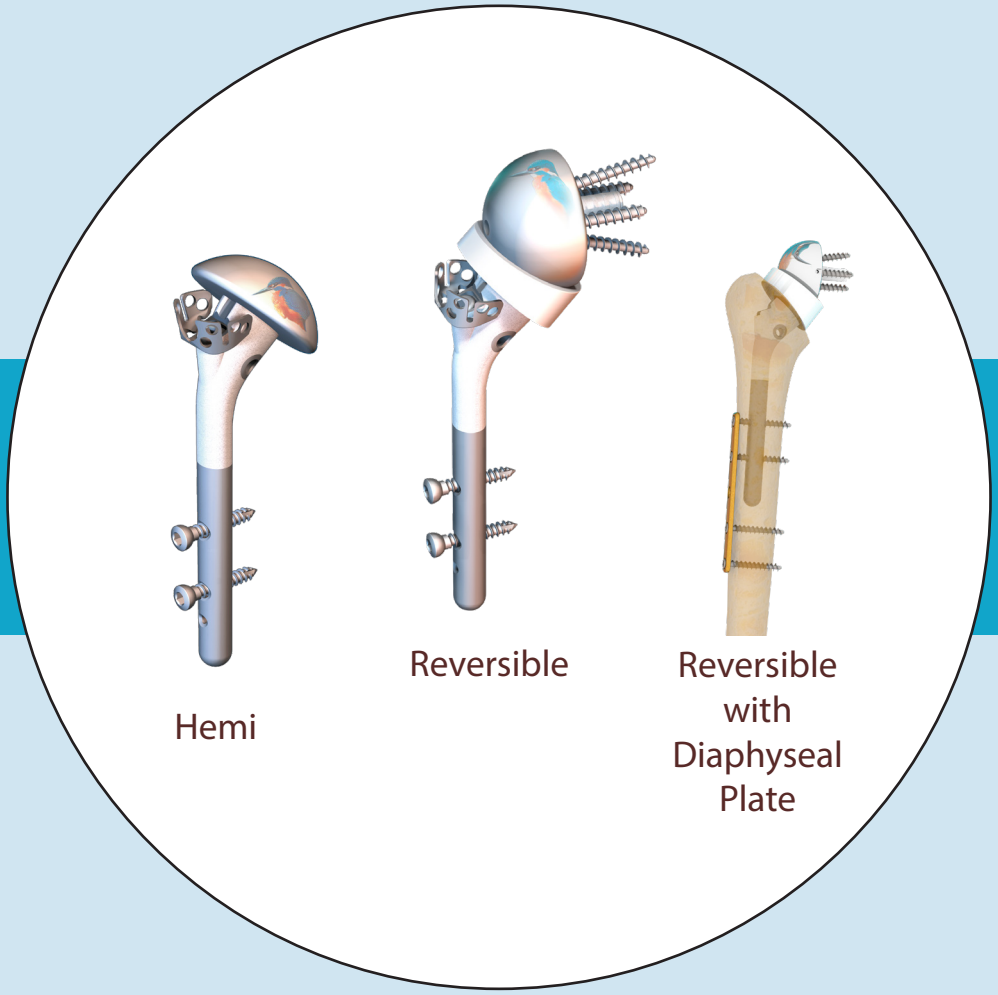
HUMELOCK II®

Cementless

SURGICAL TECHNIQUE
Hemi and Reversible



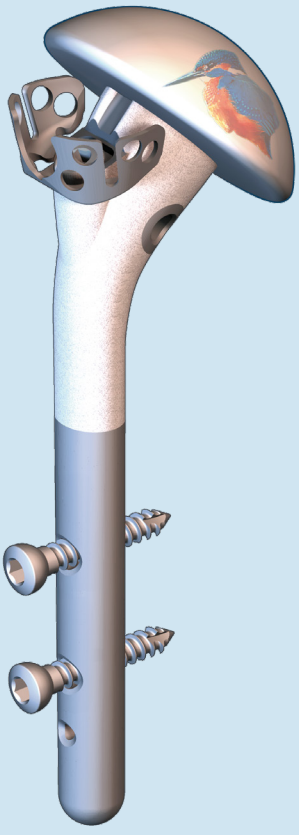
Shoulder Solutions

CONTENTS

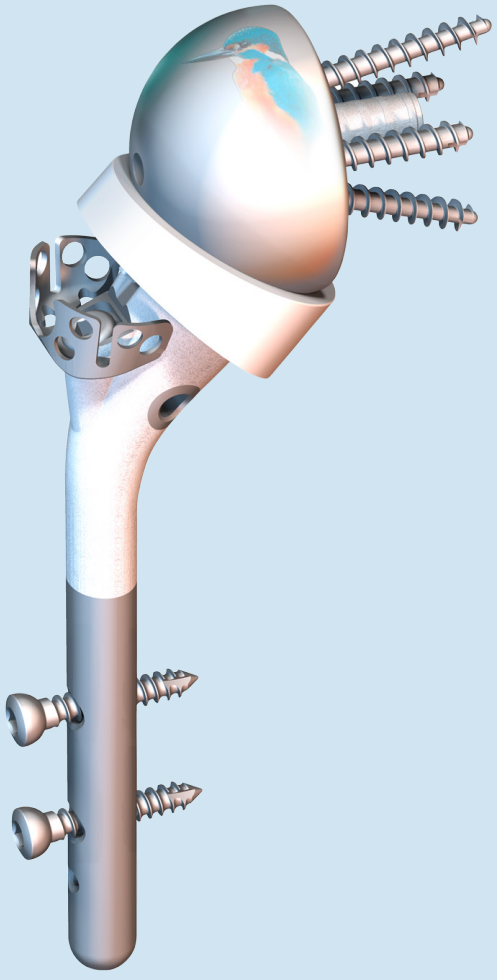
INTRODUCTION

HUMELOCK II® is a new-generation of modular implant designed for the effectivetreatment of 3 or 4 part fractures of proximal humerus. The range of cases in which it can be used is wider than a simple reconstructive anatomical prosthesis. In fact, thanks to its anchoring plate, and if cephalic perfusion criteria are met, the modular nature of HUMELOCK II means it is possible to retain the patient's native humeral head, even in cases of severe osteopenia.

Furthermore, when the use of a reverse prosthesis is not possible on account of the patient's age (<70 years), HUMELOCK II® can achieve optimum anatomical reconstruction of the tuberosities thanks to its Offset Modular System (OMS) which promotes stability and consolidation of the tuberosities, which are essential to shoulder function. HUMELOCK II® is a solution which takes account of the latest scientific developments in the treatment of cephalotuberosity fractures and is ideally suited to the treatment of complex shoulder fractures.

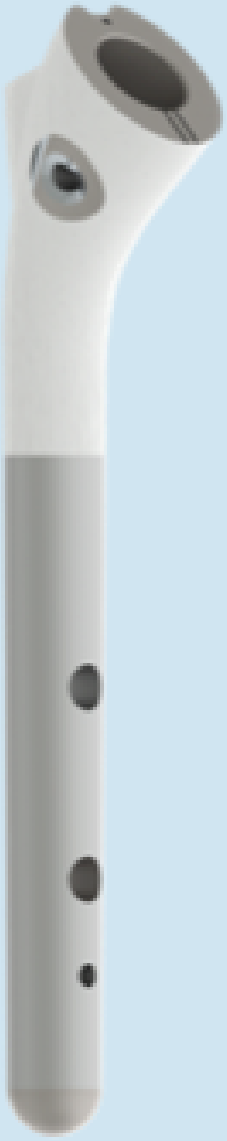


Hemi



Reversible

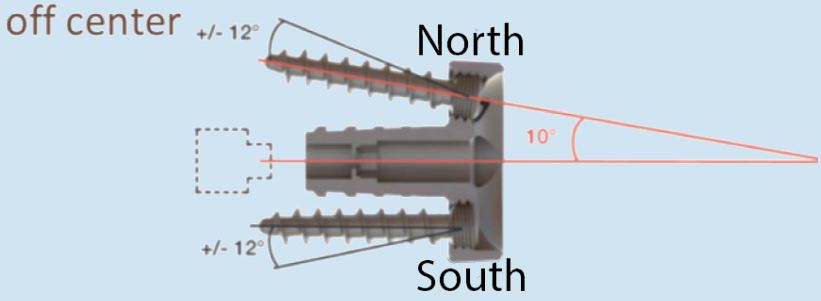
DEVICE DESCRIPTION



HUMERAL STEMS

"Onlay" design at 135°. The Humelock II Cementless Humeral Stem is manufactured from Ti-6Al-4V alloy conforming to ISO 5832-3 and is available in diameters of 8-14mm. The distal end of the humeral stem is cylindrical with a grit blasted surface and two unthreaded screw holes in the anterior / posterior direction for fixation using bone screws. The proximal portion of the humeral stem has a plasma sprayed commercially pure Titanium (CP Ti) and Hydroxyapatite (HA) coating.

HUMELOCK II HUMERAL STEMS		
120MM CEMENTLESS	120 MM CEMENTED	200MM (LONG) CEMENTED
8MM	6MM	8MM
10MM	8MM	10MM
12MM	10MM	12MM
14MM	12MM	



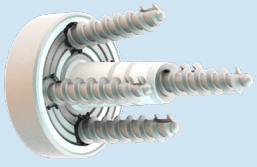
BASEPLATE (24mm)

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 II® Glenosphere is available in Ø36 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 of 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

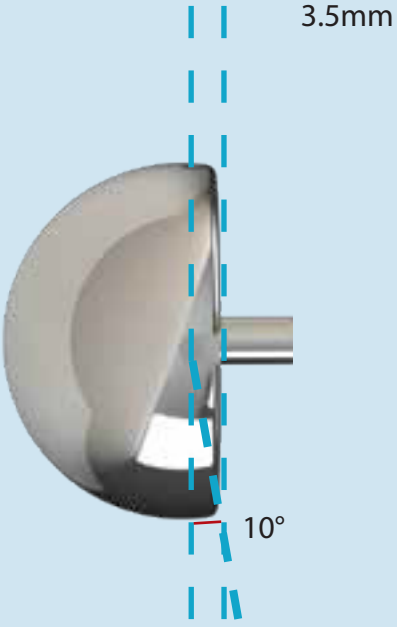
36mm, 40mm

SIZES AND STYLES

Centered or Eccentric
Impacted or With Screw
Size 36 = 3mm of Eccentricty
Size 40 = 1mm of Eccentricty
Lateralization = 3.5mm
Extraction = 132Kg

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

CAUTION



DEVICE DESCRIPTION

HUMERAL CUP THICKNESS

The 135°/145° humeral cups (Figure A) are a one-piece construct consisting of net-shape molded UHMWPE (polyethylene) inserts onto Ti6Al4V alloy shells. A 10mm diameter male taper post allows attachment of the humeral cup into the stem.

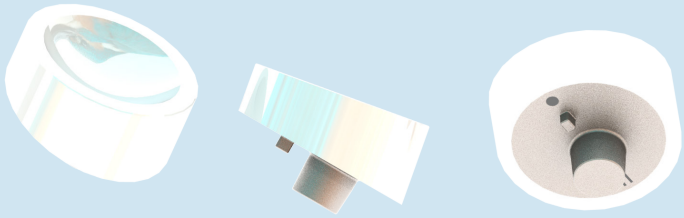


Figure A

135°/145° HUMERAL CUP

DIAMETERS

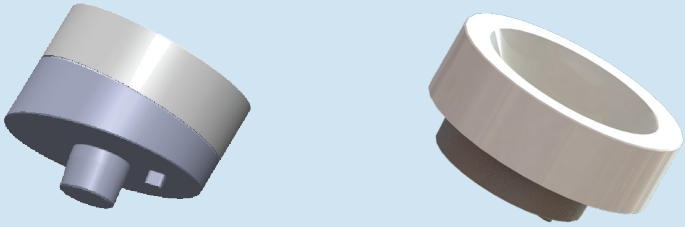
36mm or 40mm

THICKNESS

+3mm, +6mm, +9mm

OPTIONAL REVERSE ADAPTER

A reverse adapter (Figure B) 135°/145° can be used to add +9mm of height when combined with the Standard Reverse Humeral Cups to build up to +12mm, +15mm, or +18mm.



