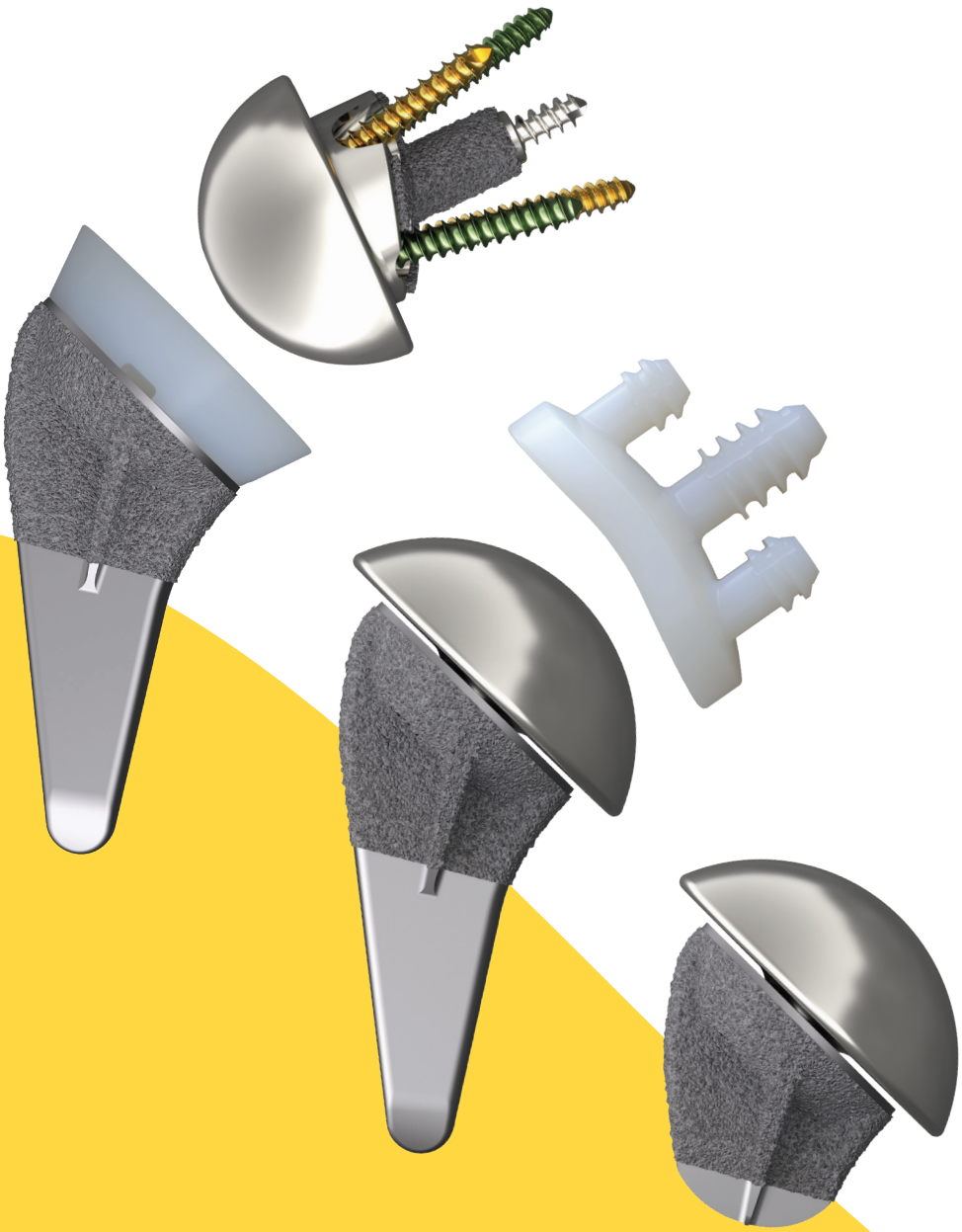
Smith+Nephew

AETOS◊
Shoulder System

Surgical Technique



Stemless Humeral Implant is not available in all markets the Meta Stem Humeral Implant is available.

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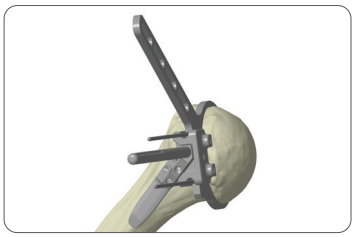
Nota Bene

The following technique is for informational and educational purposes only. It is not intended to serve as medical advice. It is the responsibility of treating physicians to determine and utilize the appropriate products and techniques according to their own clinical judgment for each of their patients. For more information on the product, including its indications for use, contraindications, and product safety information, please refer to the product's label and the Instructions for Use packaged with the product.

Surgical Technique – Visual step by step – Humerus

Common Humeral Preparation



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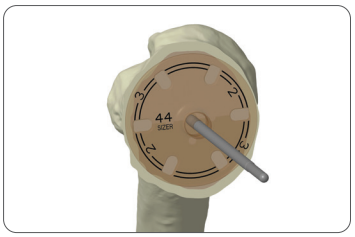

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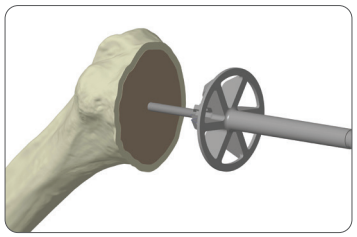

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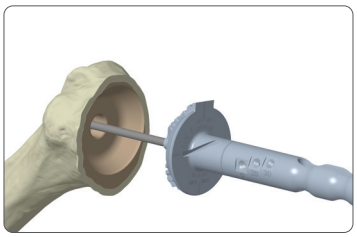

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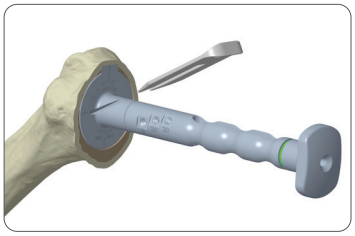

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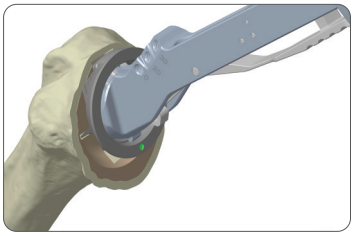

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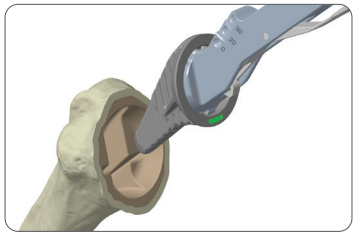
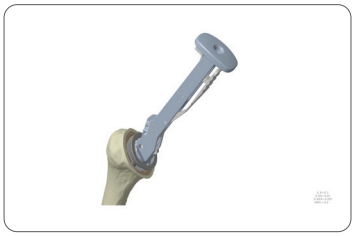
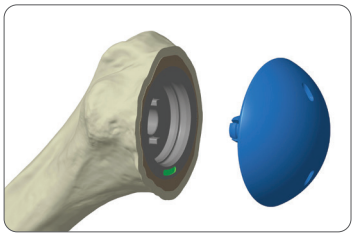


7. Meta final compaction

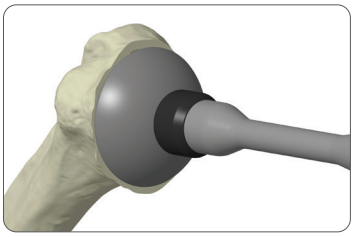


8. Implant

Anatomic

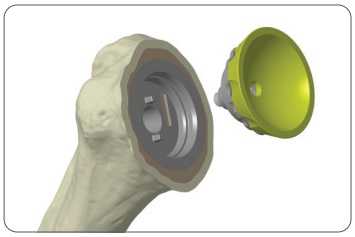


9. Trial



10. Implant

Reverse



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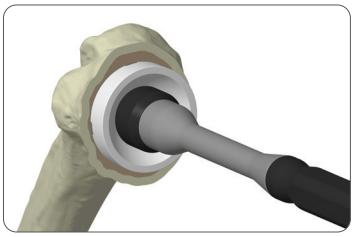
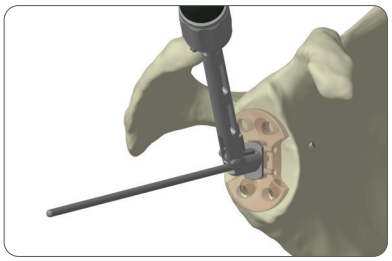


10. Implant

Surgical Technique – Visual step by step – Glenoid

Anatomic



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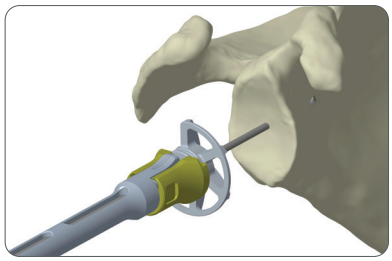

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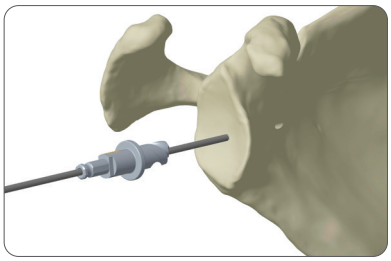
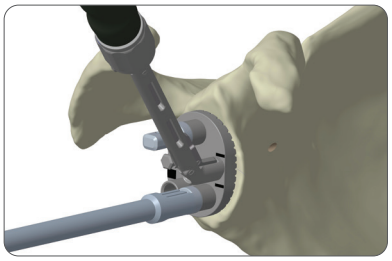
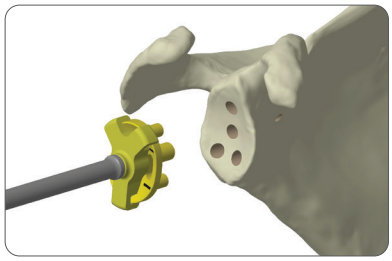


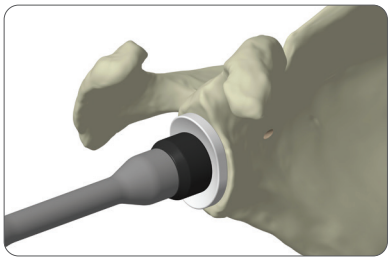
3. Central drill



4. Peripheral drill



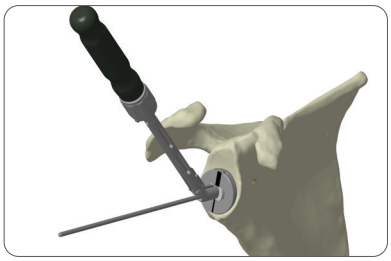
5.Trial



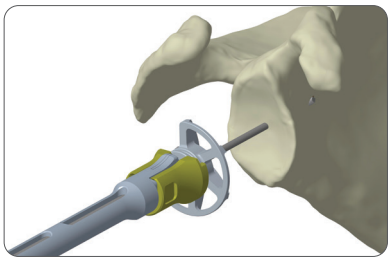
6. Implant

Surgical Technique – Visual step by step – Glenoid *continued*

Reverse



1. Size Pin



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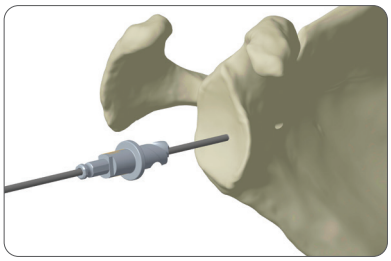
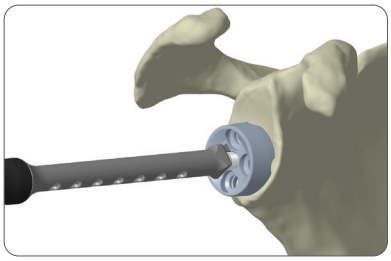
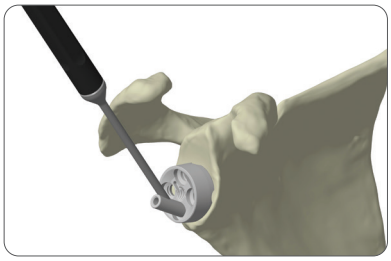


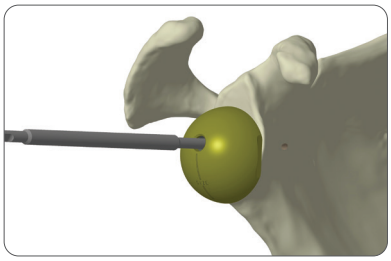
3. Central drill



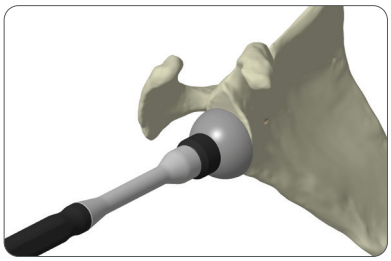
4. Implant Baseplate



5. Drill Peripheral Screws



6. Trial Glenosphere



7. Implant Glenosphere

1-1

Surgical Technique

Common Humeral Preparation

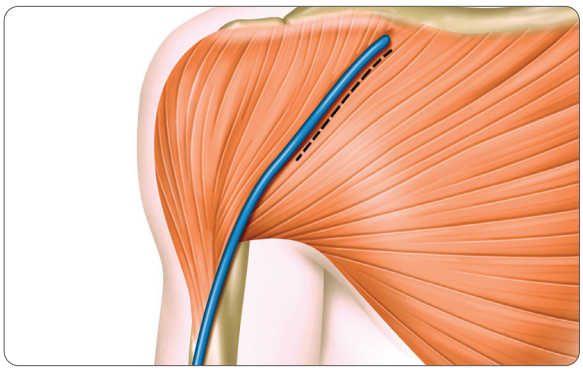
Unless otherwise noted the steps outlined in this section are applicable for Meta Stem, Stemless, Anatomic Total Shoulder Arthroplasty (TSA) and Reverse Shoulder Arthroplasty (RSA).

Step 1 ▪ Preoperative templating and patient positioning

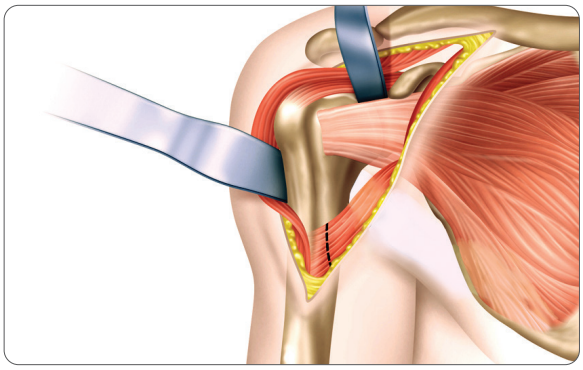
Preoperative evaluation of the humerus using the AETOS◊ Shoulder System X-ray Templates and Preoperative Planning Software helps determine the type of prosthesis, size of the prosthesis and level of the humeral head resection. The goal is to resect the humeral head at the level of the anatomic neck respecting the inclination and humeral version indicated by the patient's natural version.

Shoulder arthroplasty can be performed using general anesthesia, regional anesthesia (i.e., interscalene block), or a combination.

Place the patient in beach chair position. This position would have the patient supine with the hips flexed approximately 30°, knees bent approximately 30° and back elevated approximately 30°. Specialized headrests, arm mounts or operating tables with breakaway side panels can facilitate further access to the top and back of shoulder.



2-1a



2-1b

Step 2 ▪ Exposure

A deltopectoral approach is used to provide exposure to the anterior aspect of the glenohumeral joint, the upper humeral shaft and the humeral head. The initial incision line runs from the mid-clavicle, over the top of the coracoid and extends in a straight line down the anterior aspect of the arm. It should follow the path of the cephalic vein along the interval between the deltoid and the pectoralis major.

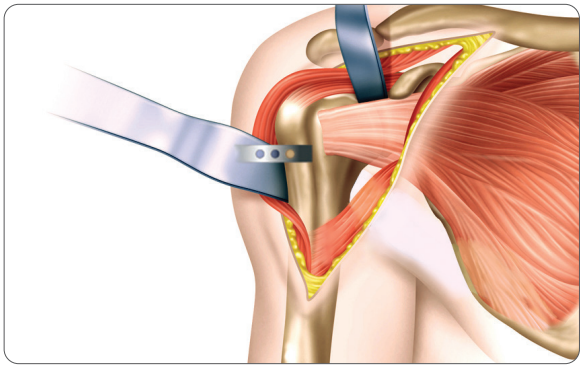
The length of the initial incision along this line can vary, depending on the exposure needed to provide adequate access and visualization of the joint, and is determined by patient body habitus.

Once the initial incision is made, expose, incise and release the fascia. Locate the cephalic vein at the deltopectoral interval. Separate the deltoid and pectoralis major muscles so that the deltoid muscle is completely free from its origin to its insertion, especially along its deep surface. Abduct and externally rotate the arm. Gently retract the cephalic vein medially or laterally along with the deltoid and pectoralis muscle.

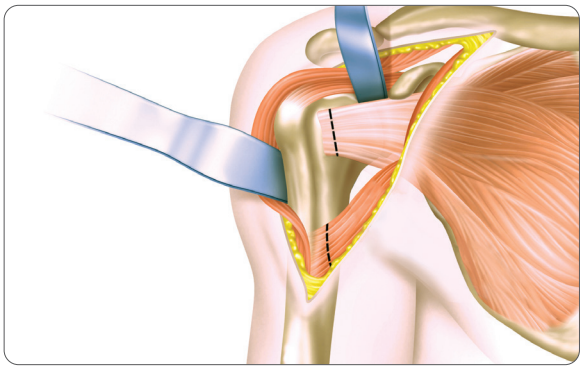
Incise the clavipectoral fascia lateral to the conjoined tendon. If needed, release the upper 25% of the pectoralis major tendon from its insertion on the humerus, using an electrocautery cutting blade. Place a Hohmann retractor over the top of the humeral head, pulling the upper part of the deltoid posteriorly. Introduce self-retaining Weitlander and Kobel retractors underneath the conjoined tendon and underneath the middle deltoid.

If intact, release the biceps tendon from the bicipital groove and along the rotator interval down to its glenoid attachment. Resect the long head of the biceps at the origin of the superior glenoid. Open the rotator interval, if still present, along the line of the biceps to define the superior margin of the subscapularis.

Isolate, clamp and ligate or coagulate the anterior humeral circumflex vessels lying across the anterior/inferior third of the subscapularis tendon. It is important to be aware of the musculocutaneous nerve, which penetrates the coracobrachialis muscle 1-2” distally from the coracoid. The nerve may not be palpable within the surgical field but remember its proximity to the conjoined tendon. Digitally locate the axillary nerve. Introduce a Hohmann retractor and carefully retract the nerve along with the latissimus dorsi tendon. This is especially important as it will protect the axillary nerve, define and expose the inferior capsule.



3-1a



3-1b

Step 3 ▪ Subscapularis tendon management

If the subscapularis muscle and the capsule are still intact or partially intact, they must be released to dislocate the humeral head. Multiple surgical approaches can be used to manage the subscapularis tendon as described below.

Lesser tuberosity osteotomy

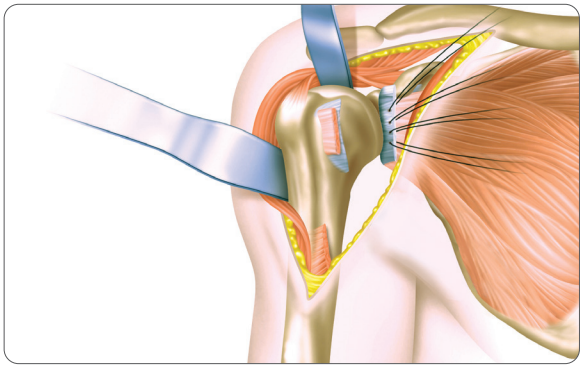
Locate the insertion of the subscapularis tendon onto the lesser tuberosity. Place the saw blade or osteotome just lateral to the subscapularis insertion point and resect approximately 4-5mm of the lesser tuberosity.

Lesser tuberosity peel

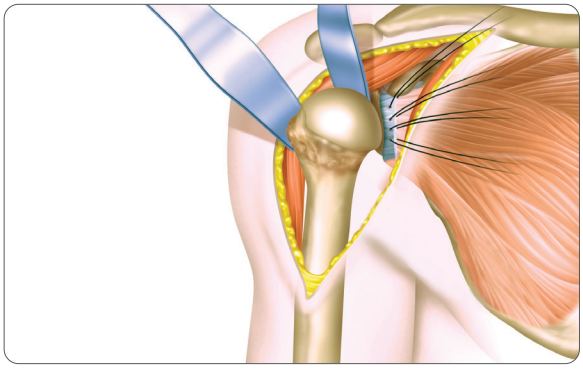
Beginning at the medial border of the bicipital groove using a scalpel or electrocautery, the subscapularis and muscle insertion is removed directly from the lesser tuberosity.

Subscapularis tenotomy

The tendon can be removed from its insertion with sharp dissection about 1cm medial to the lesser tuberosity. This will allow for tendon-to-tendon reattachment of the subscapularis.



4-1a



4-1b

Step 4 ▪ Capsule release

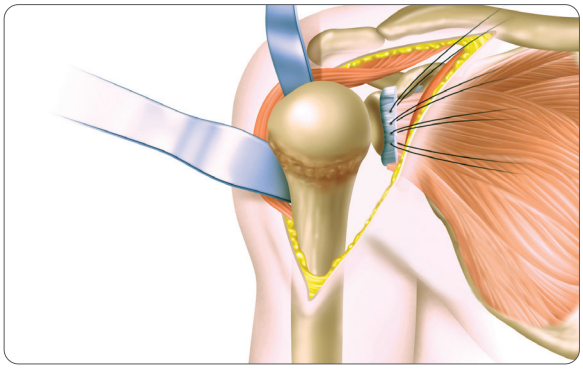
Using blunt dissection, separate the capsule from the subscapularis, inferiorly and medially. Release the rest of the anterior capsule from the subscapularis to the glenoid rim. Release the coracohumeral ligament from the base of the coracoid. Place traction sutures in the subscapularis tendon to control and mobilize it from the anterior glenoid neck. The subscapularis traction sutures will be utilized as a “shoehorn” to control the humeral head dislocation and relocation.

The ‘subscapularis tendon-capsule complex’ is dissected and elevated as one unit from the humerus at the medial aspect of the bicipital groove. If this complex is contracted, a superior 180° release of the subscapularis must be performed to mobilize the tendon to gain eventual external rotation.

Further humeral neck joint capsule release may be performed medially, anteriorly or inferiorly as needed. The posterior capsule is maintained to facilitate centralization and prevent posterior subluxation. Take care to protect the axillary nerve as it passes inferior to the subscapularis and capsule. The location of the axillary nerve should be kept in mind at all times during capsular release.

