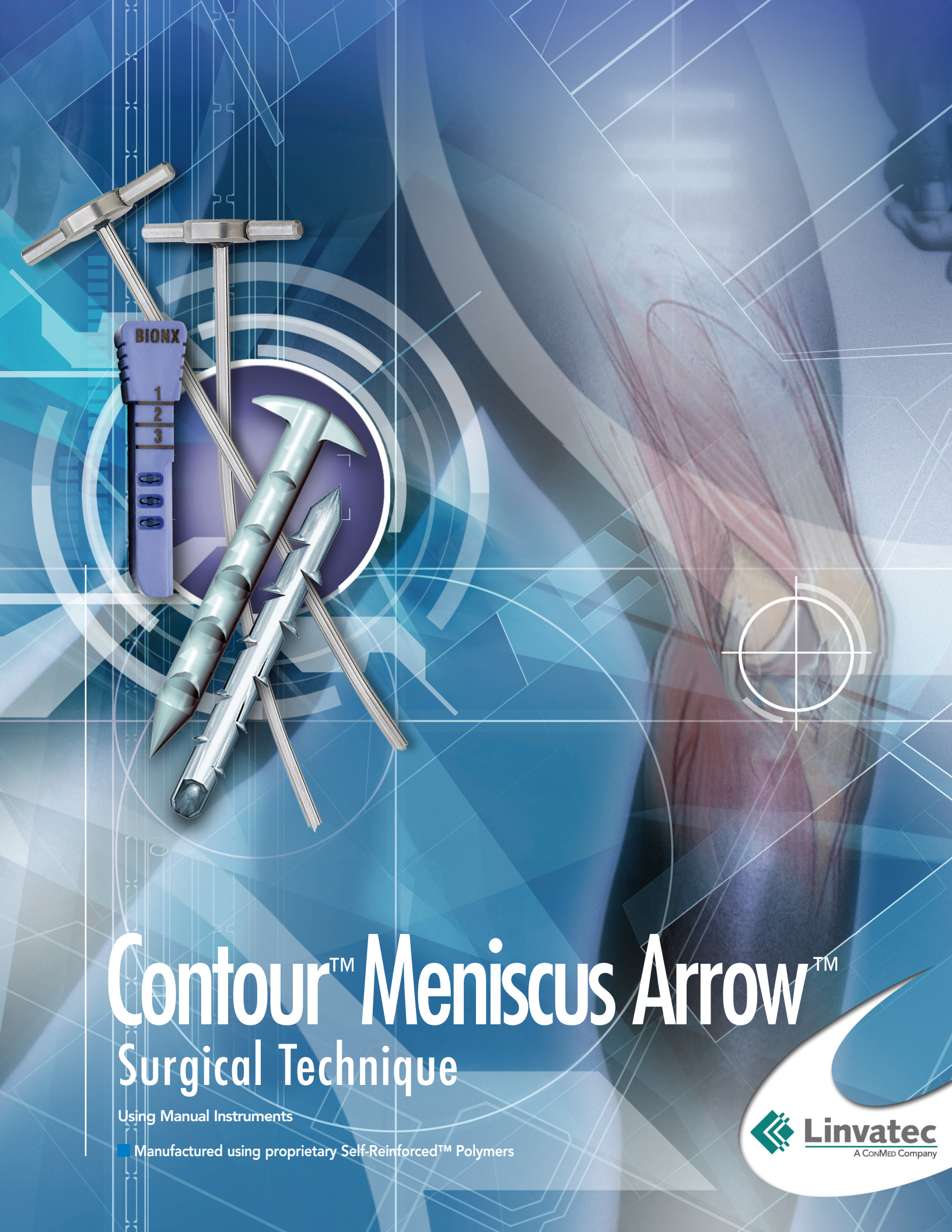


Contour™ Meniscus Arrow™

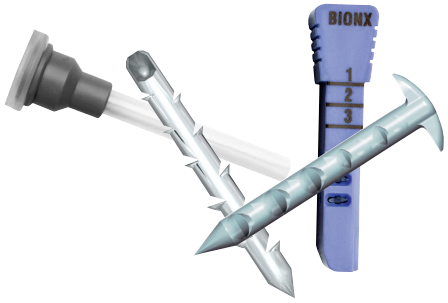
Surgical Technique

Using Manual Instruments

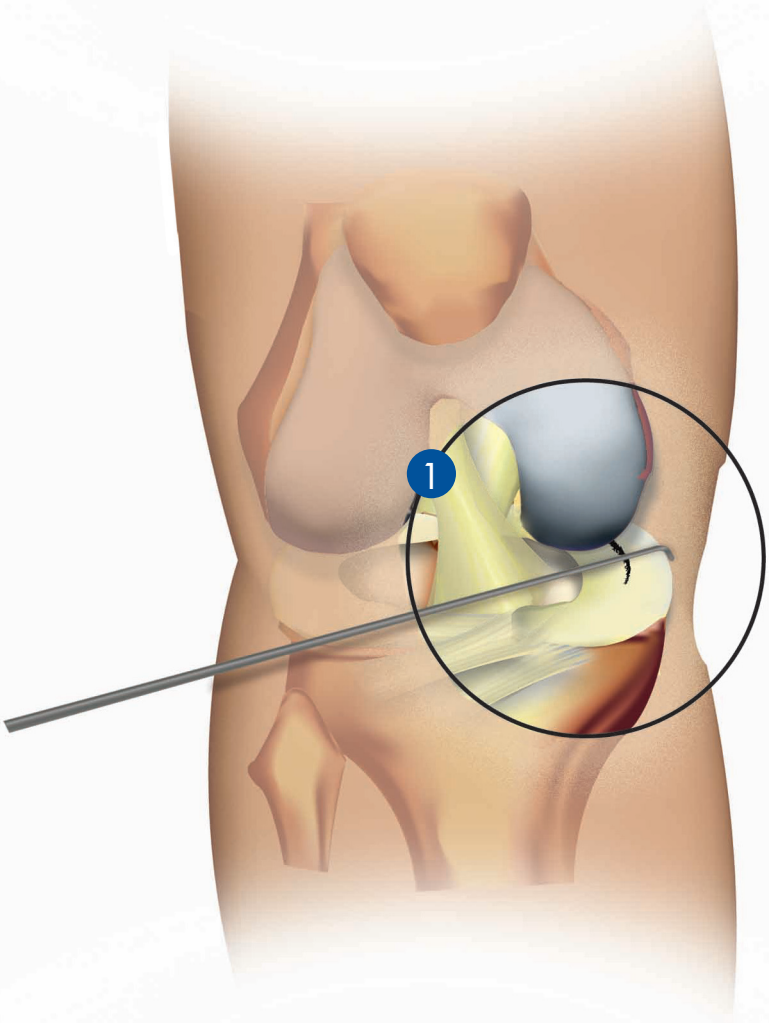
- Manufactured using proprietary Self-Reinforced™ Polymers

Linvatec
A ConMed Company

Contour™ Meniscus Arrow™



Instruments for manual placement, with and without stylets for meniscal lesion stabilization, provide excellent tactile feedback through arthroscopic methods while reducing procedure time up to 50% over conventional suture methods.



Meniscal Examination and Repair Planning

1

After determination of the presence of a tear by either arthroscopic examination or by diagnostic imaging, approach the knee as with any arthroscopic procedure.

With the scope placed in the portal to provide the best view of the tear, confirm the diagnosis that the tear is in a repairable area of the meniscus, either in the "red-red" or the "red-white" areas. The shaded area of the diagram shows the approximate location of these areas in the lateral meniscus.

If there is a concomitant tear of the ACL or other ligamentous structures in the knee, the meniscus repair should be performed first.

Gently rasp the surfaces of the tear and surrounding synovium to generate a healing environment. Use your normal techniques for this approach, no special techniques are needed at this time for the use of the Contour Meniscus Arrow™ implant.

Using the Bionx Implants probe, measure to determine the length of Contour™ Arrow™ implant required for each implantation at each planned location. From the contralateral portal, hook the probe over the capsule and measure the distance to the exterior edge of the tear. Laser etchings at 10, 13 and 16 mm determine the proper size Contour Arrow that should be inserted 3-5 mm before the tear.

