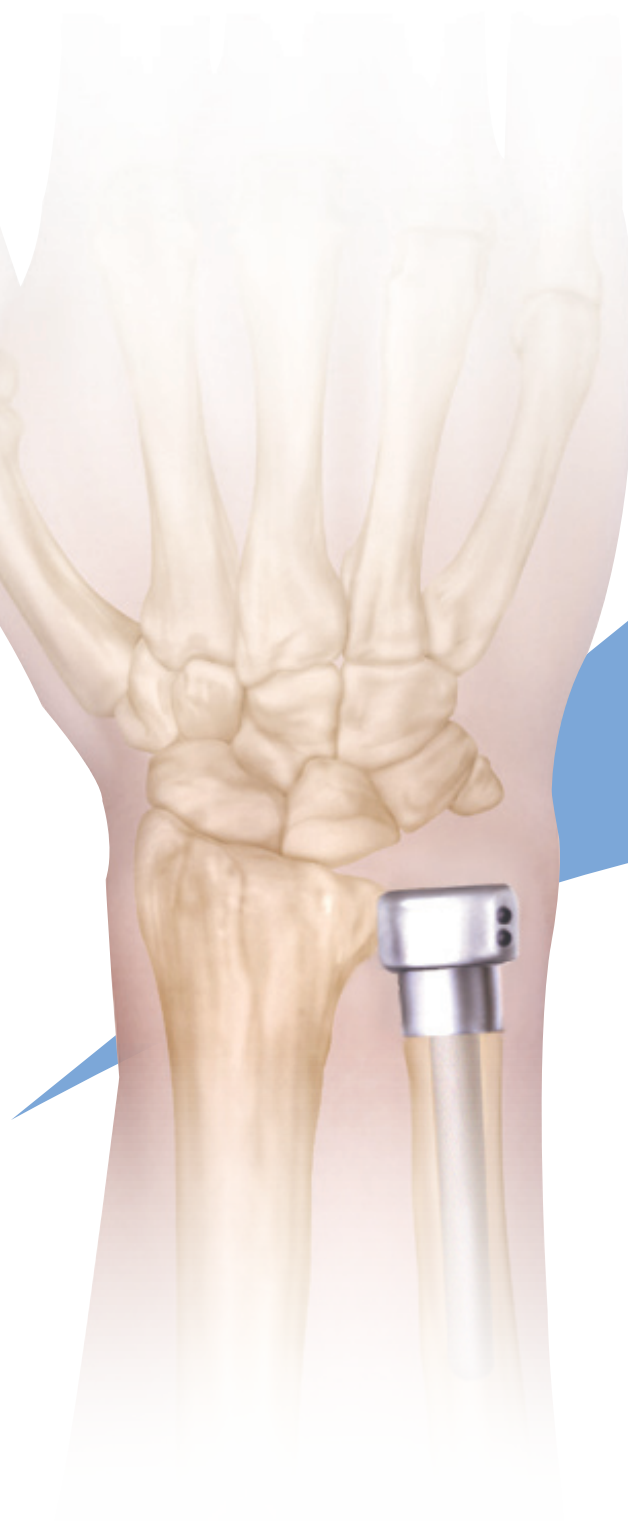


First Choice® Modular Ulnar Head

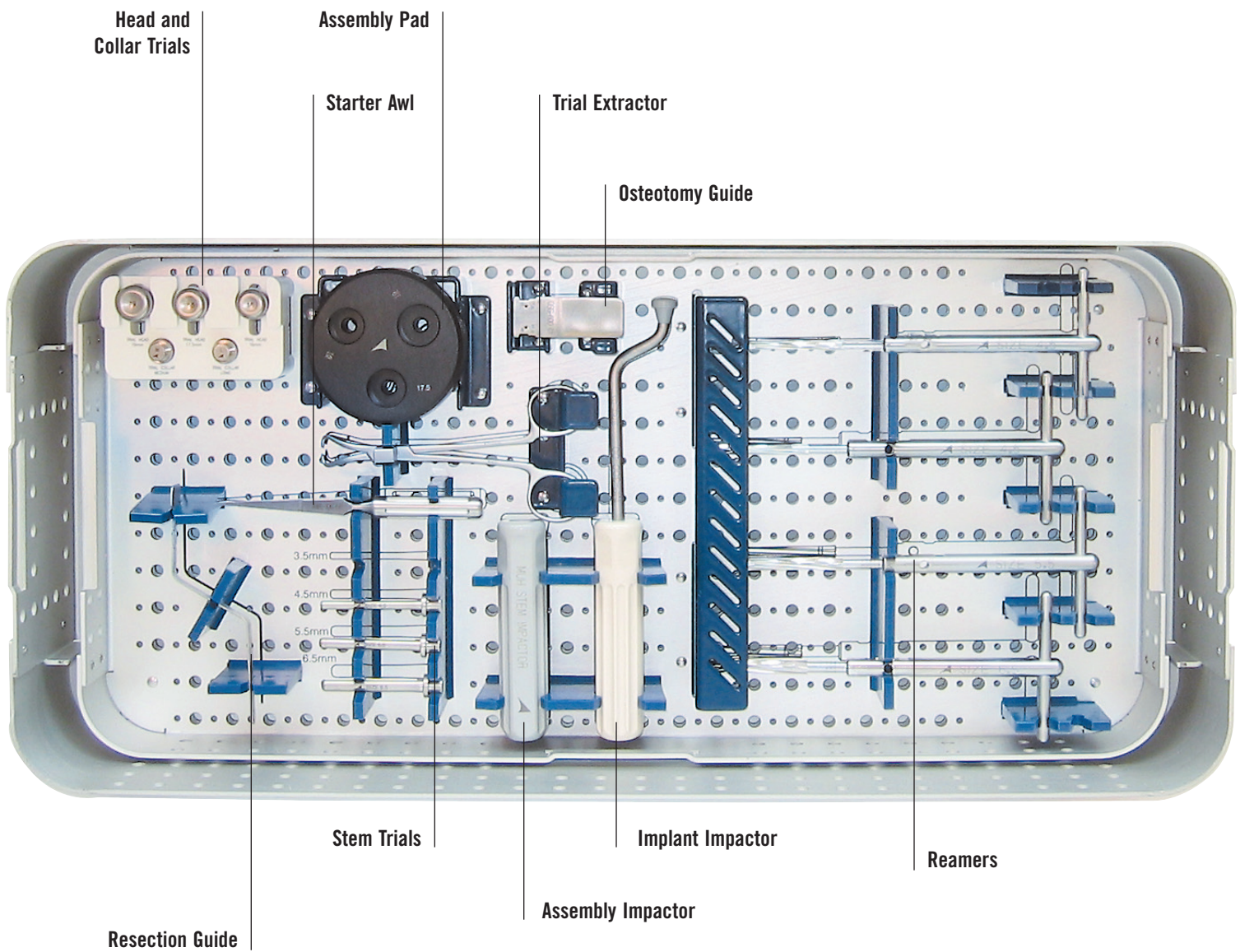
# surgical technique

*Transforming* Extremities™



Ascension Orthopedics

# instrumentation



# modular ulnar head surgical technique

The **Ascension® First Choice® Modular Ulnar Head** is intended for replacement of the distal ulna for rheumatoid, degenerative, or post-traumatic arthritis presenting with any of the following possible findings:

- Pain and weakness of the wrist joint not improved by conservative treatment
- Instability of the ulnar head with x-ray evidence of subluxation and erosive changes
- Failed previous ulnar head resection

The **First Choice® Modular Ulnar Head (MUH)** is designed to replace the ulnar head and restore DRUJ function. The **First Choice® MUH** features a cobalt chrome alloy head with a titanium stem.