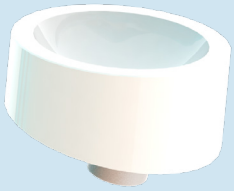
+9MM REVERSE ADAPTER

Figure B

STANDARD REVERSE HUMERAL CUP

STABILITY CUP-OPTION

In extreme cases of instability, the stability variant 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 potentially reduce the range of motion that can be achieved. (Figure C)



STABILITY HUMERAL CUP

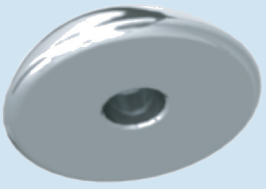
Figure C

135/145° HUMERAL STABILITY CUP		
	STANDARD CUP	STABILITY CUP
DEPTH OF SPHERE	7MM	9MM

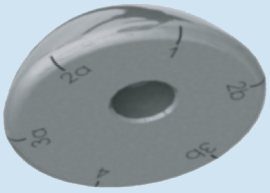
DEVICE DESCRIPTION

HUMERAL HEADS

0°, double taper cone, connects the stem and the humeral head to match 135° inclination.



CoCr CONCENTRIC HEADS



CoCr ECCENTRIC HEADS

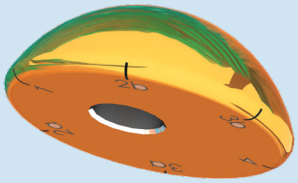
CONCENTRIC HEADS

39x14
43x16
46x17
50x19

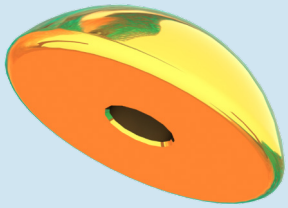
DOUBLE TAPER

ECCENTRIC HEADS

39x15
43x17
46x18
50x20
52x21 - Hemi Only**
54x21 - Hemi Only**



TiN* COATED CONCENTRIC HEADS



TiN* COATED ECCENTRIC HEADS

CAUTION

Indications

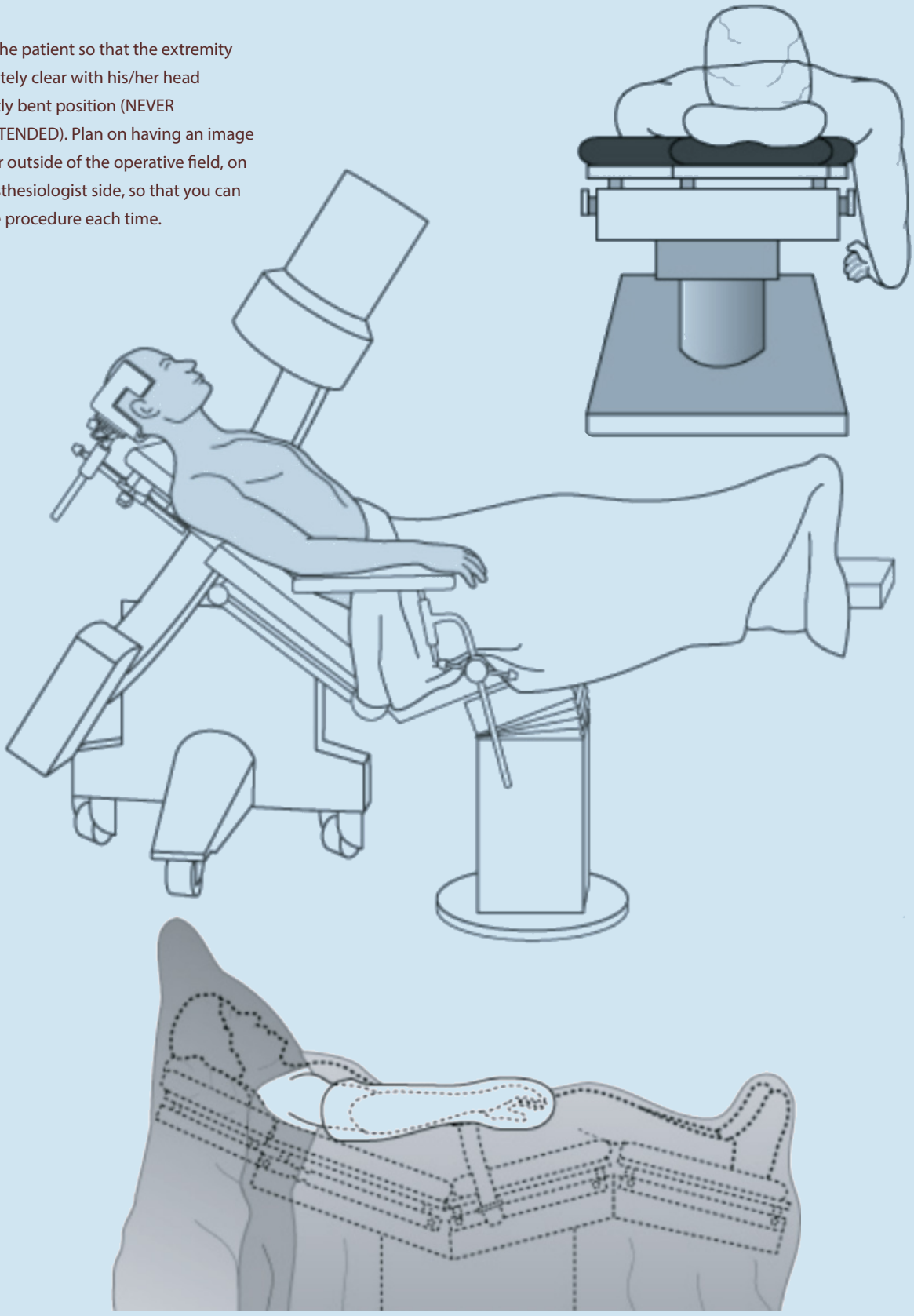
- Cuff Tear Arthropathy
- Rheumatoid Arthritis
- Massive Rotator Cuff Tear
- Fractures of the proximal humerus
- Revision of failed previous procedure necessitating an arthroplasty

Contraindications

- Acute, chronic, local or systemic infections
- Sever muscular, neurological or vascular impairment affecting the joint in question
- Bone destruction or bone quality that could compromise the stability of the device
- Excessive alcohol consumption or other dependency disorders
- Allergy to the material
- Any concomitant illness that could compromise the function of the device

Patient Positioning

Position the patient so that the extremity is completely clear with his/her head in a slightly bent position (NEVER HYPEREXTENDED). Plan on having an image intensifier outside of the operative field, on the anaesthesiologist side, so that you can check the procedure each time.



HUMERAL PREPARATION

STEP 1: EXTRACTION OF THE HUMERAL HEAD

(Figure 1)

Measure the head using the metallic ruler. Use a smaller prosthetic head than the size measured.

Example: Measurement = 46mm => Trial Head = Ø43mm.

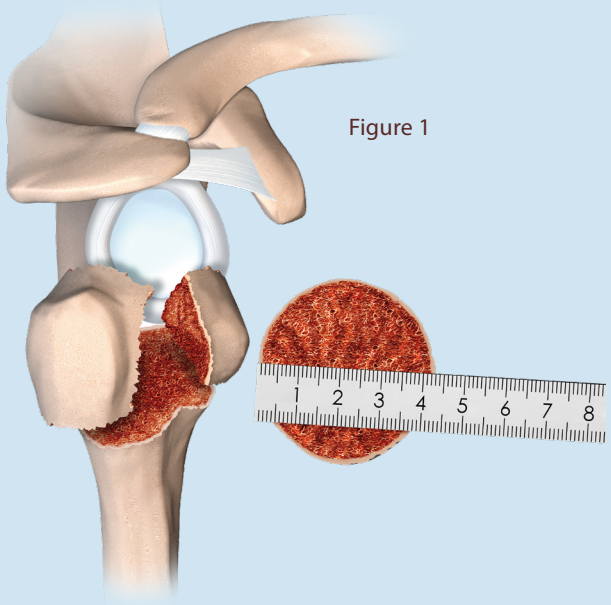


Figure 1

STEP 2: PREPARATION OF THE HUMERAL HEAD

(Figure 2)

Prepare the humeral shaft using the reamers from the smallest To the biggest size.

Use one size then the other until the reamer diameter fits to the humeral intramedullary canal (Ø08, 10, 12, 14mm for cementless stems).

The reamer must be introduced into the canal until it stops.

(Size of the Reamer = Size of the Stem)

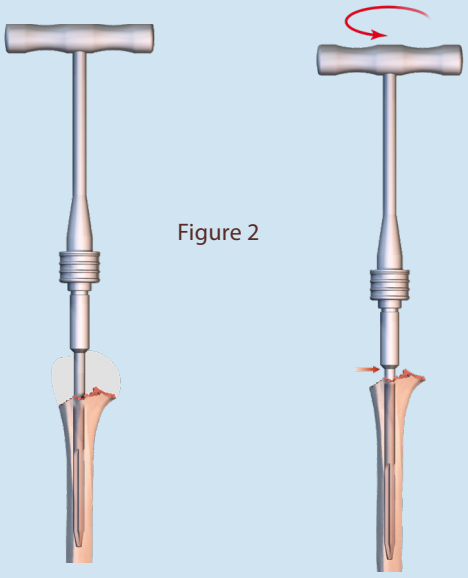


Figure 2

STEP 3: POSITIONING OF THE SMARTLOOP® (GREEN)

(Figure 3)

Make two holes in the diaphysis before inserting the stem into the humeral shaft, by using the same drill bit (Ø3.2mm) as for locking.

Introduce the loop from the outside to the inside, then through the second hole from the inside to the outside.

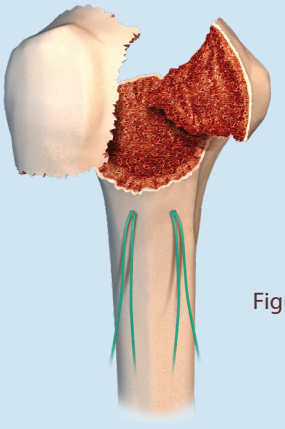


Figure 3

HUMERAL PREPARATION

STEP 4: FITTING THE STEM

(Figure 4)

1- Mount the aiming guide onto the implant without tightening the screw.

2- Place the stability pin (a) into the distal locking hole of the guide andthe stem.

Do not lean on the stability pin, in order to avoid stress on the stem.

3- Tighten the screw of the (implant + guide) assembly.

4- Remove the stability pin.

5- Verify the proper alignment of locking holes with the aimer.

