Medtronic

ENT Blades and Burs

FOR THE STRAIGHTSHOT® M4 MICRODEBRIDER AND THE MAGNUM II MICRODEBRIDER

ENT Blades and Burs

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A Generation of Powered ENT Tools

IPC® (Integrated Power Console) and Straightshot® M4 Microdebrider

This dynamic combination provides:

- The widest range of application-specific blades and burs
- Blade tips that rotate 360°
- Factory-calibrated blades for surgical navigation
- Seamless integration with other Medtronic ENT devices
- Integrated Endo-Scrub® 2 lens cleaning system

We offer a broad variety of Straightshot M4 blades and burs for specific applications, including:

- Polypectomy
- Turbinoplasty
- Septoplasty and rhinoplasty
- Ethmoidectomy and sphenoidotomy
- Uncinectomy and maxillary antrostomy
- Trephination of frontal and maxillary sinus
- Tonsils and adenoids
- Choanal atresia
- Larynx and airways
- Microscopy sinus surgery

Visit www.MedtronicENT.com for more information.

Automated EM Tracking Blades

M4-Rotatable

QUADCUT® BLADES 360°

4.3 mm Quadcut® Straight Rotatable Blade with Automated EM Tracking

1884380EM

- 13.0 cm long with straight shaft
- Rotates through 360°
- 70% reduction in clogging over the Tricut® Blade
- Outer teeth stabilize tissue while inner blade cuts
- Better engagement of ethmoid bone
- Improved precision
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

3.4 mm Quadcut Straight Rotatable Blade with Automated EM Tracking

1883480EM

- 13.0 cm long with straight shaft
- Rotates through 360°
- Reduced clogging over the Tricut® Blade
- Outer teeth stabilize tissue while inner blade cuts
- Improved precision
- Better engagement of ethmoid bone
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

3.0 mm Quadcut Straight Rotatable Blade with Automated EM Tracking

1883080EM

- 13.0 cm long with straight shaft
- Rotates through 360°
- Reduced clogging over the Tricut® Blade
- Outer teeth stabilize tissue while inner blade cuts
- Better engagement of ethmoid bone
- Improved precision
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

TRICUT® BLADE 360°

4.0 mm Tricut® Straight Rotatable Blade with Automated EM Tracking

1884080EM

- 13.0 cm long with straight shaft
- Straightshot® M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: ethmoidectomy, sphenoid sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

RAD BLADES 360°

4.0 mm RAD® 12 Curved Rotatable Blade with Automated EM Tracking

1884012EM

- 11.0 cm long with curved shaft
- Straightshot® M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

4.0 mm RAD 40 Curved Rotatable Blade with Automated EM Tracking

1884006EM

- 11.0 cm long with curved shaft
- Straightshot M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

IRRIGATION TUBING

Irrigation Tubing for Blades and Burs

1895522

- For use with IPC® blades and burs
- 5 each

Speeds are suggested rpm (revolutions per minute), operated in oscillation mode for blades and (forward) mode for burs.

Measurements are listed in millimeters unless otherwise specified.

Automated EM Tracking Blades

First and Only Factory-Calibrated Blades for Navigation

The innovative Automated EM Tracking Blades deliver unparalleled convenience and technology integration. They're the first and only blades that are factory-calibrated for navigation, right out of the box. Attach the blade to the M4 microdebrider and the Fusion® system, and start navigating.

With this latest innovation, we continue to deliver the feature expansion and product integration that you expect from Medtronic.

Unique features include:

· No array, no clamps, no calibration, no waiting

· First and only factory-calibrated blades for navigation

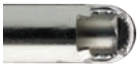
· True "plug and play" is more convenient and efficient

Visit www.MedtronicENT.com for more information.

Quadcut® Blades
M4-Rotatable

Available with built-in EM tracking
(see page 2 for details)

QUADCUT® BLADES 360°



4.3 mm Quadcut® Blade
1884380HR

- 13.0 cm long with straight shaft
- Rotates through 360°
- 70% reduction in clogging over the Tricut® Blade
- Outer teeth stabilize tissue while inner blade cuts
- Better engagement of ethmoid bone
- Improved precision
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

3.4 mm Quadcut Blade
1883480HRE

- 13.0 cm long with straight shaft
- Rotates through 360°
- Reduced clogging over the Tricut® Blade
- Outer teeth stabilize tissue while inner blade cuts
- Improved precision
- Better engagement of ethmoid bone
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

3.0 mm Quadcut Blade
1883080HRE

- 13.0 cm long with straight shaft
- Rotates through 360°
- Reduced clogging over the Tricut® Blade
- Outer teeth stabilize tissue while inner blade cuts
- Better engagement of ethmoid bone
- Improved precision
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

Quadcut® Blades
Real Relief from Blade Clogging

Powered FESS is an important advancement in surgical treatment, yet some challenges remain. Medtronic engineers continually strive to enhance technology, making surgery better for you and your patients.

***The Innovative Quadcut® Blades Offer:**

- Reduced blade clogging over the Tricut® Blades[1]
- Better engagement of ethmoid bone[3]
- Improved precision and reduced collateral tissue damage[3]

Test Medium
Oyster and eggshell mixture

MMR (Material Removal Rate)
(Tissue weight / minutes)

Cut Score
Material removed / clogs

- 70% reduction in clogging over the Tricut® Blade
- Approximately 17% additional tissue resection

Data Collected from 4.3 mm Quadcut Blade[2]

Straight Sinus Blades

M4-Rotatable

TRICUT® BLADES 360°

4.0 mm Tricut® Blade

1884004HR

- 11.0 cm long with straight shaft
- Rotates through 360°
- Offset cutting surface cuts in 3 planes
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

4.0 mm Tricut® Blade

1884080HR

- 13.0 cm long with straight shaft
- Rotates through 360°
- Offset cutting surface cuts in 3 planes
- Application: ethmoidectomy, sphenoid sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

3.5 mm Tricut® Blade

1883504HR

- 11.0 cm long with straight shaft
- Rotates through 360°
- Offset cutting surface cuts in 3 planes
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

2.9 mm Tricut® Blade

1882904HRE

- 11.0 cm long with straight shaft
- Rotates through 360°
- Offset cutting surface cuts in 3 planes
- Application: pediatric sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

SERRATED BLADES 360°

4.0 mm Serrated Blade

1884002HRE

- 11.0 cm with straight shaft
- Rotates through 360°
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

3.5 mm Serrated Blade

1883502HRE

- 11.0 cm long with straight shaft
- Rotates through 360°
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

2.9 mm Serrated Blade

1882902HRE

- 11.0 cm long with straight shaft
- Rotates through 360°
- Application: pediatric sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing

SILVER BULLET® 360°

4.0 mm Silver Bullet® Blade

1884005HRE

- 11.0 cm long with straight shaft
- Rotates through 360°
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing
- Developed in conjunction with Rodney Lusk, MD

