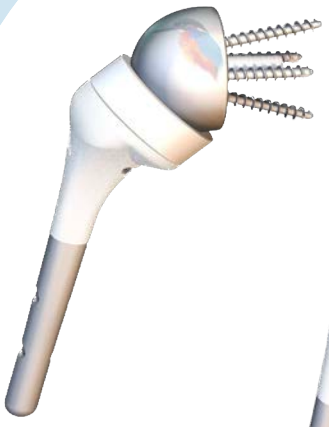
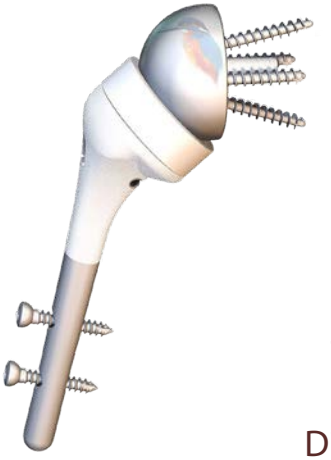
HUMELOCK REVERSED®

Cementless

SURGICAL TECHNIQUES
Primary Degenerative & Trauma



Degenerative



Trauma

Trauma with Diaphyseal Plate

Shoulder Solutions

Thank You

FX Shoulder USA, Inc. would like to thank with gratitude the surgeons listed here for their input on instrument design.

Wayne Z. Burkhead, M.D. | WB Carrell Clinic, Dallas, TX, USA
Travis Burns, M.D. | Ortho San Antonio, San Antonio, TX, USA
Alfred Cook, M.D. | The Villages, Leesburg, FL, USA
John Costouros, M.D. | Stanford University, Redwood City, CA, USA
Mark D'Onofrio, M.D. | Lancaster, OH, USA
David Glaser, M.D. | University of Pennsylvania, Philadelphia, PA, USA
Howard W. Harris, M.D. | TX Ortho, Dallas, TX, USA
Russell Huffman, M.D. | University of Pennsylvania, Philadelphia, PA, USA
Stanley Kupiszewski, M.D. | Orlando, FL, USA
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Frederick Song, M.D. | Princeton, NJ, USA
Umasuthan Srikumaran, M.D. | Columbia, MD, USA

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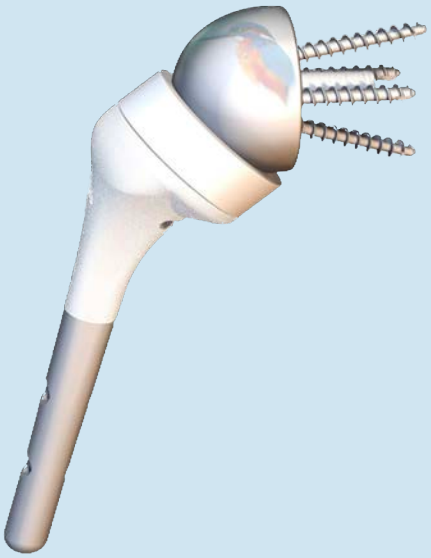
DEVICE DESCRIPTION

The Humelock Reversed® shoulder is a total shoulder prosthesis designed for use in patients with non-functional rotator cuffs. The articulation of this design is inverted so that the ball of the articulation is on the glenoid side and the mating humeral cup fits into the humeral stem. The components of the system include a glenoid baseplate, standard (non-locking) and locking bone screws, humeral cups, cementless and cemented stems, an optional humeral spacer (+9mm), and an optional taper adapter for use in hemiarthroplasty shoulder replacements.

The Humelock® glenoid baseplate is a 24mm round base with a central, cannulated post and four peripheral polyaxially (12°) oriented screw holes. The outer edges of the baseplate are tapered to lock with the glenosphere component. 4.5mm non-locking and locking screws in lengths from 20-50mm (5mm increments) are used to secure the baseplate. The screw holes have 12° of polyaxial orientation with the superior hole preoriented of 10° allowing for up to 22° of angulation to reach the coracoid. There are optional post extensions available to extend the central post of the baseplate from 17mm to provide additional anchoring in cases with poor bone quality. The post extensions are available in +6mm and +10mm lengths. When used, the post extensions screw into the baseplate post.



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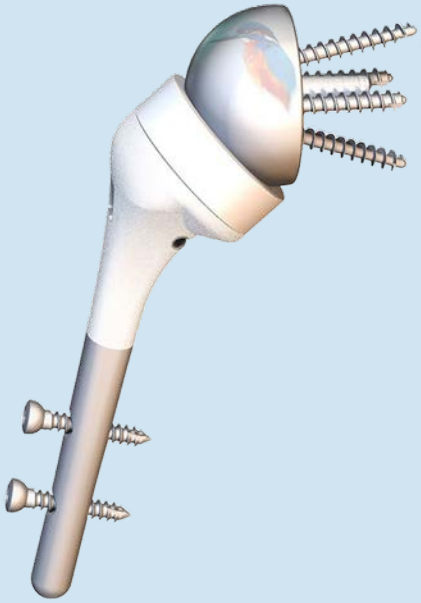
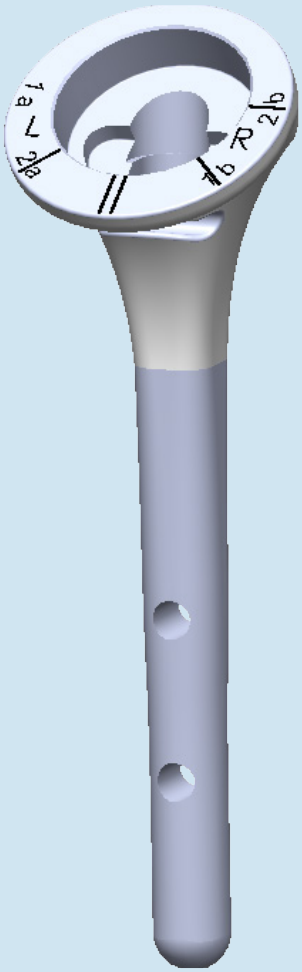


Trauma

DEVICE DESCRIPTION

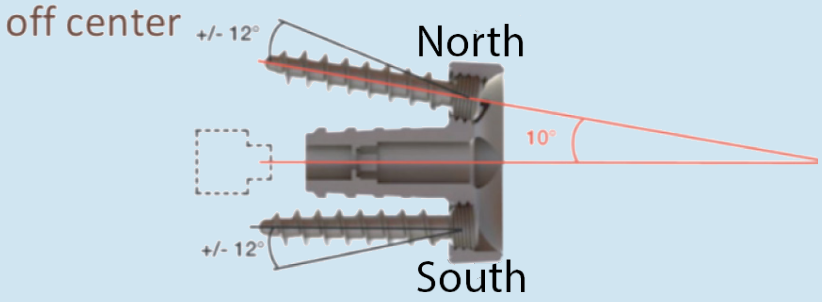


HUMERAL STEMS

Inlay design at 145° with proximal plasma-sprayed hydroxyapatite coating (HA) on Ti6Al4V ELI (conforming to ISO 5832-3). Metaphyseal press fit, bi-cortical distal interlocking.

CEMENTLESS			
EPYPHYSIS	Ø32MM	Ø36MM	Ø40MM
DIAPHYSIS	Ø08 Ø10 Ø12	Ø10 Ø12 Ø14	Ø12 Ø14 Ø16
COMBINATION	Ø32/08 Ø32/10 Ø32/12	Ø36/10 Ø36/12 Ø36/14	Ø40/12 Ø40/14 Ø40/16

CEMENTED			
EPYPHYSIS	Ø32MM	Ø36MM	Ø40MM
DIAPHYSIS	Ø06	Ø08	Ø10
COMBINATION	Ø32/06	Ø36/08	Ø40/10



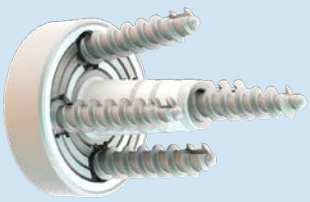
BASEPLATE (24mm)

The Ti6Al4V ELI 24mm size and cannulation allows for optimal placement in the inferior glenoid. The post option has a 17mm post that tapers from 7.5mm proximally to 6.5mm distally with the option for an additional +6mm and +10mm extension posts. Pre-oriented 10° superiorly at the 12 o'clock position with 12° of variability off center.

The glenoid baseplate with a central screw has a 17mm post that tapers from 7.5mm proximally to 6.5mm distally with 7 different central screws sizes from 8mm-20mm in 2mm increments.

Baseplate with Central Post

Baseplate with Central Screw



DEVICE DESCRIPTION

GLENOSPHERES

The Humelock Reversed® Glenosphere is available in 32, 36 and 40mm diameter sizes in centered and eccentric styles. The eccentric glenospheres are designed to be offset from the center of the glenoid baseplate. All glenospheres are slightly lateralized of 3.5mm corresponding to 10° of tilt. The curvature of the glenosphere extends 10° beyond the equator of a hemisphere. This additional articular surface lateralizes the center of rotation to help reduce the potential for scapular notching by the humeral cup.

DIAMETERS

32mm, 36mm, 40mm

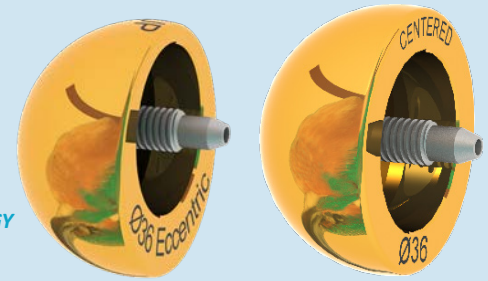
SIZES AND STYLES

Centered or Eccentric
Size 32 = 1mm of Eccentricty
Size 36 = 3mm of Eccentricty
Size 40 = 1mm of Eccentricty
Lateralization = 3.5mm

TIN (TITANIUM NITRIDE)COATED GLENOSPHERES*

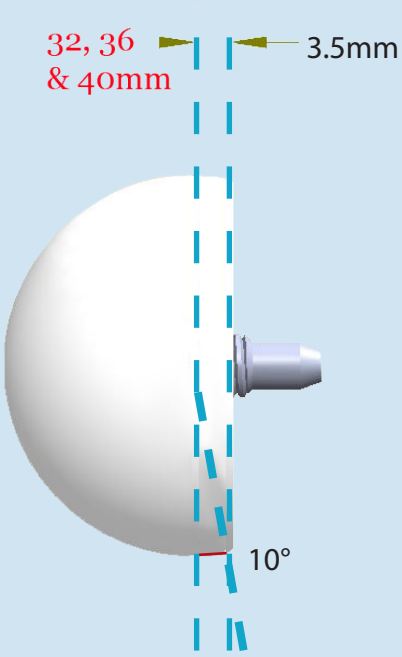
NEXT GENERATION COATING TECHNOLOGY
FIRST & ONLY TiN HUMERAL HEADS AND GLENOSPHERS IN THE U.S. MARKET AS AN ALTERNATE BEARING FOR TOTAL SHOULDER ARTHROPLASTY

- **HARD, THIN SMOOTH COATING**
- **APPROXIMATELY 2300Hv**
- **WORST CASE LOAD & ENVIRONMENT**
- **EXCELLENT WEAR RESISTANCE*****
- **SINGLE LAYER**
- **BIOCOMPATIBLE TiN COATING OVER CoCr*****
- **WORST CASE LOAD & ENVIRONMENT**
- **SURFACE ROUGHNES**
- **PARTICLE ANALYSIS**
- **1-6 MICRONS THICK**



TiN (TITANIUM NITRIDE)
ECCENTRIC AND CENTERED
GLENOSPHERE
Ø32/36/40MM

CAUTION



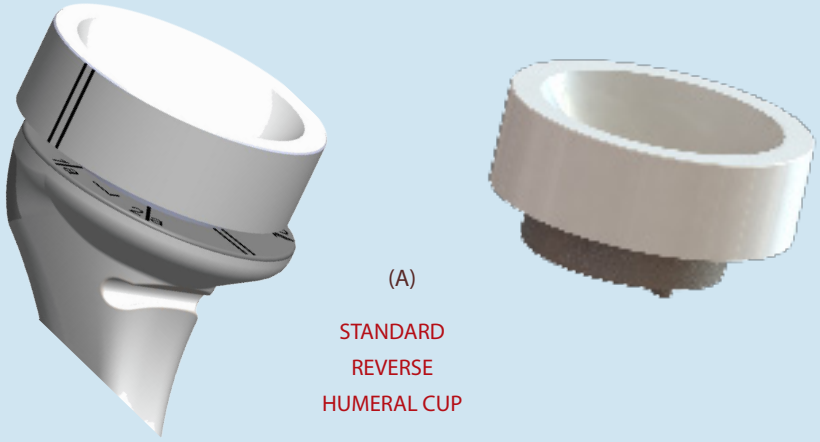
*FX MAKES NO CLAIM ABOUT THE USE OF TIN FOR NICKEL ALLERGY PATIENTS
***DATA ON FILE AT FX SHOULDER USA, INC. & FX SOLUTIONS S.A.S

DEVICE DESCRIPTION

HUMERAL CUP

The humeral cups (A) are a one-piece construct consisting of net shape molded UHMWPE (polyethylene) inserts into Ti6Al4V ELI alloy shells. A morse taper on the inferior surface of the humeral cup locks into the female Morse taper on the superior surface of the humeral stem.

