ To clean inside walls of canal
To contour inner walls of canal

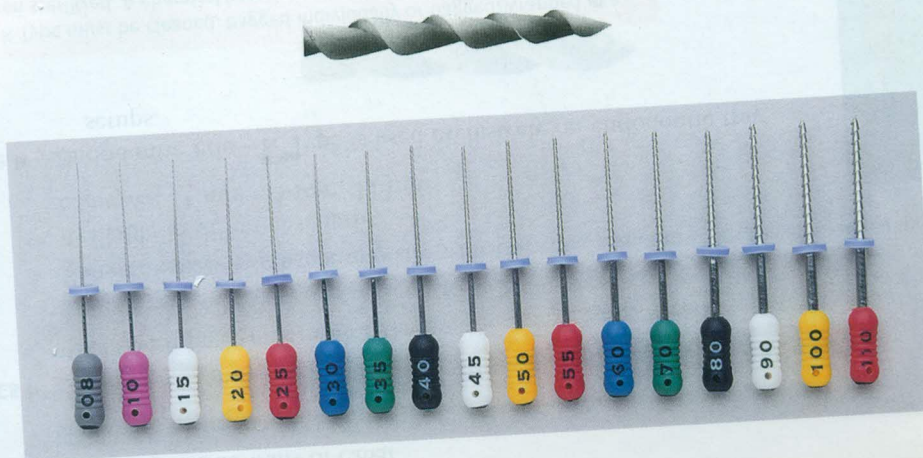
Characteristics ▶ Twisted design—More twists per millimeter than reamer
Used with push-pull motion
Handles—Color coded according to size
Range of sizes—To accommodate width of canal; diameter increases with size.
Available in different lengths
Examples: 21 mm, 25 mm, 31 mm

Practice Note ▶ Endodontic File—K Type is used exclusively on endodontic tray setups.

S Endodontic File—K Type must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping, or used file must be disposed of in a Sharps container. Rubber stopper on the file should be disposed of in the garbage.



Photo courtesy Premier Dental, Plymouth Meeting, PA.



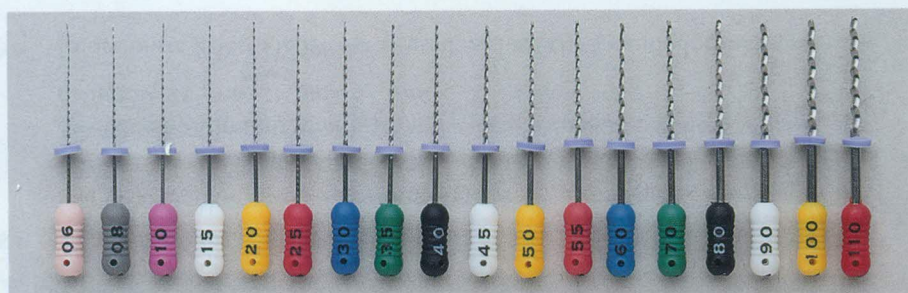
■ INSTRUMENT Endodontic File—Hedstrom

- Functions ▶** To clean inside walls of canal
To enlarge and smooth inner walls of canal

- Characteristics ▶** Triangular cutting edge
Handles—Color coded according to size
Range of sizes—To accommodate width of canal; diameter increases with size.
Available in different lengths
Examples: 21 mm, 25 mm, 31 mm

- Practice Note ▶** Endodontic File—Hedstrom is used exclusively on endodontic tray setups.

S Endodontic File—Hedstrom must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping, or used file must be disposed of in a Sharps container. Rubber stopper on the file should be disposed of in the garbage.



