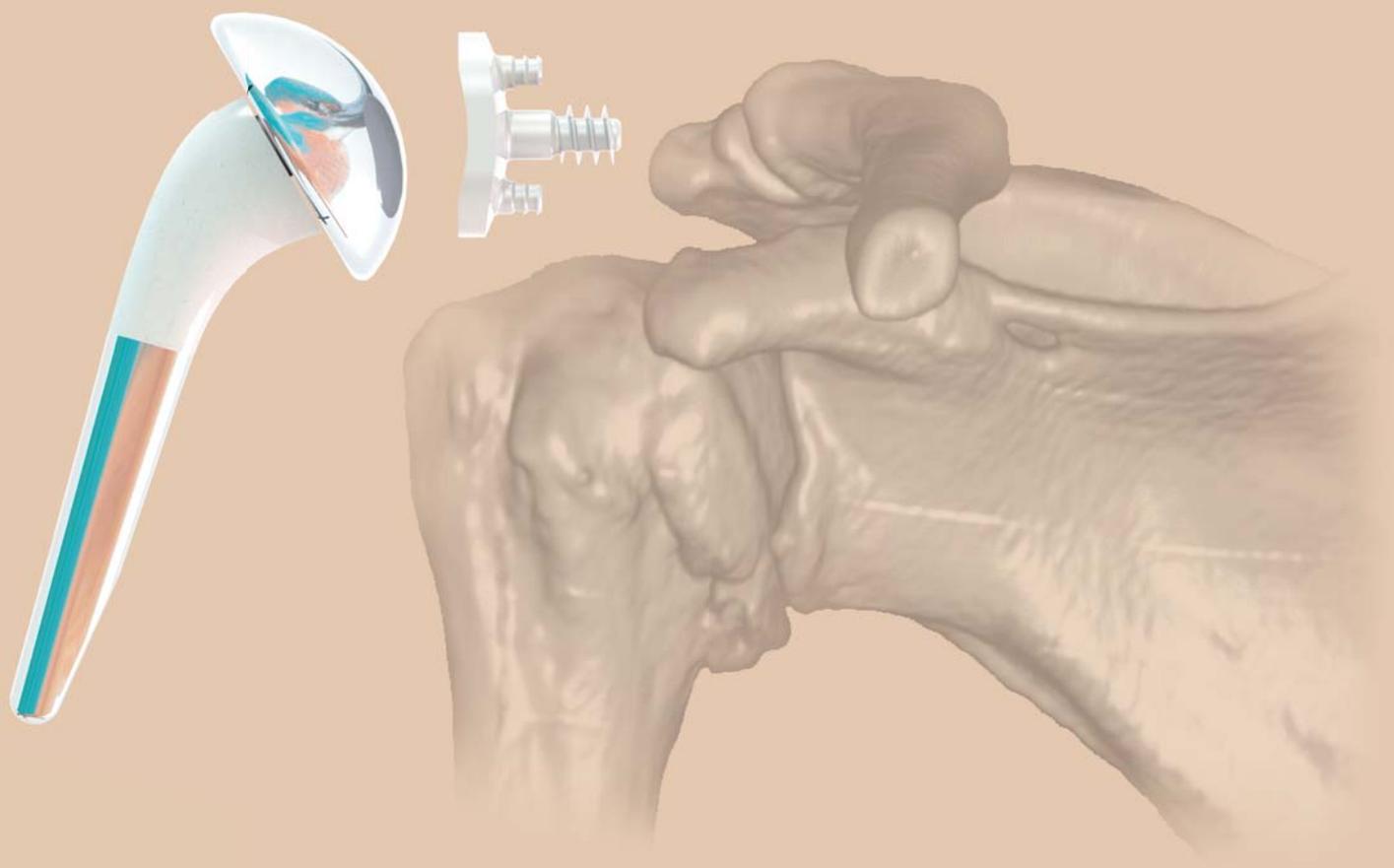




HUMERISTM



SURGICAL TECHNIQUE

CHARACTERISTICS, TIPS AND TRICKS

Cementless stems:

Ø08, 10, 12 and 14mm

Epiphysis - metaphysis : Ti + HAP coated.

Diaphysis : mirror polished to allow cement.