The **First Choice® Modular Ulnar Head** implant has three stem diameters (4.5mm, 5.5mm, 6.5mm), three head diameters (16mm, 17.5mm, 19mm) and three collar heights (standard, medium, and long). There are a total of 27 sizing options. **FIGURE 1**

First Choice® Modular Ulnar Head Sizing Chart			
	Head Sizes		
Stem Sizes	16.0 mm	17.5 mm	19.0 mm
4.5 mm	S/M/L collar	S/M/L collar	S/M/L collar
5.5 mm	S/M/L collar	S/M/L collar	S/M/L collar
6.5 mm	S/M/L collar	S/M/L collar	S/M/L collar

The medium and long collar options are provided for previous resections of the distal ulna such as partial resections of the articular surface (e.g., Bowers and Watson procedures), for complete resections of the distal ulna (e.g., Darrach resection), or for a failed Sauve-Kapandji procedure.

## Step 1: Pre-Operative Assessment

Use the x-ray sizing template on a PA x-ray to estimate the proper size prosthetic stem and head to best match the patient's distal radioulnar joint (DRUJ) anatomy.



**FIGURE 1**  
First Choice® Modular Ulnar Head has a total of 27 sizing options.

## Step 2: Patient Position

The patient should be supine with the shoulder abducted to 90°, elbow flexed to 90°, and palm down, thus presenting the wrist in near neutral pronation/supination.

## Step 3: Initial Incision

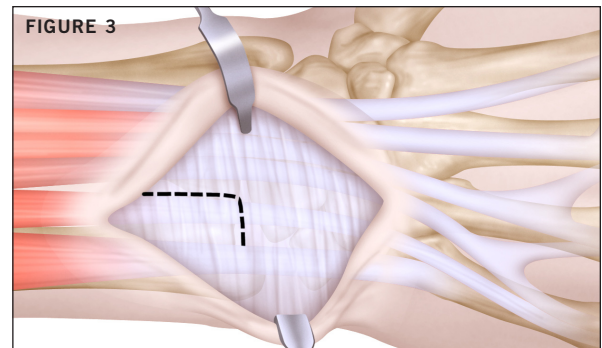
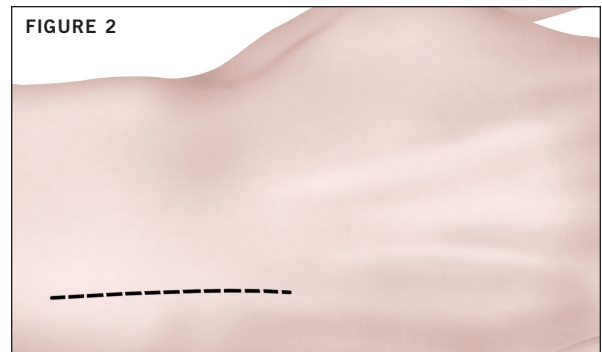
Make a straight 5 cm dorsal skin incision over the dorsal aspect of the ulnar head and neck. If an associated procedure is planned for the radio-carpal joint, a longer, more central incision can be used. **FIGURE 2.**

## Step 4: Extensor Retinaculum Incision

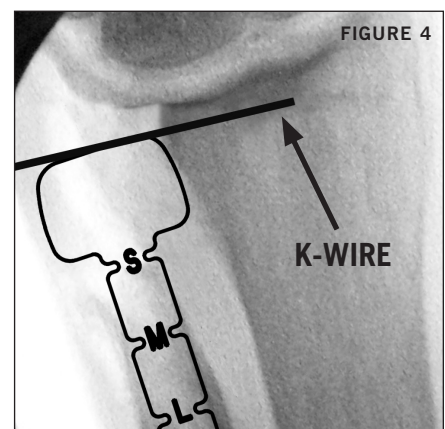
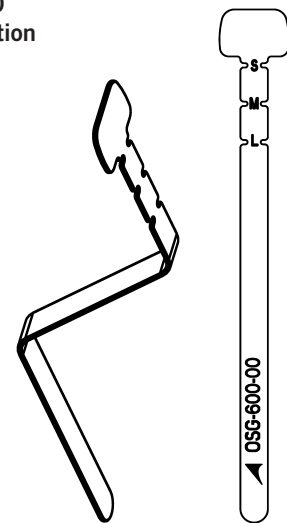
Using a combination of blunt and sharp dissection, elevate the skin and subcutaneous tissues. Identify the ECU and the EDM. Avoid injuring the dorsal branch of the ulnar sensory nerve. The 5th extensor compartment is opened and the EDM extracted. An “L” or “C”-shaped dorsal capsulotomy flap is made over the DRUJ extending distally to the end of the ulna and ulnarly to the styloid. Continue to raise the flap ulnarly and volarly around the distal ulna, going beneath the ECU sheath and releasing soft tissue attachments to the ulnar styloid. The dissection will create a continuous sleeve for subsequent closure over the implant. **FIGURE 3.**