2.9 mm Silver Bullet® Blade

1882905HRE

- 11.0 cm long with straight shaft
- Rotates through 360°
- Application: choanal atresia
- Operating speed: 5,000 rpm, oscillate
- 1 each with irrigation tubing
- Developed in conjunction with Rodney Lusk, MD

TURBINATE 360°

2.9 mm Inferior Turbinate Blade

1882940HR

- 11.0 cm long
- Rotates through 360°
- Straight shaft with elevator
- Application: submucosal resection of inferior turbinate
- Operating speed: 3,000 rpm, oscillate
- 5 each with irrigation tubing
- Developed in conjunction with Laurence O'Halloran, MD

2.0 mm Inferior Turbinate Blade

1882040HR

- 11.0 cm long
- Rotates through 360°
- Straight shaft with elevator
- Application: submucosal resection of inferior turbinate
- Operating speed: 3,000 rpm oscillate
- 5 each with irrigation tubing
- Developed in conjunction with Laurence O'Halloran, MD

Straight Sinus Blades
Non-Rotatable

TRICUT® BLADES

4.0 mm Tricut® Blade
1884004

- 11.0 cm long with straight shaft
- Offset cutting surface cuts in 3 planes
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

3.5 mm Tricut® Blade
1883504

- 11.0 cm long with straight shaft
- Offset cutting surface cuts in 3 planes
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

2.9 mm Tricut® Blade
1882904

- 11.0 cm long with straight shaft
- Offset cutting surface cuts in 3 planes
- Application: pediatric sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

SERRATED BLADES

4.0 mm Serrated Blade
1884002

- 11.0 cm long with straight shaft
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

3.5 mm Serrated Blade
1883502

- 11.0 cm long with straight shaft
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

2.9 mm Serrated Blade
1882902

- 11.0 cm long with straight shaft
- Application: pediatric sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing

SILVER BULLET® BLADES

4.0 mm Silver Bullet® Blade
1884005

- 11.0 cm long with straight shaft
- Application: ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing
- Developed in conjunction with Rodney Lusk, MD

2.9 mm Silver Bullet® Blade
1882905

- 11.0 cm long with straight shaft
- Application: choanal atresia
- Operating speed: 5,000 rpm, oscillate
- 5 each with irrigation tubing
- Developed in conjunction with Rodney Lusk, MD

INFERIOR TURBINATE

2.9 mm Inferior Turbinate Blade
1882940

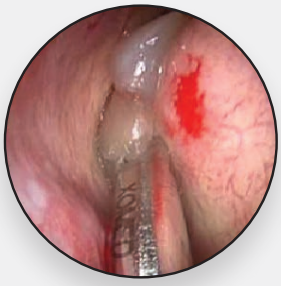
- 11.0 cm long
- Straight shaft with elevator
- Application: submucosal resection of inferior turbinate
- Operating speed: 60-3,000 rpm, oscillate
- 5 each with irrigation tubing
- Developed in conjunction with Laurence O'Halloran, MD

2.0 mm Inferior Turbinate Blade
1882040

- 11.0 cm long
- Straight shaft with elevator
- Application: submucosal resection of inferior turbinate
- Operating speed: 60-3,000 rpm, oscillate
- 5 each with irrigation tubing
- Developed in conjunction with Laurence O'Halloran, MD

The Endo-Scrub® 2 and IPC® Difference. Significantly Improves the Ability to Operate in the Presence of Bleeding[4-9]

Fogging and accumulated debris can decrease visualization and necessitate removing the scope during a surgical procedure for cleaning.



Software-driven Endo-Scrub® 2 Lens Cleaning Sheaths ensure that fluid is evacuated from the sheath to keep the lens from fogging.

Powered Inferior Turbinoplasty

Long-Term Results with One Treatment

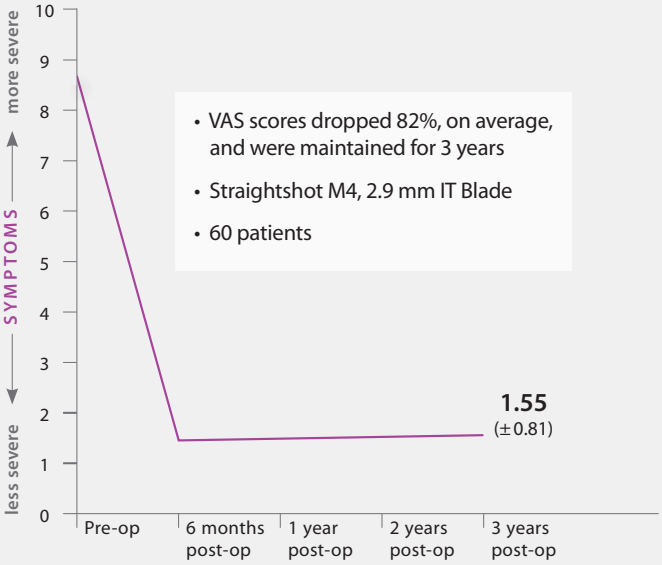
Chronic inferior turbinate hypertrophy is a common cause of nasal obstruction that can have significant effects on quality of life.[10] Minimally invasive surgical technologies have evolved to address this condition, including laser, radiofrequency (RF), and microdebrider methods.

Compared to RF Methods, Our Inferior Turbinate Blade[11-13]

- Offers significant and long-term results with one treatment
- Results in significantly reduced postoperative complications
- Helps achieve the goals of volumetric reduction
- Helps avoid unpredictable thermal damage to surrounding tissue

Study Results

VAS Scores after Inferior Turbinoplasty with Microdebrider-Assisted Surgery[11]



VAS Scores: Assessing the Effectiveness of IT Reduction

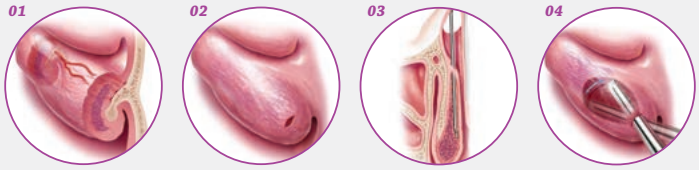
There are a variety of ways to evaluate surgical results, but the most direct method is to ask patients how they feel. The Visual Analog Scale (VAS) is a subjective measurement tool that evaluates the patient's perception of his or her nasal health, including nasal obstruction, rhinorrhea, snoring, and sneezing. Answers usually range from 0 (no symptoms) to 10 (the most severe symptoms).

Surgical Technique

The primary goal of turbinate surgery is volumetric reduction of submucosal vascular stromal tissue with preservation of overlying respiratory epithelium (Fig. 01). This mucosa is essential to proper turbinate function, such as warming and humidifying inspired air and mucociliary clearance.