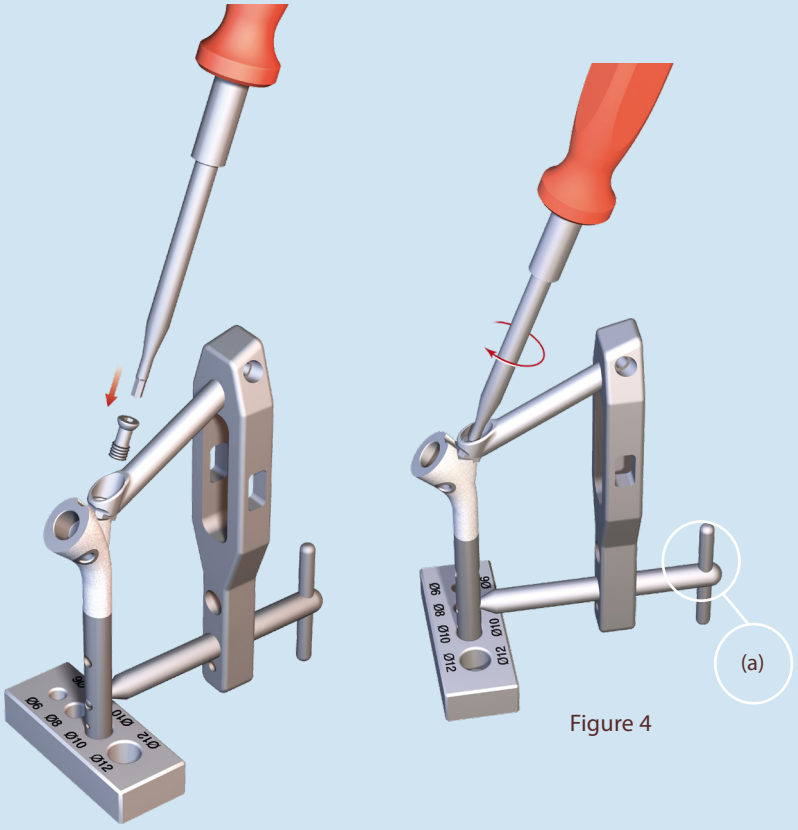


Figure 4

STEP 5: IMPACTION OF THE DEFINITIVE TAPER

(Figure 5)

Put the stem into the stem holder.

Check carefully that there are no splinters on the top of the humeral metaphysis hindering impaction of the morse taper.

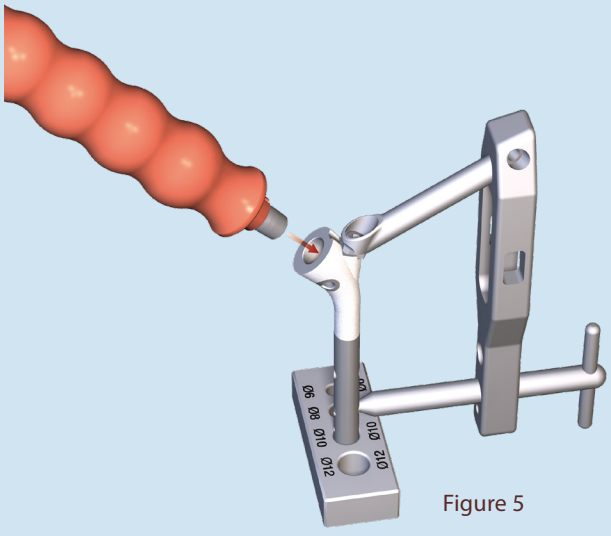


Figure 5

Impact the definitive double taper INTO THE STEM, not into the head using the impactor

HUMERAL PREPARATION

STEP 6: TRIAL HEAD

(Figure 6)

Insert the head onto the taper of the stem. If an offset head is used (white), turn it to find the best position, i.e., the position that is closest to the anatomical structure.

Record the details so that this position can be used again for the definitive implant.

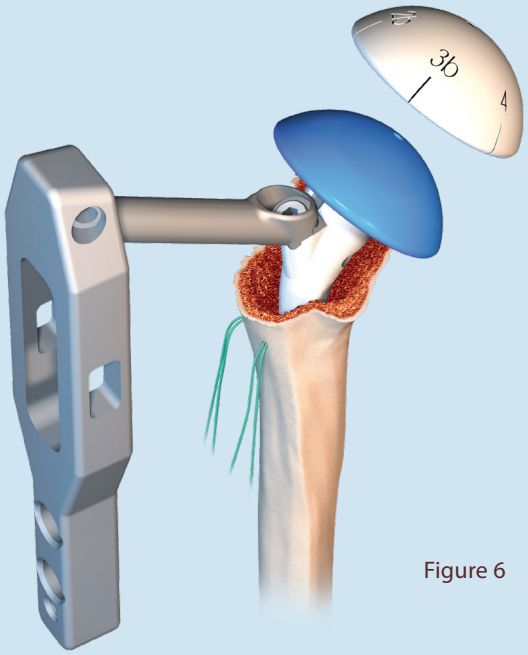


Figure 6

STEP 7: HEIGHT ADJUSTMENT

(Figure 7)

(A) DELTO-PECTORAL APPROACH

Use Murachovsky's criteria1.
Position the trocar level with the point of insertion of the clavicular fascicle of the pectoralis major muscle.
The face of the top plate indicates the position for the top of the humeral head.

(1) Murachowsky J et al. JSES 06; Torrens C et al. JSES 08; Hasan SA et al. Orthopedics 09

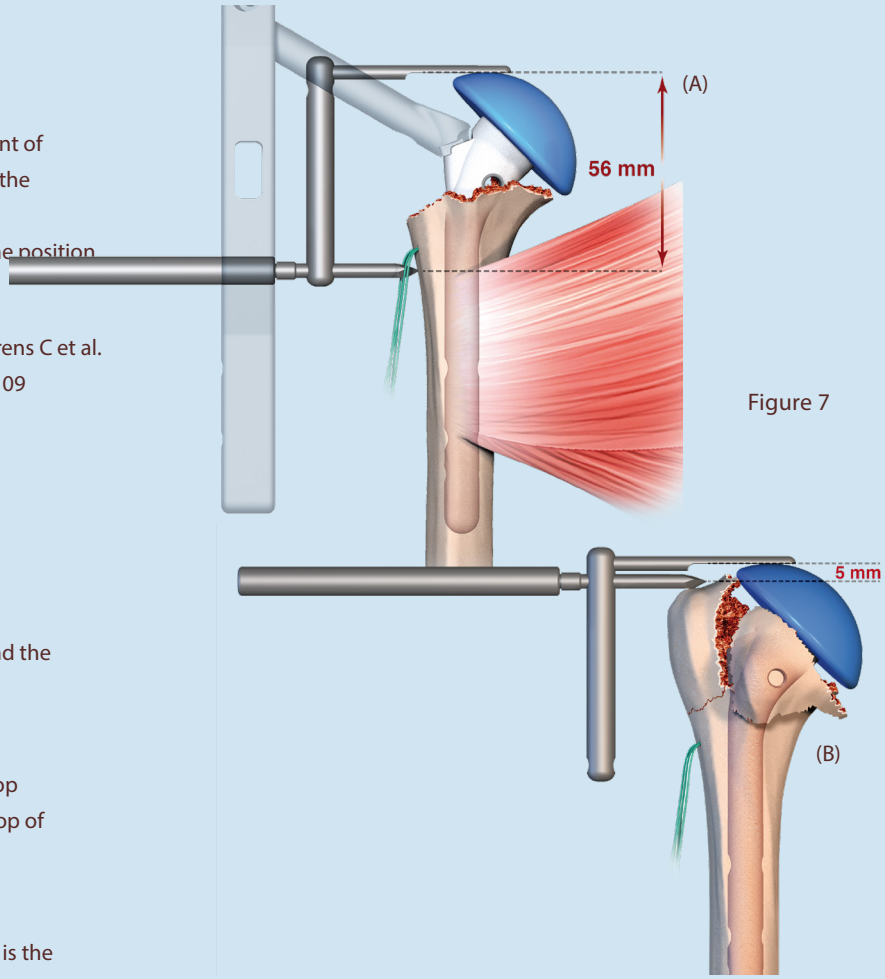


Figure 7

(B) SUPERO-EXTERNAL APPROACH

This criteria applies when there is continuity between the diaphysis and the greater tuberosity.

Position the trocar at the top of the greater tuberosity. The face of the top plate indicates the position for the top of the humeral head.

This position is best assessed by perioperative X-ray. The best criteria is the anatomical reduction of the tuberosities, if the fracture is not too comminuted.

HUMERAL PREPARATION

STEP 8: RETROVERSION

(Figure 8)

Mount the retroversion rod onto the aimer from the right- or left-hand side.
Position this rod parallel to the forearm to achieve 20° retroversion.

VIEW FROM THE TOP: UPPER RIGHT LIMB

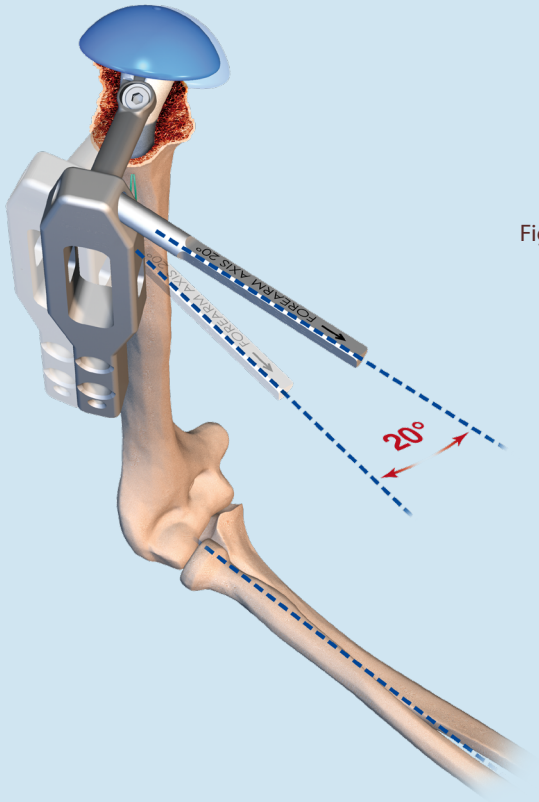


Figure 8

STEP 9: STABILIZING THE HEIGHT AND VERSION

(Figure 9)

Insert the Ø2.0 mm K-wire through the Ø2.2 mm guide to make

contact with the second cortex.

Visually check the height and position of the stem by X-ray before interlocking with two screws.

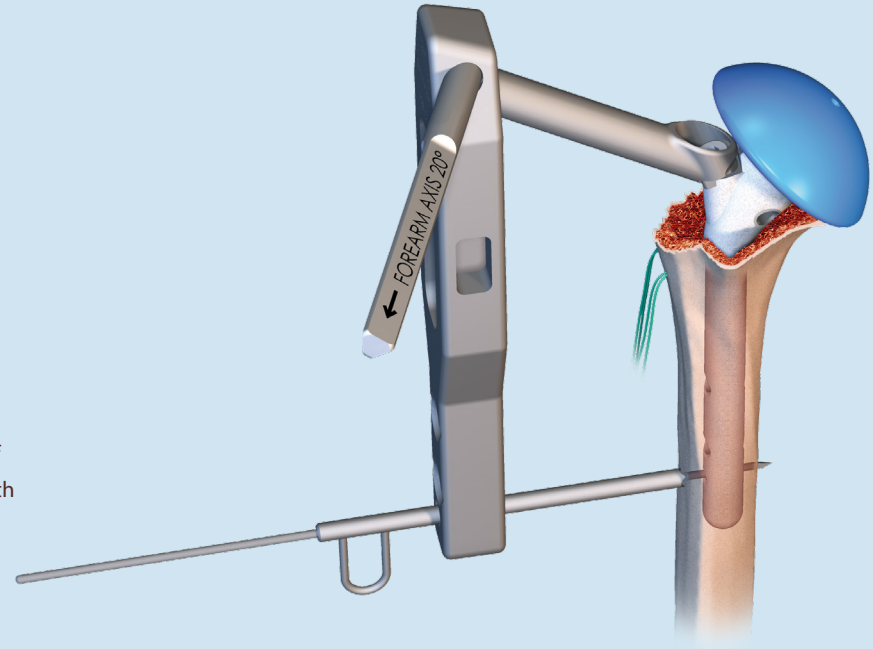


Figure 9

HUMERAL PREPARATION

STEP 10: PROXIMAL SCREW

(Figure 10)

After having carefully dissected the soft parts using Halstead forceps.
Insert the Ø10mm guide into the top hole of the aiming guide until contact is made with the cortex using the soft-tissue holder.

Insert the drill guide depth gauge into the Ø10mm guide.

Leave the distal K-wire in place.

