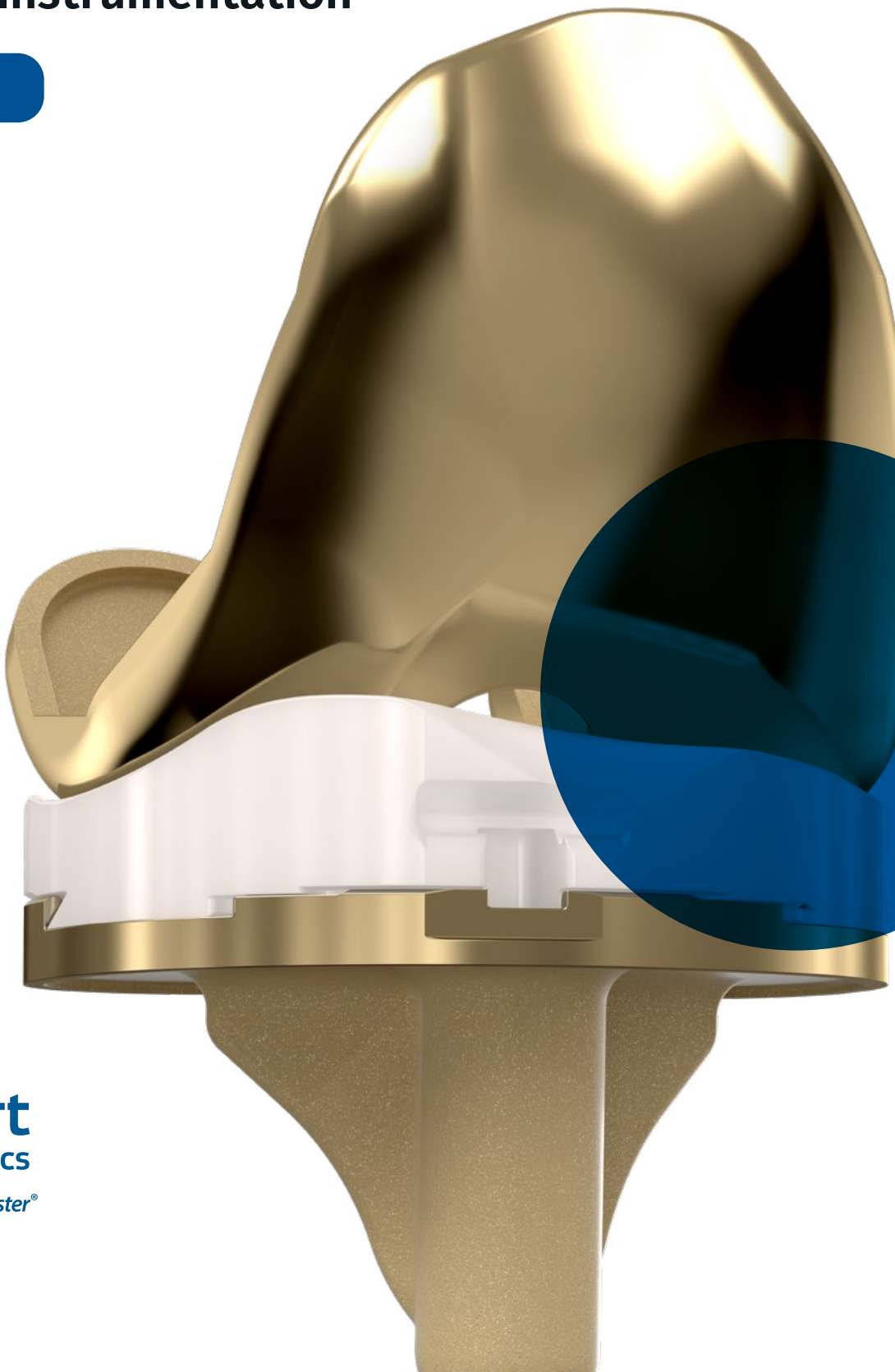
Evolution® NitrX

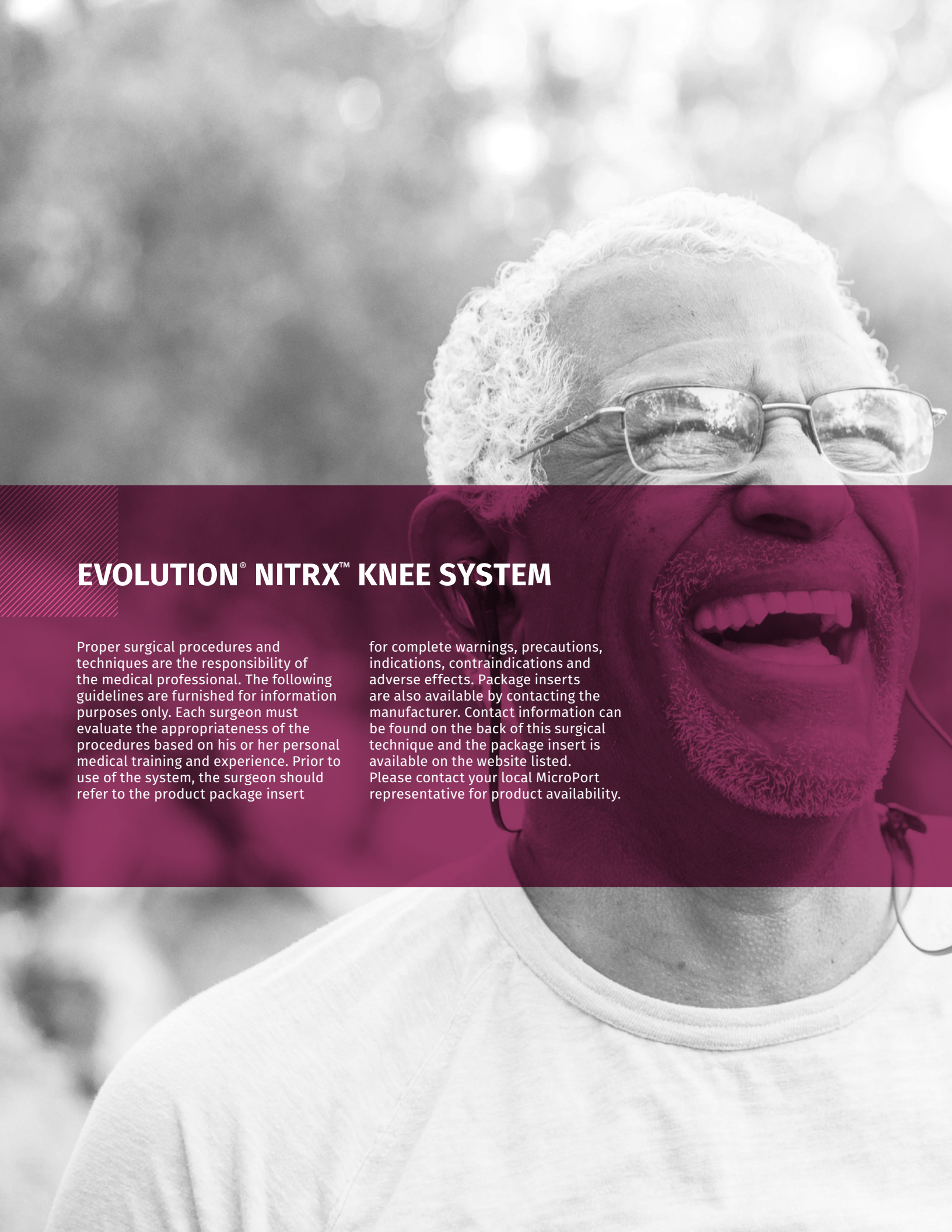
Medial-Pivot Knee System
Distal Cut First Instrumentation

Surgical technique



MicroPort Orthopedics

Full Function, Faster®



EVOLUTION® NITRX™ KNEE SYSTEM

Proper surgical procedures and techniques are the responsibility of the medical professional. The following guidelines are furnished for information purposes only. Each surgeon must evaluate the appropriateness of the procedures based on his or her personal medical training and experience. Prior to use of the system, the surgeon should refer to the product package insert for complete warnings, precautions, indications, contraindications and adverse effects. Package inserts are also available by contacting the manufacturer. Contact information can be found on the back of this surgical technique and the package insert is available on the website listed. Please contact your local MicroPort representative for product availability.

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Product Information

The Evolution® Knee System builds on the clinical history of the Advance Knee System ball-in-socket design.

Device Description

FEMORAL IMPLANT

- CS/CR options offered in eight sizes, left and right
- CS/CR offered in nonporous, Evolution® NitrX (TiNbN) Coated, and porous-coated options
- 145° constant radius C-curve
- Anatomic, recessed patellar groove with bone conserving preparation and enhanced contact area
- Central pegs to minimize bone removal during downsizing

TIBIAL BASE IMPLANT

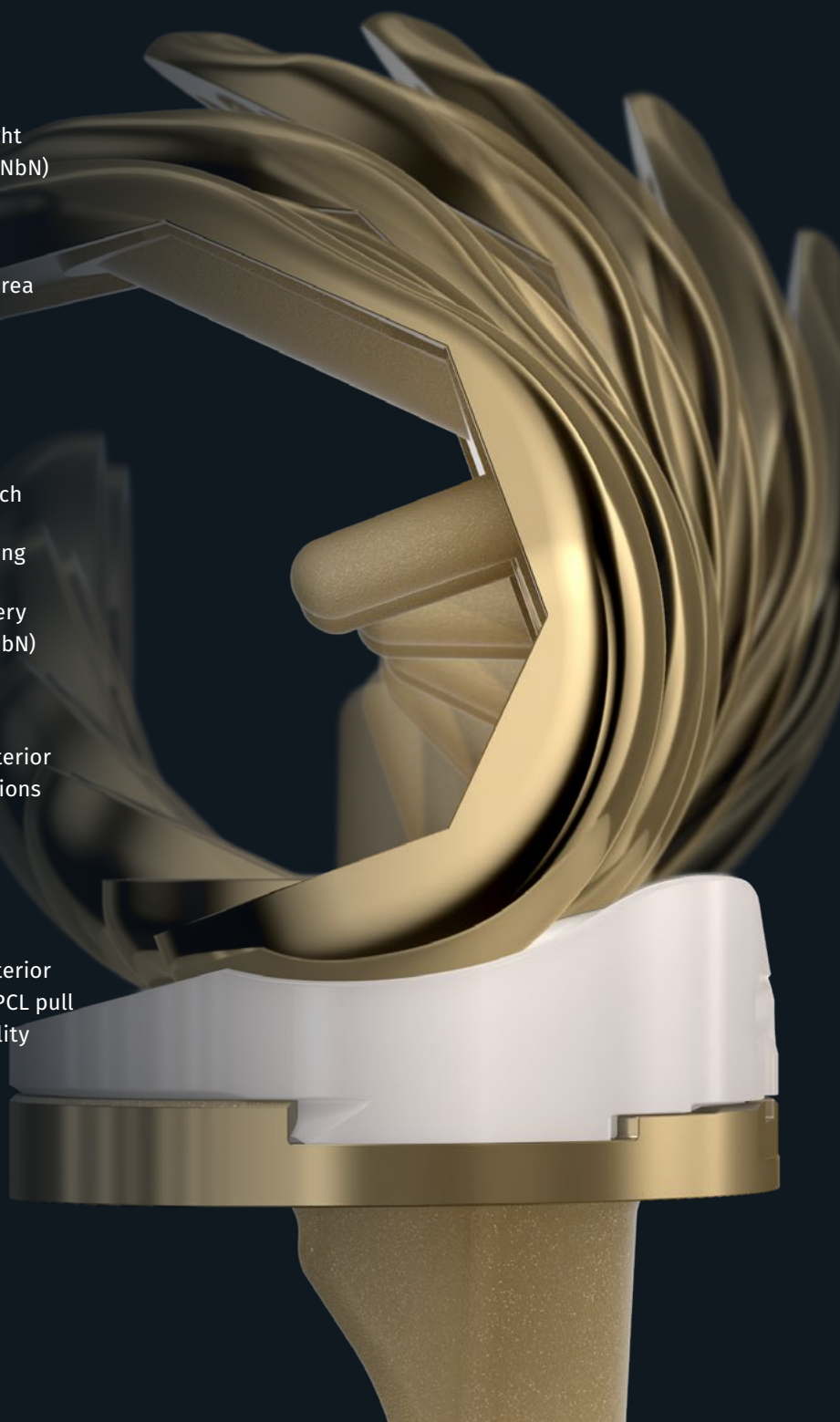
- Asymmetric for improved bone coverage
- Enhanced locking mechanism
  - Angled 8° in direction of the incision approach (anterior-medial direction)
  - Lower insertion loads while maintaining strong disassociation loads
- Stem and keel configured for less-invasive surgery
- Available in Cemented, and Evolution® NitrX (TiNbN) Coated

TIBIAL INSERT IMPLANT – CS

- Asymmetric to position mating femur more posterior
- 1-up interchangeability with plus size insert options
- 1-down interchangeability with standard insert
- Soft tissue friendly patellar tendon relief
- 15° of permissible femoral rotation

TIBIAL INSERT IMPLANT – CR

- Asymmetric to position mating femur more posterior
- PCL soft tissue relief angled in the direction of PCL pull
- 1-up, 1-down tibiofemoral sizing interchangeability
- Soft tissue friendly patellar tendon relief
- 15° of permissible femoral rotation



Indications and warnings

Indications

The eMP™ Knee System is indicated for use in knee arthroplasty in skeletally mature patients with the following conditions:

1. Noninflammatory degenerative joint disease including osteoarthritis, traumatic arthritis or avascular necrosis;
2. Inflammatory degenerative joint disease including rheumatoid arthritis;
3. Correction of functional deformity;
4. Revision procedures where other treatments or devices have failed; and treatment of fractures that are unmanageable using other techniques.