Note: If the capsule is tented over large inferior osteophytes, it may be safer to remove the osteophytes with an osteotome, moving away from the articular surface in an inferior direction. Once the osteophyte has been separated from the bone, it may be peeled off the capsule, and the capsular release can then be completed adjacent to the capsular attachment to the humerus. This decreases the risk of inadvertently damaging the axillary nerve when attempting to mobilize the capsule out from beneath large inferior osteophytes.

Step 5 ▪ Humeral head dislocation



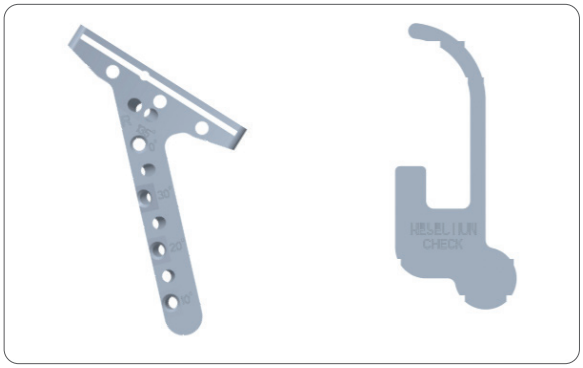
5-1

Place a large Darrach retractor underneath the upper part of the humeral head and dislocate the humerus. Put a medium size retractor on the inferior part of the humeral head and continue to bring the arm into full external rotation. The entire humeral head should now be in vision, with all capsular tissues removed from around the neck to provide excellent exposure.

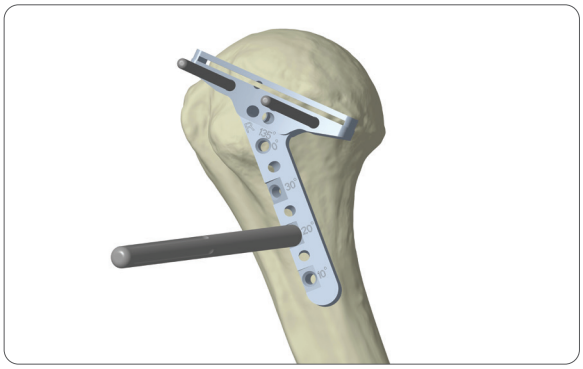
Release of the anterior, inferior and posterior gleno-humeral ligaments is vital to properly and concentrically centralize the humeral head as noted above. At this point, the humeral head should freely rotate into maximum external rotation, slight abduction and significant extension allowing the head to dislocate anteriorly for preparation of the humeral head.

Proper anterior and inferior capsular releases are needed for ease of dislocation and proper humeral head preparation as well as re-establishing concentricity of the gleno-humeral joint. Releasing the inferior capsule off the humerus past

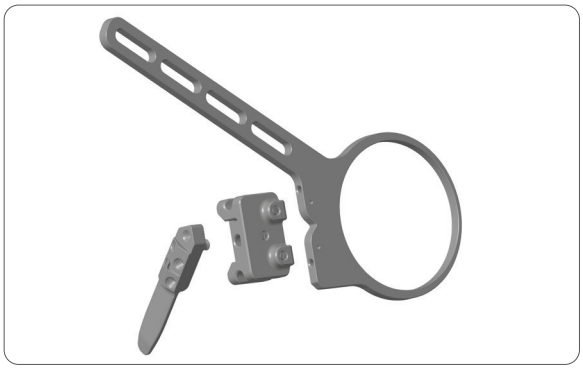
6 o'clock position is essential in gaining exposure. Bone preparation is initiated by debridement of sufficient amount of anterior inferior osteophytes to properly identify the anatomic neck.



6-1a



6-1b



6-2a

Step 6 ▪ Humeral head resection

The AETOS◊ Stem is designed to be centered and inlayed into the humeral Metaphysis, requiring a resection at the anatomic neck. Version, inclination, and the patient's laxity should be considered prior to making the resection. Resection down to the cuff insertion is not necessary in most patients.

Guided EM Humeral Cut Guide Technique

6-1a An Extra-Medullary Cut Guide is available to help achieve an accurate anatomic neck osteotomy.

6-1b Place the EM Humeral Cut Guide along the proximal humerus aligning the cut slot with the anatomic neck and the shaft of the EM Humeral Cut guide parallel with the long axis of the humerus.

The Version Rod is assembled to the EM Humeral Cut Guide using one of the threaded holes (0deg, 10deg, 20deg, or 30deg) in reference to the forearm and the retroversion is visually assessed.

Using 3.2mm Speed Pins in the holes beneath the cut slot, pin the cut guide inferiorly. The Resection Guide may be used in the cut slot to fine tune inclination prior to placing the lateral Speed Pin. Prior to final resection, use the Resection Guide to verify the resection.

Note: The 20° and 30° retroversion hole is side-specific.

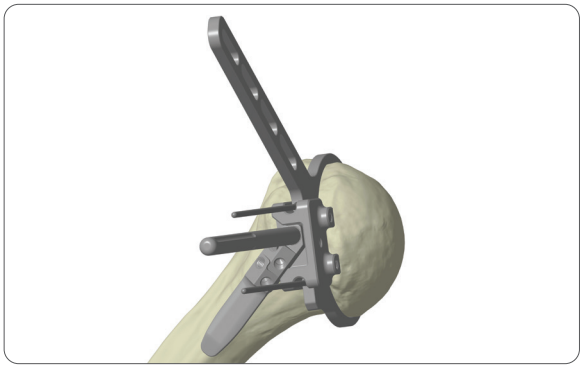
Guided Resection Technique

6-2a A set of Resection Guides is available to help achieve an accurate anatomic neck osteotomy.

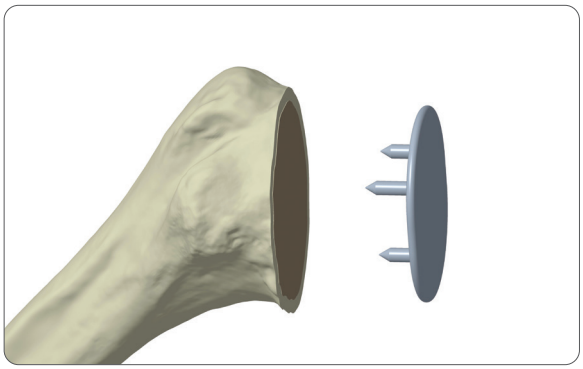
Select the smallest Resection Guide size that fits over the humeral head. Assemble the Resection Guide Holder and the Low Profile Angle Indicator to the selected Resection Guide and place the Guide over the humeral head, aligning the Guide to the anatomic shaft. The Angle Indicator should point in the direction of the humeral shaft.

The Version Rod is assembled to the Low Profile Angle Indicator using one of the threaded holes (0, 20, or 30°) in reference to the forearm and the retroversion is visually assessed.

Note: The 20° and 30° retroversion hole is side-specific.



6-2b



6-3

6-2b Secure the Guide to the humerus with two Resection Guide Pins when desired version has been achieved. Remove the Resection Guide Holder, Angle Indicator, and Version Rod, leaving the secured Resection Guide in place.

The humerus is resected using the upper surface of the Resection Guide. Both Pins and the Resection Guide can be removed.

6-3 If desired, the Canal Osteotomy Cover can be placed on the surface of the humeral resection at this point to protect the humeral resection while glenoid preparation is performed.

Freehand Head Resection Technique

Option A: Stem Compactor

6-4 The Stem Compactor may be used as a template for the cut angle, if a freehand cut is preferred. Place the Compactor along the anterior aspect of the arm parallel to the shaft of the humerus and mark the angle at which the humeral head will be resected with a bovie. Remove the Compactor; the saw should enter the anterior surface of the humerus along the line of the anatomic neck and exit 2-3mm proximal to the posterior cuff attachment.

Option B: TITAN Head Cutting Template

6-5 Alternatively, the anatomic Head Cutting Templates from the TITAN System may be special ordered to perform a freehand cut. Place the 135° Head Cutting Template along the anterior aspect of the arm parallel to the shaft of the humerus and mark the angle at which the humeral head will be resected. There are two proximal holes on the Head Cutting Template for 3.2mm Fixation Pin placement, if preferred. A 30° threaded version hole for the Template Handle is also available to assess retroversion.

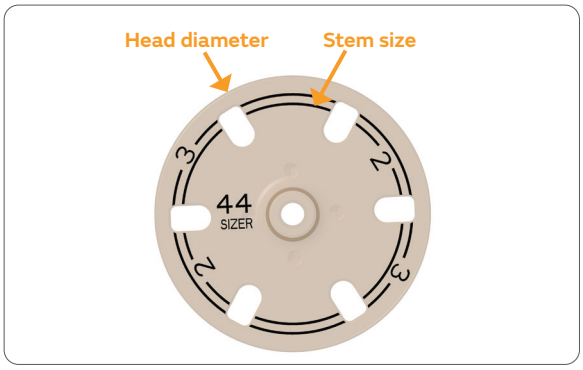
Items used:

AETOS Extramedullary Cutting Guide - 71935994
AETOS Resection Check - 71935995
3.2 x 75mm Non-Rimmed Trocar Speed Pin - 74016467
Speed Pin Driver- 74016464
Version Rod - VER-0990-803
Stem Compactor - COM-0990-808-01/2/3/4/5
Canal Osteotomy Cover - CVR-0920-077S/L
Stem Compactor – COM-0990-808-01/2/3/4/5
Canal Osteotomy Cover – CVR-0920-077S/L

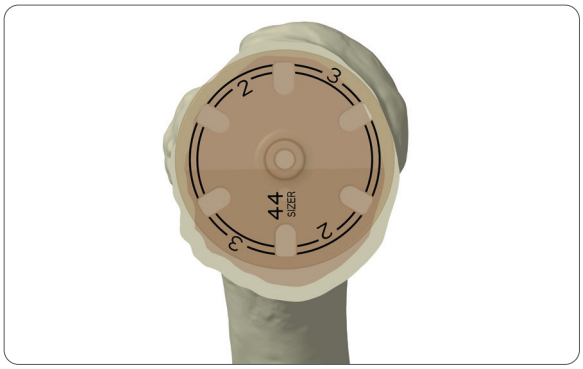
Special Order:

Resection Guides – CUT-0990-800-1/2/3
Resection Guide Pin – PIN-0990-801
Version Rod – VER-0990-803
Resection Guide Holder – RGH-0990-812
Angle Indicator, Low Profile – INC-0990-802
Head Cutting Template, Left – TDT-0920-040-001L
Head Cutting Template, Right – TDT-0920-040-001R
Head Cutting Template Handle – ROD-0923-040-001
Fixation Pin – PIN-0920-051-001

Option C: Head Resection with a TITAN Intramedullary Cutting Guide (See Appendix A – page 69)



7-1



7-2a

Step 7 ▪ Humeral sizing

7-1 The AETOS◊ Stem is designed to center the humeral component in the Metaphysis.

Utilizing the Osteotomy Sizers (38, 41, 44, 47, 50, and 53mm), select the size that completely covers the humeral resection with no overhang. The sizer should cover the external diameter of the humeral resection including the cortical rim.

Note: Six Osteotomy Sizers (diam. 38, 41, 44, 47, 50 and 53mm) are available to individually assess the humeral head size and the size of the Stem.

7-2 Identify the humeral Implant by selecting the internal black ring that is immediately inside the cortical rim without cortical contact.

Note: The external size of the Sizer represents the diameter of the Humeral Head Implant. The internal rings printed on the Sizers represent the size options for the humeral component.

Continued on next page

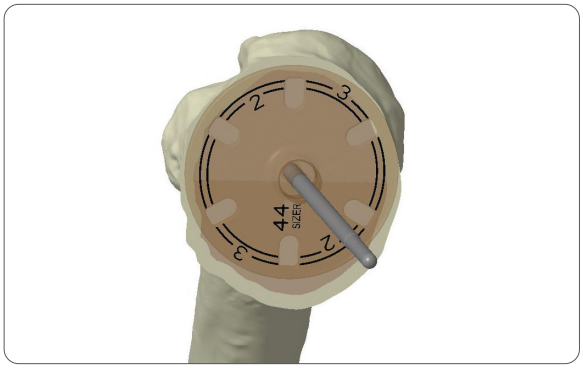
7-2b

Note: Translate the sizer superiorly to match the radius of the superior osteotomy if the osteotomy is ellipsoid.

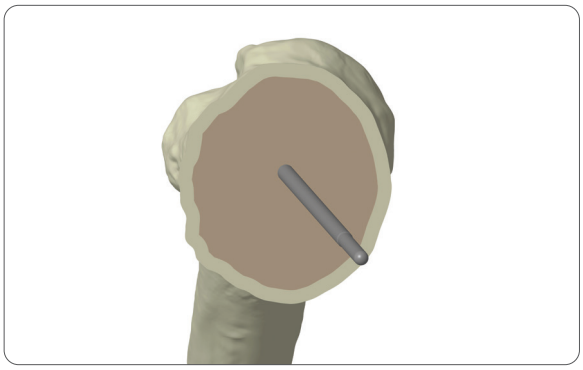
The size of the humeral head and of the humeral Implant selected during this step will determine the final Implant sizing and will dictate the bone preparation throughout the rest of the procedure.

Items used:

Osteotomy Sizer / Pin Guide – HOS-0990-805-01/2/3/4/5/6



8-1



8-2

Step 8 ▪ Humeral pin placement

8-1 Once the appropriate Osteotomy Sizer has been selected and placed on the resected humerus, drive the Humeral Pin through the Sizer and secure it in the lateral cortex. The Humeral Guide Pin is available in a threaded or non-threaded version, depending on surgeon preference.

Note: The Pin should be engaged into the lateral cortex, but exercise caution to prevent axillary nerve damage.

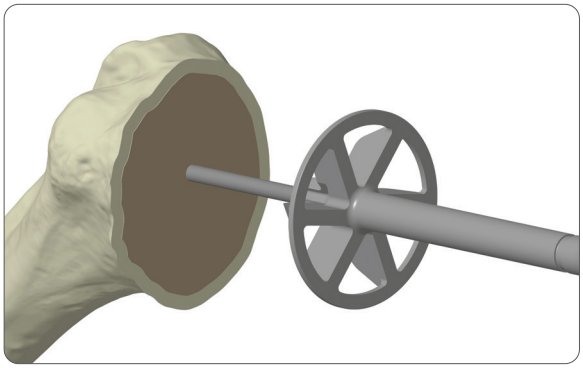
8-2 Remove the Sizer and perform a visual check of the Pin position. The Pin should be centrally positioned in the anteroposterior plane and should be centered or slightly superior to the equator of the humeral resection based on the humeral resection shape.

Items used:

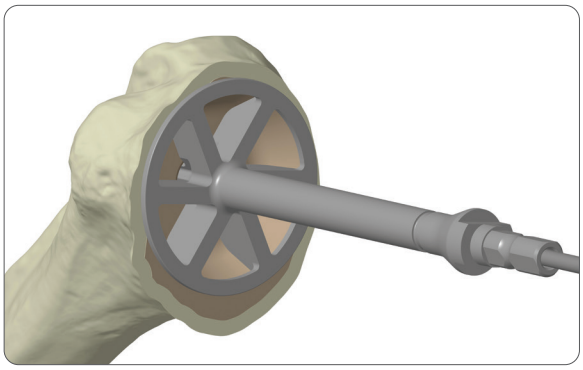
Osteotomy Sizer/Pin Guide – HOS-0990-805-01/2/3/4/5/6

3.5mm Humeral Guide Pin, Threaded – GDW-0990-839 or

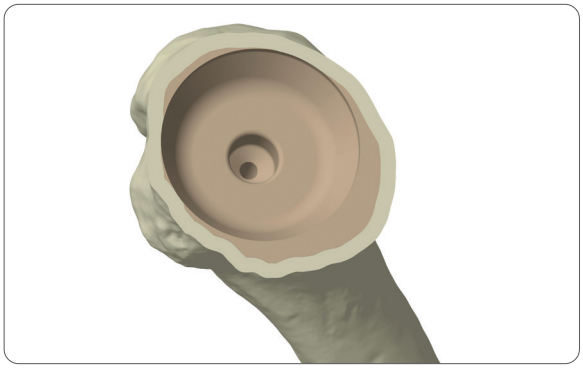
3.5mm Humeral Guide Pin, Non-Threaded – GDW-0990-839NT



9-1a



9-1b



Bone reamed

Step 9 ▪ Humeral Metaphyseal reaming

9-1 Select the Cannulated Humeral Reamer that corresponds to the size selected during Step 7: Humeral Sizing. The sizes are color coded to efficiently identify the proper size for humeral preparation steps.

Size	Color
1	White
2	Yellow
3	Green
4	Blue

Attach the Reamer to power and place it over the Humeral Pin. Ream the humeral Metaphysis until the Reamer stop located on the edge of the Reamer is flush to the humeral osteotomy. Remove the Reamer, leaving the Humeral Pin in place.

Note: Do not over-ream to avoid compromising humeral fixation.

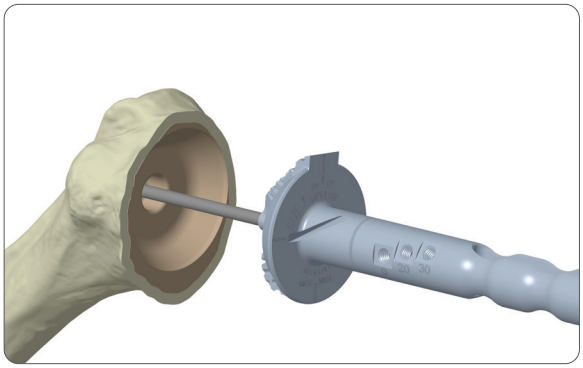
Note: Do not under-ream to avoid compromising proper positioning of the Implant.

Items used:

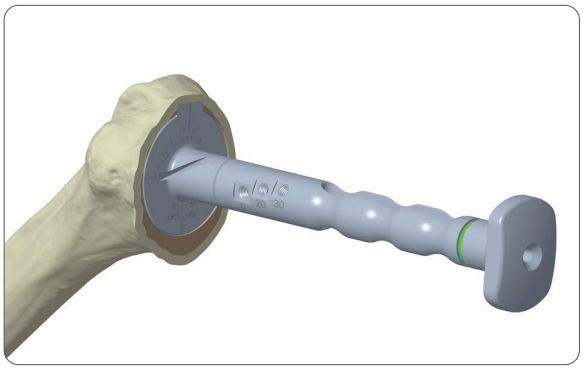
Humeral Reamer – RMR-0990-806-01/2/3/4

3.5mm Humeral Guide Pin, Threaded – GDW-0990-839 or

3.5mm Humeral Guide Pin, Non-Threaded – GDW-0990-839NT



10-1a



10-1b

Step 10 ▪ Cruciate broaching

10-1 Select the Metaphyseal Broach of the size selected during Step 7: Humeral Sizing. The sizes are color coded to allow you to efficiently identify the proper size for humeral preparation steps.

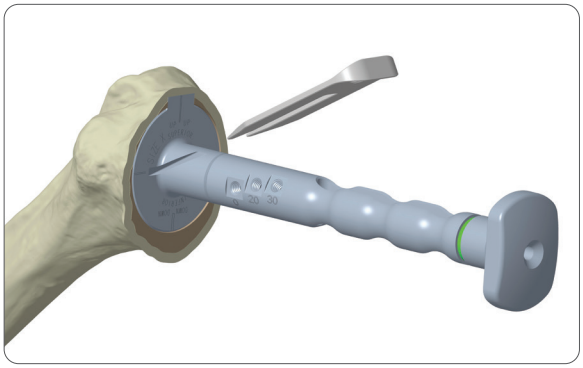
Note: Four Cannulated Cruciate Broaches are available to prepare the Metaphysis for Stem Implantation. The Broach placement determines the position of the final Implant. The anterior/posterior fins created with the Cruciate Broach Osteotome prepare slots in the bone, which match the fins on the final Implant.

Size	Color
1	White
2	Yellow
3	Green
4	Blue

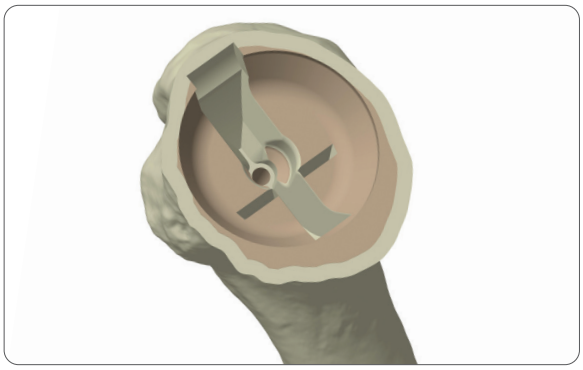
A Version Rod can be attached to one of the threaded holes (0, 20, or 30° in reference to the forearm) to visually assess the retroversion.

Place the Cruciate Broach over the Humeral Guide Pin, making sure the fins are properly oriented by aligning the inferior laser mark with the axis of the humeral shaft. The orientation of the fins will determine the trajectory of the Humeral Stem.

Impact the Broach until it is completely flush to the cut. Ensure while impacting that the impaction is perpendicular to the cut to prevent a varus/valgus positioning of the Stem. If required, additional bone can be removed from the greater tuberosity with a high speed burr or rongeur to better center and align the broach.



10-2



Bone reamed

10-2 Once the Broach is fully seated, insert the Cruciate Broach Osteotome into the slot visible at the distal end of the Broach. Lightly tap with a mallet to fully seat the Osteotome in the Broach. Remove the Cruciate Broach Osteotome by inserting a kocher in the hole of the osteotome and lightly tapping upward with a mallet.

Warning: Remove the Osteotome prior to removing the Broach from the bone. If the Osteotome is not removed first, additional bone may be inadvertently removed when removing the Broach, which may compromise implant fixation.

Once the broaching is completed, remove the Osteotome, Broach and Guide Pin.

Items Used:

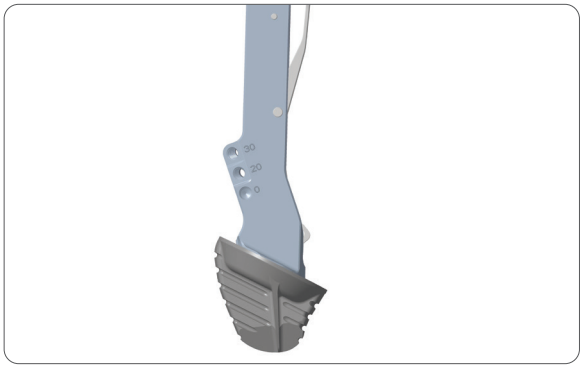
Cruciate Broach – BRH-0990-898-01/2/3/4

Cruciate Broach Osteotome – OST-0990-899

Version rod – VER-0990-803

3.5mm Humeral Guide Pin, Threaded – GDW-0990-839 or

3.5mm Humeral Guide Pin, Non-Threaded – GDW-0990-839NT



11-1

Step 11 ▪ Humeral Metaphyseal stemless (ST) compaction

Note: When used with AETOS◊ Stemless Humeral Prosthesis, the AETOS Shoulder System is indicated for Anatomic Total Shoulder Replacement of the shoulder joint. AETOS Stemless Humeral Prosthesis is not approved in reverse shoulder arthroplasty and is not available in all markets as the AETOS Meta Stem.

