



EASYTECHTM REVERSED

Keep It Simple & Smart



SURGICAL TECHNIQUE

CHARACTERISTICS, TIPS AND TRICKS



3 sizes of anchoring base:

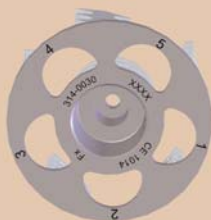
Ø30, 34 and 38mm

Primary stability from central retaining peg and peripheral notches.

Secondary stability provided by a double layer Ti + HA coating.



Anti-rotation from alternating notches positioned in different axes / angles.



Female conical fitting can be reversed.

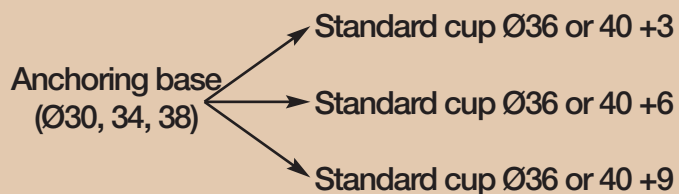


Symmetrical humeral cup:

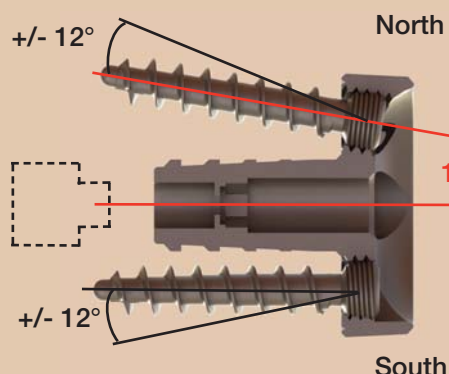
Thermocompressed poly UHMWPE in titanium shell.

3 available heights (+3, 6, +9mm).

Modularity of the prosthesis :



⇒ 18 combinations due to different sizes of anchoring bases



Locking screw Ø4.5 TA6V ELI :

Cortico-cancellous (conical core)

Conical head

Non traumatic tip

5 sizes (20 to 40 mm)



Standard screw Ø4.5 TA6V ELI :

Cylindrical core

Conical head

Non traumatic tip

5 sizes (20 to 40 mm)

Baseplate Ø24 mm :

Fits all anatomies

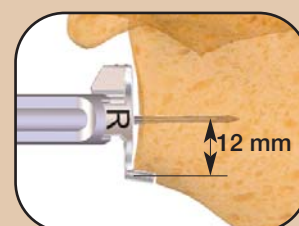
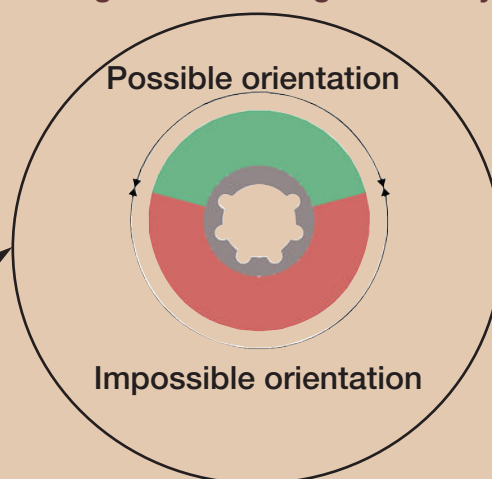
TA6V ELI / Ti + HA coated

Conical assembly

4 cylindrical threaded holes

2 extensions of +6 and +10 mm for lateralization and revisions.

Directive locking & variable angle screw system*



Implantation at 12 mm from inferior edge of the scapula

CoCr glenosphere:

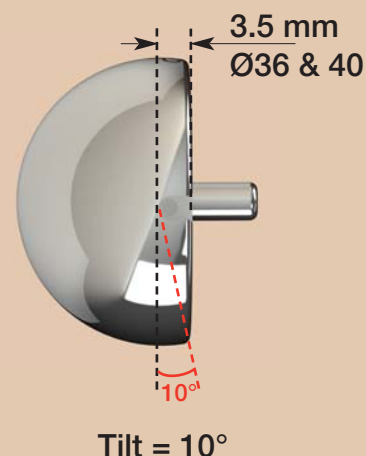
2 sizes: Ø36, Ø40 mm

Centered or eccentric (3 mm)

Impacted with or without screw

Conical grooved impactation.