Non-porous MicroPort total knee replacement implants are for cemented use only.

Contraindictions

Patients should be warned of these contraindications. Contraindications include:

1. Overt infection;
2. Distant foci of infections (which may cause hematogeneous spread to the implant site);
3. Rapid disease progression as manifested by joint destruction or bone absorption apparent on roentgenogram;
4. Skeletally immature patients;
5. Cases where there is inadequate neuromuscular status (eg. prior paralysis, fusion and/or inadequate abductor strength), poor bone stock, or poor skin coverage around the joint that would make the procedure unjustifiable.

Use with stainless steel bone screws in contraindicated.

Prior to use of the system, the surgeon should refer to the product package insert for complete warnings, precautions, indications, contraindications and adverse effects. Package inserts are also available by contacting the manufacturer. Contact information can be found on the back of this surgical technique and the package insert is available on the website listed.

Warnings and precautions

The potential long-term biological effects of metal wear debris and metal ion production are not known. Questions regarding carcinogenicity have been raised in literature; no studies have conclusive evidence that metal wear debris or metal ions are carcinogenic

NEVER combine components made by different manufacturers.

Preoperative precautions

The surgeon must evaluate each situation individually based on the patient's clinical presentation in making any decisions regarding implant selection. The surgeon must be thoroughly familiar with the implant, instruments and surgical procedure prior to performing surgery. The surgeon should contact MicroPort for product-specific surgical techniques. Patient selection should consider the following factors which could lead to increased risk of failure and can be critical to the eventual success of the procedure: the patient's weight, activity level and occupation. Additional conditions presenting increased risk of failure include:

1. Uncooperative patient or patient with neurologic disorders, incapable of following instructions;
2. Marked bone loss, severe osteoporosis, or revision procedures for which an adequate fit of the prosthesis cannot be achieved;
3. Metabolic disorders that may impair bone formation;
4. Osteomalacia;
5. Poor prognosis for good wound healing (eg. decubitus ulcer, end-stage diabetes, severe protein deficiency and/or malnutrition).

The patient should be warned of surgical risks and made aware of possible adverse effects. The patient should be warned that the prosthesis does not replace normal healthy bone, that the prosthesis can break or become damaged as a result of certain activity or trauma, has a finite expected service life and may need to be replaced at some time in the future. The patient should also be advised of other risks that the surgeon believes should be disclosed.

Intraoperative precautions

Specialized instruments are available and must be used to assure the accurate implantation of prosthetic components. Do not mix instruments from different manufacturers. While rare, breakage of instruments may occur especially with extensive use or excessive force. For this reason, instruments should be examined for wear or damage prior to surgery. Inspect instruments prior to use for items that may cause unacceptable functional deterioration that exceeds the instrument's use life:

- Damage during shipment or storage.
- Visual cues such as worn surfaces, dull edges, corrosion, pitting, cracking, or discoloration.
- Difficulty to move, lock, or mate pieces.

Inspect devices prior to use for damage during shipment or storage or any out-of-box defects that might increase the likelihood of fragmentation during a procedure. Correct selection of the prosthesis is important. The potential for success in knee joint replacement is increased by selection of the proper size, shape, and design of the prosthesis. Knee joint prostheses require careful seating and adequate bone support. Smaller sized implants are intended for patients with small bone and normally slight weight. Such components could be inappropriate for other patients. Physicians are encouraged to use their best medical judgment when choosing the proper implant size regardless of the endosteal area of the bone.

Preoperative templates and trial prostheses should also be used to assure proper sizing of prostheses. Use only with mating prosthetic components of appropriate size. Mismatching of components could impede component articulation, leading to wear and possible failure of the component and also contribute to joint laxity.

Cemented application

Care is to be taken to ensure complete support of all components of the prosthesis embedded in bone cement to prevent stress concentrations that may lead to failure of the device or cement mantle. Complete cleaning including complete removal of bone chips, bone cement fragments, and metallic debris prior to closure of the prosthetic site is critical to prevent accelerated wear of the articular surfaces of the prosthesis.

Non-Cemented Application

Adequate fixation at the time of surgery is critical to the success of the procedure. The femoral components must press fit in the femur, which necessitates precise operative technique and the use of specified instruments. Intraoperative fracture of the femur can occur during seating of the prosthesis. Bone stock must be adequate to support the device.

Modular Components

Modular components must be assembled securely to prevent disassociation. Avoid repeated assembly and disassembly of the modular components that could compromise the locking action of the components. Surgical debris must be cleaned from components before assembly since debris may inhibit the proper fit and interfere with the locking mechanisms of modular components that may lead to early failure of the procedure.

Fixation Screws

Fixation screws, when used, should be fully seated to ensure stable fixation and to avoid interference with proper seating of components.

Alignment of Components

Care should be taken to restore the proper joint alignment and to balance ligamentous tension. Malalignment of the joint can cause excessive wear, loosening of the prosthesis, and pain leading to premature revision of one or more of the prosthetic components.

Postoperative precautions

The patient must be advised of the limitations of the reconstruction and the need for protection of the prosthesis from full weight bearing until adequate fixation and healing have occurred. Excessive activity and trauma affecting the joint replacement have been implicated with failure of the reconstruction by loosening, fracture and/or wear of the prosthetic components. Loosening of the components can result in increased production of wear particles, as well as damage to the bone, making successful revision surgery more difficult.

Periodic, long-term follow-up is recommended to monitor the position and state of the prosthetic components, as well as the condition of the adjoining bone.

Periodic postoperative x-rays are recommended for close comparison with early post-op conditions to detect long term evidence of changes in position, loosening, bending, or cracking of components.

Recommendations Regarding Device Fragments:

- Inspect devices immediately upon removal from the patient for any signs of breakage or fragmentation.
- If the device is damaged, retain it to assist with MicroPort's analysis of the event.
- Carefully consider and discuss with the patient (if possible) the risks and benefits of retrieving vs. leaving the fragment in the patient.
- Advise the patient of the nature and safety of unretrieved device fragments including the following information:
    a. The material composition, size, and location of the fragment (if known);
    b. The potential mechanisms for injury, e.g., migration, infection;
    c. Procedures or treatments that should be avoided such as MRI exams in the case of metallic fragments. This may help to reduce the possibility of a serious injury from the fragment.

MR Safety Information

MR Conditional, if applicable, is determined by experimental testing and is denoted on a product's immediate package labeling by the MR Conditional symbol. Once an unevaluated component is added to the system, the entire system becomes unevaluated. There are inherent risks associated with the use of metallic implants in the MR environment; including component migration, heat induction, and signal interference or distortion near the component(s). Heat induction of metallic implants is a risk related to component geometry and material, as well as the MR power, duration, and pulse sequence. Since MR equipment is not standardized, the severity and likelihood of occurrence are unknown for these implants.

MicroPort Knee Systems that do not possess the MR Conditional symbol on the package label have not been evaluated for safety and compatibility in the MR environment. MicroPort Knee Systems have not been tested for heating, migration, or image artifact in the MR environment. The safety of these devices in the MR environment is unknown. Scanning a patient who has these devices may result in patient injury. These components are passive metallic devices, and as with all passive devices, there is potential for reciprocal interference with certain imaging modalities; including image distortion for MR and X-ray scatter in CT.

MicroPort Knee Systems that do possess the MR Conditional symbol on the package label have been experimentally tested in the following conditions. Non-clinical testing has demonstrated that items bearing the MR Conditional symbol on the package label are MR Conditional. A patient with this device can be safely scanned in an MR system meeting the following conditions:

- Static magnetic field of 1.5-Tesla and 3.0-Tesla, only
- Maximum spatial gradient magnetic field of 2,000-Gauss/cm
- Maximum MR system reported, whole body averaged specific absorption rate (SAR) of < 2W/kg (Normal
- Operating Mode) for patient landmarks above the acetabulum and <0.5W/kg for patient landmarks below the acetabulum.
- Under the scan conditions with a SAR of 2W/kg, the MicroPort knee devices bearing the symbol for MR
- Conditionality are expected to produce a maximum temperature rise of 10.9°C at 1.5 Tesla/64 MHz and
- 5.4°C at 3.0 Tesla/128 MHz after 15 minutes of continuous scanning.
- The effect of local RF transmit coils have not been tested and are not recommended in the area of the implant.

In non-clinical testing, the image artifact caused by the assembled MicroPort Knee device extends approximately 50 mm from the device assembly when imaged with a gradient echo pulse sequence and a 3.0 Tesla MRI system.

Adverse Effects Can Include:

1. Osteolysis (progressive bone resorption). Osteolysis can be asymptomatic, and therefore, routine periodic radiographic examination is vital to prevent any serious future complication;
2. Particulate generation leading to increased wear rates necessitating early revision. Soft tissue imbalance leading to excessive wear;
3. Allergic reactions to materials; metal sensitivity that may lead to histological reactions;
4. Delayed wound healing; deep wound infection (early or late) which may necessitate removal of the prosthesis. On rare occasions, arthrodesis of the
   involved joint or amputation of the limb may be required;
5. A sudden drop in blood pressure intraoperatively due to the use of bone cement;
6. Damage to blood vessels or hematoma;
7. Temporary or permanent nerve damage, peripheral neuropathies and subclinical nerve damage as possible result of surgical trauma resulting in pain or numbness of the affected limb;
8. Cardiovascular disorders including venous thrombosis, pulmonary embolism, or myocardial infarction;
9. Dislocation, migration and/or subluxation of prosthetic components from improper positioning, trauma, loss of fixation and/or muscle and fibrous
   tissue laxity;
10. Periarticular calcification or ossification, with or without impediment to joint mobility;
11. Varus-valgus deformity;
12. Traumatic arthrosis of the knee from intraoperative positioning of the extremity;
13. Inadequate range of motion due to improper selection or positioning of components, periarticular calcification, flexion contracture;
14. Femoral, tibial or patellar bone or component fracture intraoperatively or postoperatively; fracture by trauma or excessive loading, particularly in the
    presence of poor bone stock;
15. Undesirable shortening or lengthening of the limb;
16. Aggravated problems of the affected limb or contralateral extremity by leg length discrepancy, excess femoral medialization, or muscle deficiency;
17. Pain.

Surgery Preparation

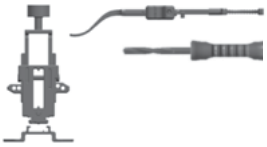
SIZE SPECIFIC COMPONENT PART NUMBERS ARE REPRESENTED WITH X'S THROUGHOUT THIS SURGICAL TECHNIQUE.

A 1.3mm (.05") thick saw blade is recommended for resections.