11-1 There are four Metaphyseal ST Compactors, one for each of the four sizes corresponding to either Meta Stem or Stemless Implants.

Select the ST Compactor that corresponds to the size selected in Step 7: Humeral Sizing. The sizes are color coded to efficiently identify the proper size for humeral preparation steps.

Initial humeral preparation is accomplished with the ST Compactors by compacting the cancellous Metaphyseal bone to encourage the best press fit for the final humeral Implant. The ST Compactors create a starting point for the final compactors and helps maintain varus/valgus, flexion/extension, and orientation of the final humeral Implant.

Note: Four Cannulated Cruciate Broaches are available to prepare the Metaphysis for Meta Stem Implantation. The Broach placement determines the position of the final Implant. The anterior/posterior fins created with the Cruciate Broach Osteotome prepare slots in the bone, which match the fins on the final Implant.

Size	Color
1	White
2	Yellow
3	Green
4	Blue

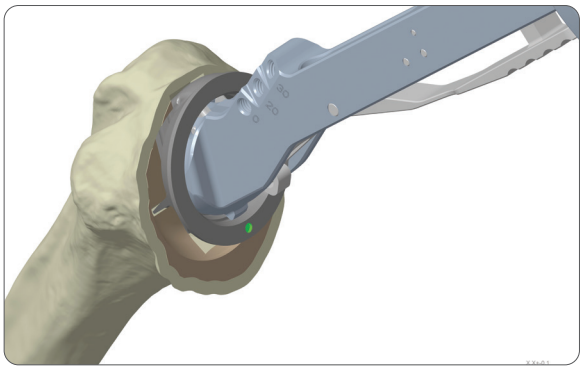
Select the appropriate Stem Inserter:

- Small Stem Inserter: ST Compactor sizes 1,2
- Large Stem Inserter: ST Compactor sizes 3,4

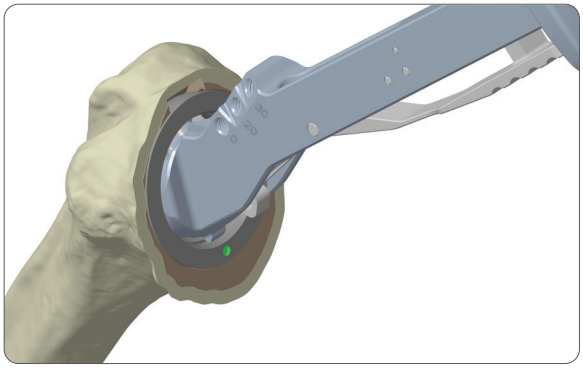
A Version Rod can be attached to one of the threaded holes (0, 20, or 30° in reference to the forearm) to visually assess the retroversion.

To attach the ST Compactor to the Stem Inserter:

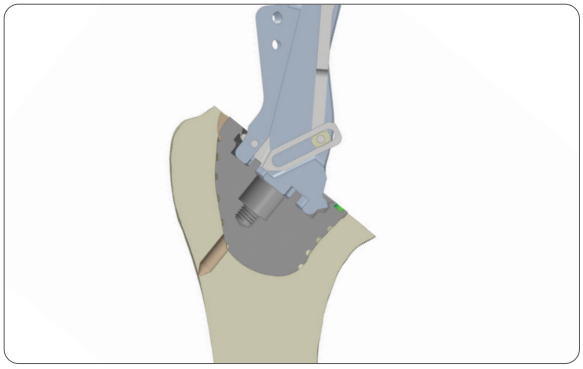
1. Angle the Stem Inserter and insert the protrusion at the distal end of the Inserter into the rim of the ST Compactor cavity.
2. With the instruments connected, angle the Inserter to be flush with the ST Compactor cavity and push the lever to lock the Compactor to the Stem Inserter. Ensure that the strike plate of the Stem Inserter is in-line with the anterior/posterior fins of the ST Compactor.



11-2a



11-2b



Seated section

11-2 Position the tip of the ST Compactor into the cavity created by the Cruciate Broach and Cruciate Broach Osteotome, aligning the fins on the ST Compactor with those created in Step 10: Cruciate broaching.

Impact the ST Compactor until it is completely flush to the cut. Ensure while impacting that the impaction is perpendicular to the cut to prevent a varus/valgus and flexion/extension positioning of the Stem.

The ST Compactors are designed to complete the final preparation of the Stemless Implant by compacting the cancellous Metaphyseal bone.

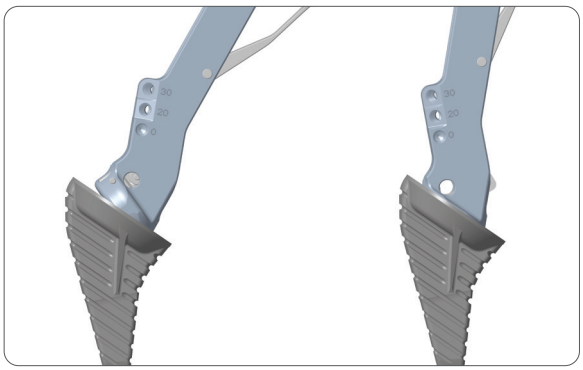
Gently tap on the under side of the strike plate of the Stem Inserter handle to remove ST Compactor.

Items used:

Stem Compactor – COM-0990-808-01/2/3/4

Stem Inserter – INS-0990-804S/L

Version rod – VER-0990-803



12-1

Step 12 ▪ Humeral Meta Stem compaction

12-1 There are four Metaphyseal Compactors, one for each of the five sizes corresponding to the Meta Stem Humeral Implants.

Select the Meta Stem that corresponds to the size selected in Step 7: Humeral Sizing. The sizes are color coded to efficiently identify the proper size for humeral preparation steps.

The Compactors are designed to complete the final preparation of the Implant by compacting the cancellous Metaphyseal bone to encourage the best press fit for the final Implant.

Size	Color
1	White
2	Yellow
3	Green
4	Blue

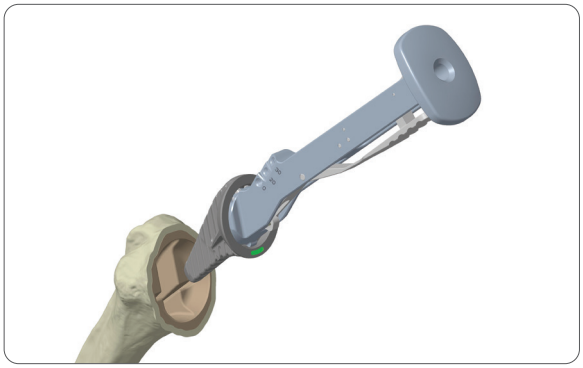
Select the appropriate Stem Inserter:

- Small Stem Inserter: Compactor sizes 1,2
- Large Stem Inserter: Compactor sizes 3,4

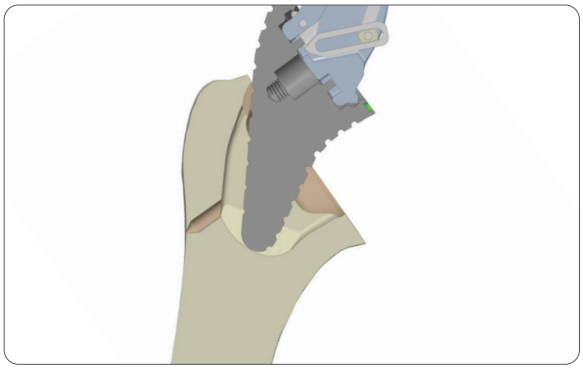
A Version Rod can be attached to one of the threaded holes (0, 20, or 30° in reference to the forearm) to visually assess the retroversion.

To attach the Compactor to the Stem Inserter:

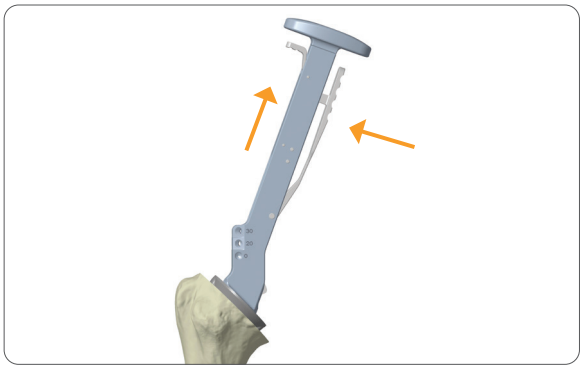
1. Angle the Stem Inserter and insert the protrusion at the distal end of the Inserter into the rim of the Compactor cavity.
2. With the instruments connected, angle the Inserter to be flush with the Compactor cavity and push the lever to lock the Compactor to the Stem Inserter. Ensure that the strike plate of the Stem Inserter is in-line with the anterior/posterior fins of the Compactor.



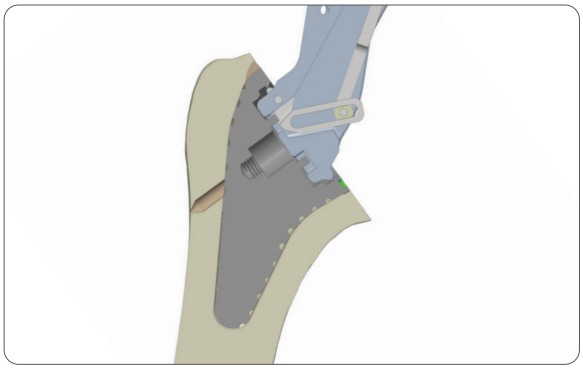
12-2a



Start section



12-2b



Seated section

12-2 Position the distal tip of the Compactor into the cavity prepared by the ST Compactor, Step 11: Humeral Metaphyseal ST Compaction. Align the compactor vertically with the lateral humerus, ensuring the fins are properly aligned with the slot created during Step 10: Cruciate broaching.

Impact the Compactor until it is completely flush to the cut. Ensure while impacting that the impaction is perpendicular to the cut to prevent a varus/valgus and flexion/extension positioning of the Stem.

Push the lever on the Stem Inserter in with your thumb and use your finger to lift the latch to disengage the Compactor and remove it.

The Compactor can be left in place to be used as a trial with the Humeral Head or Humeral Liner, depending on the surgical procedure performed.

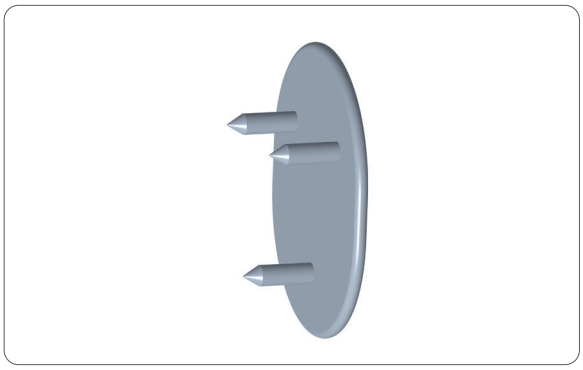
Items used:

Stem Compactor – COM-0990-808-01/2/3/4

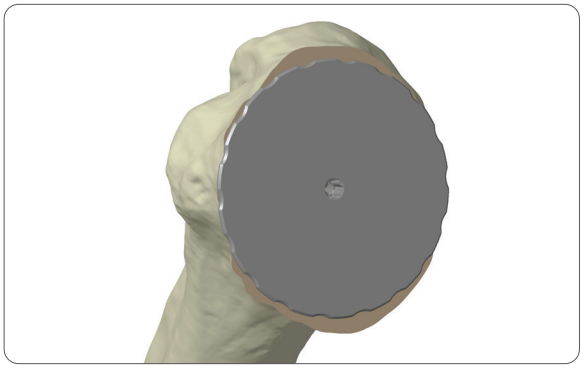
Stem Inserter – INS-0990-804S/L

Version rod – VER-0990-803

13-1a: Cut Protector



13-1b: Canal Osteotomy Cover



13-1c

Step 13 ▪ Humeral cut protection

Two styles of cut protectors are available to protect the humerus during glenoid preparation.

a The Cut Protector can be assembled to the compactor by finger tightening and/or a T-20 driver.

b The Canal Osteotomy Cover can be placed on the surface of the humeral resection if glenoid preparation is completed prior to humeral preparation.

Select the Cut Protector size that best corresponds to the size of the resected surface.

Once the Cut Protector is placed on the resected surface, the glenoid preparation can be performed.

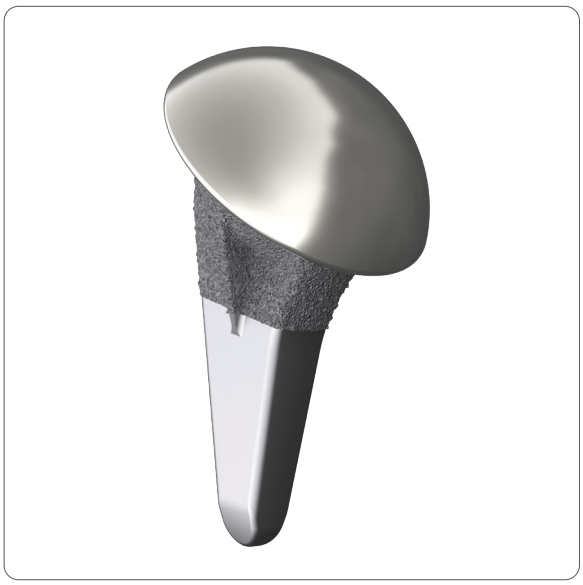
Items used:

Canal Osteotomy Cover – CVR-0920-077S/L

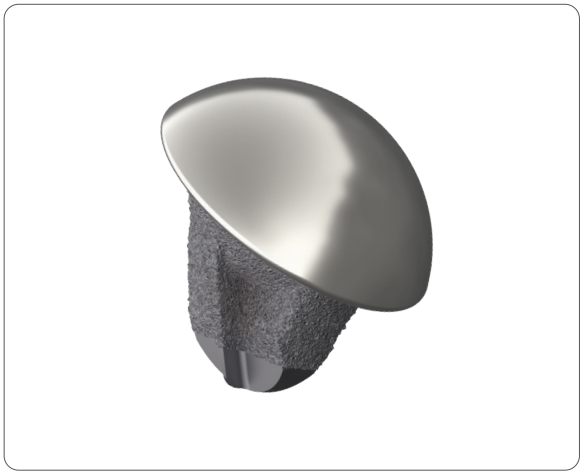
Cut Protector – CVR-0990-811-S/L

T-20 Driver for Peripheral Screws – SCR-0990-862

AO Quick Connect Handle – G107992B



AETOS Meta Stem
(Meta refers to Metaphyseal fitting)



AETOS Stemless Implant

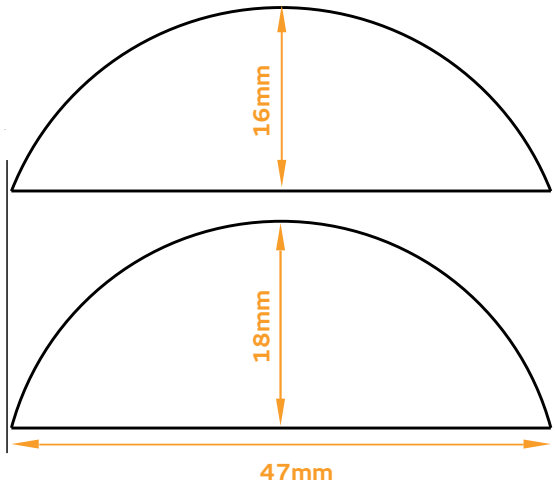
Anatomic Preparation

Ten concentric Humeral Head sizes are available in the AETOS◊ Shoulder System. The AETOS Stem design allows the Humeral Implant to be centered on the Metaphyseal cut surface, obviating the requirement for eccentric heads.[1]

The AETOS System measures its Humeral Heads using a base width x height measurement. The base width remains the same with increasing Head thickness. This results in different spherical radii in each base width as the Head height changes.

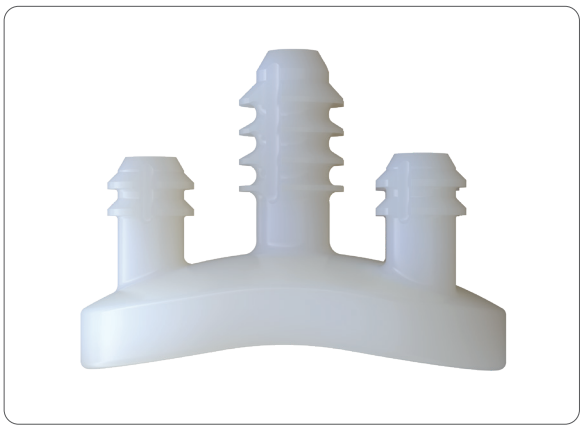
With the AETOS System, the surgeon chooses the diameter that best fits the osteotomy, and Head height is selected based on desired glenoid mismatch and soft tissue balancing.

Note: To ensure adequate range of motion, the Humeral Head must completely cover the surface of the Humeral Stem. The smallest Head diameters will not adequately cover the surface of the larger Stem sizes. The 38mm Head may only be used with Stem sizes 1 or 2; the 41mm Head may be used with Stem sizes 1, 2, or 3.

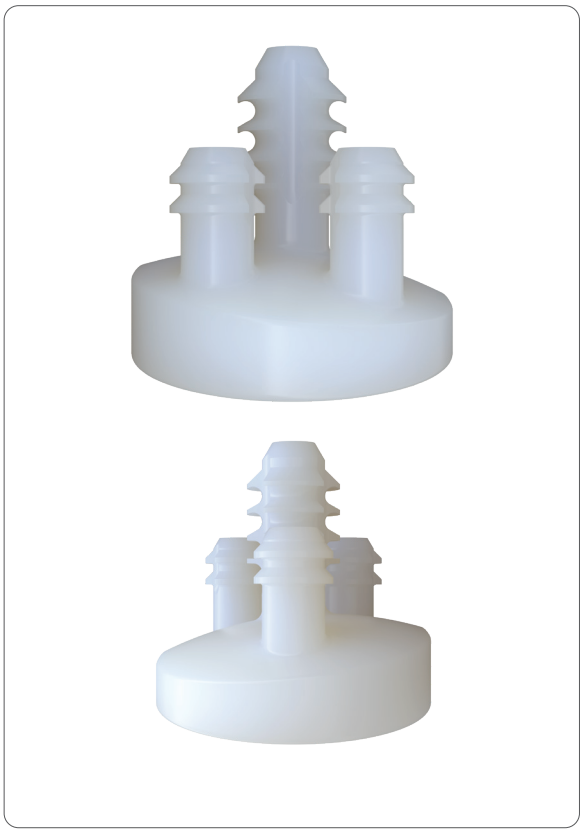


AETOS Base width diameter sizing:
47-16 / 47-18

Base width diameters:
Base width same for each height



Poly Glenoid



10° Poly Glenoid

Anatomic Glenoids

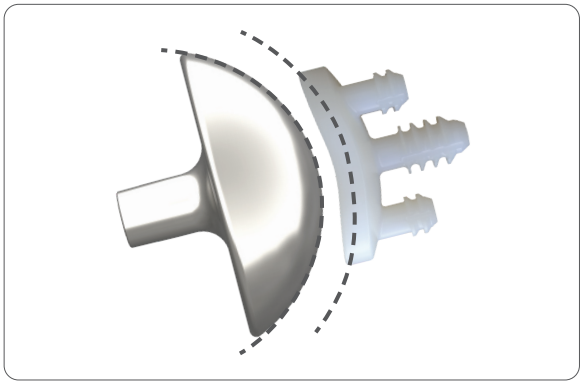
The AETOS◊ Anatomic Glenoids have been designed to be compatible with the humeral components of the TITAN Total Shoulder System or the AETOS Shoulder System. Reference the appropriate surgical technique to prepare the humerus for the desired system.

AETOS Anatomic Glenoids are offered in four sizes: XS = Extra Small, S = Small, M = Medium, and L = Large. Peg Geometry remains the same across all sizes.

Each glenoid size is available with no augment, 5° full wedge, posterior augment, or 10° full-wedge, posterior augment. Augmented sizes are left/right specific.

Posterior augment poly thickness specifications

Glenoid base size	5° correction (mm)	10° correction (mm)
XS	4.4	6.2
S	4.8	6.4
M	5.2	6.5
L	5.6	6.8



47mmx16mm Head:
Spherical Diameter = 52mm

Medium Glenoid:
Spherical Diameter = 64mm

Diametrical Mismatch = 12mm
Radial Mismatch = 6mm

System Compatibility Mismatch Charts

When sizing the glenoid, care should be taken to create the recommended 3.5-10mm mismatch of the Humeral Head and Glenoid component. See charts below for more information on the radial mismatches when using AETOS◊ Glenoids with either the TITAN or AETOS Stems.

AETOS◊ Heads					
		AETOS Glenoid			
		XS	S	M	L
	Spherical diameter (mm)	54	59	64	66
Humeral Head		Radial Mismatch			
38-14	41	6.5	9	11.5	12.5
41-15	44	5	7.5	10	11
44-16	48	3	5.5	8	9
44-18	46	4	6.5	9	10
47-16	52	1	3.5	6	7
47-18	50	2	4.5	7	8
50-18	54	0	2.5	5	6
50-21	51	1.5	4	6.5	7.5
53-19	57	-1.5	1	3.5	4.5
53-22	55	-0.5	2	4.5	5.5

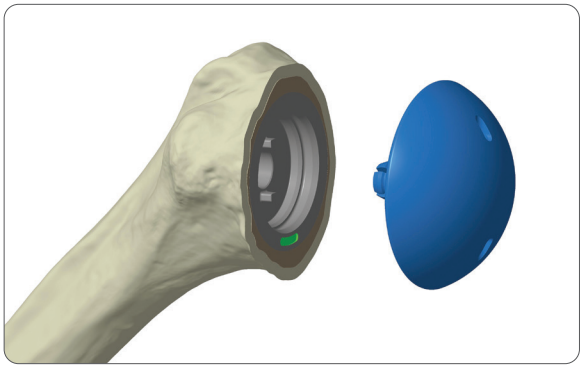
Green boxes represent the ideal glenohumeral sizing options as it relates to the Humeral Head and Glenoid Implant sizes.