## Step 5: K-wire Placement

To determine the best position for the ulnar osteotomy, insert a 0.045” (1.1 mm) k-wire at the most distal point of the sigmoid notch articulating surface. The k-wire is placed perpendicular to the long axis of the radius. Place the resection guide next to the sigmoid notch and aligned with the previously inserted k-wire. It should lie very near to where the native ulnar head resided to recreate the appropriate anatomy. Use a pen or osteotome to mark the resection level (S / M / L). **FIGURE 4.**



OSG-600-00  
MUH Resection  
Guide



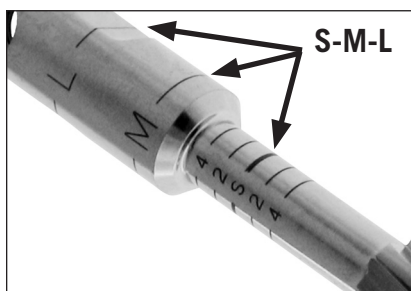


## Step 6: Medullary Canal Preparation

The forearm is hyperpronated while the wrist is flexed acutely over a bump. Place a Hohmann retractor under the ulnar head **at a 45° angle to the head on the radial side**. This will allow proper visualization of the medullary canal of the ulna. Using the starter awl or k-wire, penetrate the center of the medullary canal approximately 1.5-2.0 cm.

FIGURE 5A.

Insert the 3.5 mm starter reamer, using a 360° forward twisting motion until the appropriate mark on the reamer (S,M,L as determined by the resection level guide) lines up with the k-wire placed at the sigmoid notch. **FIGURES 5B, 5C.**



Repeat as necessary with increasing size reamers until cortical contact is obtained.

**CAUTION: Do not over-advance the reamer; over-advancing the reamer may reduce the press-fit of the implant stem in the medullary canal.**

If desired, an ulnar-negative variance or an ulnar-positive variance can be achieved by inserting the reamer to a more proximal or distal position during preparation of the medullary canal.