Female taper which allow reversibility.



Prosthetic heads CoCr:

4 centered heads Ø39/14, 43/16, 46/17 and 50/19mm.

4 offset heads Ø39/15, 43/17, 46/18 and 50/20mm.



Preservation of the tuberosity's bony stock.
Endo-medullary adaptation.



Double taper

Modular system of glenoid:

Head

Ø39

Ø43

Ø46

Ø50

Glenoid

XS-S mismatch 6.6-9.1mm

XS-S-M mismatch 5.1-9.2mm

M-L mismatch 6.8-7.6mm

L mismatch 5.2-5.8mm

⇒ 8 possible combinations



Glenoid with 3-4 pegs:

4 sizes XS, S, M, L made from UHMWPE with radio-opaque marker made from tantalum
 3 - 4 retentive pegs with 2 different inter-axis sizes XS-S / M-L
 Mismatch included between 5 and 9
 Convex, rough basis for better adhesion of cement.

Switch from anatomical prosthesis to reversed:

Remove the humeral head and double taper
 Impact a humeral cup 135/145°

Humeral cup 135/145°:

Thermo-compressed UHMWPE in a titanium shell made of TA6V ELI
 Transformation of 135° resection to 145°
 3 available heights (+3, +6, +9mm).

Glenospheres en CoCr :

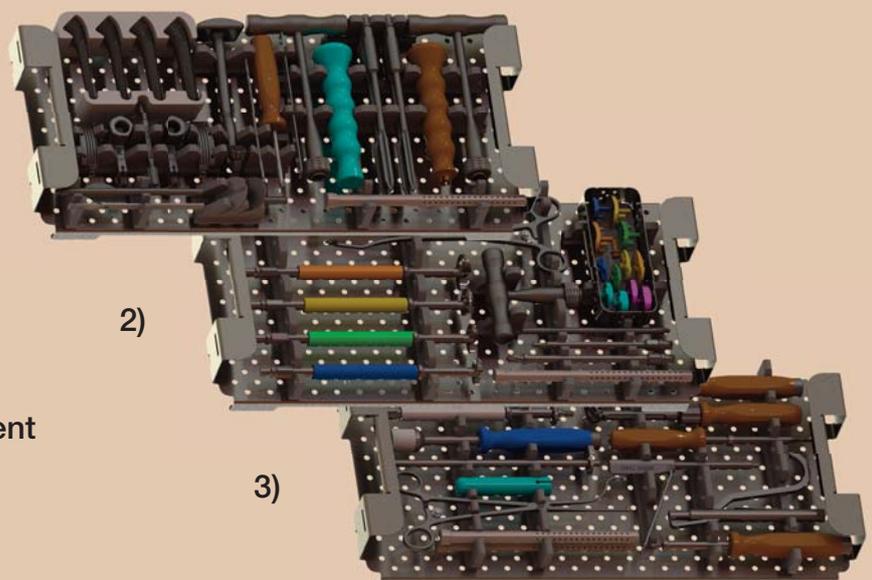
2 sizes : Ø 36, Ø 40mm
 Centric or excentric (3 mm)
 Impaction by female grooved taper. Extraction = 132kg
 With or without screw
 Tilted at 10°.



Baseplate Ø 24mm:

Fits all anatomies
 TA6V ELI Ti+HA coated
 Conical assembly
 4 standard or locking polyaxial screws L= 20 to 40mm, inc 5mm
 2 extension posts of +6 et +10 mm.

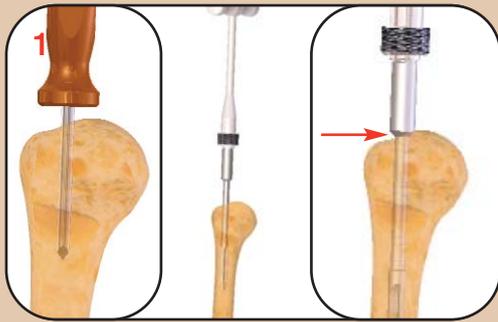
1)



Ancillaries :

- 1- One tray for stem placement
- 2- One tray for glenoid placement
- 3- One tray for glenosphere placement

SURG. TECHNIQUE - HUMERUS (1)



Preparation of the humeral shaft:

Locate and perforate the top of the humeral head in the medullary canal axis using a triangular awl.