9.5 mm (3/8") diameter drill (E5001002)

T-handle (E5001001) and IM rod (E5001003) with valgus module (E1101001, E1100357, E1000010)

Ensure proper resection guide is set at appropriate valgus angle and the bushing is rotated with the correct side designation



Sizing caliper (E1100101), caliper feet (E110013X), caliper stylus (E1100112) & 3.2mm drill bit (E1000201)

Ensure the "Left" side is facing out for a left knee. This means the "Right" side is against the resected distal surface. For a right knee, the "Right" side is facing out.

4-in-1 resection guide (E12041XX) with posterior condylar gauge (E1200113) and dual reference "angel wing" gauge (E5001006)

Ensure the 4-in-1 resection guide is set to "0."

3.5mm hex screwdriver (E5001005)

Slaphammer (E5002001) with attached extraction boss (E5002002)

Femoral trial (E130XXXX), patella cap (E13050XX), femoral holder driver (E10051X3 or E10051X7), femoral finishing impactor (E10051X1) and handle

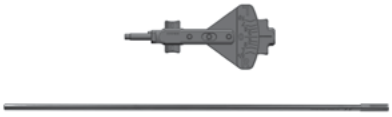
Extramedullary tibial alignment guide (E2102001), standard proximal rod (E2102002), adjustment barrel (E2102006), tibial resection crosshead (K004007L or K004007R), and stylus (E2100210)

(IM guide not pictured)

Tibial base trials (E2302XXX), trial base handle (E2001020), and anchoring pins

Keel punch tower (E2004028)

Keel punch (E2005XXX) and handle (E2000001)



External alignment guide with slope gauge (E5101000) and drop rod

P/N E5001002

P/N E5001003

P/N E5001003

Surgical Technique

Preparation of the Distal Femur

Starter Hole Preparation

Initiate an opening in the femoral canal with the 9.5 mm (3/8”) diameter drill (E5001002). The hole may be placed medial and anterior to the anteromedial corner of the intercondylar notch, in the center of the trochlear groove, or 1 cm (.4”) anterior to the PCL origin. | FIGURE 1

FIGURE 1

Alignment Rod Insertion

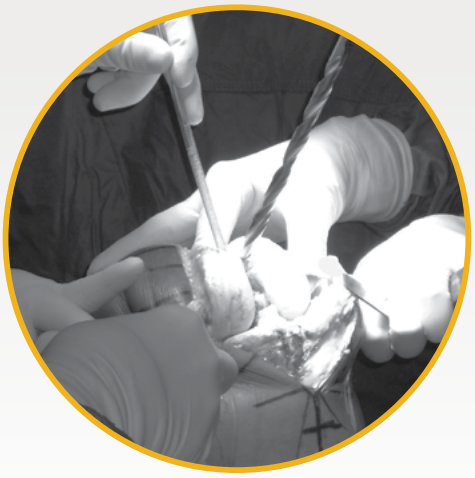
Insert the fluted IM reamer/rod (E5001003) into the femoral canal, being sure to irrigate and aspirate several times to reduce the chance of a fat embolus. Turn the reamer during insertion with the T-handle (E5001001). | FIGURE 2

FIGURE 2

Efficiency Suggestion

Some surgeons prefer the distal femoral alignment guide (E1101001), valgus busing (E1100357) and resection guide (E1000010) pre-loaded on the IM rod (E5001003) before it is introduced into the femur. After insertion, the T-handle (E5001001) is maintained on the rod for faster rod removal after the resection block (E12041XX) is pinned. | FIGURE 3

FIGURE 3



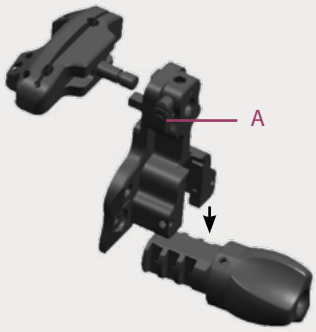
Retractors and placement:

- Knee should be in >90° flexion
- “Z” Retractor - superior lateral on femur to lift skin out of way of distal resection guide
- “Z” Retractor - medial on femoral condyle or tibia to protect collateral ligament

IMPORTANT NOTE: All Evolution® femoral resection slots are designed for use with a .050" (1.3 mm) thick saw blade. Wide 1" (25.4mm) saw blades are recommended for the distal resection.

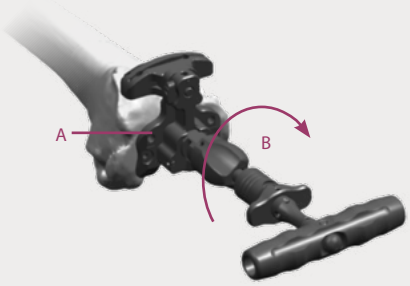
Distal resection guides are available in 10mm (E1000010), 12mm (E1000012), and 10 & 14mm (E1000114). Load the appropriate distal resection guide onto the distal femoral alignment guide (E1101001) and lock them together by pushing the locking button from left to right. | **A IN FIGURE 4** A lock icon will be visible. Insert the distal femoral alignment guide (E1101001) onto the valgus bushing (E1100357). | **FIGURE 4** The valgus bushing (E1100357) has both a "Left" and "Right" side, and has three slots which allow 3°, 5°, or 7° of valgus. Ensure the "Left" side of the bushing is facing up for a left knee, and the "Right" side is facing up for a right knee.

FIGURE 4



Slide the valgus bushing (E1100357) down the IM rod (E5001003) toward the T-handle (E5001001) connection. Insert the fully assembled IM rod into the intramedullary canal until the distal femoral alignment guide (E1101001) rests against the unresected prominent distal condyle. | **FIGURE 5** Although rotation is not critical at this step, the distal femoral alignment guide (E1101001) features two lines which may be aligned with the epicondyles. | **A IN FIGURE 5** Lock the valgus bushing (E1100357) to the IM rod (E5001003) by turning the knob until it is tight. | **B IN FIGURE 5**

FIGURE 5



Retractors and placement:

- Knee should be in >90° flexion
- "Z" Retractor – Posterior lateral on femur
- Bent Hohmann – Antero-lateral on femoral cortex

P/N E1000010

P/N E1000012

P/N E1000114

P/N E1101001

P/N E1100357

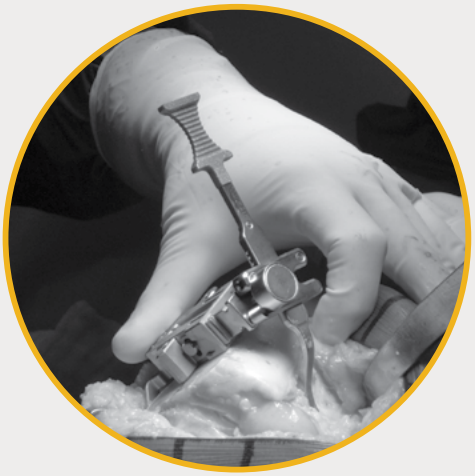


FIGURE 6

FIGURE 7

Retractors and placement:

- Knee should be in >90° flexion
- "Z" Retractor – Posterior lateral on femur
- Bent Hohmann – Antero-lateral on femoral cortex

Pin the distal resection guide (E1000XXX) to the anterior cortex with two headless pins through the "STD" holes. These are the most proximal holes on the guide. If the pins are left too proud, they may impinge on the saw and prevent full saw penetration. Push the locking button to detach the resection block and remove the IM rod (E5001003), distal femoral alignment guide (E1101001) and valgus bushing (E1100357). Use of a divergent pin is recommended to prevent the distal resection guide (E1000XXX) from vibrating off the pins during resections. In the absence of a divergent pin, a kocher can be clipped to the pin to provide stability. | FIGURE 6

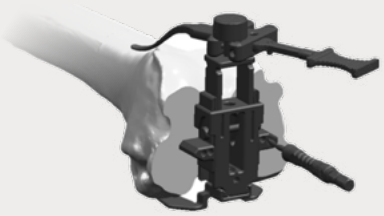
NOTE: At this point the proximal tibia may be resected. This allows easier placement of the femoral sizing caliper under the posterior condyles.

Femoral Sizing and Rotation

The caliper must be set for the appropriate knee. For example: If used on a right knee, the "Right" marking must be facing the observer and the "Left" marking should be against the bone. To set the caliper for the opposite knee, remove the posterior feet, rotate the caliper and reinsert the feet. | FIGURE 7

Place the sizing caliper (E1100101) flush against the resected distal femur. Adjust the sizer so the posterior feet (E110013X) rest against the posterior condyles. The stylus (E1100112) should be set to the expected femoral size (femoral size is presumed based on preoperative templating) and clipped to the medial side of the caliper. The stylus (E1100112) size markings are read through the hole in the stylus body. | **A IN FIGURE 8**.

FIGURE 8

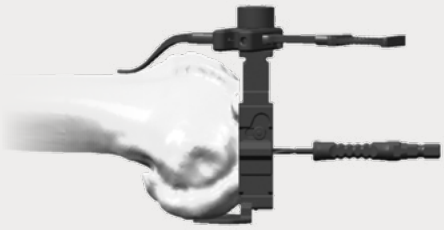


P/N E1100101

P/N E110013X

Ensure the caliper (E1100101) rests flat on the distal surface. | **FIGURE 9**

FIGURE 9

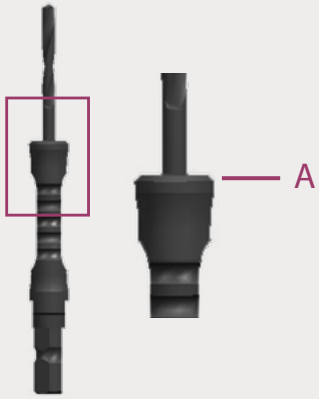


P/N E1100112

P/N E1000201

The tip of the stylus (E1100112) should touch the most prominent aspect of the anterior cortex just proximal to the lateral anterior condyle. The femoral size is read through the windows in the anterior face of the sizing caliper (E1100101). Sizes are represented by shaded areas. The 4-in-1 resection block (E12041XX) preparation holes are drilled through the 3° holes with the 3.2 mm (1/8”) drill bit (E1000201) which features a shoulder at the correct depth. | **A IN FIGURE 10**

FIGURE 10



P/N E12041XX

FIGURE 11

The preparation of the holes will set 3° of external rotation relative to the posterior condylar axis. In a severe varus or valgus knee, the posterior condylar axis may not be a reliable reference for femoral rotation; instead, rotation may be set visually by referencing the A/P axis or epicondyles. If rotation must be set visually, the caliper (E1100101) features a central window with crosshairs. With the sizing caliper (E1100101) resting on the distal resection, the crosshair may be aligned with the A/P axis or the epicondyles. | **FIGURE 11** Once aligned, the peg holes are drilled through the 0° holes.

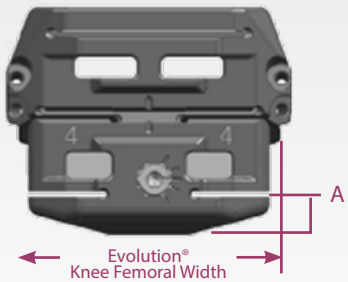
Retractors and placement:

- Curved single-prong Hohmann – Superior-lateral on femoral cortex
- "Z" Retractor – Posterior lateral on femur
- "Z" Retractor – Posterior medial on femur to protect medial collateral ligament

Anterior and Posterior Resections

NOTE: Take care to protect the collateral ligaments during resections.

FIGURE 12



Select the 4-in-1 femoral resection block (E12041XX) corresponding to the size indicated by the femoral sizing caliper (E1100101) . Make sure the 4-in-1 femoral resection block (E12041XX) is set to zero at the beginning of the case. Place the pegs on the back of the femoral resection block (E12041XX) into the holes drilled through the sizing caliper (E1100101). The femoral resection blocks (E12041XX) may be used to double-check the femoral size. The width of the resection block (E12041XX) on the step just posterior to the level of the pinholes represents the width of the femoral component. The distance from the top of the posterior slot to the central bottom portion of the guide represents the thickness of the posterior condyles of the implant. | **A IN FIGURE 12**

To ensure appropriate posterior condyle resection, utilize the posterior condylar gauge (E1200113). | FIGURE 13 The inside of the gauge equals the thickness of the implant posterior condyles (10mm for sizes 1-4; 11mm for sizes 5-8). The thickness of the outside of the gauge equals approximately 2mm more (12mm for sizes 1-4; 13mm for sizes 5-8). It is recommended to remove 2mm more bone than the implant thickness from the medial side during the posterior resection.