The definitive humeral cup incorporates an option to dial-in offset anterior or posterior up to 90° (maximum) corresponding to 1.5mm of offset.



(A)

STANDARD
REVERSE
HUMERAL CUP

THICKNESS

+3/+6/+9mm

DIAMETERS

32mm, 36mm, 40mm

HUMERAL CUP SPACER

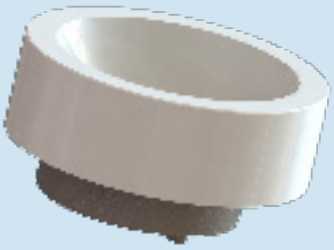
The +9mm Ti-6Al-4V spacer can be used to build additional heights of +12mm, +15mm, and +18mm. (B)

(B)

+9
HUMERAL
SPACER

STABILITY CUP- OPTION***

In extreme cases of instability, the stability variant (C) of the humeral cups can provide added constraint by capturing more of the glenosphere with a deeper dish of the humeral cup without adding to the joint space. The stability variant may also reduce the potential range of motion that can be achieved.



(C)

STABILITY
HUMERAL CUP

HUMERAL STABILITY CUP		
	STANDARD CUP	STABILITY CUP
DEPTH OF SPHERE	8MM	9MM

CAUTION

If BMI is equal to or greater than 40, it is recommended that a stability humeral cup is used.

DEVICE DESCRIPTION

FOR HEMI-PROSTHESIS ONLY**

ECCENTRIC TAPER ADAPTER

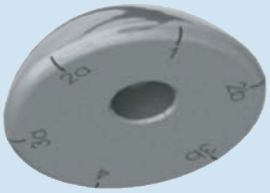
An Eccentric Taper Adapter connects the stem and the humeral head in cases of hemi prosthesis conversion/revision.

ECCENTRIC HUMERAL HEADS SIZES

50x20**

52x21 - Hemi Only**

54x21 - Hemi Only**



ECCENTRIC HEAD

ECCENTRIC TAPER ADAPTER

**THE TiN COATED HUMERAL HEADS ARE NOT INDICATED FOR SHOULDER HEMI-ARTHROPLASTY

Indications

The Humelock Reversed® shoulder is indicated for primary reverse, reverse fracture, or revision total shoulder arthroplasty for the relief of pain, improve range of motion, and function in patients with a massive and irreparable rotator cuff tear. The patient's joint must be anatomically and structurally suited to receive the selected implants and a functional deltoid muscle is necessary to use the device.

During primary reverse or revision surgery, if the glenoid bone stock appears to be insufficient to bear the reverse glenoid components or the glenoid bone fractures during the procedure, a taper adapter can be used to convert the Humelock Reversed® to an anatomic hemi-shoulder prosthesis.

The humeral stem of the Humelock Reversed® cemented shoulder prosthesis is intended for cemented use only. The cementless stem is lockable with two cortical bone screws (option) and is intended to be for cementless use only.

The glenoid baseplate and post extensions are intended for cementless use and are fixated by the non-locking (compression) and locking screws.

Rehabilitation

(RECOMMENDATION ONLY)

Short-term immobilization (according to the surgeon's assessment) in the neutral position to promote recovery of external rotation. Promote pool therapy and specialist rehabilitation, without counter resistance work, for six weeks (depending on the age and objectives noted in the "patient contract").

Warnings

CONTRAINDICATIONS

- Non-displaced or slightly displaced fractures
- Dislocation fractures in elderly subjects
- Acute, chronic, local, or systemic infections
- Severe muscular, neurological or vascular impairment affecting the joint in question
- Bone destruction or poor bone quality that could compromise the stability of the joint
- Excessive alcohol consumption or other dependency disorders
- Allergy to the materials of the prosthesis
- Any concomitant Illness that could compromise the function of the device

WARNINGS AND PRECAUTIONS

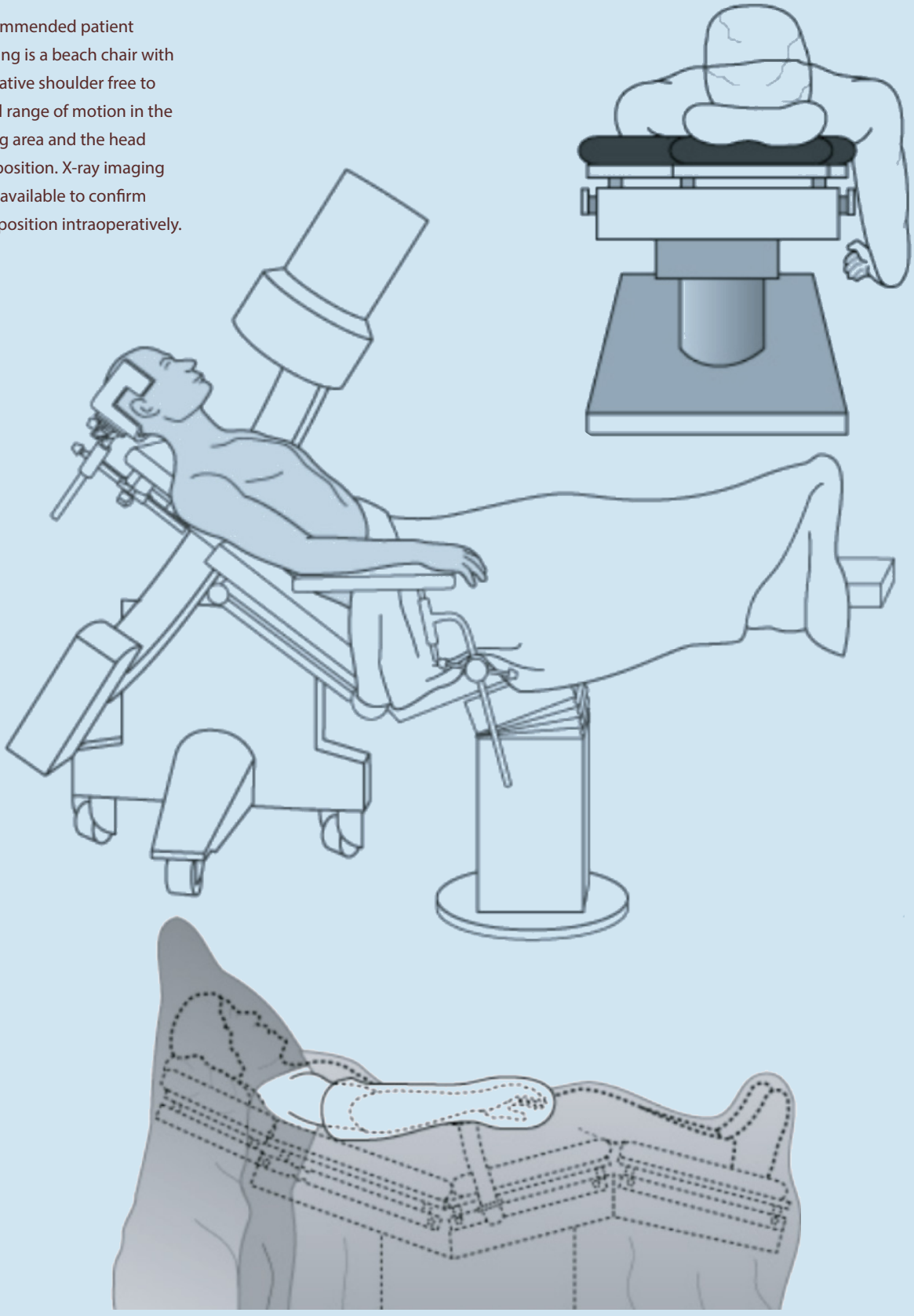
Unless otherwise indicated, instrument sets are provided non-sterile and must be completely cleaned and sterilized before use. Instruments must not undergo accelerated autoclave sterilization inside the instrument box. Accelerated autoclave sterilization of the instruments has not been validated by the manufacturer. Please consult the instrument package insert for validated sterilization instructions and the implant package insert of a complete list of warnings, precautions, contraindications and adverse events.

CAUTION

If BMI is equal to or greater than 40, it is recommended that a stability humeral cup is used.

Patient Positioning

The recommended patient positioning is a beach chair with the operative shoulder free to allow full range of motion in the operating area and the head fixed in position. X-ray imaging must be available to confirm implant position intraoperatively.



HUMERAL PREPARATION

STEP 1: PREPARATION OF THE HUMERAL SHAFT (Figure 1)

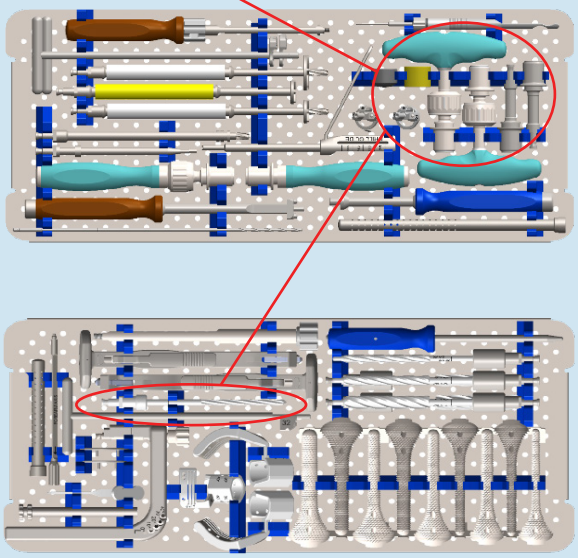
Locate and perforate the top of the humeral head in the medullary canal axis using the 6mm awl tip starting reamer. Use the reamers in increasing size with the ratcheting T-Handle. Increase in reamer size diameter until the diameter of the reamer meets the diameter of the humeral canal.

HUMELOCK STEM SIZES

+8mm, +10mm, +12mm, +14mm, +16mm

Refer Humeral Stem description on Page 4

Figure 1



HUMERAL PREPARATION

STEP 2: MOUNTING & PLACING THE INTRAMEDULLARY DELTO-PECTORAL 145° CUTTING GUIDE

(Figure 2)

Remove the T-Handle and leave the reamer inside the canal. Select the left or right (L or R) 145° intramedullary cutting guide. Slide the intramedullary cutting guide over the remaining reamer. Screw the forearm axis into one of the (5) positions according to the required version of the patient: 0°, 10°, 20°, 30°, or 40°.

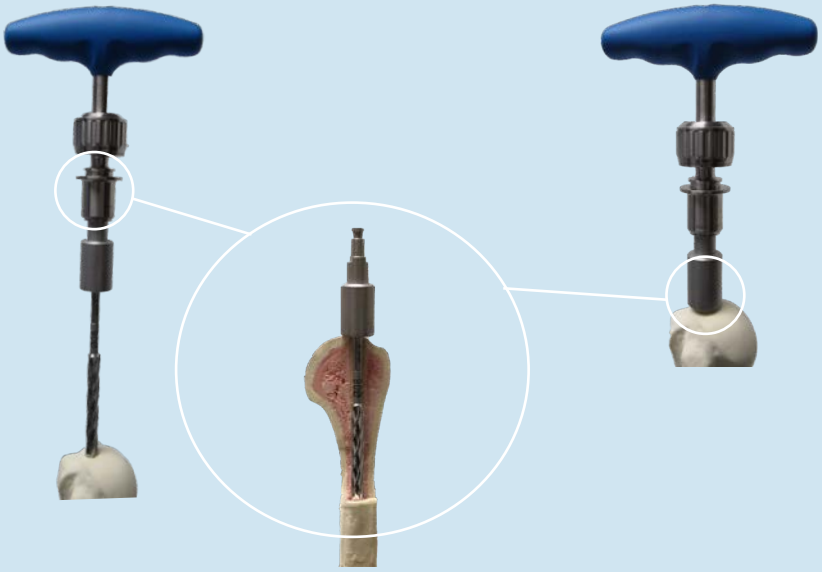
Align the forearm axis and screw this tightly to the reamer to the preferred version (0°, 10°, 20°, 30° or 40°). The forearm axis positions the cutting guide in the desired retroversion.