Use the reamers in increasing size order on the T handle.

Go from one size to the next until the diameter of the reamer fits the shaft diameter.

The reamer should enter the humeral shaft up to the guard (→).

The stem choice is made depending on the last reamer size use:

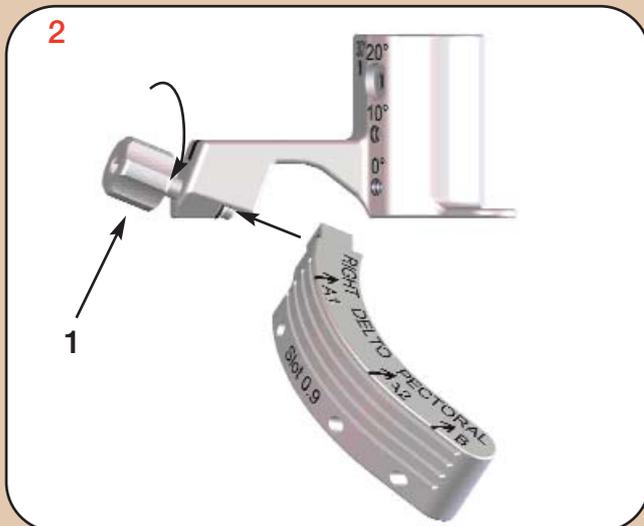
Ø8 --> Stem size 08

Ø10 --> Stem size 10

Ø12 --> Stem size 12

Ø14 --> Stem size 14.

Mounting delto-pectoral incision guide:



Put the delto-pectoral guide on the operating side on the guide holder.

Fasten the guide with the knurled screws (1).



Slide the assembly onto the remaining reamer.

Screw the retroversion stem into one of the four positions according to the required angle: 0, 10, 20, 30°.



Placing the 135° cutting guide :

The probe stops at the top of the head and determines the incision height.

The retroversion is determined by screwing the stem into one of 4 positions (0, 10, 20, 30°) and aligning it with the forearm axis. Fastening the retroversion stem sets the position for the cutting guide.

Place two pins (A1+A2) by drilling if necessary, using the Ø3.2 mm bit.

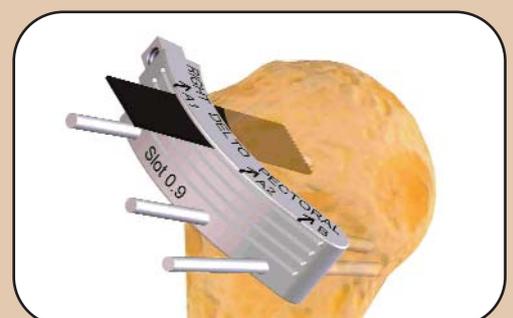
Remove the retroversion stem and the guide holder as well as the reamer.

Slide the cutting guide on the pins up to the bone.

Stabilize the mounting using a 3rd oblique pin (B).

Make the incision across the desire slot (0, +3, +6 ou +9mm) with a saw blade of a maximum 0.9 mm thickness.

Insert the protector into the prepared humerus during the glenoid preparation.





SURG. TECHNIQUE - GLENOID

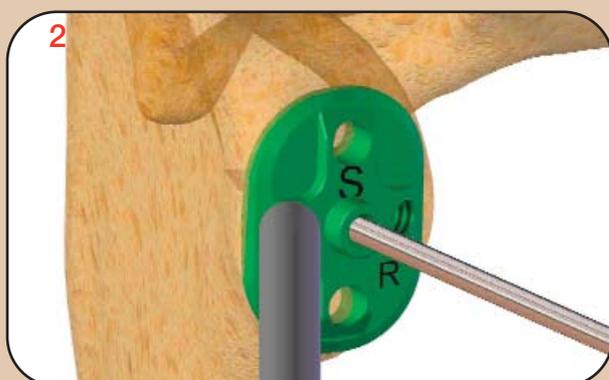


Glenoid exposure :

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.