Inferior turbinoplasty with the Straightshot® M4 is a minimally invasive technique, typically requiring just one 2.0 mm or 2.9 mm incision into the anterior portion of the turbinate (Fig. 02).

The physician inserts the IT Blade beneath the mucosal layer. After creating a submucosal dissection plane with the blade's elevator tip, remove the intervening stromal tissue (Fig. 03-04).



The underlying turbinate bone is not removed and the overlying mucosa is also preserved. This technique reduces the size of the inferior turbinate with no damage to the functional mucosal tissue, such as blanching or crusting.

Once the turbinoplasty has been completed, the turbinate can be outfractured using standard techniques.

However, none of the patients in the three studies referenced on this page received an outfracture, and these patients experienced excellent long-term results.[12-14]

At the surgeon's discretion, Merocel® packing may be used for the first 24 hours. Studies suggest its value in eliminating postoperative bleeding, including the Liu and Chen studies.[11-13]

For the complete surgical technique, please contact your Medtronic ENT representative.

Nota Bene: The technique description herein and the use of instructions for the related procedures are made available by Medtronic ENT to the healthcare professional to illustrate the author's suggested treatment for the uncomplicated patient. In the final analysis, the preferred treatment is that which, in the healthcare professional's judgment, addresses the needs of the individual patient.

Curved Sinus Blades

M4-Rotatable

RAD® 12 BLADES 360°

4.0 mm RAD® 12 Blade

1884012HR

- 11.0 cm long with curved shaft
- Straightshot® M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each, irrigation tubing separate

3.5 mm RAD® 12 Blade

1883512HRE

- 11.0 cm long with curved shaft
- Straightshot M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 1 each, irrigation tubing separate

SKIMMER® BLADE 360°

2.9 mm Skimmer® Angle-Tip Blade

1882979HRE

- 13.0 cm long double-curved blade
- Application: pituitary tumor resection
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 1 each with irrigation tubing

RAD® 40 BLADES 360°

4.0 mm RAD® 40 Blade

1884006HR

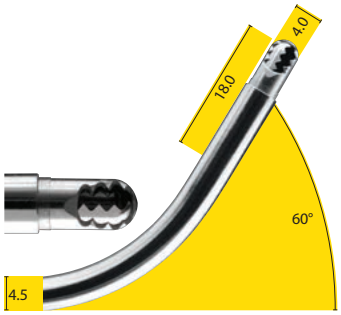
- 11.0 cm long with curved shaft
- Straightshot M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each, irrigation tubing separate

3.5 mm RAD® 40 Blade

1883506HRE

- 11.0 cm long with curved shaft
- Straightshot M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 1 each, irrigation tubing separate

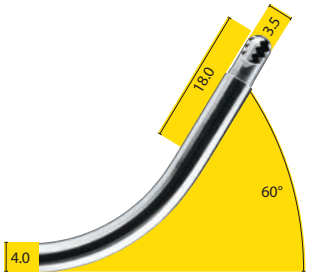
RAD® 60 BLADES 360°



4.0 mm RAD® 60 Blade

1884016HR

- 11.0 cm long with curved shaft
- Straightshot M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: frontal sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 5 each, irrigation tubing separate

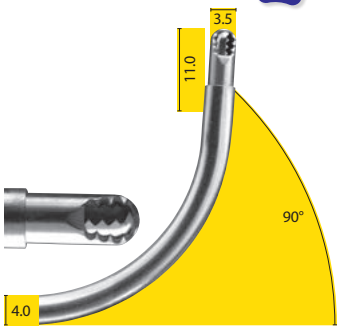


3.5 mm RAD® 60 Blade

1883516HRE

- 11.0 cm long with curved shaft
- Straightshot M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: frontal sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 1 each, irrigation tubing separate

RAD® 90 BLADE 360°

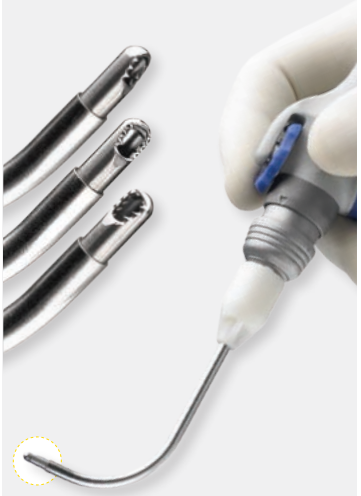


3.5 mm RAD® 90 Blade

1883519HR

- 11.0 cm long with curved shaft
- Straightshot M4 rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: maxillary polypectomy, frontal sinusotomy
- Operating speed: 2,000-3,000 rpm, oscillate
- 3 each, irrigation tubing separate

The Straightshot® M4 Microdebrider and 360° rotating RAD® 90 blade allow optimum access to maxillary polyps and the frontal recess.



Curved Sinus Blades

*Key-Rotatable**

RAD® 12 BLADE

3.5 mm RAD® 12 Blade

1883514RT

- 11.0 cm long with curved shaft
- Key rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 3,000 rpm, oscillate
- 3 each, irrigation tubing separate

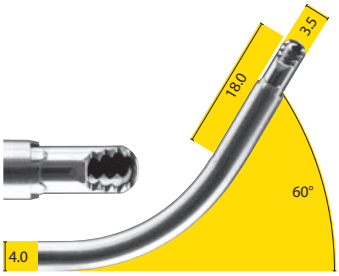
RAD® 40 BLADE

3.5 mm RAD® 40 Blade

1883507RT

- 11.0 cm long with curved shaft
- Key rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 3 each, irrigation tubing separate

RAD® 60 BLADE



3.5 mm RAD® 60 Blade

1883516RT

- 11.0 cm long with curved shaft
- Key rotates blade tip 360° without shaft rotation
- Offset cutting surface cuts in 3 planes
- Application: frontal sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 3 each, irrigation tubing separate

IRRIGATION TUBING

Irrigation Tubing for Blades and Burs

1895522

- For use with IPC® blades and burs
- 5 each

The Straightshot® Magnum II

With Key-Rotatable Blades

**For use with Straightshot® Magnum II*

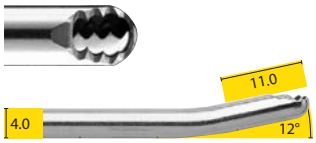
Speeds are suggested rpm (revolutions per minute), operated in oscillation mode for blades and (forward) mode for burs.

Measurements are listed in millimeters unless otherwise specified.

