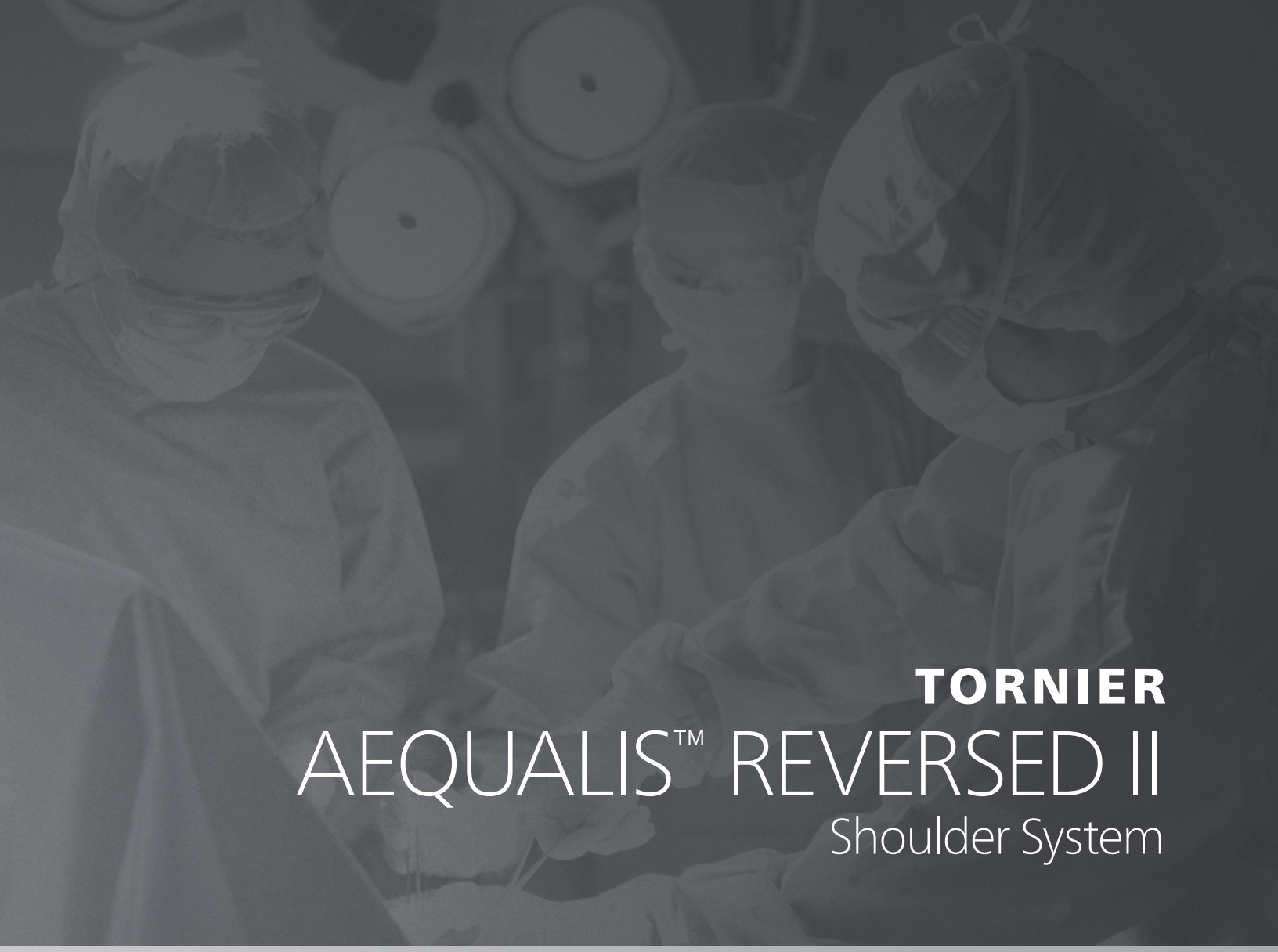


TORNIER

AEQUALIS™ REVERSED II

Shoulder System

SURGICAL TECHNIQUE

WRIGHT®

FOCUSED EXCELLENCE

Table of Contents:

Implant Description

The 9 mm Spacer

A 9 mm Spacer allows for increased lateralization and height of the humeral component up to 21 mm to optimize deltoid tension.

The Metaphysis
(Cobalt Chrome for cemented application)

Available in 2 diameters - 36 mm and 42 mm - to adapt to varying patient's anatomy.

An anti-rotation design with a polyethylene plug to secure the fixation between the Metaphysis and Stem.

Polyethylene Insert

Available to optimize the deltoid tension, implant stability and avoid any risk of acromial impingement.

- Centered insert (6 mm, 9 mm, 12 mm)
- 36/42 combination insert (6 mm, 9 mm, 12 mm) to match a 36 mm metaphysis with a 42 mm sphere
- Eccentric +2 mm insert (6 mm, 9 mm, 12 mm)
- Constrained insert (6 mm, 9 mm, 12 mm, 15 mm) Upon request only

The Stem
(Cobalt Chrome for cemented application)

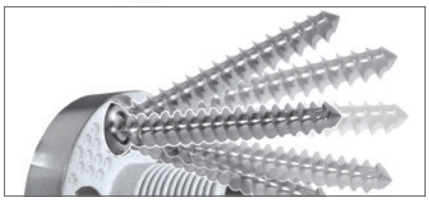
A wide variety of diameters offered to adapt to each patient's anatomy and in multiple lengths for revision purposes.

The Glenoid Sphere

Available in 4 diameters: 33, 36, 39 and 42 mm.

33 mm sphere:
- Lateralized +4 mm, +6 mm or +8 mm

36, 39 and 42 mm spheres:
- Centered glenoid sphere (standard)
- +2 mm lowered eccentric glenoid sphere (to reduce risk of scapular notching)
- 10° tilted glenoid sphere (to compensate for superior glenoid wear)



Compression Screws

4.5 mm self-tapping screws allow for added fixation and compression of the baseplate.

Variable screw angles (+/-15°), enhance cortical fixation.

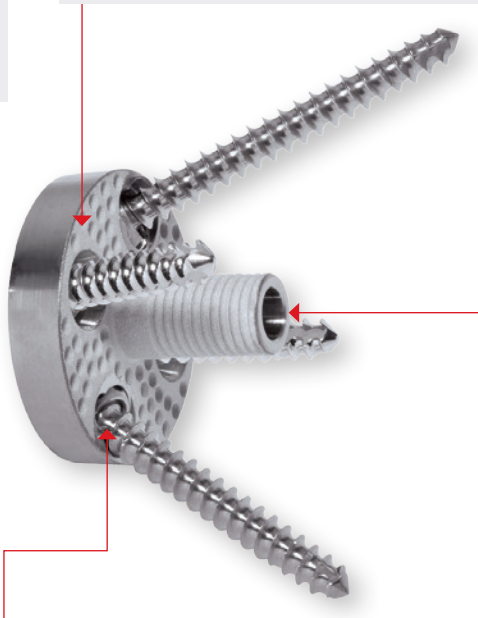
The Multidirectional Screws

A 4.5 mm self-tapping locking head design allows proper orientation of the screw and then secures the angle for optimal fixation.

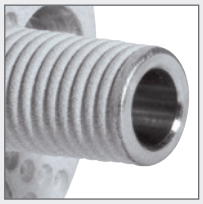
The Glenoid Baseplate

Available in 2 diameters: 25 and 29 mm.

Designed to enhance primary fixation (conical central post and 4 peripheral screws) and secondary fixation (HA coating).

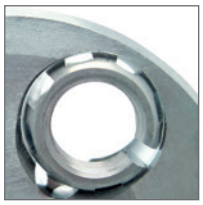


The Central Post



- To facilitate initial primary fixation, preparation of the glenoid central hole is accomplished by drilling with the 7.5 mm drill bit which allows a good press-fit for the 8 mm central post.
- HA coated on post and backside of baseplate.
- 2 lengths 15 and 25 mm for revision and bone graft.

The Threaded Rings



Threaded rings have been designed in the superior and inferior holes of the glenoid baseplate to allow free angulation of the screws within a certain range, and locking of the screws in the desired position :

- superior screw range of angulation is 0° to 30° superior towards the base of the coracoid process and +/-15° in the transverse plane.
- inferior screw range of angulation is 0° to 30° inferior towards the lateral scapula spine and +/-15° in the transverse plane.

Implant Indications and Contraindications

Indications

The complete list of contraindications can be found in the “Instructions For Use” packaged with the implants.

Contraindications

The complete list of contraindications can be found in the “Instructions For Use” packaged with the implants.

Surgical Technique

Pre-Operative Planning

Pre-operative planning is performed using x-ray templates of known magnification in the frontal and sagittal views to determine implant size and positioning.

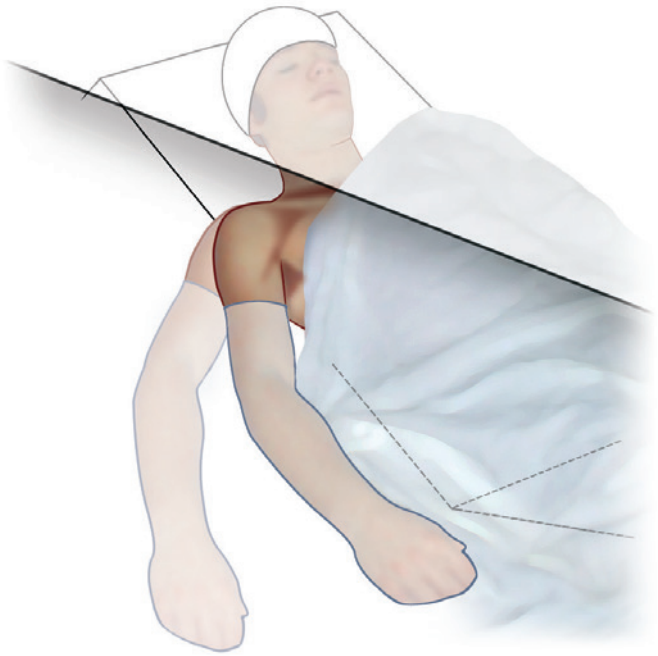
The use of a CT scan or MRI is recommended to determine the orientation of the glenoid and bone stock quality.

X-ray templates allow the surgeon to assess:

- The size and the optimal length of the gleno-humeral implants.
- The diameters of the metaphysis, the poly insert and the glenoid sphere.

Patient Positioning

Beach chair position with the shoulder positioned sufficiently lateral to allow full arm extension.



Humeral Exposure

Deltopectoral Approach

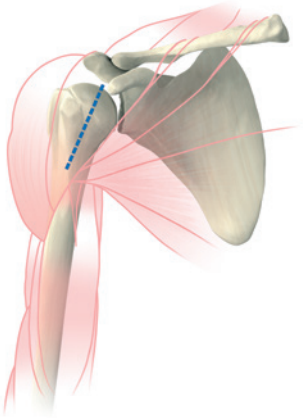
An incision is made from the tip of the coracoid along the deltopectoral groove, slightly lateral to the axillary fold. The pectoralis major is identified. The deltoid and cephalic veins are retracted laterally to open the deltopectoral groove.

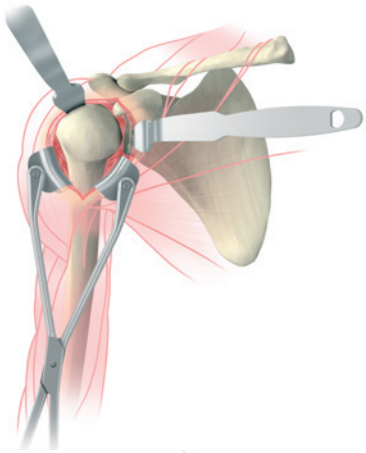
The coracoid process is identified. A Hohmann retractor is positioned behind the coracoid. Care should be taken to preserve the origin and insertion of the deltoid.

The clavipectoral fascia is incised at the external border of the coraco-brachialis. The axillary nerve is then identified before opening the subscapularis.

With the arm externally rotated, a conservative anterior and inferior capsule release from the humerus to the glenoid may be performed.

With adequate releases made, the humeral head is dislocated into the deltopectoral interval by abduction of the arm and progressive external rotation and extension. In cases of severely restricted external rotation (0° or less), it is recommended to further release the upper pectoralis insertion.





Superolateral Approach

The incision is made from the acromioclavicular joint along the anterior border of the acromion and downward approximately 4 cm.

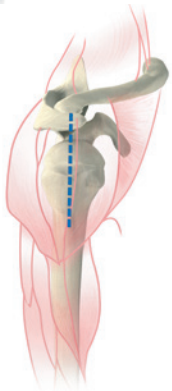
The deltoid is split in line with its fibers. Extra care should be taken to avoid any damage to the axillary nerve, which is located approximately 4 cm distal to the acromion.