Drive two pins (A1 + A2) into the correlating holes. Remove the forearm axis and reamer.

Slide the cutting guide along the pins closer to the humeral head. Drive the 3rd pin into the (B) oblique hole. Resect the humeral head.

There are (3) different options of height to resect based on the patients' anatomy.

**Optional superior-lateral cutting guide available (page 12)



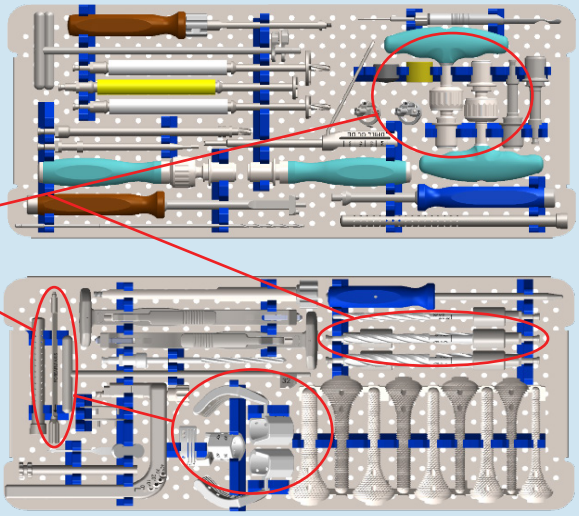
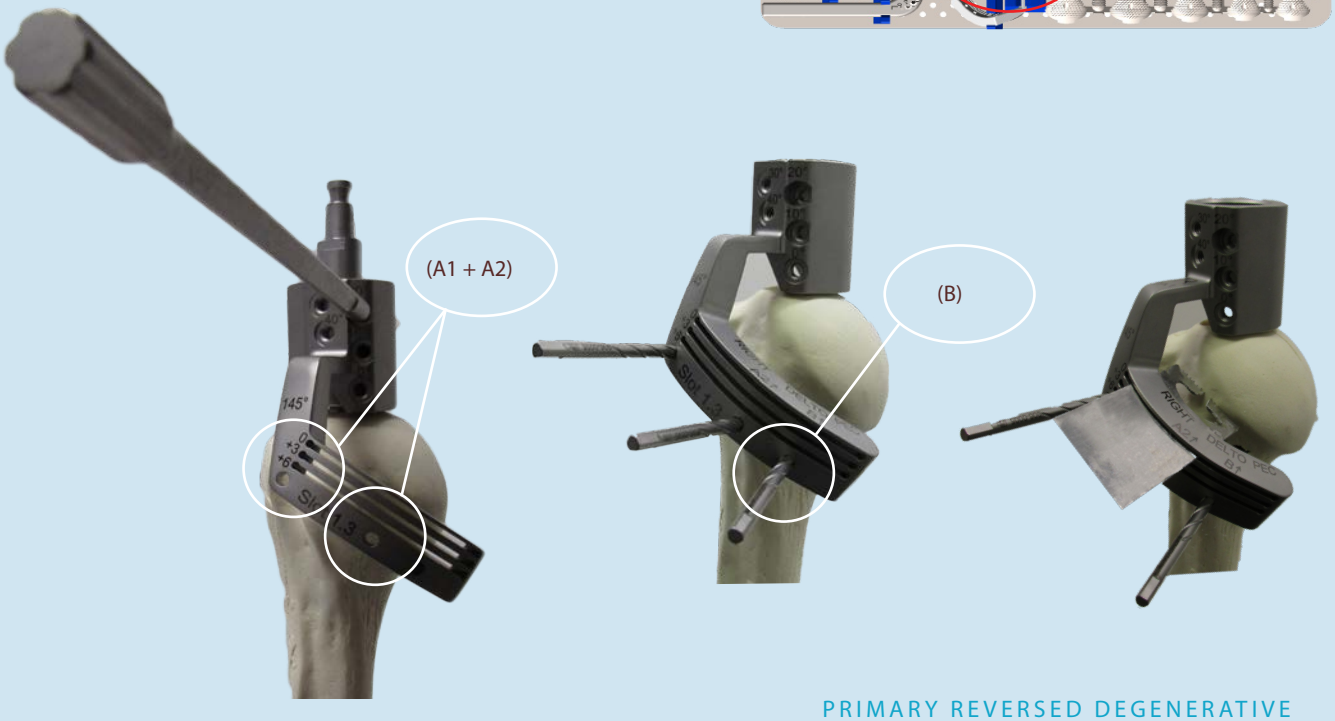


Figure 2



HUMERAL PREPARATION

STEP 2 - OPTION: USING THE 145° EXTRAMEDULLARY CUTTING GUIDE

(Figure 3)

Select the left or right (L or R) 145° extramedullary cutting guide. Insert the forearm axis by screwing it into the preferred version (0°, 10°, 20°, 30° or 40°).

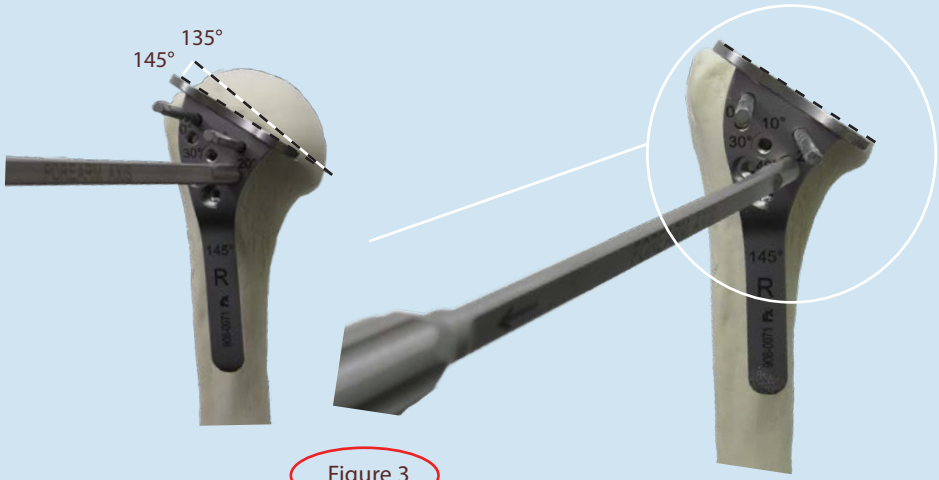
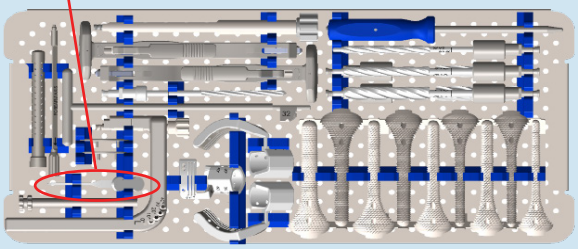


Figure 3



STEP 2 - OPTION: SUPERO-LATERAL APPROACH (Figure 4)

Slide the cutting guide over the remaining reamer. Screw the forearm axis into one of the (5) positions according to the required patient version: 0°, 10°, 20°, 30°, or 40°.

Align the forearm axis and screw this tightly to the reamer to the preferred version (0°, 10°, 20°, 30° or 40°). The forearm axis rod positions the cutting guide in the desired retroversion.

Drive two pins into the correlating holes. Remove the forearm axis and reamer to rescect the head.

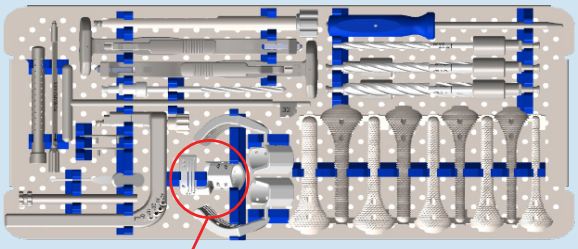


Figure 4

HUMERAL PREPARATION

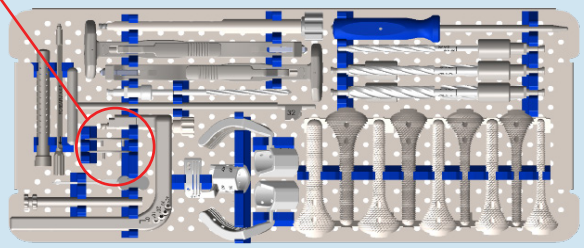
STEP 3: HUMERUS PROTECTION

(Figure 5)

Impact the selected protector cap on the resected humeral surface. Humeral protectors are available in two diameters (Ø41 and Ø46) and spiked.

SPIKED PROTECTOR CAP

Figure 5

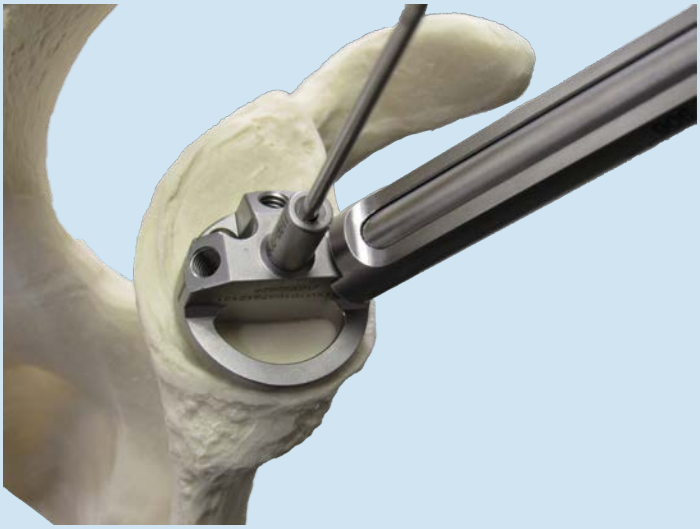


GLENOID PREPARATION

STEP 4: PLACING THE 2.0mm K-WIRE**

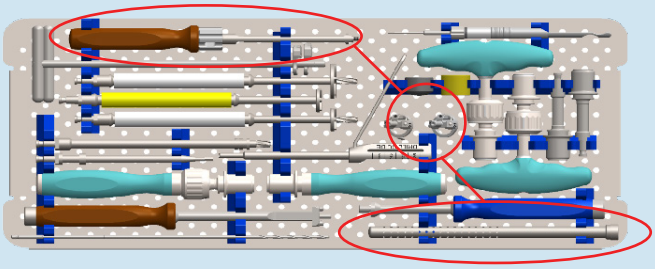
(Figure 6)

The (3) different positions for the guide are left (L), right (R) for delto-pectoral approach and the (S) is for the superior-lateral approach. Positioning should fit the anatomy of the patient and planned according to the pre-operative x-ray.