The Contour Arrow shafts should be placed approximately 5 mm apart. Have the Assistant select the proper number and lengths of Contour Arrow implants to be used and arrange them in the order to be used on the back table.

Surgical Technique

2

The surgical plan for the Contour Arrow implants is much like that used in suture-type fixation cases.

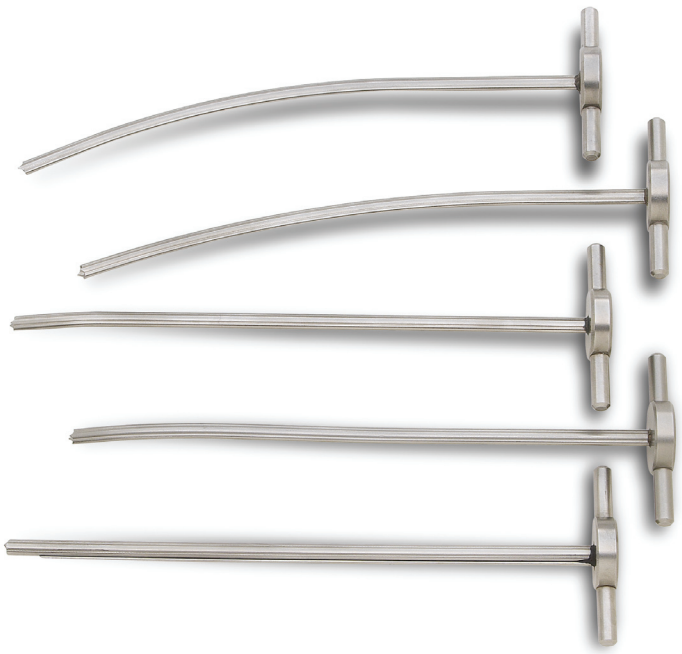
For a tear that extends into the posterior horn of either the lateral or medial meniscus, the first Contour Arrow implant should be placed at the posterior end of the tear. This will stabilize the tear and allow for easier approximation of the edges in the more anterior sections of the tear.

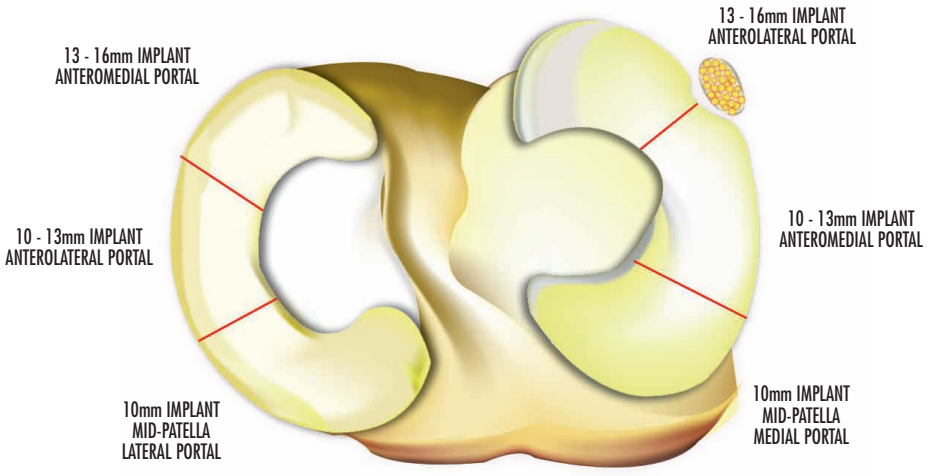
After placing the posterior Contour Arrow implant, or in the case of a tear that does not have a significant posterior component, the approximate center of the tear should be located and the first Contour Arrow implant placed at that location. For the tear with a posterior component, the second Contour Arrow implant should be placed in the central location.

Selection of the insertion cannulae is important when placing any Contour Arrow implant. Select the cannula that will allow an approach to the tear in as perpendicular a manner as possible.

The Contour Arrow cannulae have been designed to allow the use of standard portals for the repair of most tears, but in the instance where a standard portal will not allow for a perpendicular approach to the tear, additional portals should be made as needed.