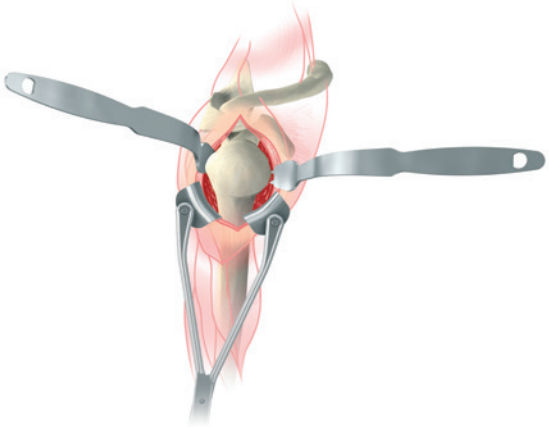
The anterior part of the deltoid and the coracoacromial ligament are then carefully detached from their acromial insertion up to the acromioclavicular joint.

The humeral head will then become visible at the anterior border of the acromion. Next, the subscapularis bursa is released and the humeral head dislocated by placing the arm in flexion and external rotation.

To optimize the exposure, the anterior border and the remaining superior cuff can be resected.

In some cases, the remaining subscapularis tendon may be resected.





Preparation of the Humerus

Identification of the Humeral Entry Point

The humeral head is generally deformed and anatomic reference points may be missing or distorted.

The humeral entry point is located at the diaphyseal axis at the highest point of the humeral head. This is determined after examination of the sagittal and anterior-posterior x-rays (in case of humeral head deformity).

The entry point is marked with a starter awl. (Figure 1)

If necessary, the entry point can also be enlarged with an osteotome before inserting the starter awl down the diaphyseal axis.

Figure 1

Humeral Head Resection

Two cutting guides are available:

- One for the Deltopectoral approach (Figure 2)
- One for the Superolateral approach. Upon request only (Figure 3)

The shaft of the monobloc cutting guide is inserted into the medullary canal at the entry point previously determined. It is driven down until the ring contacts the humeral head.

Figure 2

Figure 3

To define the prosthetic retroversion, a retroversion rod is positioned into one of the holes along the axis which allows for retroversion between 0° and 20° (R for right arm and L for left arm). (Figure 4)

The cutting guide is turned until the retroversion rod is aligned with the patient's forearm.

Figure 4

Once the retroversion has been determined, the head is then resected with an oscillating saw, below the ring of the cutting guide. (Figure 5)

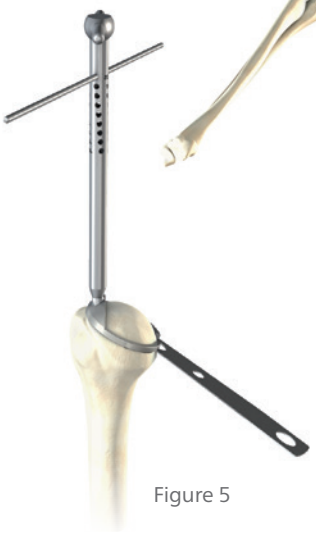


Figure 5

To complete the cut, the cutting guide is removed. (Figure 6-7)

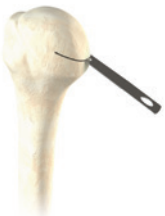


Figure 6

Figure 7

Metaphyseal Reaming

The appropriate metaphysis size is determined preoperatively and confirmed intraoperatively in accordance with the size of the humerus.

The metaphyseal component is available in two diameters (Ø36 mm and Ø42 mm).

The selection of the metaphyseal diameter is essential, as it will determine whether the Ø36 mm or Ø42 mm implants and instruments will be used to complete the procedure.

The humeral and glenoid implant sizes Ø36 mm or Ø42 mm diameter are usually paired together.

The desired metaphyseal reamer is assembled to the pilot tip and connected (Ø36 mm or Ø42 mm) to the metaphyseal reamer shaft. (Figure 8)

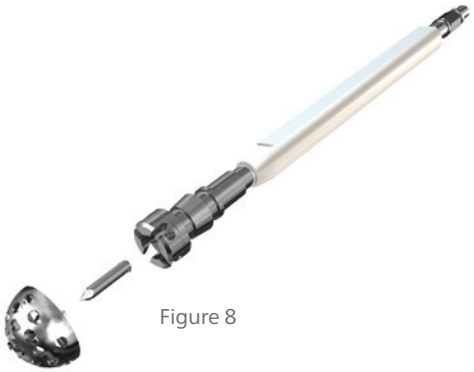


Figure 8

The pilot tip is positioned in the center of the humeral cut and the metaphyseal region is reamed. (Figure 9)

Figure 9

Reaming is complete when the depth of the reamer head is at the level of the cut surface. (Figure 10)

Note: a special angulated reamer for superolateral approach is available on upon request only.

Figure 10

Metaphyseal and Diaphyseal Reaming

The appropriate size metaphyseal reamer is then assembled onto the T-handle and inserted up to the level of the height landmark on the shaft of the reamer. (Figure 11-12)

This reaming shapes the metaphysis to receive the conical portion of the metaphyseal cup.

Figure 11

Figure 12

The diaphysis is manually reamed using cylindrical reamers that progressively increase in diameter. (6.5 mm, 9 mm,

12 mm and 15 mm, respectively). (Figure 13a-b)

The reamer should be inserted up to the appropriate height landmark of the desired implant length (100 mm,150 mm, 180 mm and 210 mm respectively). (Figure 14)

Reaming is complete when the reamer contacts diaphyseal cortical bone. Additional reaming should be avoided to prevent humeral fracture.

The last reamer used determines the final implant diameter and length.

Figure 13a

Figure 13b

Figure 14

Positioning of the Trial Implant Stem-Metaphysis

Assemble the selected diaphyseal and metaphyseal trial components. (Figure 15)

Figure 15

The trial assembly is then attached to the humeral impactor handle and inserted into the reamed medullary canal. (Figure 16)

Figure 16

The retroversion rod is then inserted into the hole of the humeral impactor handle at the previously determined retroversion angle (0° to 20°). (Figure 17)

Figure 17

Positioning of the trial assembly is then verified.

The trial assembly is impacted if necessary to ensure that it seats to the proper depth within the metaphysis.

Once seated, retroversion is checked and the impactor handle is removed from the trial stem with the 4.5 mm screwdriver. (Figure18)

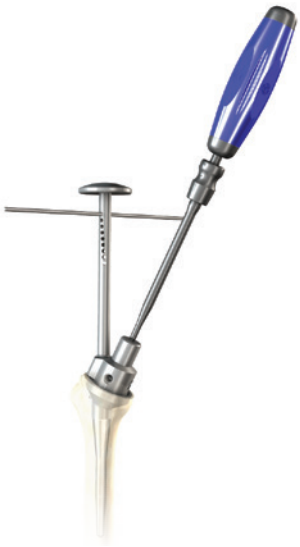


Figure 18

The cut protector is positioned into the trial metaphysis to protect the prepared humerus during glenoid preparation. (Figure 19)

Figure 19

Glenoid Preparation

Glenoid Exposure

A partial capsulotomy and resection of the remaining glenoid labrum are performed to expose the glenoid.

A Kolbel retractor is positioned at the inferior border of the glenoid. The two prongs retractor is seated on the pillar of the scapula for the superolateral approach or at the posterior aspect of the glenoid for the deltopectoral approach.

Additional retractors are positioned anterior and posterior to the glenoid for the supero-lateral approach and superior and inferior for the deltopectoral approach.

Once the initial exposure is achieved, an additional capsulotomy is performed if necessary.

Glenoid osteophytes are removed to further reveal the anatomical shape.

Glenoid Preparation Techniques

AEQUALIS™ REVERSED II Instrumentation allows for use of different surgical techniques to better suit the situation and surgeon preferences.

The instrumentation allows either a standard glenoid preparation or a cannulated preparation referencing a guide pin positioned at a chosen orientation.

Standard Glenoid Surgical Technique

(See from page 16 to 18)

Cannulated Glenoid Surgical Technique

(See from page 19 to 22)

Standard Glenoid Preparation Technique

Central Hole Drilling

The Ø6 mm drill guide is the same outer diameter as the final glenoid baseplate. (Ø25 mm or Ø29 mm).

Choose the appropriate diameter central post drill guide that matches the final baseplate diameter.

Two types of drill guide handles are available:

- A peripheral handle can be assembled to one of the three holes in the peripherical aspect of the drill guide. (Figure 20)
- A central handle can be assembled to the central hole of the drill guide. (Figure 21)

Figure 20

Figure 21

According to surgeon preference, exposure and surgical approach, one of the two handles is selected and assembled to the Ø6 mm drill guide.

The drill guide is positioned making sure that its bottom surface is properly seated on the bone surface. (Figure 22a)

To limit any risk of impingement, it is important to properly align the inferior edge of the drill guide with the inferior edge of the glenoid.

Mark the central hole with a bovie and remove the guide to confirm central hole orientation prior to drilling. When evaluating the central hole location and angle of entry for eroded glenoids, the hole orientation and angle of entry may need to be adjusted to compensate for wear.

According to pre-operative CT scan or MRI, the central hole should be located inferiorly and slightly posterior from the anatomical center.

Insert the Ø6 mm drill bit into the drill guide and drill until the depth stop makes contact with the bone. (Figure 22b)

Figure 22a

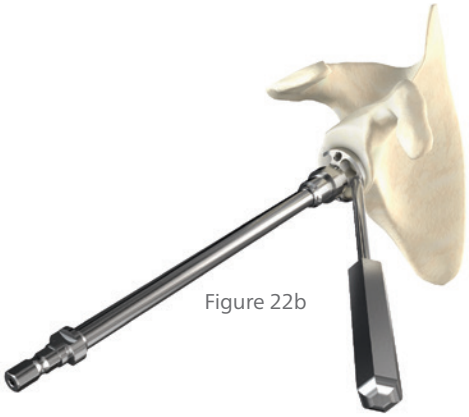


Figure 22b

Glenoid Reaming

To obtain good bone seating and secure fixation of the glenoid baseplate it is important to flatten the glenoid surface.

Four different reamers are available:

- Two central reamers for the baseplate diameter (Ø25 mm or Ø29 mm) to create the flat surface for the glenoid baseplate
- Two peripheral reamers for the sphere diameter (Ø36 mm or Ø42 mm) to create the grove around the baseplate
- Ø36 mm central and peripheral reamers must be used with 33 mm and 36 mm spheres
- Ø42 mm central and peripheral reamers must be used with 39 mm and 42 mm spheres

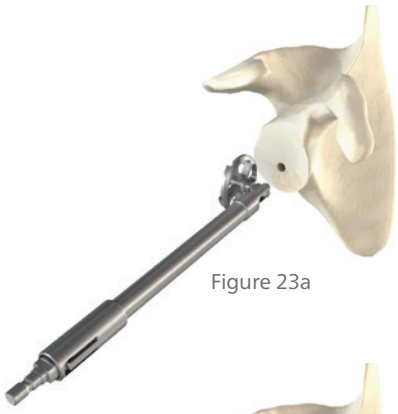


Figure 23a

Figure 23b

Using the Articulated Driver

1) To use the articulated driver, attach the reamer in the unlocked straight position.

2) Once attached, pivot the driver and insert the tip of the reamer into the central hole of the glenoid (Figure 23a).

3) Once the reamer tip is seated (Figure 23b), use the handle as a lever and retract the driver shaft into the straight position

(Figure 24/Unlocked). Slide the outer sleeve into the locked position (Figure 25/Locked).

Caution: The articulated driver can only be used in the straight locked position.

Always begin by hand reaming and advance to a power reamer only if necessary. When using reaming under power, apply power to the reamer prior to seating on the glenoid surface and then apply using pressure.

The reamer should remain perpendicular to the medullary canal. The goal of reaming is to obtain a bony surface that matches the backside of the glenoid component (Figure 26).

However, it is not advisable to ream down to cancellous bone because of the limited glenoid bone stock. Over aggressive reaming should be avoided to prevent possible glenoid fracture.

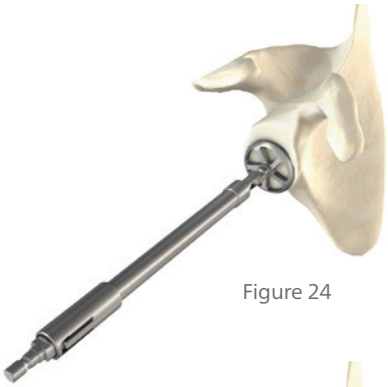


Figure 24

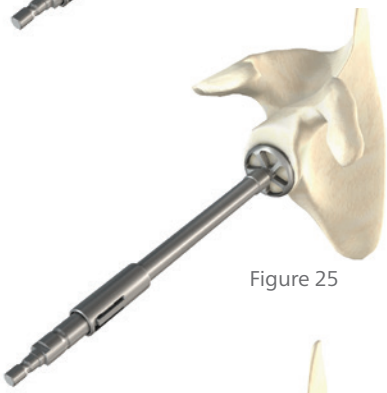


Figure 25

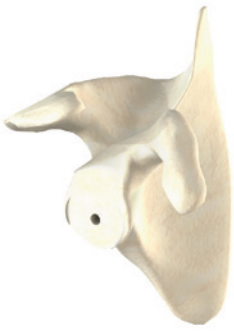


Figure 26

Central Hole Re-Drilling

Final drilling of the glenoid central hole is performed under power using the Ø7.5 mm drill bit to enable a press-fit when impacting the final glenoid baseplate (the baseplate central peg is Ø8 mm).

