surgical technique

CURVTEK®
BONE TUNNELING SYSTEM

APPLICABLE TO ALL CURVTEK®
BONE TUNNELING SYSTEM INDICATIONS

ARTHROTEK®
A Biomet Company
inserting the cartridge

To insert the cartridge into the handpiece:

• Be certain the On-Off switch on the handpiece is in the “Off” position when inserting a cartridge.

• Hold the cartridge between the thumb and forefinger of one hand (Fig. 1).

• With the free hand, grasp the “barrel” of the handpiece and depress the toggle latch on the handpiece. Carefully insert the back end of the cartridge, with the two male hex drives, into the barrel of the handpiece until the cartridge snaps into place (Fig. 2).

**NOTE:** If one or both cutter heads advance from the cartridge during insertion, the male and female hex drive(s) did not mate properly (Fig. 3 and 4). If this occurs, remove the cartridge and rotate the non-mating male hex drive(s) 1/8 turn (Fig. 5).

• Carefully reinsert the cartridge into the handpiece. Repeat until properly seated.

**CAUTION:** Keep hands away from, and do not push on, the serrated front end of the cartridge during insertion since this could result in injury. Do not force the cartridge to facilitate proper insertion.

**introduction**

The CurvTek® System combines the benefits of preferred soft tissue reattachment with innovative pneumatic technology for creating curved transosseous tunnels. The unique CurvTek® handpiece and cartridge assembly machine curved tunnels, creating a strong bony bridge for each suture tie-down.
creating the tunnel

Ensure that the repair site is free from soft tissue to prevent interference with the cutting performance of the cutter heads. Stabilize the instrument perpendicular to the bone into which you will drill the transosseous tunnel.

The CurvTek® System is a unique soft tissue repair system that requires attention to the bone chip removal technique to ensure successful results. Unlike conventional straight drills that allow bone debris removal through flutes, the CurvTek® System requires two simultaneous activities for bone debris removal: Chip Cycles and Continuous Irrigation.

the chip cycle technique

One trigger advance and release action is called a “chip cycle.” Chip cycles are required to allow bone debris removal throughout the process of creating a tunnel. The technique is as follows:

- As the trigger is pulled, the cutters engage the cortex, and bone chips develop.
- As the trigger is released, the cutters retract and the bone chips clear the tunnel.
- Each pull and release of the trigger is a “chip cycle.”
- To adequately clear the chips for a complete tunnel, 12 – 15 chip cycles may be necessary (Fig. 6).

NOTE: The trigger must be fully released to the starting position at the end of each chip cycle or the bone chips will not clear the tunnel.
**continuous irrigation**
In addition to the Chip Cycle Technique, constant copious irrigation is required throughout the chip cycle process to ensure bone debris removal from the drill holes and to cool the cutting tips (Fig. 7). Irrigation technique should be either pulsed lavaged or submerged.

**completing the tunnel**
When the chip cycle process is complete and the trigger is fully depressed, one cutter head passes across the center line of the cartridge to complete the transosseous tunnel (Fig. 8).

**passing the suture**
To pass the CurvTek® needle, place the jaws of the instrument utilized to grasp the needle on the sides of the needle and orient the needle parallel to the long axis of the instrument (Fig. 9). Position the needle to follow the path of the tunnel created by the cartridges (Fig. 10). This aligns the needle with the radius of the transosseous tunnel. Advance the needle while rotating the instrument away from the entry point (Fig. 11). Gently feed the needle through the length of the tunnel (Fig. 12).

**suture tie-down**
Once the suture is passed through the tunnel, the soft tissue can be tied down, directly on bone (Fig. 13). This technique and the resulting repair maximizes the surface area of soft tissue-to-bone contact.
surgical indications

**Bankart**
- Rotator Cuff
- Deltoïd to Acromion Reattachment
- Subscapularus Repair

**Rotator Cuff**
- Long Head of the Biceps
- Pectoralis Major Repair
- Capsular Shift

**Deltoid Ligament**
- Bankart Lesion Repairs — Anterior and Posterior
- Subscapularis Repairs

**7mm (medium) cartridge**
- Bone Bridge: 7mm*
- Depth: 4.7mm* (curved)
- Tunnel Size: 2mm*
*Approximate Sizes

**Shoulder**
- Bankart Lesion Repairs — Anterior and Posterior
- Subscapularis Repairs

**12mm (large) cartridge**
- Bone Bridge: 12mm*
- Depth: 5.2mm* (curved)
- Tunnel Size: 2mm*
*Approximate Sizes

**Shoulder**
- Rotator Cuff Repairs
- Pectoralis Major Repairs

**22mm (x-large) cartridge**
- Bone Bridge: 22mm*
- Depth: 7.8mm* (curved)
- Tunnel Size: 2mm*
*Approximate Sizes

**Hip**
- Reattach Abductor/Adductor Complex

**Shoulder**
- Rotator Cuff Repairs

- Deltoïd Ligament
- Modified Kidner
- Hoke-Miller
- Medial Column
- Bunionectomy
- Brostrom

- Scaphoid-Lunate Repair
- Patellar Tendon Repair
- Quadriceps Femoris Tendon Repair
- Collateral Ligament Reconstruction/Repair
- Reconstruction for Recurrent Dislocating Patella
- Peroneal Tenodesis
- Achilles Tendon Lateral Stabilization

- Bone Bridge: 7mm*
- Depth: 4.7mm* (curved)
- Tunnel Size: 2mm*
potential applications:

shoulder
Bankart Lesion Repair — Anterior
Bankart Lesion Repair — Posterior
Rotator Cuff Repair
Deltoid to Acromion Reattachment
Subscapularus Reattachment
Long Head of the Biceps Tendons Repair
Pectoralis Major Repair to Anterior Humerus Trapeziun Transfer to Spine of Scapula

foot and ankle
Attachment of Distal EHL at Hallux IPJ (Jones Arthrodesis)
Attachment of EHL to First Metatarsal (Jones Tenodesis)
Attachment of EDL into Midfoot (Modified Hibbs Tenosuspension)
Attachment of Split Portion of Anterior Tibial Tendon into Lateral Tarsal (STATT)

knee
Quadriceps Femoris Tendon Repair (for Rupture)
Patellar Tendon Repair (for Rupture)
Semimembranosus Tendon Reconstruction (for Posteriormedial Compartment Instability)
Posterior Oblique Ligament Reconstruction (for Posteriormedial Compartment Instability)
Tibial Collateral Ligament Reconstruction (for Posteriormedial Compartment Instability)
Collateral Ligament Reconstruction/Repair
Hamstring Tendon Transplant (to Patella)
Hamstring Tendon Transfer (to Femur)
Reconstruction for Recurrent Dislocating Patella (Hauser Type Procedure)

NOTE: Anatomy should be assessed pre-operatively prior to use to determine appropriate cartridge size.

ordering information

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<tr>
<th>CurvTek® Handpiece</th>
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