TITAN Heads					
		AETOS Glenoid			
		XS	S	M	L
	Spherical diameter (mm)	54	59	64	66
Humeral Head		**Radial Mismatch**			
38-14	41	6.5	9	11.5	12.5
40-15	43	5.5	8	10.5	11.5
42-16	45	4.5	7	9.5	10.5
44-16	48	3	5.5	8	9
44-19	45	4.5	7	9.5	10.5
46-14	54	0	2.5	5	6
46-17	49	2.5	5	7.5	8.5
46-20	47	3.5	6	8.5	9.5
48-15	56	-1	1.5	4	5
48-18	51	1.5	4	6.5	7.5
48-21	49	2.5	5	7.5	8.5
50-19	53	0.5	3	5.5	6.5
50-22	51	1.5	4	6.5	7.5
52-20	55	-0.5	2	4.5	5.5

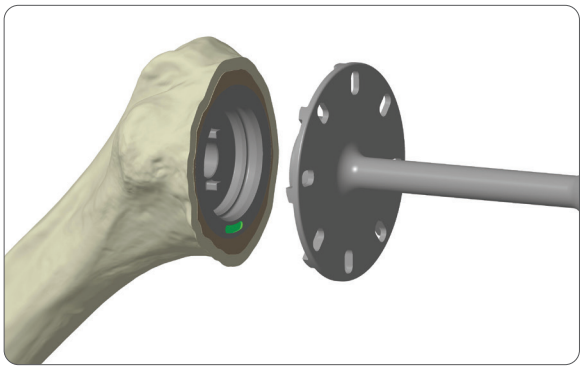
Green boxes represent the ideal glenohumeral sizing options as it relates to the Humeral Head and Glenoid Implant sizes.

AETOS◊ Heads					
		TITAN FIN-LOCK◊ Glenoid			
		XS	S	M	L
	Spherical diameter (mm)	54	59	64	66
Humeral Head		**Radial Mismatch**			
38-14	41	6.5	9	11.5	12.5
41-15	44	5	7.5	10	11
44-16	48	3	5.5	8	9
44-18	46	4	6.5	9	10
47-16	52	1	3.5	6	7
47-18	50	2	4.5	7	8
50-18	54	0	2.5	5	6
50-21	51	1.5	4	6.5	7.5
53-19	57	-1.5	1	3.5	4.5
53-22	55	-0.5	2	4.5	5.5

Green boxes represent the ideal glenohumeral sizing options as it relates to the Humeral Head and Glenoid Implant sizes.



14-1a



14-1b

Step 14 ▪ Anatomic humeral head trial

14-1 Select the Humeral Head Trial whose diameter corresponds to the size selected in Step 7: Humeral Sizing. Humeral Heads with a diameter of 44mm and larger are available in two thicknesses to accommodate soft tissue tensioning and variation of anatomy.

Remove the Cut Protector and place the selected Humeral Head Trial into the compactor or final Stem.

The Humeral Head Trial contains a split taper which allows it to self-retain in the Compactor or Stem. Place by hand only, as impaction is not needed to seat.

Note: If the Head Trial is not fully seating, a Humeral Planer is available in the system to ensure the angle of the resected surface aligns with the angle of the Humeral Head. Attach the Planer size that best corresponds to the size of the resected surface to power and ream over the Compactor until a hard stop is achieved.

Check that the Head Trial achieves appropriate coverage of the osteotomy with no overhang. If using a Head with a diameter of 44mm or greater, proper Head thickness can be determined during trial reduction once the Glenoid component is in place if performing a total shoulder arthroplasty. If necessary, increase or decrease selected Head size/thickness and reassess in place.

If performing a hemiarthroplasty, the trial humeral components can then be reduced into the joint and the stability and mobility of the shoulder can be assessed.

Remove the Humeral Head Trial and the Compactor.

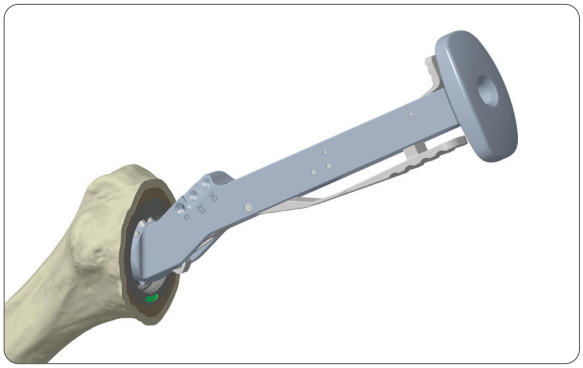
Items used:

Stem Compactor – COM-0990-808-01/2/3/4

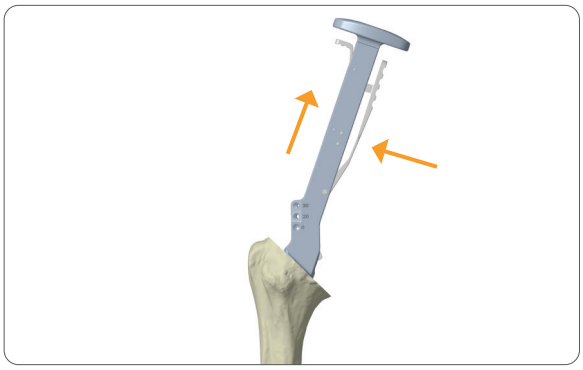
Stem Inserter – INS-0990-804S/L

Humeral Head Trial – TRL-0990-813-3814 – 5322

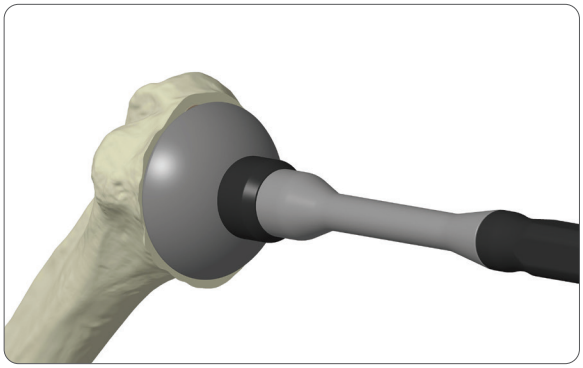
Humeral Planer – RMR-0990-810-S/M/L



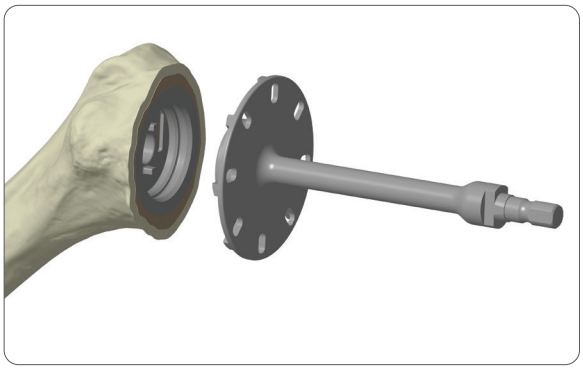
15-2a



15-2b



15-3a



15-3b

Step 15 ▪ Anatomic humeral head Implantation

15-1 The definitive humeral Implants can be assembled in-situ or on the back table.

In-Situ assembly

With clean gloves, open the definitive Stem humeral Implant.

Select the appropriate Stem Inserter:

- Small Stem Inserter: Stem sizes 1-2
- Large Stem Inserter: Stem sizes 3-4

To attach the definitive Stem humeral Implant to the Stem Inserter:

1. Angle the Stem Inserter and insert the protrusion at the distal end of the Inserter into the rim of the Stem cavity.
2. With the instruments connected, angle the Inserter to be flush with the Stem cavity and push the lever to lock the Compactor to the Stem Inserter.

15-2 Align the Implant with the prepared medullary canal and impact it with a mallet, taking care to ensure the Implant is inserted on axis. The Version Rod may be used on the Stem Inserter to help align the Stem in the correct retroversion.

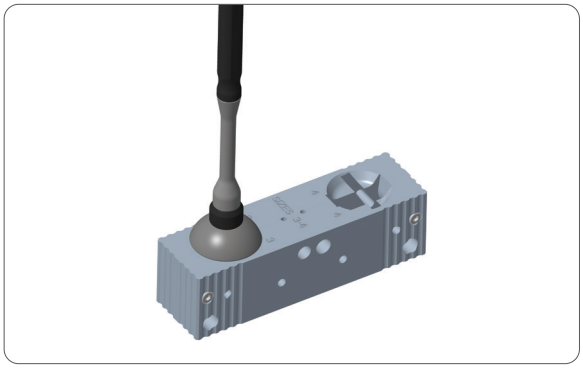
Note: It is recommended to leave the Implant slightly proud to facilitate Humeral Head assembly.

Push the lever on the Stem Inserter in and use your finger to lift the latch to disengage the Stem Inserter and remove it.

15-3 Open the selected size of the definitive Humeral Head and place its male taper into the clean and dry female taper of the humeral component. Impact the Humeral Head using the Humeral Head/Glenosphere Impactor. Remove any final osteophytes and perform the final checks for range of motion, version, and stability.

Note: If the taper of the Humeral Head is not engaging, a Humeral Planer is available in the system to ensure the angle of the resected surface aligns with the angle of the Humeral Head. Attach the Planer size that best corresponds to the size of the resected surface to power and ream until a hard stop is achieved.

Warning: Use of the Humeral Planer may disrupt initial fixation of the Implant; use care if performing this step and apply minimal pressure when reaming.



15-5

Back table assembly

15-5 Place the Stem humeral Implant in the hole corresponding to its size in the Impaction Stand. Place the Humeral Head into the female taper of the humeral component. Impact the Head and Stem Implant assembly using the Humeral Head/Glenosphere Impactor.

Visually inspect the Head after impaction to ensure full seating. Additionally, a pull test may be performed by hand to ensure the Head has fully engaged.

Note: If the Stem feels tight in a specific slot on the Impaction Stand, sizes 1-3 can be moved up to the next available size in the impaction block.

15-6 Remove the assembled Implants and place them into the prepared bone. The assembly may be driven into the bone with the Humeral Head/Glenosphere impactor. Remove any final osteophytes and perform the final checks for range of motion, version and stability.

Note: The final Implant construct may have a gap of up to 2mm between the head and the Stem.

Items used:

Stem Inserter – INS-0990-804S/L

Version rod – VER-0990-803

Humeral Planer – RMR-0990-810-S/M

Impaction Stand – STD-0990-837

Humeral Head/Glenosphere Impactor – IMP-0990-835

Alternate TITAN Impactor:

Glenosphere Impactor – IMP-0960-066-01

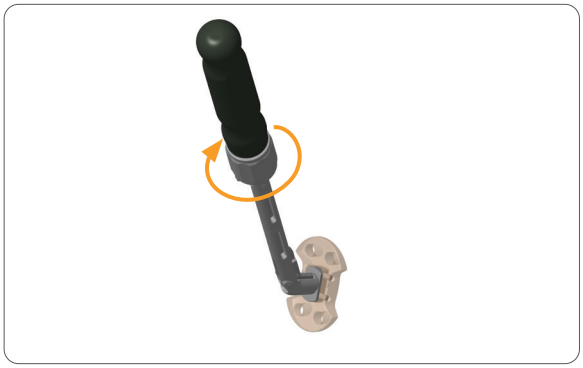
Anatomic Glenoid Preparation

Step 16 ▪ Glenoid exposure

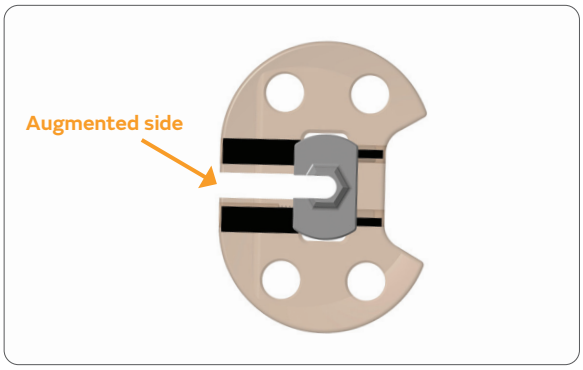
16-1 Place a Fukuda retractor in the joint to retract the humerus posteriorly. Identify the axillary nerve by digital palpation and place a blunt Hohmann retractor between the axillary nerve and the subscapularis.

Dissect the inferior capsule from the inferior border of the subscapularis. Release the capsule above the blunt Hohmann retractor to the glenoid margin. Release the rotator interval to the base of the coracoid to complete the superior and inferior release of the subscapularis. Release the capsule between the labrum and the subscapularis, leaving the labrum attached to the glenoid.

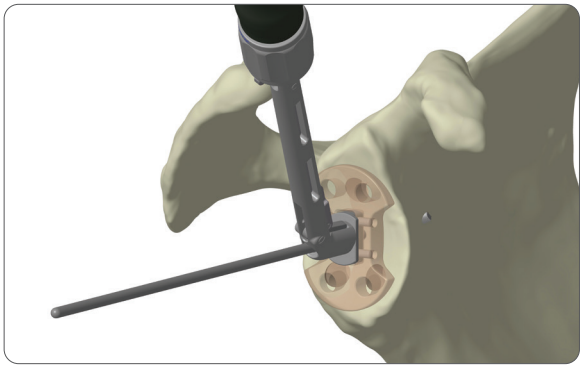
With the subscapularis circumferentially released, the remnant capsule on the undersurface of the subscapularis can either be resected or retained to bolster the bulk of the subscapularis. Place the subscapularis with its attached tuberosity fragment behind a retractor. Grasp the remaining biceps tendon and excise the posterosuperior labrum from within the joint to the inferior labrum. Similarly, excise the anterosuperior labrum to the inferior labrum. This leaves a small fragment of inferior labrum with attached capsule that needs to be released. Protect the axillary nerve with an index finger and release the inferior capsule from the labrum. After release of the inferior capsule, exposure to glenoid is improved. Glenoid exposure is complete once the inferior capsule is released and the remnant labrum is excised.



17-1a



17-1b



17-2

Step 17 ▪ Glenoid sizing and pin placement

17-1 There are twelve Glenoid Sizers in the system that correspond to the definitive Glenoid Implant sizes.

Select a Glenoid Sizer and connect its Metal post to the distal end of the Glenoid Sizer/Guide Handle. The handle can be adjusted to an anterior superior angle. Rotate the beveled knob on the Handle to lock the Sizer in place.

Select the size that covers as much of the glenoid surface as possible, without overhanging the periphery of the bone.

Note: For augmented Glenoids, the laserlines on the Glenoid Sizers indicate the location of the augment. A thick laserline is shown on the side with the augment, while a thin line is shown on the opposite side.

17-2 The Glenoid Guide Pin is available in a threaded or non-threaded version, depending on surgeon preference. Insert the 2.5mm Glenoid Guide Pin through the selected Sizer and Guide Handle.

Advance the pin until bicortical purchase is achieved.

Leaving the Guide Pin in the bone, slide the Sizer over the pin and visually check the position and orientation of the pin.

Note: In cases where the Sizer is difficult to remove from the glenoid, remove the Glenoid Sizer/Guide Handle from the Sizer and then grasp the Sizer with the Glenoid Trial/Implant Holder to remove.

Items used:

Glenoid Sizer – SZR-0990-815-XXX

Glenoid Sizer/Guide Handle – HDL-0990-816

2.5mm Glenoid Guide Pin, Threaded – GDW-0990-840 or

2.5mm Glenoid Guide Pins, Non-Threaded – GDW-0990-840NT

Step 18 ▪ Glenoid reaming

18-1 Prior to reaming, it is crucial to make a pilot hole to avoid a central bone protrusion from forming. To address this:

1. Attach the Glenoid Central Hole Drill Bit to the 2.8mm Drill Shaft and connect this assembly to the Hudson T-Handle.

2. Position this setup over the Guide Wire. Manually drill to remove central bone, ensuring the Angulator Reamer can sit flush on the glenoid surface. Do not remove excessive bone to avoid compromising glenoid guide pin fixation.

18-2 The AETOS◊ Shoulder System features the Angulator: an innovative glenoid reaming system that allows OR staff to quickly set the angle for version-correcting reaming to address glenoid deformity.

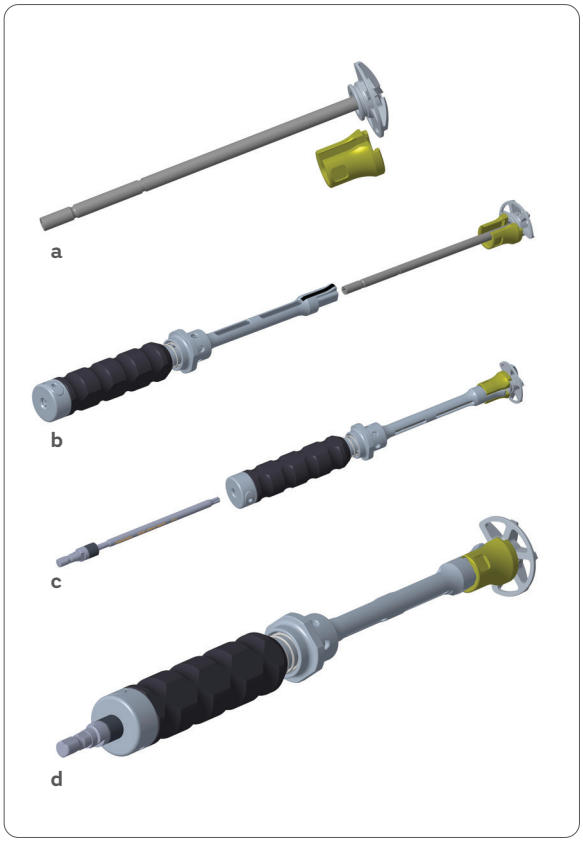
To assemble the Reamer:

a Select the Angulator that corresponds to the desired augment angle (0°, 5°, or 10°) and slide it in the groove of the Glenoid Ream Bit corresponding to the glenoid size selected in Step 17: Glenoid sizing*.

b Slide the assembled Angulator and Ream Bit through the distal end of the Glenoid Reamer Handle. Pull back on the Glenoid Reamer Handle collar to allow the Angulator and ream bit construct to fully seat into the Glenoid Reamer Handle.

c Insert the Glenoid Reamer Driver through the proximal end of the Glenoid Reamer Handle.

d Connect the assembled Reamer to power.



18-2a-d

*The sizes are color coded to efficiently identify the proper size for glenoid preparation steps.

Size	Color
XS	White
S	Yellow
M	Green
L	Blue

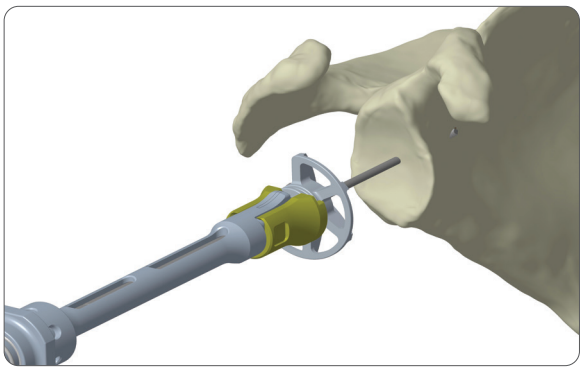
Items used:

Glenoid Reamer Angulator – RMB-0990-870-00/5F/10F

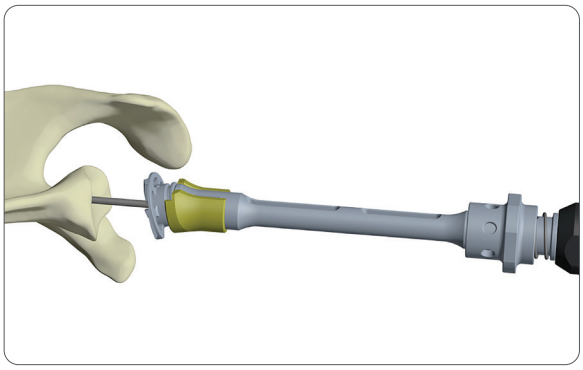
Glenoid Reamer Driver – SCR-0990-822

Glenoid Ream Bit – RMB-0990-818-00/1/2/3

Glenoid Reamer Handle – HDL-0990-821



18-2a



18-2b

18-2a Standard Glenoid (No Augment) – Slide the assembled Reamer over the 2.5mm Glenoid Guide Pin, making sure to start the Reamer prior to contacting the glenoid surface. Ream until proper concavity has been achieved congruentto the backside radius of the Glenoid Implant.

18-2b Augmented Glenoid: Slide the assembled Reamer over the 2.5mm Glenoid Guide Pin. Rotate the Reamer Handle and line up the thick laser line with the defect, then start the Reamer prior to contacting the glenoid surface. Ream the whole surface of the glenoid until proper concavity is reached.

If manual reaming is preferred, attach the assembled Reamer to the T-Handle in the instrument tray.

Note: Repeat Pilot Drill Technique as needed. If, during reaming, a central glenoid bone protrusion reoccurs, hindering proper reamer seating, repeat the pilot drill technique. Attach the Glenoid Central Hole Drill Bit to the 2.8mm Drill Shaft and manually drill to remove the protrusion.

Note: It is important to remember that over-reaming will decrease the surface area of the glenoid face, reduce the depth of the glenoid vault, and compromise subchondral bone. Excessive glenoid reaming should be avoided.

Items used:

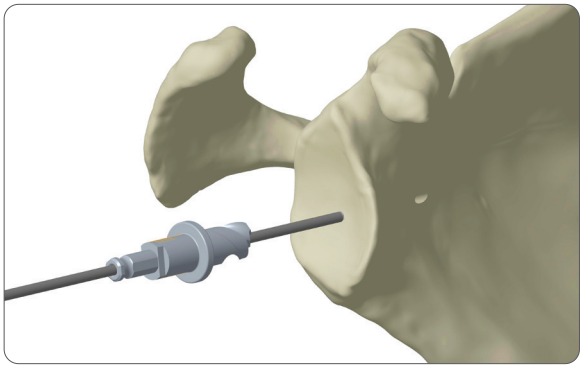
2.5mm Glenoid Guide Pin, Threaded – GDW-0990-840 or

2.5mm Glenoid Guide Pins, Non-Threaded – GDW-0990-840NT

Hudson T-Handle – HDL-0926-002

Glenoid Central Hole Drill Bit – DRL-0990-823

2.8mm Drill Shaft – DRS-0926-001



19-1

Step 19 ▪ Glenoid central drilling

19-1 After removing the Reamer, attach the Glenoid Central Hole Drill Bit to the 2.8mm Drill Shaft and connect to power. Slide the Drill over the Guide Pin and drill to the stop. Remove the Guide Pin using power.

Note: If hard bone drill is needed for the Glenoid prep the 8.0mm TITAN Baseplate Boss Drill can be used as a secondary drill following the AETOS◊ Glenoid Central Drill Bit.