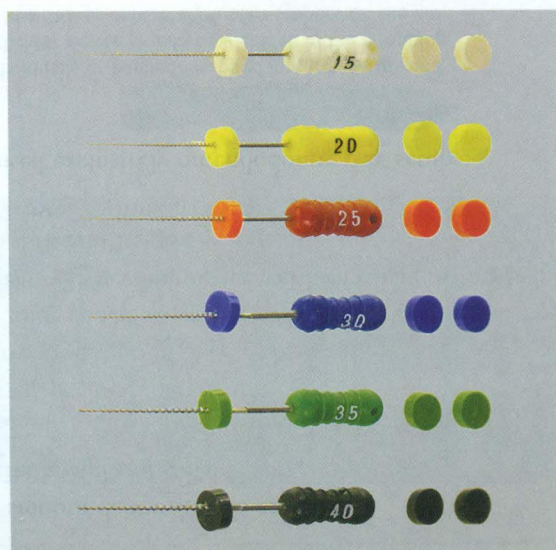
INSTRUMENT Reamer

Functions ▶ To cut and smooth dentinal walls of canal
To enlarge inner walls of canal

Characteristics ▶ Twisted triangular cutting edge (similar to K-type file, but cutting edge is farther apart and has fewer twists per millimeter)
Used with twisting motion
Handles—Color coded according to size
Range of sizes—To accommodate width of canal; diameter increases with size.
Available in different lengths
Examples: 21 mm, 25 mm, 31 mm

Practice Note ▶ Reamer is used exclusively on endodontic tray setups.

S Reamer must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping, or used reamer must be disposed of in a Sharps container. Rubber stopper on the file should be disposed of in the garbage.



■ INSTRUMENT Endodontic Stoppers

Function ▶ To place onto an intracanal instrument such as a file or reamer to help determine length of canal

Characteristics ▶ Files or reamers are measured from stopper to apex of root to determine length of canal. (Radiographs also help determine length.)
Stoppers are made from rubber, silicone, or plastic.

Practice Notes ▶ Endodontic Stoppers are color coded to correspond to a particular file or reamer, or a single color of stopper is used for all files or reamers.
Endodontic Stoppers are used exclusively on endodontic tray setups.

S Endodontic Stoppers should be disposed of in the garbage. Single use only.

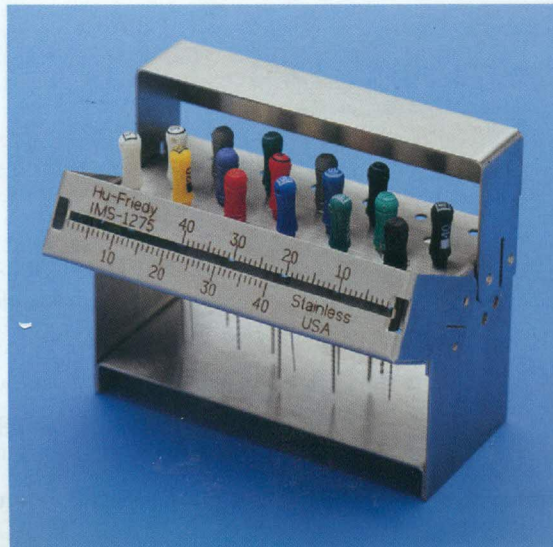


Photo courtesy Hu-Friedy Mfg. Co., LLC, Chicago, IL.

■ INSTRUMENT

Endodontic Stand

- Functions** ▶ To hold endodontic files and reamers
To measure endodontic files and reamers with millimeter ruler etched in container; may be measured from right or left side of stand
- Characteristic** ▶ Container closes with endodontic files and reamers for sterilization processes.
- Practice Note** ▶ Endodontic Stand is used exclusively with endodontic tray setups.

S File or Reamer in Endodontic Stand and Endodontic Stand must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping, or used file or reamer must be disposed of in a Sharps container. Rubber Stopper on the file should be disposed of in the garbage. Single use only.



■ INSTRUMENT

Endodontic Millimeter Ruler

- Function** ▶ To measure files, reamers, other instruments, and materials in millimeter increments
- Characteristic** ▶ Variety of designs
- Practice Note** ▶ Endodontic Millimeter Ruler could be used in areas of dentistry other than on endodontic tray setups.



Endodontic Millimeter Ruler must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping.

