Meniscal Repair Solutions

ALL TEARS
ALL REPAIRS

Complete solutions to save the meniscus

Smith+Nephew

The clearly defined path to meniscal repair

Arthroscopy can provide easier access to the knee and potentially avoid the risks of open surgical procedures.[1]

A number of studies have been published that clearly define the benefits of meniscal repair to help restore as much functional meniscus as possible and to potentially minimize the risk of degenerative disease such as osteoarthritis.[1-3]

Removal of meniscal tissue, referred to as meniscectomy, has been shown to increase intraarticular pressure and to result in degeneration of the articular cartilage over the long term.[3,4] In recent years, arthroscopic repair techniques have become more prevalent and widely accepted for the treatment of meniscal tears.[1]

The ALL TEARS, ALL REPAIRS meniscal repair portfolio from Smith & Nephew provides surgeons with unsurpassed options and possibilities for meniscal repair.

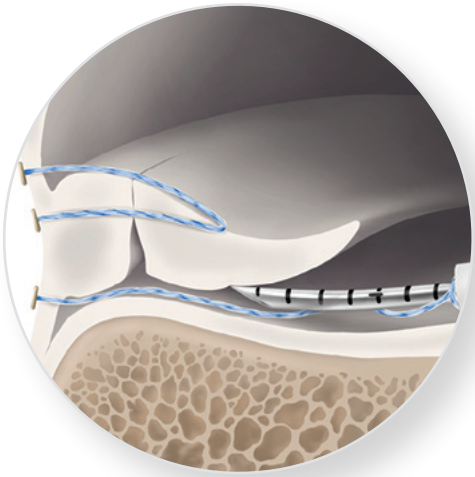

smith&nephew
FIRSTPASS° MINI

FAST-FIX◇ 360
Meniscal Repair System

Easy, fast, all-inside meniscal repair[6]

The FAST-FIX 360 Meniscal Repair System offers exceptional fixation strength,[7] easier implant deployment, a built-in depth penetration limiter and a stiffer needle shaft for enhanced control.[6] The system is designed to help optimize the chances of a successful meniscus repair.

Reverse Curved
Instrumentation is specifically designed to pierce the underside of the meniscus. Because the needle's point is on the opposite side of the curve, it is designed to enter the inferior area without skiving the meniscus or the tibial plateau.



One-handed, fast-click, active implant deployment

The unique 360° actuation design provides improved control, enabling you to deploy implants in any hand position – vertically or horizontally on either side of the meniscus – with a fast, smooth, advancing motion.[6] This spring-action design facilitates the advancement of each implant into the capsule.

Minimal disruption to the meniscus

Low-profile needle delivers smaller implants and pre-tied, self-sliding knot made of ULTRABRAID◇ 2-0 Suture creating smaller needle insertions, designed to reduce disruption to the meniscus.[6]

Clinically proven FAST-FIX Meniscal Repair Technology[8-10]

Like its predecessor, the FAST-FIX 360 system has biomechanical properties that best reproduce the vertical mattress-suture technique.[2] You can count on a strong, reproducible and reliable meniscal repair.[11*]

*Based on *in vitro* data.

ULTRA FAST-FIX◇
Meniscal Repair System

Tried and true all-inside meniscal repair

When the original FAST-FIX Meniscal Repair System was introduced, it set the benchmark for non-invasive, all-inside repairs. Thanks to its preloaded implants, pre-tied sliding knot and innovative pusher/cutter device, this system lets surgeons deploy two implants vertically or horizontally on either side of the meniscus, tighten the suture and trim the excess. The ULTRA FAST-FIX System was designed by building upon the success of the original FAST-FIX system.

Curved and reverse-curved needle
Curved needles are designed to provide easy access to a multitude of tear sites. The reverse-curved needle is designed for repairing tears on the inferior surface.

Passive implant deployment
The implant is deployed when it catches on the capsule.

FAST

- Unlike conventional suture-based repair systems, the ULTRA FAST-FIX system is an implant system with a pre-tied, self-sliding knot designed to eliminate the need for intraarticular knot tying.

STRONG

- System provides a strong, reproducible and reliable meniscal repair.[11]*
- Contains no hard device heads; designed to minimize trauma to articular cartilage.

EASY

- ULTRABRAID◇ Suture has improved knot-sliding properties over traditional polyester suture.[7]
- Curved and reverse-curved needles designed to provide easy access to a multitude of tear sites.