Two drill bits are available according to the length of the baseplate central Post:

- A 15 mm drill bit for standard post baseplate
- A 25 mm drill bit for long post baseplate

The long post baseplate is typically recommended in cases where bone graft is used between glenoid baseplate and native glenoid.

It is important to check that the tip of the post is properly implanted into the native glenoid.

Select the appropriate drill bit and connect it to power.

Place the 7.5 mm drill guide onto the glenoid surface and align with the previously established 6 mm central hole.

Insert the drill bit into the drill guide and drill until the depth stop contacts the surface of the glenoid bone. (Figure 27)

Remove the drill bit.

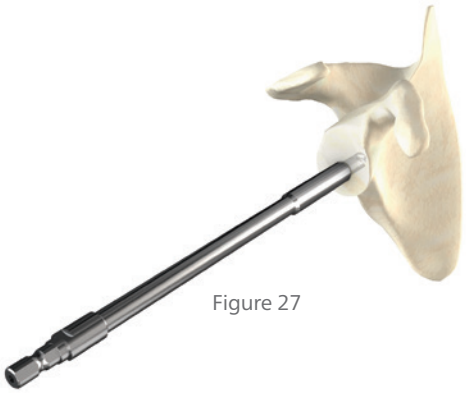


Figure 27

Note: Please go to page 23 for the positioning and definitive implantation of the baseplate.

Cannulated Glenoid Preparation Technique

Introduction

Two types of Ø2.5 mm pin guides are available (Ø25 mm or Ø29 mm). (Figure 28)

The Ø2.5 mm pin guide has the same outer diameter as the glenoid baseplate.

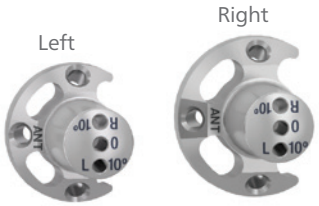


Figure 28

The 0° pin hole can be used to prepare the baseplate perpendicular to the glenoid. The 10° tilted hole can be used to place an inferior tilt to the baseplate. (Figure 29)

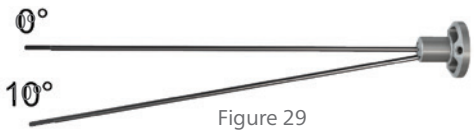


Figure 29

According to surgeon preference, exposure and surgical approach, the handles can be assembled to the Ø2.5 mm drill guide in various orientations. (Figure 30)

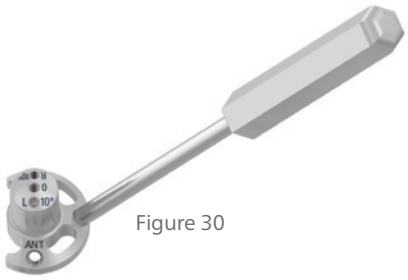


Figure 30

Guide Pin Positioning

Place the 2.5 mm drill guide onto the glenoid surface making sure that its bottom surface is perfectly seated on the bone. (Figure 31)

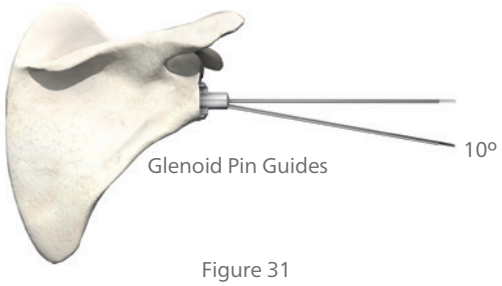


Figure 31

To limit any risk of impingement, it is important to properly position the drill guide referencing the inferior glenoid edge. (Figure 32)

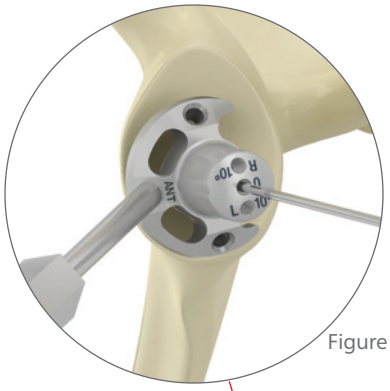


Figure 32

Once the drill guide is positioned, insert the single use alignment pin into the guide and drill until a trans-cortical fixation is obtained. (Figure 33)

Check the stability of the pin to avoid any migration in subsequent steps.

Once the alignment pin is inserted, remove the drill guide sliding it over the guide pin.

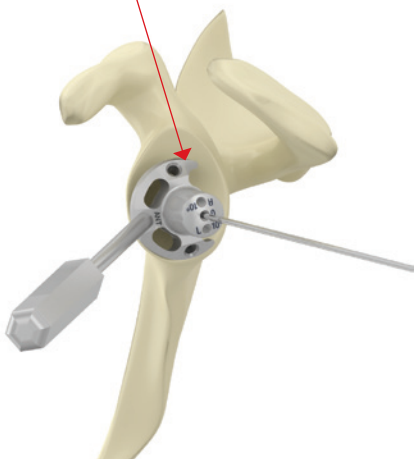


Figure 33

Visually check the position and orientation of the pin. (Figure 34)

It is important to check the alignment pin condition after every step of the glenoid preparation. If the guide pin is damaged or bent, a new guide pin should be inserted.

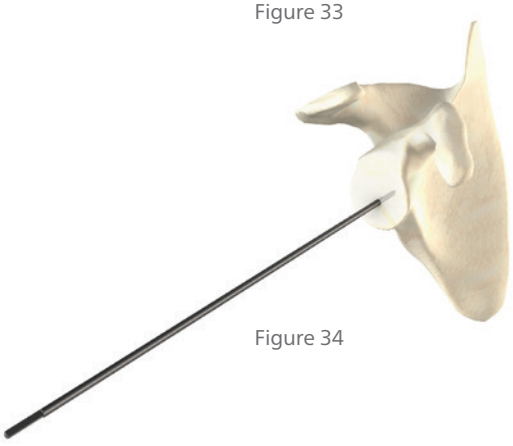


Figure 34

Glenoid Reaming

To obtain good seating and secure fixation of the glenoid baseplate, it is important to create a flat glenoid surface using the cannulated circular reamer of the same diameter of the baseplate.

Connect the appropriate reamer to power, slide the assembly onto the guide pin and ream. (Figure 34a)

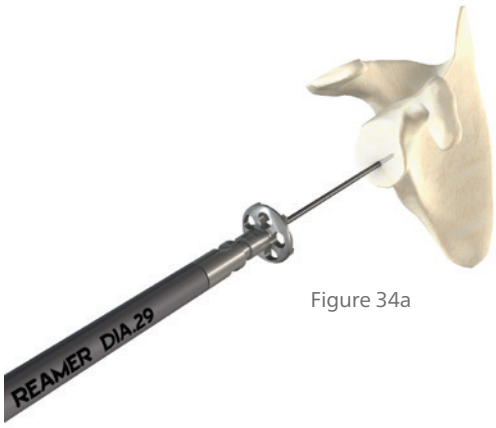


Figure 34a

It is recommended to start the reamer before contacting the glenoid surface and ream until the glenoid surface is flat. (Figure 34b)

If insertion of reamer is difficult, remove or reposition retractors for greater exposure.

A T-handle is available if manual reaming is desired.

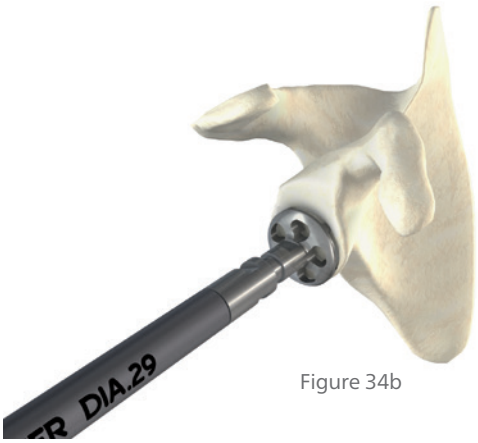


Figure 34b

Preserve as much bone as possible to support good primary fixation. (Figure 35)

It is not advisable to ream down to cancellous bone due to limited glenoid bone stock. Overly aggressive reaming should be avoided to minimize the risk of glenoid fracture.

Note: When using the BIO-RSA technique, please refer to the BIO-RSA surgical technique

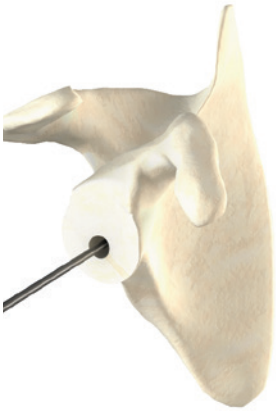


Figure 35

If the guide pin is damaged or bent, a new guide pin should be placed.

Peripheral Reaming

To obtain good fixation of the glenoid sphere on the baseplate, peripheral reaming is necessary.

Four manual cannulated peripheral reamers are available according to the size of the glenoid sphere:

- Ø36 mm reamer for Ø25 mm and Ø29 mm baseplate
  - Ø36 mm reamer must be used with 33 mm spheres
- Ø42 mm reamer for Ø25 mm and Ø29 mm baseplate
  - Ø42 mm reamer must be used with 39 mm spheres

Assemble the T-handle to the peripheral reamer and ream until the depth stop contacts the bony surface. (Figure 36a-b-c)

The peripheral reamer should never be used with power to avoid the risk of fracture.

After using the peripheral reamer, cortical bone outside the groove has to be removed to make the glenoid sphere assembly easier.

Remove the reamer and visually check the adequacy of the reaming.

Figure 36a

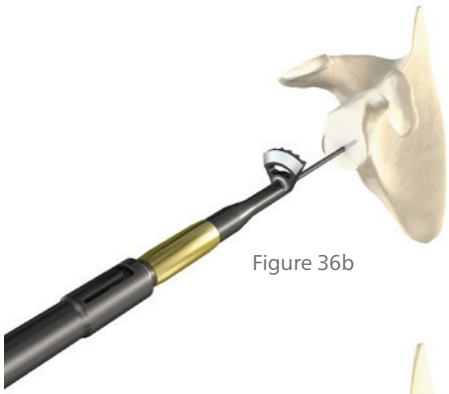


Figure 36b

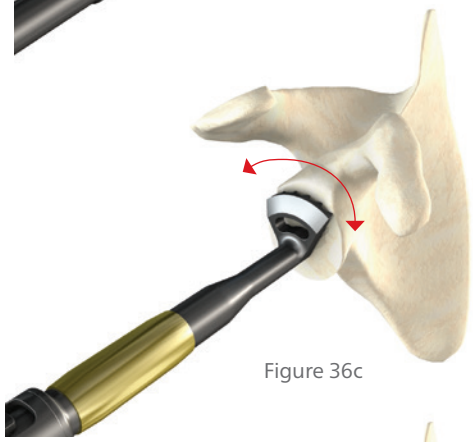


Figure 36c

Central Hole Drilling

The glenoid central hole is drilled using the Ø7.5 mm cannulated drill bit to enable a press-fit when impacting the final glenoid baseplate (the baseplate central post is Ø8 mm).

Two Ø7.5 mm cannulated drill bits are available according to the length of the glenoid baseplate central post:

- A 15 mm drill bit for standard post baseplate
- A 25 mm drill bit for long post baseplate

A long post baseplate is typically recommended in cases where bone graft is used between glenoid baseplate and native glenoid.

It is important to check that the tip of the post is properly implanted into the native glenoid.

Select the appropriate drill bit and connect it to power.

Slide the assembly onto the guide pin and drill the central hole until the depth stop contacts the surface of the glenoid. (Figure 37a-b)

Remove the drill bit.

Remove the guide pin using power.