**There is a choice of a K-wire guide with a foot or without for surgeons preference

Figure 6



GLENOID PREPARATION

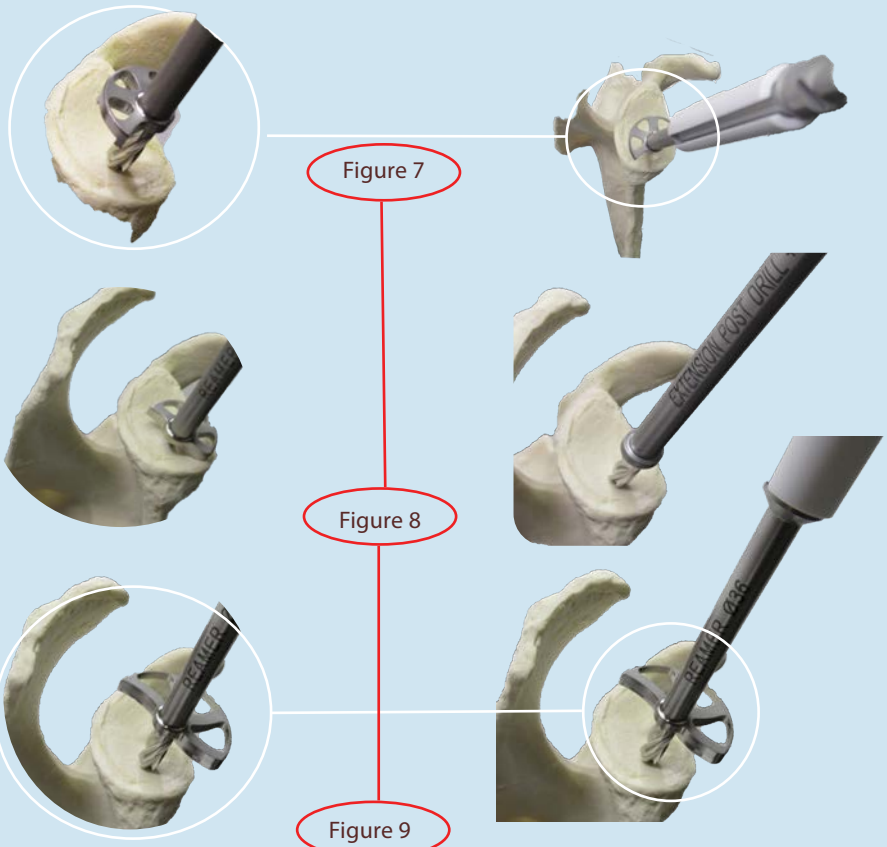
STEP 5: GLENOID REAMING

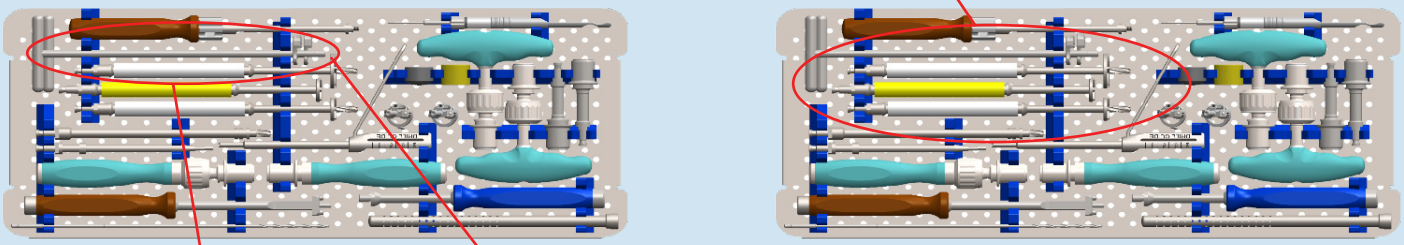
This step can be performed with three different options: Ream to bleeding subchondral bone for all options. (RECOMMENDATION ONLY)

OPT 1: GLENOID RESURFACING REAMER Ø24MM WITH DRILL / HUDSON
Over the 2.0mm K-wire, drill central peg and switch to ream to prepare the glenoid surface. (Figure 7)

OPT 2: Ø24MM GLENOID RESURFACING WITHOUT DRILL
Ream over the 2.0mm K-wire, remove reamer and drill the central peg using the Ø7mm cannulated drill. (Figure 8)

OPT 3: GLENOID RESURFACING REAMER Ø36MM WITH DRILL
Place over the 2.0mm K-wire. Drill and ream. (Figure 9)





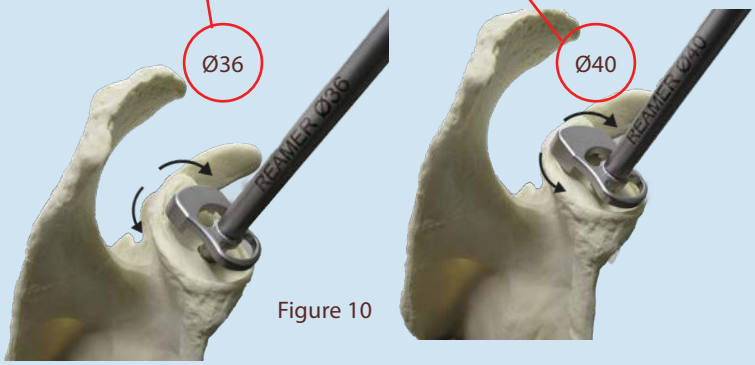


Figure 10

CAUTION

INSPECT TO MAKE SURE ALL OF THE BONE AND SOFT TISSUE HAVE BEEN REMOVED DURING THE GLENOID CLEARANCE BY SWEEPING YOUR FINGER AROUND THE IMPACTED BASEPLATE TO ENSURE YOU WILL HAVE A PROPER IMPACTION AND SEATING OF THE GLENOSPHERE

STEP 6: GLENOID CLEARANCE

Use the GLENOID MANUAL REAMER 36mm OR 40mm. *Must be performed after OPT 1 and OPT 2 (or with the 40mm T-handle if selecting a 40mm glenosphere).* To avoid an interference between the definitive glenosphere and the scapula, ream the glenoid using the Ø36mm or Ø40mm T-handle reamers if needed. (Figure 10)

GLENOID PREPARATION

STEP 7: OPTION 1 BASEPLATE WITH A POST

(Figure 11)

For the Glenoid Baseplate with a Central Screw Proceed to Step 11 on page 18. Connect the baseplate impactor to the definitive baseplate implant. The baseplate impactor is positioned in the anterior and posterior baseplate holes with the "UP" in the superior position. Impact the baseplate so that there is pressure on the whole surface. (RECOMMENDATION ONLY)

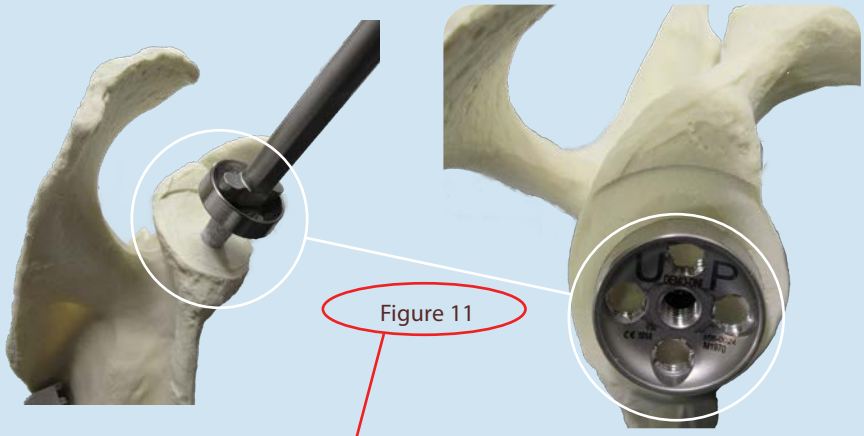
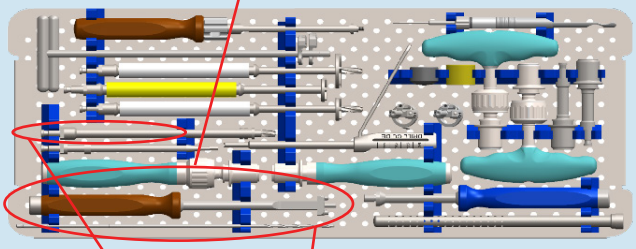


Figure 11



BASEPLATE WITH EXTENSION POST

Figure 12

+6MM EXTENSION POST

STEP 8: EXTENSION POST (OPTIONAL)

(Figure 12)

In cases of poor bone quality, a medializied glenoid, or in revision cases, a bone graft could be used between the glenoid baseplate and the native glenoid, the baseplate post can be extended by +6mm or +10mm as required. It is important to check that the tip of the extension post is properly implanted into the native glenoid.

Drill the post again with stop drill bit either +6mm or +10mm as required.

GLENOID PREPARATION

STEP 9: LENGTH OF SCREWS

(Figure 13)

An adapted guide allows drilling and measuring the screws with a 3.2mm drill bit.

Be sure the drill guide is flush within the screw hole. Measure the length of the screws directly from the drill guide.

Recommendations:

(2) Standard 4.5mm screws (compression) for anterior and posterior holes

(2) Locking 4.5mm screws for superior and inferior holes

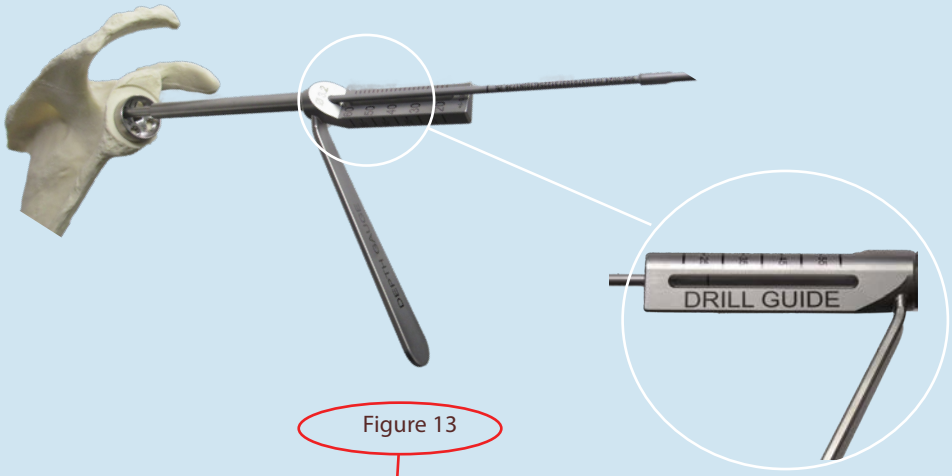
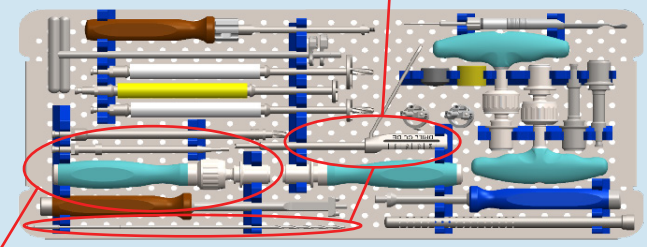


Figure 13



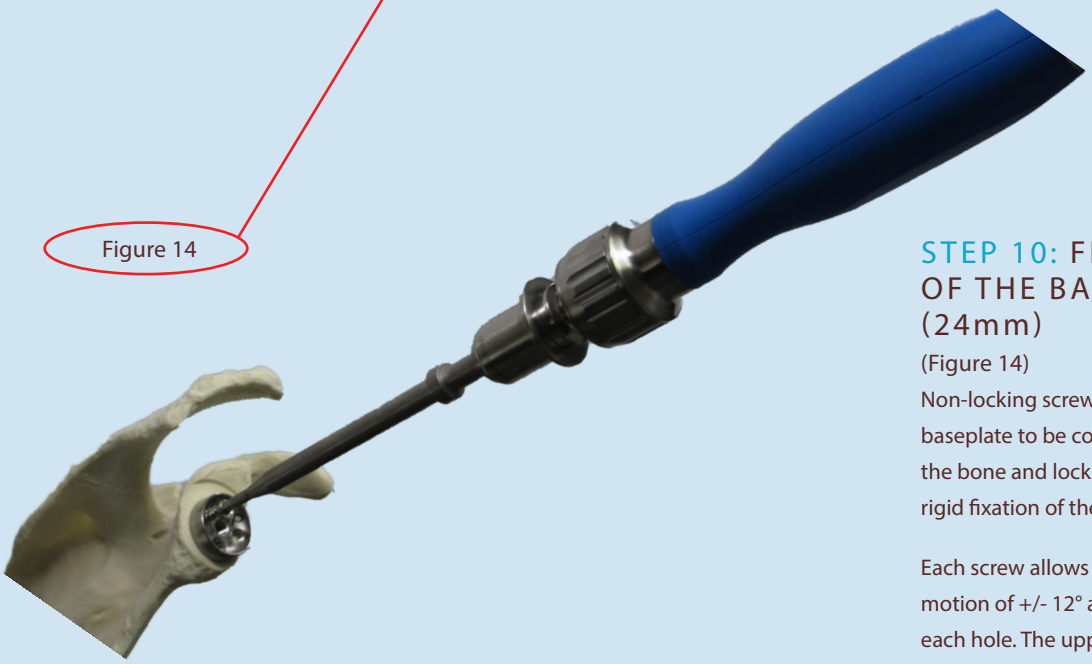


Figure 14

STEP 10: FIXATION OF THE BASEPLATE (24mm)

(Figure 14)

Non-locking screws allow the baseplate to be compressed to the bone and locking screws for rigid fixation of the baseplate.

Each screw allows an polyaxial motion of +/- 12° around the each hole. The upper hole is preoriented of 10° to optimize its positioning around the base of the coracoid process.

GLENOID PREPARATION

STEP 11: OPTION 2
BASEPLATE WITH CENTRAL SCREW

(Figure 15)
Insert the drill guide depth gauge in the central hole of the baseplate. Drill until the cortex.

The length of the screw is measured directly off of the laser etching on the 3.2mm drill at the marking on the drill guide.

Option: Use the depth guage (Figure 16) after drilling to measure or ensure an accurate screw length is measured.