To ensure an appropriate anterior resection, utilize the dual reference “angel wing” gauge (E5001006). If it appears too much or too little of the posterior condyles are being removed or that there will be anterior notching, the 4-in-1 femoral resection block (E12041XX) may be adjusted up to 2mm (.08”) anterior or posterior with the 3.5mm hex head screwdriver (E5001005). Place the screwdriver (E5001005) into the adjustment dial and push the dial inward, then turn the dial in increments of 1mm. | FIGURE 14

If rotation of the femoral resection block (E12041XX) must be adjusted, utilize the 2-degree re-drill guide (E1100002). Remove the femoral resection block (E12041XX) and insert the re-drill guide (E1100002) into the peg holes. Re-drill the holes in the desired rotation and reinsert the femoral resection block (E12041XX). | FIGURE 15

FIGURE 13

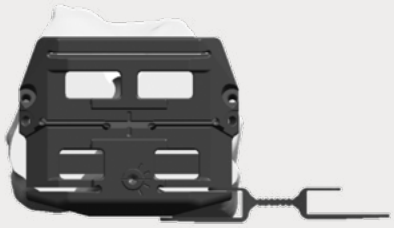
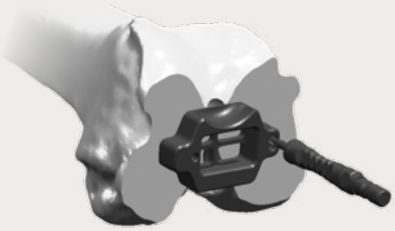


FIGURE 14

FIGURE 15



P/N E1200113

P/N E5001006

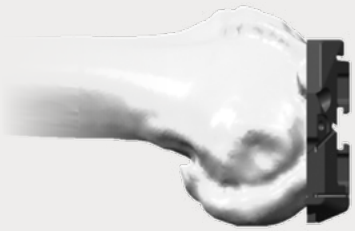
P/N E5001005

P/N E1100002

P/N E5002001

P/N E5002002

FIGURE 16



Ensure the resection block (E12041XX) rests flat on the distal surface. | FIGURE 16

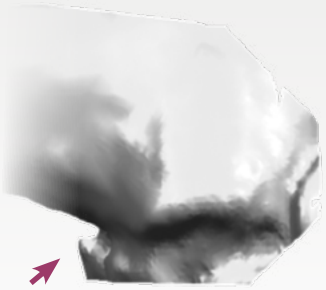
FIGURE 17

Stabilize the block (E12041XX) against the bone using four 3.2 mm (1/8”) diameter pins on the medial and lateral sides of the block (E12041XX). | FIGURE 17 If two pins are preferred, place one pin low and the other high contralaterally. The recommended order of resection is: anterior, posterior, posterior chamfer, anterior chamfer. After resections have been made, the pins are withdrawn, and the block (E12041XX) is removed with the slaphammer (E5002001) and the extraction boss (E5002002). | FIGURE 18

FIGURE 18

FIGURE 19

Care should be taken to remove posterior condylar osteophytes to avoid impingment with the posterior portion of the tibial component. |FIGURE 19



osteophyte

Tibial Preparation

The eMP™ tibial resection guides are designed for use with a 1.3 mm (.05”) thick saw blade.

Extramedullary Tibial Resection

Assemble the extramedullary tibial resection guide by erecting the distal tower portion of the ankle clamp (E2102001) | FIGURE 20 and inserting the standard proximal rod (E2102002) with the adjustment barrel (E2102006) into the distal tower. A short proximal rod (E2102005) and a spiked proximal rod (E2102013) are also available. Attach the appropriate tibial resection crosshead (K004007R for “right”, K004007L for “left”) to the proximal rod using the adjustment barrel (E2102006). | FIGURE 21 For positioning, unlock the barrel (E2102006) by sliding the unlock button down and in to allow for height adjustment. Once the needed height is met, push in the lock button and spin the adjustment barrel (E2102006) to fine tune. The distance between each line on the short (E2102005), standard (E2102002) and spiked (E2102013) proximal rod is 2mm. Place the ankle clamp (E2102001) around the ankle and position the tibial resection crosshead (K004007X) close to the tibia by sliding the distal tower toward the shaft of the tibia. The varus/valgus alignment of the extramedullary guide may be adjusted to match the tibial axis by using the left – right adjustment feature on the ankle clamp. | A IN FIGURE 21 Tighten the large distal knob to secure its position. | B IN FIGURE 21

If the spiked proximal rod (E2102013) is used, place the longer (posterior) spike into the center of the proximal tibia, adjust the internal-external rotation of the guide, then drive both spikes into the tibia with a mallet. | FIGURE 22

FIGURE 20

FIGURE 21

FIGURE 22

P/N E2102001

P/N E2102002

P/N E2102005

P/N E2102006

P/N E2102013

P/N K004007L

P/N K004007R

P/N E2100210

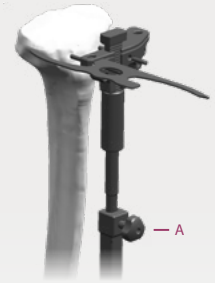
FIGURE 23

When the vertical axis of the extramedullary tibial resection guide is parallel to the tibial axis, the tibial resection crosshead (K004007X) is set for 3° of posterior slope. For an anatomically sloped resection, place the dual reference gauge (E5001006) or a saw blade in the cutting slot and adjust the long axis of the EM guide by loosening the ankle screw on the right side of the ankle clamp and pulling the distal end of the guide away from the ankle. | **C IN FIGURE 21** Adjust the guide until the cutting slot angle matches the anatomic slope of the tibia. Depress the button on the tibial stylus (E2100210) to place it into one of the holes (medial or lateral) on the resection crosshead (K004007X). | **FIGURE 23**

FIGURE 24

Generally the stylus (E2100210) is set to resect 2mm from the most deficient side and/or 10mm from the most prominent. The stylus can also be rotated to take 4mm of bone. The number in the upright position represents the resection depth. | A IN **FIGURE 24** Pin the resection guide to the proximal tibia through the STD holes using headless pins. The dual reference gauge (E5001006) may also be used to check how much bone is to be removed. | **FIGURE 25**

FIGURE 25



To remove the alignment guide, spin the adjustment barrel (K0040109) to release the resection crosshead (K004007X). Loosen the knob at the top of the distal tower | **A IN FIGURE 25** and raise the proximal rod up to pull out from the crosshead (K004007X).

FIGURE 26

Remove the proximal rod (E21020XX) and the ankle clamp (E2102001). The spiked proximal rod (E2102013) is removed using the slaphammer (E5002001) and the extraction boss (E5002002). | **FIGURE 26**

Varus/valgus angulation can be checked to the ankle using the external alignment guide (E5101002) | FIGURE 27 or the external alignment guide with slope gauge (E5101000). | FIGURE 28 If using the external alignment guide with slope gauge (E5101000), slope can be approximated by aligning the alignment rod (E5101001) parallel to the shaft of the tibia. | FIGURE 29

Once the resection guide is detached from the EM guide, it can be moved distally 2mm if headless pins are used. The top surface of the resection guide can also be used to resect the tibia and is 4 mm proximal to the distal surface of the captured slot. Use of a divergent pin is recommended to prevent the resection block from vibrating off the pins during resections. In the absence of a divergent pin, a kocher can be clipped to the pin to provide stability.

To fold the distal tower of the ankle clamp (E2102001), fully loosen the large distal knob. Hold the left – right adjustment portion to the ankle clamp, slide the distal tower toward the large knob, and fold the distal tower. | FIGURE 30

FIGURE 27

FIGURE 28

FIGURE 29

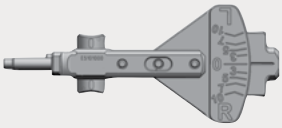
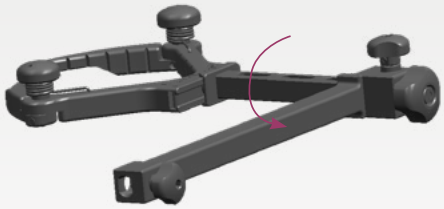


FIGURE 30



P/N E5101002

P/N E5101000

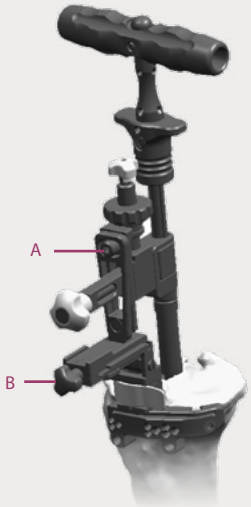
P/N E5101001

P/N E2101012

Intramedullary Tibial Resection

Efficiency Suggestion: Some surgeons prefer the tibial crosshead (E220100R or E220100L) and IM alignment guide (E2101012) to be pre-loaded on the IM rod (E5001003) before it is introduced into the tibial canal. After insertion, the T-handle (E5001001) is maintained on the IM rod (E5001003) for easierrod removal.

FIGURE 31

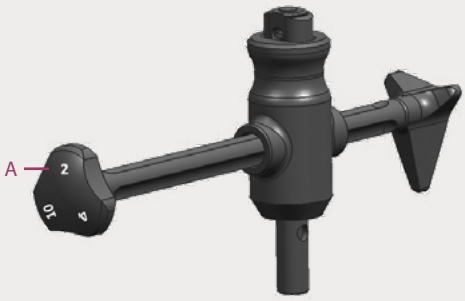


The 3/8” (9.5 mm) drill bit (E5001002) is used to penetrate the proximal tibia just posterior to the tibial ACL attachment. Insert the fluted IM reamer/rod (E5001003) into the tibial canal, constantly turning the T-handle (E5001001). | FIGURE 31

Irrigate and aspirate several times to reduce the chance of a fat embolus. The IM rod (E5001003) with assembled IM guide (E2101012) should be inserted to at least the mid isthmus. Turn the gold anterior lock knob to secure the guide to the IM reamer/rod. Use the varus/valgus screw to set the desired varus/valgus angle with the 3.5mm hex driver (E5001005). | A IN FIGURE 31 Set the posterior slope using the posterior slope adjustment knob. | B IN FIGURE 31 The crosshead is neutral and does not contribute any additional slope tothe resection.

Place the tibial stylus (E2100210) into the medial hole on the resection guide (E220100R or E220100L) to set the desired level of tibial resection. Turn the tibial stylus (E2100210) knob to set the desired level of resection. The number in the upright position represents the resection depth. | **A in FIGURE 32**

FIGURE 32



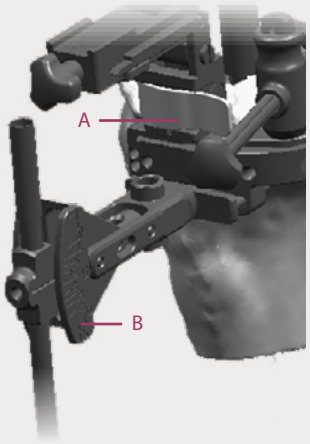
P/NE2100210

P/NE220100R

P/N E220100L

Generally the stylus is set to resect 2mm from the most deficient side and/or 10mm from the most prominent. Pin the resection guide (E220100X) to the proximal tibia through the "STD" holes. Using the release lever, release the resection guide (E220100X) from the intramedullary alignment guide (E2101012). | **A IN FIGURE 33** The rest of the alignment guide assembly will remain connected to the IM rod (E5001003) and can be removed all at once by pulling up on the T-handle (E5001001).

FIGURE 33



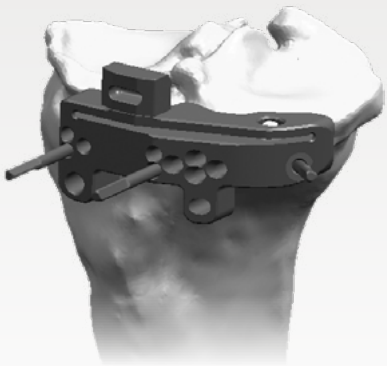
P/N E5101000

P/N E5101001

Varus/valgus angulation can be checked to the ankle using the external alignment guide with slope gauge (E5101000) and alignment rod (E5101001). With the alignment rod (E5101001) parallel to the tibia, posterior slope can be measured. | **B IN FIGURE 33**

Ensure the tibial resection guide (E220100X) is adjacent to the tibia and place a divergent pin. | **FIGURE 34**

FIGURE 34



Refer to Figure 35 for breakdown of IM Guide and for detail of the resection guide.