		Ø36	Ø40
Impacted	Centered	X	X
	Eccentric	X	X
With screw	Centered	X	X
	Eccentric	X	X



* Patented

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INTRODUCTION

Easytech™ Reversed is a new generation stemless reversed prosthesis, designed for subjects with offset arthritis, and with good bone quality.

The technical characteristics of this implant have been designed based on computer simulations, correlated to results previously published in medical journals, in order to avoid the disadvantages of traditional reverse prostheses.

A centric or eccentric glenosphere, tilted at 10°, centered on a variable length baseplate post (compatible with positioning techniques), the position of which is guided by an intuitive adaptive instrumentation.

The implant has to be in a 145° position to allow the scapula pillar to be protected while maintaining optimum stability.

The humeral implant is positioned naturally in the center of the epiphysis, preserving the remaining bone as much as possible.

Easytech™ Reversed is a totally modern implant, designed to adapt to the new lifestyles of older, increasingly active, patients for a longer timeframe.

INDICATIONS & CONTRAINDICATIONS

The Easytech™ Reversed prosthesis is indicated for patients presenting with:

- eccentric omarthritis,
- significant rupture of rotator cuff-tear : first surgery.

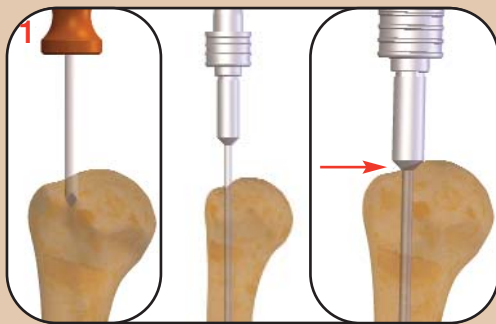
Contraindications: Patient with Parkinson's disease, Hemiplegic patient.

PATIENT POSITIONING

The recommended patient positioning is a beach chair with a member free in the operating area and the head fixed in position.

X-ray imaging must be available to confirm implants position intraoperatively.

SURG. TECH. - HUMERUS



Preparation of the humeral shaft:

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

Put the guide on the T handle.

Move down the guide up to the guard.

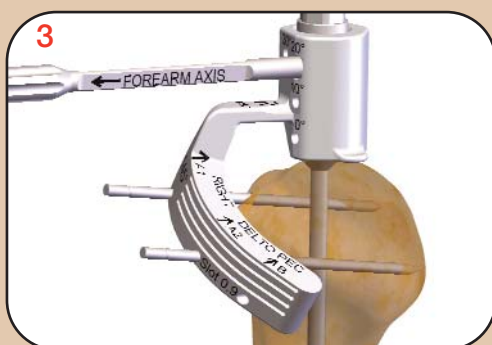
Remove the T handle, leaving the guide in place.



Delto-pectoral cutting guide mounting:

Slide the assembly onto the remaining guide.

After the cutting guide is positioned on the guide, screw the retroversion stem into one of the four positions according to the required angle: 0°, 10°, 20°, 30°.



Placing the 145° 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.

Slide the cutting guide along the pins.

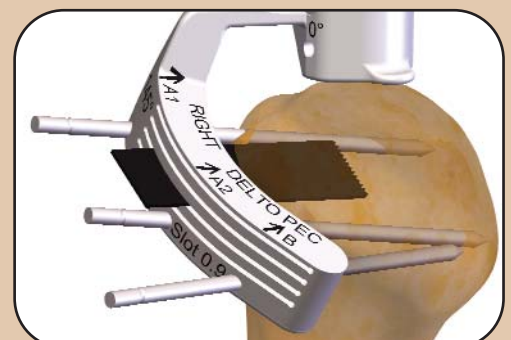
Stabilize the mounting using a 3rd oblique pin (B).