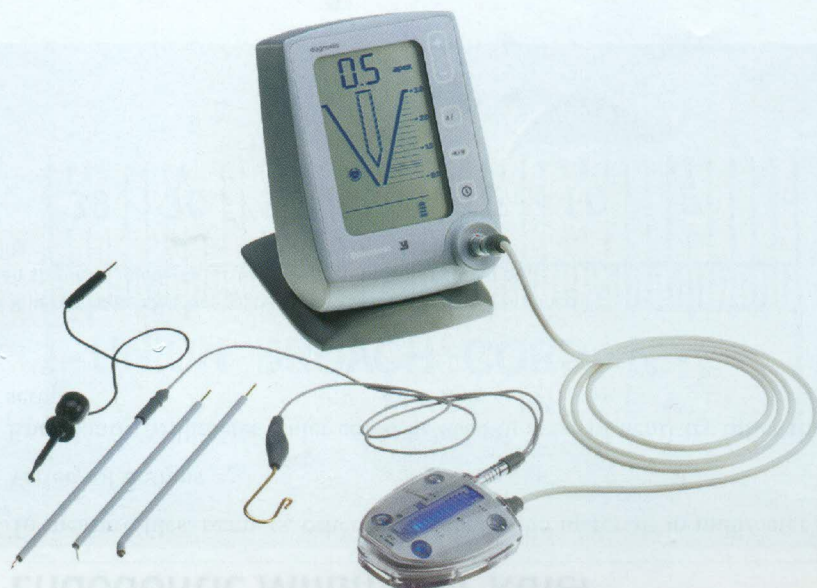
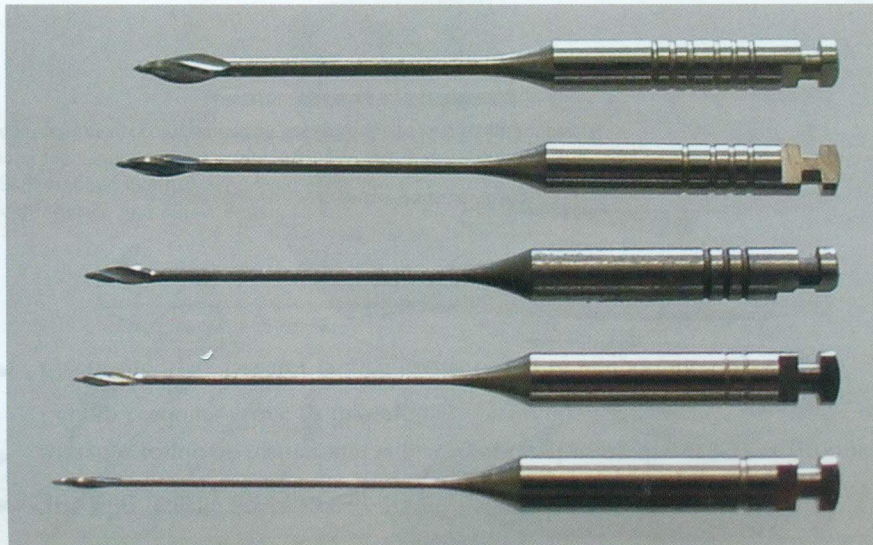


Photo courtesy SybronEndo, Orange, CA.

■ INSTRUMENT Electronic Apex Locator

- Function** ▶ To electronically measure length of canal to apex of tooth
- Characteristics** ▶ Attaches to file or reamer and is placed in canal using dry or wet environment
Length readout—Tone or digital
- Practice Note** ▶ Electronic Apex Locator is used exclusively with endodontic tray setups.

S Electronic Apex Locator device that enters patient's mouth must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping. Barriers should be used on the unit, and/or the manufacturer's recommendation for sterilization should be followed.



■ INSTRUMENT Gates Glidden Bur or Drill

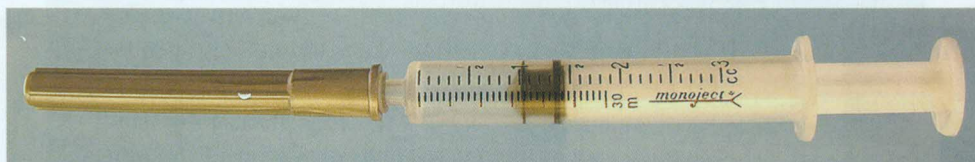
Functions ▶ To enlarge walls of pulp chamber
To open canal orifice

Characteristics ▶ Long-shank bur
Elliptical or flame-shaped cutting edge
Latch type—Used with slow-speed contra-angle handpiece (air driven or electric)
Range of sizes—Size identified by number of grooves on shank
Two lengths—Shorter for posterior teeth, longer for anterior teeth



Practice Note ▶ Gates Glidden Burs are used exclusively on endodontic tray setups.