FIGURE 35

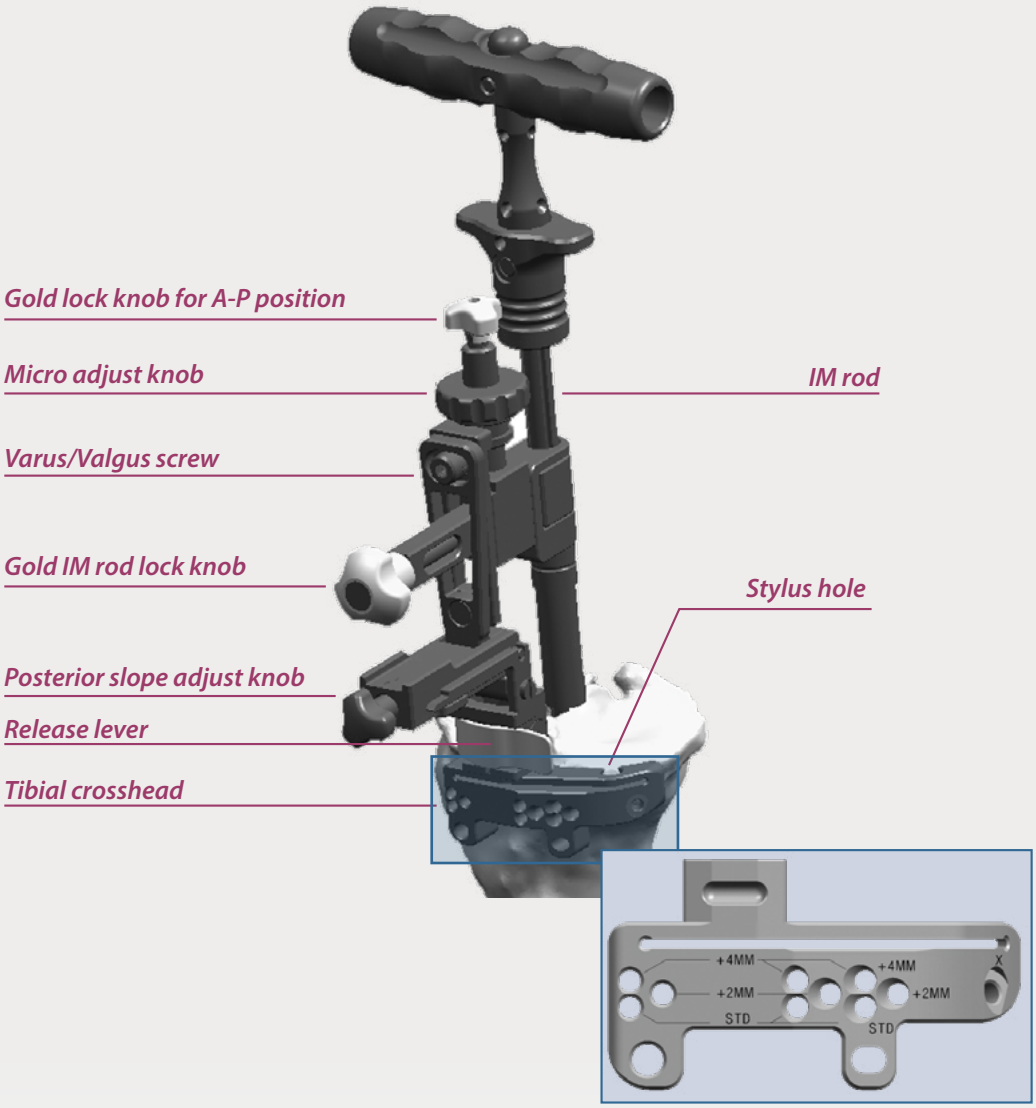
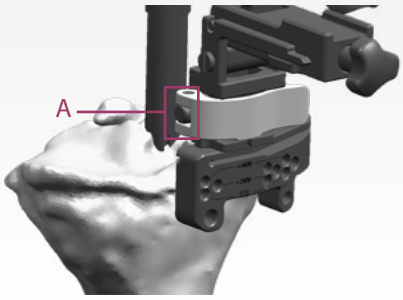


FIGURE 36



NOTE: Lubrication of the crosshead connection cam hinge is particularly important to maintenance of the mechanism. Regular lubrication with surgical-grade lubricant intended for heat sterilized medical instruments per cleaning instructions (document 130561) should be part of the routine instrument maintenance. | A IN FIGURE 36

Flexion/Extension Blocks

P/N E50010XX

Flexion/Extension blocks are not part of the standard kit. They can be ordered under kit # E200KT20.

The flexion/extension gaps are measured following the femoral and tibial resections. With the knee flexed at 90°, insert the 10mm flexion block (E50010XX) into the space between the posterior femoral resection and proximal tibial resection. | FIGURE 37 If the 10mm spacer block (E50010XX) does not fit in flexion, additional tibial resection or a smaller femoral size may be needed. After the flexion gap has been determined, place the leg in extension. Insert the 10mm extension block (E50010XX) into the space between the distal femoral resection and the proximal tibial resection. | FIGURE 38 If the 10mm spacer block (E50010XX) does not fit, additional distal femoral bone resection may be required to achieve full extension. The spacer blocks indicate the thickness of the appropriate tibial insert and are available for all insert thicknesses. The thickness of the femoral condyles, tibial base, and tibial insert are built into the spacer block thickness.

Refer to | FIGURE 39 for more information on flexion/extension gaps.

FIGURE 37

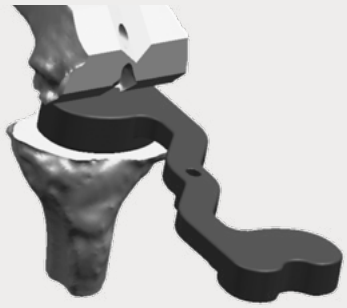


FIGURE 38

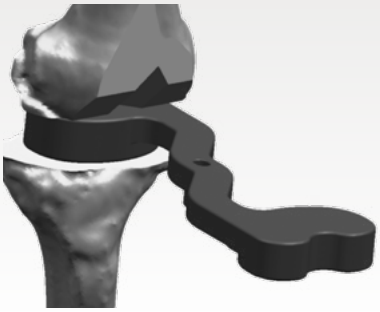


FIGURE 39

FLEXION	EXTENSION: TIGHT	EXTENSION: OK	EXTENSION: LOOSE
TIGHT	Downsize poly insert Cut more tibia	Cut more posterior condyle (Resulting in smaller femoral componet)	Cut more posterior condyle (Resulting in smaller femoral componet)
OK	Recut distal femur	No adjustment necessary	Cut more posterior slope and use thicker poly
LOOSE	Recut distal femur and use thicker poly (If necessary)	Change may not be necessary. Ball-in-socket design accommodates for slight laxity in flexion If necessary, recut distal femur and use thicker poly	Change may not be necessary. Ball-in-socket design accommodates for slight laxity in flexion Use thicker poly

P/N E23020XX

P/N E2001020

P/N E2001020

P/N E2004028

P/N E2001238

P/N E2001138

FIGURE 40

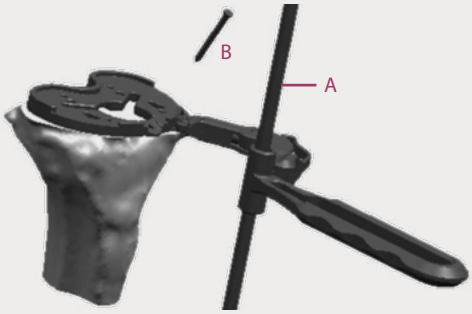


FIGURE 41

Tibial Sizing, Keel Preparation, and Trial Reduction

The eMP™ Knee System allows 1-up, 1-down interchangeability. (See page 32 for interchangeability information.)

Assemble the appropriate trial tibial base (E2302XXX) to the trial base handle (E2001020) and place it against the proximal tibial surface. The alignment rod (E5101001) can be inserted through the handle (E2001020) to check alignment to the ankle. | A IN FIGURE 40 Align the base (E2302XXX) (generally to the medial one-third of the tibial tubercle). The base (E2302XXX) may be pinned to the tibia using short headed anchoring pins (K0002007) through the holes with vertical lines. | B IN FIGURE 40

Align the four spikes on the keel punch tower (E2004028) with the corresponding holes on the trial base (E2302XXX) and impact the guide with a mallet until the guide is seated on the surface of the trial base (E2302XXX). In the event of hard tibial bone, before punching, prepare the entry hole for the tibial stem using the 15mm (1/2”) cemented or cement free reamer. Separate reamers are available for sizes 1, 2 and sizes 2+ through 8+. For the size 2+ through 8+ cemented reamer (E2001238) or the size 2+ through 8+ cement free reamer (E2001138), ream to the first line on the reamer for a size 2+, 3 or 4 base, to the second line for a 5 or 6 base, and to the third line for a 6+, 7, 8 or 8+ base. | FIGURE 41

NOTE: Make sure cemented or cement free reamers, towers, and keels all match.

Retractors and placement:

- Knee should be placed in 90° of flexion.
- Retractors and placement:
- Curved Single Prong Hohmann – on lateral tibia to cover patella and protect soft tissues
- “Z” Retractor – on medial tibia to expose tibia and protect the medial collateral ligament
- Cobb Elevator – subluxes tibia forward

For leave-in keel punches, assemble the appropriate size keel punch (E2005XXX) to the keel punch handle (E2000001) by pulling back on the trigger mechanism of the handle (E2000001) and inserting it into the opening on the punch (E2005XXX). | FIGURE 42 The keel punch handle (E2000001) is impacted with a mallet until fully seated and the bottom edge of the handle (E2000001) aligns with the top of the keel tower (E2004028). | FIGURE 43

FIGURE 42

P/N E2005XXX

P/N E2000001

FIGURE 43

P/N E5002003

FIGURE 44

FIGURE 45

FIGURE 47

The handle (E2000001) is released from the punch (E2005XXX) by pulling back on the handle's trigger mechanism. The keel punch tower (E2004028) is removed with the slaphammer (E5002001) and the extraction boss (E5002002) | FIGURE 44 or hook (E5002003) | FIGURE 45, leaving the tibial base and keel punch (E2005XXX). | FIGURE 46 If desired, the lines on the anterior portion of the trial bases can be marked to aid with alignment of the final tibial base implant.

Trochlear Groove Resection for CS/CR Femoral Components (Sizes 1-2)

The trochlear groove resection for sizes 3-8 CS/CR femoral components is made through the femoral trial and is performed after the tibial bone has been prepared.

Select the sulcus resection guide (E120100X) corresponding to the size indicated by the sizing caliper (E1100101). Place the sulcus resection guide (E120100X) on the femur. | FIGURE 47 The width of the distal aspect of the guide (E120100X) is the same M/L width as the femoral implant, and the lateral proximal edge represents the lateral edge of the implant and dictates the final implant location. | FIGURE 48 Place the guide (E120100X) along the lateral edge of the femur to reproduce the natural Q-angle. Pin the guide using two collared pins. | A in Figure 47 The trochlear groove should be resected by using a 12.7mm (1/2") sawblade on the angled surface and along the sides of the central portion of the guide (E120100X).

The peg holes for the implant are prepared during the femoral trialing step. It is not necessary to drill through the 4.8mm (3/16") distal holes on the sulcus guide (E120100X) to prepare final peg holes. If a femoral re-cut is necessary, the 4-in-1 femoral resection guide (E12041XX) cannot be remounted onto the femur due to the 3.2mm (1/8") pegs on the back of the guides (E12041XX).

Refer to page 35 for instructions on re-cutting the distal femur.