Make the incision across the slot with a saw blade of a maximum 0.9 mm thickness.



It is important to not damage the calcar, in order to have the best humeral implant stability.

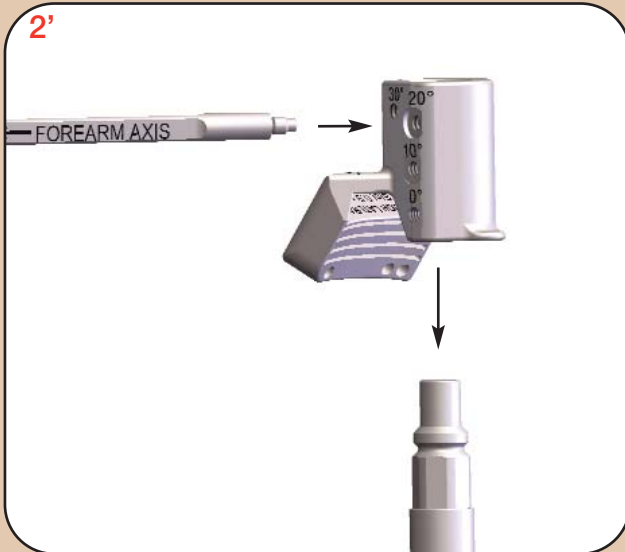
The 3rd slot from the top (0) is the ideal cutting.



Superior-lateral cutting guide mounting:

Slide the assembly onto the remaining guide.

After the cutting guide is positioned on the guide, screw the retroversion stem into one of the four positions according to the required angle: 0°, 10, 20°, 30°.

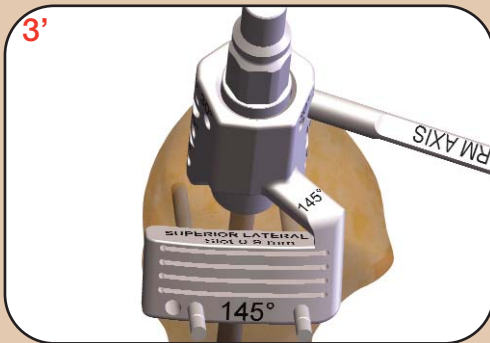


Placing the 145° cutting guide :

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

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Place two pins by drilling if necessary, using the Ø3.2 mm bit.



Remove the retroversion stem and the guide.

Slide the cutting guide along the pins.

Make the incision across the slot with a saw blade of a maximum 0.9 mm thickness.



It is important to not damage the calcar, in order to have the best humeral implant stability.

The 3rd slot from the top (0) is the ideal cutting.

Placing the K-wire :

Place the K-wire guide by centering it on the cut surface.



Insert the threaded K-wire through the guide.

Do not go further than the cortex.



Remove the K-wire guide.



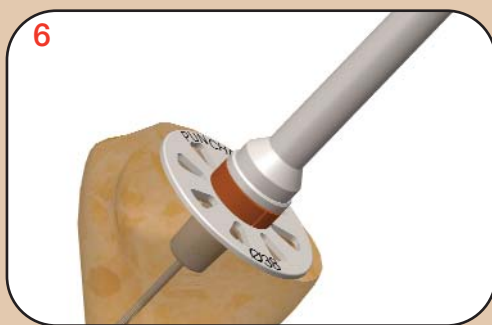
Choice of the anchoring base:

Choose the greatest anchoring base as possible, in order to have a peripheral support.



The pins have to be, on average, at 5 mm inside to the cortex.
They do not contact the cortex.

The size pin length corresponds to the anchoring base notches length.
Place a pin along the calcar.

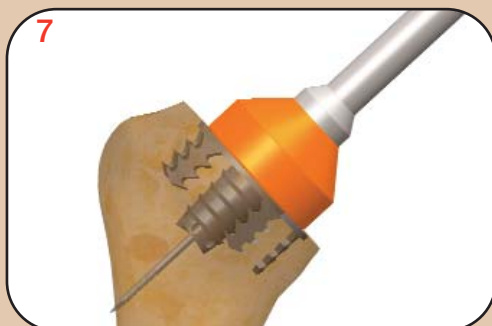


Humeral conformation:

Make a central guide-mark for the anchoring base using the cannulated puncher with the same diameter as the anchoring base.
Turn the puncher clockwise until to bottom out on the bony section.