*Based on biomechanical testing

MENISCUS MENDER II
Repair System

Outside-in access to anterior tears

The Meniscus Mender II (MMII) Repair System is designed for repairing the meniscus under arthroscopic visualization and is ideally suited for anterior horn tears and middle-third tears. The system allows surgeons to work from the outside of the knee into the joint, instead of starting sutures inside the capsule and exiting less predictably out the back.

The MMII system utilizes curved and straight needles and a patented suture-capture loop. Depending on the patient's anatomy, the surgeon may use a combination of curved or straight needles in order to best access the tear. These components allow the surgeon to use the outside-in approach, which may help minimize the risk of damage to neurovascular structures during meniscal repair.[12]

Suture-capture loop
The MMII system utilizes curved and straight needles and a patented suture-capture loop.

MENISCAL ROOT
Repair System

Reproduce the anatomic footprint

A meniscus root tear can be defined as either an avulsion of the meniscal root from its attachment point or a radial root tear within 1cm of the root attachment.[13]

The Meniscal Root Repair System features aimers designed to maneuver around the tibial eminence, and the system has been designed to support one- or two-tunnel procedures. The included guide has offsets of between 5-8mm which allow it to be positioned in a manner that facilitates the ideal location of the second tunnel.

The Meniscal Root Repair System has been designed to support one-tunnel or two-tunnel procedures.

FIRSTPASS◇ MINI
Family of Suture Passers

Designed for reliability, versatility and accessibility

These suture passers, which come in three versions, left curved, straight and right curved, are designed to help facilitate root-repair procedures executed in tight spaces.

RELIABILITY
Fully disposable system with a preloaded needle.[14]

VERSATILITY
Passes ULTRABRAID◇ Suture or ULTRATAPE Suture.

ACCESSIBILITY
Straight and 17° left- and right-curved jaw options.

MENISCAL STITCHER
Repair System

Inside-out delivery with smaller needle diameter

Classic inside-out techniques remain a viable solution for the repair of many kinds of meniscal tears. Providing the versatility to address a variety of tear patterns and the ability to deliver sutures with smaller needles, with proven long-term results, inside-out techniques have been considered the gold standard for arthroscopic meniscus repair.[15]

Designed specifically for inside-out procedures and can be customized to the unique needs of each procedure.

MENISCAL STITCHER SYSTEM INCLUDES:

- Curved double-lumen cannulas
- Straight double-lumen cannulas
- Posterior-access cannula
- Thimble
- Bending tool
- Sterilization tray
- Variety of disposable needles

WEREWOLF◇ FLOW 50◇
Wand

Optimal control

COBLATION◇ technology means *controlled ablation.* The COBLATION process involves the creation and application of an energy field called *glow discharge plasma.* This plasma ablates tissue through a chemical process as highly energized particles in the plasma break down molecules in the tissue.

FLOW 50 Wand enables surgeons to access and address all soft tissue types in the knee without compromise.

- Indicated for meniscus and all soft tissue in the knee
- Combined COBLATION and FLOW~IQ◇ technology to remove tissue with speed* and precision[16,17]**
- Designed to provide optimal access to the posterior horn and root of the meniscus

FASTER***
Faster patient recovery.[18]

BETTER***
Better patient outcomes.[18-20]

SAFE****
Safe for use on all joint soft tissue.[21-27]

* In Vac mode the FLOW 50◇ COBLATION Wand removes free-floating tissue approximately four times faster than AMBIENT◇ SUPER MULTIVAC 50, *in vitro.*

** The controlled plasma field produced by COBLATION allows for precise removal of soft tissue with minimal damage (100 - 200 µm) evident in untargeted cartilage tissue *ex vivo*; Cell damage may vary depending on protocol used.

*** Compared to mechanical debridement. In a randomized, controlled study for knee chondroplasty in patients with a grade 3 chondral lesion and concomitant meniscal tears.

**** Market-indicated for use on all soft tissue types including the knee.

DYONICS◇ Curved PLATINUM Blades

Platinum technology and performance

PLATINUM curved blades deliver easy access, aggressive resection and effective debris evacuation. Each blade is designed to retain sharpness throughout a procedure and have low risk of metal debris generation.[28,29] By increasing speed and quality of resection, PLATINUM curved blades can help busy arthroscopists operate efficiently and reduce patient time under anesthesia.