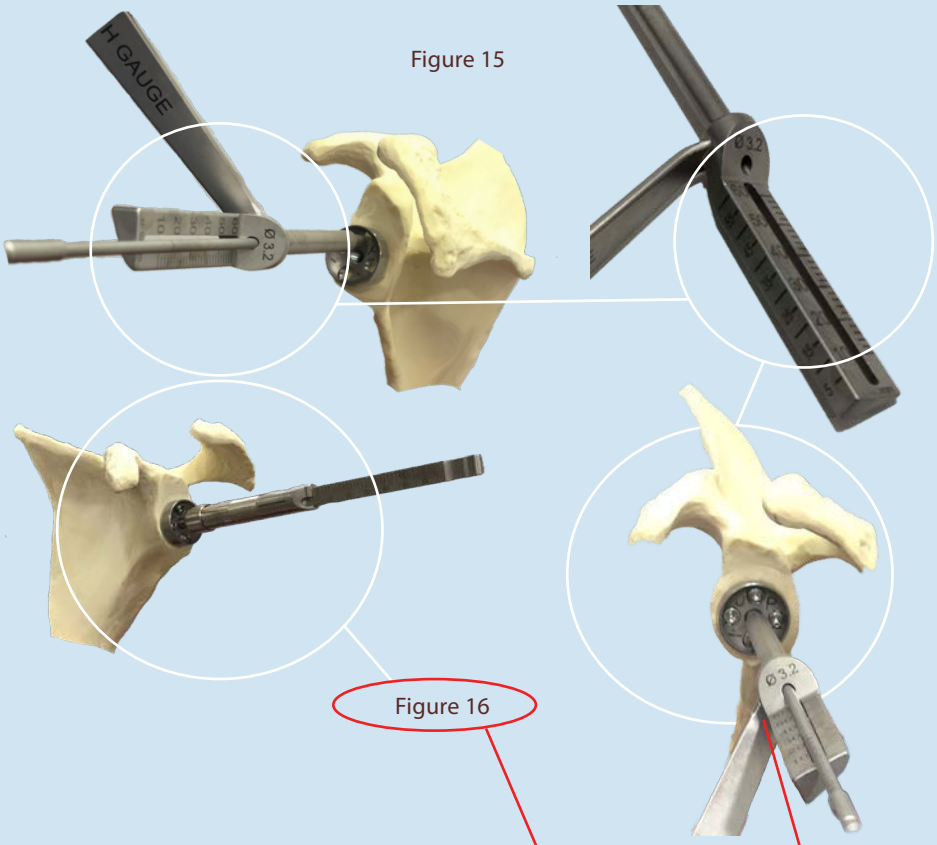
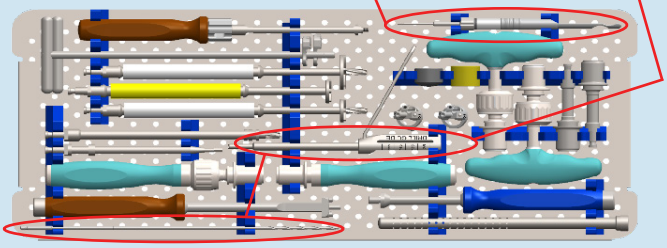


Figure 15

Figure 16



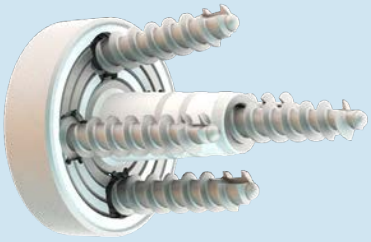
STEP 12 (A):
LENGTH OF SCREWS

There are (7) central screw lengths from 8mm to 20mm (2mm increments).

Recommendations:
(2) Standard 4.5mm screws (compression) for anterior and posterior holes
(2) Locking 4.5mm screws for superior and inferior holes

Standard screws allow the baseplate to be compressed to the bone and locking screws for rigid fixation of the baseplate.

Each screw allows an polyaxial motion of +/- 12° around the each hole. The upper hole is preoriented of 10° to allow up to 22° orientation to reach the base of the coracoid process.



BASEPLATE
WITH
CENTRAL SCREW

STEP 12 (B): FIXATION OF THE BASEPLATE (24mm)

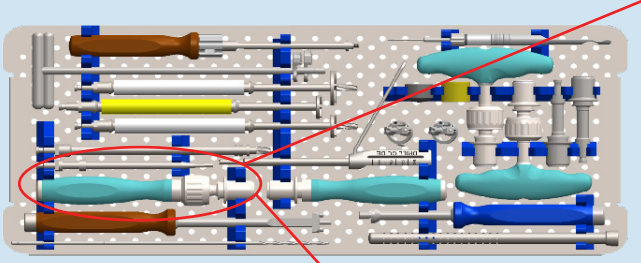
(Figure 17)

It is recommended to screw the anterior and posterior screws first. Then screw the central screw with the 3.5mm hex screwdriver. The central screw will engage the threads of the baseplate post first before the glenoid bone.

The central screw is correctly tightened when the laser etching on the screwdriver (Figure 18) is not visible anymore and the screw cannot be tightened any further through the main post.

Follow and finish the fixation of the baseplate by inserting two locking screws to complete the fixation of the baseplate.

Figure 17



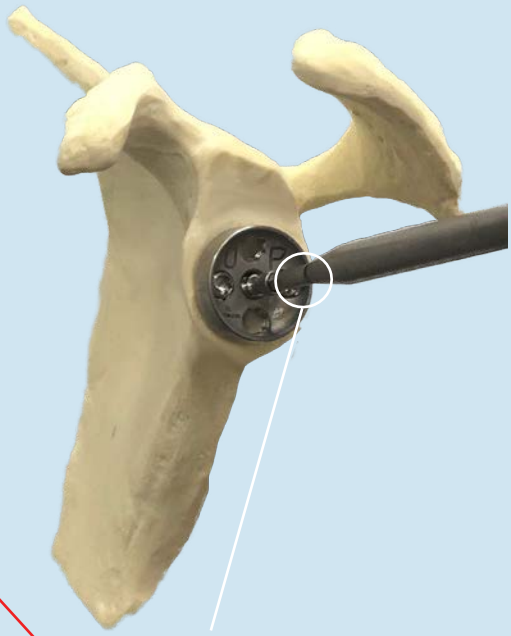


Figure 18

GLENOSPHERE - TRIAL AND DEFINITIVE

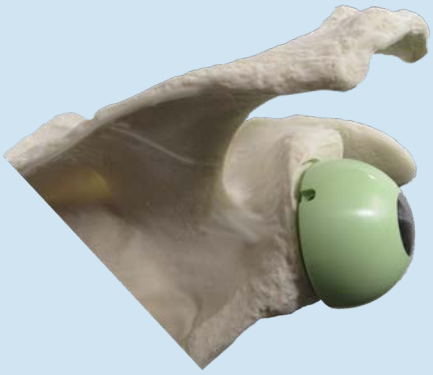


Figure 18

GLENOSPHERE TRIALS Ø32/36/40MM

STEP 13: TRIAL IMPLANTS - GLENOSPHERE

(Figure 18)

There are (3) diameters of glenospheres: 32mm, 36mm and 40mm.

The choice of glenosphere does not depend on the size of the humeral stem.

STEP 14: DEFIN1TIVE GLENOSPHERE

(Figure 19)

Visualize the glenoid baseplate taper surfaces, clean and dry the surfaces to enable the tapered surfaces to be securely engaged. All definitive glenospheres are centered or eccentric with a screw taper. Insert the 3.5mm hexagonal screwdriver into the screw hole of the glenosphere.

If the 2.0 K-wire is still in place, guide the glenosphere over the K-wire to seat it onto the baseplate.

Once the screw of the glenosphere is inserted into the post of the baseplate, tighten the screw one full turn to align the tapers and then tighten the screw until the screw has fully engaged. Impact the glenosphere with the impactor. Hand tighten to finish securing the baseplate.

If using an eccentric glenosphere, be sure that the glenosphere "UP" marking is in the superior and "UP" position. Use the glenoid impactor head attached to the blue sleeved handle for impaction.

CAUTION

Do NOT impact the glenosphere with the screwdriver

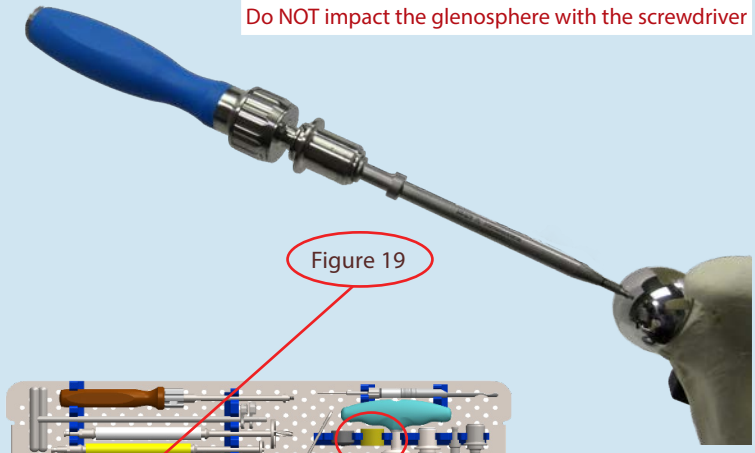
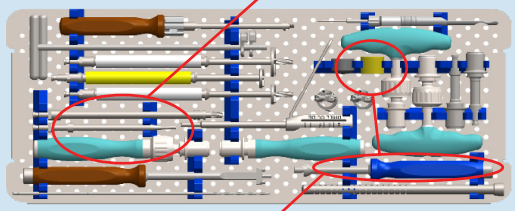
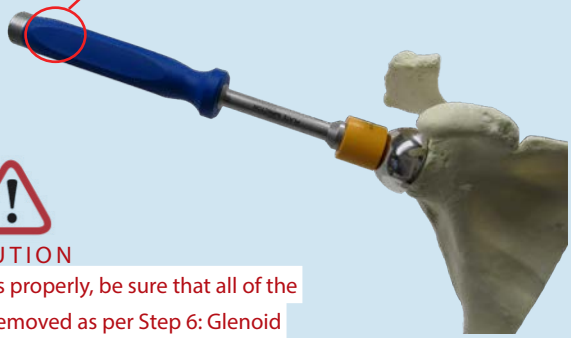


Figure 19





CAUTION

To ensure the morse taper engages properly, be sure that all of the bone and soft tissue have been removed as per Step 6: Glenoid Clearance on page 15

Recommendation:

If the neck of the scapula is short, it is recommended to use an eccentric glenosphere to reduce the risk of notching.

If the neck of the scapula is long, depending on the deltoid tension and the stability of the mounting, a centered glenosphere can be implanted.

HUMERAL PREPARATION

STEP 15: BROACHING

(Figure 20)

Use the metaphyseal broach in incremental size increase with the quick release handle to secure it into place.

Screw in the forearm axis to the desired version (0°, 10°, 20°, 30°, or 40°) into the quick release broach handle.

(Figure 21)

The size of the epiphysis is determined by the size of the last broach.

Note: It is advisable to sequentially broach using a broach size two – three sizes smaller than the reamer. In cases when a larger broach is required to fill the metaphysis, the corresponding reamer and broach to be impacted should be passed down the canal.