The K-wire must be at right angles to the anchoring base.



Installation of the anchoring base:

Seat the appropriate final anchoring base using the cannulated impactor.
The flat side of the anchoring base should be inlayed inside the bone.



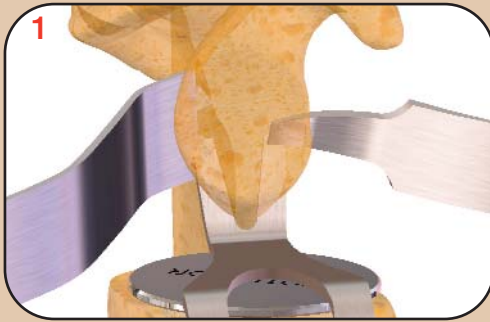
Place a notch along the calcar.



Protecting the final anchoring base:

Protect the humerus using a protector by inserting it during the glenoid step.

SURGICAL TECHNIQUE - GLENOID



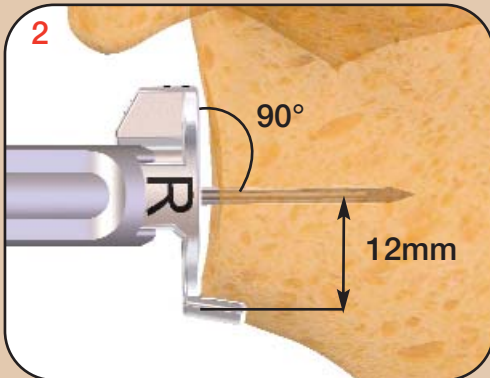
Glenoid exposure :

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:

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 glenoid to determine the correct height.

The K-wire is 12 mm above the lower edge, according to Kelly¹ 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°. (see picture #2).

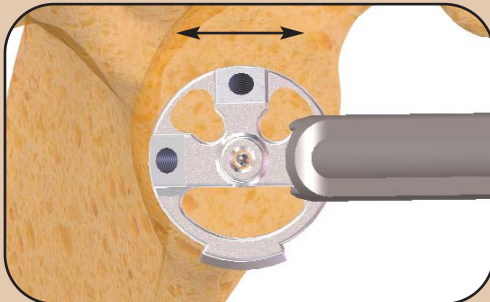
The glenospheres are tilted (lower lip) by 10°.

Positioning should be to fit the anatomy of the patient and planned according to the pre-operative X rays.

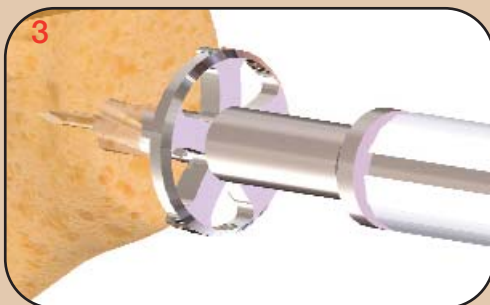
This element must be decided in pre-operative planning.

By default, the base plate is perpendicular to the mid plane of the glenoid.

Insert the K-wire using a power tool.



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

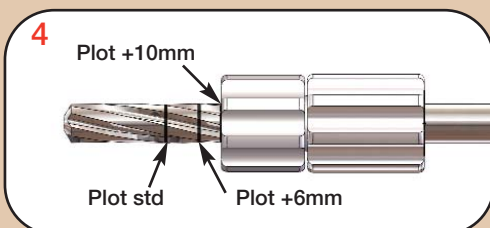


Glenoid reaming:

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 porotic.