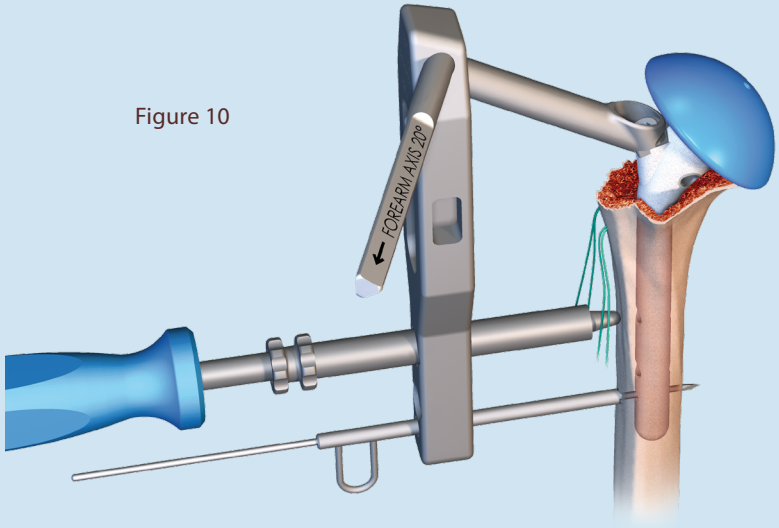


Figure 10

STEP 11: LENGTH OF SCREWS (10 SIZES)

(Figure 11)

a) 1st method without a gauge:
Drill the 1st cortex with the measurer drill.

When in contact with the 2nd cortex, read the measurement and use screw size L + 4mm. Drill to the 2nd cortex.

b) 2nd method with gauge:
Drill up to and including the 2nd cortex. Use the gauge to measure the screw length.
Use screw size L + 2mm.

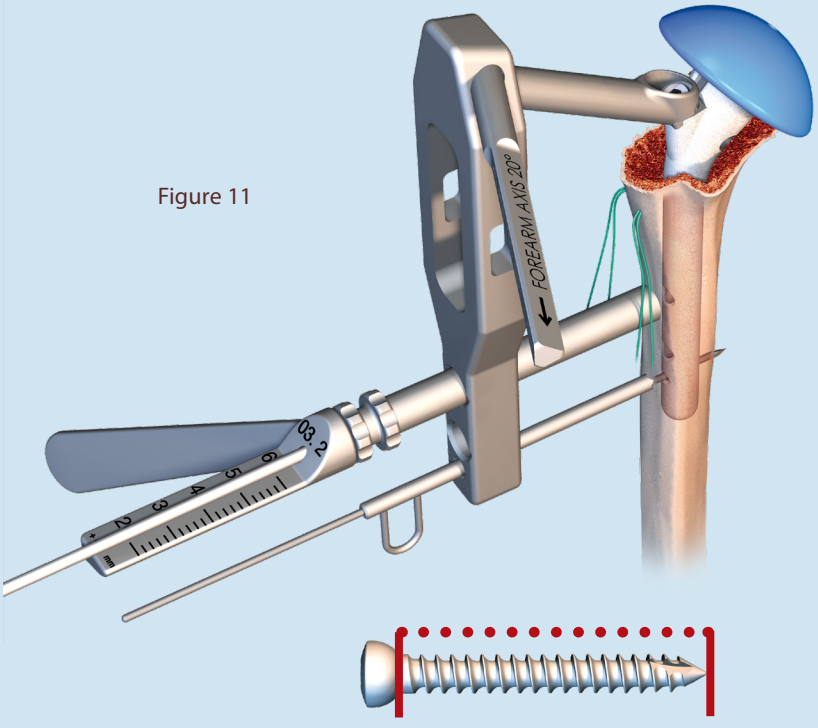


Figure 11

Screw length is measured from under the head.

STEP 12: DISTAL INTERLOCKING SCREW

Proceed in the same way as for proximal interlockng screw leaving the K-wire in place.

HUMERAL PREPARATION

STEP 13: POSITIONING THE DEFINITIVE HEAD

(Figure 12)

Record the position of the offset head in relation to the arrow on the aimer.

Take the appropriate implant and insert it on the taper of the stem in the same way.

Check carefully that there are no splinters on the top of the humeral metaphysis hindering impaction of the morse taper.

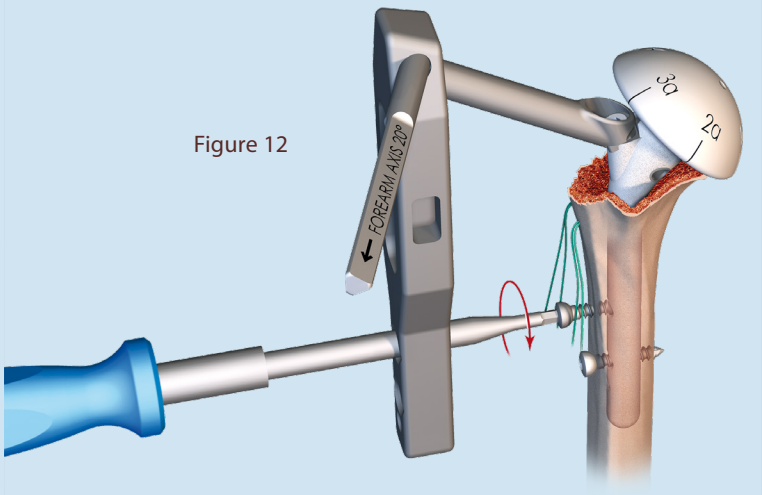


Figure 12

STEP 14: IMPACTION OF THE DEFINITIVE HEAD

(Figure 13)

Impact the definitive head on themale taper with the impactor.

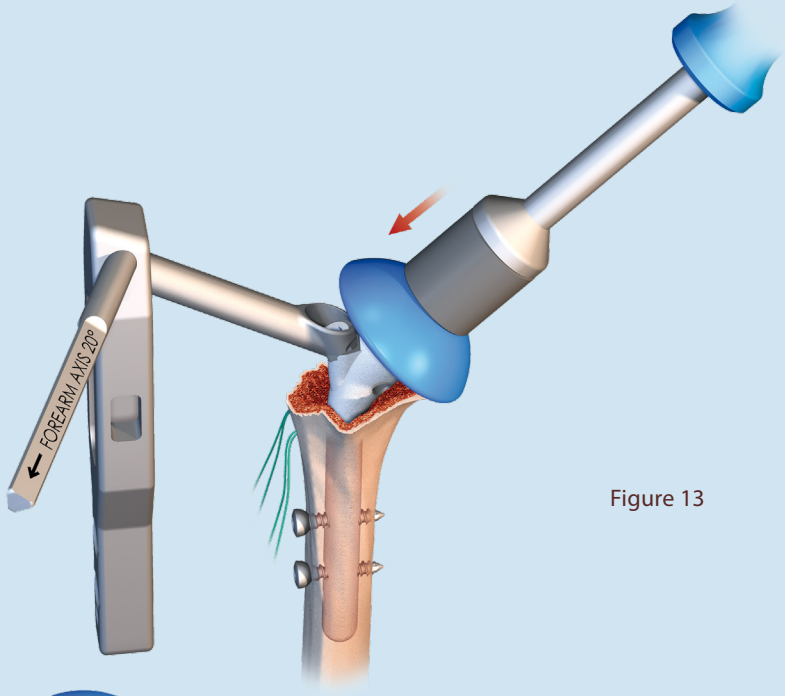


Figure 13

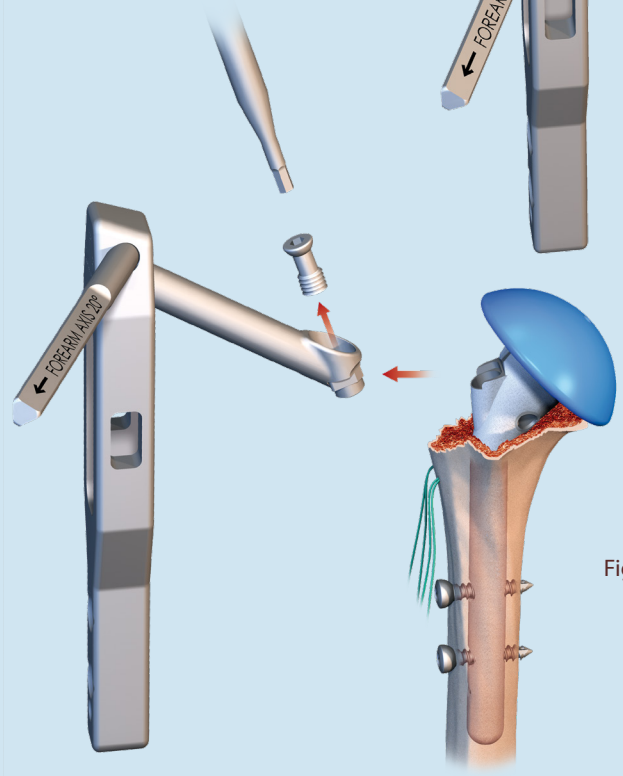


Figure 14

REMOVAL OF THE AIMING GUIDE

(Figure 14)

Remove the aiming guide locking screw.

USING THE OMS - OPTION

INITIAL POSITION:

(Figure 15)

Once the stem has been interlocked, remove the aimer. Reposition the tuberosities.

In the event of their medialisation, use one of five cages from the offset modular system (OMS)

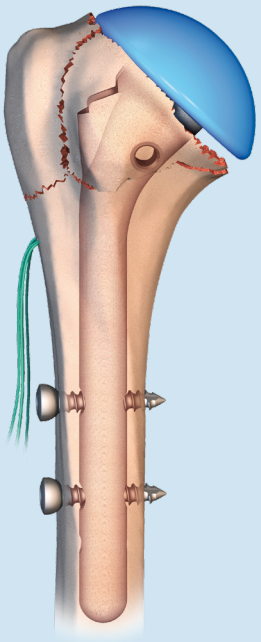


Figure 15

SELECTING THE CAGE SIZE

(Figure 16)

Use trial cages in increasing order of size. Change from one size to another until the diameter of the cage allows correct filling of the epiphyseal space.

From the front view, the cage must be lower than (X) and inside (Y) the top edge of the prosthetic head.

The size selected depends on the anatomy of the tuberosities.

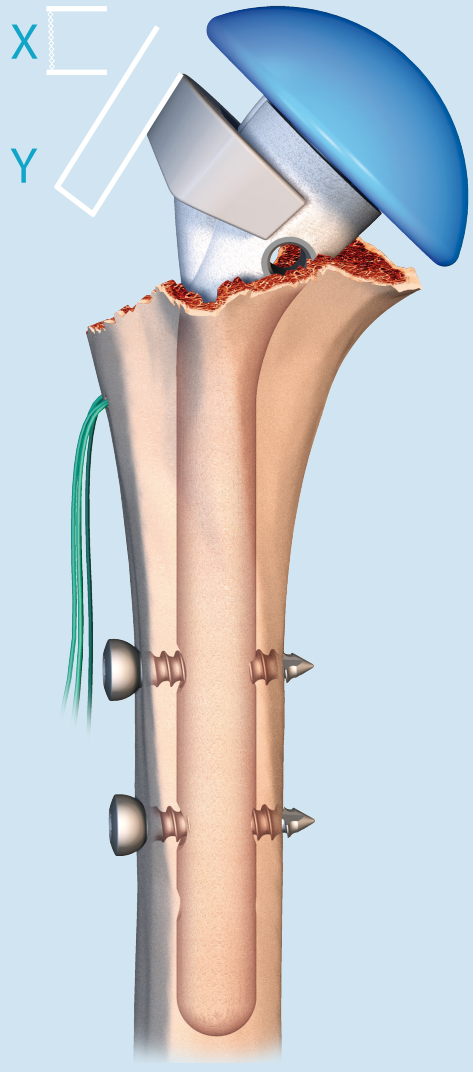


Figure 16

USING THE OMS - OPTION

FITTING THE DEFINITIVE CAGE

(Figure 17)

Take the appropriate implant and fit it onto the stem.