STATE-OF-THE-ART

- Automated production ensures the highest level of quality, manufactured to meet demanding surgical applications.

TIGHT CLEARANCE

- Between inner and outer blade tips enables precise cutting for precise resection[28] and efficient debris evacuation.[29]

PREFERENCE-SETTING

- Window lock function control facilitates fine tuning of suction flow, allowing performance to be uniquely adapted to each situation.

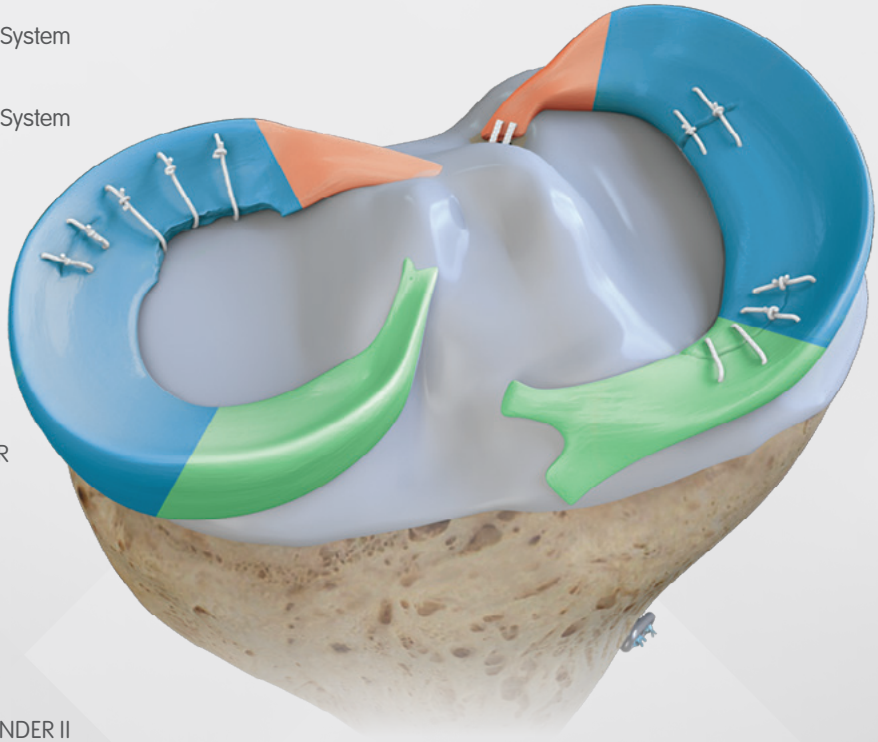
Complete solutions to save the meniscus

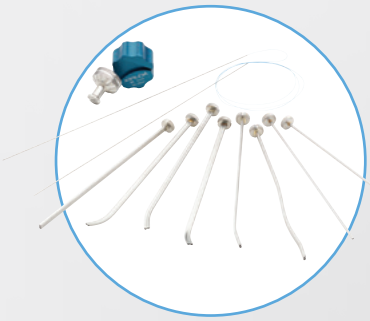
MENISCAL ROOT
Repair System

FIRSTPASS® MINI
Suture Passer

FAST-FIX® 360
Meniscal Repair System

ULTRA FAST-FIX
Meniscal Repair System





MENISCAL STITCHER
Repair System

MENISCUS MENDER II
Repair System

WEREWOLF® FLOW 50°
Wand

DYONICS® Curved
PLATINUM
Blades

Solution Offering

	Root Tear	Anterior Tears	Horizontal Tear	Radial or Parrot Beak Tear	Flap Tear	Longitudinal Vertical Tear	Bucket Handle Tear	Complex Tear
FAST-FIX° 360 Meniscal Repair System						●	●	
ULTRA FAST-FIX Meniscal Repair System						●	●	
MENISCUS MENDER II Repair System		●						●
MENISCAL ROOT Repair System	●							
FIRSTPASS° MINI Suture Passers	●							
MENISCAL STITCHER Repair System			●	●	●	●	●	●
WEREWOLF° FLOW 50° Wand			●	●				●
Curved SYNOVATOR° PLATINUM 4.5mm Blade	●							
Curved INCISOR Plus PLATINUM 4.5mm Blade			●	●				●

Smith & Nephew: expanding what's possible in meniscal repair by enabling treatment of all tears with all repairs ... all around the meniscus.