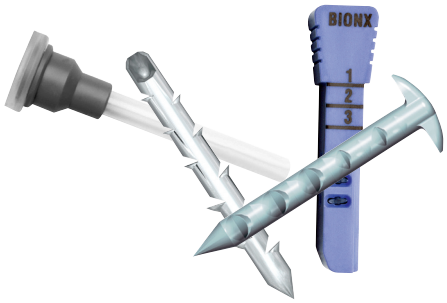
A Perpendicular approach is critical for the success of the Contour Arrow implant repair, for the repair is dependent on the interface between the barbs and the circumferential fibers of the meniscus for strong fixation.



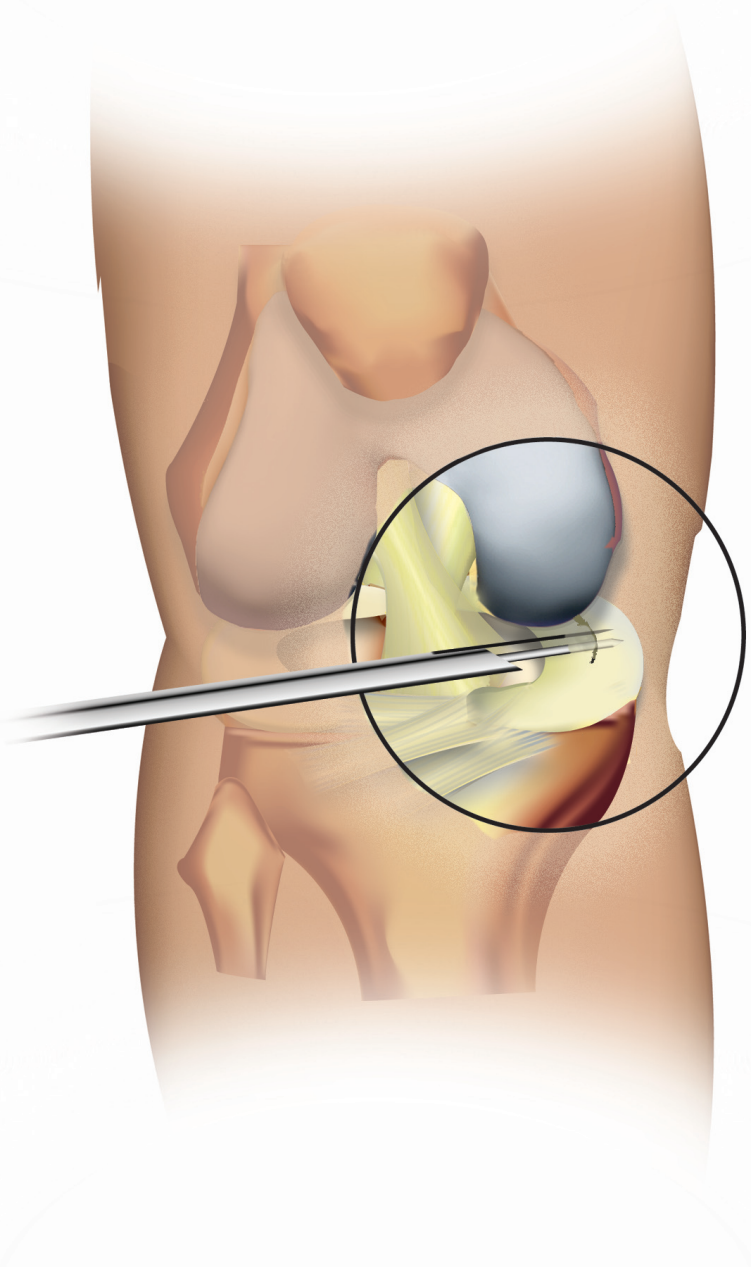


Zone-specific choice of Contour™ Arrow™ length and portal

Contour™ Meniscus Arrow™



Deployment of the Contour™ Arrow™



3

Insert the selected cannula with obturator in place to avoid soft tissue interference. Remove the obturator and reduce the tear by grabbing the central portion of the tear with the top teeth of the cannula or the stylet on the side of the straight cannulae a distance of approximately 3-5 mm in front of the tear.