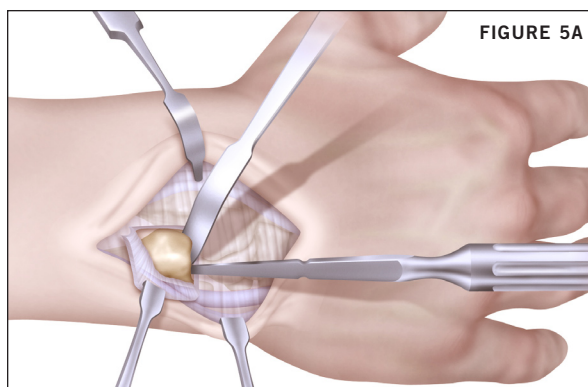


FIGURE 5A

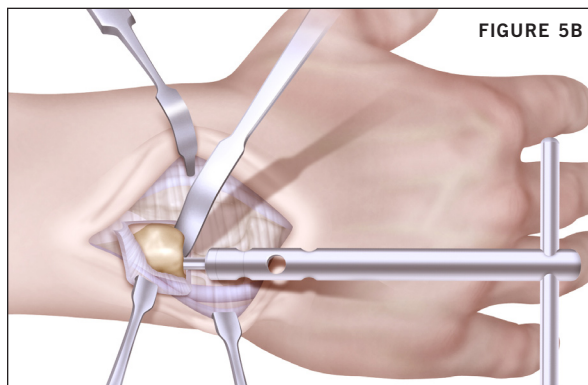
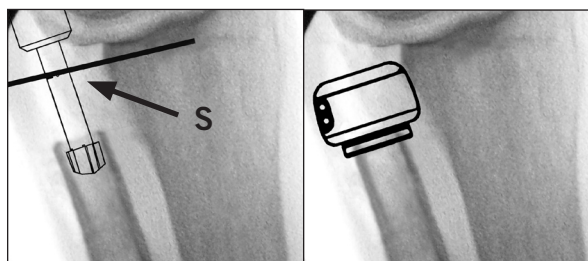
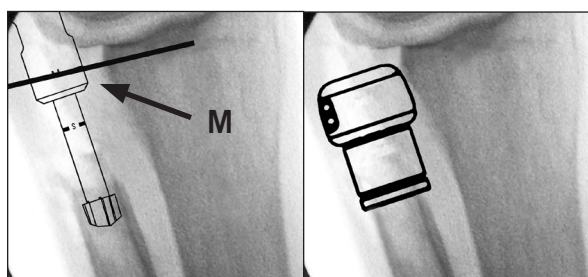


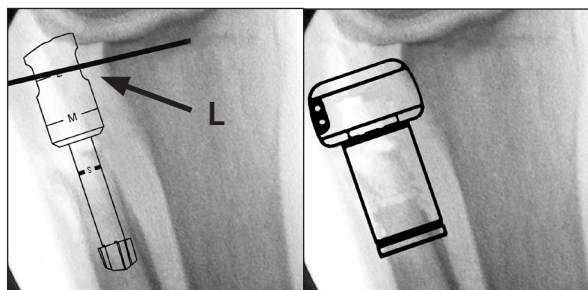
FIGURE 5B



Placement of reamer for standard collar implant



Placement of reamer for medium collar implant



Placement of reamer for long collar implant

### Step 7: Osteotomy Guide Placement

Place the **First Choice® Modular Ulnar Head** osteotomy guide on the last reamer used. **FIGURE 6.** If sufficient bone stock exists, stabilize the guide with a 0.045" (1.1mm) k-wire. Using a sagittal saw with the blade held flush against the surface of the osteotomy guide, cut to the level of the reamer. Remove the osteotomy guide and reamer, and complete the osteotomy.

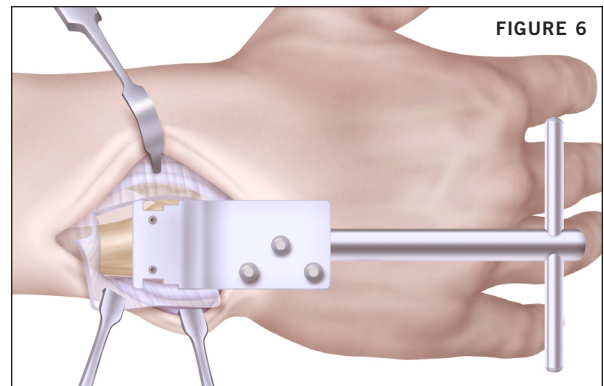


FIGURE 6

### Step 8: Trial Reduction

Choose the stem trial that corresponds to the last reamer used. **FIGURE 7A.** If a medium or long collar resection was made, place the medium or long collar trial onto the trial stem. **FIGURE 7B.** Choose the head trial that best fits the sigmoid notch and provides proper DRUJ stability, place it on the neck, and reduce the joint. **FIGURE 7C.** **If in between sizes, it is usually best to use the smaller size to prevent overstuffing the joint.**