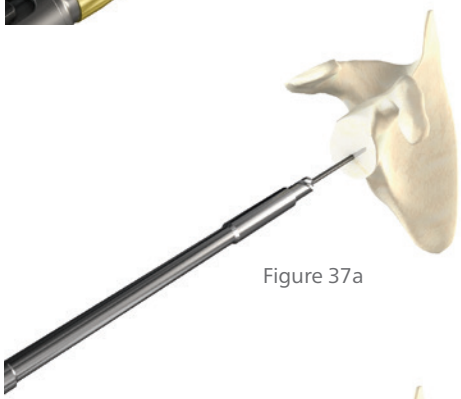


Figure 37a

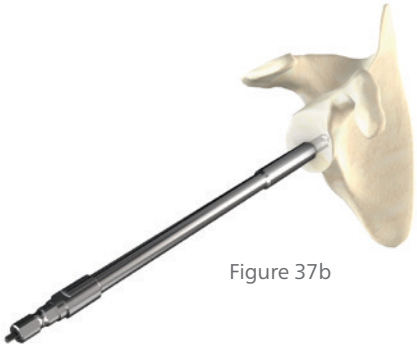


Figure 37b

Positioning of the Glenoid Baseplate

The glenoid baseplate is attached to the baseplate impactor through its central hole using a screw in the impactor central shaft. (Figure 38a)

Figure 38a

Care should be taken to ensure that the two pegs on the impactor seat properly into their respective holes on the implant baseplate. (Figure 38b)

To assemble, check that the small engagement hole on the baseplate is situated inferiorly, at the left side of the impactor. (Figure 38b)

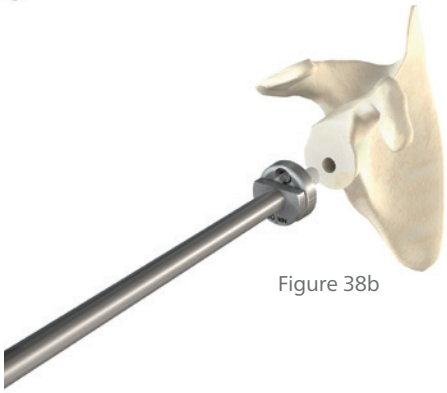


Figure 38b

The central peg of the glenoid baseplate is then impacted into the previously drilled Ø7.5 mm diameter hole. (Figure 38c)

Note: Care should be taken to correctly orient the superior/inferior position of the impactor before impacting the baseplate.

The flat section of the baseplate impactor should be positioned on the superior aspect of the glenoid. In addition, the proper orientation can be determined by orienting the impactor according to the down markings on the visible surface of the impactor. (Figure 38c)

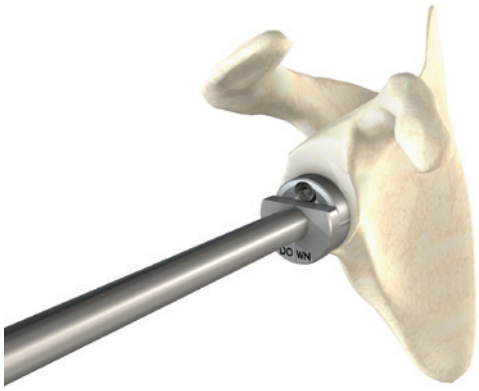


Figure 38c

Once impacted, the baseplate should seat fully on the glenoid. If not, impact until fully seated.

The baseplate impactor is then removed by unscrewing the knob on the handle of the impactor.

Check that the peripheral aspect of the baseplate is flush with the prepared glenoid surface. (Figure 39)

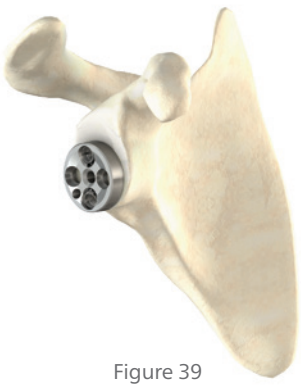


Figure 39

Fixation of the Glenoid Baseplate

The glenoid baseplate is fixed to the glenoid with four 4.5 mm self-tapping screws.

There are two types of screws:

- 2 compression screws (Figure 40)
- 2 multidirectional locking screws (Figure 41)

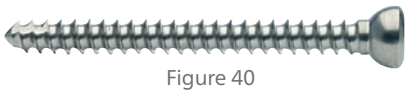


Figure 40

Figure 41

Anterior & Posterior Screws

The two anterior and posterior screws are self-tapping and have a hemispherical head to provide compression.

Each screw can be oriented in any direction within a 30° arc.

To optimize fixation, it is recommended to achieve bi-cortical fixation.

Inferior & Superior Head Screws

The two inferior and superior screws are self-locking and can be oriented within a deflection range of:

Inferior screw:

- 30° inferiorly and +/- 15° in the transverse plane

Superior screw:

- 30° superiorly and +/- 15° in the transverse plane

To optimize fixation, it is recommended to achieve:

- Bi-cortical fixation or
- Fixation in cortical bone in the pillar of the scapula or coracoid process.

Anterior and Posterior Screw Fixation

The anterior and posterior screws are positioned first to optimize compression of the baseplate.

Each screw can be oriented in any direction within a 30° arc.

Using the Ø3 mm drill bit, drill the screw hole through the compression screw drill guide for anterior-posterior compression screws. (Figure 42-43)

Figure 42

To obtain a good cortical fixation the anterior screw should be directed posterior (15°) and superior (20°).

Figure 43

The screw length is read by locating the laser mark on the drill through the window of the drill guide. (Figure 44)

If desired, a standard depth gauge is available.

Figure 44

The anterior screw is inserted with the 4.5 mm screwdriver without fully tightening to avoid anterior baseplate rocking. (Figure 45)

Figure 45

The posterior screw is then placed in the same manner as the anterior screw.

To obtain a good cortical fixation, the posterior screw should be directed anterior and inferior to the central post.

Alternate final tightening of the two compression screws until fully tightened. (Figure 46)

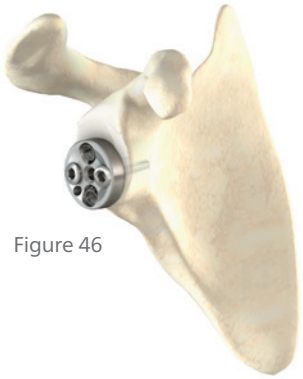


Figure 46

Superior and Inferior Screw Fixation

The Ø3 mm locking screw drill guide for the superior and inferior screws is positioned into the inferior threaded hole of the baseplate. (Figure 47-48)

Figure 47

The direction of the drill axis is chosen by free orientation of the drill guide.

The Ø3 mm drill bit is passed through the guide and the hole is drilled bicortically.

The inferior screw is positioned into the pillar of the scapula. The inferior screw can be oriented within a range of 30° inferiorly and +/- 15° in the transverse plane.

The pillar of the scapula is generally situated downwards in the vertical axis of the glenoid at an angle of approximately 20°.

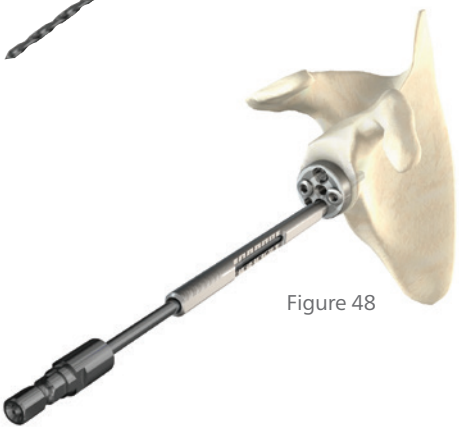


Figure 48

The screw length is read directly on the drill guide by locating the laser mark on the drill through the window on the drill guide. (Figure 49)

If desired, a standard depth gauge is available.

Figure 49

The screw is introduced into the inferior hole and fully tightened with the 4.5 mm screwdriver. (Figure 50)

Finally, the superior screw is placed in the same manner as in the inferior screw.

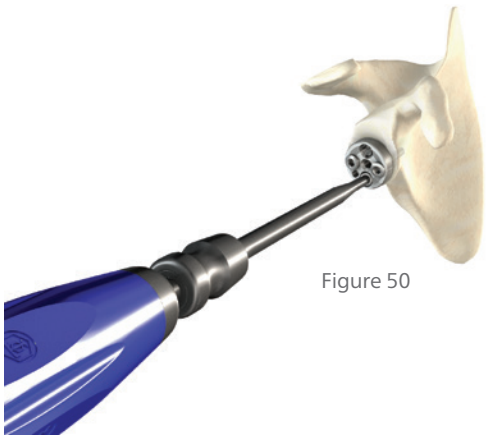


Figure 50

The superior screw is positioned into the base of the coracoid process.

The coracoid is generally situated superiorly in the vertical axis of the glenoid at an angle of approximately 20° and anteriorly in the transverse axis of the glenoid at an angle of approximately 10°. (Figure 51)

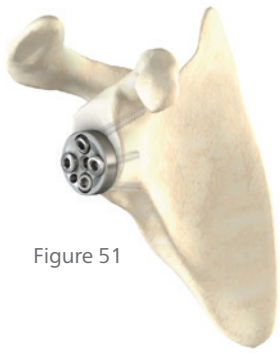


Figure 51

Note: In the event of poor bone fixation, the orientation of the drill guide should be changed and the hole drilled again into more sufficient bone stock.

Positioning of the Final Glenoid Sphere

Four different models of spheres are available: 36, 39 and 42mm spheres are compatible with Ø25mm and Ø29mm baseplates. 33mm spheres are compatible with Ø25mm baseplates only.

- Centered glenoid sphere (standard)
- +2 mm lowered eccentric glenoid sphere (to reduce risk of scapular notching)
- 10° tilted glenoid sphere (to compensate the superior glenoid wear or create approximately 4 mm of lateralization)

Note: If desired, a trial glenoid sphere can be used to assess the deltoid tension. (Figure 52)

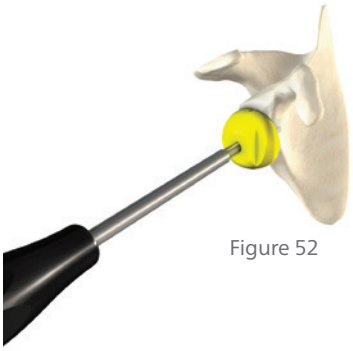


Figure 52

Once the desired sphere is chosen, the final implantation can be performed. Prior to positioning of the definitive glenoid sphere, it is important to remove any soft tissue between the baseplate and the glenoid sphere.

Connect the small AO handle to the 3.5 mm hexagonal tip. (Figure 53)

Figure 53

Place the glenoid sphere onto the baseplate using the 3.5 mm hexagonal screwdriver. (Figure 54)

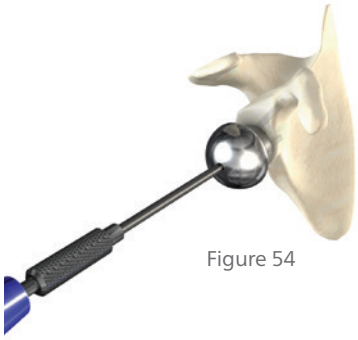


Figure 54

Assemble glenoid sphere impactor tip onto the impactor handle. (Figure 55a)

The glenoid sphere is then impacted onto the taper of the glenoid baseplate with the glenoid sphere impactor assembly. (Figure 55b)

Figure 55a

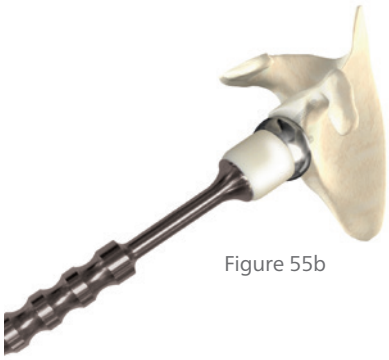


Figure 55b

The fixation of the assembly is visually checked to ensure that no soft tissue is present between the baseplate and the glenoid sphere.

Once impacted, secure the assembly by tightening the glenoid sphere screw clockwise with the 3.5 mm diameter screwdriver. (Figure 56)

Attention: It is mandatory that the glenoid sphere is screwed manually and the implant is handled with clean gloves.

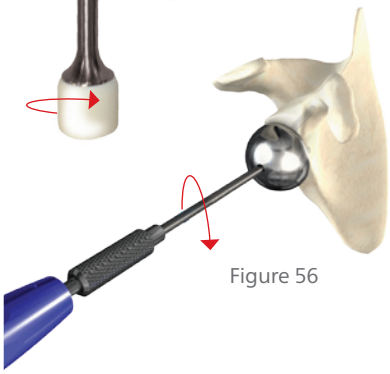


Figure 56

In some cases it may be necessary to remove the humeral trial to avoid metallic contact that could damage the glenoid sphere.

Final Implant

Selection of the Humeral Insert

Remove the cut protector.

4 different versions of poly inserts are available:

- Centered insert (6 mm, 9 mm, 12 mm)
- 36/42 combination insert (6 mm, 9 mm, 12 mm) to match a 36 mm metaphysis with a 42 mm sphere
- Eccentric +2 mm insert (6 mm, 9 mm, 12 mm)
- Constrained insert (6 mm, 9 mm, 12 mm, 15 mm) Upon request only (Figure 57)

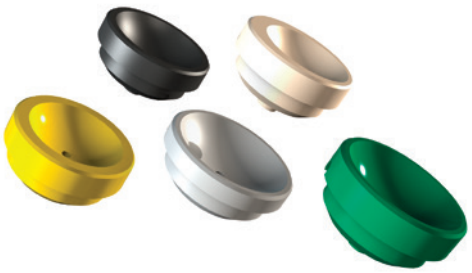


Figure 57

The chosen trial insert of the desired thickness is inserted into the trial metaphysis for trial reduction. (Figure 58)

The humeral trial component is then reduced into the joint to check deltoid tension, stability and range of motion.