Curved Sinus Blades

Non-Rotatable

RAD® 12 BLADE



4.0 mm RAD® 12 Blade

1884012

- 11.0 cm long with curved shaft
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each, irrigation tubing separate

4.0 mm RAD® 12 Microscopy Blade

1884012M

- 13.0 cm long
- Multi-bend curved shaft for use with operating microscope
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 3,000 rpm, oscillate
- 5 each, irrigation tubing separate

3.5 mm RAD® 12 Blade

1883514

- 11.0 cm long with curved shaft
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each, irrigation tubing separate

RAD® 40 BLADE

4.0 mm RAD® 40 Blade

1884006

- 11.0 cm long with curved shaft
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 5 each, irrigation tubing separate

4.0 mm RAD® 40 Microscopy Blade

1884006M

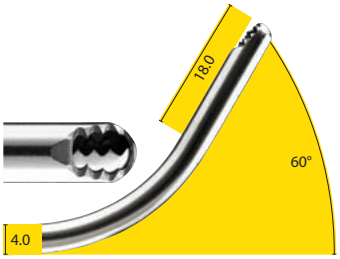
- 14.0 cm long
- Multi-bend curved shaft for use with operating microscope
- Offset cutting surface cuts in 3 planes
- Application: frontal sinus surgery
- Operating speed: 3,000 rpm, oscillate
- 3 each, irrigation tubing separate

3.5 mm RAD® 40 Blade

1883507

- 11.0 cm long with curved shaft
- Offset cutting surface cuts in 3 planes
- Application: uncinectomy, ethmoidectomy
- Operating speed: 5,000 rpm, oscillate
- 3 each, irrigation tubing separate

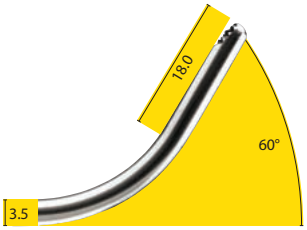
RAD® 60 BLADE



4.0 mm RAD® 60 Blade

1884016

- 11.0 cm long with curved shaft
- Offset cutting surface cuts in 3 planes
- Application: frontal sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 5 each, irrigation tubing separate



3.5 mm RAD® 60 Blade

1883516

- 11.0 cm long with curved shaft
- Offset cutting surface cuts in 3 planes
- Application: frontal sinus surgery
- Operating speed: 5,000 rpm, oscillate
- 3 each, irrigation tubing separate
- Developed in conjunction with William Bolger, MD

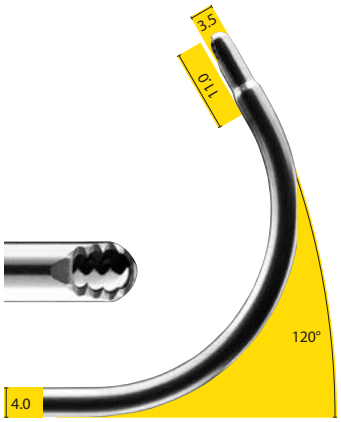
RAD® 60 BLADE

2.9 mm RAD® 60 Blade

1882916

- 11.0 cm long with curved shaft
- Offset cutting surface cuts in 3 planes
- Same inner lumen as wider 3.5 mm blades
- Application: frontal sinus surgery
- Operating speed: 1,500 rpm, oscillate
- 3 each, irrigation tubing separate

RAD® 120 BLADE



3.5 mm RAD® 120 Blade

1883517

- 11.0 cm long with curved shaft
- Tapered tip to allow maximum bend angle
- Application: maxillary polypectomy
- Operating speed: 1,500-3,000 rpm, oscillate
- 3 each, irrigation tubing separate

Straight Sinus Burs

OVAL BUR

3.2 mm Oval Bur, High-Speed

1883264HS

- 12.5 cm long with straight shaft
- Cannulated suction bur tip
- Application: sinus drilling
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate

ROUND BURS

4.5 mm Round Bur, High-Speed

1884560HS

- 12.5 cm long with straight shaft
- Cannulated suction bur tip
- Application: sphenoid drilling
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate

3.2 mm Round Bur, High-Speed

1883262HS

- 12.5 cm long with straight shaft
- Cannulated suction bur tip
- Application: sinus drilling
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate

2.9 mm Pediatric Round Bur

1882960

- 10.0 cm long with straight shaft
- Application: choanal atresia
- Operating speed: up to 5,000 rpm (forward)
- 5 each, irrigation tubing separate

ROUTER BUR

4.5 mm Aggressive Router Bur, High-Speed

1884562HS

- 12.5 cm long with straight shaft
- Cannulated suction bur tip
- Application: sinus drilling
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate

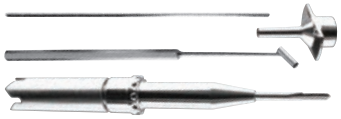
DRILL

2.0 mm Drill

1882900

- Operating speed: 6,000 rpm (forward)
- Irrigation tubing separate

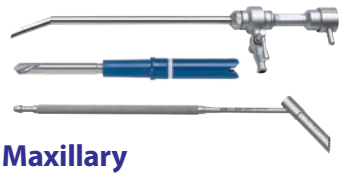
SINUS BUR SETS



Mini-Trephination Set

The complete set includes:

- 1882900, 2.0 mm Drill
- 1892001, Drill Guide
- 1892002, Guide Pin
- 1892003, Irrigation Cannula
- 3717005, Instrument Tray (not shown)
- Irrigation tubing separate
- Developed in conjunction with Barry Schaitkin, MD



Maxillary Trephination Set

Allows trephination through anterior face of the maxillary sinus while helping to reduce damage to dental nerve tissue.

The complete set includes:

- 1886301, Endoscope Sheath with Elevator, 4.0 mm
  Endoscope sheath helps deflect soft tissue and nerves during identification of drill site and guide placement
- 1893001, Maxillary Trephination Drill Guide, 5.0 mm
  Drill guide is irrigated
- 1884501, Maxillary Trephination Drill Bit, 5.0 mm
- 1893007, Maxillary Trephination Instrument Tray (not shown)
- Operating speed: 12,000 rpm (forward)
- Irrigation tubing separate
- Developed in conjunction with PJ Wormald, MD

Speeds are suggested rpm (revolutions per minute), operated in oscillation mode for blades and (forward) mode for burs.

Measurements are listed in millimeters unless otherwise specified.

Selecting the Best Bur for the Job

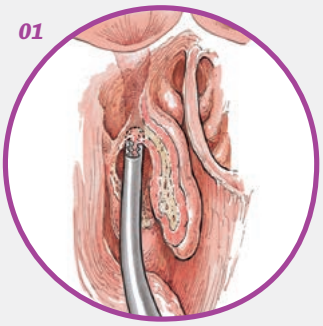
Modified Lothrop Procedure

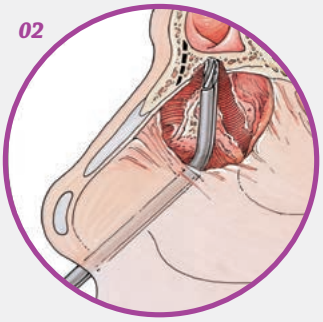
One of the most technically challenging procedures for the rhinologist is the modified Lothrop procedure, where the frontal sinus nasal floor is removed endoscopically from lacrimal bone to lacrimal bone, including the interfrontal sinus septum and a portion of the nasal bony septum that adjoins the frontal sinus floor.