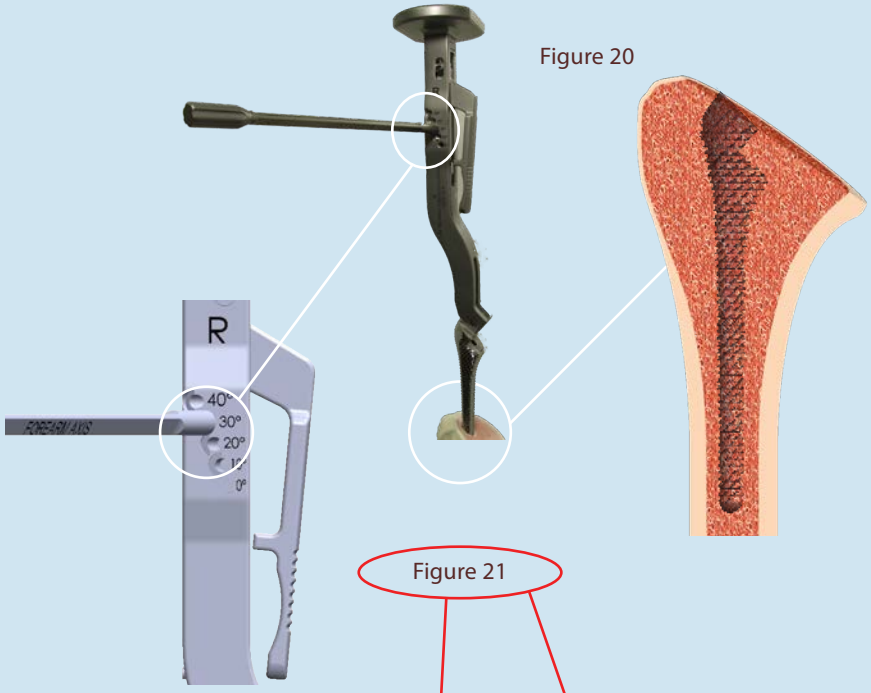


Figure 20

Figure 21

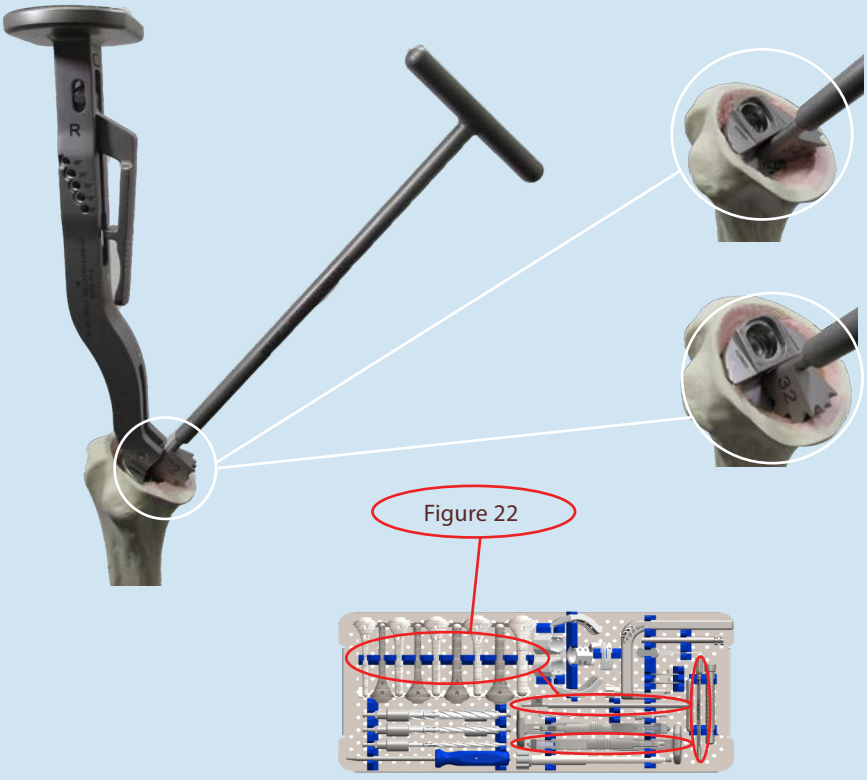


Figure 22

STEP 16: CALCAR HUMERAL PREP

(Figure 22)

Use the 32mm metaphyseal reamer that corresponds to the humeral broach size used. Ream by progressively inserting it onto the broach to clear the medial metaphysis.

HUMERAL CUP - TRIAL

STEP 17: TRIAL IMPLANTS – HUMERAL CUP

(Figure 23)

The cup size is linked to the glenosphere size and not the stem size. Humeral Cup Trials can be done directly off of the broach or off of the defiinitive stem with their respective trials (see figure 23)

TRIAL THICKNESSES

+3mm, +6mm, +9mm, +12mm, +15mm, +18mm

On the definitve implant, you will need to add the +9mm humeral spacer to build up of +12/+15/+18mm.

DIAMETERS

32mm, 36mm, 40mm

The choice of the Standard Reversed Humeral Cup or the addition of the Humeral Spacer (+9mm) is based on the height need for the humeral side of the joint reconstruction.

Recommendation:
The choice of height depends on the amount of resected humeral head, the stability of the reconstructed joint, and the tension of the supporting soft tissues—additional humeral cup height may be desired.

HUMERAL
CUP TRIALS
Ø32/36/40MM

BROACH
CUP TRIALS
Ø32/36/40MM

Figure 23

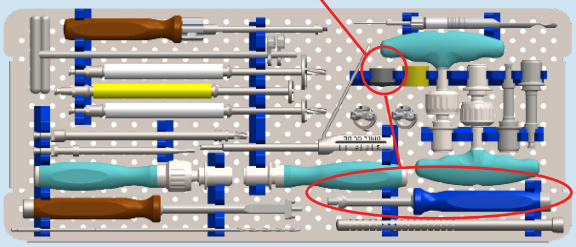


Figure 24

STEP 18: TRIAL REDUCTION

(Figure 24)

Place the trial glenosphere , followed by the humeral trial cup. Assess joint stability and range of motion. The eccentric glenosphere trials and implants offset the glenosphere center of rotation inferiorly.

HUMERAL STEM - DEFINITIVE

STEP 19:
DEFINITIVE HUMERAL STEM
(Figure 25)

Fit the appropriate implant to the stem impactor by aligning the screw of the impactor to the definitive stem taper. Tighten the screw until the stem is secured.

Screw the retroversion rod onto the impactor to check the angulation while impacting the stem.

Impact the definitive stem into the prepared humerus.

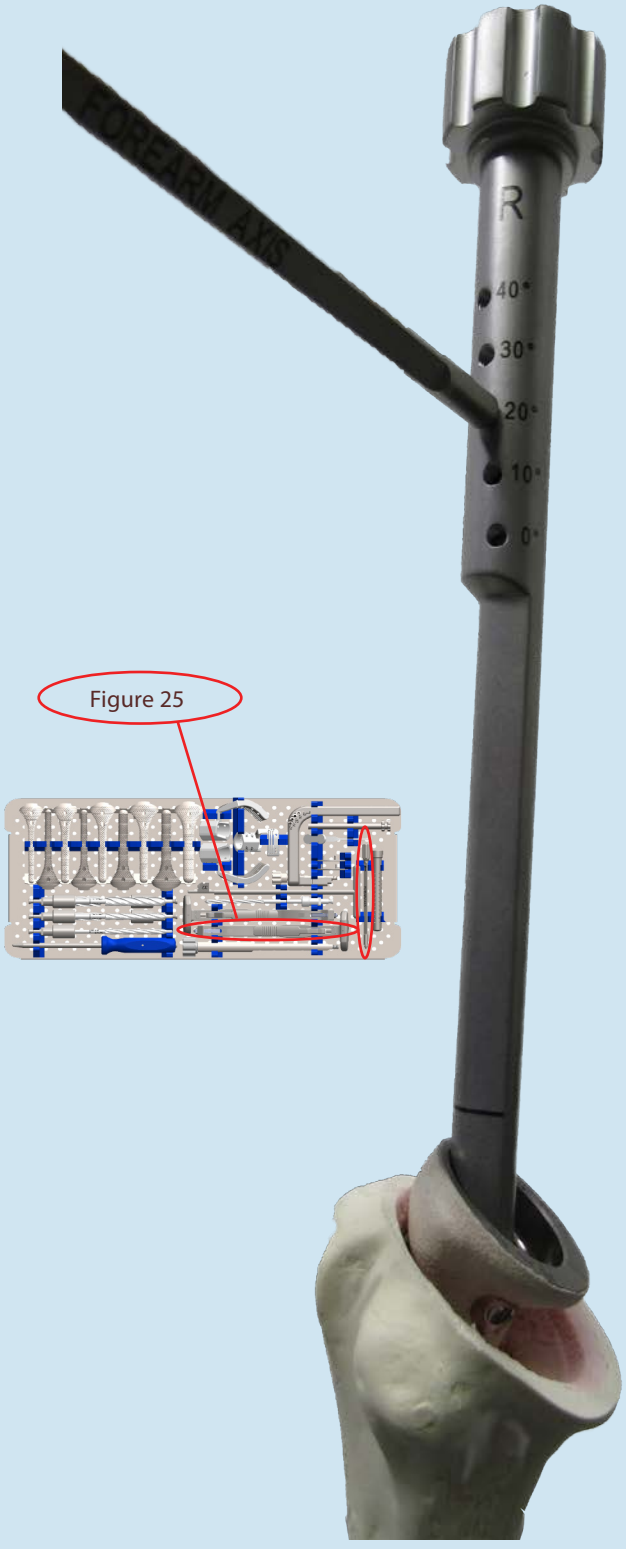


Figure 25

HUMERAL CUP - DEFINITIVE

STEP 20:
DEFINITIVE HUMERAL CUP

(Figure 26)
Select the appropriate humeral cup implant that corresponds to the trial used to assess range of motion and stability. Neutral position is achieved when the medial lines on the Humelock stem and the Humeral cup are aligned.

The +9mm optional humeral spacer enables humeral cup rotation. Place the selected definitive humeral cup into the definitive +9mm humeral spacer (aligning the medial lines of both implants).

Place both implants into the impacted definitive stem by aligning the medial lines of the +9mm spacer to the stem. Impact both into the definitive stem.

STANDARD
REVERSE
HUMERAL CUPS

Figure 26

REDUCTION WITH
+9MM HUMERAL SPACER
AND
STANDARD REVERSE CUP

REDUCTION WITH
STANDARD REVERSE CUP

STEP 21: FOR LOCKED STEM

(Figure 27)

The addition of (2) 4.5mm cortical screws are available as an option to lock the humeral stem.

Insert the drill guide into the proximal hole of the Trauma Aiming Guide. Identify the incision point for the Drill Guide Sleeve, with blunt dissection using forceps expose the soft tissue to bone.

After having carefully dissected the soft tissue, insert the 10mm guide into the proximal hole of the aimer until contact is made with the cortex using the soft-tissue holder. (H) Insert the 4.5mm guide into the 10mm guide.

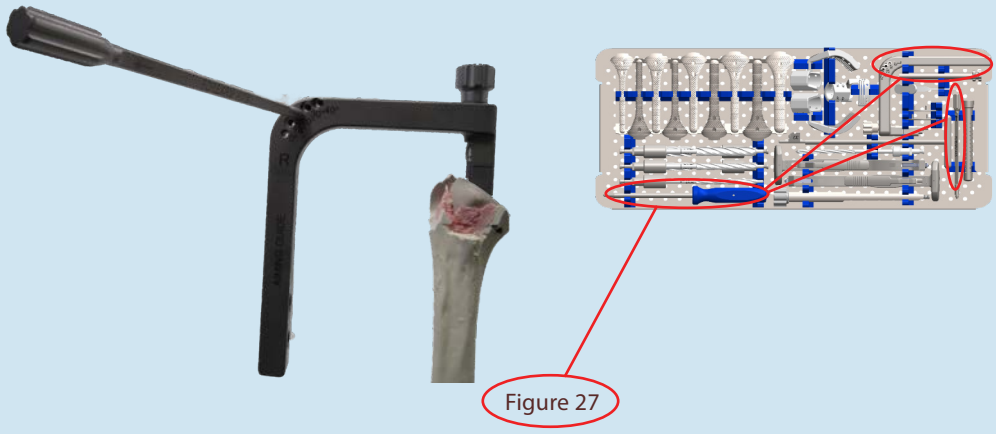
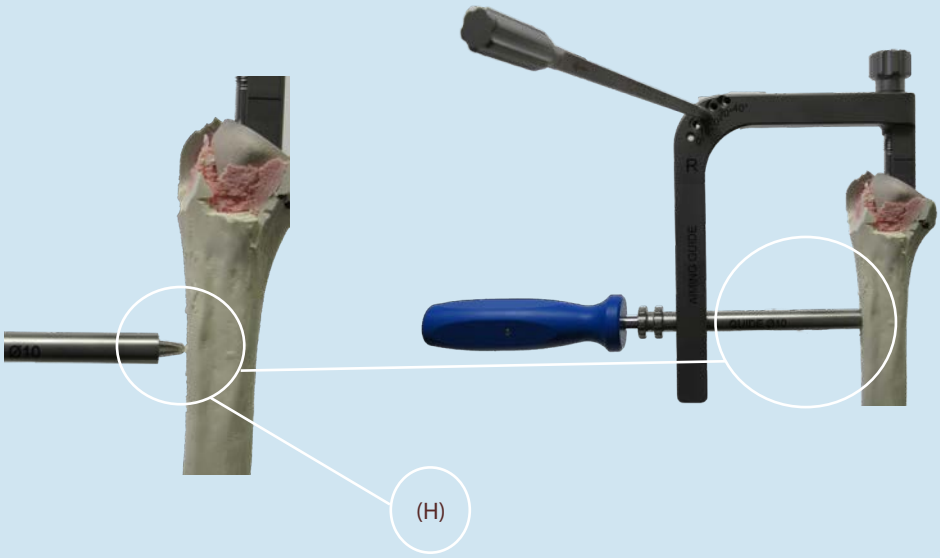


Figure 27



STEP 22:
PROXIMAL AND DISTAL INTERLOCKING

(Figure 28)

Place the drill guide into the desired hole for screw fixation. The Drill Guide Sleeve should contact bone to provide an accurate screw length. Insert the Drill guide/Depth Gauge into the Drill Guide Sleeve until it contacts the Drill Guide Sleeve.