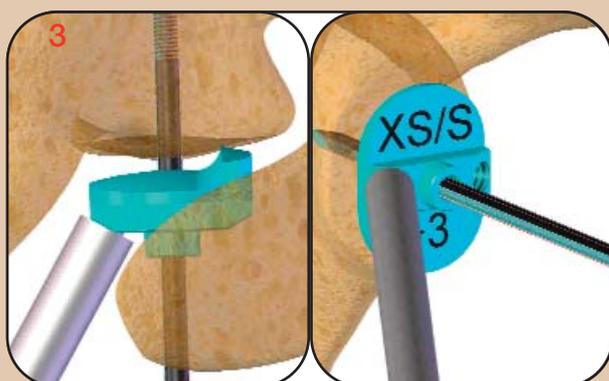


Placing the K-Wire : (symmetrical wear)

Introduce the K-wire guide - template for the symmetrical glenoid (XS, S, M ou L).

The K-wire should be centered in the antero-posterior plane. The orientation of the K-wire will determine the inclination of the glenoid.

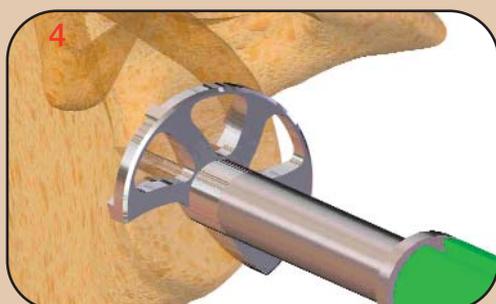
The position should be adapted to the patient's anatomy and planned according to the pre-operative iconography. By default, the K-wire is perpendicular to the medium plane of the glenoid.



Asymmetrical wear of the glenoid:

Introduce the K-wire guide for the asymmetrical glenoid (+3 or +5mm) according to the patient's anatomy and by checking the pre-operative iconography.

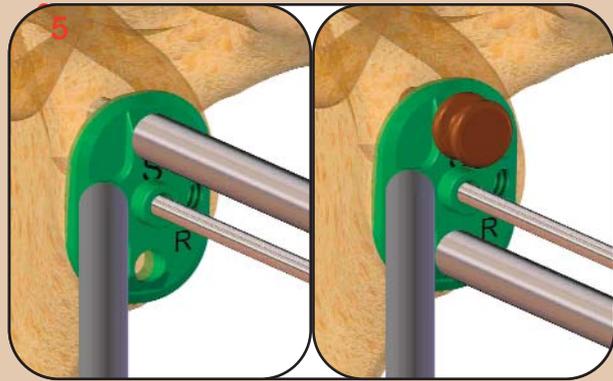
Insert the K-wire through the guide.



Reaming the glenoid:

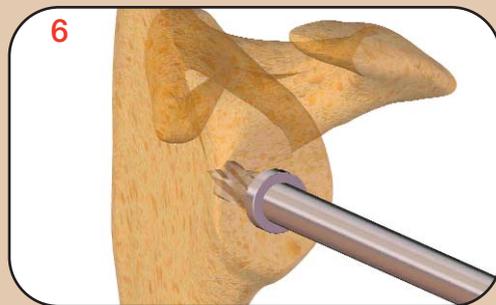
Ream the glenoid using the K-wire as a guide.
Ream until the sub-chondral bone is reached.

It is preferable to begin this reaming by hand in order to avoid osteophytes and also in cases when the glenoid is osteoporotic.



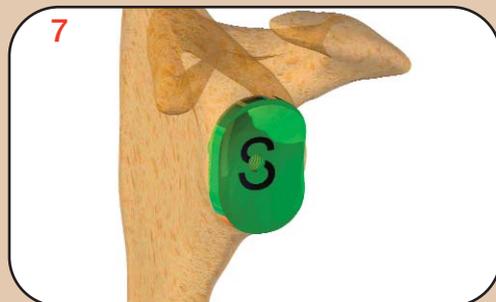
Drilling stabilization holes:

Place or replace the K-wire-guide template for the symmetrical glenoid onto the rod.
 Drill the 1st anchor hole.
 Installing the stabilization post,
 Drill the 2nd hole,
 Installing the 2nd stabilization post.
 Drill the 3rd hole if it is a size M or L.