ONCE THE TEAR HAS BEEN REDUCED, CARE MUST BE TAKEN TO MAINTAIN THE POSITION OF THE CANNULA UNTIL THE IMPLANT PLACEMENT IS COMPLETE.

Firmly resting the heel of the surgeon's hand on the knee and firmly grasping the cannula is recommended. Note that during this portion of the procedure, the camera should be held by an assistant.

The wide dimension of the cannula should remain parallel to the joint line during placement to again assure the proper interface between the barbs of the Contour Arrow implant and the meniscal fibers.

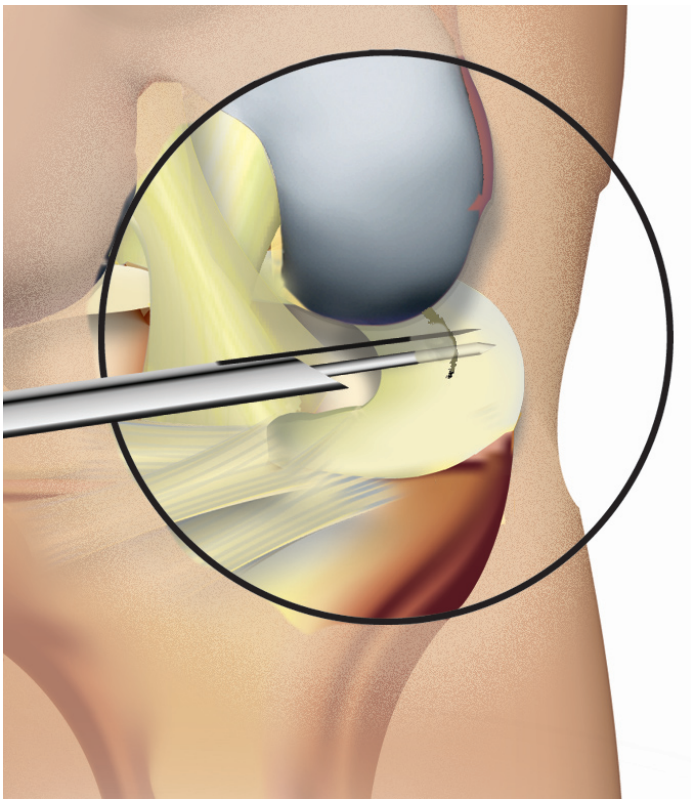
Surgical Technique

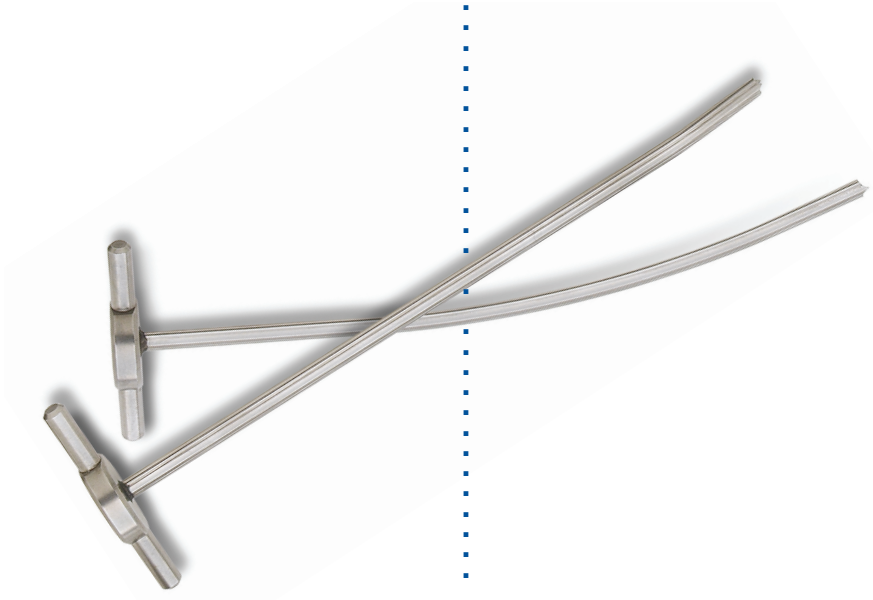
4

While maintaining firm pressure and reduction in both the lateral and vertical directions on the meniscus with the cannula, insert the trocar pointed cutting needle into the cannula and across the tear. The needle will seat against the back of the cannulae when fully inserted. The needle protrudes 13 mm from the tip of the cannulae and can be used as a confirmation of implant length.