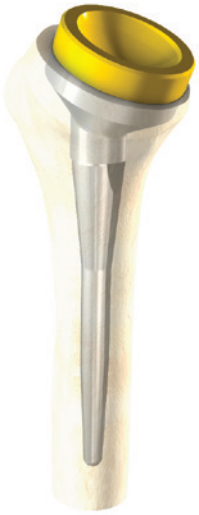


Figure 58

In case of severe bone defects or inadequate deltoid tension, a 9 mm lateralized trial spacer can be added to the metaphysis. This will increase the combined lateralized thickness to either 15, 18 or 21 mm. (Figure 59)

The trial 9 mm lateralized spacer is pressed into the metaphysis. Trial reduction is again performed beginning with the thinnest insert (6 mm).

If muscles are over-tensioned, additional resection of the metaphysis may be required in order to reposition the component more distally in the humerus.

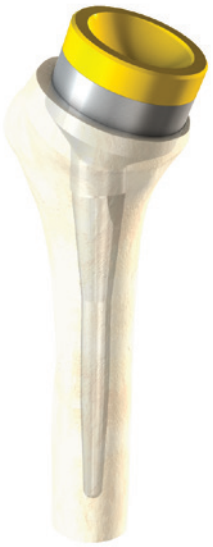


Figure 59

Assembly and Insertion of the Final Humeral Implant

Use the humeral extractor to remove the humeral trial. The humeral extractor is screwed to the humeral trial. Then manually pull the extractor to remove it. (Figure 60)

Figure 60

The final metaphyseal component is screwed to the impactor. (Figure 61)

A supplemental anti-rotation polyethylene plug within the threads of the metaphyseal stem help prevent the components from possible disassociation.

Figure 61

The final implant stem is then secured to the metaphysis with the 14 mm wrench. The blue handle can be assembled to the impactor to provide countertorque when assembling the implant to the impactor. Three holes are available for assembly of the blue handle. (Figure 62)

The humeral canal is then irrigated and dried.

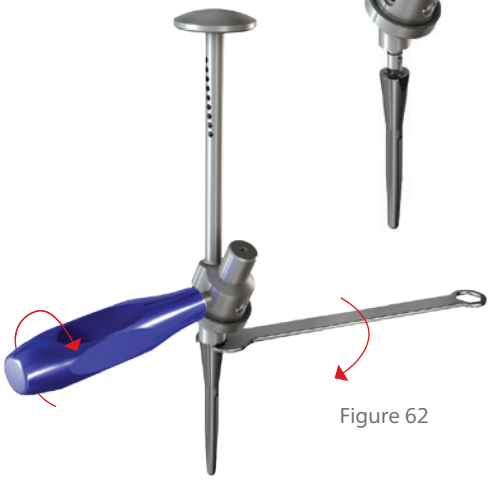


Figure 62

A cement restrictor is inserted and cement is injected into the medullary canal using a standard cementing technique in case of implantation of a cemented stem.

The final implant is inserted into the canal utilizing the humeral extractor/impactor handle. Retroversion is verified by re-inserting the retroversion rod into the shaft of the impactor/extractor. (Figure 63)

Figure 63

Use the 4.5 mm screwdriver to disengage the impactor from the metaphysis.

If desired, deltoid tension can be checked again with a trial poly insert.

Impaction of the Humeral Insert

The metaphyseal component is then thoroughly cleaned and dried. (Figure 64)

If a lateralized spacer is used, impact the spacer into the metaphyseal cup using the head impactor assembly.

After impaction, the central screw is inserted and fully tightened with the 4.5 mm screwdriver, securing the spacer onto the metaphysis.

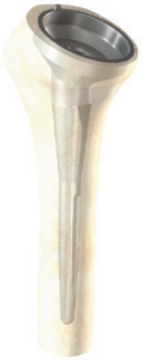


Figure 64

The selected polyethylene insert is then positioned by aligning the orientation notch on the insert with the metaphyseal tab. (Figure 65)

Final fixation is achieved by impacting the insert into the cup with the spherical impactor assembly. (Figure 66)

Figure 65

Figure 66

Reduction, Trial and Closure

Reduction

The prosthesis is then reduced using the reducer (Figure 67a) and stability is checked. (Figure 67b)

Peri-Operative Function

Pull the arm away from the body after reduction to ensure that there is no pistoning effect. A complete separation of the humeral insert from the glenoid sphere indicates inadequate tensioning of the deltoid.

Abduction of the arm is performed to check that there is no impingement and that anterior elevation and abduction has been restored. External rotation with the elbow at the side checks for mobility and risk of subluxation. Internal rotation with the elbow at the side and in abduction (the forearm has to be parallel to the thorax) is performed.

Adduct the arm to check that there is no impingement between the pillar of the scapula and the humeral implant. After reduction, the conjoined tendon should show sufficient muscular tension (similar to the deltoid).

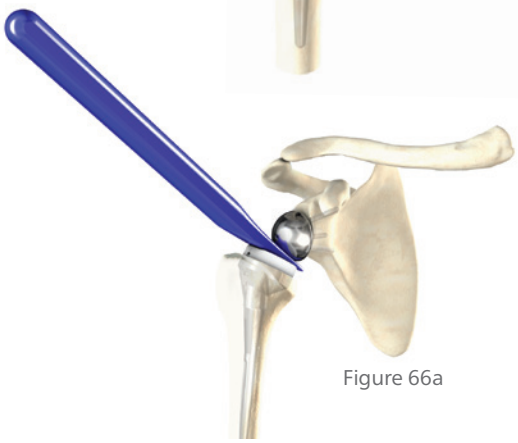


Figure 66a

Closure

In the supero-lateral approach, the deltoid is reattached to the acromion with a trans-osseous suture.

In the delto-pectoral approach, a full or partial re-insertion of the subscapularis is performed, if possible.

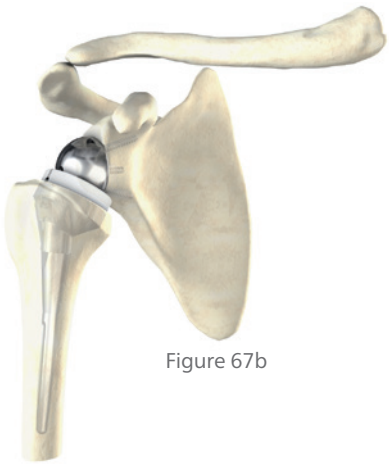


Figure 67b

Post-Operative Care

Complications

Post-operative Stiffness

In case of significant preoperative stiffness, it may be difficult to regain postoperative mobility.

A surgical arthrolysis in conjunction with a capsulotomy may be required with the removal of soft tissue adhesions and removal of the tuberosities. Postoperatively, the arm is usually immobilized in a shoulder abduction splint for 3 to 6 weeks (in 60 degrees abduction).

Passive elevation above the splint in the scapular plane is started immediately.

Prosthesis Instability

Possible causes:

- Improper humeral cut
- Massive humeral bone deficiency

Such cases are the consequence of insufficient deltoid tension.

In case of early postoperative dislocation, a closed reduction under local anesthesia is performed. If the prosthesis is in good position, then immobilization for 6 weeks normally restores stability.

With recurrent instability, a revision is needed to check the humeral version and increase (if necessary) the humeral lateralization utilizing a thicker insert and/or lateralized spacer.

Scapula Notch

Impingement between the pillar of the scapula and the humeral implant can lead to bone scapula erosion.

This notch usually does not impact function or mobility but may compromise fixation. X-ray follow-ups are recommended.

Absence of Active External Rotation

In the absence of the Teres Minor and Infraspinatus due to cuff tear or fatty infiltration, there may be loss of active external and internal rotation. At the time of surgery, a Latissimus Dorsi Transfer alone or with Pectoralis Major transfer to the greater tuberosity may be considered.

Rehabilitation

Post-operative Rehabilitation

The arm is placed in a brace with the elbow close to the body in neutral or internal rotation.

An abduction cushion can be used especially in cases of deltoid detachment or if the supero-lateral approach was performed. Rehabilitation is performed with passive pendular motion exercises five times per day at 5 minutes per session.

Aquatic therapy can begin as soon as healing has occurred.

Arm Motion to be Avoided

Abduction/external rotation or abduction/internal rotation.

Note: active motion in the arm is restricted in daily activity as only elbow, wrist and finger motion is allowed.

6 Weeks Post-op

Strengthening of the deltoid muscle and external rotators at 6 weeks post-op can be initiated with isometric exercise against resistance. Strengthening of the external rotators with the elbow at the level of the arm can be initiated by isometric exercise against resistance. Provided that deltoid attachment has not been disrupted, normal active elevation is generally rapidly recovered.

AEQUALIS™ REVERSED II Hemi-Adaptor Technique

How and When to Use It

The AEQUALIS™ REVERSED II Hemi-Adaptor implants may be used to convert an AEQUALIS REVERSED humeral stem with metaphysis into a modified hemi-arthroplasty.

Rationale

If it is found that the glenoid bone stock is insufficient to support a rigidly fixed baseplate with screws, due to either poor (osteopenic) quality bone or intraoperative glenoid fracture, a variety of bone grafting techniques can be employed.

By reconstructing the glenoid architecture, thus rebuilding bone stock, the surgeon may return months later to convert the hemi-adaptor back to a Reversed prosthesis.

To convert to a Reversed system, a simple exchange of humeral implants coupled with the implantation of the baseplate, screws, and glenoid sphere construct would be all that is required.

If the surgeon chooses not to graft the glenoid and return later, then the procedure simply turns into a pain relief procedure with limited or no shoulder function improvement. The goal of restoring center of rotation and patient kinematics, as in a standard hemi-arthroplasty, is no longer important when employing the hemi-adaptor. The patient does not have an adequate rotator cuff to move his/her arm before the procedure, so a change in shoulder landscape will not positively or negatively impact his/her ability to move the arm and will only provide pain relief.

Preparation of the Metaphyseal Component

If necessary, the polyethylene is removed with an osteotome. (Figure 68)

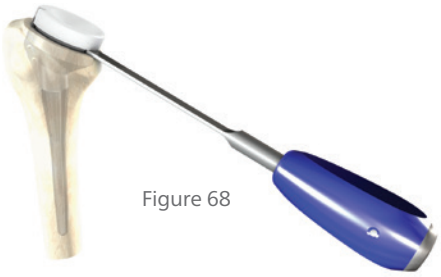


Figure 68

Fixing the Adaptor/Metaphysis Union Screw

The adaptor/metaphysis union screw is screwed into the threaded hole of the metaphysis by hand and tightened fully with the 12 mm wrench. (Figure 69)

Make sure to tighten the screw with the wrench with as much force as possible to avoid micromotion.

Figure 69

Implantation of the Adaptor

The internal cup of the metaphyseal component is thoroughly cleaned and dried.

The adaptor is then positioned over the union screw, into the metaphyseal component, and impacted into the metaphysis with the adapter impactor screwed into the insert impaction handle. (Figure 70)

After impaction, hand check the adaptor to ensure it is well fixed into the metaphysis. A small gap (less than 1 mm) will remain between the adaptor and metaphysis.

Two sizes are available (Ø36 mm & Ø42 mm).

The hemi-adaptor size must be the same size as the metaphyseal component.

Figure 70

Figure 71a

Implantation of the Humeral Head

A larger over-sized head is recommended to provide continuous stable glenohumeral contact and fill the joint. Once the appropriate head diameter and thickness is selected, the male taper of the adaptor/metaphysis union screw is thoroughly cleaned and dried.