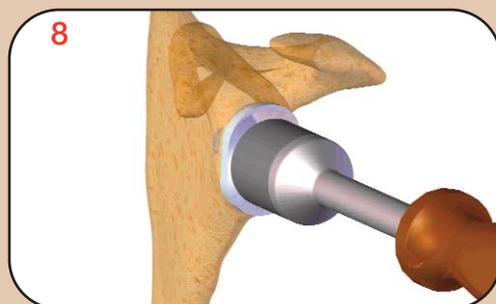
Drilling the central hole:

Remove the K-wire guide template.
 Drill the central hole using a cannulated stop drill bit through the K-wire.



Trial implant:

Select the appropriate trial and insert it into the glenoid with the forceps.



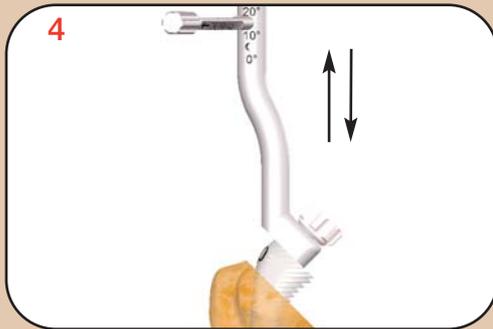
Definitive implant:

Preparation of the cement.
 Place a “drop” in each stabilization hole.



The central peg should NOT be cemented.
 It can be filled with graft.

Take the definitive implant and insert it into the glenoid.
 Check adjustments.



Metaphysis shaping:

The size of the metaphysis is determined by the size of the last reamer used.

Ø08 --> Stem size 08

Ø10 --> Stem size 10

Ø12 --> Stem size 12

Ø14 --> Stem size 14

Connect the rasp to the rasp holder.

Screw the retroversion stem to the rasp holder.

Impact the rasp until it is flush with the height of the resected bone surface.

The rasp can act as test stem.



Trial:

Measure the head using the metallic ruler.

Use a smaller prosthetic head than the size measured.

Select the components:

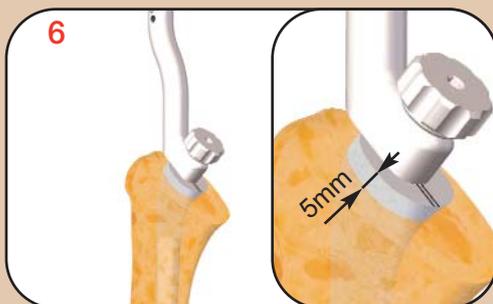
- Neck height / spacer (+0, +3, +5mm).

- Centered or offset trial head.

The humeral head should cover the cortical bone in an appropriate manner while being 5 to 8mm above the trochiter.

The flat side of the head should be parallel to the incision.

If using an offset head, mark its indexation.



Definitive stem:

Place the rasp holder on the appropriate final-use stem.

Screw the retroversion stem to the handle to check the angle while the implant is flush with the bone resection.

Impact the stem until it is at the same height as the bone incision.



If possible, impact the stem till 5mm over the humeral cut.



Definitive taper and head:

Be sure to check that there are no splinters on the upper extremity of the humerus metaphysis hindering impaction of the double taper.