Items used:

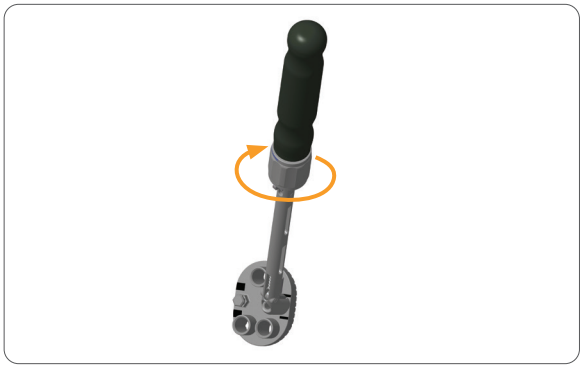
Glenoid Central Hole Drill Bit – DRL-0990-823

2.8mm Drill Shaft – DRS-0926-001

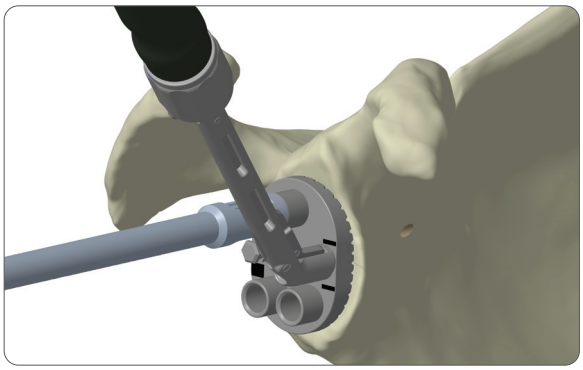
2.5mm Glenoid Guide Pin, Threaded – GDW-0990-840 or

2.5mm Glenoid Guide Pins, Non-Threaded – GDW-0990-840NT

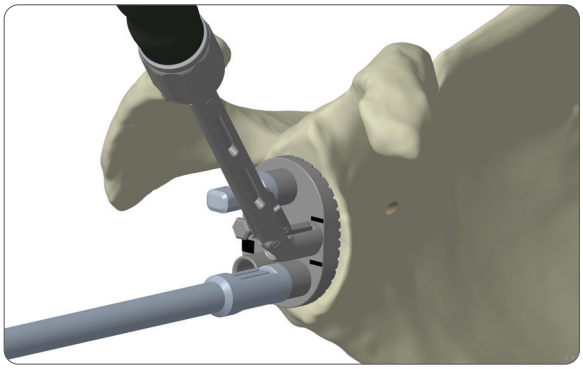
Baseplate Boss Drl- DRL-0960-075-01



20-1



20-2a



20-2b

Step 20 ▪ Peripheral hole drilling

20-1 Peripheral Glenoid Drill Guides are available in XS/S or M/L sizing, with backside geometry consistent with the degree of version correction in the Glenoid Implant (0°, 5°, or 10°).

Select the appropriate Glenoid Drill Guide and assemble it to the Glenoid Sizer/Guide Handle. The handle should be adjusted to an anterior superior orientation. Rotate the beveled knob on the top of the Handle to lock the Drill Guide in place.

Ensure the Drill Guide is aligned so that the two adjacent holes are inferior and place the Drill Guide into the central hole.

20-2 Attach a Glenoid Peripheral Drill Bit to the Self-retaining Drill Adaptor and connect to power. Drill the superior hole until the collar of the Drill Bit contacts the Guide. Pull the Self-retaining Drill Adaptor gently and the Drill Bit will remain in the hole and act as an anti-rotation peg. Repeat these steps for drilling the two inferior holes.

Remove the Drill Guide and Peripheral Drills using a Kocher.

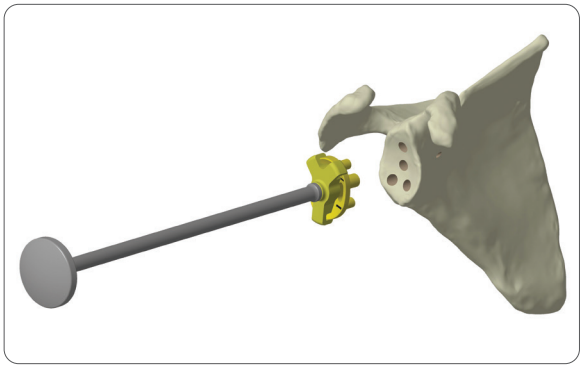
Items used:

Glenoid Drill Guide – DRG-0990-825-XXX

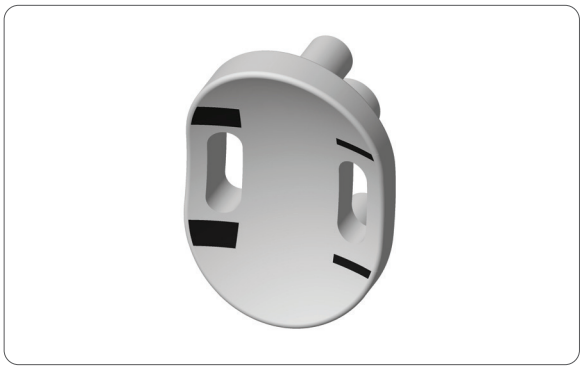
Glenoid Peripheral Drill Bit – DRL-0990-827

Self-Retaining Drill Adaptor – ADP-0980-105-00

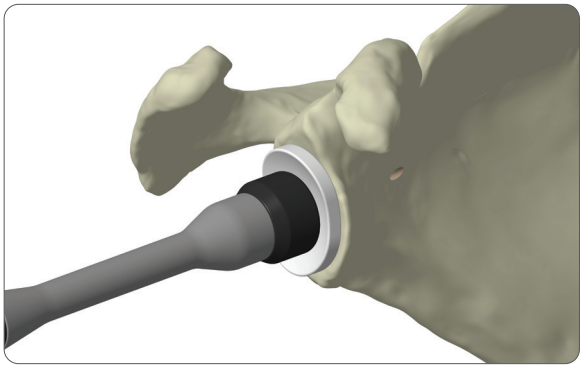
Glenoid Sizer/Guide Handle – HDL-0990-816



21-1a



21-1b



21-2

Step 21 ▪ Glenoid trialing

21-1 Select the Glenoid Inserter Tip from the Anatomic Caddy that corresponds to the size of the selected Glenoid Trial and assemble it to the Impactor Handle. Attach this to the Glenoid Trial and place the Trial into the prepared glenoid surface. Confirm stable seating of the Glenoid Trial on the prepared glenoid surface.

The sizes are color coded to efficiently identify the proper size for glenoid preparation steps.

Size	Color
XS	White
S	Yellow
M	Green
L	Blue

Note: For augmented Glenoids, the laser lines on the Trials indicate the location of the augment. A thick laser line is shown on the side with the augment, while a thin line is shown directly opposite the maximal augment.

21-2 Remove the Holder and impact the Trial onto the glenoid using the Glenoid/Humeral Liner Impactor. Visually verify that the Trial sits flush with the prepared glenoid surface through the slots in the Trial. Remove the Trial and irrigate the glenoid using pulsative lavage to remove blood and tissue debris from the drill holes.

Items used:

Glenoid Trial (Standard) – TRL-0990-834-XXX

Glenoid Trial (Augmented) – TRL-0990-833-XXX FL/R

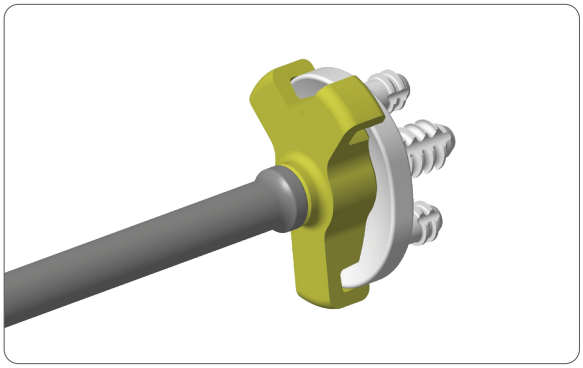
Glenoid Inserter Tip – INS-0990-830-00/1/2/3

Impactor Handle – IMH-0926-000

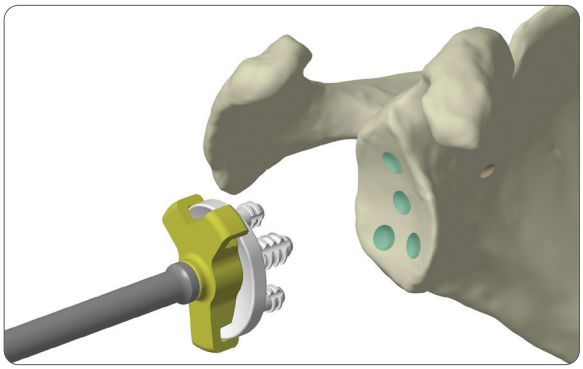
Glenoid/Humeral Liner Impactor – IMP-0990-836

Alternate TITAN Impactor:

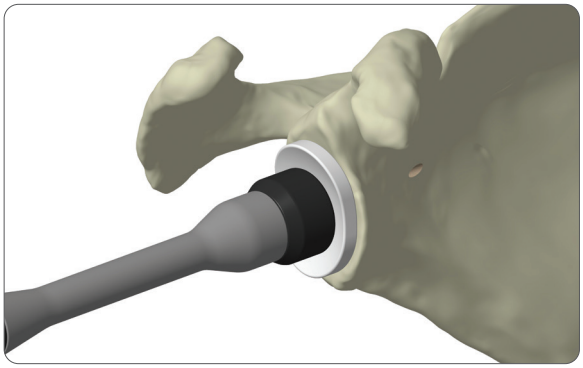
Glenoid Impactor – IMP-0920-064-001



22-1



22-2a



22-2b

Step 22 ▪ Glenoid Implantation and cement

22-1 Utilizing the same Glenoid Inserter Tip as used for the Trial, attach the definitive Glenoid Implant onto the Inserter.

The size of the Inserter Tips are color coded to allow you to efficiently identify the proper size for glenoid preparation steps.

Size	Color
XS	White
S	Yellow
M	Green
L	Blue

Mix cement using manual or syringe application. Place the cement into a 20 cc Catheter/Toomey syringe. Insert the tip and pressurize the cement into each of the peg holes.

22-2 Appropriately align the final component and impact the Implant with a mallet until there is complete seating with the prepared glenoid. It may be necessary to use the Glenoid/Humeral Liner Impactor to fully seat the Implant. Maintain pressure directly on the glenoid component until the cement has hardened.

Items used:

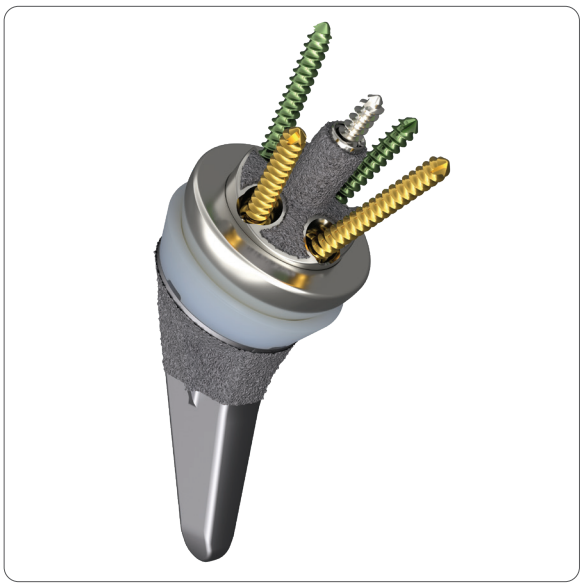
Glenoid Inserter Tip – INS-0990-830-00/1/2/3

Impactor Handle – IMH-0926-000

Glenoid/Humeral Liner Impactor – IMP-0990-836

Alternate TITAN Impactor:

Glenoid Impactor – IMP-0920-064-001



AETOS Meta Stem Reverse

Reverse Glenoid Overview

Note: The Reverse construct is only available for Meta Stem

Four Meta Stem sizes are available in the AETOS◊ Shoulder System. The AETOS Meta Stem design allows the Humeral Implant to be centered in the Metaphyseal cut surface. The in-lay collar sits flush with the humeral osteotomy and houses the locking mechanism for the reverse liner.

Reverse Liners

Humeral Liners and Spacer are offered in Small and Large options to correspond with the Metaphyseal size of the Humeral Stem component. The small Liners and Spacer must be used with Stem sizes 1-2; the large Liners and Spacer must be used with Stem sizes 3-4.

The 9mm Metal Spacer can be used with the +0, +3, or +6 Humeral Liner of any diameter to increase joint tensioning as required.

Glenosphere Articulation	Small (Stem sizes 1-2)	Large (Stem sizes 3-4)	Standard and Retentive constraint	+0, +3, +6 and +9mm heights
34mm	X		X	X
38mm	X	X	X	X
42mm	X	X	X	X

Eccentric Post Baseplate

Centered Baseplate

Reverse Glenoid Implants

The AETOS◊ Reverse Glenoid Components have been designed to be compatible with the Meta Stem humeral components of the AETOS Shoulder System.

Baseplates

Eccentric Post Baseplate

The Eccentric Post Baseplate may be used with a Post Extension if additional fixation is required. Central Screw fixation is not compatible with the Eccentric Post Baseplate. The Eccentric Post Baseplate's post is offset 4mm.

Centered Baseplate

The Centered Baseplates may be used with a Central Screw or Post Extension if additional fixation is required and are available in the following options:

- No Augment
- 10°Full Wedge Augment
- 15° Full Wedge Augment

Eccentric Baseplate

Centered Baseplate

10° Full Wedge Baseplate

15° Full Wedge Baseplate

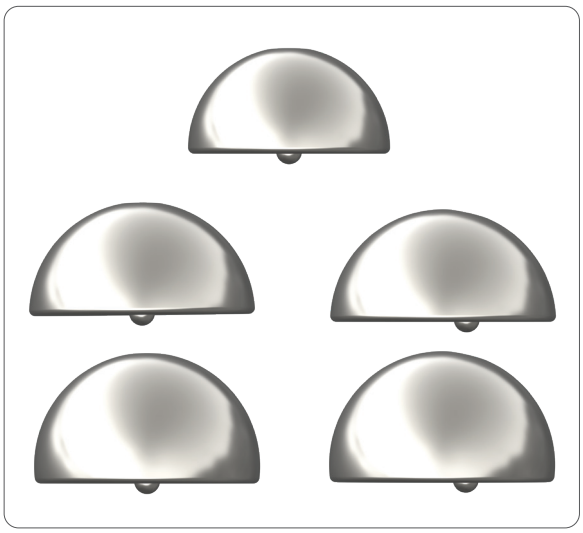
7mm lateralization | **8mm lateralization**

Post Extension

Note: AETOS Lateralization with a Concentric, 0mm Glenosphere:
7mm: Eccentric, Centered, and 10°
8mm: 15°

Post Extension

Any Baseplate may be used with a Post Extension of 10mm or 15mm to provide a longer post with increased porous coated surface area. Note that by using a Post Extension, a Central Screw cannot be used.



Glenospheres

Glenospheres are available in a 34, 38, or 42mm diameters

- 34mm Glenospheres are available in +1mm lateralization
- 38mm and 42mm Glenospheres are available in:
  - Concentric, 0mm Lateralized
  - Concentric, +3mm Lateralized
  - Eccentric, 0mm Lateralized
  - Eccentric, +3mm Lateralized

AETOS◊ Reverse Configuration Chart

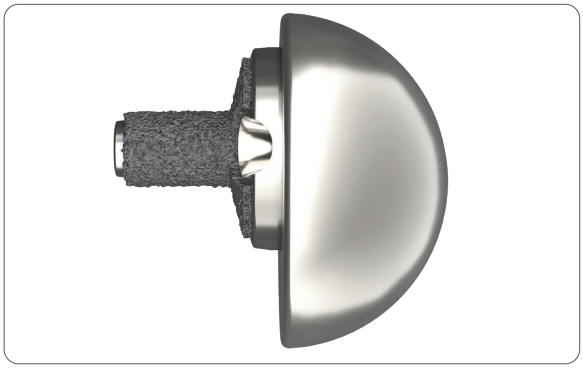
AETOS Shoulder System has certain combinations that may limit range of motion or cause mechanical impingement between the Baseplate and Humeral Liner.

The combinations highlighted in teal are cleared combinations. The combinations highlighted in yellow have not been cleared due to possible limitation in range of motion or mechanical impingement between the Implant construct.

	AETOS Baseplate with Liner Combination							
Baseplate Liner	**Concentric**		**Eccentric**		**15° Full Wedge**		**10° Full Wedge**	
	Standard	**Retentive**	**Standard**	**Retentive**	**Standard**	**Retentive**	**Standard**	**Retentive**
38mm +0mm Concentric								
42mm +0mm Concentric								
38mm +0mm Eccentric								
42mm +0mm Eccentric								
34mm +1mm Concentric								
38mm +3mm Concentric								
42mm +3mm Concentric								
38mm +3mm Eccentric								
42mm +3mm Eccentric								

Cleared Combinations

Non-Cleared Combinations



Centered Baseplate with Eccentric Glenosphere: 4mm of Eccentricity

The AETOS Baseplates and 38mm Glenospeheres have been designed to be compatible with the humeral component of the TITAN Shoulder System or the Meta Stem humeral component of the AETOS Shoulder System. Reference the appropriate surgical technique to prepare the humerus for the desired system.

TITAN Humeral Liners:

Available in Standard and Retentive options, these liners come in four thicknesses: +0mm, +3mm, +6mm, +9mm. Please note the TITAN Liners are only offered in 38mm articulations and thus must be coupled with a 38mm AETOS Glenosphere in accordance with the chart below.

TITAN Reverse Bodies:

Porous coated Titanium for press-fit applications offered in three different height options; 30mm (Small), 35mm (Standard), and 40mm (Large).

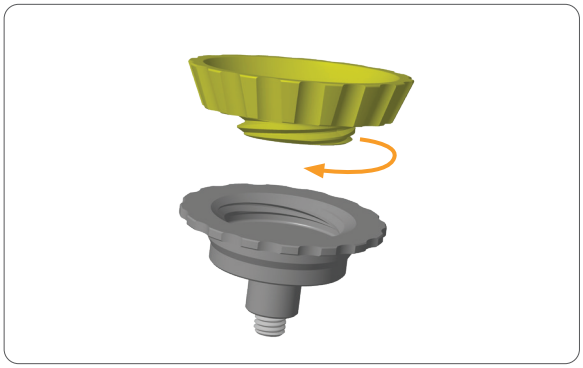
TITAN Humeral Stems:

Titanium for press-fit applications, are offered in 11 sizes ranging from 6-16mm in 1mm increments.

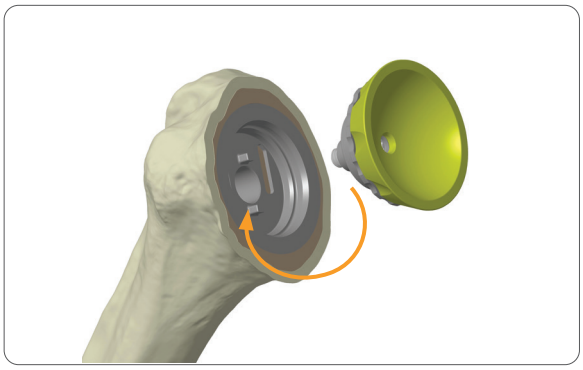
	AETOS Baseplate with TITAN Liner Combination							
Baseplate Liner	**Concentric**		**Eccentric**		**15° Full Wedge**		**10° Full Wedge**	
	Standard	**Retentive**	**Standard**	**Retentive**	**Standard**	**Retentive**	**Standard**	**Retentive**
38mm +0mm Concentric								
38mm +0mm Eccentric								
38mm +3mm Concentric								
38mm +3mm Eccentric								

Cleared Combinations

Non-Cleared Combinations



23-1



23-2

Step 23: Reverse humeral liner trialing

Note: The 34mm diameter Liner is not available in larger Stems (sizes 3-4).

23-1 The liner trials are a two-part assembly comprised of:

1. An Articular Component that corresponds to the:
   - Selected Glenosphere size (34mm, 38mm, or 42mm)
   - Humeral Liner Constraint Options: Standard or Retentive.
2. A Height Offset that corresponds to the desired height of the Liner (+0mm, +3mm, +6mm, +9mm, +12mm, or +15mm)

Select the Articular Trial component that corresponds to the selected Glenosphere size and level of constraint desired. Select the appropriate Height Offset Trial based on the required deltoid tensioning. Thread the Articular component to the Height component using dry gloves.

Tip: If the threads of the Articular and Height Offset Trial components do not immediately align when connecting them, turn the Articular Trial counter-clockwise until it drops into the Height Offset Trial; then twist clockwise to lock.

23-2 Remove the Cut Protector. Place the Trial construct into the Compactor or definitive Stem and thread on by hand and/or with the T-20 Driver.

Perform a trial reduction of the shoulder joint to assess stability of the Implant construct and range of motion. If tension is inadequate, additional Liner thickness options are available, up to 9mm. If additional stability is required, Retentive Poly Liner options are available in the same thickness as the Standard Poly Liners. Additional trial reductions should be performed to confirm adequate stability if the trial components are changed.

The Liner Trials can be removed from the Compactor or Stem by hand or with the T-20 Driver. Remove the Compactor using the Stem Inserter.

Items used:

Humeral Liner Trial, Articular – TRL-0990-841-XXA/AR

Humeral Liner Trial, Height Offset – TRL-0990-844-0XH

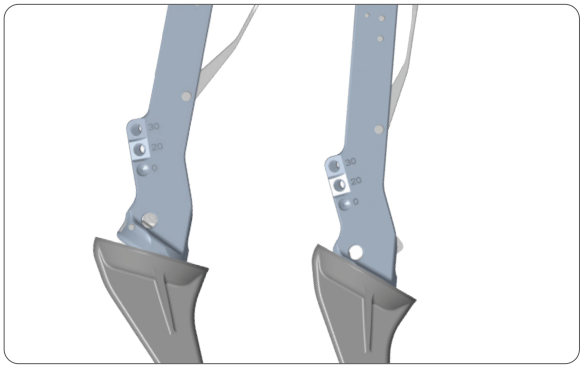
T-20 Driver for Peripheral Screws – SCR-0990-862

Stem Compactor – COM-0990-808-01/2/3/4

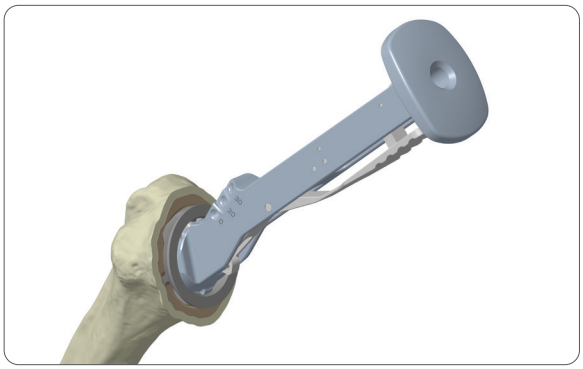
Step 24 ▪ Reverse humeral final Implantation

24-1 The definitive humeral Implants can be assembled in-situ or on the back table.

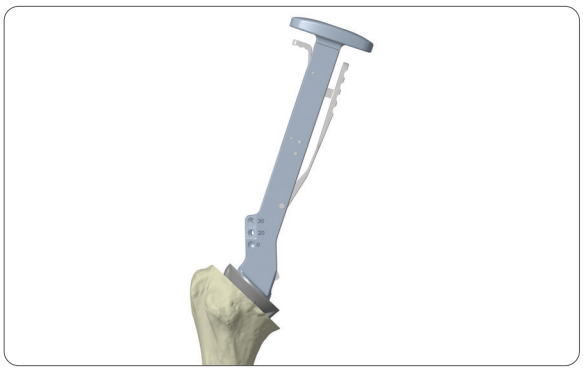
Glenosphere Articulation	Small (Stem sizes 1-2)	Large (Stem sizes 3-4)	Standard and Retentive constraint	+0, +3, +6, and +9mm heights
34mm	X		X	X
38mm	X	X	X	X
42mm	X	X	X	X



24-2a



24-2b



24-2c

Note: The definitive Liner Implants are offered in small and large options to correspond with the Metaphyseal size of the Humeral Stem component. Small Liners must be used with Stem sizes 1-2; large Liners must be used with Stem sizes 3-4.