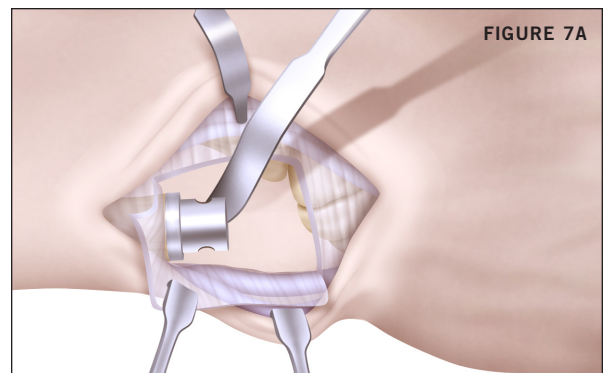


FIGURE 7A

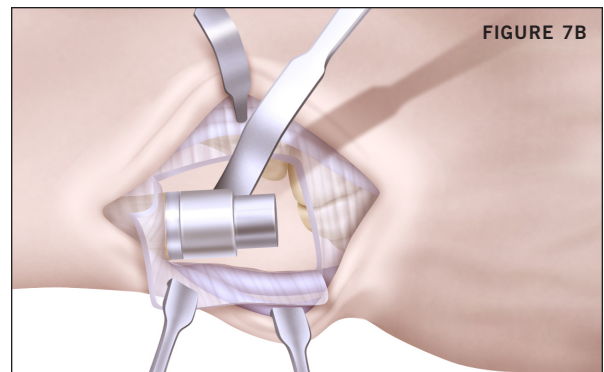


FIGURE 7B

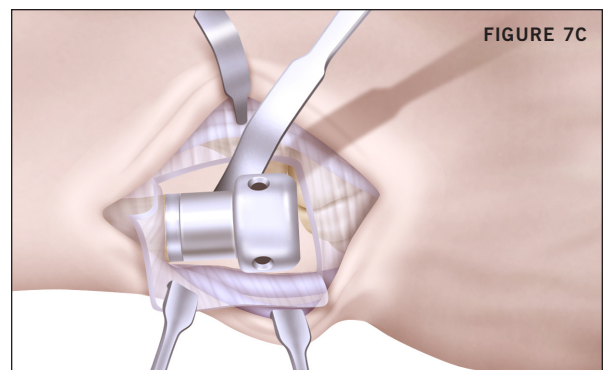


FIGURE 7C

Reduce the trial into the sigmoid notch and evaluate DRUJ stability and forearm pronation and supination. Proper positioning should be checked by x-rays.

Use the trial extractor to remove the trial implant components. **FIGURE 7D.**

### Step 9: Assemble and Implant the MUH

Using the black assembly pad, place the chosen ulnar head implant in the matching hole with its opening facing up. Place the taper portion of the correct stem into the head taper and use the gray stem impactor to impact the stem into the head. Insert, align, and impact the implant into the prepared medullary canal using the white implant impactor.

**NOTE:** Insert with correct orientation of the head to ensure that the suture holes in the implant face the ulnar border to allow for easy attachment of the soft tissues, using non-absorbable 2-0 or greater suture.

Reduce the implant into the sigmoid notch and evaluate DRUJ stability and forearm pronation and supination. Final x-rays may be used to verify that anatomic alignment of the DRUJ has been achieved.

**FIGURE 8.**

### Closure and Stabilization

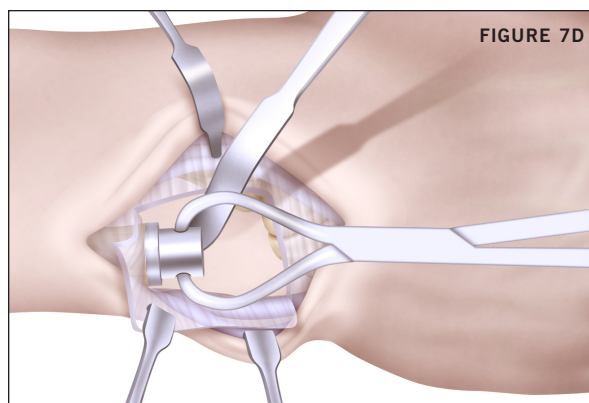
Close the capsule and retinaculum either separately or together. Imbricate if needed to improve DRUJ stability, avoiding excessive imbrication as this will decrease joint motion. Place a subcutaneous drain, if desired. The patient is placed in long arm splint with wrist and forearm in neutral positions. If needed for added joint stability, sutures can be inserted through the holes in the implant head and secured to the capsule during closure.