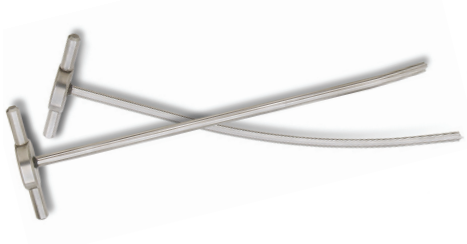
- If the implant tip can just be palpated, the maximum length that should be used is 13 mm.
- If a substantial portion of the tip can be palpated, a 10 mm implant should be selected.

Selection of the proper length can preclude two minor problems post operatively, (1) the tip of the Contour Arrow implant may cause some transient tenderness in the knee during rehabilitation, and (2) placing the implant too centrally may create the opportunity for a difference in absorption rates between the portion in the vascular zone and that in the non-vascular area which could lead to the potential for implant fracture.





Contour™ Meniscus Arrow™



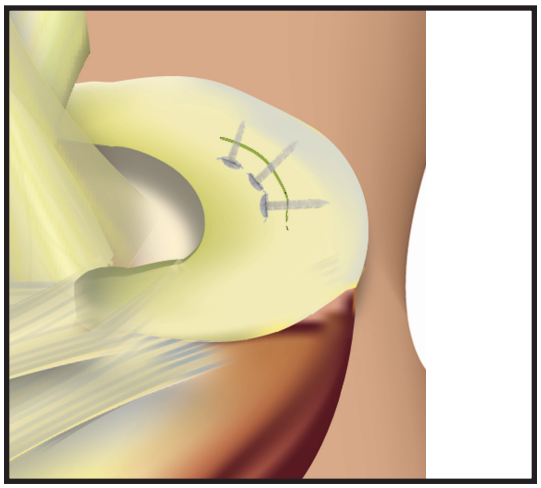
5

Remove the needle taking care to not disturb the cannula position. Remove the selected Contour™ Arrow™ implant from the foil package and place it into the proximal end of the cannulae. The implant will fit into the cannula in the proper orientation due to the shape of the lumen.

Using the blunt obturator, slide the Contour Arrow implant down the cannulae until resistance is felt. At that point the implant is at the surface of the meniscus.

Tap the Contour Arrow implant into place using a mallet (not included with the instruments) on the proximal end of the blunt obturator. When the obturator has seated firmly against the end of the cannula, the Contour Arrow implant should be seated into the meniscus in a dimple on the surface.

- If the Contour Arrow head can be palpated with a probe, place the cannulae over the head of the implant and reimpact with the mallet to assure that the head is fully driven into the meniscal surface.
- If the edges of the tear do not align exactly, do not attempt to remove the implant. Make minor corrections in alignment with the remaining implants.



Shift the cannula to a new position or select a new cannula to place the next Contour Arrow implant. This choice should be made on the basis of trying to keep the Contour Arrow shafts perpendicular to the tear.

The order of implantation location should alternate from anterior to posterior back to anterior around the centrally placed implant.

The Contour Arrow implant should be placed to maintain a separation of 5 mm between the implant shafts, not the T-Heads.

When the repair is complete, the Contour Arrow implant should be lying in a small dimple in the surface of the meniscus and probing should reveal a strong, stable meniscus.

Frayed edges of the central portion of the meniscus can be shaved away at this time and repairs to other structures in the knee can also be started.