Secure using the screw provided for this purpose and thehex 3.5 mm screwdriver.

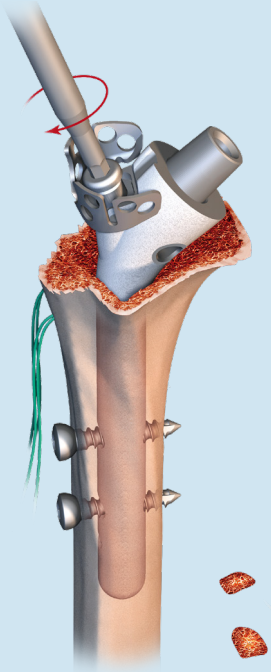


Figure 17

FILLING THE DEFINITIVE CAGE

(Figure 18)

Wenn notwendig, werden kleine

If necessary, use small autograft cubes (5 mm) taken from the natural head to fill the cage.

Reconstruct a homogeneous epiphyseal mass.

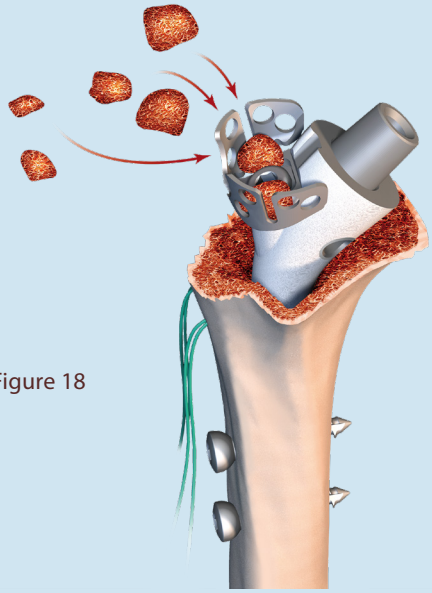


Figure 18

ADJUSTING THE CAGE

(Figure 19)

Cages are designed to allow flexion of the walls in order to adapt a better configuration of the tuberosities and preserve the bone stock.

The cage must be adjusted to ensure continuity between the articular surface and the greater tuberosity.

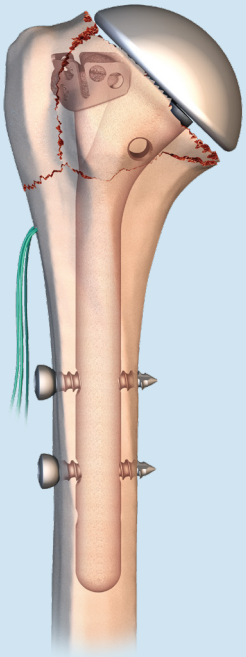


Figure 19

GLENOID PREPARATION

STEP 15: GLENOID EXPOSURE:

(Figure 20)

Expose the glenoid fully using the three types of retractors.
- Anterior retractor,
- Superior retractor,
- Inferior retractor.

Remove the glenoid labrum.
Remove any potential osteophytes to expose the full bone anatomy.

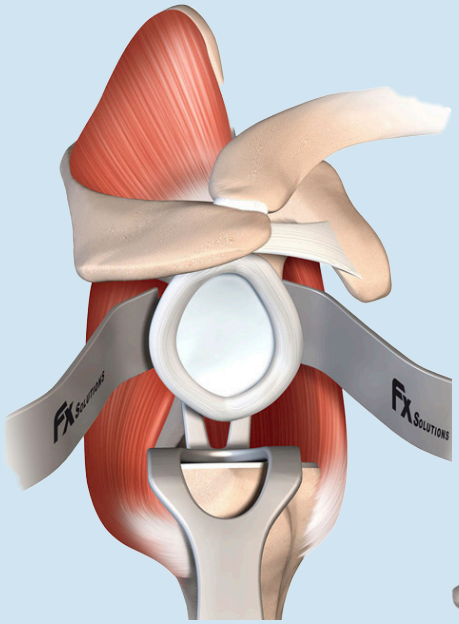


Figure 20

STEP 16: PLACING THE K-WIRE:

(Figure 21)

Three different positions for the guide: Left (L), Right (R) for a deltopectoral approach and Superior lateral (S).
Position the K-wire guide on the inferior part of the pillar of the scapula to determine the correct height.
The K-wire is 12 mm above the lower edge, according to Kelly* and must be centered in the antero-posterior plane.
The K-wire guide orientation is important for the glenoid tilt and must be done at 90°.
The glenospheres are lateralizing by 3.5 mm, tilted (lower lip) by 10°.

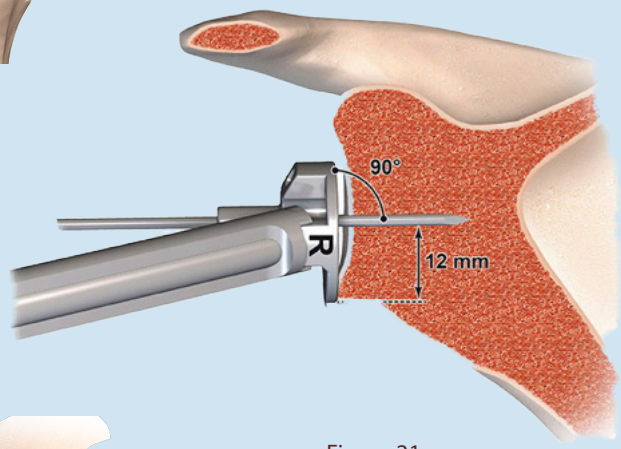
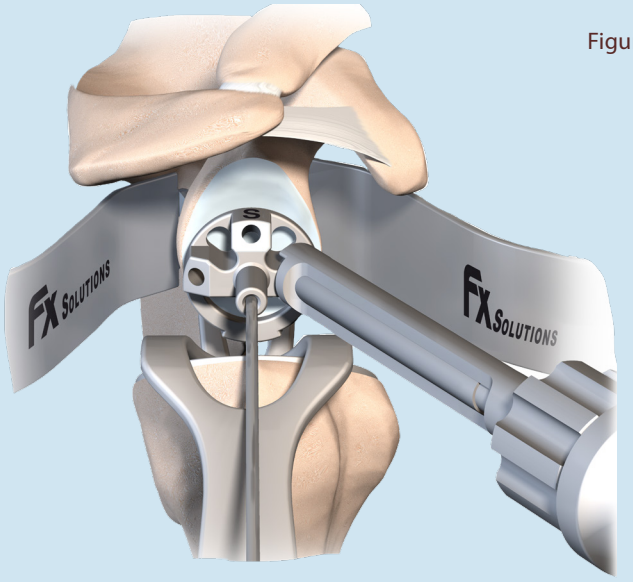


Figure 21

Positioning should be to fit the anatomy of the patient and planned according to the pre-operative X rays. This element must be decided in pre-operative planning.
By default, the k-wire is perpendicular to the mid plane of the glenoid.
Insert the K-wire using a power tool.



(*) Kelly JD. Humphrey CS, Norris TR. Optimizing glenosphere position and fixation in reverse shoulder arthroplasty, Part One: thetwelve mm rule. J Shoulder Elbow Surg 2008;17:589-94

GLENOID PREPARATION

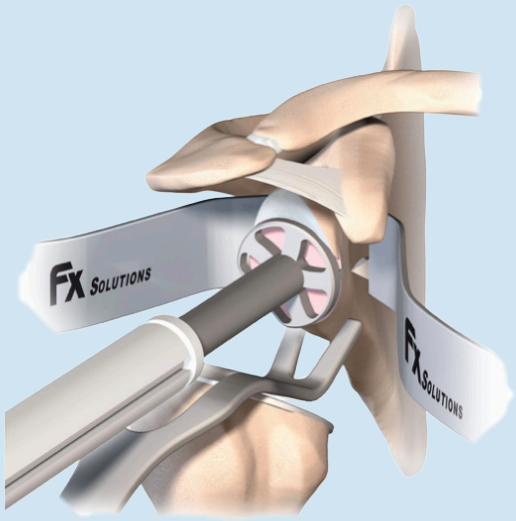
STEP 17: GLENOID REAMING:

(Figure 22)

Drill and ream the glenoid using the K-wire guide. Ream until the subchondral bone is reached.

This step can be done by power or by hand if the glenoid is osteoporotic.

Figure 22



STEP 18: EXTENSION POST:

(Figure 23)

In the case of revision or lateralization of the center of rotation with a graft from the pillar of the scapula, it is possible to extend the post by +6mm or +10mm.

Drill the post again with the drill +6mm or +10mm

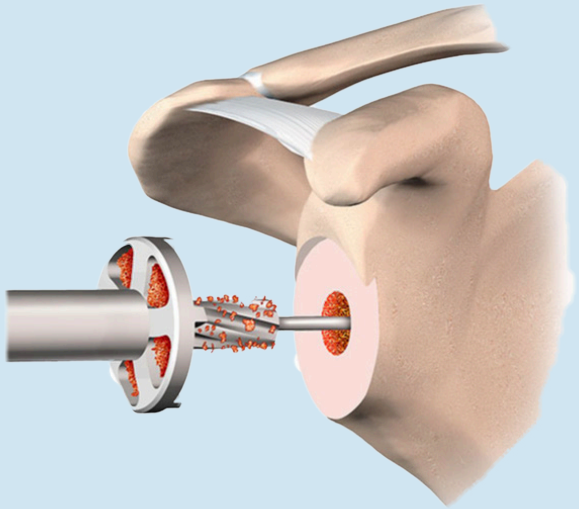


Figure 23

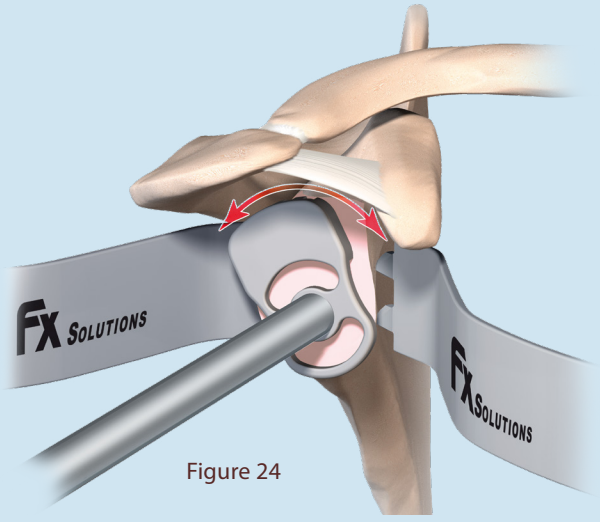


Figure 24

STEP 19: GLENOID CLEARANCE

(Figure 24)

To avoid any interference between the glenosphere and the scapula, ream the glenoid using the Ø36mm or Ø40 mm hand reamer.

CAUTION

Pay attention to avoid ovalizing the post hole.
360° clearance = succesfull impaction of the glenosphere.

GLENOID PREPARATION

STEP 20: POSITIONING THE BASEPLATE

(Figure 24)

Connect the holder / impactor to the baseplate. Impact the

baseplate so that there is pressure over the whole surface.

The impactor allows for the upper and lower holes to be placed so that a screw can be positioned in the base of the coracoid and in the pillar of the scapula.

The sign (UP) must be on top under the coracoid basis.

Remove the K-wire.