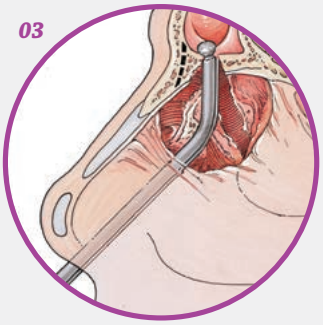
Choosing the right bur includes choosing the proper angle as well as its shape and aggressiveness. The *RAD® 55 Curved Sinus* and the *RAD® Frontal Finesse Burs* provide an elongated fluted geometry that can drill inferiorly to superiorly into the nasal crest, which can then be extended laterally in a controlled manner (Figures 01 and 02). The *70° Tapered Diamond Bur* can assist in extending the frontal sinus laterally, in a superior to inferior fashion (Figure 03).

Higher frontal sinus cell partitions or osteomas may exist in patients' anatomy that need to removed. This type of work would require a longer working length, thus the *70°, 5.0 mm ASB Diamond Bur* may be the best option for this type of procedure.

For the complete surgical technique, please contact your Medtronic ENT representative.







Papilloma Surgical Technique

Using Angled Skimmer® Blades for Papilloma Excision

Surgical Technique Presented by Matthew T. Brigger, MD, and Christopher J. Hartnick, MD

The microdebrider has emerged as a preferred modality of papilloma excision. The Skimmer® Laryngeal Blade was specifically designed for delicate removal of papillomas near the vocal fold while minimizing damage to the epithelium (Figure 01).

Surgical Technique

The ability to successfully excise papillomas while avoiding collateral epithelial damage to the vocal fold serves as a model to the surgical management of papilloma. The recurrent nature of papilloma with resultant numerous surgeries often leads to progressive scarring and poor voice outcomes that may be prevented by the ability to avoid injury to normal tissues with the microdebrider.

Even for bulky disease associated with airway obstruction, the Skimmer blade rapidly removes papilloma in a controlled fashion (Figure 02). In the setting of acute distress, a single controlled pass can rapidly relieve airway obstruction and ensure that the child has a secure airway. Subsequently, a complete excision can be completed in the manner described above (Figure 03).

The development of longer Tricut® blades, coupled with the ability to rotate the blade housing, allows access to the distal airway[15,16] down to the mainstem bronchi for papilloma removal (Figure 04). A Tricut blade is safe for use in the distal airway as the tracheal and bronchial mucosa is less susceptible to injury than the vocal fold epithelium. In patients with tracheostomies, a useful approach is to pass the blade through the stoma while directly visualizing the blade with a transoral endoscope.

Caution: *Careful attention to the transition from papilloma to vocal fold epithelium is requisite. Particular concern is at the region of the anterior commissure where consideration of a staged resection is prudent. Bleeding is generally minimal and self-limited. If visualization becomes compromised, a pledget soaked with a vasoconstrictive agent invariably controls bleeding and allows the surgery to proceed.*

01

02

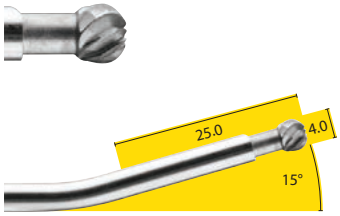
03

04

Curved Sinus Burs

*Anterior Skull Base**

ASB CUTTING BUR



4.0 mm Anterior Skull Base Cutting Bur, 15°

1884075HSE

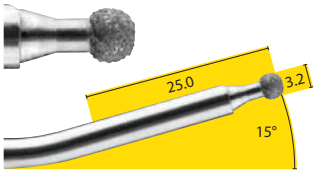
- 15.0 cm long
- Application: Removal of bone in and around sphenoid, sella, clivus, and pterygoid plate
- Operating speed: up to 12,000 rpm (forward)
- 1 each, irrigation tubing separate
- Developed in conjunction with PJ Wormald, MD, and Aldo Stamm, MD

ASB DIAMOND BURS

5.0 mm Anterior Skull Base Diamond Bur, 15°

1885076HSE

- 15.0 cm long
- Application: Removal of bone in and around sphenoid, sella, clivus, and pterygoid plate
- Operating speed: up to 12,000 rpm (forward)
- 1 each, irrigation tubing separate
- Developed in conjunction with PJ Wormald, MD, and Aldo Stamm, MD

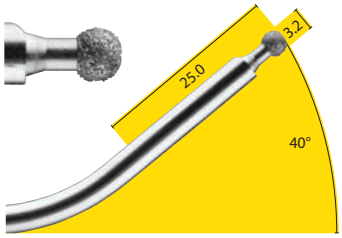


3.2 mm Anterior Skull Base Diamond Bur, 15°

1883274HSE

- 15.0 cm long
- Application: Removal of bone in and around sphenoid, sella, clivus, and pterygoid plate
- Operating speed: up to 12,000 rpm (forward)
- 1 each, irrigation tubing separate
- Developed in conjunction with PJ Wormald, MD, and Aldo Stamm, MD

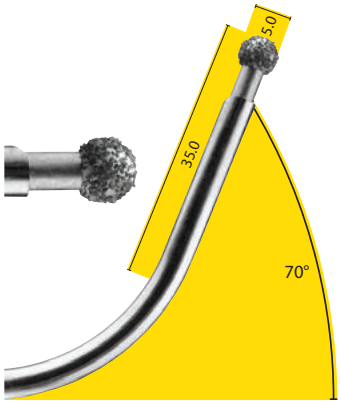
ASB DIAMOND BURS



3.2 mm Anterior Skull Base Diamond Bur, 40°

1883277HSE

- 15.0 cm long
- Application: Removal of bone in and around sphenoid, sella, clivus, and pterygoid plate
- Operating speed: up to 12,000 rpm (forward)
- 1 each, irrigation tubing separate
- Developed in conjunction with PJ Wormald, MD, and Aldo Stamm, MD

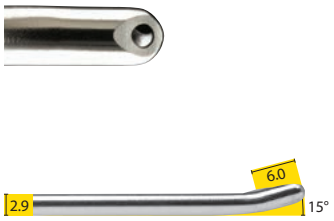


5.0 mm Anterior Skull Base Diamond Bur, 70°

1885078HSE

- 13.0 cm long
- Application: Removal of frontal sinus septations and osteomas *above* the level of frontal recess
- Operating speed: up to 12,000 rpm (forward)
- 1 each, irrigation tubing separate
- Developed in conjunction with PJ Wormald, MD, and Aldo Stamm, MD