Figure 28

CAUTION

For Trauma Indications, use both interlocking screws to ensure stability of the prosthesis

CORTICAL SCREW LENGTHS

(Figure 29)

The calibrated 3.2mm x 270mm Drill Bit is drilled through the first cortex, stop at the second cortex and measure. Read the length directly on the Drill Guide/Depth Gauge ruler. Add +4mm to the measurement (Figure 29)

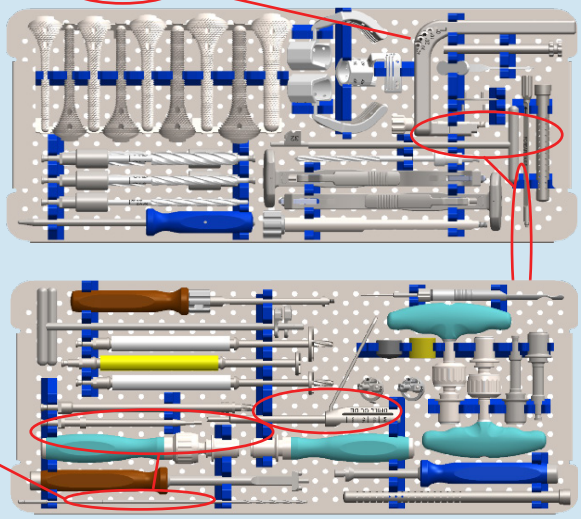


Figure 29

(Example: If the 3.2mm drill bit ring indicates 20mm at the opposite cortex, the definitive screw is 24mm).

If the preference is to drill through both cortices an alternative AO type depth gauge is available.

Drill through the second cortex. Place the definitive screw on the screwdriver (blue handle) and through the guide to screw through and fixate the humerus and stem. (Figure 30)

The optional depth gauge is available to measure screw length if desired.

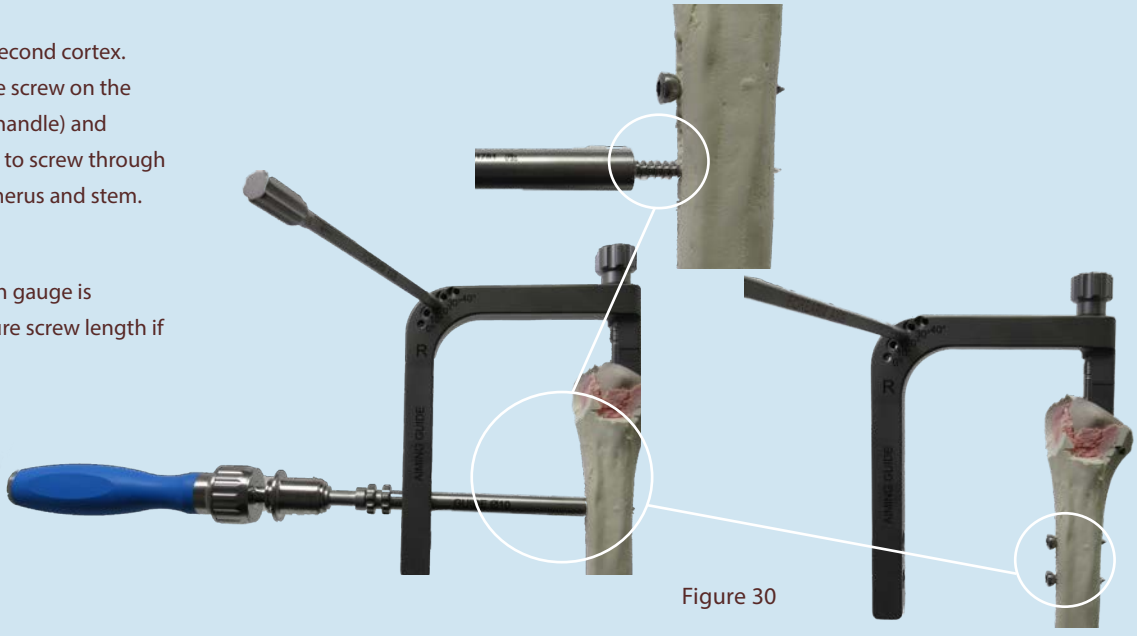


Figure 30

HEMI-PROSTHESIS CONVERSION

HUMERAL CUP REMOVAL

(Figure 31)

Remove the cup by sliding small fork between the cup and the stem.

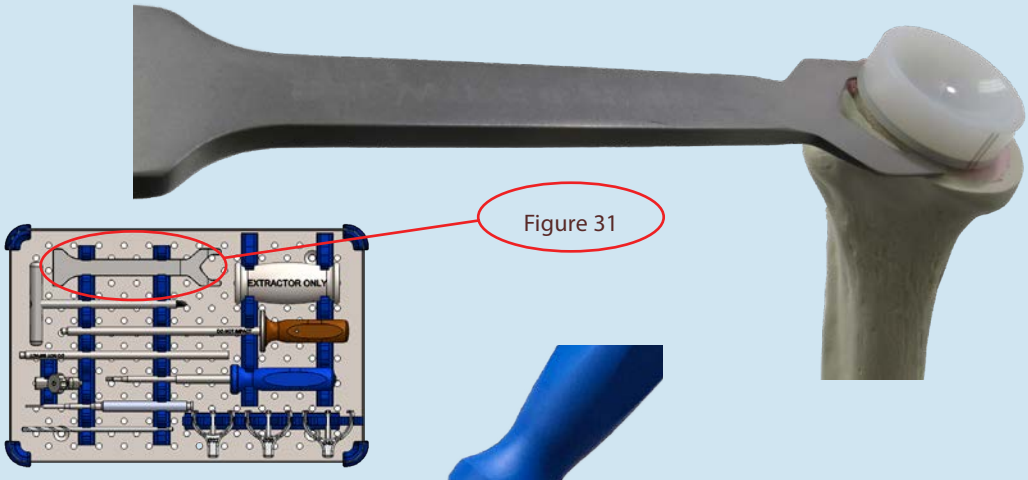


Figure 31

FITTING OF THE TAPER ADAPTER

(Figure 32)

Insert the eccentric taper adapter (ø24/10) into the female taper of the stem so that the index of the taper adapter and the stem are correctly aligned. Check to ensure that nothing is impeding the taper adapter and impact it with the impactor.

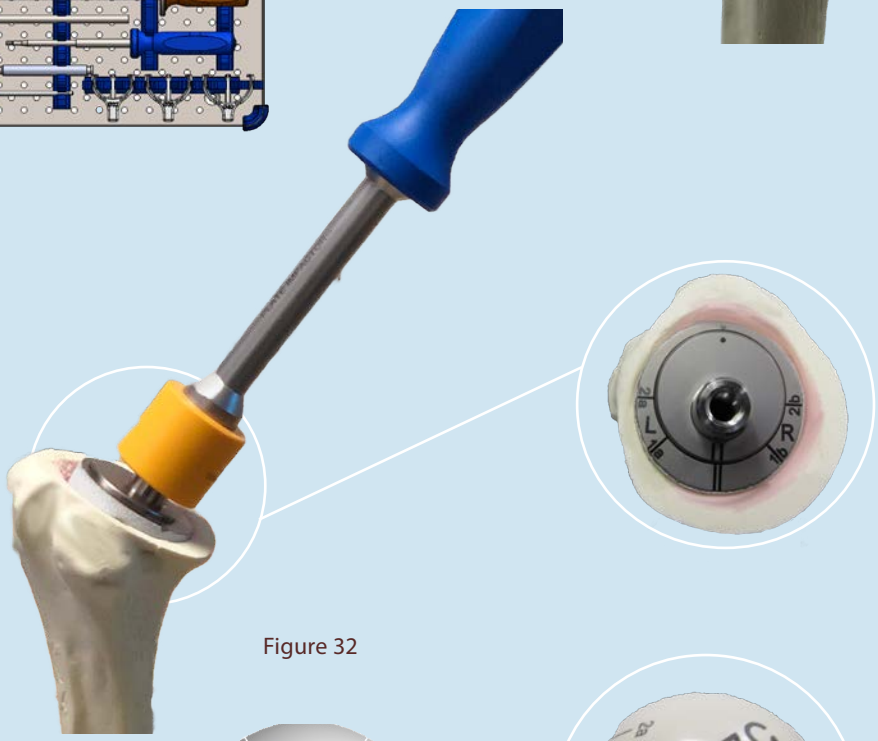


Figure 32

OFFSET HEAD TRIAL Ø50/52/54

(Figure 33)

Choose the best trial head fitting closest to the native anatomy. Record the details so that this position can be used for the definitive implant.

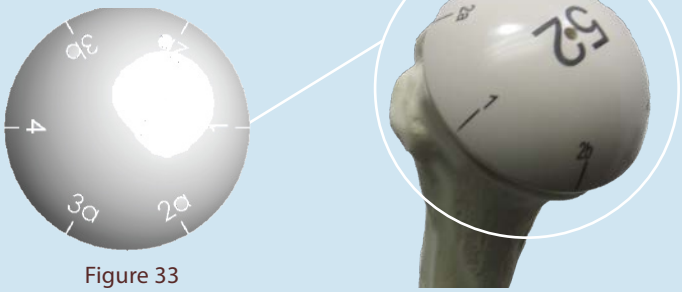


Figure 33

FITTING OF THE DEFINITIVE IMPLANTS

(Figure 34)

Take appropriate implant and insert it on the taper in the same position as the trial. Impact the head using the impactor.

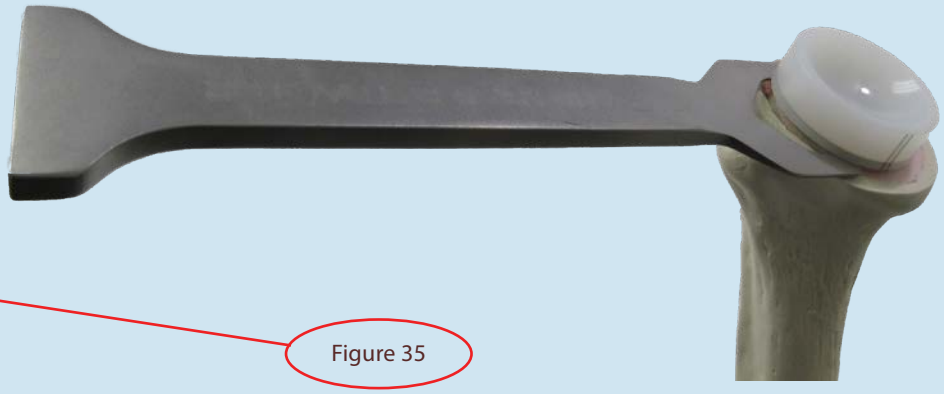
Figure 34

IMPLANT REMOVAL

HUMERAL CUP REMOVAL

(Figure 35)

Remove the cup by sliding the small fork between the cup and the stem.



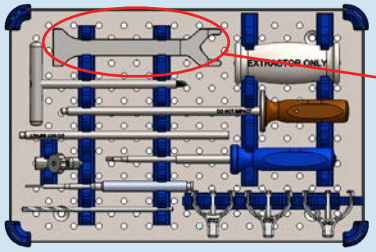


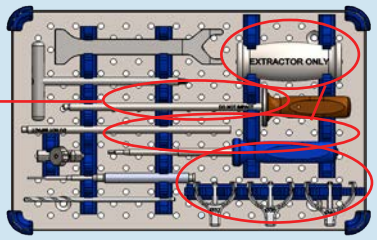
Figure 35

GLENOSPHERE REMOVAL

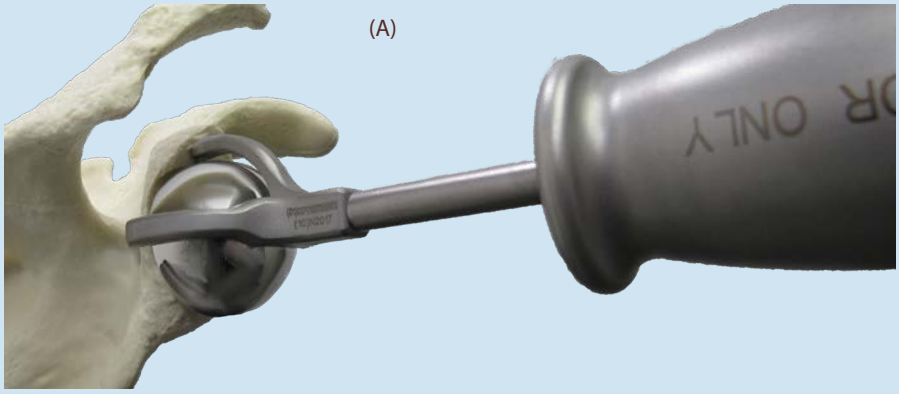
(Figure 36)

Completely loosen and untighten Completely loosen and untighten the glenosphere using the 3.5mm hexagonal screwdriver. Select and attach the corresponding size 32, 36, or 40mm arch to the extractor. Slide the arch spurs onto the equator face of the glenosphere rim. Separate the glenosphere from the baseplate using the slap hammer. (A)

Figure 36



(A)



IMPLANT REMOVAL

BASEPLATE REMOVAL

(Figure 37)

Unscrew the baseplate screws with the 3.5mm hexagonal screwdriver.