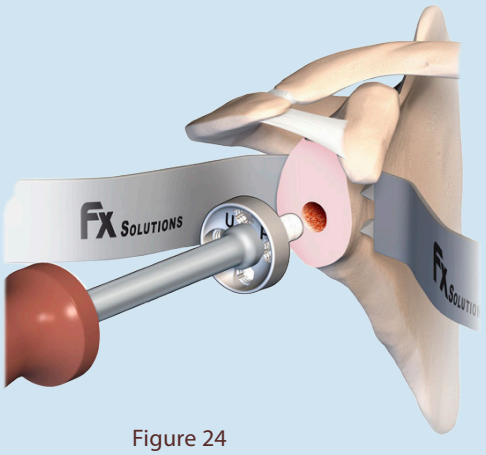


Figure 24

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 21: LENGTH OF SCREWS (6 SIZES FROM 15 TO 40MM)

(Figure 25)

An adapted guide allows for the holes to be drilled and the length of the screws measured with the Ø3.2mm drill bit. The length of the screws is measured directly.

The screw is measured between the head and his extremity.

Two types of screws are available, locking or standard.

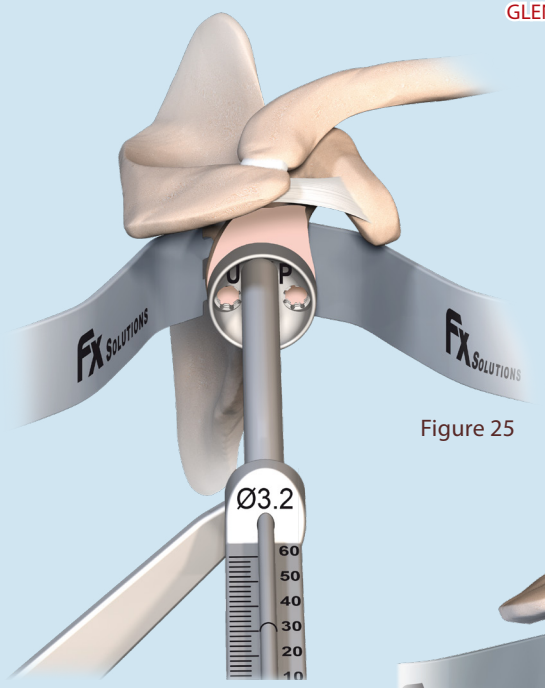


Figure 25

STEP 22: FIXATION OF THE BASEPLATE

(Figure 26)

Standard screws allow the baseplate to be lagged to the bone, and locking screws fix the mounting.

Each screw allows an angulation of +/-12° around the axial hole.

The upper hole for the first screw is pre-oriented by 10° to optimise its positioning in the base of the coracoid.

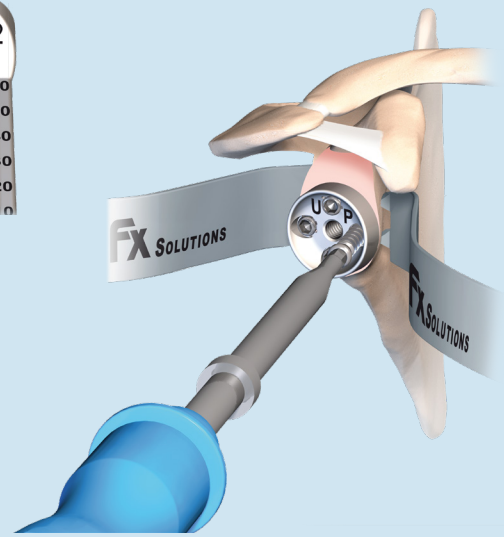


Figure 26

RECOMMENDATION

2 compression screws (std) for anterior and posterior holes.

2 locking screws for superior and inferior holes.

GLENOSPHERE - TRIAL AND DEFINITIVE

STEP 23: TRIAL IMPLANTS - GLENOSPHERE (Figure 27)

There are (2) diameters of glenospheres: Ø36mm and 40mm.

All glenospheres are centered or eccentric--with or without a screw.

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

All glenospheres are tilted downwards by 10°.

For slim patients (BMI (W/S2)≤21) (Body Mass Index(weight / size2)), use of the Ø40mm glenosphere is recommended, where possible, particularly if the subject is male.

Position the glenosphere with the special clamp allowing the humerus to be circumvented by the delto-pectoral approach.

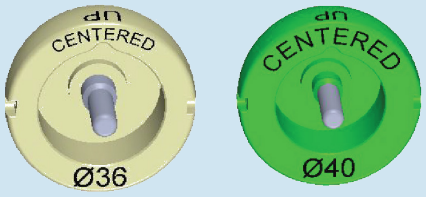
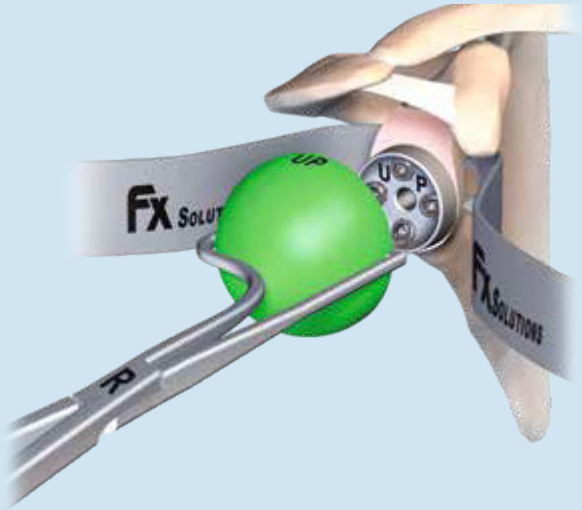
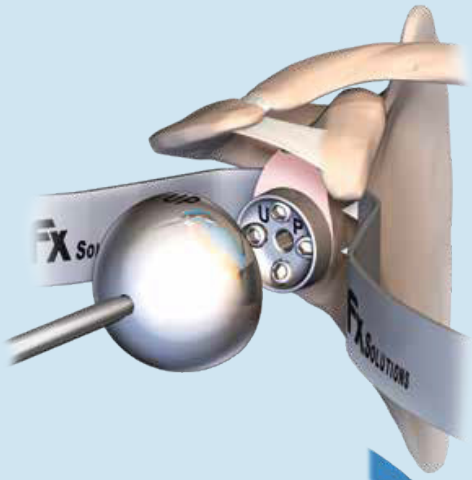


Figure 27

GLENOSPHERE TRIALS
Ø36/40MM





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.

Input the screwdriver in the screw of the glenosphere.

Insert the glenosphere paying attention to the "UP"m arking, if an eccentric glenosphereis used.

Introduce the screw of the glenosphere in the post of the baseplate.

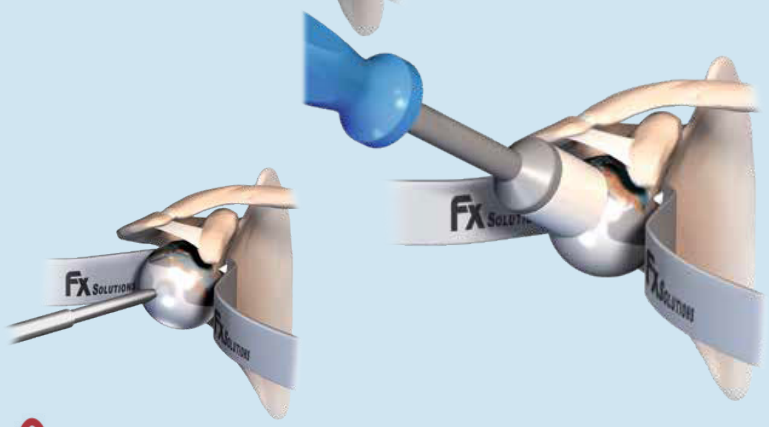
Be sure to check that the baseplate is clean and free of any bone or tissue particles that could

hinder impaction of the morse taper.

1- Begin to screw the glenosphere w/ screw.

2- Impact the glenosphere with the impactor.

3- Finish screwing.



CAUTION

To ensure the morse taper engages properly, be sure that all of the bone and soft tissue have been removed as per Step 8: Glenoid Clearance on page 13

HUMERAL PREPARATION - REVERSIBLE

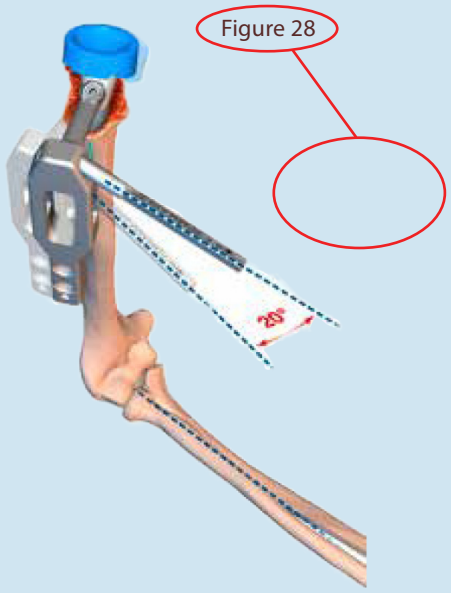
FOR THE REVERSIBLE HUMERAL PREPARATION - FOLLOW STEPS 1-5 AND AS FOLLOWS

STEP 24: RETROVERSION ADJUSTMENT

(Figure 28)

Mount the retroversion rod onto the aimer from the right- or left-hand side. Position this rod parallel to the forearm to achieve 20° retroversion.

VIEW FROM THE TOP: UPPER RIGHT LIMB



STEP 25: STABILIZING HEIGHT AND VERSION

(Figure 29)

Insert the 2.0mm k-wire through the 2.2mm guide to make contact with the second cortex. Visually check the height, version, and position of the stem by x-ray before locking the stem with two screws.

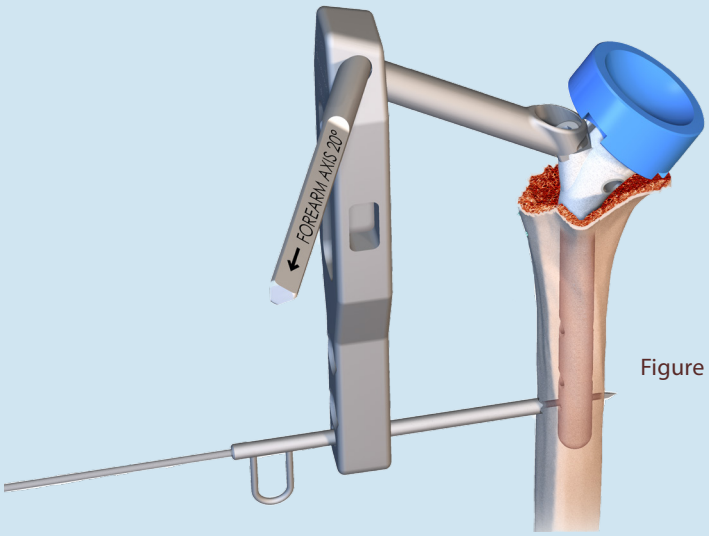


Figure 29

*Murachovsky J et al. JSES 06; Torrens et al. JSES 06; Hasan SA et al. Orthopedics 09

HUMERAL PREPARATION

STEP 26: PROXIMAL SCREW

(Figure 30)

After having carefully dissected the soft parts using Halstead forceps.
Insert the Ø10mm guide into the top hole of the aiming guide until contact is made with the cortex using the soft-tissue holder.

Insert the drill guide depth gauge into the Ø10mm guide.

Leave the distal K-wire in place.