FIGURE 47

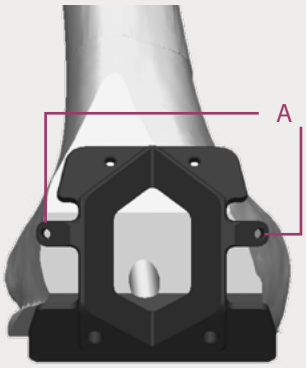


FIGURE 48

P/N E120100X

P/N E10051X3

P/N E130XXXX

P/N E5005001

FIGURE 50

FIGURE 51

Trochlear Groove Resection for CS/CR Femoral Components (Sizes 3-8)

The femoral holder driver (E10051X3 or E10051X7) may be used to seat the femoral trial (E130XXXX) and the final implant. There is a separate holder driver for each type of femur CS/CR (E10051X3). | FIGURES 50 Assemble the appropriate holder driver to the modular impaction handle (E5005001). | FIGURE 51

Loosen the knob to retract the impactor pad housing to expose the intracondylar hook. Place the intercondylar hook on the appropriate size femur as shown. Use the knob to tighten the holder driver to the femoral trial/ implant. Many surgeons lateralize the femoral component to reproduce the natural Q-angle. Fully seat the femoral trial against the bone. | FIGURE 52

P/N E10051X3

P/N E130XXXX

P/N E5005001

FIGURE 52

P/N E10051X1

P/N E1000301

P/N E1051022

FIGURE 53

FIGURE 54

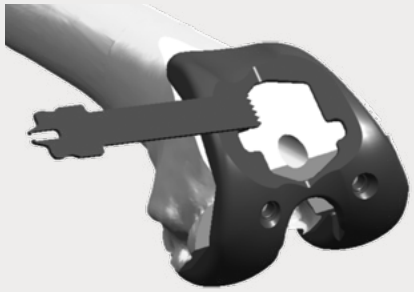


FIGURE 55

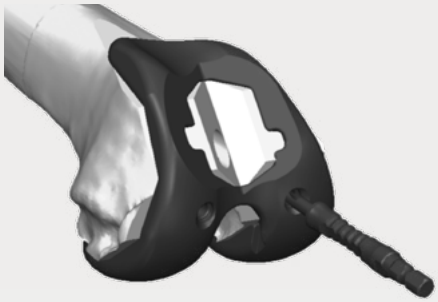
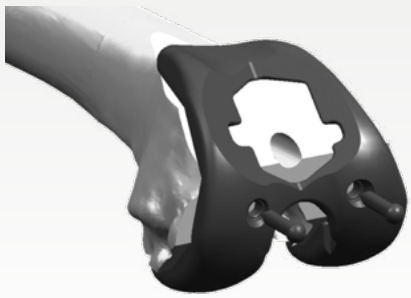


FIGURE 56



Impaction of the trial femur is made with the femoral finishing impactor (E10051X1). | FIGURE 55 Resect the trochlear bone using the V-shaped flat on the CS/CR femoral trial as a guide. | FIGURE 54 Prepare the final peg holes for the implant by drilling the distal holes on the femoral trial with the 4.8mm (3/16") drill bit (E1000301). The bit features a collar at the correct depth. | FIGURE 55 Femoral trial pins (E1051022) may also be used to prepare for the pegs on the final implant. | FIGURE 56

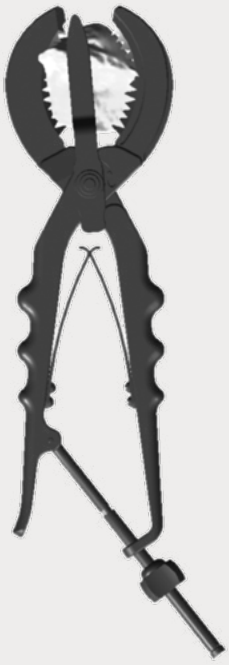
CAUTION: Be careful not to plunge the saw blade past the intended V-shaped trochlear groove resection. This can possibly lead to stress risers on the distal femur and periprosthetic fractures of the bone.

Patella Preparation

Choose the appropriate patella resection depth stylus. The 6mm (E4202002) and 8mm (E4202001) resection depth gauge come standard in the patella kit. Attach the resection depth gauge to the top of the resection guide (E4202000). | **A IN FIGURE 57** Position the resection guide (E4202000) jaws parallel to the articular margin and securely clamp the guide to the bone; ensuring the gauge is contacting the apex of the articular surface. | **FIGURE 58** Remove the gauge (E420200X) and make the patellar resection.

FIGURE 57

FIGURE 58



P/N E4202002

P/N E4202001

P/N E4202000

P/N K0031109

P/N K0031104

P/N K0031103

P/N E4001015

P/N E4001035

P/N E4001008

Attach the single peg (K0031109) or tri-peg (K0031104) drill guide to the patellar clamp (K0031103). | **A IN FIGURE 59** The drill guides have grooves on their surfaces indicating the patellar diameter options. The single peg (E4001015) or tri-peg (E4001035) drill is used to prepare the peg hole(s). The single peg and tri-peg patella componets have the same peg position between sizes and can be easily changed during trial reduction. The patellar implant can be held in place while the cement cures using the parallel patellar clamp (K0031103) and implant seater (E4001008). | **FIGURE 60**

The surgical technique for the patella reaming system (K100KT75) can be found in the Addendum on page 40.

FIGURE 59

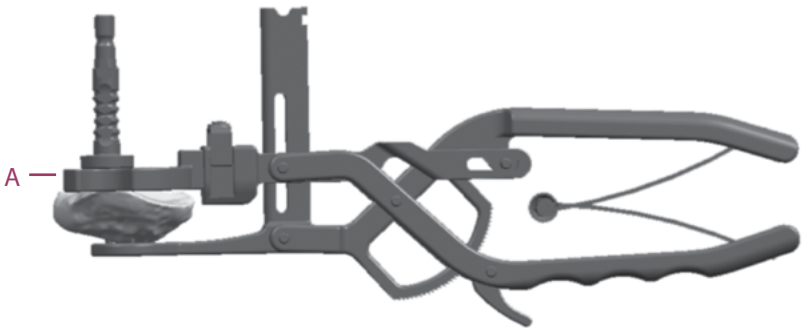
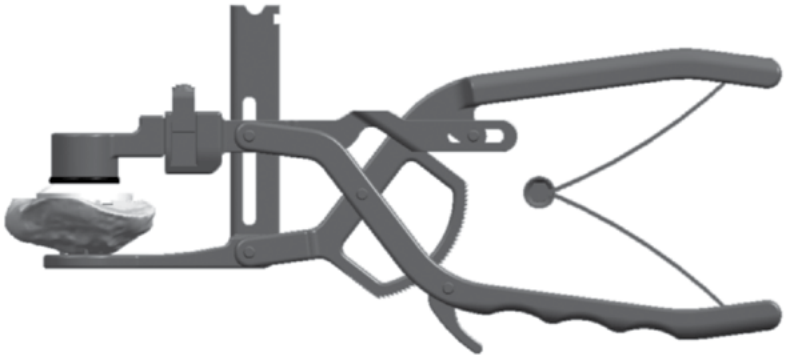


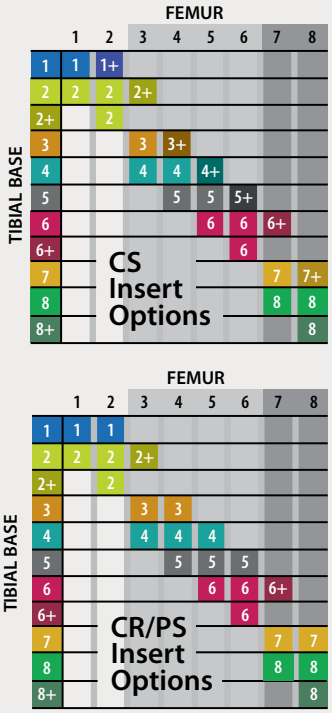
FIGURE 60



Trial Reduction and Implant Insertion

The eMP™ system allows for 1 size mismatch between the femur and tibia for all styles. Refer to the sizing chart below for size interchangeability and see the implant specification charts at the end of this surgical technique for a more detailed look at the options available for use. | FIGURE 61 Be aware of the size 2+ and 6+ tibial bases; these are required for the articular surface groupings built into this system.

FIGURE 61



P/N K13050XX

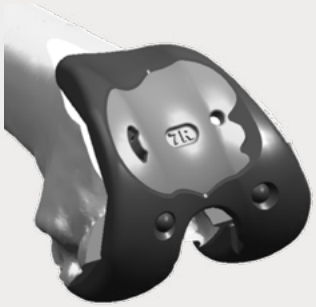
P/N E3XXXXXX

Trial Reduction

CS/CR TRIAL REDUCTION

Place the appropriate size CS/CR femoral trial patella cap (E13050XX) on the femoral trial. | FIGURE 62

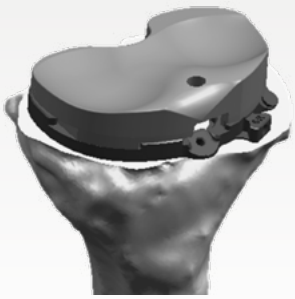
FIGURE 62



Insert the trial tibial insert (E3XXXXXX) of the appropriate size and thickness onto the trial base (E2302XXX) and complete the trial reduction. | FIGURE 63

NOTE: When assembling the tibial insert trial (E3XXXXXX), slightly angle the insert trial with some posterior slope during insertion to clear the anterior lip of the trial base (E2302XXX).

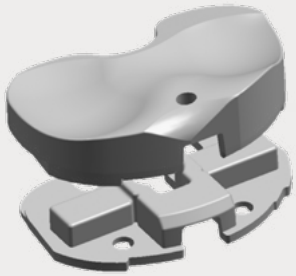
FIGURE 63



P/N E340XXXX

P/N ETPKNXXX

FIGURE 64



To achieve an insert trial with a thickness of more than 14mm, use the trial insert spacers (E340XXXX) which make 17mm, 20mm and 24mm increments. Trial insert spacers work in conjunction with the size 14mm insert trials. | FIGURE 64 Trial inserts (E3XXXXXX) may be assembled in conjunction with the final tibia base implant (ETAKNXXX) to allow the surgeon to continue to trial.

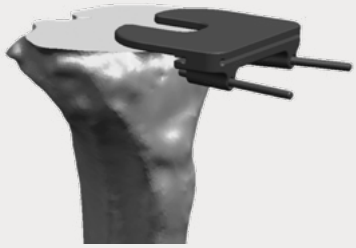
FIGURE 65

After the trial reduction is complete, remove the femoral trial (E130XXXX), along with the femoral trial pins (E1051022), with the slaphammer (E5002001) by sliding the extraction boss (E5002002) into the slot between the femoral condyles. | FIGURE 65 During removal, keep one hand on the trial (E130XXXX) to control its extraction.

2mm Recut Guide, 2° Posterior Slope Recut Guide and 2° Varus/Valgus Recut Guide

These guides are generally employed to alter the proximal tibial resection. The holes on all guides are convergent and do not correlate to the holes on the distal femoral or proximal tibial resection guides. To position the guides, place the wings on the resected surface with the resection slot touching the edge of the surface. | FIGURE 66 Pin the guide while applying downward pressure on the surface to prevent it from raising up during pinning.

FIGURE 66



P/N E2201002

P/N E2201020

P/N E2201010

P/N E1101007

Re-cutting the Distal Femur

Assemble the T-handle (E5001001), IM rod (E5001003), valgus bushing (E1100357), and 10mm distal resection guide (E1000010). Place the 2mm distal recut spacer (E1101007) against the interior face of the distal femoral alignment guide (E1101001). | FIGURE 67 When utilized, the distal spacer (E1101007) will reduce the distal resection made by 8mm. (For example, it will allow a 2mm distal resection when cutting through the 10mm distal resection slot.) Slide the reamer (E5001003) into the intramedullary canal until the distal spacer (E1101007) contacts the distal femur. | FIGURE 68 Pin the resection guide (E1000110) in place and remove the IM reamer rod (E5001003), valgus bushing (E1100357) and distal femoral alignment guide (E1101001).

FIGURE 67

FIGURE 68

P/N E2001021

P/N E20051X1

Final Implant and Insert Implantation

The recommended order for implantation is left to the discretion of the orthopaedic surgeon.