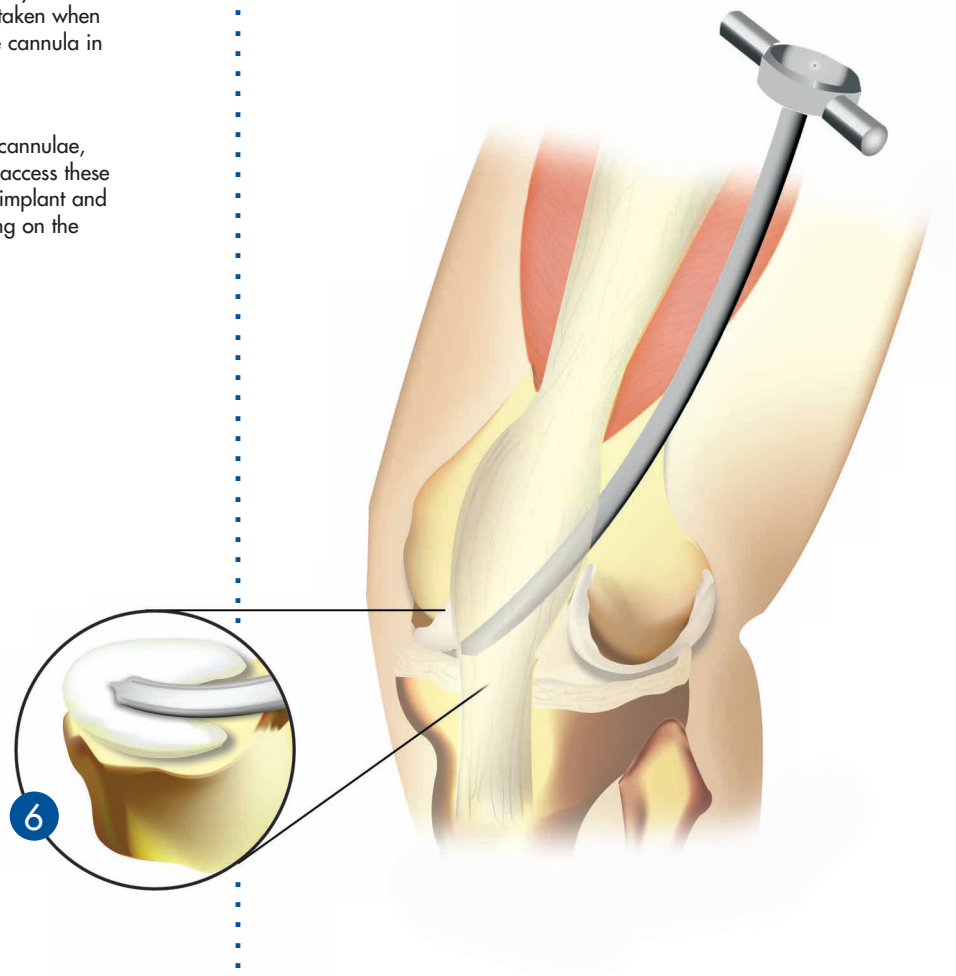
Surgical Technique

6

Tears to the anterior third of the meniscus with the Contour Arrow implant can be made using two approaches.

1. If your instrument set has 30 degree cannulae, use the same technique as described above, but using only the 10 mm Contour Arrow implant. Care must be taken when using the 30 degree cannulae to assure that the cannula in use does not shift during the procedure.

2. If your instrument set does not have 30 degree cannulae, the 15 degree curved cannulae can be used to access these anterior tears using the 10 mm Contour Arrow implant and a mid-patella, lateral or medial portal depending on the location of the tear.



Contour™ Meniscus Arrow™

The new Contour Meniscus Arrow implant is indicated for the repair of vertical, longitudinal "Bucket-Handle" tears of the meniscus in the vascular zone (red-red, red-white) through arthroscopic and open methods. The Contour Meniscus Arrow implant features a low profile contoured head, which sinks into the meniscus while compressing the tear. The Contour Meniscus Arrow implant is barbed along the entire length of the implant shaft for superior fixation strength.

The Contour Meniscus Arrow implants are made of a new proprietary Self-Reinforced™ copolymer, 80L/20D, PLA, which imparts on the implants an ultra-high strength microstructure that has a unique ability to resist shear and torque while the tear is healing. The new 80L/20D, PLA copolymer is a faster resorbing implant material that will continue to provide strength for up to 24 weeks while the tear is remodeling and then gradually resorb away.