1. Konan S, Haddad F. Outcomes of Meniscal Preservation Using All-inside Meniscus Repair Devices. *Clin Orthop Relat Res.* 2010;468:1209-1213. **2.** Fairbank T. Knee joint changes
after meniscectomy. *J Bone Joint Surg.* 1948;30:664-670. **3.** McDermott I, Amis A. Review article: the consequences of meniscectomy. *J Bone Joint Surg.* 2006;88-B:1549-1556. **4.** Hoser C, Fink, Brown C, Reichkendler M, Hackl W, Bartlett J. Long-term results of arthroscopic partial lateral meniscectomy in knees without associated damage. *J Bone Joint Surg [Br].* 2001;83-B:513-516. **5.** Saliman, JD. Circumferential Compression Stitch for Meniscus Repair. *Arthroscopy Tech.* 2013; V2(3); e257-262. **6.** Smith & Nephew 2015. User Needs Validation 15000994 Rev:E. **7.** Smith & Nephew 2004. Laboratory Report 1061539 Rev. A. **8.** Albertoni LJB, Schumacher FC, Ventura MHA, et al. Meniscal repair by all-inside technique with fast-fix device. *Revista Brasileira de Ortopedia (English Edition).* 2013; 48; 448-454. **9.** Chiang CW, Chang CH, Cheng CY, et al. Clinical results of all-inside meniscal repair using the fast-fix meniscal repair system. *Chang Gung medical journal.* 2011; 34; 298-305. **10.** Kotsovolos ES, Hantes ME, Mastrokalos DS, Lorbach O, Paessler HH. Results of all-inside meniscal repair with the FAST-FIX meniscal repair system. *Arthroscopy.* 2006; 22; 3-9. **11.** Smith & Nephew 2010. Laboratory Report 10600596. **12.** Cohen DB, Wickiewicz TL. The Outside-in Technique for Arthrscopic Meniscal Repair. *Operative Techniques in Sports Medicine.* 2003;11;91-103. **13.** Moatshe G, Chahla J, Slette E, Engebretsen L, Laprade RF. Posterior meniscal root injuries: A comprehensive review from anatomy to surgical treatment. *Acta Orthopaedica.* 2016;87(5):452-458. **14.** Smith & Nephew 2018. Laboratory Report 96344-01. **15.** Nelson C, Bonner K. Inside-Out Meniscus Repair. *Arthroscopy Techniques.* 2013;2(4):e453-e460.B. **16.** Amiel D, Ball ST, Tasto JP. Chondrocyte viability and metabolic activity after treatment of bovine articular cartilage with bipolar radiofrequency: an *in vitro* study. *Arthroscopy.* 2004;20(5):503-510. **17.** ArthroCare 2014.FLOW 50 Wand Vac Mode Comparative Bench-Top Study Report. P/N 53303-01_A **18.** Spahn G, Kahl E, Mückley T, Hofmann GO, Klinger HM. Arthroscopic knee chondroplasty using a bipolar radiofrequency-based device compared to mechanical shaver: results of a prospective, randomized, controlled study. *Knee Surg Sports* Traumatol Arthrosc. 2008;16:565–573. **19.** Spahn G, Hofmann GO, von Engelhardt LV. Mechanical debridement versus radiofrequency in knee chondroplasty with concomitant medial meniscectomy: 10-year results from a randomized controlled study. *Knee Surg Sports Traumatol Arthrosc.* 2016;24:1560–1568. **20.** Spahn G, Klinger HM, Muckley T, Hofmann GO. Four-year results from a randomized controlled study of knee chondroplasty with concomitant medial meniscectomy: mechanical debridement versus radiofrequency chondroplasty. *Arthroscopy.* 2010;26:S73–S80. **21.** Barker SL, Johnstone AJ, Kumar K. In vivo temperature measurement in the subacromial bursa during arthroscopic subacromial decompression. *J Shoulder Elbow Surg.* 2012;21(6):804-807. **22.** Gharaibeh M, Szomor A, Chen DB, Macdessi SJ. A Retrospective Study Assessing Safety and Efficacy of Bipolar Radiofrequency Ablation for Knee Chondral Lesions. *Cartilage.* 2018;9(3):241-247. **23.** Liu YJ, Wang Y, Xue J, Lui PP, Chan KM. Arthroscopic gluteal muscle contracture release with radiofrequency energy. *Clin Orthop Relat Res.* 2009;467(3):799-804. **24.** Sean NY, Singh I, Wai CK. Radiofrequency microtenotomy for the treatment of plantar fasciitis shows good early results. *Foot Ankle Surg.* 2010;16(4):174-177. **25.** Taverna E, Battistella F, Sansone V, Perfetti C, Tasto JP. Radiofrequency-based plasma microtenotomy compared with arthroscopic subacromial decompression yields equivalent outcomes for rotator cuff tendinosis. *Arthroscopy.* 2007;23(10):1042-1051. **26.** Wei M, Liu Y, Li Z, Wang Z. Short-term effects of radiofrequency shrinkage treatment for anterior cruciate ligament relaxation on proprioception. *J Int Med Res.* 2013;41(5):1586-1593. **27.** Zini R, Munegato D, De Benedetto M, Carraro A, Bigoni M. Endoscopic iliotibial band release in snapping hip. *Hip Int.* 2013;23(2):225-232.
28. Smith & Nephew 2018. Laboratory Report 15007991. **29.** Smith & Nephew 2018. Laboratory Report 15007708.