Femoral Implantation

The femoral holder driver (E10051X3 or E10051X7) may be used for initial positioning and impaction of final implant (Porous, EFSRPXXX or Nonporous, EFSANXXX). Final impaction of the femur needs to be performed with the finishing impactor (E10051X1). | Figure 69

CAUTION: Use Porous coated femoral components only when there is no need for cement. Use Nonporous coated femoral components only when there is need for cement.

FIGURE 69

Tibial Base Seating

The tibial holder driver (E2001021) may be used to seat the final implant. To engage the tibial holder driver (E2001021), depress and engage the locking mechanism with the front of tibial base implant. | FIGURE 70 The tibial finishing impactor (E20051X1) may be used to fully impact the tibial implant.

FIGURE 70

Tibial Insert Seating

P/N E30051X1

Ensure the posterior and peripheral captures of the tibial base implant (ETAKNXXX) are completely clear of soft tissue and bone. If these captures are not clear, the tibial insert will not be able to seat. The tips of the dual reference “angel wing” gauge (E5001006) are contoured to fit in the lock detail to help clear debris.

Once the cement has cured, the appropriate eMP™ tibial insert may be locked into place. Initial seating is accomplished by pushing the insert as far posterior as possible with hand pressure, paying special attention to engage the medial and lateral dovetails. The 45° insert impactor (E30051X1) may be utilized by placing the impactor tip in the anterior slot of the tibial insert at approximately a 45° angle to the tibia base. | FIGURE 71 While maintaining this 45° angle, apply several strong mallet blows directing the insert posteriorly. After the anterior edge of the insert has been pushed past the anterior capture of the tibial base, it will automatically drop behind the anterior capture and the insert face will be flush against the surface of the tibial base.

FIGURE 71

Explant Information

If the removal of the implant is required due to revision or failure of the device, the surgeon should contact the manufacturer using the contact information located on the back cover of this surgical technique to receive instructions for returning the explanted device to the manufacturer for investigation.

Femur, tibia, and patella components
To remove the components, small osteotomes, power saws, or other surgical instruments may be used to disrupt the bone-cement interface and bone ingrowth into porous coating. Once the components have been removed, rongeurs or small osteotomes as well as other surgical instruments may be used to remove the remaining cement.

Insert replacement
A narrow osteotome may be inserted into the anterior region of the insert to facilitate removal. A hemostat may be used to remove the insert once it is no longer locked to the tibial base. Care must be taken not to scratch or mar any component that is not intended to be removed.

Addendum

Replaceable Plastic Impaction Surfaces

The femoral finishing impactor (E10051X1), tibial finishing impactor (E20051X1), CS/CR holder driver (E10051X3), and tibial holder driver (E2001021) have replaceable plastic impaction surfaces. All can be disassembled by inserting a pin in each hole in the impaction surface and depressing the locking mechanism. | FIGURE 72 Slide each impactor pad to the side and pull up to remove.

FIGURE 72

P/N E1005102 OR
P/N E1005212

P/N E2005102 OR
P/N E2005212

P/N E1005104 OR
P/N E1005114

P/N E2001022

P/N K0031103

P/N E42000XX

FIGURE 73

aMP™ Patellar Reaming System

The aMP™ Patellar Reamer may be utilized for both recessed and onlay patellar implants.

Sizing the Patella
To determine which patellar implant will be used, compare the patient's patella with the patellar trials. This will help determine how much patellar bone should be removed to replicate patellar anatomy.

Reamer Guide Choice
Load the appropriate reamer guide into the upper jaw of the patellar clamp (K0031103). | FIGURE 73 Reamer guides are available in five diameters: 25, 28, 32, 35, 38, 41, and 45mm. The actual diameter of the guide is 2mm larger than the indicated size. The largest possible guide that holds the patella securely should be utilized to ensure complete resurfacing. This will avoid creating a rim of unresurfaced bone around the patella periphery. The 45mm reamer guide is already labeled as 47mm to reflect its outer diameter.

Clamp the patella ensuring the basket is positioned to remove the greatest surface area of bone. Feed the reamer driver (K0031101) through the outrigger (K0031102). | **A IN FIGURE 74** Insert the corresponding reamer (E42001XX) into the reamer driver (K0031101) by retracting the spring-loaded locking collet on the driver (K0031101). | **B IN FIGURE 74** Attach the outrigger (K0031102) to the patellar clamp (K0031103) with the locking lever. | **A IN FIGURE 75** Lower the reamer until it is contacting the patellar surface.

P/N K0031101

P/N E42001XX

P/N K0031102

P/N K0031105

FIGURE 74

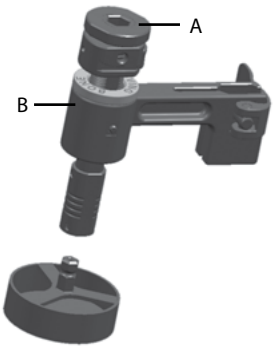
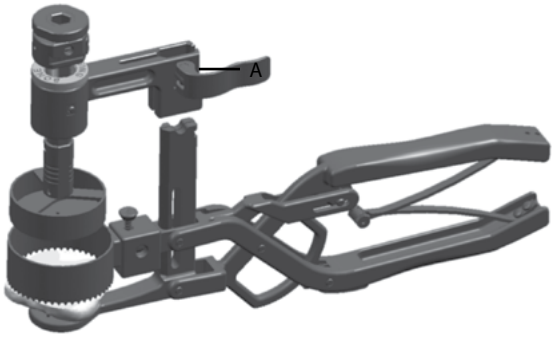


FIGURE 75



The onlay reaming depth stop (K0031105) may be utilized to control how much bone is removed during reaming, or how much bone remains after reaming. The depth stop (K0031105) offers bone resection amounts of 2, 7, 8, 9, 10, or 11mm | **FIGURE 76** or retention of 12, 13, 14, 15 or 16mm of bone after resection. | **FIGURE 77**

FIGURE 76

FIGURE 77

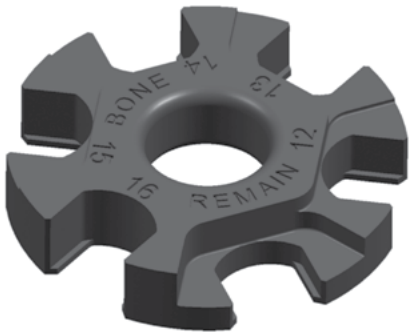
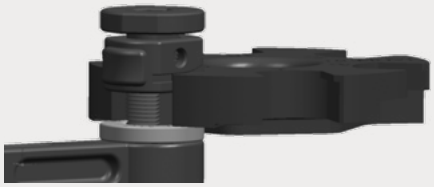


FIGURE 78

FIGURE 79

FIGURE 80



Setting the Bone Resection

To control the amount of bone reamed from the patellar surface, orient the onlay reaming depth stop (K0031105) with the “Bone Remove” side up. Generally, the amount of bone removed correlates to the thickness of the expected patellar implant thickness. | FIGURE 78 Identify the notch which correlates to the required amount of bone resection. Each notch features rails which must be inserted into the proximal slots on the reamer driver (K0031101). Rotate the reamer driver (K0031101) until the depth resection button is facing the onlay reaming depth stop (K0031105). | FIGURE 79 Insert the depth stop into the driver until the depth stop depresses the button; this will allow the depth stop gauge and the depth resection stop to be lowered. Lower the depth stop until it contacts the plastic “Bone Resection” collet. | FIGURE 80

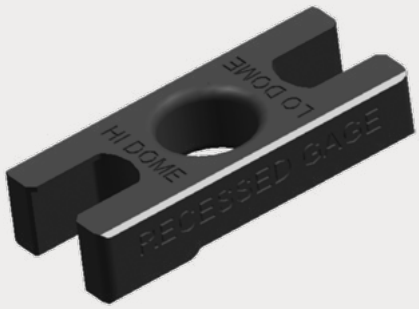
Remove the depth stop.

When preparing for a recessed patellar implant, a recessed depth gauge (E4201002) is available. | FIGURE 81

Setting the Amount of Bone Retained

To ensure a specified patellar bone thickness after patellar reaming, orient the onlay reaming depth stop (K0031105) with the “Bone Remain” side up. Identify the notch which correlates to the required amount of bone resection. Each notch features rails which must be inserted into the proximal slots on the reamer driver (K0031101). Rotate the reamer driver (K0031101) until the depth resection button is facing the onlay reaming depth stop (K0031105). Insert the depth stop into the driver until the depth stop depresses the button; this will allow the depth stop guide and the depth resection stop to be raised. Raise the depth stop until it contacts the top of the reamer driver (K0031101). | FIGURE 82 Remove the depth stop.

FIGURE 81



P/N E4201002

FIGURE 82

P/N K0031206

Load the power driver shaft (K0031206) into a powered reamer. Insert the hexagonal end of the driver shaft (K0031206) into the end of the reamer driver (K0031101). | **A IN FIGURE 83** While reaming, apply downward pressure until the stop no longer allows progression. | **FIGURE 84**

FIGURE 83

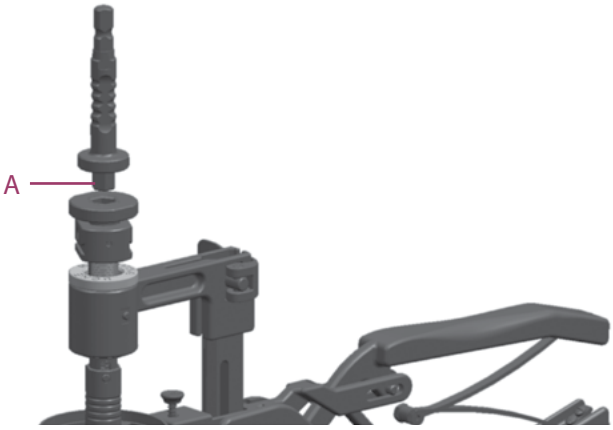


FIGURE 84

Release the locking lever to remove the clamp outrigger assembly. Loosen the clamp and remove the reamer basket. For an onlay patella, insert the peg endmill guide (K0031109 for single peg, K0031104 for tri-peg) into the patellar clamp. | A IN FIGURE 85 Load the peg drill (K0031108 for single peg, K0031107 for tri-peg) into a powered reamer and drill the patellar bone to accept the implant pegs. The single peg and tri-peg patella componets have the same peg position between sizes and can be easily changed during trial reduction.

P/N K0031109

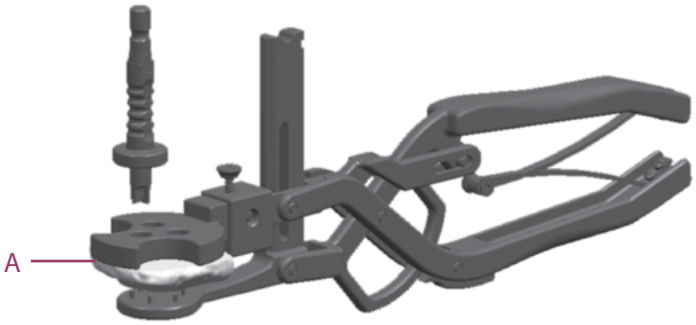
P/N K0031104

P/N K0031108

P/N K0031107

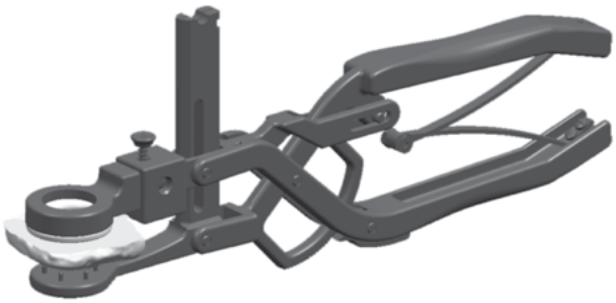
P/N K0031120

FIGURE 85

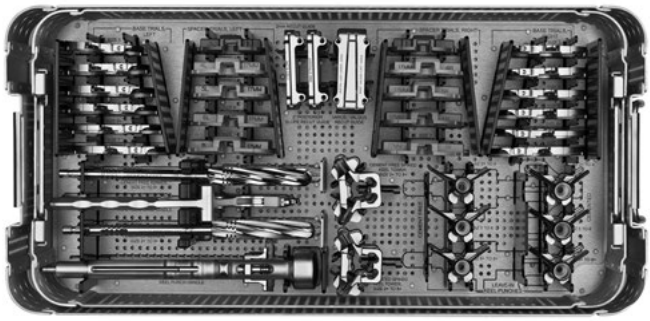


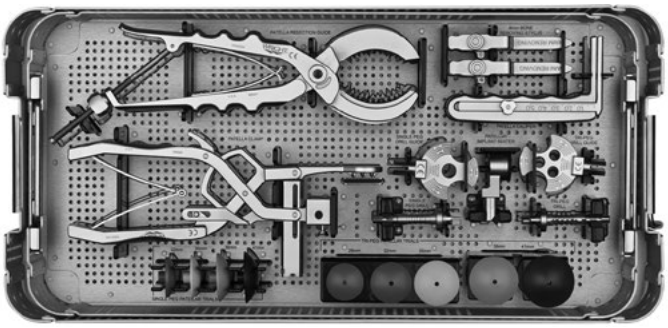
For final patellar implantation, the implant seater (K0031120) may be inserted into the patellar clamp (K0031103) and used to maintain force between the patellar implant and host bone. | FIGURE 86