SKIMMER® BLADE 360°



2.9 mm Skimmer® Angle-Tip Blade

1882979HRE

- 13.0 cm long double-curved blade
- Application: pituitary tumor resection
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 1 each with irrigation tubing

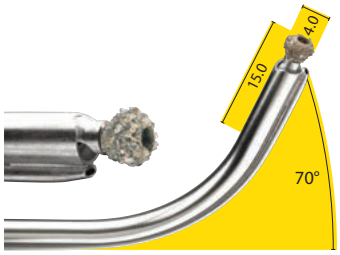
**For use with M4 only*

Curved Sinus Burs
(continued)

TAPERED DIAMOND BURS

4.0 mm Choanal Atresia Bur, High-Speed
1883673HS

- 13.0 cm long with curved shaft
- Cannulated suction bur tip
- Application: removal of vomer
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate
- Developed in conjunction with Gary Josephson, MD



4.0 mm Tapered Diamond Bur, High-Speed
1883672HS

- 13.0 cm long with curved shaft
- Cannulated suction bur tip
- Application: frontal sinusotomy
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate
- Developed in conjunction with David Kennedy, MD

ROUND DIAMOND BUR

5.0 mm Curved Round Diamond Bur, High-Speed
1885061HS

- 12.5 cm long with curved shaft
- Cannulated suction bur tip
- Application: trans-sphenoidal surgery
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate
- Developed in conjunction with David Kennedy, MD

SEPTOPLASTY BUR

3.2 mm Septoplasty Bur, High-Speed
1883212HS

- 11.0 cm long with curved shaft
- Cannulated suction bur tip
- Application: removal of bony and cartilagineous septal deviations
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate
- Developed in conjunction with Donald Leopold, MD, and Eileen Raynor, MD

DCR BURS

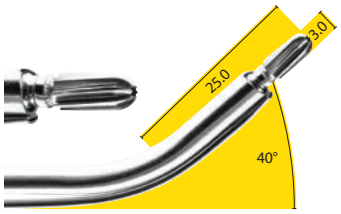
4.0 mm Curved DCR Bur, High-Speed
1884068HS

- 11.0 cm long with curved shaft
- Application: endoscopic drilling of lacrimal bone
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate
- Developed in conjunction with Michael Mercandetti, MD

2.5 mm Curved Diamond DCR Bur, High-Speed
1882569HS

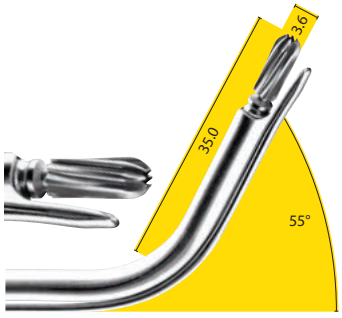
- 11.0 cm long with curved shaft
- Cannulated suction bur tip
- Application: endoscopic drilling of lacrimal bone
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate
- Developed in conjunction with PJ Wormald, MD

RAD® BURS



3.0 mm RAD® Frontal Finesse Bur, High-Speed
1883070HS

- 13.0 cm long with curved shaft
- 8 flutes
- Cannulated suction bur tip
- Application: frontal sinus drilling
- Operating speed: up to 12,000 rpm (forward)
- 3 each, irrigation tubing separate
- Developed in conjunction with Donald Leopold, MD



3.6 mm RAD® 55 Curved Bur, High-Speed
1883670HS

- 13.0 cm long with curved shaft
- Cannulated suction bur tip
- Application: frontal sinus drilling
- Operating speed: up to 12,000 rpm (forward)
- 3 each , irrigation tubing separate

Speeds are suggested rpm (revolutions per minute), operated in oscillation mode for blades and (forward) mode for burs.

Measurements are listed in millimeters unless otherwise specified.

Airway Blades
M4-Rotatable

SKIMMER® BLADES 360°

2.9 mm Skimmer® Angle-Tip Blade
1882979HRE

- 13.0 cm long double-curved blade
- Application: papilloma and tumor removal, laryngomalacia, and pediatric
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 1 each with irrigation tubing

2.9 mm Skimmer® Angle-Tip Blade
1882925HRE

- 18.0 cm long double-curved blade
- Application: papilloma removal, laryngomalacia, and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 1 each with irrigation tubing

2.9 mm Skimmer® Angle-Tip Blade
1882923HRE

- 22.0 cm long double-curved blade
- Application: papilloma removal, laryngomalacia, and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 1 each with irrigation tubing

SKIMMER® BLADES 360°

2.9 mm Skimmer® Angle-Tip Blade
1882924HRE

- 27.0 cm long double-curved blade
- Application: papilloma removal, laryngomalacia, and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 1 each with irrigation tubing

TRICUT® BLADES 360°

4.0 mm Tricut® Angle-Tip Laryngeal Blade
1884030HRE

- 22.0 cm long double-curved blade
- Angled tip allows better visibility with endoscopy
- Application: tumor debulking and granulation tissue removal
- Operating speed: 500-1,200 rpm
- 1 each with irrigation tubing
- Developed in conjunction with William Lunn, MD, and Armin Ernst, MD

4.0 mm Tricut® Angle-Tip Subglottic Blade
1884031HRE

- 27.0 cm long double-curved blade
- Angled tip allows better visibility with endoscopy
- Application: tracheal stenosis, tumor debulking, and granulation tissue removal
- Operating speed: 500-1,200 rpm
- 1 each with irrigation tubing
- Developed in conjunction with William Lunn, MD, and Armin Ernst, MD