24-2

In-Situ assembly

With clean gloves, open the definitive Humeral Stem. Select the appropriate Stem Inserter:

- Small Stem Inserter: Stem sizes 1-2
- Large Stem Inserter: Stem sizes 3-4

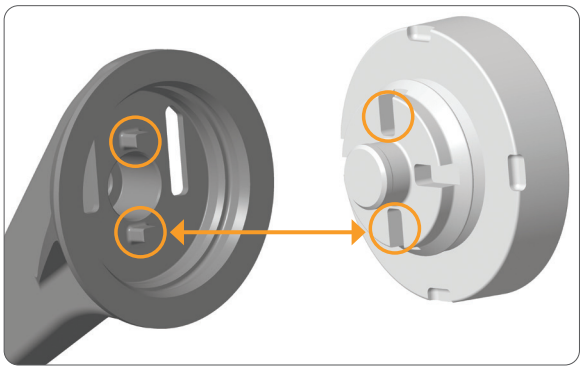
To attach the Definitive Stem to the Stem Inserter:

1. Angle the Stem Inserter and insert the protrusion at the distal end of the Inserter into the rim of the Stem cavity.
2. With the instruments connected, angle the Inserter to be flush with the Stem cavity and push the lever to lock the Compactor to the Stem Inserter.

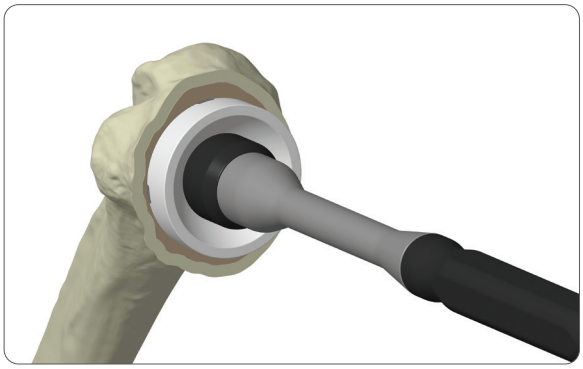
Align the Implant with the prepared medullary canal and impact it. The Version Rod may be used on the Stem Inserter to help align the Stem in the correct retroversion. It is recommended to leave the Implant slightly proud to facilitate assembly with the Liner. Remove the Stem Inserter from the Stem by pushing the lever on the Stem Inserter in and using your finger to lift the latch to disengage the Stem Inserter.

24-3 If the Humeral Liner thickness was trialed with a height offset of +9mm or greater, a +9mm Humeral Liner Spacer should be Implanted on the Stem prior to Liner Implantation. Place the central post of the definitive Spacer into the clean and dry female taper of the humeral Stem. Ensure the protrusions of the Stem are aligned with the cutouts in the bottom of the Spacer. To do this, rotate the Spacer until the laser marks on the Stem visually line up with the laser marks on the Spacer and it drops slightly into the Stem. Impact the Spacer at a 90° angle to the osteotomy with the Humeral Spacer Impactor until it is fully seated. A Humeral Liner should be placed on top of the Spacer corresponding to the total amount of height buildup selecting during trialling; i.e. place a +6mm Humeral Liner on the +9mm Humeral Spacer to achieve +15mm of buildup. Reference the chart below for an overview of which Implants to use to obtain the desired height.

Implants to use	Trialled height		
	9mm	12mm	15mm
+0mm Liner	X		
+3mm Liner		X	
+6mm Liner			X
+9mm Spacer	X	X	X



24-4a



24-4b

Note: Do not use a 9mm reverse liner with a 9mm spacer. This is not a cleared combination.

24-4 Place the central post of the definitive Liner into the clean and dry female taper of the humeral Stem or Spacer. Ensure the protrusions on the Stem or Spacer are aligned with the cutouts in the bottom of the Liner. To do this, rotate the Liner until the laser marks on the Stem or Spacer visually line up with the cutout slots in the Liner and it drops slightly into the Stem. Impact the Liner at a 90° angle to the osteotomy with the Glenoid/Humeral Liner Impactor until it is fully seated.

Visually inspect the liner after impaction to ensure full seating. Additionally, a pull test may be performed by hand to ensure the liner has fully engaged.

Items used:

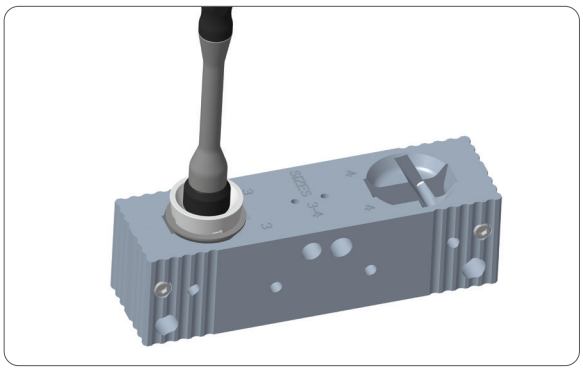
Stem Inserter – INS-0990-804S/L

Version rod – VER-0990-803

Glenoid/Humeral Liner Impactor – IMP-0990-836

Alternate TITAN Impactor:

Liner Impactor – IMP-0960-071-01



24-5

Back table assembly

24-5 Place the definitive Stem in the hole corresponding to its size in the Impaction Stand. If a spacer will be used, assemble it according to the instructions in step 24-3. Place the central post of the Humeral Liner into the female taper of the Stem or Spacer. Ensure the protrusions on the Stem or Spacer are aligned with the cutouts in the bottom of the Liner. To do this, rotate the Liner until the laser marks on the Stem or Spacer visually line up with the cutout slots in the Liner and it drops slightly into the Stem or Spacer. Impact it using the Glenoid/Humeral Liner Impactor and a mallet. A pull test may be performed by hand to ensure the liner has fully engaged.

Note: If the Stem feels tight in a specific slot on the Impaction Stand, sizes 1-3 can be moved up to the next available size in the impaction block.

24-6 Remove the assembled components from the Impaction Stand and place the assembly into the prepared bone, impacting with the Glenoid/Humeral Liner Impactor and a mallet to seat the Stem flush with the bone. Visually inspect liner after impaction to ensure full seating.

Reduce the joint and perform a final assessment of joint stability and range of motion.

Items used:

Impaction Stand – STD-0990-837

Glenoid/Humeral Liner Impactor – IMP-0990-836

Stem Inserter – INS-0990-804S/L

Version rod – VER-0990-803

Humeral Spacer Impactor – IMP-0990-838

Alternate TITAN Impactor:

IMP-0960-071-01 Liner Impactor

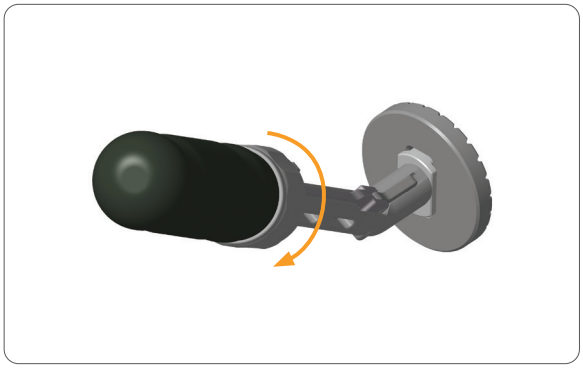
Reverse Glenoid Preparation

Step 25 ▪ Glenoid exposure

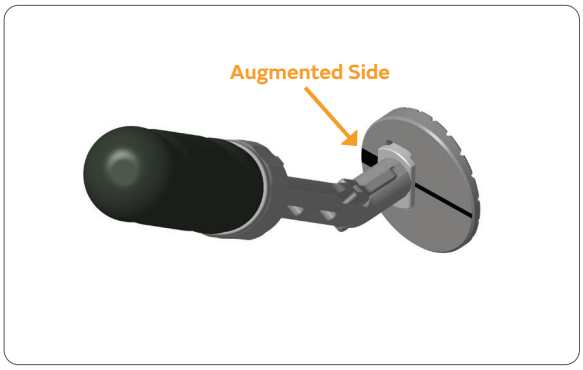
25-1 Place a Fukuda retractor in the joint to retract the humerus posteriorly. Identify the axillary nerve by digital palpation and place a blunt Hohmann retractor between the axillary nerve and the subscapularis.

Dissect the inferior capsule from the inferior border of the subscapularis. Release the capsule above the blunt Hohmann retractor to the glenoid margin. Release the rotator interval to the base of the coracoid to complete the superior and inferior release of the subscapularis. Release the capsule between the labrum and the subscapularis, if still present, leaving the labrum attached to the glenoid.

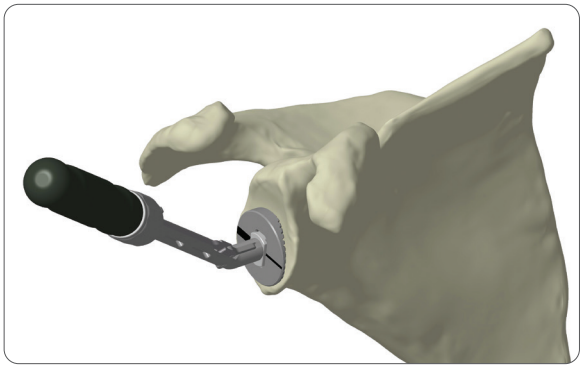
With the subscapularis circumferentially released, the remnant capsule on the undersurface of the subscapularis can either be resected or retained to bolster the bulk of the subscapularis. Place the subscapularis with its attached tuberosity fragment behind a retractor. Grasp the remaining biceps tendon and excise the posterosuperior labrum from within the joint to the inferior labrum. Similarly, excise the anterosuperior labrum to the inferior labrum. This leaves a small fragment of inferior labrum with attached capsule that needs to be released. Protect the axillary nerve with an index finger and release the inferior capsule from the labrum. After release of the inferior capsule, exposure to glenoid is improved. Glenoid exposure is complete once the inferior capsule is released and the remnant labrum is excised.



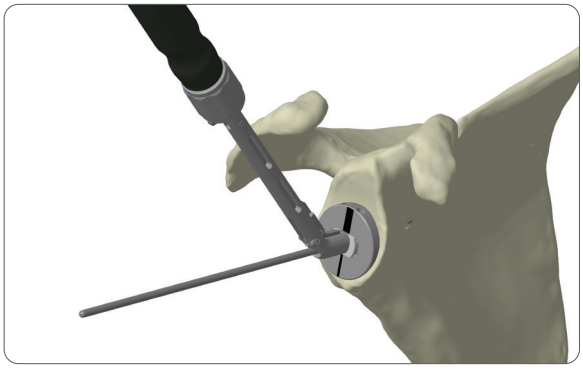
26-1a



26-1b



26-2a



26-2b

Step 26 – Glenoid sizing and pin placement

26-1 There are four Baseplate Pin Guides in the AETOS system that correspond to the Baseplate options in the system. Select the Guide that corresponds to the desired Baseplate and connect its Metal post to the distal end of the Glenoid Sizer/Guide Handle. With the Handle positioned in the anterior superior direction, rotate the knob at the top of the Handle to lock the Guide in place.

Note: For augmented Baseplates, the laserlines on the Pin Guides indicate the location of the augment. A thick laserline is shown on the side with the augment, while a thin line is shown on the opposite side.

26-2 Place the Pin Guide in contact with the native glenoid and position the Guide flush with the inferior border of the glenoid. Placement may be adjusted to allow for the post of the Baseplate to be positioned for adequate fixation of peripheral Baseplate Screws. Positioning should also allow for the chosen Glenosphere to be flush or below the inferior glenoid rim to minimize impingement of the humeral Poly Liner with the glenoid rim or lateral scapular border during humeral adduction.

Advance the 2.5mm Glenoid Guide Pin through the selected Pin Guide until bicortical purchase is achieved. The Glenoid Guide Pin is available in a threaded or non-threaded version, depending on surgeon preference.

Note: The Pin Guides are designed with 0° of inferior inclination built in. If 10° of inferior inclination is desired, you may use the 10° augment sizer with the wedge oriented superiorly to achieve this.

Slide the Guide over the Pin to remove, leaving the Guide Pin in the bone. Visually check the position and orientation of the Pin.

Items used:

Baseplate Pin Guide – GWG-0990-845/6/7

Glenoid Sizer/Guide Handle – HDL-0990-816

2.5mm Glenoid Guide Pin, Threaded – GDW-0990-840 or

2.5mm Glenoid Guide Pins, Non-Threaded – GDW-0990-840NT

Step 27 ▪ Glenoid reaming

27-1 Prior to reaming, it is crucial to make a pilot hole to avoid a central bone protrusion from forming. To address this:

1. Attach the Central Post Drill Bit to the 2.8mm Drill Shaft and connect this assembly to the Hudson T-Handle.

2. Position this setup over the Guide Wire. Manually drill to remove central bone, ensuring the Angulator Reamer can sit flush on the glenoid surface. Do not remove excessive bone to avoid compromising glenoid guide pin fixation.

27-2 The AETOS◊ System features the Angulator: an innovative glenoid reaming system that allows OR staff to quickly set the angle for version-correcting reaming to address glenoid deformity.

To assemble the Reamer:

a Select the Angulator that corresponds to the desired augment angle (0°, 10°, or 15°) and slide it in the groove of the Glenoid Ream Bit corresponding to the selected Baseplate.

b Slide the assembled Angulator and Ream Bit through the distal end of the Glenoid Reamer Handle. Pull back on the Glenoid Reamer Handle collar to allow the Angulator and ream bit construct to fully seat into the Glenoid Reamer Handle.

c Insert the Glenoid Reamer Driver through the proximal end of the Glenoid Reamer Handle

d Connect the assembled Reamer to power.

27-3 Centered or Eccentric Baseplate (No Augment) – Slide the assembled Reamer over the 2.5mm Glenoid Guide Pin, making sure to start the Reamer prior to contacting the glenoid surface. Ream until proper concavity has been achieved congruent to the backside radius of the Baseplate. The spherical radius of the Reamer matches the backside of the Baseplate and sufficient reaming will allow the Baseplate to fully seat in the glenoid.

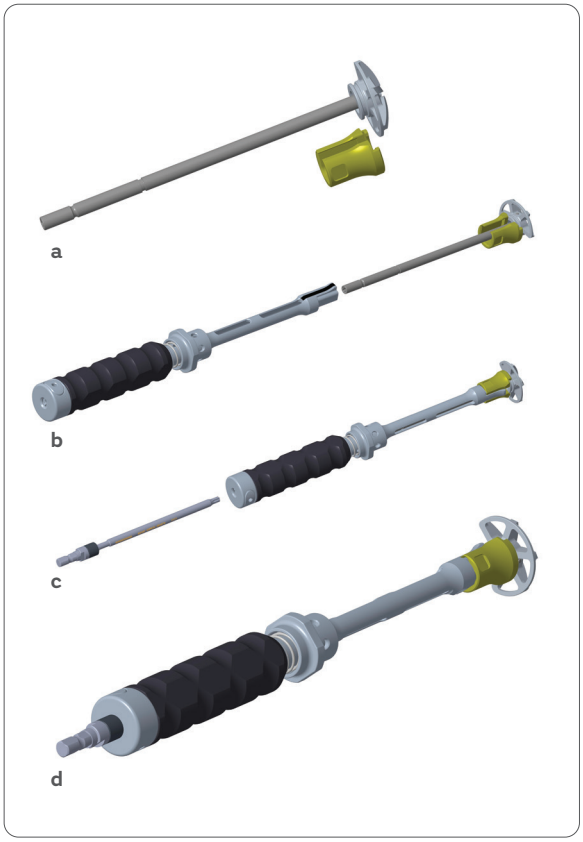
Items used:

Glenoid Reamer Angulator – RMB-0990-870-00/10F/15F

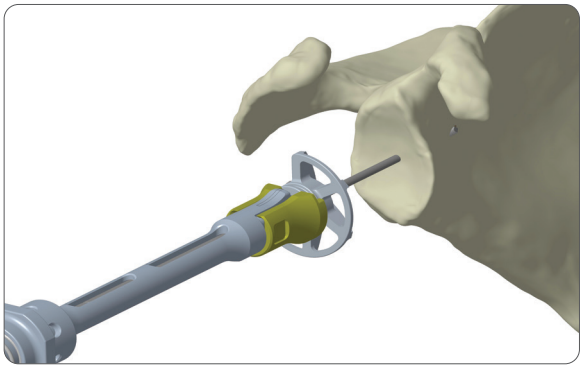
Glenoid Reamer Driver – SCR-0990-822

Glenoid Ream Bit – RMB-0990-818-R/RE

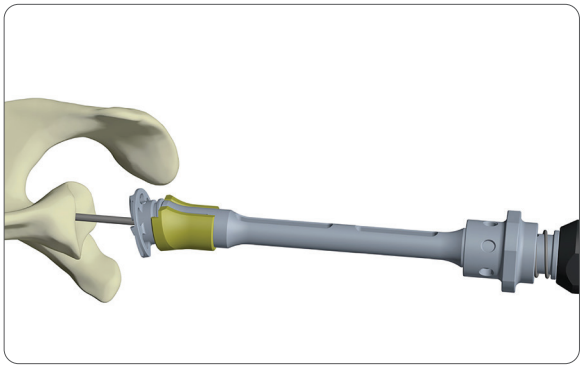
Glenoid Reamer Handle – HDL-0990-821



27-2a-d



27-3a



27-3b

Augmented Baseplate: Slide the assembled Reamer over the 2.5mm Glenoid Guide Pin. Rotate the Reamer Handle and line up the thick laser line with the defect, then start the Reamer prior to contacting the glenoid surface.

Note: Repeat Pilot Drill Technique as needed. If, during reaming, a central glenoid bone protrusion reoccurs, hindering proper reamer seating, repeat the pilot drill technique. Attach the Central Post Drill Bit to the 2.8mm Drill Shaft and manually drill to remove the protrusion.

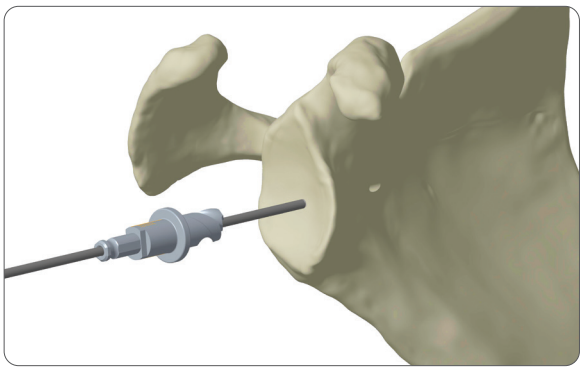
Note: It is important to remember that over-reaming will both decrease the surface area of the glenoid face and reduce the depth of the glenoid vault. Excessive glenoid reaming should be avoided.

Items used:

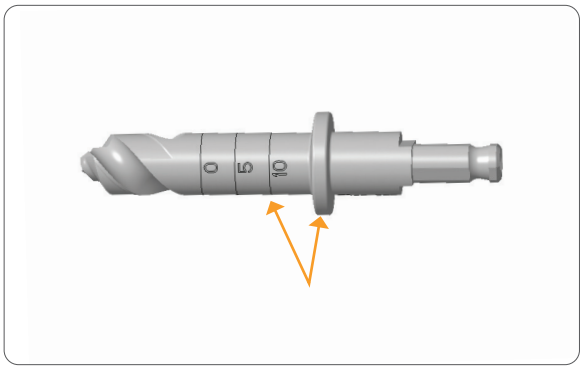
Hudson T-Handle – HDL-0926-002

2.8mm Drill Shaft – DRS-0926-001

Central Post Drill Bit – DRL-0990-849S



28-1



28-1b

Step 28 ▪ Glenoid central drilling and optional post extension preparation

28-1 Two Drill Bits are available in the system to prepare the glenoid for the Baseplate central post:

- Central Post Drill Bit – Always used with the Centered Baseplates and with the Eccentric Post Baseplate when no Post Extension will be used.
- Central Post Extension Drill Bit – Used with the Centered or Eccentric Post Baseplate when a Post Extension (10mm or 15mm) will be used.

With the Guide Pin still in place, attach the selected Central Hole Drill Bit to the 2.8mm Drill Shaft and connect to power.

28-1a Central Post Drill Bit: Slide the drill over the Guide Pin and drill to the stop. Remove the Guide Pin.

28-1b Central Post Extension Drill Bit: Based on the length of the post extension, the central hole should be drilled to the length of the extension chosen. Laser marks on the central drill allow you to ensure the proper length of drilling.

Slide the drill over the Guide Pin and drill until the “10” line is reached for 10mm post extension or drill to the shoulder for a 15mm post extension. If preparing the glenoid for an augment, reference the side with the defect when measuring the post.

Note: Central Post Drill Bit Cannulated 8.0mm and Central Post Drill Bit Cannulated 8.5mm are available to be used in hard bone situations following the use of the Central Post Drill, step 28-1a.

Note: The TITAN Baseplate Boss Drill may be used in hard bone situations. The AETOS◊ Central Post Drill Bit must be used prior to using the TITAN Baseplate Boss Drill. As an alternative, the 8.0mm or 8.5mm Universal Endoscopic drill can be used while taking special care not to drill beyond 16mm deep.

Note: Utilizing a Post Extension will not allow a Central Screw to be used.

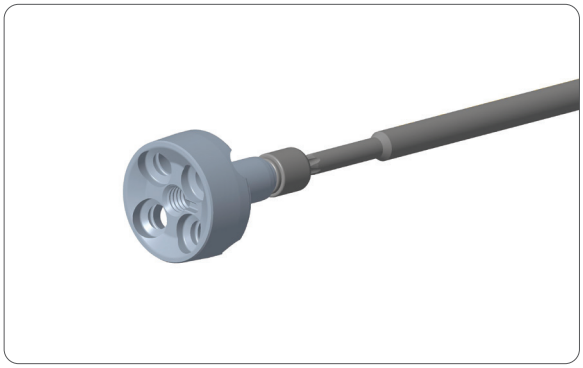
Once drilled, remove the Drill Bit and the Glenoid Pin.