CROSSBOW® Delivery System

The complete system includes five zone-specific cannulae to facilitate access to meniscal lesions and a unique, graduated, calibrated probe to facilitate tear assessment and to aid in selection of the correct implant size. Multi-arrow implant magazine saves procedure time. Elimination of pre-drilling or preforming a channel in the meniscus increases time zero pull-out strengths.

MENISCUS SHEATH

The Meniscus Sheath is for use with either the Crossbow or manual cannulae. The flexible sheath allows easy atraumatic insertion of the cannulae into the space and accomodates curved or straight cannulae.

Contour Meniscus Arrow Implants *are also available in preloaded cartridges for easier handling in the operating room.**

References:
*U.S. Patent 4,873,976
U.S. Patent 5,562,704
U.S.Patent 4,968,317

ORDERING INFORMATION

Ref. No.	Description	Size	Qty./Pkg.
Single Implant Packaging			
541110	Contour Meniscus Arrow 80L/20D,L PLA	1.1mm O.D. x 10mm L	1
541113	Contour Meniscus Arrow 80L/20D,L PLA	1.1mm O.D. x 13mm L	1
541116	Contour Meniscus Arrow 80L/20D,L PLA	1.1mm O.D. x 16mm L	1
Pre-Loaded Implants for Crossbow			
541110-1	Contour Meniscus Arrow 80L/20D,L PLA*	1.1mm O.D. x 10mm L	1
541110-3	Contour Meniscus Arrow 80L/20D,L PLA*	1.1mm O.D. x 10mm L	3
541113-1	Contour Meniscus Arrow 80L/20D,L PLA*	1.1mm O.D. x 13mm L	1
541113-3	Contour Meniscus Arrow 80L/20D,L PLA*	1.1mm O.D. x 13mm L	3
541116-1	Contour Meniscus Arrow 80L/20D,L PLA*	1.1mm O.D. x 16mm L	1

Set Consists of:

AP1000	Arthroscopic Probe (Gold)
MAC1100-01	CrossBow Housing
MAC1100-02	CrossBow Magazine
MAC1100-05	CrossBow Cannula Straight
MAC1100-06	CrossBow Cannula Right Curve
MAC1100-07	CrossBow Cannula Left Curve
MAC1100-08	CrossBow Cannula Curve Tip
MAC1100-09	CrossBow Cannula Curve Shaft
MAC0001	CrossBow Sterilization Tray

Ref. No.	Description	Size
Addtional Items Not Included in Instrument Set:		
CN1000A	Meniscus Arrow Sheath	
MA5005	Meniscal Rasp	
Set Consists of:		
AP1000	Arthroscopic Probe (Gold)	
MA1100-01	Manual Needle (Menicus Arrow)	
MA1100-021	Manual Obturator/Manual Piston	
MA1100-05	Manual Cannula Straight w/Channel & Stylet	
MA1100-06	Manual Cannula Right Curve	
MA1100-07	Manual Cannula Left Curve	
MA1100-08	Manual Cannula Curved Tip	
MA1100-09	Manual Cannula Curved Shaft	
MA0001	Manual Sterilization Tray	
MA1100-051	Manual Stylet (Stabilizing Wire) Replacement for MA1100-05	–
MA1100-062	Manual Cannula Right Curv	30 degree
MA1100-072	Manual Cannula Left Curve	30 degree
MA5005	Meniscal Rasp	–
Manual Set with Channels		
Set Consists of:		
AP1000	Arthroscopic Probe (Gold)	
MA1100-01	Manual Needle (Meniscus Arrow)	
MA1100-021	Manual Obturator/Manual Piston	
MA1100-05	Manual Cannula Straight w/Channel Stylet	
MA1100-06S	Manual Cannula Right Curve w/Channel	
MA1100-07S	Manual Cannula Left Curve w/Channel	
MA1100-08S	Manual Cannula Curved Shaft w/Channel	
MA1100-09S	CrossBow Cannula Curve Shaft	
MA1100-051	Manual Stylet (Stabilizing Wire) Replacement for MA1100-05	
MA0001	Manual Sterilization Tray	

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