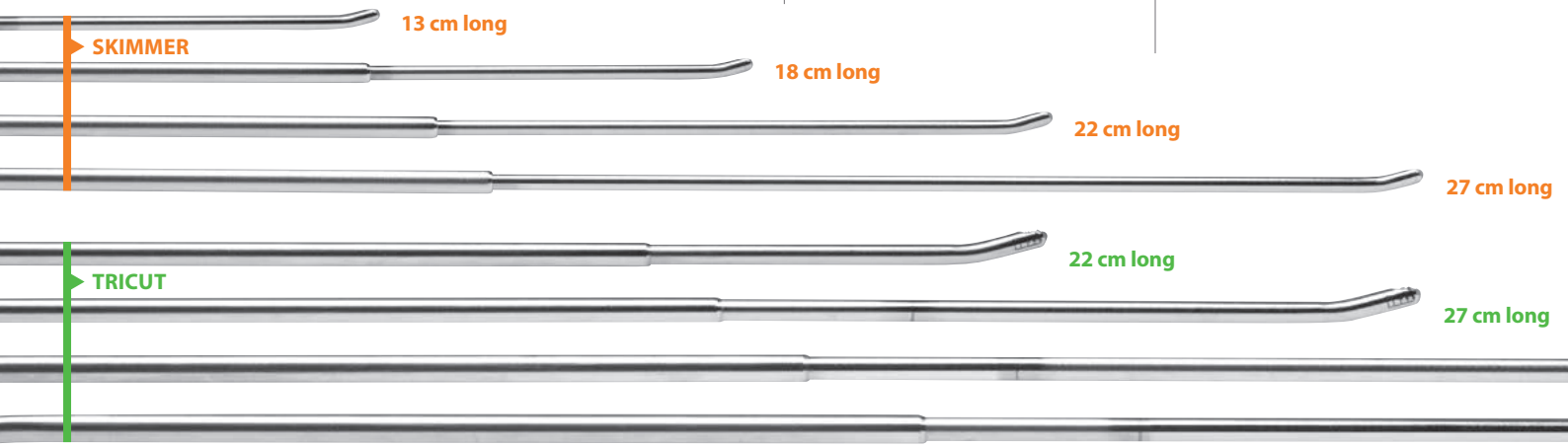
TRICUT® BLADES 360°

4.0 mm Tricut® Angle-Tip Tracheal Blade
1884033HRE

- 37.0 cm long double-curved blade
- Angled tip allows better visibility with endoscopy
- Application: debulking tracheal papilloma and lesions, tumor debulking, and granulation tissue removal
- Operating speed: 500-1,200 rpm
- 1 each with irrigation tubing
- Developed in conjunction with William Lunn, MD, and Armin Ernst, MD

4.0 mm Tricut® Angle-Tip Bronchial Blade
1884035HRE

- 45.0 cm long double-curved blade
- Rotating angled tip offers access to lateral, medial, and posterior bronchial lesions through a rigid bronchoscope
- Application: debulking bronchial papilloma and lesions, tumor debulking, and granulation tissue removal
- Operating speed: 500-1,200 rpm
- 1 each with irrigation tubing
- Developed in conjunction with William Lunn, MD, and Armin Ernst, MD



Airway Blades
Non-Rotatable

SKIMMER® BLADES

2.9 mm Skimmer® Angle-Tip Blade
1882925

- 18.0 cm long double-curved blade
- Inner suction path is the same as larger curved blade
- Application: recurrent respiratory papilloma (RRP) removal and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 3 each with irrigation tubing
- Developed in conjunction with Craig Derkay, MD, and David Darrow, MD

2.9 mm Skimmer® Angle-Tip Blade
1882923

- 22.5 cm long double-curved blade
- Inner suction path is the same as larger curved blade
- Application: recurrent respiratory papilloma (RRP) removal and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 3 each with irrigation tubing
- Developed in conjunction with Craig Derkay, MD, and David Darrow, MD

SKIMMER® BLADES

3.5 mm Skimmer® Angle-Tip Blade
1883525

- 18.0 cm long double-curved blade
- Application: recurrent respiratory papilloma (RRP) removal and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 3 each with irrigation tubing

3.5 mm Skimmer® Angle-Tip Laryngeal Blade
1883523

- 22.5 cm long double-curved blade
- Application: recurrent respiratory papilloma (RRP) removal and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 3 each with irrigation tubing
- Developed in conjunction with Charles Myer, III, MD; Paul Wilging, MD; Brian Wiatrak, MD; Paul Flint, MD; David Parsons, MD; and John Little, MD

3.5 mm Skimmer® Angle-Tip Subglottic Blade
1883524

- 27.5 cm long double-curved blade
- Application: recurrent respiratory papilloma (RRP) removal and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 3 each with irrigation tubing
- Developed in conjunction with Charles Myer, III, MD; Paul Wilging, MD; Brian Wiatrak, MD; Paul Flint, MD; David Parsons, MD; and John Little, MD

SKIMMER® BLADES

4.0 mm Skimmer® Angle-Tip Laryngeal Blade
1884023

- 22.5 cm long double-curved blade
- Application: recurrent respiratory papilloma (RRP) removal and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 3 each with irrigation tubing
- Developed in conjunction with Charles Myer, III, MD; Paul Wilging, MD; Brian Wiatrak, MD; Paul Flint, MD; David Parsons, MD; and John Little, MD

4.0 mm Skimmer® Angle-Tip Subglottic Blade
1884024

- 27.5 cm long double-curved blade
- Application: recurrent respiratory papilloma (RRP) removal and trans-sphenoidal hypophysectomy
- Operating speed: 60-500 rpm
- Low-profile distal bend: 15°
- 3 each with irrigation tubing
- Developed in conjunction with Charles Myer, III, MD; Paul Wilging, MD; Brian Wiatrak, MD; Paul Flint, MD; David Parsons, MD; and John Little, MD

TRICUT® BLADES

4.0 mm Tricut® Angle-Tip Laryngeal Blade
1884030

- 22.5 cm long double-curved blade
- Application: tumor debulking
- Operating speed: 1,500 rpm
- 3 each with irrigation tubing
- Developed in conjunction with Paul Flint, MD, and John Little, MD

4.0 mm Tricut® Angle-Tip Subglottic Blade
1884031

- 27.5 cm long double-curved blade
- Application: tracheal stenosis
- Operating speed: 1,500 rpm
- 3 each with irrigation tubing

4.0 mm Tricut® Straight-Tip Laryngeal Blade
1884020

- 22.5 cm long
- Straight tip with curve at handpiece
- Application: debulking of RRP lesions
- Operating speed: 1,200 rpm
- 3 each with irrigation tubing
- Developed in conjunction with Paul Flint, MD, and John Little, MD

37 cm long

45 cm long

Airway Blades
Non-Rotatable (continued)

SERRATED BLADES

4.0 mm Serrated Angle-Tip Tracheal Blade
1884033

- 37.0 cm long
- Angled tip allows better visibility with endoscopy
- Application: debulking distal RRP and tracheal lesions
- Operating speed: 1,200 rpm
- 1 each with irrigation tubing
- Developed in conjunction with Paul Flint, MD

SERRATED BLADES

2.9 mm Serrated Angle-Tip Blade
1882936E

- 18.0 cm long double-curved blade
- Application: papilloma and hemangioma removal
- Operating speed: 500-1,500 rpm
- 1 each with irrigation tubing

2.9 mm Serrated Angle-Tip Blade
1882937E

- 22.0 cm long double-curved blade
- Application: papilloma and hemangioma removal
- Operating speed: 500-1,500 rpm
- 1 each with irrigation tubing