Screw the slap hammer extractor into the baseplate post and remove it.

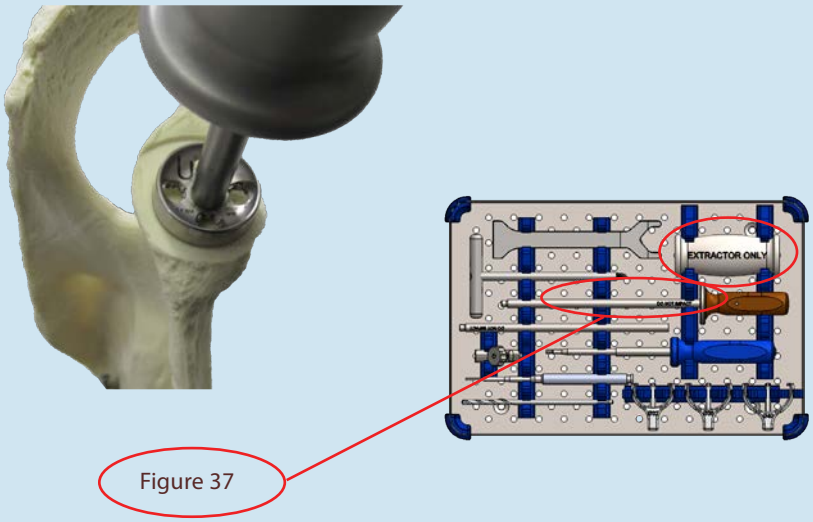


Figure 37

EXTRACTION OF THE LOCKING SCREWS (OPTIONAL)

(Figure 38)

After carefully dissecting the soft tissue, insert the 10mm guide into the proximal hole of the aiming jig until contact is made with the cortex using the soft tissue holder.

Insert the screwdriver into the guide and remove the cortical screw. Repeat for this procedure for the distal hole.

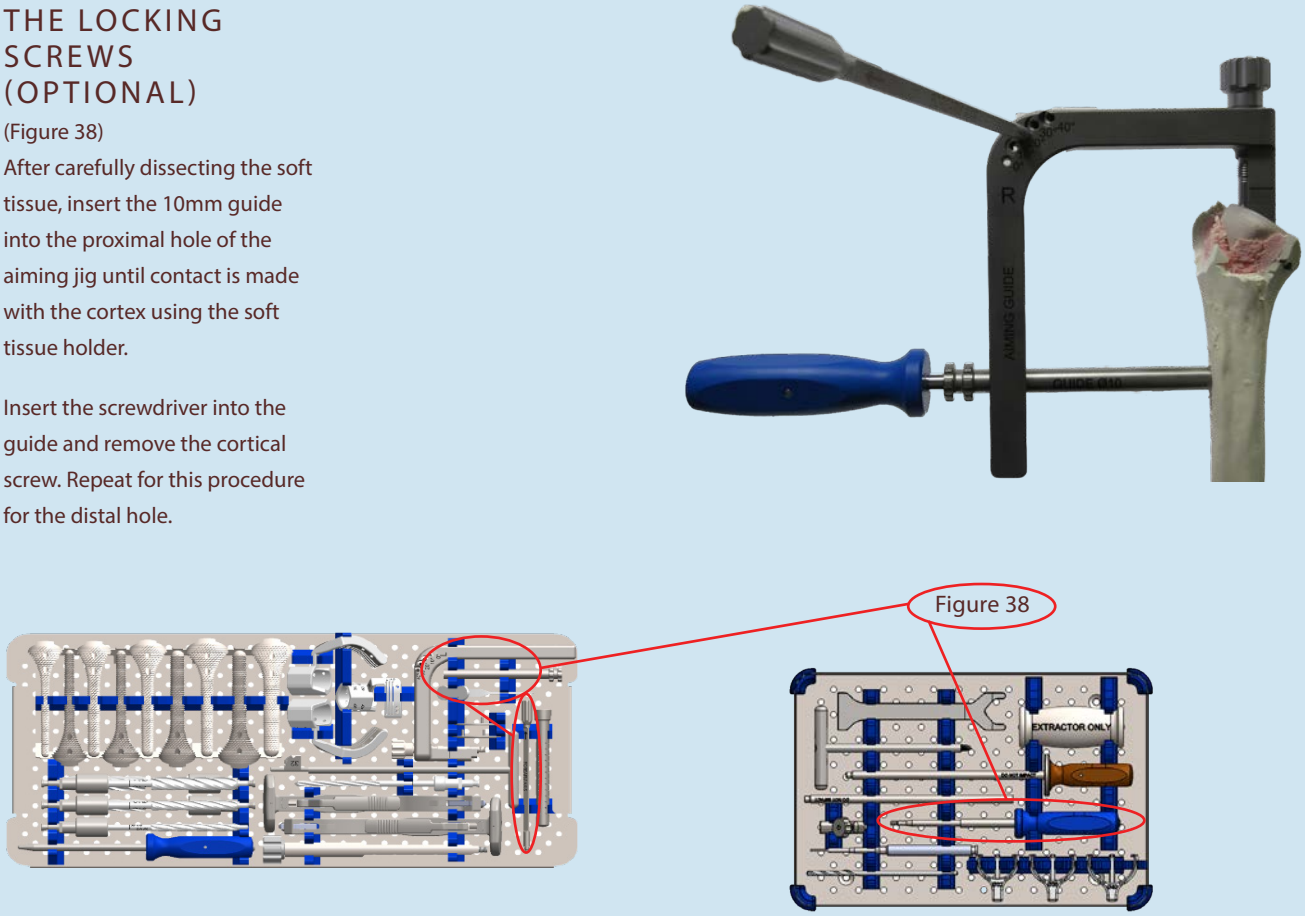


Figure 38

EXTRACTION OF THE STEM

(Figure 38)

Insert the stem extractor into the threaded hole of the epyphysis. Use this to extract and pull out the stem.

If the surgeon has difficulty removing a cementless stem, you can use a little osteotome and slide it between the bone and the HA coating to unstuck the stem from the bone.

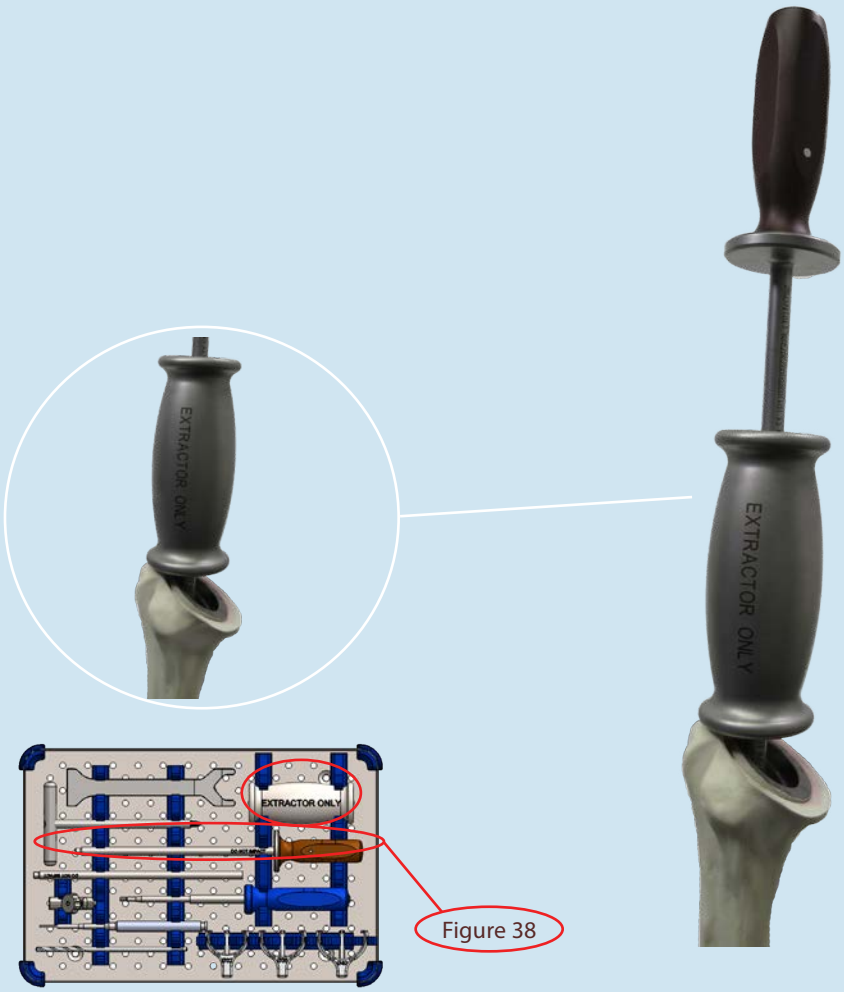
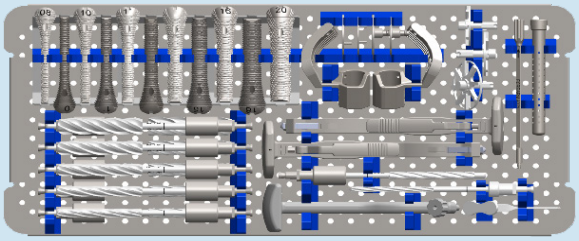
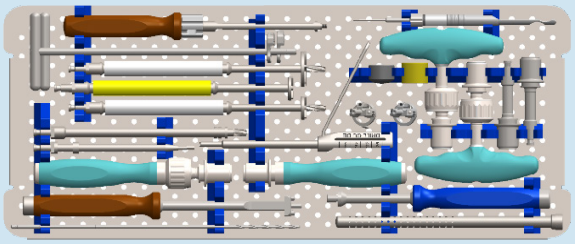
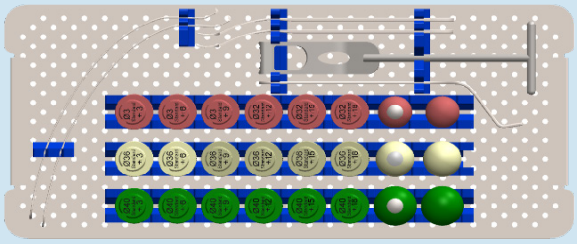
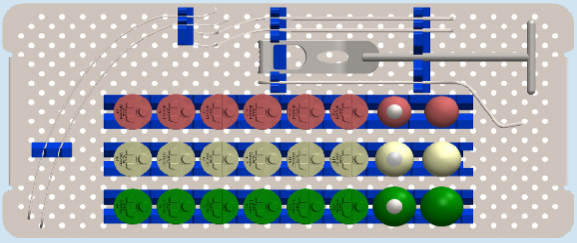
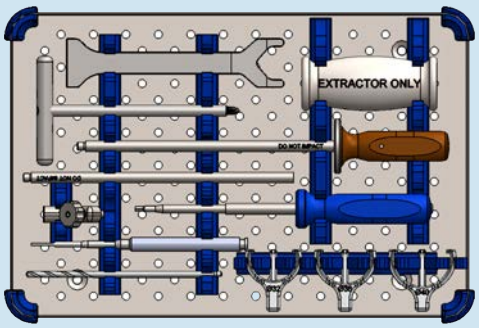


Figure 38

INSTRUMENTATION

REFERENCE NUMBER	DESCRIPTION	INSTRUMENTATION
606-0006	HUMELOCK REVERSED HUMERAL TRAY	
606-0008	REVERSED GLENOID TRAY	
606-0020	STANDARD REVERSED TRIAL TRAY	
606-0021	BROACH TRIAL TRAY	
606-0010	EXTRACTION TRAY	

NOTES

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