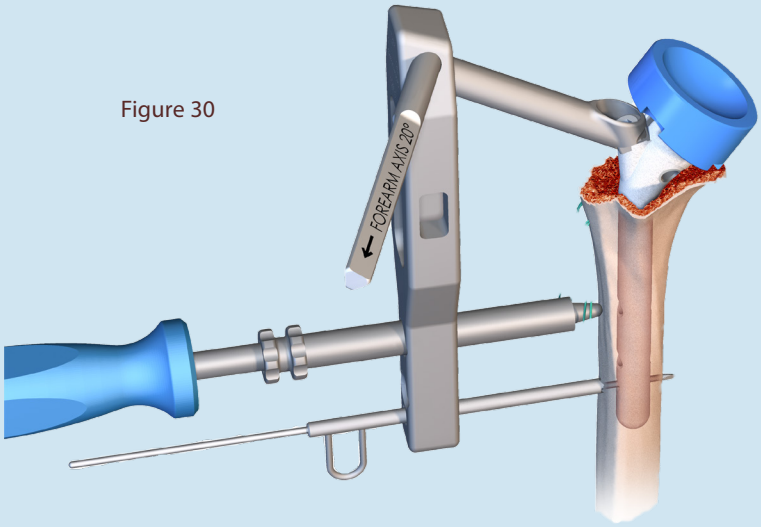


Figure 30

STEP 27: LENGTH OF SCREWS (10 SIZES)

(Figure 31)

a) 1st method without a gauge:
Drill the 1st cortex with the measurer drill.

When in contact with the 2nd cortex, read the measurement and use screw size L + 4mm. Drill to the 2nd cortex.

b) 2nd method with gauge:
Drill up to and including the 2nd cortex. Use the gauge to measure the screw length.
Use screw size L + 2mm

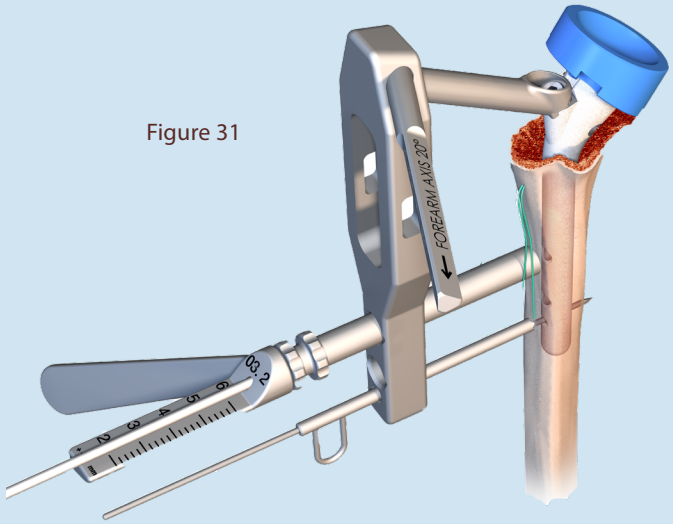


Figure 31

STEP 28: DISTAL INTERLOCKING SCREW

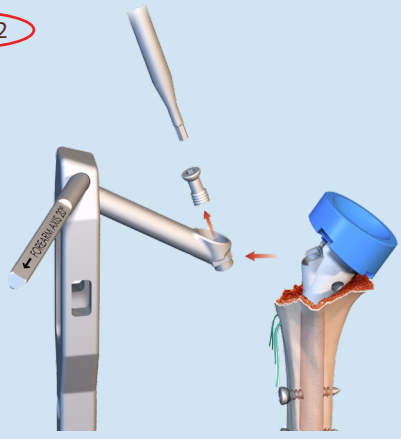
Proceed in the same way as for proximal interlocking scew leaving the K-wire in place.

Figure 32

STEP 29: REMOVE THE AIMING GUIDE

(Figure 32)

Remove the aiming guide locking screw.
Remove the aiming guide.



HUMERAL CUP - TRIAL AND DEFINITIVE

STEP 29: HUMERAL CUP CHOICE (Figure 34)

The cup diameter matches the glenosphere diameter. Three heights are available (+3, +6, +9 mm). If required a spacer (+9 mm) is available to add to the cup. Take care to respect index marks on the stem and cup. Test for stability and mobility. Trials are identical to final implants. You can trial directly off of the definitive stem.

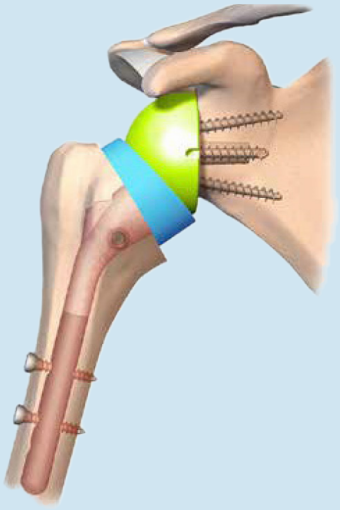
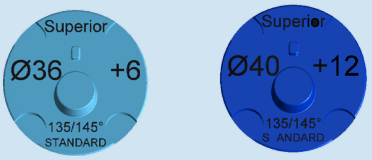


Figure 34



135°/145° HUMERAL CUP
TRIALS 36/40MM

STEP 30: TRIAL REDUCTION

Assess joint stability and range of motion. The eccentric glenosphere trials and implants offset the glenosphere center of rotation inferiorly of 3mm. Proceed to the definitive humeral cup if the selected humeral cup trial is properly selected for the patient.

RECOMMENDATION:
Use the Aiming Guide to help you reduce and dislocate while trialing the humeral cup

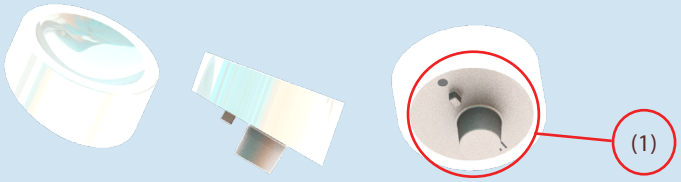


Figure 35

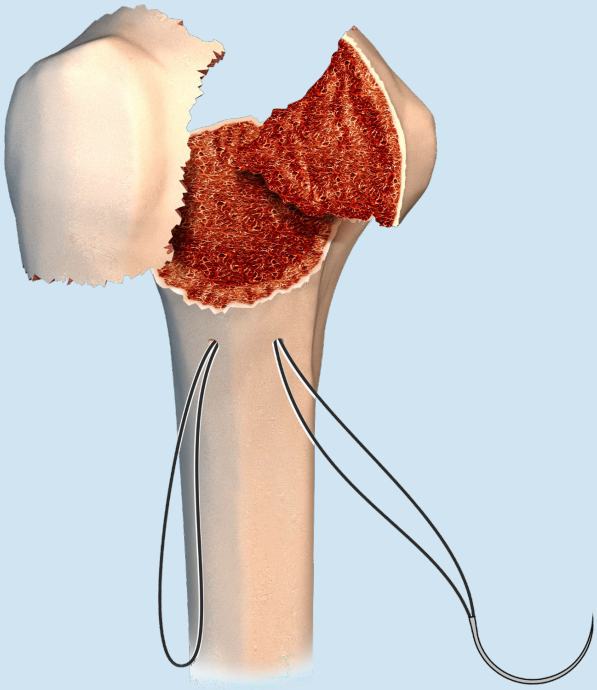
STEP 30: DEFINITIVE CUP

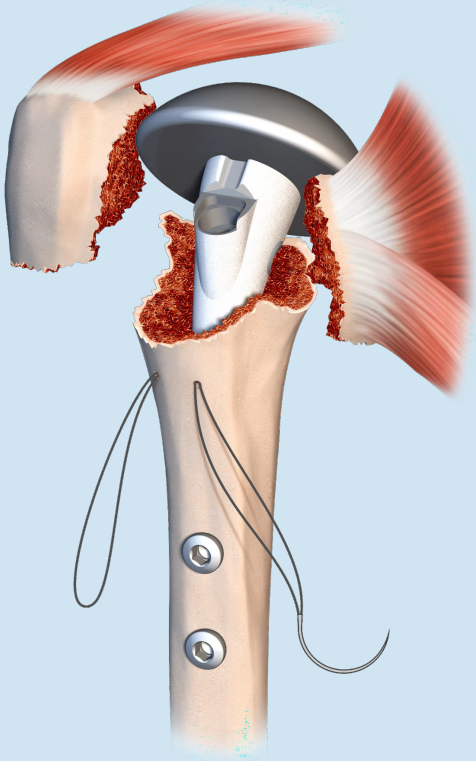
(Figure 35)

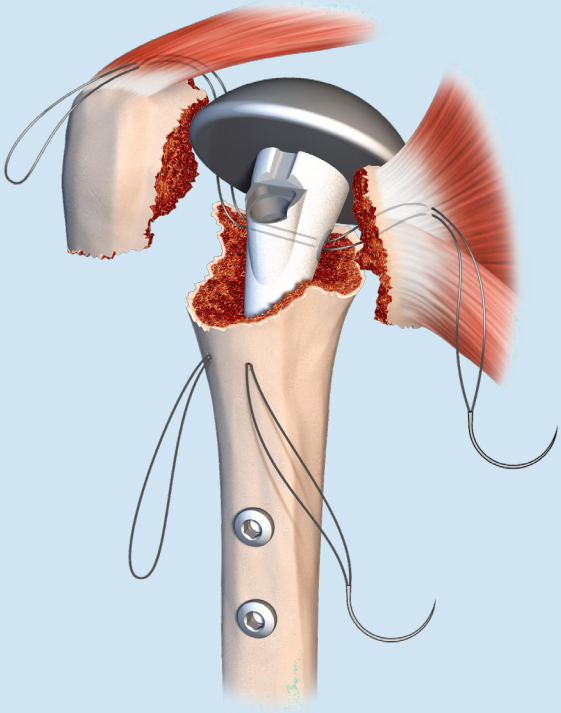
Find the index marks (1) on both the definitive cup and the stem. Position the cup so that the index matches the index on the stem.

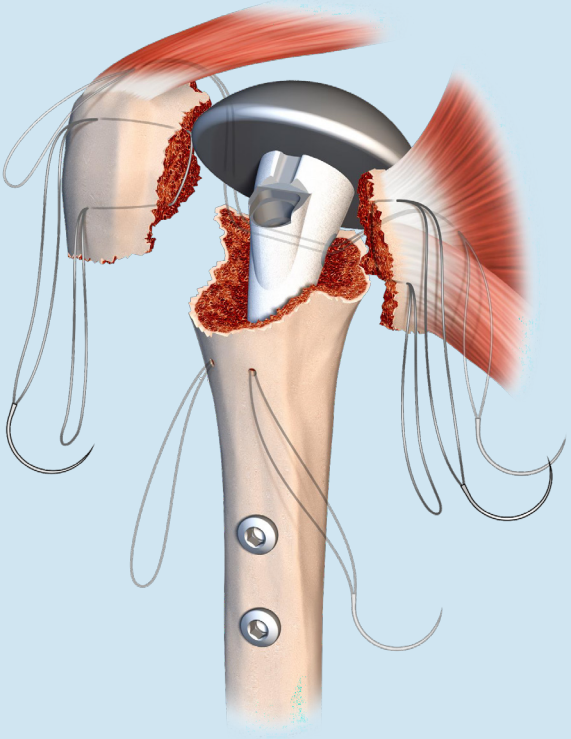
Insert the cup into the taper of the stem so that indices of the cup and stem are correctly aligned. Be sure to check that there are no impediments and impact the cup. Also, be sure to check that the shoulder is stable and there are no impingements.