The AEQUALIS™ head of the chosen diameter and offset is then impacted onto the male taper of the union screw with the glenoid sphere impactor.. (Figure 71a, Figure 71b)

Figure 71b

Color Coding

Humeral Side

Trial Liner Ø36 mm	Color
Centered Insert + 6 mm	Yellow
Centered Insert + 9 mm	
Centered Insert + 12 mm	
+ 2 mm Eccentric Insert + 6 mm	Beige
+ 2 mm Eccentric Insert + 9 mm	
+ 2 mm Eccentric Insert +12 mm	
Constrained Insert + 6 mm	Black
Constrained Insert + 9 mm	
Constrained Insert + 12 mm	
Constrained Insert + 15 mm	

Humeral Side

Trial Liner Ø42 mm	Color
Centered Insert + 6 mm	Green
Centered Insert + 9 mm	
Centered Insert + 12 mm	
+ 2 mm Eccentric Insert + 6 mm	Beige
+ 2 mm Eccentric Insert + 9 mm	
+ 2 mm Eccentric Insert +12 mm	
Constrained Insert + 6 mm	Black
Constrained Insert + 9 mm	
Constrained Insert + 12 mm	
Constrained Insert + 15 mm	
36/42 mm Combination Insert + 6 mm	Grey
36/42 mm Combination Insert + 9 mm	
36/42 mm Combination Insert + 12 mm	

Glenoid Side*

Glenoid Preparation				Trial Sphere	Color	
Baseplate	Color	Sphere	Color			
Ø25 mm	Blue	Ø36 mm	Yellow	Centered	Purple	Yellow
				+ 2 mm Eccentric	Blue	Yellow
				10° Angulated	Brown	Yellow
		Ø42 mm	Green	Centered	Purple	Green
				+ 2 mm Eccentric	Blue	Green
				10° Angulated	Brown	Green
Ø29 mm	Grey	Ø36 mm	Yellow	Centered	Purple	Yellow
				+ 2 mm Eccentric	Blue	Yellow
				10° Angulated	Brown	Yellow
		Ø42 mm	Green	Centered	Purple	Green
				+ 2 mm Eccentric	Blue	Green
				10° Angulated	Brown	Green

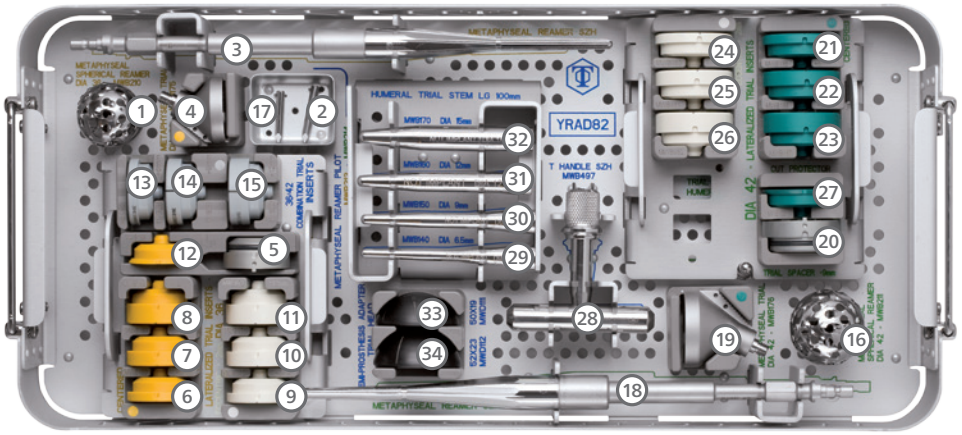
Surgical Technique

	Instruments
BIO-RSA™	Purple
Cannulated	Beige
Non-Cannulated	Grey

***Note:** The 33 and 39 mm glenospheres are compatible with the Reverse II glenoid however are only compatible with the AEQUALIS ASCEND™ FLEX and the AEQUALIS™ Fx2 humeral systems. They cannot be used with the AEQUALIS™ REVERSE II humeral system.

Instrumentation

Humeral Instruments YKAD82 - Ø36 and Ø42 mm Box



36 mm Instrumentation

#	Reference	Description	Quantity
1	MWB210	Ø36 mm metaphyseal spherical reamer	1
2	MWB213	Ø36 mm metaphyseal reamer pilot	1
3	MWB495	Ø36 mm metaphyseal reamer	1
4	MWB175	Ø36 mm metaphyseal trial	1
5	MWB190	Ø36 mm trial spacer +9 mm	1
6	MWB180	Ø36 mm trial insert / lateralized + 6 mm	1
7	MWB181	Ø36 mm trial insert / lateralized + 9 mm	1
8	MWB182	Ø36 mm trial insert / lateralized + 12 mm	1
9	MWB970	Ø36 mm trial insert / lateralized + 6 mm / offset 2 mm	1
10	MWB971	Ø36 mm trial insert / lateralized + 9 mm / offset 2 mm	1
11	MWB972	Ø36 mm trial insert / lateralized + 12 mm / offset 2 mm	1
12	MWB192	Ø36 mm humeral cut protector	1
13	MWB088	36/42 trial combination insert for Ø36 mm metaphysis/lateralised + 6 mm	1
14	MWB089	36/42 trial combination insert for Ø36 mm metaphysis/lateralised + 9 mm	1
15	MWB090	36/42 trial combination insert for Ø36 mm metaphysis/lateralised + 12 mm	1

42 mm Instrumentation

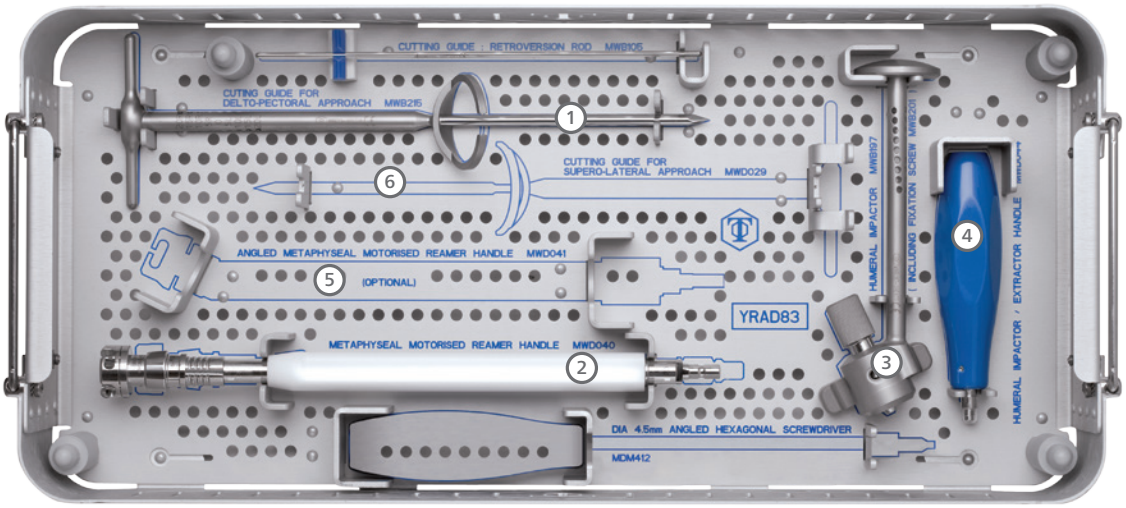
#	Reference	Description	Quantity
16	MWB211	Ø42 mm metaphyseal spherical reamer	1
17	MWB214	Ø42 mm metaphyseal reamer pilot	1
18	MWB496	Ø42 mm metaphyseal reamer	1
19	MWB176	Ø42 mm metaphyseal trial	1
20	MWB191	Ø42 mm trial spacer +9 mm	1
21	MWB185	Ø42 mm trial insert / lateralized + 6 mm	1
22	MWB186	Ø42 mm trial insert / lateralized + 9 mm	1
23	MWB187	Ø42 mm trial insert / lateralized + 12 mm	1
24	MWB980	Ø42 mm trial insert / lateralized + 6 mm / offset 2 mm	1
25	MWB981	Ø42 mm trial insert / lateralized + 9 mm / offset 2 mm	1
26	MWB982	Ø42 mm trial insert / lateralized + 12 mm / offset 2 mm	1
27	MWB193	Ø42 mm humeral cut protector	1

Common Instrumentation

#	Reference	Description	Quantity
28	MWB497	Metaphyseal reamer handle	1
29	MWB140	Ø6.5 mm Humeral trial stem L 100 mm	1
30	MWB150	Ø9 mm Humeral trial stem L 100 mm	1
31	MWB160	Ø12 mm Humeral trial stem L 100 mm	1
32	MWB170	Ø15 mm Humeral trial stem L 100 mm	1
33	MWD098	Hemi-prosthesis adapter: trial head 50x19	1
34	MWD099	Hemi-prosthesis adapter: trial head 52x23	1

Instrumentation

Humeral Instruments YKAD83 - Humeral Box

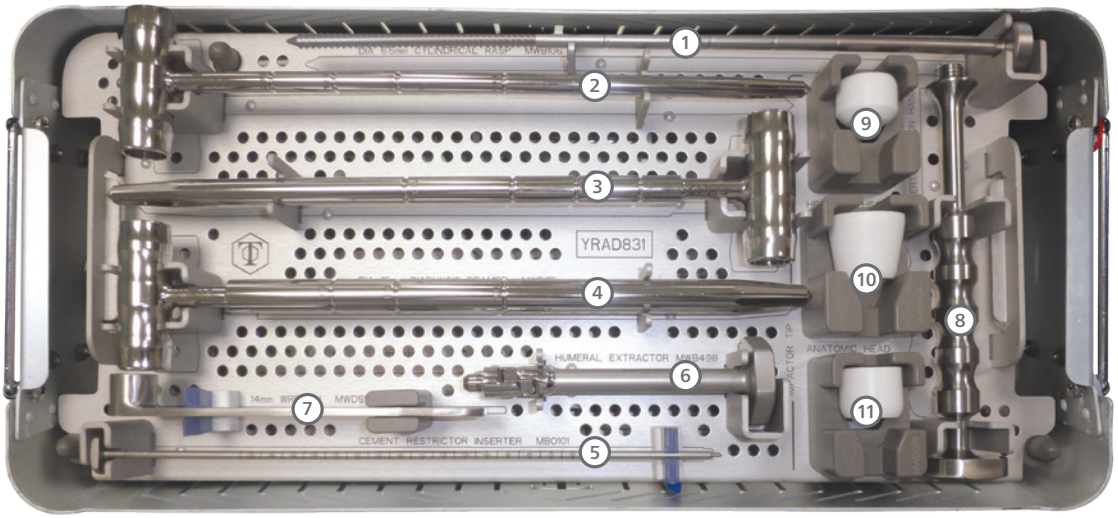


Lower Tray

#	Reference	Description	Quantity
1	MWB215	Cutting Guide for Deltopectoral Approach	1
2	MWD040	Metaphyseal Motorized Reamer Handle	1
3	MWB197	Humeral Impactor (including fixation screw MWB201)	1
4	MWD044	Humeral Impactor/Extractor Handle	1
Option for Superolateral Approach			
5	MWD041	Angled Metaphyseal Motorized Reamer Handle*	1
6	MWD029	Cutting Guide for Superolateral Approach*	1

*upon request only

Humeral Instruments YKAD83 - Humeral Box

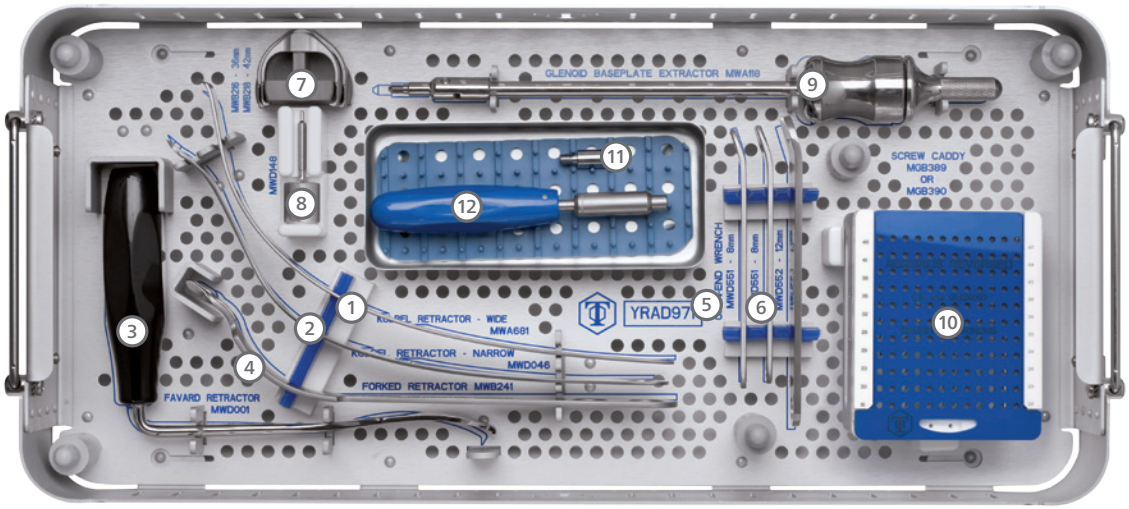


Upper Tray

#	Reference	Description	Quantity
1	MWB106	Ø6.5 mm Cylindrical Rasp	1
2	MWB113	Ø9 mm Diaphysis Reamer	1
3	MWB114	Ø12 mm Diaphysis Reamer	1
4	MWB115	Ø15 mm Diaphysis Reamer	1
5	MBO101	Cement Restrictor Inserter	1
6	MWB498	Humeral Extractor	1
7	MWD553	Ø14 mm Wrench	1
8	MWD421	Impaction Handle	1
9	MWD423	Insert Impactor Tip	1
10	MWD424	Hemiprosthesis Adapter Impactor Tip	1
11	MWD425	Anatomic Head Impactor	1