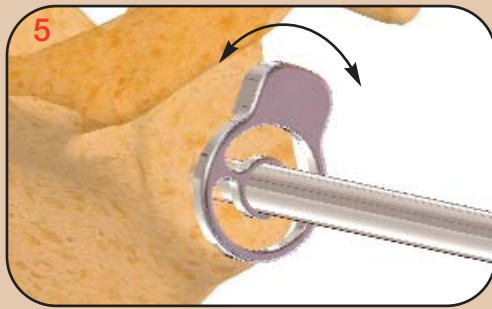


Extension post:

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

Tighten the block-stop in the correct position by screwing it onto the drill to either 6 mm or 10 mm, as required.

Drill the post again with block stop in position.

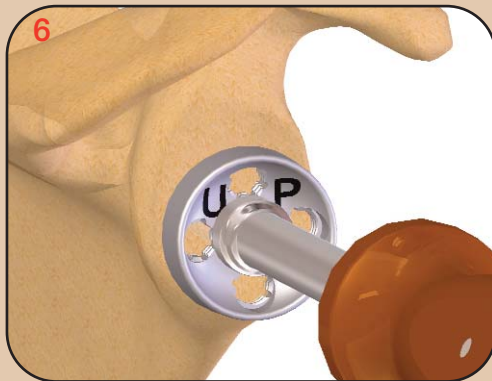


Glenoid clearance:

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



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



Positioning the baseplate :

Connect the holder/impactor to the baseplate.
Impact the baseplate so that there is pressure on 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 UP marking must be on top under the coracoid basis.

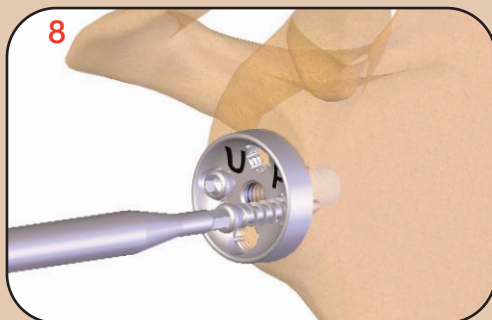
Remove the K-wire.



Screw lengths (5 sizes from 20 to 40 mm) :

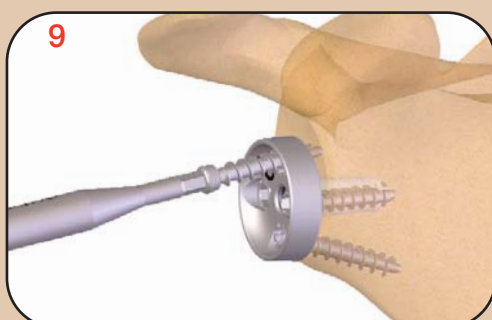
An adapted guide allows for the holes to be drilled and the length of the screws measured with the Ø 3.2 mm drill bit.
The length of the screws is measured directly.

The screw length is measured from under the head.
Two types of screws are available, locking or standard (compression).



Fixation of the baseplate :

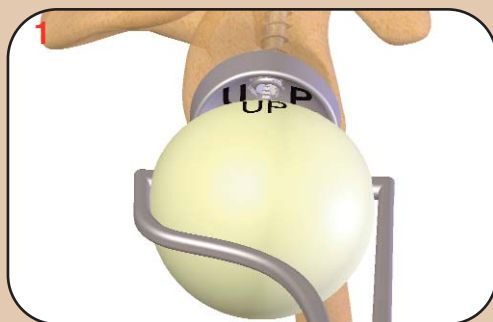
Standard screws allow the baseplate to be lagged to the bone, and locking screws fix the mounting.
Each screw allows an angulation of $\pm 12^\circ$ around the axial hole.
The upper hole for the first screw is pre-oriented by 10° to optimize its positioning in the base of the coracoid.



Recommendations:

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

TRIAL IMPLANTS



Glenosphere trial (10° tilt) :

There are two diameters of glenospheres: Ø36 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 anchoring base.

All glenospheres are tilted downwards by 10°.

For slim patients ($BMI (W/S^2) \leq 21$) (Body Mass Index (weight / size²)), use of the Ø 40 mm 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.