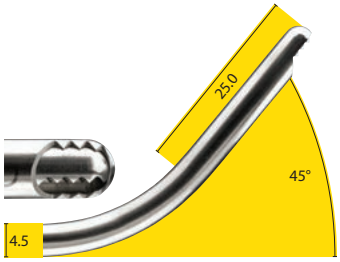
TRACHEAL BLADE

4.0 mm Straight Tracheal Blade
1884032

- 37.0 cm long
- Straight tip to allow access through smaller diameter bronchoscope
- Application: debulking distal RRP and tracheal lesions
- Operating speed: 1,200 rpm
- 1 each with irrigation tubing
- Developed in conjunction with Paul Flint, MD, and John Little, MD

Tonsillectomy and Adenoidectomy Blades

RADENOID® BLADES



4.5 mm RADenoid® Adult Blade

1884507

- 13.0 cm long with curved 45° blade
- Application: adenoidectomy
- Allows better access into the choana
- Operating speed: 1,500 rpm
- 5 each, irrigation tubing separate
- Designed in conjunction with Max April, MD, and J. Lindhe Guarisco, MD

RADENOID® BLADES

4.0 mm RADenoid® Blade

1884008

- 11.0 cm long with curved 40° blade
- Application: adenoidectomy
- Operating speed: 1,500 rpm
- 5 each, irrigation tubing separate
- Designed in conjunction with Max April, MD, and J. Lindhe Guarisco, MD

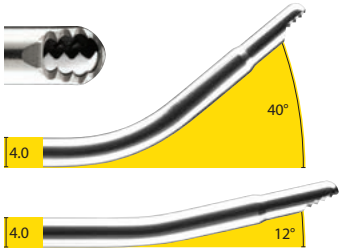
TONSILLECTOMY BLADE

4.0 mm Tonsillectomy Blade

1884013

- 11.0 cm
- 12° blade
- Application: intracapsular tonsillectomy
- Operating speed: 1,500 rpm
- 5 each, irrigation tubing separate

T&A BLADE SET



Powered T&A Blade Set

1884008TA

- 13.0 cm
- Removable inner cutting tube
- 40° outer blade designed for powered adenoidectomy
- 12° outer blade designed for powered intracapsular tonsillectomy
- Operating speed: 1,500 rpm
- 5 each, irrigation tubing separate
- Developed in conjunction with Peter J. Koltai, MD

The IPC® Powered T&A Blade Set for the PITA™ Technique

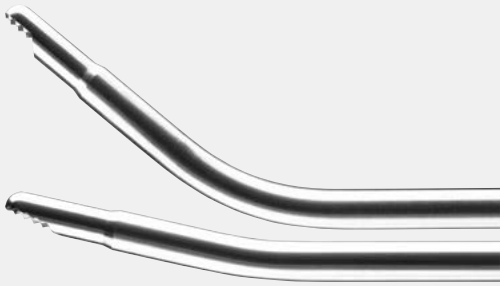
Clinical studies show that PITA™ surgery (Powered Intracapsular Tonsillectomy and Adenoidectomy) offers significant advantages to most patients.[17-33] With interchangeable 12° and 40° outer cutting tubes, you can remove adenoids and tonsils in the traditional order.

Benefits of Powered Adenoidectomy

- More complete tissue removal[23]
- Lowered recurrence rate of otitis media compared to other techniques[27]

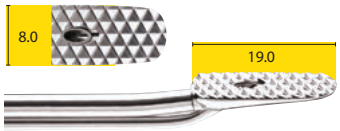
Benefits of Powered Intracapsular Tonsillectomy

- Reduces postoperative bleeding and dehydration[6]
- Less postoperative pain[20]
- Quicker patient recovery compared to traditional Bovie techniques[17-21,26,32]



Aesthetic Blades and Burs

FEATHERTOUCH® RASPS



FeatherTouch® Suction Rasp Tip (Coarse)

1992208

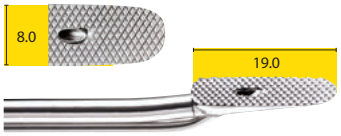
- 8.4 cm
- Coarse tip
- Operating speed: 3,000-5,000 rpm (forward)
- Suction integrated into rasp face
- Used with FeatherTouch Converter (1922005) and suction tubing (1895524)
- Application: rhinoplasty, dorsal hump reduction
- 2 each, irrigation tubing separate
- Developed in conjunction with Ted Cook, MD; M. Eugene Tardy, MD; and Dan Becker, MD

FeatherTouch® Converter

1922005

- Converts (forward) rotation to reciprocation
- Used in conjunction with rasp tips, suction tubing, and sterilizing tray (1922006)
- 2 each, irrigation tubing separate

FEATHERTOUCH® RASPS



FeatherTouch® Suction Rasp Tip (Fine)

1992210

- 8.4 cm
- Fine tip
- Operating speed: 3,000-5,000 rpm (forward)
- Suction integrated into rasp face
- Used with FeatherTouch Converter (1922005) and suction tubing (1895524)
- Application: rhinoplasty, dorsal hump reduction
- 2 each, irrigation tubing separate
- Developed in conjunction with Ted Cook, MD; M. Eugene Tardy, MD; and Dan Becker, MD

FeatherTouch® Suction Tubing (not pictured)

1895524

- For use with FeatherTouch Suction Rasp Tip
- 10 each

OTHER

Micro-Planer® Blade

1884010

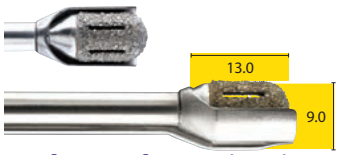
- 11.0 cm
- Application: submental soft tissue removal
- Operating speed: 1,000-2,000 rpm, oscillate
- 5 each, irrigation tubing separate
- Developed in conjunction with Ted Cook, MD

Tardy MicroBur®

1883260

- 10.0 cm
- Application: rhinoplasty
- Operating speed: 3,000-5,000 rpm (forward)
- 5 each, irrigation tubing separate
- Developed in conjunction with M. Eugene Tardy, MD

OTHER



HydroBrader® Irrigating/ Aspirating Dermabrader

1922100

- Coarse grit
- Application: dermabrasion
- Operating speed: 3,500-5,000 rpm (forward)
- 3 each, irrigation tubing separate

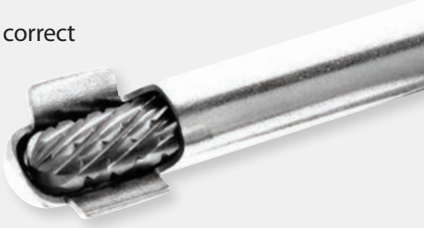
RhinoBur® Rhinoplasty Bur

1884566

- 10.0 cm
- Application: rhinoplasty
- Operating speed: 4,000-6,000 rpm (forward)
- 3 each, irrigation tubing separate
- Developed in conjunction with Dean Toriumi, MD

RhinoBur® Rhinoplasty Bur

- Sculpts the bony dorsum with finesse and control
- Particularly useful in revision cases and patients with thin nasal skin
- Allows spot burring to correct localized irregularities



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