### Post-Operative Management

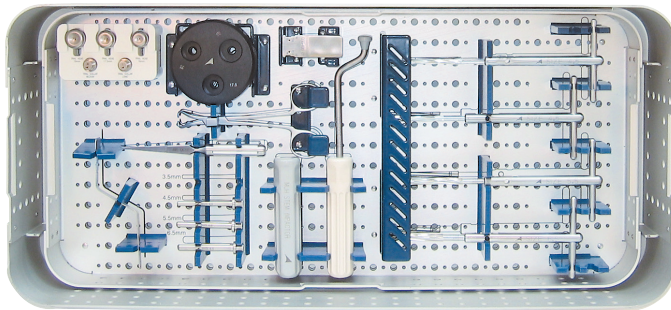
**2 Weeks Post-Op:** The long arm splint is removed and the patient is immobilized in a well-molded short arm cast which allows *some* forearm rotation.

**4 Weeks Post-Op:** Cast is converted to removable splint for an additional 4 weeks. Begin gentle ROM exercises of both wrist and forearm. Allow full activities as tolerated beginning at about 9 weeks. Begin mobilization earlier if stiffness occurs or delay as necessary to avoid instability, e.g., rheumatoid cases.

Conduct complete clinical and radiographic assessments at 6-week, 6-month, and yearly intervals.



# catalog numbers



## Modular Ulnar Head Implants

SIZE / COMPONENT	CATALOG NUMBER
16.0 mm head	MUH-600-H160
17.5 mm head	MUH-600-H175
19.0 mm head	MUH-600-H190
4.5mm standard stem	MUH-600-S45S
5.5mm standard stem	MUH-600-S55S
6.5mm standard stem	MUH-600-S65S
4.5mm medium stem	MUH-600-S45M
5.5mm medium stem	MUH-600-S55M
6.5mm medium stem	MUH-600-S65M
4.5mm long stem	MUH-600-S45L
5.5mm long stem	MUH-600-S55L
6.5mm long stem	MUH-600-S65L

## Modular Ulnar Head Instruments

ITEM / DESCRIPTION	CATALOG NUMBER
Instrument Set	INS-600-00
Starter Awl	AWL-100-01
MUH Head Trial Size 16.0	TRL-600-H160
MUH Head Trial Size 17.5	TRL-600-H175
MUH Head Trial Size 19.0	TRL-600-H190
MUH Stem Trial Size 4.5	TRL-600-S45
MUH Stem Trial Size 5.5	TRL-600-S55
MUH Stem Trial Size 6.5	TRL-600-S65
MUH Trial Collar Medium	TRL-600-MED
MUH Trial Collar Long	TRL-600-LNG
MUH Resection Guide	OSG-600-00
MUH Reamer Size 3.5	BRH-600-35
MUH Reamer Size 4.5	BRH-600-45
MUH Reamer Size 5.5	BRH-600-55
MUH Reamer Size 6.5	BRH-600-65
MUH Stem Impactor	IMP-600-00
MUH Assembly Pad	IMP-600-01
MUH Osteotomy Guide	OSG-600-01
Implant Impactor	IMP-300-00
Trial Extractor	EXT-200-00
Disposable Pack (Stryker)*	UH-DIS-STR
Disposable Pack (Linvatec/Hall)*	UH-DIS-HAL

\*Contain 2 K-Wires, 1 saw Blade

## Modular Ulnar Head Implants

### AVAILABLE IN 27 SIZES

**3 HEAD SIZES:** 16.0 mm, 17.5 mm, 19.0 mm

**3 STEM SIZES:** 4.5 mm, 5.5 mm, 6.5 mm

**MATERIAL:** CoCr head / Ti stem

**HEAD DIAMETER SIZE = Head Chosen**

16.0 mm head size = 16.0 mm head diameter

**STEM DIAMETER SIZE = Stem Chosen**

4.5 mm stem size = 4.5 mm stem diameter

### LENGTH OF COLLAR + HEAD

S = 13.0 mm

M = 22.0 mm

L = 31.0 mm

### TOTAL LENGTH OF IMPLANT

S = 63.0 mm

M = 72.0 mm

L = 81.0 mm

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to sale by or on the order of a physician.

LC-04-607-005 rev A

ER5122-12/11  
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