Symmetrical cup trial :

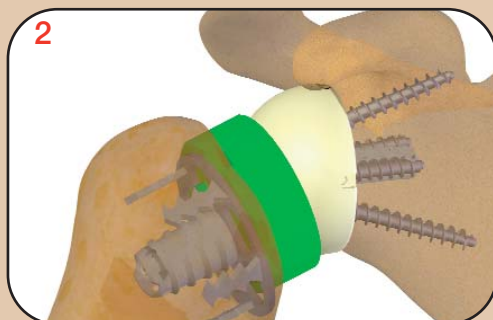
The cup diameter matches the glenosphere diameter.

Three heights are available (+3, +6, +9 mm).

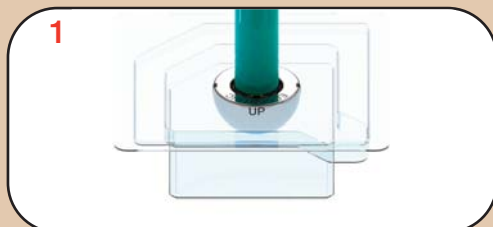
An articulating surface offset in relation to the metaphyseal part is possible for all cups.

Test for stability and mobility.

Trials are identical to the final implants.



DEFINITIVE IMPLANTS



Handling of the definitive glenosphere:

Impacted glenosphere

Insert the glenosphere implant holder into the definitive implant. On the specially designed clamp, there are notches on the jaws which should be positioned to coincide with those on the middle of the glenosphere implant.



Handling of the definitive glenosphere w/screw:

Impacted glenosphere w/screw

Insert the 3.5mm hex screwdriver in the screw of the glenosphere.



Fitting of the definitive implants:

Impacted glenosphere

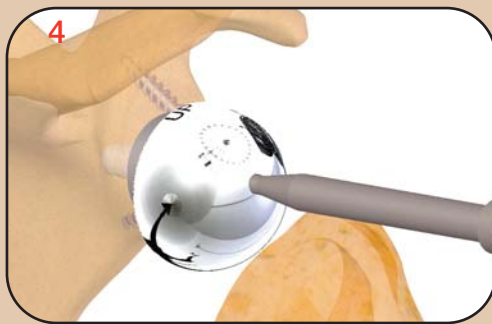
When positioning the glenosphere, pay attention to the "UP" marking, if an eccentric glenosphere is used.

First introduce the guiding post, then the female taper of the glenosphere into the male taper 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.



Impact the glenosphere and check it before closure.



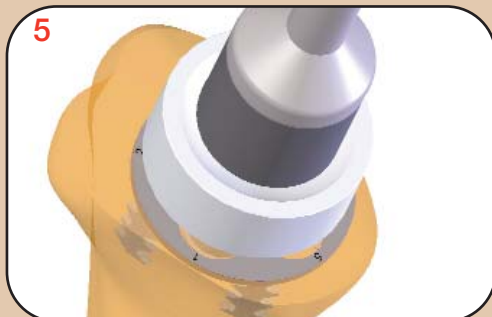
Fitting of the definitive implants: Impacted glenosphere w/screw

Insert the glenosphere paying attention to the «UP» marking, if an eccentric glenosphere is 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



Do not impact the glenosphere with the screwdriver.



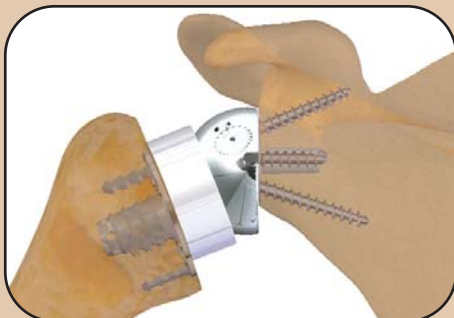
Index of the definitive symmetrical cup :

Find the index marks on both the definitive cup and the anchoring base.

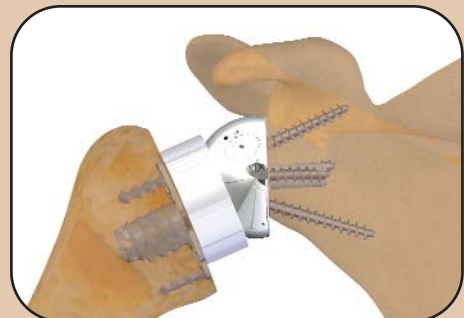
Insert the cup into the taper of the anchoring base.