Instrumentation

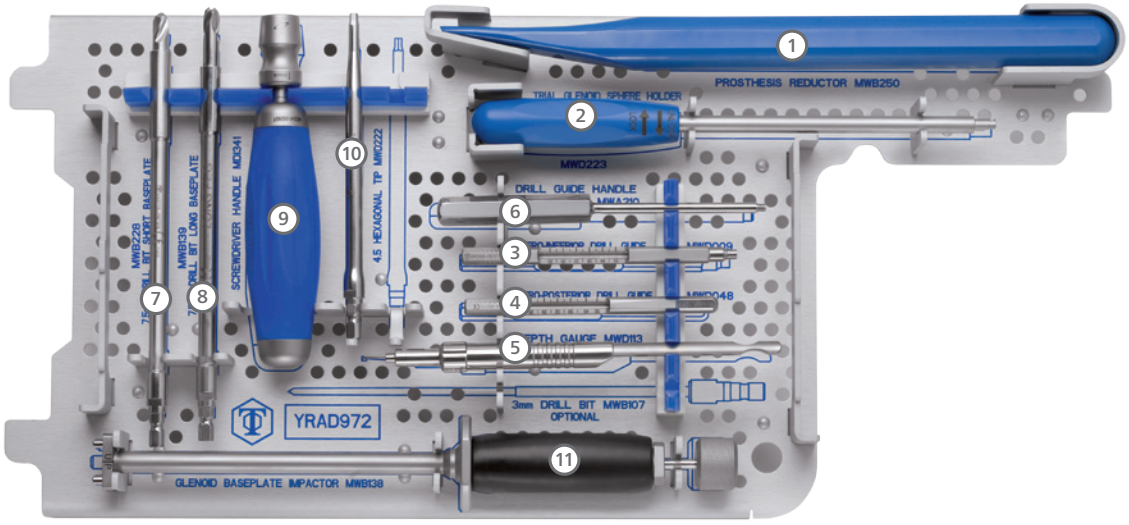
Glenoid Instruments YKAD97 - Universal Instruments



Lower Tray: Universal Instrumentation

#	Reference	Description	Quantity
1	MWA681	Kolbel Retractor - Wide	1
2	MWD046	Kolbel Retractor - Narrow	1
3	MWD001	Favard Retractor	1
4	MWB241	Forked Retractor	1
5	MWD551	8 mm Open-Ended Wrench	2
6	MWD552	12 mm Open-Ended Wrench	1
7	MWB216	Glenoid Sphere Extractor(s) - Ø36 mm	1
7“	MWB218	Glenoid Sphere Extractor(s) - Ø42 mm	1
8	MWD148	Screw for Glenoid Sphere Extractor	1
9	MWA118	Glenoid Baseplate Extractor	1
10	MGB390	Screw Caddy	1
11	MDE072	Glenoid Baseplate Extractor Adaptor	1
12	MWB346	3.5 mm Hexagonal Screwdriver Handle	1

Glenoid Instruments YKAD97- Universal Instruments



Upper Tray: Glenoid Preparation Instrumentation

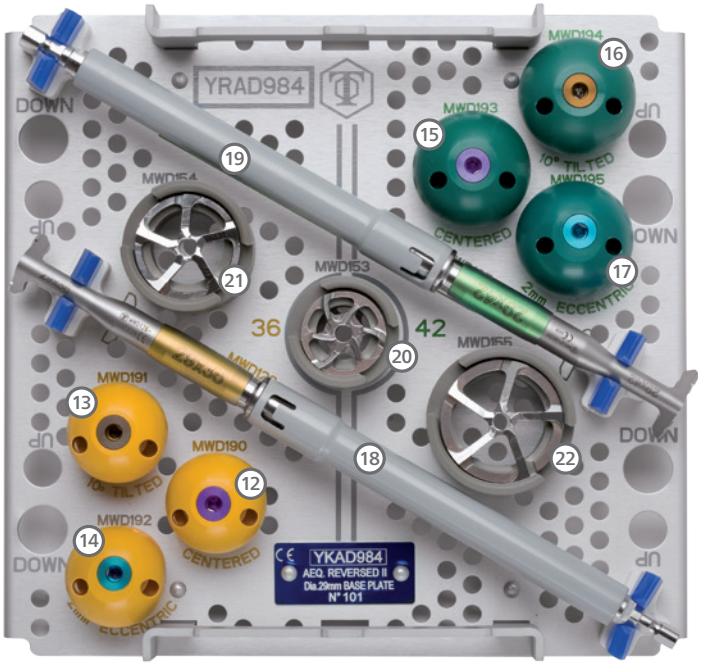
#	Reference	Description	Quantity
1	MWB250	Prosthesis Reductor	1
2	MWD223	Trial Glenoid Sphere Holder	1
3	MWD009	Drill Guide for Supero-Inferior Screws	1
4	MWD048	Drill Guide for Antero-Superior Screws	1
5	MWD113	Depth Gauge	1
6	MWA210	Drill Guide Handle	1
7	MWB228	Ø7.5 mm Cannulated Drill Bit (Short Post)	1
8	MWB139	Ø7.5 mm Cannulated Drill Bit (Long Post)	1
9	MDI341	4.5 mm Hexagonal Screwdriver Handle	1
10	MWD222	4.5 mm Hexagonal Screwdriver Tip	1
11	MWB138	New Universal Baseplate Impactor for Ø25 mm & Ø29 mm Baseplates (including Baseplate Impactor Axis Subassembly MWE007)	1

Instrumentation

Glenoid Instruments YKAD98 - 25 mm Tray

#	Reference	Description	Quantity
1	MWD180	Ø36 mm Trial Centered Glenoid Sphere for Ø25 mm Baseplate	1
2	MWD181	Ø36 mm Trial 10° Tilted Glenoid Sphere for Ø25 mm Baseplate	1
3	MWD182	Ø36 mm Trial + 2 mm Eccentric Glenoid Sphere for Ø25 mm Baseplate	1
4	MWD183	Ø42 mm Trial Centered Glenoid Sphere for Ø25 mm Baseplate	1
5	MWD184	Ø42 mm Trial 10° Tilted Glenoid Sphere for Ø25 mm Baseplate	1
6	MWD185	Ø42 mm Trial + 2mm Eccentric Glenoid Sphere for Ø25 mm Baseplate	1
7	MWD124	Ø36 mm Peripheral Glenoid Reamer for Ø25 mm Baseplate	1
8	MWD125	Ø42 mm Peripheral Glenoid Reamer for Ø25 mm Baseplate	1
9	MWD150	Glenoid Reamer for Ø25 mm Baseplate	1
10	MWD151	Ø36 mm Glenoid Reamer for Ø25 mm Baseplate - Assembled to Handle	1
11	MWD152	Ø42 mm Glenoid Reamer for Ø25 mm Baseplate - Assembled to Handle	1

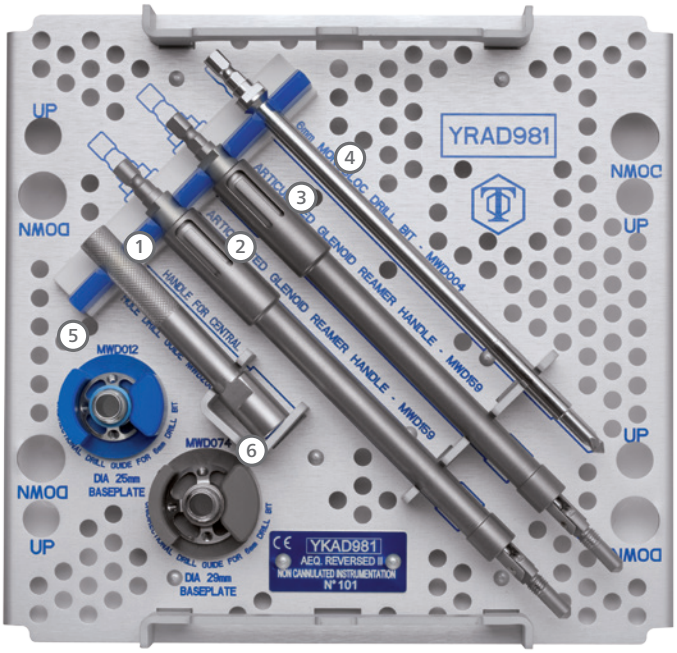
Glenoid Instruments YKAD98 - 29 mm Tray



#	Reference	Description	Quantity
12	MWD190	Ø36 mm Trial Centered Glenoid Sphere for Ø29 mm Baseplate	1
13	MWD191	Ø36 mm Trial 10° Tilted Glenoid Sphere for Ø29 mm Baseplate	1
14	MWD192	Ø36 mm Trial + 2 mm Eccentric Glenoid Sphere for Ø29 mm Baseplate	1
15	MWD193	Ø42 mm Trial Centered Glenoid Sphere for Ø29 mm Baseplate	1
16	MWD194	Ø42 mm Trial 10° Tilted Glenoid Sphere for Ø29 mm Baseplate	1
17	MWD195	Ø42 mm Trial + 2 mm Eccentric Glenoid Sphere for Ø29 mm Baseplate	1
18	MWD126	Ø36 mm Peripheral Glenoid Reamer for Ø29 mm Baseplate	1
19	MWD127	Ø42 mm Peripheral Glenoid Reamer for Ø29 mm Baseplate	1
20	MWD153	Glenoid Reamer for Ø29 mm Baseplate	1
21	MWD154	Ø36 mm Glenoid Reamer for Ø29 mm Baseplate - Assembled to Handle	1
22	MWD155	Ø42 mm Glenoid Reamer for Ø29 mm Baseplate - Assembled to Handle	1

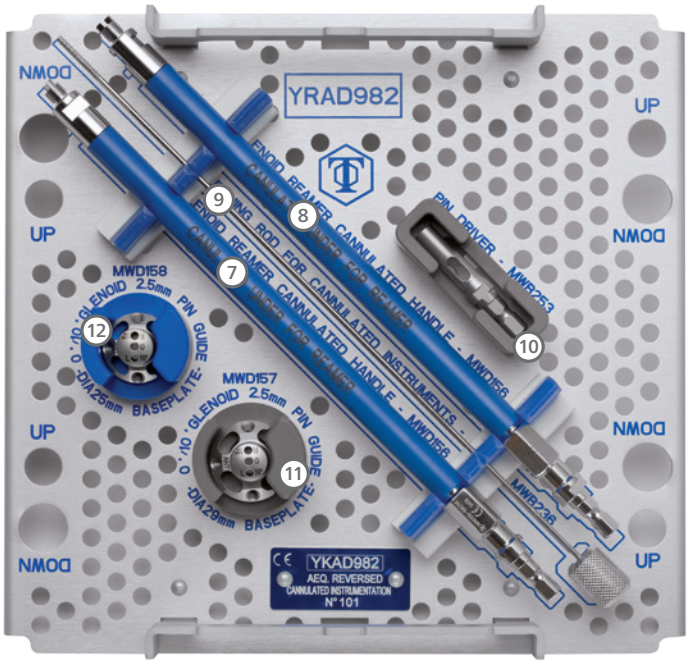
Instrumentation

Glenoid Instruments YKAD98 - Non-Cannulated



#	Reference	Description	Quantity
1	MWB260	Central Handle for Central Hole Drill Guide	1
2	MWD159	Articulated Handle with Pilot for Glenoid Reamer	1
3	MWD159	Articulated Handle with Pilot for Glenoid Reamer	1
4	MWD004	Ø6 mm Monobloc Drill Bit	1
5	MWD012	Ø25 mm Unidirectional Guide for Ø6 mm Drill Bit	1
6	MWD074	Ø29 mm Unidirectional Guide for Ø6 mm Drill Bit	1

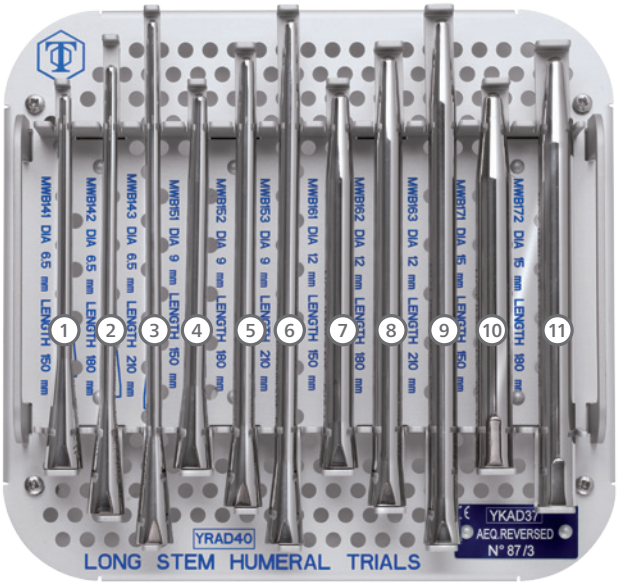
Glenoid Instruments YKAD98 - Cannulated



#	Reference	Description	Quantity
7	MWD156	Cannulated Handle for Reamer (w/ New Connector)	1
8	MWD156	Cannulated Handle for Reamer (w/ New Connector)	1
9	MWB236	Cleaning Rod for Cannulated Instruments	1
10	MWB253	Pin Driver	1
11	MWD157	0-10° Glenoid Ø2.5 mm Pin Guide for Ø29 mm Baseplate	1
12	MWD158	0-10° Glenoid Ø2.5 mm Pin Guide for Ø25 mm Baseplate	1