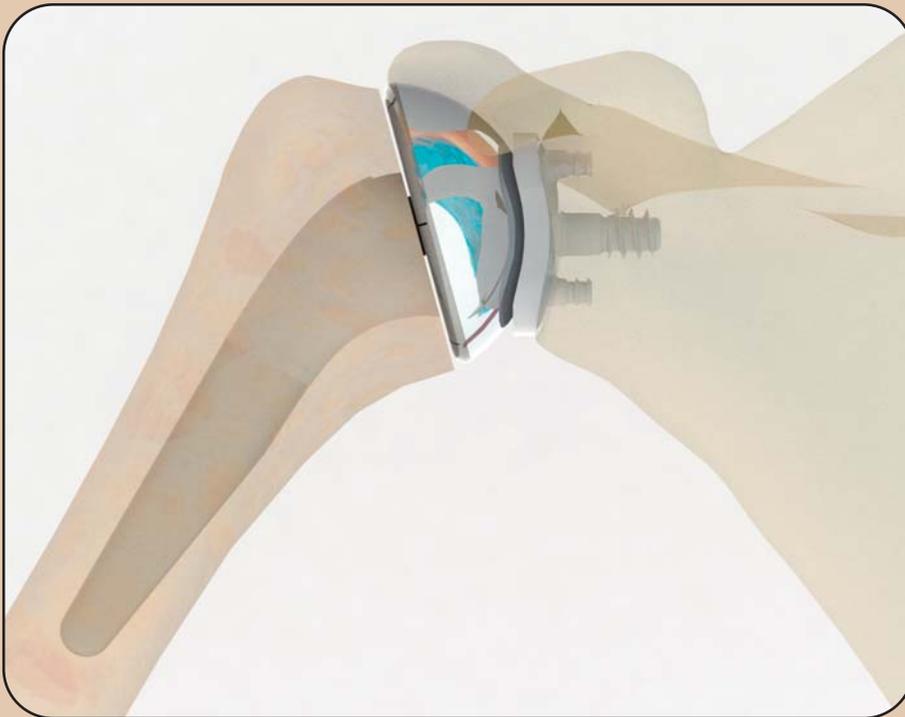
Take the definitive double taper and impact it INTO THE STEM (not to the head) using the impactor to start with.



Select the appropriate final head and impact it onto the taper.

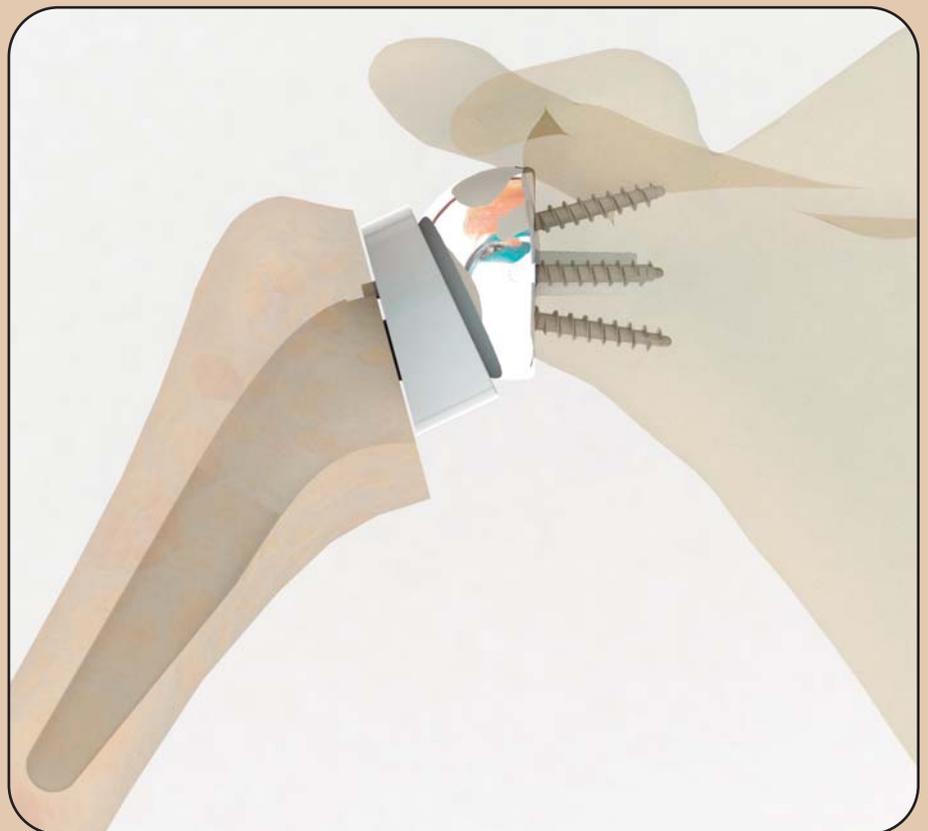
If using an offset head, insert it into the stem taper with the same indexation as determined by the trial.

Finalize impaction of the stem while impacting the head on the taper.



**Humeris
Anatomical**

**Humeris
Reversed**



1663, rue de Majornas - 01440 Viriat - France
Tél. : (33) 04 74 55 35 55 - Fax : (33) 04 74 52 44 01
E-mail: info@fxsolutions.fr - www.fxsolutions.fr

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