Special Order:

Baseplate Boss Drill – DRL-0960-075-01
8mm Endoscopic Drill – 013661
8.5mm Endoscopic Drill – 7207494
Central Post Drill Bit Cannulated 8.0mm – DRL-0990-849L
Central Post Drill Bit Cannulated 8.5mm – DRL-0990-84XL

Items used:

Central Post Drill Bit – DRL-0990-849S or
Central Post Extension Drill Bit – DRL-0990-849
2.8mm Drill Shaft – DRS-0926-001
2.5mm Glenoid Guide Pin, Threaded – GDW-0990-840 or
2.5mm Glenoid Guide Pins, Non-Threaded – GDW-0990-840NT



29-1

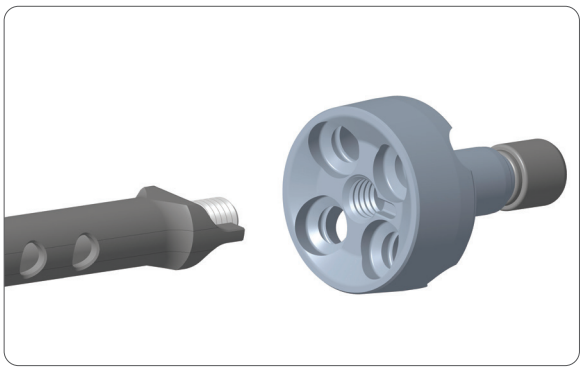
Step 29 ▪ Baseplate Implantation

29-1 Select the Definitive Baseplate that corresponds to the glenoid preparation performed. If a Post Extension will be used, screw it to the backside of the Baseplate post utilizing the T-20 Driver.

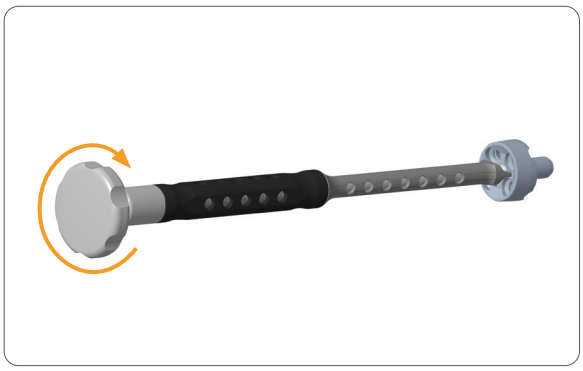
29-2 Assemble the Baseplate to the Baseplate and Glenosphere Inserter:

a Align the nub on the Inserter with the notch in the Baseplate. The nub allows rotational control while impacting.

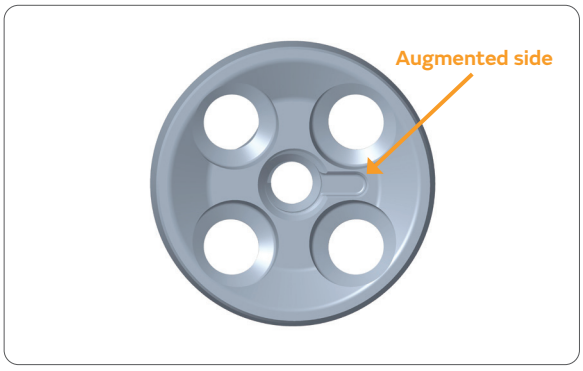
b Thread the Inserter into the Baseplate using the handle at the top.



29-2a



29-2b



29-2c

Note: If using an augmented Baseplate, the notch points to the augmented side of the Baseplate. Additionally, the thick laser mark line on the Inserter also points to the augmented side of the Baseplate.

29-3 Impact the Baseplate assembly into the prepared glenoid until the backside of the Baseplate is fully seated on the glenoid. Unthread the Baseplate and Glenosphere Inserter to remove and perform a visual check to ensure proper positioning and seating of the Baseplate.

29-3

Warning: Do not use the Inserter Handle as a method of testing fixation of the Baseplate, as this will generate a large lever arm on the Baseplate and may compromise final press fit and fixation.

Items used:

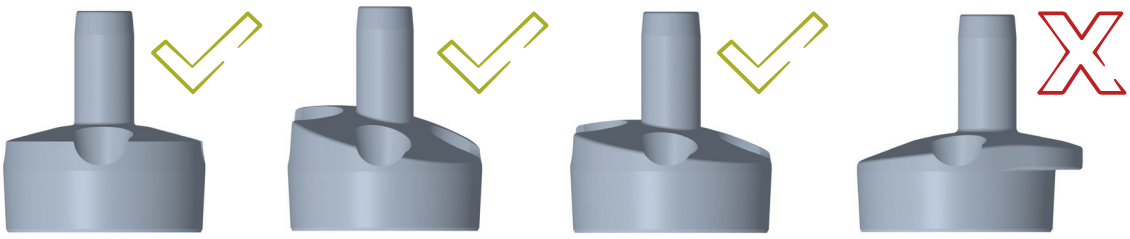
Baseplate and Glenosphere Inserter – INS-0990-861

T-20 driver for Peripheral Screws – SCR-0990-862

Step 30 ▪ Baseplate Central Screw (centered Baseplates only)

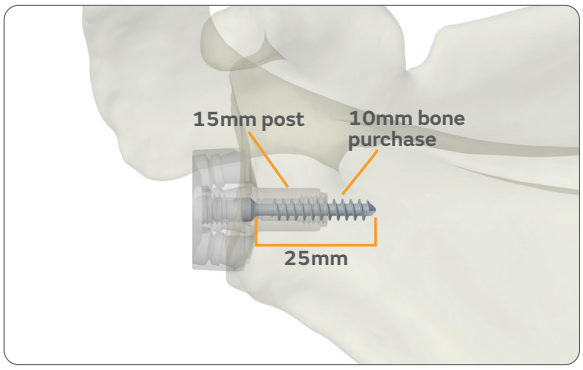
30-1 A Central Screw can be placed in the central hole when a Centered Baseplate is used.

Note: The Central Screw cannot be used if a Post Extension is connected to the Baseplate. The Central Screw can only be used with the Centered Baseplates (0, 10, or 15°), and not the Eccentric Post Baseplate

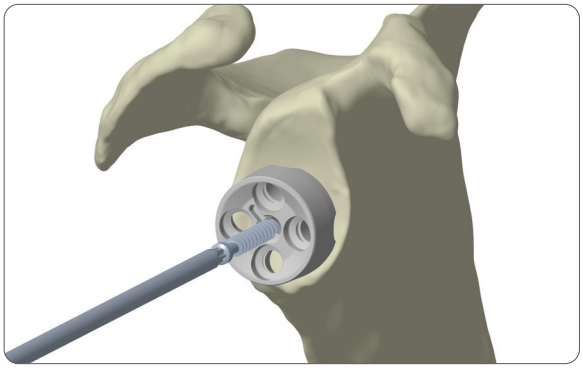


Centered Baseplate | 15° Full Wedge Baseplate | 10° Full Wedge Baseplate | Eccentric Baseplate

30-1a



30-1b



30-1c

The Central Screw is available in 7 lengths (25-55mm in 5mm increments).

Note: The length of the Screw refers to the distance of the Screw located into the bone beyond the reamed surface. To calculate the length of Screw engaged in bone subtract 15mm (the length of the Baseplate post) from the Screw length; i.e., a 25mm Screw has 10mm of bone purchase.

There is no need to drill for the Central Screw as the Glenoid Guide Wire has sufficiently prepared the bone to receive the Screw. Use the Central Screw Depth Gage to assess optimal screw length.

Select the appropriate length Screw and insert it into the Baseplate center hole with the T-15 Star Driver assembled to the AO Quick Connect Handle.

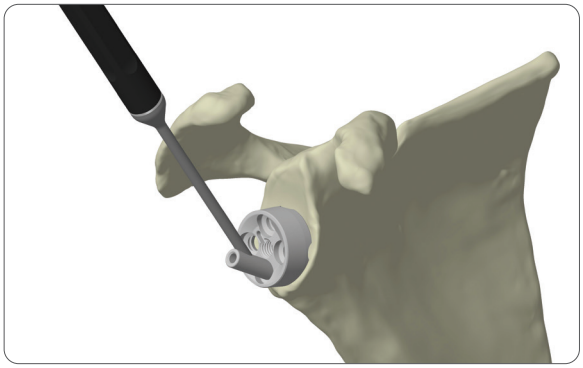
Note: The Screws should not be tightened using a power driver.

Items used:

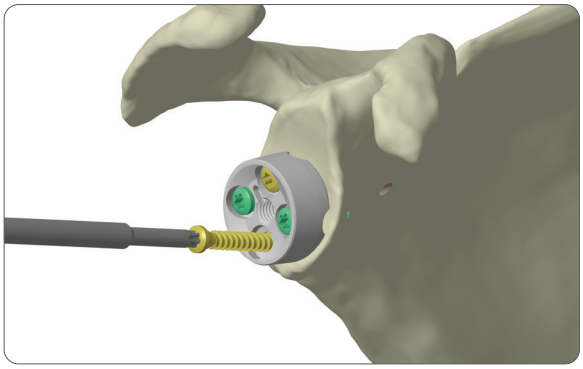
AO Quick Connect Handle – G107992B

T-15 Star Driver – SCR-0961-065-01

Central Screw Depth Gauge – DPT-0990-858



31-1



31-2

Step 31 ▪ Peripheral Screws Implantation

31-1 The AETOS◊ Shoulder System offers two types of variable angle Baseplate Peripheral Screws available in 8 lengths (15-50mm in 5mm increments):

- 4.5mm Compression Screws (Green)
- 4.5 mm Locking Screws (Gold)

Place the Peripheral Screw Drill Guide into the posterior peripheral Screw hole of the Baseplate and angle it for maximum fixation. Use the 3mm Diameter Drill Bit for 4.5mm Screws on power and drill bicortically. The length of the Screw is indicated on the Drill Bit by laser markings. The Peripheral Screw Depth Gauge can also be used to assess optimal screw length directly through the Baseplate.

31-2 The appropriate 4.5mm Screw is introduced into the drilled hole using the T-20 Driver for Peripheral Screws and the AO Quick Connect Handle. The compression Screws should be placed prior to the locking Screws.

Note: Do not fully tighten the initial Compression Screw until the second Screw is placed to prevent rocking of the Baseplate.

The anterior, superior, inferior Screw holes are filled in a similar manner, taking care to drill and places Screws in the optimal bone stock and obtaining bicortical purchase when possible.

When using a Centered Baseplate with a Center Screw, re-tighten the Central Screw prior to the placement of the locking Screws as additional compression may have occurred during Compression Peripheral Screw placement.

Note: The Screws should not be tightened using a power driver.

Note: The length of the Screw refers to the distance of the Screws located into the bone beyond the reamed surface, less the height of the Baseplate face. The most superior and inferior peripheral Baseplate holes must be filled with a Locking Screw. The anterior and posterior Baseplate holes must also be filled and can accommodate a Compression or Locking Screw.

Items used:

AO Quick Connect Handle – G107992B

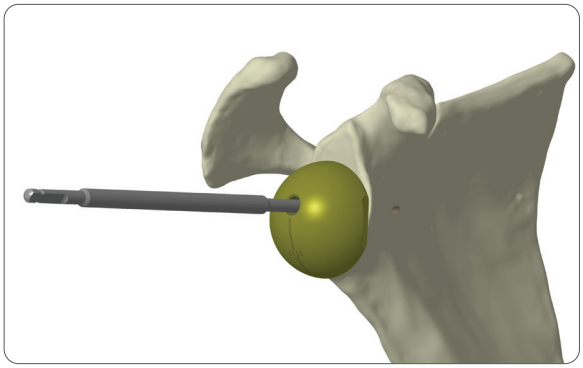
T-20 Driver for Peripheral Screws – SCR-0990-862

Peripheral Screw Depth Gauge – DPT-0990-857

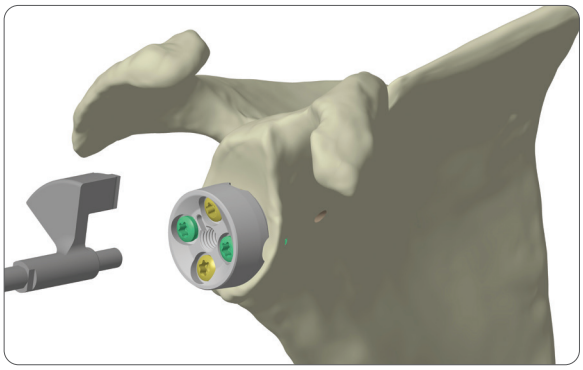
Peripheral Screw Drill Guide – DRG-0990-852

3mm Diameter Drill Bit for 4.5mm Screws – DRL-0990-856

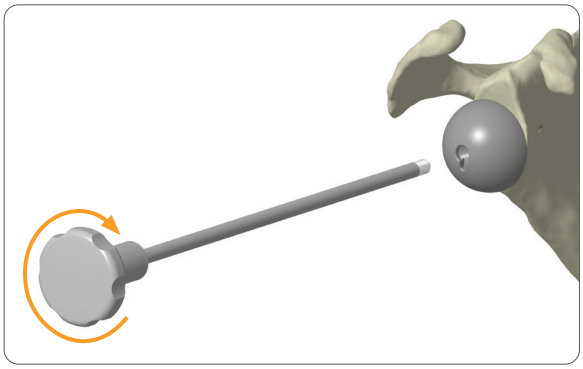
T-15 Star Driver – SCR-0961-065-01



32-1



32-2



32-3

Step 32 ▪ Glenosphere trial and Implantation

32-1 Choose the desired Glenosphere Trial and thread it onto the Baseplate, using the T-20 Driver to guide the Trial to the Baseplate and Screw in the retaining Screw. Eccentric Trials have a laser mark which corresponds to the more eccentric side. The shoulder can then be reduced to assess the deltoid tension and stability of the construct.

Note: The T-15 Driver can be used as a counter-torque tool if needed during Glenosphere Trial Insertion. To do this place the T-15 Driver in the second hole on the spherical surface of the Trial.

32-2 After selection of the appropriate Glenosphere utilizing the Glenosphere Trials, unthread and remove the Glenosphere Trial. Attach a Peripheral Glenoid Reamer to the 2.8mm Drill Shaft and the Hudson T-Handle and manually ream to clear any boney protrusions around the circumference of the Baseplate. The Standard Peripheral Reamer will clear the amount of bone corresponding to a 38mm Concentric Glenosphere; the Small and Large reamers correspond to a 34mm and 42mm Glenosphere respectively. If an Eccentric Glenosphere is chosen, any excess bone remaining on the inferior of the glenoid after peripheral reaming may be removed with a rongeur.

Note: Peripheral Reaming and cleaning the Morse Taper are critical to promote Glenosphere engagement. Ensure that both the male and female components of the taper are clean and dry before engaging the taper.

32-3 Assemble the Definitive Glenosphere to the Baseplate and Glenosphere Inserter:

1. Unthread the Inner Shaft from the Baseplate and Glenosphere Inserter. The Inner Shaft is used as the Inserter for Glenosphere Implantation.
2. Thread the Inserter Shaft into the Glenosphere. If an Eccentric Glenosphere is used, the notch on the Implant points to the direction of the eccentricity.

Items used:

Glenosphere Trial – TRL-0990-860-XXXX-C/E

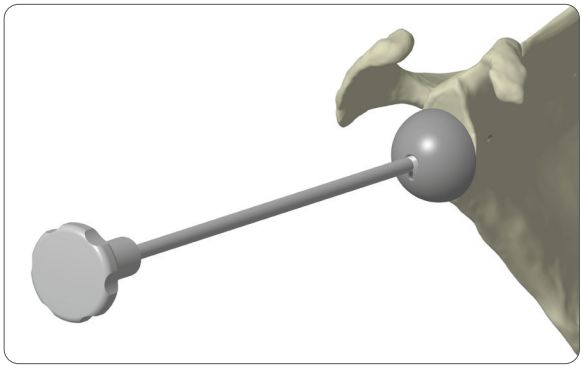
T-15 Star Driver – SCR-0961-065-01

T-20 Driver for Peripheral Screws – SCR-0990-862

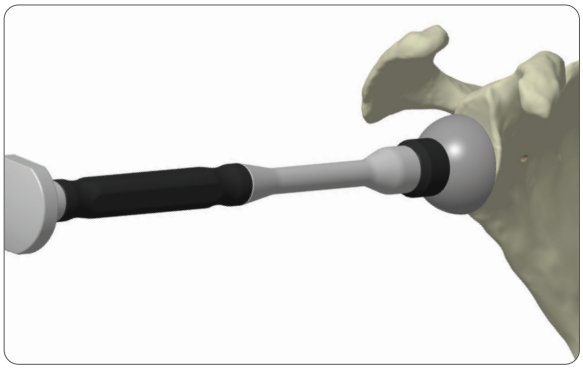
AO Quick Connect Handle – G107992B

Peripheral Glenoid Reamer – RMR-0990-859S/STD/L

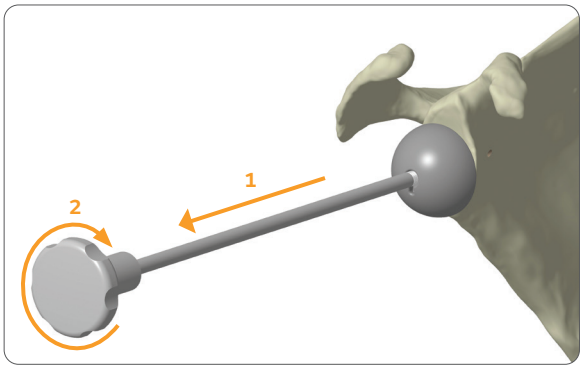
Baseplate + Glenosphere Inserter – INS-0990-861



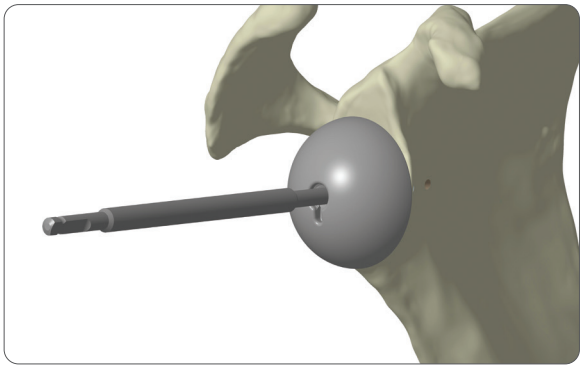
32-4



32-5



32-6



32-7

32-4 Place the Glenosphere onto the Morse Taper of the Baseplate to provisionally engage the Morse taper. Unthread the Inserter to remove it from the Glenosphere.

32-5 Use the Humeral Head/Glenosphere Impactor and a mallet to impact the Glenosphere on-axis onto the Baseplate with three controlled, firm strikes.

Note: Do not use the Inserter for final seating of the Glenosphere. Only the Humeral Head/Glenosphere Impactor should be used to impact the Glenosphere.

32-6 To confirm taper engagement, fully thread the Inserter into the Glenosphere and:

1. Pull axially
2. Twist the handle of the Baseplate and Glenosphere Inserter clockwise.
3. If the Glenosphere separates from the Baseplate, check for soft tissue impingement or screw head prominence. Repeat Steps 32-2 – 32-5 to reinsert the Glenosphere.

32-7 Assemble the T-20 Driver to the Torque Limiting Handle and tighten the Glenosphere Retention Screw until the Torque Limiter clicks.

Note: This surgical step should not be performed using a powered driver.

Items used:

Glenosphere Trial – TRL-0990-860-XXXX-C/E
T-15 Star Driver – SCR-0961-065-01
T-20 Driver for Peripheral Screws – SCR-0990-862
AO Quick Connect Handle – G107992B
Peripheral Glenoid Reamer – RMR-0990-859S/STD/L
2.8mm Drill Shaft – DRS-0926-001
Hudson T-Handle – HDL-0926-002
Baseplate and Glenosphere Inserter – INS-0990-861
Humeral Head/Glenosphere Impactor – IMP-0990-835
Torque Limiting Handle, 2NM – 1TM16-2NM-C04-SN

Alternate TITAN Impactor:

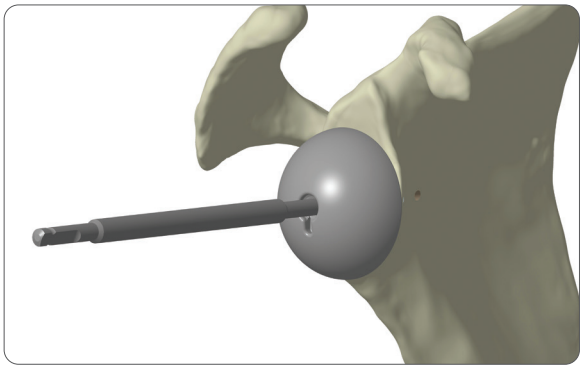
Glenosphere Impactor – IMP-0960-066-01

Step 33 ▪ Revision

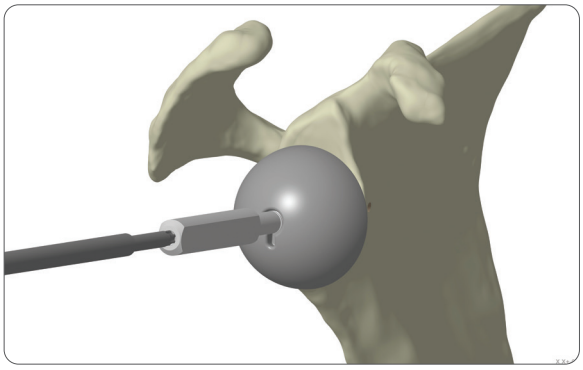
Removing the Glenosphere

33-1 There are 5 Glenosphere Removal Tools in the system, corresponding to the diameter of the Implanted Glenosphere and the level of lateralization.

Glenosphere size	Glenosphere Removal Tool
34mm Glenosphere, Concentric, +1mm	Glenosphere Removal Tool, 34+1 *REM-0990-865-3*
38mm Glenosphere, Concentric/Eccentric	Glenosphere Removal Tool, 38 *REM-0990-865-1*
38mm Glenosphere, Concentric/Eccentric +3mm	Glenosphere Removal Tool, *38+3 REM-0990-865-4*
42mm Glenosphere, Concentric/Eccentric	Glenosphere Removal Tool, 42 *REM-0990-865-2*
42mm Glenosphere, Concentric/Eccentric +3mm	Glenosphere Removal Tool, 42+3 *REM-0990-865-5*



33-2



33-3

33-2 To remove the in situ Glenosphere from an Implanted Baseplate, first loosen the Retaining Screw in the central hole in the surface of the Glenosphere using the T-20 Driver connected to the AO Handle.

33-3 Thread the appropriate Glenosphere Removal Tool into the in situ Glenosphere. Insert and then rotate the T-20 Driver clockwise in the top of the Removal Tool to release the taper lock of the Glenosphere from the Baseplate. Once the taper is disengaged and released, remove the Glenosphere.