TUBEROSITY SYNTHESIS

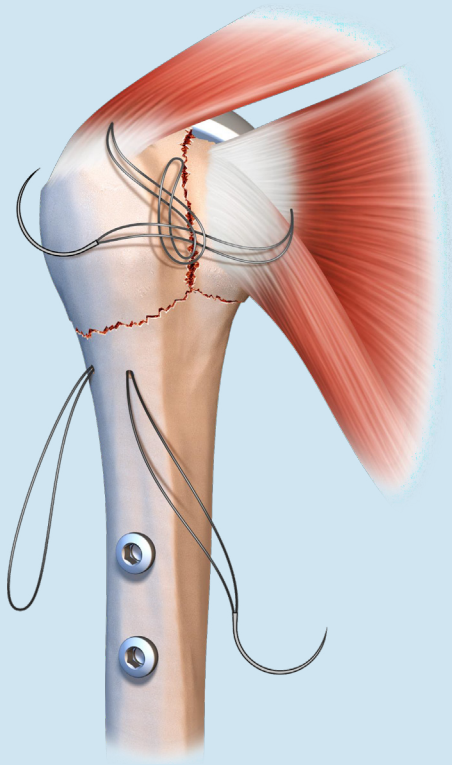


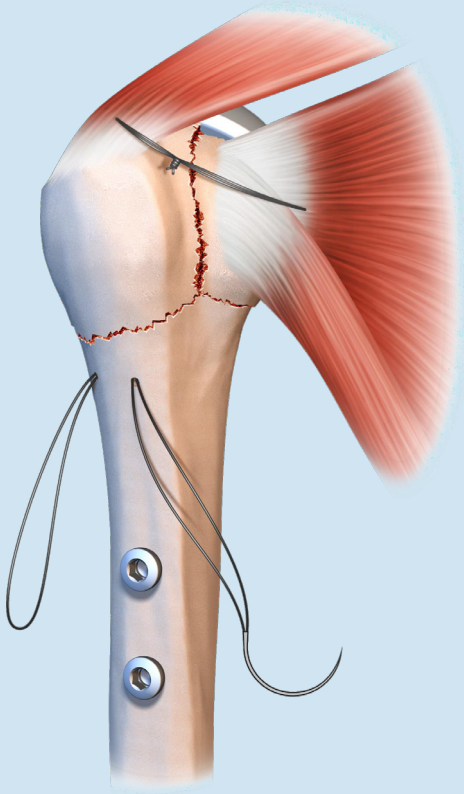


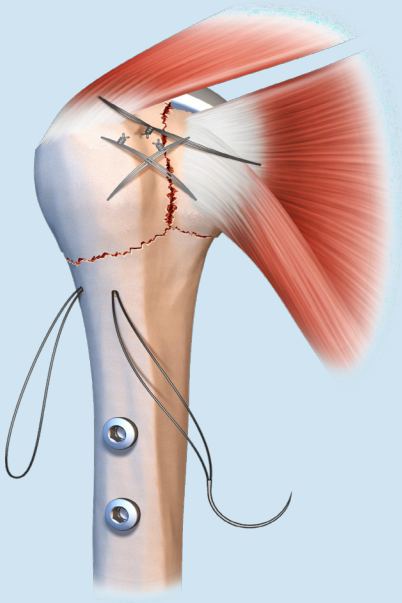


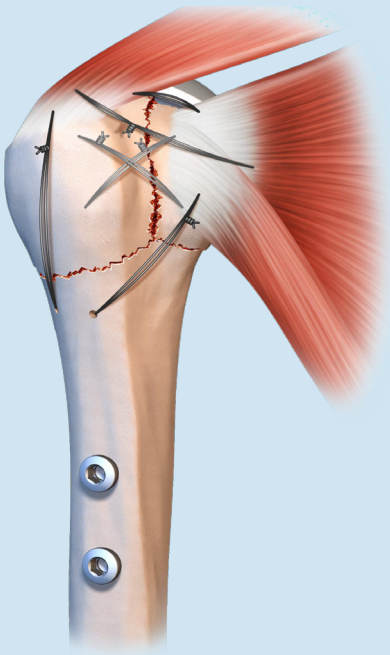


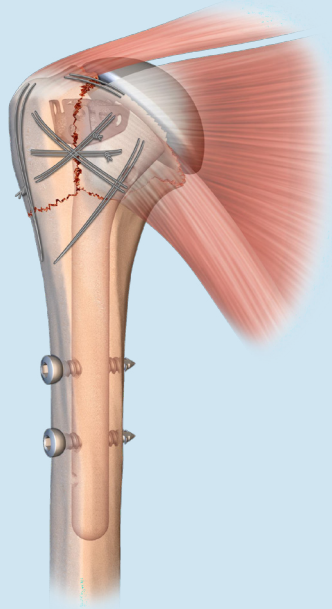
TUBEROSITY SYNTHESIS



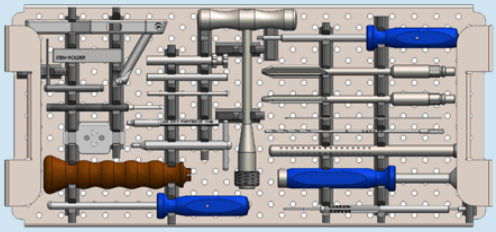
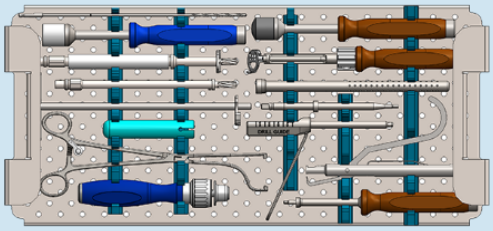
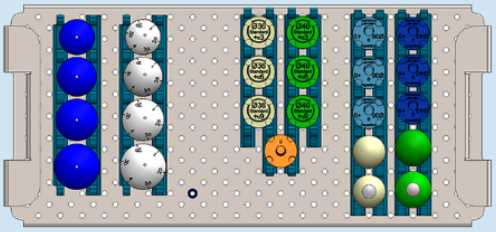
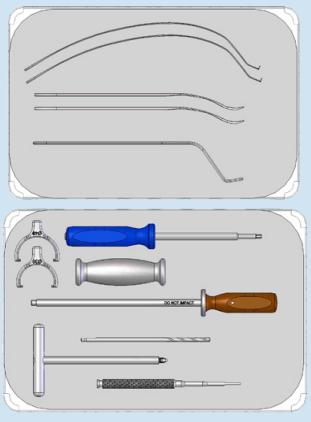








INSTRUMENTATION

REFERENCE NUMBER	DESCRIPTION	INSTRUMENTATION
603-0016	HUMELOCK II HUMERAL TRAY	
603-0008	HUMELOCK REVERSED GLENOID TRAY	
603-0032	HUMELOCK II TRIAL TRAY	
603-0010	EXTRACTION TRAY RETRACTOR TRAY	

DEFINITIVE IMPLANT LIST

REVERSED OPTION	
Part number	**Designation**
313-0703	HUMERAL CUP 135/145° STANDARD PE/TA6V Ø36 +3
313-0706	HUMERAL CUP 135/145° STANDARD PE/TA6V Ø36 +6
313-0709	HUMERAL CUP 135/145° STANDARD PE/TA6V Ø36 +9
313-0903	HUMERAL CUP 135/145° STABILITY PE/TA6V Ø36 +3
313-0906	HUMERAL CUP 135/145° STABILITY PE/TA6V Ø36 +6
313-0909	HUMERAL CUP 135/145° STABILITY PE/TA6V Ø36 +9
314-0703	HUMERAL CUP 135/145° STANDARD PE/TA6V Ø40 +3
314-0706	HUMERAL CUP 135/145° STANDARD PE/TA6V Ø40 +6
314-0709	HUMERAL CUP 135/145° STANDARD PE/TA6V Ø40 +9
314-0903	HUMERAL CUP 135/145° STABILITY PE/TA6V Ø40 +3
314-0906	HUMERAL CUP 135/145° STABILITY PE/TA6V Ø40 +6
314-0909	HUMERAL CUP 135/145° STABILITY PE/TA6V Ø40 +9
105-0024	HUMELOCK REVERSED TA6V CEMENTLESS GLENOID BASEPLATE Ti/HA Ø24mm
105-0006	POST EXTENSION TA6V +06mm CEMENTLESS Ti/HA
105-0010	POST EXTENSION TA6V +10mm CEMENTLESS Ti/HA
109-4515	STANDARD SCREW TA6V Ø4.5mm L.15 mm
109-4520	STANDARD SCREW TA6V Ø4.5mm L.20 mm
109-4525	STANDARD SCREW TA6V Ø4.5mm L.25 mm
109-4530	STANDARD SCREW TA6V Ø4.5mm L.30 mm
109-4535	STANDARD SCREW TA6V Ø4.5mm L.35 mm
109-4540	STANDARD SCREW TA6V Ø4.5mm L.40 mm
108-4515	LOCKING SCREW TA6V Ø4.5mm L.15 mm
108-4520	LOCKING SCREW TA6V Ø4.5mm L.20 mm
108-4525	LOCKING SCREW TA6V Ø4.5mm L.25 mm
108-4530	LOCKING SCREW TA6V Ø4.5mm L.30 mm
108-4535	LOCKING SCREW TA6V Ø4.5mm L.35 mm
108-4540	LOCKING SCREW TA6V Ø4.5mm L.40 mm
105-3610	HUMELOCK REVERSED CENTERED GLENOSPHERE W/ SCREW CoCr/TA6V 10° TILT Ø36 mm
105-4010	HUMELOCK REVERSED CENTERED GLENOSPHERE W/ SCREW CoCr/TA6V 10° TILT Ø40 mm
105-3613	HUMELOCK REVERSED ECCENTRIC GLENOSPHERE W/ SCREW CoCr/TA6V 10° TILT Ø36 mm
105-4011	HUMELOCK REVERSED ECCENTRIC GLENOSPHERE W/ SCREW CoCr/TA6V 10° TILT Ø40 mm
SMARTLOOP	
292-1001	SMARTLOOP WHITE USP 5
292-1003	SMARTLOOP GREEN USP 5

DEFINITIVE IMPLANT LIST

ANATOMIC	
Part number	**Designation**
311-0306	HUMELOCK II STEM TA6V SIZE 06 CEMENTED
311-0308	HUMELOCK II STEM TA6V SIZE 08 CEMENTED
311-0310	HUMELOCK II STEM TA6V SIZE 10 CEMENTED
311-0312	HUMELOCK II STEM TA6V SIZE 12 CEMENTED
311-0508	HUMELOCK II LONG STEM TA6V SIZE 08 LG200mm CEMENTED
311-0510	HUMELOCK II LONG STEM TA6V SIZE 10 LG200mm CEMENTED
311-0512	HUMELOCK II LONG STEM TA6V SIZE 12 LG200mm CEMENTED
311-0208	HUMELOCK II STEM TA6V SIZE 08 CEMENTLESS TI/HA
311-0210	HUMELOCK II STEM TA6V SIZE 10 CEMENTLESS TI/HA
311-0212	HUMELOCK II STEM TA6V SIZE 12 CEMENTLESS TI/HA
112-0000	DOUBLE TAPER TA6V +0mm 0°
107-4518	CORTICAL SCREW TA6V Ø4.5mm L.18 mm
107-4520	CORTICAL SCREW TA6V Ø4.5mm L.20 mm
107-4522	CORTICAL SCREW TA6V Ø4.5mm L.22 mm
107-4524	CORTICAL SCREW TA6V Ø4.5mm L.24 mm
107-4526	CORTICAL SCREW TA6V Ø4.5mm L.26 mm
107-4528	CORTICAL SCREW TA6V Ø4.5mm L.28 mm
107-4530	CORTICAL SCREW TA6V Ø4.5mm L.30 mm
107-4532	CORTICAL SCREW TA6V Ø4.5mm L.32 mm
107-4534	CORTICAL SCREW TA6V Ø4.5mm L.34 mm
107-4536	CORTICAL SCREW TA6V Ø4.5mm L.36 mm
106-3914	CENTERED HEAD CoCr 39x14
106-4316	CENTERED HEAD CoCr 43x16
106-4617	CENTERED HEAD CoCr 46x17
106-5019	CENTERED HEAD CoCr 50x19
106-3900	OFFSET HEAD CoCr 39x15
106-4300	OFFSET HEAD CoCr 43x17
106-4600	OFFSET HEAD CoCr 46x18
106-5000	OFFSET HEAD CoCr 50x20
106-2020	OFFSET MODULAR SYSTEM T40 Size 1
106-2021	OFFSET MODULAR SYSTEM T40 Size 2
106-2022	OFFSET MODULAR SYSTEM T40 Size 3
106-2023	OFFSET MODULAR SYSTEM T40 Size 4
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