Ordering information

FAST-FIX° 360 Meniscal Repair System	
Reference #	**Description**
72202467	FAST-FIX 360, Straight
72202468	FAST-FIX 360, Curved
72202469	FAST-FIX 360, Reverse Curved
72202674	Straight Knot Pusher/Suture Cutter and Slotted Cannula Set, Single use
72202675	Curved Knot Pusher/Suture Cutter and Slotted Cannula Set, Single use
015186	Meniscal Depth Probe, Reusable
014549	45° Diamond Rasp, Reusable
014550	90° Diamond Rasp, Reusable
7210977	Slotted Cannula, Reusable
7210450	Suture Funnel, Sterile, Box of 10
7209950	Suture Threaders, Sterile, Box of 10
ULTRA FAST-FIX Meniscal Repair System	
72201491	ULTRA FAST-FIX, Curved
72201492	ULTRA FAST-FIX, Reverse Curved
72201494	ULTRA FAST-FIX AB, Curved
72201495	ULTRA FAST-FIX AB, Reverse Curved
7210977	Slotted Cannula, Reusable
72201490	ULTRA FAST-FIX, Straight
72201493	ULTRA FAST-FIX AB, Straight
FIRSTPASS° MINI Suture Passer	
72290128	FIRSTPASS MINI Suture Passer
72290129	FIRSTPASS MINI Left-Curved Suture Passer
72290130	FIRSTPASS MINI Right-Curved Suture Passer

Meniscal Root Repair System	
Reference #	**Description**
7193J001	Meniscal Root Repair System
System includes:	
71935072	ACUFEX° DIRECTOR MRR Angled Bullet
71935073	ACUFEX DIRECTOR MRR Drill Guide Handle
71935071	Open Curette S
71935076	MRR Offset Guide
71935074	Aimer Guide Curve, Left
71935075	Aimer Guide Curve, Right
Meniscus Mender II Repair System	
7209485	Meniscus Mender II Disposable Set
Meniscal Stitcher Repair System	
012600	Meniscal Stitcher Set
Disposable Kits - Meniscal Root Repair:	
71935360	Instrument Pack
DYONICS° Curved PLATINUM Blades	
72205110	4.5mm Curved SYNOVATOR° PLATINUM Blade
72205109	4.5mm Curved INCISOR Plus PLATINUM Blade
WEREWOLF° COBLATION°	
72290037	WEREWOLF FLOW 50° Wand
72290043	WEREWOLF Controller

The NOVOSTITCH PRO Meniscal Repair System is manufactured by Ceterix Orthopaedics, Inc., 6500 Kaiser Drive, Suite 120, Fremont, CA 94555, USA

The FIRSTPASS MINI Suture Passer and WEREWOLF COBLATION are manufactured by ArthroCare Corporation, 7000 West William Cannon Drive, Austin, TX 78735, USA. All other products listed here are manufactured by Smith & Nephew.

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For detailed product information, including indications for use, contraindications, precautions and warnings, please consult the product's applicable Instructions for Use (IFU) prior to use.

Supporting healthcare professionals for over 150 years