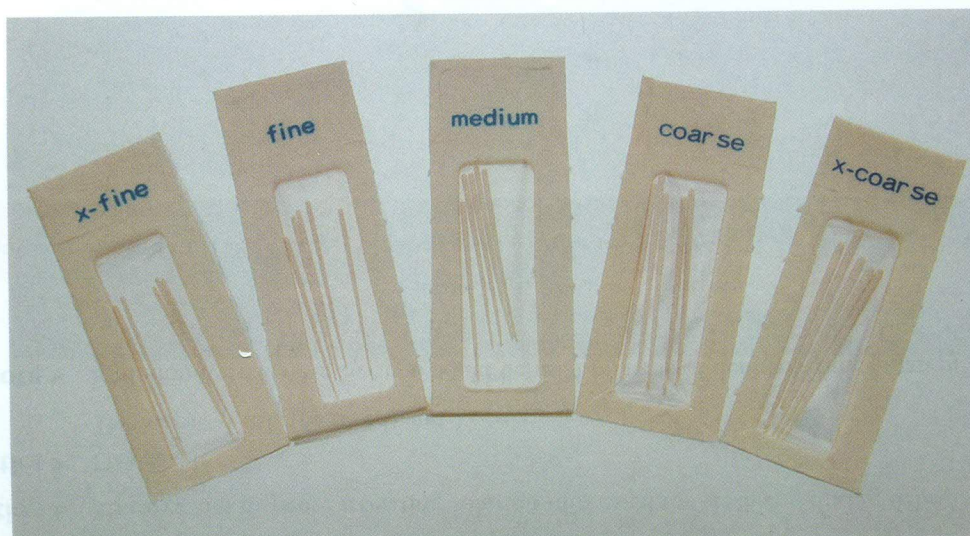
S Gates Glidden Bur or Drill must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping, or used Gates Glidden Bur must be disposed of in a Sharps container.



■ INSTRUMENT Endodontic Irrigating Syringe

- Function ▶** To carry and dispense irrigating solution into canal for cleansing during débridement of canal
- Characteristics ▶** Disposable
Two sizes—3 mL (pictured) and 12 mL
- Practice Note ▶** Endodontic Irrigating Syringe could be used in areas of dentistry other than on endodontic tray setups.

S Endodontic Irrigating Syringe should be disposed of in a Sharps container. For single use only.



■ INSTRUMENT Sterile Absorbent Paper Points

Function ► To dry pulp chambers of canal—New points inserted repeatedly until pulp chamber is completely dry

Characteristics ► Size of point corresponds to width of canal
Range of sizes available

Practice Notes ► The length of the paper point is measured to ensure that it corresponds to the length of the canal.
Paper Points are used exclusively on endodontic tray setups.



Sterile Absorbent Paper Points should be disposed of in the garbage.



Photo courtesy Coltene/Whaledent, Cuyahoga Falls, OH.

■ INSTRUMENT Gutta-Percha

Function ▶ To fill pulp chamber after completion of canal preparation (called *obturation*)

Characteristics ▶ Solid at room temperature; becomes soft and pliable when heated
May be heated in a cartridge and then dispensed into canal
Range of sizes—To correspond to size of canal

Practice Notes ▶ Endodontic Sealer, a cement material, is used with Gutta-Percha for final sealing of the canal.
Gutta-Percha is used exclusively on an endodontic tray setup.

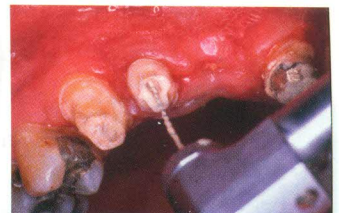
S Gutta-Percha should be disposed of in the garbage.





■ INSTRUMENT Lentulo Spiral

- Function ▶** To place endodontic sealer or cement in canal for final seal before placement of gutta-percha
- Characteristic ▶** Latch-type Shank—Used with slow-speed contra-angle handpiece (air driven or electric)
- Practice Note ▶** Lentulo Spiral is used exclusively on endodontic tray setups.