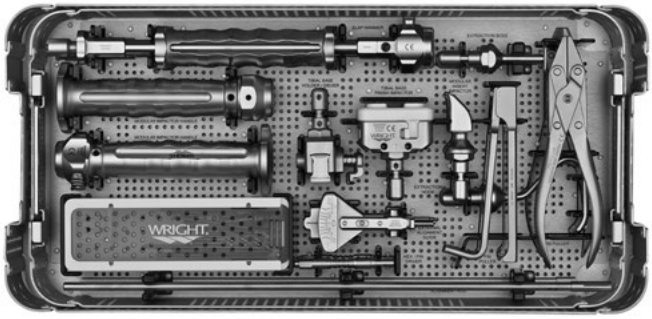
FIGURE 86



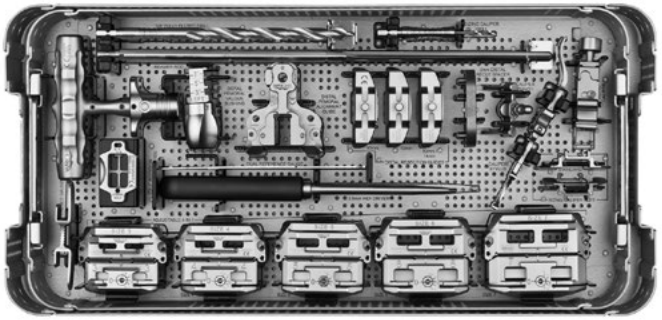
Instrument Kit Information



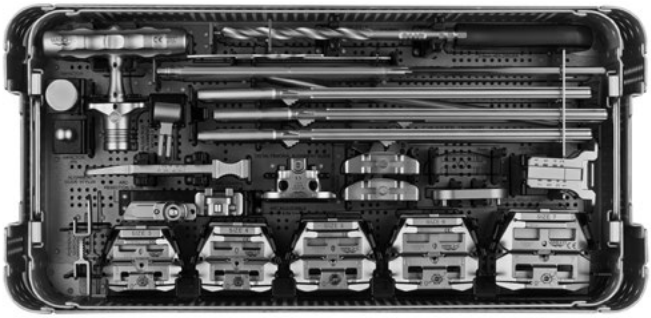




E200KT10 - EVOLUTION® Core Instruments

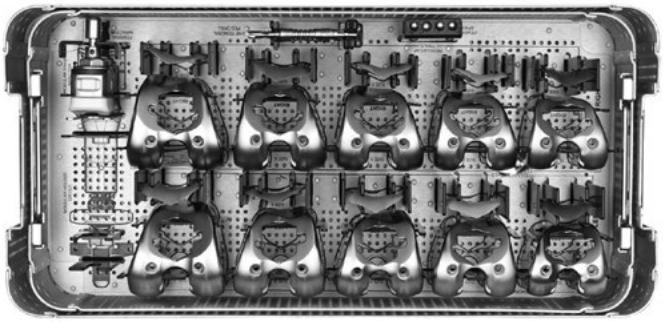


E200KIT1 - EVOLUTION® DCF Instruments

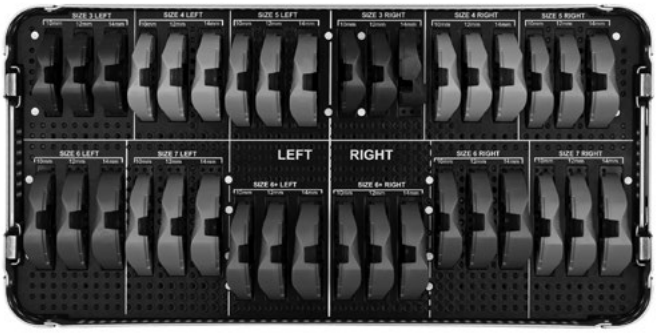


E200KT40 - EVOLUTION® ARC Instruments

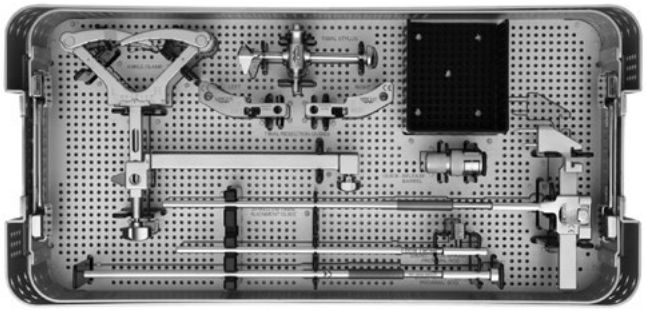
E200KIT7 - CS Insert Trials



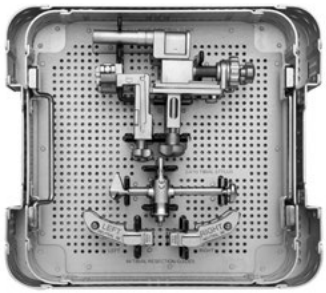
E200KT29 - CS / CR Femoral Trials



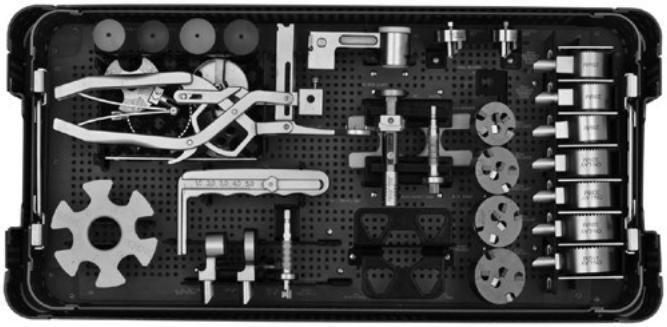
E200KIT6 - CR Insert Trials



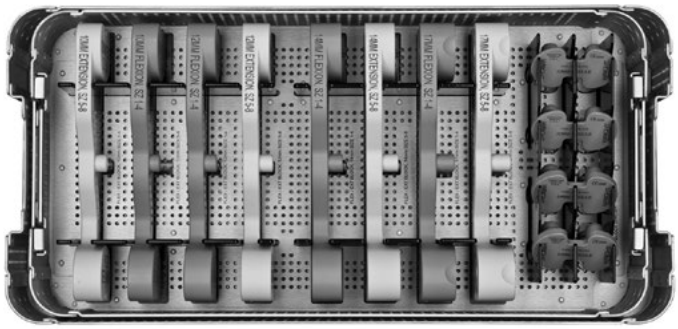
E200KIT3 - eMP™ EM Tibial Guide Kit



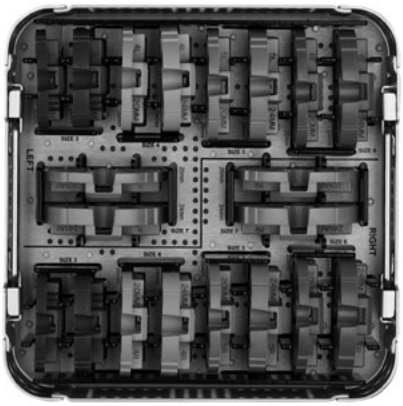
E200KIT4 - eMP™ IM Tibial Guide Kit



K100KT75 - ADVANCE® Patella Reaming Kit

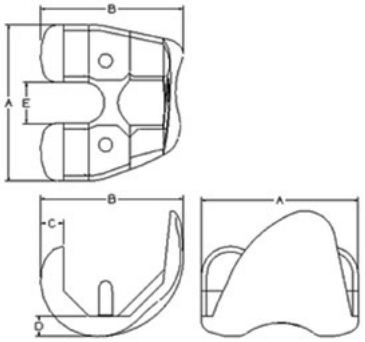


E200KT20 - Flexion / Extension Blocks



E200KT23 - 20mm and 24mm Trials (CS and

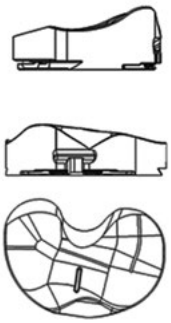
Implant dimensions



eMP™
MP CS/CR Femoral Components
EFSRN(X)P(L/R)
EFSRP(X)P(L/R)
EFSAN(X)P(L/R)

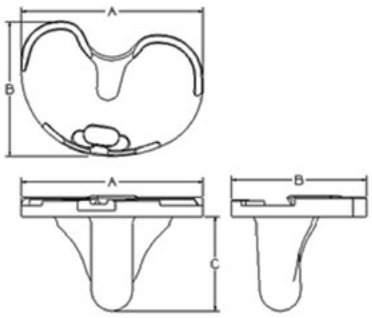
Size	A	B	C	D	E
1	59	51	10	9	16
2	61	54	10	9	16
3	64	57	10	9	18
4	66	60	10	9	18
5	70	64	11	9	18
6	73	68	11	9	18
7	77	72	11	9	20
8	80	76	11	9	20

Dimensions are in mm



eMP™ CR Insert
Available Thicknesses
10, 12, 14, 17mm
EIC(X)S(T)(L/R)
EIC(X)P(T)(L/R)

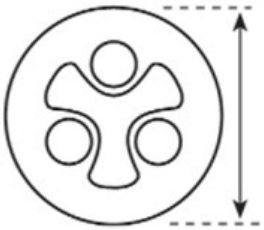
CR/PS	A	B	(PS Only) C
1	9	19	14
2	9	19	14
2+	9	20	16
3	9	20	16
4	9	20	16
5	9	21	16
6	10	22	16
6+	10	23	19
7	10	23	19
8	11	24	19



eMP™
MP Tibial Base Components
ETPKN(X)S(L/R)
ETPKN(X)P(L/R)
ETAKN(X)S(L/R)
ETAKN(X)P(L/R)

Size	A	B	C
1	54	40	31
2	58	43	31
2+	62	46	34
3	62	46	34
4	66	49	34
5	70	52	38
6	74	55	38
6+	78	58	41
7	78	58	41
8	82	61	41
8+	86	64	41

Dimensions are in mm

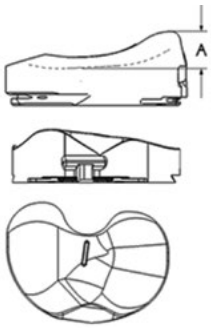


ADVANCE®
Patella Components
KPONTP(X)
KPON(X)(SP/TP)

Size (Diameter)	Single Peg	Tripeg	Thickness (mm)
25	•	n/a	7 or 9
26	n/a	•	8
28	•	n/a	7 or 9
29	n/a	•	8
32	•	•	8
35	•	•	8
38	•	•	10
41	•	•	11

Dimensions are in mm

(X)	SIZE
(T)	THICKNESS
(L/R)	LEFT/RIGHT



eMP™ CS Insert
(Available Thicknesses 10, 12, 14, 17, 20, 24mm)
EIS(X)S(T)(L/R)
EIS(X)P(T)(L/R)

CS	A
1	11
1+	11
2	11
2+	11
3	11
3+	11
4	11
4+	11
5	11
5+	11
6	11
6+	11
7	11
7+	11
8	12

Dimensions are in mm

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