Instrumentation

AEQUALIS™ REVERSED Long Stem Instrumentation YKAD37



Trial Humeral Stem Ø6.5 mm

#	Reference	Description	Quantity
1	MWB141	Trial Humeral Stem Ø6.5 mm - Length 150 mm	1
2	MWB142	Trial Humeral Stem Ø6.5 mm - Length 180 mm	1
3	MWB143	Trial Humeral Stem Ø6.5 mm - Length 210 mm	1

Trial Humeral Stem Ø9 mm

#	Reference	Description	Quantity
4	MWB151	Trial Humeral Stem Ø9 mm - Length 150 mm	1
5	MWB152	Trial Humeral Stem Ø9 mm - Length 180 mm	1
6	MWB153	Trial Humeral Stem Ø9 mm - Length 210 mm	1

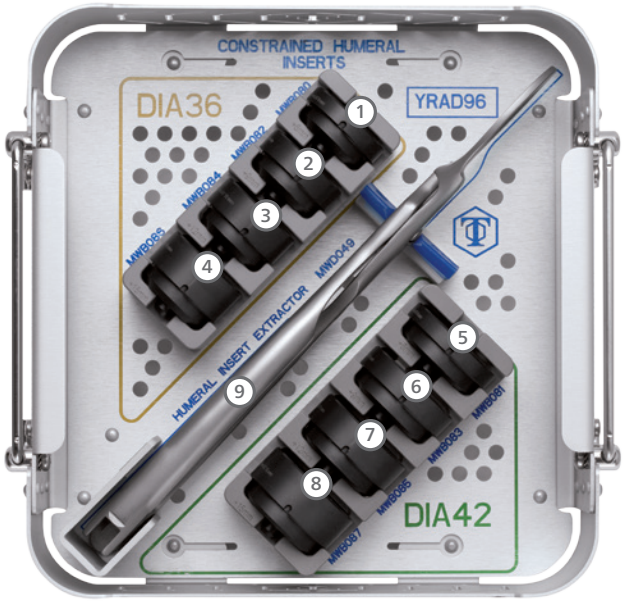
Trial Humeral Stem Ø12 mm

#	Reference	Description	Quantity
7	MWB161	Trial Humeral Stem Ø12 mm - Length 150 mm	1
8	MWB162	Trial Humeral Stem Ø12 mm - Length 180 mm	1
9	MWB163	Trial Humeral Stem Ø12 mm - Length 210 mm	1

Trial Humeral Stem Ø15 mm

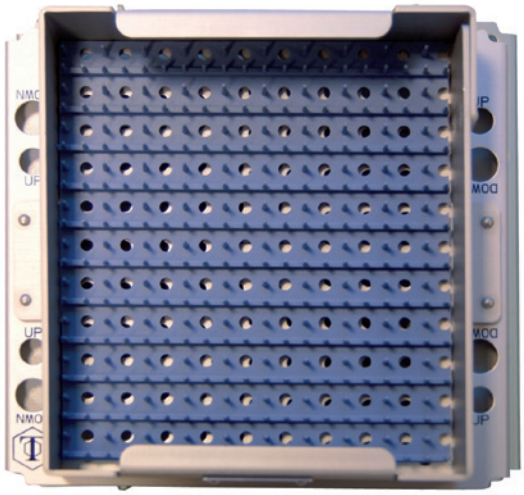
#	Reference	Description	Quantity
10	MWB171	Trial Humeral Stem Ø15 mm - Length 150 mm	1
11	MWB172	Trial Humeral Stem Ø15 mm - Length 180 mm	1

Trial Constrained Insert YKAD96



#	Reference	Description	Quantity
1	MWB080	Ø36 mm Trial Constrained Insert / Lateralized + 6 mm	1
2	MWB082	Ø36 mm Trial Constrained Insert / Lateralized + 9 mm	1
3	MWB084	Ø36 mm Trial Constrained Insert / Lateralized + 12 mm	1
4	MWB086	Ø36 mm Trial Constrained Insert / Lateralized + 15 mm	1
5	MWB081	Ø42 mm Trial Constrained Insert / Lateralized + 6 mm	1
6	MWB083	Ø42 mm Trial Constrained Insert / Lateralized + 9 mm	1
7	MWB085	Ø42 mm Trial Constrained Insert / Lateralized + 12 mm	1
8	MWB087	Ø42 mm Trial Constrained Insert / Lateralized + 15 mm	1
9	MWD049	Humeral Insert Extractor	1

Glenoid Instruments YKAD985 Open tray (Optional)



Instrumentation

AEQUALIS™ REVERSED II 33/39 extended size Glenoid Instrumentation YKAD988

Reference	Description	Quantity
MWG901	Ø33 mm Tilted Trial Glenoid Sphere for Ø25 mm Baseplate	1
MWG902	Ø33 mm Lateralized +6 mm Trial Glenoid Sphere for Ø25 mm Baseplate	1
MWG903	Ø33 mm Lateralized +8 mm Trial Glenoid Sphere for Ø25 mm Baseplate	1
MWG160	Ø33 mm Glenoid Sphere Extractor	1
MWG904	Ø39 mm Centered Trial Glenoid Sphere for Ø25 mm Baseplate	1
MWG905	Ø39 mm Tilted Trial Glenoid Sphere for øØ25 mm Baseplate	1
MWG906	Ø39 mm Eccentric +2 mm Trial Glenoid Sphere for Ø25 mm Baseplate	1
MWG907	Ø39 mm Centered Trial Glenoid Sphere for Ø29 mm Baseplate	1
MWG909	Ø39 mm Eccentric +2 mm Trial Glenoid Sphere for Ø29 mm Baseplate	1
MWG908	Ø39 mm Tilted Trial Glenoid Sphere for Ø29 mm Baseplate	1
MWG161	Ø39 mm Glenoid Sphere Extractor	1

Implants

Glenoid Implants

Glenoid Baseplate

Reference	Description
DWD170	Ø25 mm US Glenoid Baseplate
DWD003	Ø29 mm US Glenoid Baseplate
DWD171	Ø25 mm US Glenoid Baseplate with Long Post
DWD067	Ø29 mm US Glenoid Baseplate with Long Post

Glenoid Sphere for Glenoid Baseplate (Cobalt Chrome)

Reference	Diameter	Description
DWH901	Ø25 mm	Ø33 mm - 10° Tilted Glenoid Sphere
DWH902		Ø33 mm Lateralized +6 mm -
DWH903		Ø33 mm Lateralized +8 Glenoid Sphere
DWD180		Ø36 mm Centered Glenoid Sphere
DWD181		Ø36 mm 10° Tilted Glenoid Sphere
DWD182		Ø36 mm Eccentric + 2 mm Glenoid Sphere
DWH904		Ø39 mm Centered Glenoid Sphere
DWH905		Ø39 mm 10° Tilted Glenoid Sphere
DWH906		Ø39 mm Eccentric + 2 mm Glenoid Sphere
DWD183		Ø42 mm Centered Glenoid Sphere
DWD184		Ø42 mm 10° Tilted Glenoid Sphere
DWD185		Ø42 mm Eccentric + 2 mm Glenoid Sphere
DWD190 or DWB935	Ø29 mm	Ø36 mm Centered Glenoid Sphere
DWD191		Ø36 mm 10° Tilted Glenoid Sphere
DWD192		Ø36 mm Eccentric + 2 mm Glenoid Sphere
DWH907		Ø39 mm Centered Glenoid Sphere
DWH908		Ø39 mm 10° Tilted Glenoid Sphere
DWH909		Ø39 mm Eccentric + 2 mm Glenoid Sphere
DWD193 or DWB936		Ø42 mm Centered Glenoid Sphere
DWD194		Ø42 mm 10° Tilted Glenoid Sphere
DWD195		Ø42 mm Eccentric + 2 mm Glenoid Sphere

Glenoid Sphere for Glenoid Baseplate (Titanium)

Reference	Diameter	Description
DWE860	Ø25 mm	Ø36 mm Centered Titanium Glenoid Sphere
DWE880	Ø29 mm	Ø36 mm Centered Titanium Glenoid Sphere
DWE890		Ø42 mm Centered Titanium Glenoid Sphere

Not Sterile Glenoid Baseplate Screws

Ø4.5 mm Compression Screw	
Reference	Size
VDV218	L 18 mm
VDV220	L 20 mm
VDV223	L 23 mm
VDV226	L 26 mm
VDV229	L 29 mm
VDV232	L 32 mm
VDV235	L 35 mm
VDV238	L 38 mm
VDV241	L 41 mm
VDV245	L 45 mm
VDV250	L 50 mm

Ø4.5 mm Multidirectional Locking Screw	
Reference	Size
DWD020	L 20 mm
DWD023	L 23 mm
DWD026	L 26 mm
DWD029	L 29 mm
DWD032	L 32 mm
DWD035	L 35 mm
DWD038	L 38 mm
DWD041	L 41 mm
DWD044	L 44 mm
DWD047	L 47 mm

Sterile Instruments Single Use

Reference	Description
DWD055	Ø3 mm Drill Bit
DWD063	Ø2.5 mm Alignment Pin L 200 mm
DWD164	Pilot Tip for Cannulated Reamers*
DWD167	Ø3.5 mm Hexagonal Tip
DWD163	Retroversion Rod

* Pilot tip used for pie-shaped reamers so they can be used with a non-cannulated technique

Implants

Humeral Implants

Cemented Humeral Stems

Diam.\ Length	100 mm	150 mm*	180 mm*	210 mm*
6.5 mm	DWB940	DWB941	DWB942	DWB943
9 mm	DWB945	DWB946	DWB947	DWB948
12 mm	DWB950	DWB951	DWB952	DWB953
15 mm	DWB955	DWB956	DWB957	

Cement Restrictor

Reference	Description
EBO101	Cement Restrictor

Cemented Humeral Metaphysis

Reference	Diameter
DWB960	36 mm
DWB961	42 mm

Adaptor

Reference	Diameter
DWB991	36 mm
DWB992	42 mm

Humeral Spacer

Reference	Diameter	Height
DWB931	36 mm	+ 9 mm
DWB932	42 mm	+ 9 mm
Includes tightening screw:		
DWB937	-------	+ 9 mm
Not included with humeral spacers:		
DWD160*	-------	+ 18 mm

Aequalis Head

Reference	Dimension
DWB251	50 x 19 mm
DWB253	52 x 23 mm

Adaptor/Metaphysis Union Screw

Reference
DWD054 or DWB990

Standard Humeral Inserts

Reference	Diameter	Height
DWB993	36 mm	+ 6 mm
DWB994	36 mm	+ 9 mm
DWB995	36 mm	+ 12 mm
DWB996	42 mm	+ 6 mm
DWB997	42 mm	+ 9 mm
DWB998	42 mm	+ 12 mm

Constrained Humeral Inserts*

Reference	Diameter	Height
DWD980	36 mm	+6 mm
DWD982	36 mm	+9 mm
DWD984	36 mm	+12 mm
DWD986	36 mm	+15 mm
DWD981	42 mm	+6 mm
DWD983	42 mm	+9 mm
DWD985	42 mm	+12 mm
DWD987	42 mm	+15 mm

36/42 Combination Inserts

Reference	Diameter	Height
DWD988	42 mm	+6 mm
DWD989	42 mm	+9 mm
DWD990	42 mm	+12 mm

Eccentric Humeral Inserts

Reference	Diameter	Height	Eccentricity
DWD070	36 mm	+ 6 mm	+ 2 mm
DWD071	36 mm	+ 9 mm	+ 2 mm
DWD072	36 mm	+ 12 mm	+ 2 mm
DWD080	42 mm	+ 6 mm	+ 2 mm
DWD081	42 mm	+ 9 mm	+ 2 mm
DWD082	42 mm	+ 12 mm	+ 2 mm

* upon request only

Notes

Notes

Notes

WRIGHT
FOCUSED EXCELLENCE

1023 Cherry Road
Memphis, TN 38117
800 238 7117
901 867 9971
www.wright.com

10801 Nesbitt Avenue South
Bloomington, MN 55437
888 867 6437
952 426 7600
www.tornier.com

Proper surgical procedures and techniques are the responsibility of the medical professional. This material is furnished for information purposes only. Each surgeon must evaluate the appropriateness of the material based on his or her personal medical training and experience. Prior to use of any Tornier implant system, the surgeon should refer to the product package insert for complete warnings, precautions, indications, contraindications, and adverse effects. Package inserts are also available by contacting Wright. Contact information can be found in this document and the package insert.

CAW-2145 Rev H ECN 160217 12-May-2016