Optimize the cup orientation to adapt it to the posterior offset.

Check there is nothing impeding impaction of the cup and impact it.



If the neck of the scapula is short, it is recommended to use an offset 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.

REHABILITATION

Short-term immobilization (according to the surgeon's assessment) with mobilization in neutral rotation 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".

IMPLANTS

- 314-0030 Anchoring base TA6V Ø30 w/cement Ti/HA
- 314-0034 Anchoring base TA6V Ø34 w/cement Ti/HA
- 314-0038 Anchoring base TA6V Ø38 w/cement Ti/HA

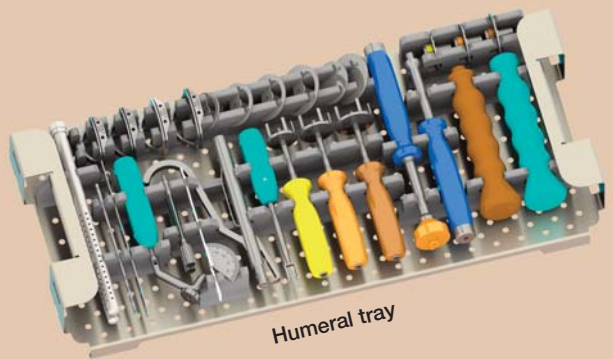
- 323-0803 Std symmetrical humeral cup PE/TA6V Ø36/+3
- 323-0806 Std symmetrical humeral cup PE/TA6V Ø36/+6
- 323-0809 Std symmetrical humeral cup PE/TA6V Ø36/+9
- 324-0803 Std symmetrical humeral cup PE/TA6V Ø40/+3
- 324-0806 Std symmetrical humeral cup PE/TA6V Ø40/+6
- 324-0809 Std symmetrical humeral cup PE/TA6V Ø40/+9

- 105-0006 Post extension TA6V +6 mm
- 105-0010 Post extension TA6V +10 mm
- 105-0024 Glenoid baseplate TA6V Ti/HA Ø24 mm

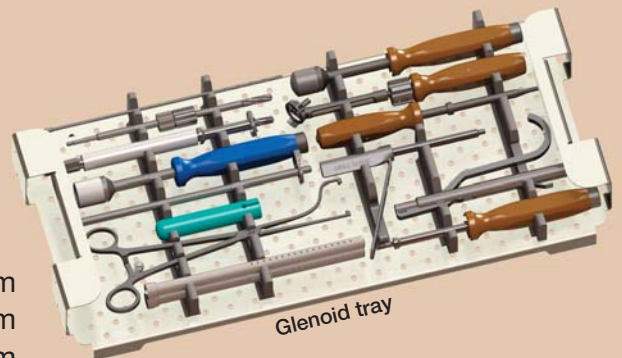
- 105-3600 * Centered glenosphere CoCr 10° tilt Ø36 mm
- 105-3603 Eccentric glenosphere CoCr 10° tilt Ø36 mm
- 105-4000 Centered glenosphere CoCr 10° tilt Ø40 mm
- 105-4001 Eccentric glenosphere CoCr 10° tilt Ø40 mm
- 105-3610 Centered glenosphere w/ screw CoCr/TA6V 10° tilt Ø36 mm
- 105-3613 Eccentric glenosphere w/ screw CoCr/TA6V 10° tilt Ø36 mm
- 105-4010 Centered glenosphere w/ screw CoCr/TA6V 10° tilt Ø40 mm
- 105-4011 Eccentric glenosphere w/ screw CoCr/TA6V 10° tilt Ø40 mm

- 108-4520/4540 Polyaxial locking screw TA6V Ø4.5 mm L. 20 to 40 mm inc. 5 mm
- 109-4520/4540 Polyaxial standard screw TA6V Ø4.5 mm L.20 to 40 mm inc. 5 mm

* Glenospheres are also available TiN coated.



Humeral tray



Glenoid tray



Easytech Reversed additional tray
(Polyethylene symmetrical cups)



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