S Lentulo Spiral must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping, or used Lentulo Spiral must be disposed of in a Sharps container.



Photo courtesy: Obtura Spartan, Fenton, MO.

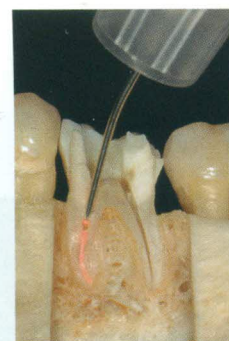
■ INSTRUMENT

Gutta-Percha Warming Unit

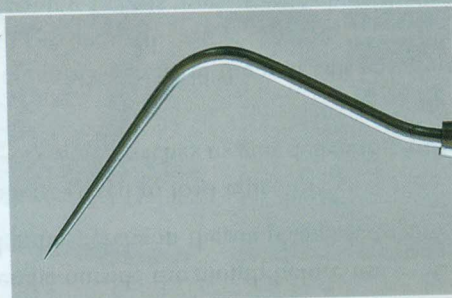
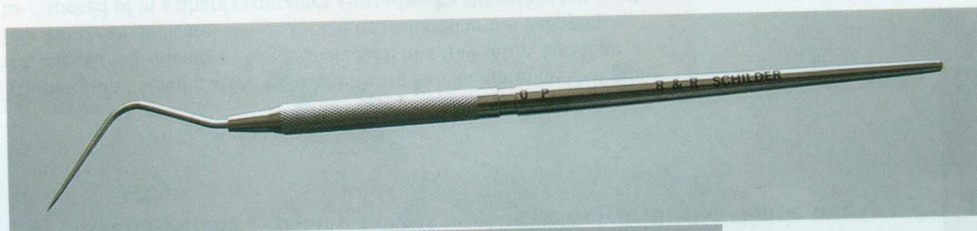
Functions ▶ To heat gutta-percha outside the mouth before use
To inject heated gutta-percha in thermoplastic state into prepared canals

Characteristics ▶ Gutta-percha pellets—Used to load unit
Delivery system—Needle attaches to gun delivering gutta-percha into canal

Practice Notes ▶ Temperature of the gutta-percha in the unit can be adjusted to control the viscosity of the material.
Gutta-Percha Warming Unit is used exclusively with endodontic tray setups.



S Gutta-Percha Warming Unit Needle attached to the Gutta-Percha Warming Unit gun must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping. Needle must be disposed of in a Sharps container. Gutta-Percha Warming Unit must be disinfected according to the manufacturer's recommendation.



■ INSTRUMENT

Endodontic Spreader

Functions ▶ To help condense gutta-percha laterally in canal
To use for final filling of canal

Characteristics ▶ Pointed tip
Working end—Has rings in millimeter increments
Two handle styles—Conventional (pictured), finger spreader
Range of sizes—To correspond to size of canal

Practice Note ▶ Endodontic Spreader is used exclusively on endodontic tray setups.



Endodontic Spreader must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping.



■ INSTRUMENT Endodontic Plugger

Functions ▶ To help condense gutta-percha vertically in canal
To use for final filling of canal

Characteristics ▶ Flat tip
Working end—Has rings in millimeter increments
Two handle styles—Conventional (pictured), finger spreader
Range of sizes—To correspond to size of canal

Practice Note ▶ Endodontic Plugger is used exclusively on endodontic tray setups.

S Endodontic Plugger must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping.





■ INSTRUMENT Glick Instrument

- Functions ▶** To condense gutta-percha into endodontically prepared teeth, using plugger end
 To sever excess gutta-percha after plugger end is heated
 To carry and place material into tooth, using paddle end

- Characteristics ▶** Double ended:

- 1** Plugger end—May have rings in millimeter increments
- 2** Paddle end

- Practice Note ▶** Glick Instrument is used exclusively on endodontic tray setups.

S Glick Instrument must be cleaned, bagged individually or bagged/wrapped in a tray setup, and then sterilized. A chemical/steam indicator device should be included in the wrapping.