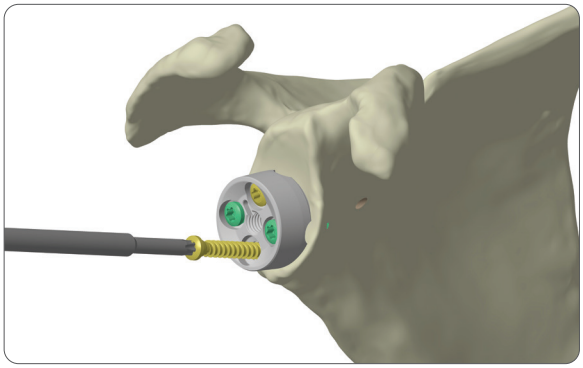
Note: If the Glenosphere does not immediately release after removing the Removal Tool, it is possible that the Retaining Screw re-engaged slightly during the removal process. If this happens, place the T-20 Driver into the Glenosphere and re-loosen the Screw. The Glenosphere should be completely disengaged and easily removable.

Items used:

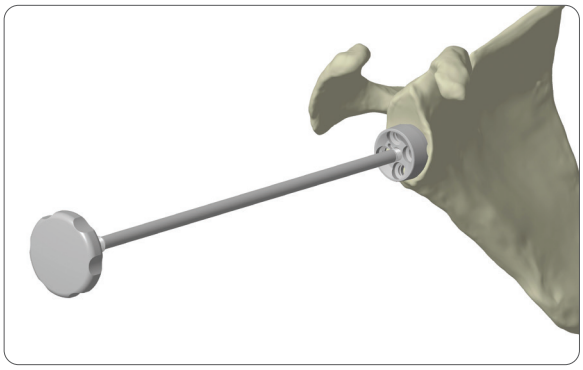
Glenosphere Removal Tool – REM-0990-865-1/2/3/4/5

T-20 Driver for Peripheral Screws – SCR-0990-862

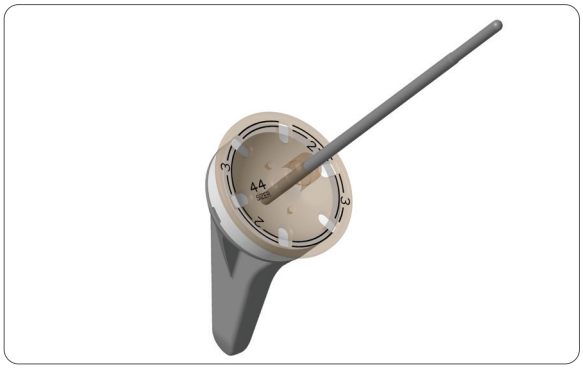
AO Quick Connect Handle – G107992B



33-4



33-5



33-6a

33-6b

Removing the Baseplate/Screws

33-4 To remove an Implanted Baseplate after the Glenosphere has been removed, use the T-20 Driver for Peripheral Screws connected to the AO Quick Connect Handle to remove the four Peripheral Screws. If a Central Screw was used, remove it with the T-15 Star Driver.

33-5 A narrow osteotome may be used to break any bony ingrowth on the backside of the Baseplate to the face of the glenoid. Disassemble the Baseplate Inserter and attach the Draw Rod to the Baseplate. Give the underside of the strike plate several firm taps to remove the Baseplate.

Removing the Humeral Liner

33-6 To remove the Humeral Liner, first select the Osteotomy Sizer which best approximates the top diameter of the Liner. This will allow for the Guide Pin or Drill Bit to be appropriately centered in the next steps.

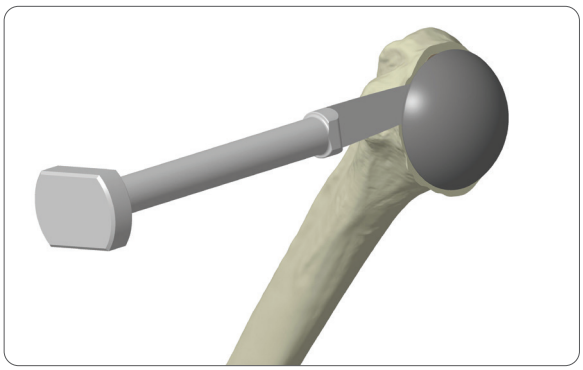
Hold the Osteotomy Sizer centered on the Liner. Drive either the 3.0mm Drill Bit or the 2.5mm Glenoid Guide Pin through the center of the Guide until the Guide Pin hits the Stem. Remove both the Drill or Pin and the Osteotomy Sizer.

Note: It is recommended to use the 2.5mm Glenoid Guide Pin first, as this will allow more purchase to remove the Liner in the next step. If the Guide Pin does not efficiently drill through the poly, then move to the Drill Bit.

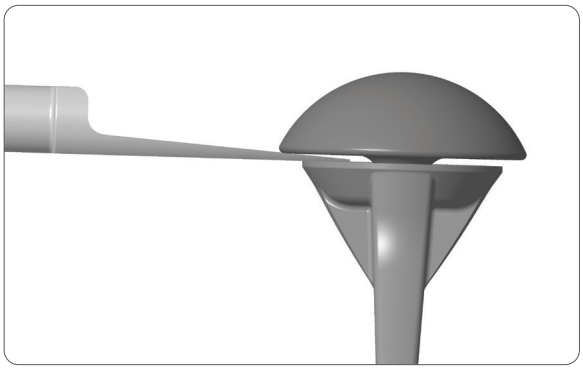
Attach the T-15 Driver to the AO Quick Connect Handle. Select a Baseplate Central Screw of at least 30mm in length. Drive the Screw through the pre-drilled hole from the previous step. Once the Screw reaches the bottom, the threads will work to push the Liner out of the Stem.

Items used:

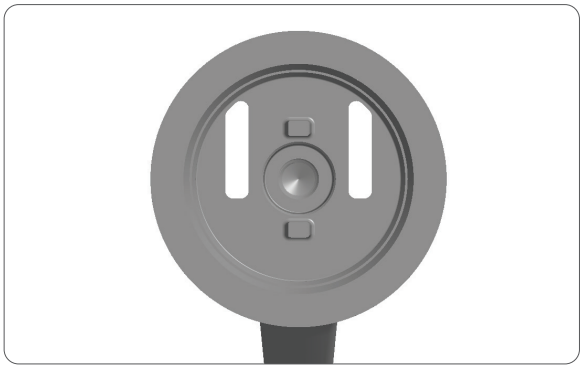
AO Quick Connect Handle – G107992B
T-20 Driver for Peripheral Screws – SCR-0990-862
T-15 Star Driver – SCR-0961-065-01
Baseplate and Glenosphere Inserter – INS-0990-861
Osteotomy Sizer / Pin Guide – HOS-0990-805-01/2/3/4/5/6
2.5mm Glenoid Guide Pin, Threaded – GDW-0990-840 or
2.5mm Glenoid Guide Pin, Non-Threaded – GDW-0990-840NT
3mm Dia Drill Bit for 4.5mm Screws – DRL-0990-856



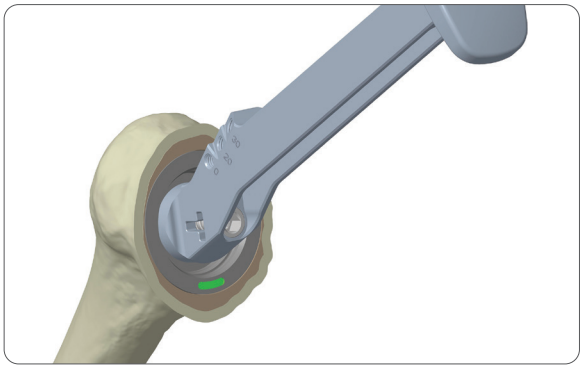
33-7a



33-7b



33-8



33-9

Removing the Humeral Head

33-7 The Humeral Head can be removed using the Humeral Head Removal Tool. Place the prong of the Removal Tool between the Humeral Head and the osteotomy surface, avoiding the taper. Gently impact the strike plate of the tool with a mallet repeatedly to lift the head from the Stem component. If the taper does not break, remove the Removal Tool and reposition at another interface and impact again. Repeat until the Humeral Head is removed.

Note: If the gap between the Humeral Head and the osteotomy surface is too tight to fit the Removal Tool, light impaction with a mallet may be required to wedge the tool in the gap.

Removing the Stem

33-8 The Stem is designed to be revisable and/or convertible from anatomic to reverse without Stem removal from the proximal humerus. If removing the Stem is necessary, the most bone preserving technique utilizes small, flexible osteotomes to break bony ingrowth from the proximal portion of the Stem within the Metaphysis of the proximal humerus. The osteotomes should be passed around the surface of the Implant to break apart the bony ingrowth in the proximal Stem. Osteotomes may also be passed through the slots on the inlay collar of the Stem to help break apart ingrowth near the lateral fin.

Note: AETOS◊ Stemless Implants should only be used in an anatomic shoulder arthroplasty. If converting to a reverse shoulder arthroplasty with an Implanted AETOS Stemless Implant, remove the Stem. Refer to step 12 to prep bone for a Meta Stem.

33-9 Utilize the thread Stem Insertion Device to remove a Stem. Insert the threaded Stem Insertion Device into the Stem and use the T-20 driver for Peripheral Screws to tighten.

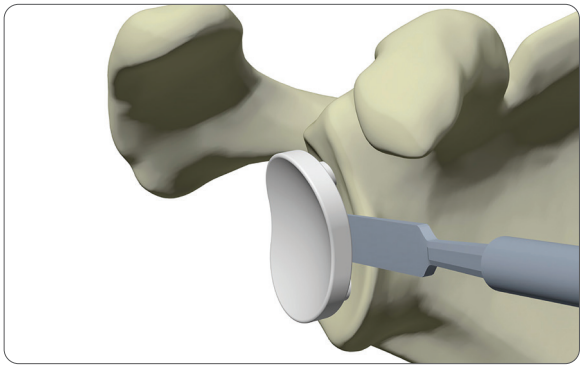
Backslap the Stem Inserter with a mallet to remove the Implant.

Items used:

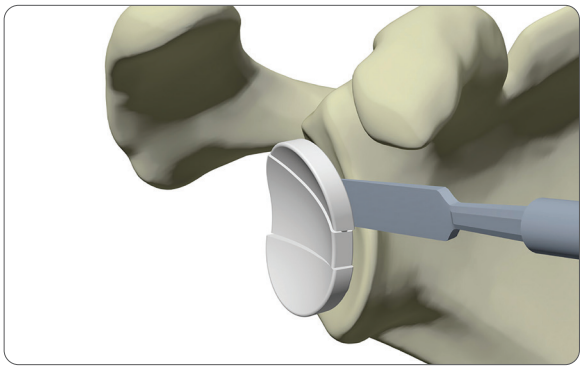
Stem Inserter – INS-0990-804-INT

T-20 driver for Peripheral Screws – SCR-0990-862

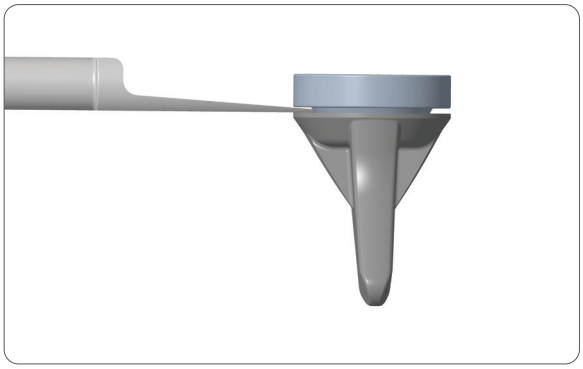
Humeral Head Removal Tool – EXT-0990-866



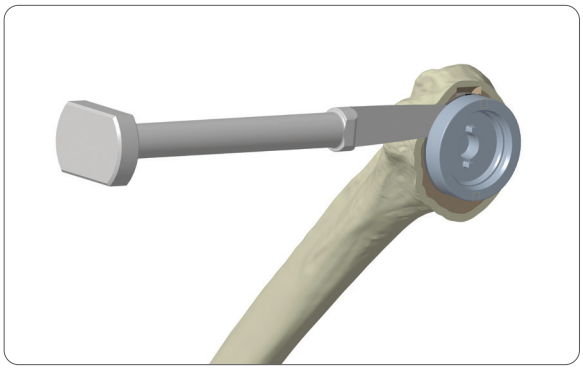
33-10a



33-10b



33-11



33-12

Removing the Anatomic Glenoid

33-10 To remove the Anatomic Glenoid Implant, gently tap a narrow osteotome in the interface between the Implant and the glenoid bone surface at various locations to try to cleave the back side pegs off the surface of the Implant. Gentle levering of the osteotome may help pry the Implant off the glenoid surface but may risk fracture of the glenoid bone. The glenoid Implant may also be removed piecemeal by cutting the Implant surface into 2 or 3 parts with an osteotome and then removing them one by one with an osteotome. Likewise, a rongeur may be used to remove the glenoid component piecemeal with less risk of glenoid bone fracture in the setting of jeopardized glenoid bone stock.

33-11 Once the articulating surface of the anatomic glenoid Implant has been removed, the residual pegs and/or bone cement remaining in the glenoid vault may be removed with curettes if needed. In the case of revising an anatomic glenoid implant or converting an anatomic Implant to a reverse Baseplate, check whether the remaining glenoid bone stock is sufficient to support the Implantation of the new component.

Note: When converting a cemented anatomic Glenoid Implant to a Reverse Glenoid Baseplate, it is recommended to consider using the Eccentric Post Baseplate with a center Post Extension. The center post of the Eccentric Post Baseplate may be placed into the same central hole created when removing the anatomic Glenoid component. This minimizes glenoid bone loss from re-drilling a more inferior center post Baseplate hole. The Eccentric Post Baseplate optimizes the Glenosphere inferior position on the glenoid while still using a centered hole location in the glenoid face.

Removing the Humeral Spacer

33-12 The Humeral Spacer can be removed using the Humeral Head Removal Tool. Place the prong of the Removal Tool between the Humeral Spacer and the Stem on the edge of the spacer to avoid the taper. Gently impact the strike plate of the tool with a mallet repeatedly to lift the Spacer from the Stem component. If the taper does not break, remove the Removal Tool and reposition at another interface and impact again. Repeat until the Humeral Spacer is removed.

Note: If the gap between the Humeral Spacer and the osteotomy surface is too tight to fit the Removal Tool, light impaction with a mallet may be required to wedge the tool in the gap.

Items used:

Humeral Head Removal Tool – EXT-0990-866

Ordering information

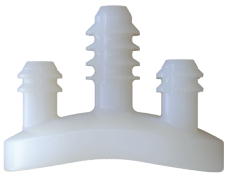
Reference	Description
STEM-0990-101-001	Stemless Humeral Body, Size 1*
STEM-0990-101-002	Stemless Humeral Body, Size 2*
STEM-0990-101-003	Stemless Humeral Body, Size 3*
STEM-0990-101-004	Stemless Humeral Body, Size 4*

*Stemless Humeral Implants may not be commercially available in all markets with approved Meta Stem Humeral Implants

STEM-0990-100-001	Meta Humeral Stem, Size 1
STEM-0990-100-002	Meta Humeral Stem, Size 2
STEM-0990-100-003	Meta Humeral Stem, Size 3
STEM-0990-100-004	Meta Humeral Stem, Size 4

MHH-0990-102-3814	Humeral Head, 38mm x 14mm concentric
MHH-0990-102-4115	Humeral Head, 41mm x 15mm concentric
MHH-0990-102-4416	Humeral Head, 44mm x 16mm concentric
MHH-0990-102-4418	Humeral Head, 44mm x 18mm concentric
MHH-0990-102-4716	Humeral Head, 47mm x 16mm concentric
MHH-0990-102-4718	Humeral Head, 47mm x 18mm concentric
MHH-0990-102-5018	Humeral Head, 50mm x 18mm concentric
MHH-0990-102-5021	Humeral Head, 50mm x 21mm concentric
MHH-0990-102-5319	Humeral Head, 53mm x 19mm concentric
MHH-0990-102-5322	Humeral Head, 53mm x 22mm concentric

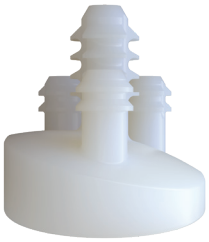
GLN-0990-400-000	Central Fixed 4 Peg Poly Glenoid, XS
GLN-0990-400-100	Central Fixed 4 Peg Poly Glenoid, S
GLN-0990-400-200	Central Fixed 4 Peg Poly Glenoid, M
GLN-0990-400-300	Central Fixed 4 Peg Poly Glenoid, L



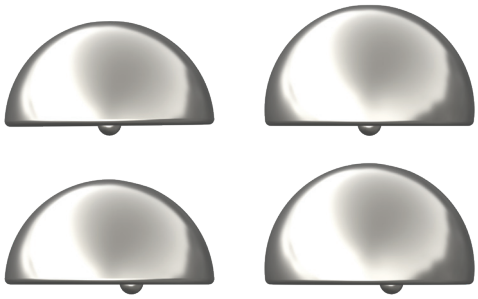
GLN0990-403-005FL	5° FW Augment 4 Peg Poly Glenoid, XS Left
GLN0990-403-005FR	5° FW Augment 4 Peg Poly Glenoid, XS Right
GLN0990-403-105FL	5° FW Augment 4 Peg Poly Glenoid, S Left
GLN0990-403-105FR	5° FW Augment 4 Peg Poly Glenoid, S Right
GLN0990-403-205FL	5° FW Augment 4 Peg Poly Glenoid, M Left
GLN0990-403-205FR	5° FW Augment 4 Peg Poly Glenoid, M Right

Ordering information

Reference	Description
GLN0990-403-010FL	10° FW Augment 4 Peg Poly Glenoid, XS Left
GLN0990-403-010FR	10° FW Augment 4 Peg Poly Glenoid, XS Right
GLN0990-403-110FL	10° FW Augment 4 Peg Poly Glenoid, S Left
GLN0990-403-110FR	10° FW Augment 4 Peg Poly Glenoid, S Right
GLN0990-403-210FL	10° FW Augment 4 Peg Poly Glenoid, M Left
GLN0990-403-210FR	10° FW Augment 4 Peg Poly Glenoid, M Right
GLN0990-403-310FL	10° FW Augment 4 Peg Poly Glenoid, L Left
GLN0990-403-310FR	10° FW Augment 4 Peg Poly Glenoid, L Right



GLS0990-506-3401C	34mm Glenosphere, Concentric, +1mm
GLS0990-506-3800C	38mm Glenosphere, Concentric
GLS0990-506-4200C	42mm Glenosphere, Concentric
GLS0990-506-3803C	38mm Glenosphere, Concentric, +3mm
GLS0990-506-4203C	42mm Glenosphere, Concentric,+3mm
GLS0990-506-3800E	38mm Glenosphere, Eccentric
GLS0990-506-4200E	42mm Glenosphere, Eccentric
GLS0990-506-3803E	38mm Glenosphere, Eccentric, +3mm
GLS0990-506-4203E	42mm Glenosphere, Eccentric, +3mm



GBP-0990-500-2	Glenoid Baseplate, Centered
GBP-0990-501-2	Glenoid Baseplate, Eccentric
GBP-0990-502-10F	10° Augment Baseplate, Full Wedge
GBP-0990-502-15F	15° Augment Baseplate, Full Wedge

SPC-0990-204-S	Humeral Spacer, +9 Small
SPC-0990-204-L	Humeral Spacer, +9 Large

PST-0990-510-10	Baseplate Post Ext, 10mm
PST-0990-510-15	Baseplate Post Ext, 15mm

Reference	Description
LNR-0990-200-340S	34mm Reverse Liner, +0, Sml
LNR-0990-200-343S	34mm Reverse Liner, +3, Sml
LNR-0990-200-346S	34mm Reverse Liner, +6, Sml
LNR-0990-200-349S	34mm Reverse Liner, +9, Sml
LNR0990-200-340SR	34mm Reverse Liner, +0, Sml Retentive
LNR0990-200-343SR	34mm Reverse Liner, +3, Sml Retentive
LNR0990-200-346SR	34mm Reverse Liner, +6, Sml Retentive
LNR0990-200-349SR	34mm Reverse Liner, +9, Sml Retentive
LNR-0990-200-380S	38mm Reverse Liner, +0, Sml
LNR-0990-200-383S	38mm Reverse Liner, +3, Sml
LNR-0990-200-386S	38mm Reverse Liner, +6, Sml
LNR-0990-200-389S	38mm Reverse Liner, +9, Sml
LNR0990-200-380SR	38mm Reverse Liner, +0, Sml Retentive
LNR0990-200-383SR	38mm Reverse Liner, +3, Sml Retentive
LNR0990-200-386SR	38mm Reverse Liner, +6, Sml Retentive
LNR0990-200-389SR	38mm Reverse Liner, +9, Sml Retentive
LNR-0990-200-420S	42mm Reverse Liner, +0, Sml
LNR-0990-200-423S	42mm Reverse Liner, +3, Sml
LNR-0990-200-426S	42mm Reverse Liner, +6, Sml
LNR-0990-200-429S	42mm Reverse Liner, +9, Sml
LNR0990-200-420SR	42mm Reverse Liner, +0, Sml Retentive
LNR0990-200-423SR	42mm Reverse Liner, +3, Sml Retentive
LNR0990-200-426SR	42mm Reverse Liner, +6, Sml Retentive
LNR0990-200-429SR	42mm Reverse Liner, +9, Sml Retentive
LNR-0990-202-380L	38mm Reverse Liner, +0, Lrg
LNR-0990-202-383L	38mm Reverse Liner, +3, Lrg
LNR-0990-202-386L	38mm Reverse Liner, +6, Lrg
LNR-0990-202-389L	38mm Reverse Liner, +9, Lrg
LNR0990-202-380LR	38mm Reverse Liner, +0, Lrg Retentive
LNR0990-202-383LR	38mm Reverse Liner, +3, Lrg Retentive
LNR0990-202-386LR	38mm Reverse Liner, +6, Lrg Retentive
LNR0990-202-389LR	38mm Reverse Liner, +9, Lrg Retentive
LNR-0990-202-420L	42mm Reverse Liner, +0, Lrg
LNR-0990-202-423L	42mm Reverse Liner, +3, Lrg
LNR-0990-202-426L	42mm Reverse Liner, +6, Lrg
LNR-0990-202-429L	42mm Reverse Liner, +9, Lrg
LNR0990-202-420LR	42mm Reverse Liner, +0, Lrg Retentive
LNR0990-202-423LR	42mm Reverse Liner, +3, Lrg Retentive
LNR0990-202-426LR	42mm Reverse Liner, +6, Lrg Retentive
LNR0990-202-429LR	42mm Reverse Liner, +9, Lrg Retentive

Ordering information

Reference	Description
SCW-0990-504-15	4.5mm Locking Screw, 15mm
SCW-0990-504-20	4.5mm Locking Screw, 20mm
SCW-0990-504-25	4.5mm Locking Screw, 25mm
SCW-0990-504-30	4.5mm Locking Screw, 30mm
SCW-0990-504-35	4.5mm Locking Screw, 35mm
SCW-0990-504-40	4.5mm Locking Screw, 40mm
SCW-0990-504-45	4.5mm Locking Screw, 45mm
SCW-0990-504-50	4.5mm Locking Screw, 50mm

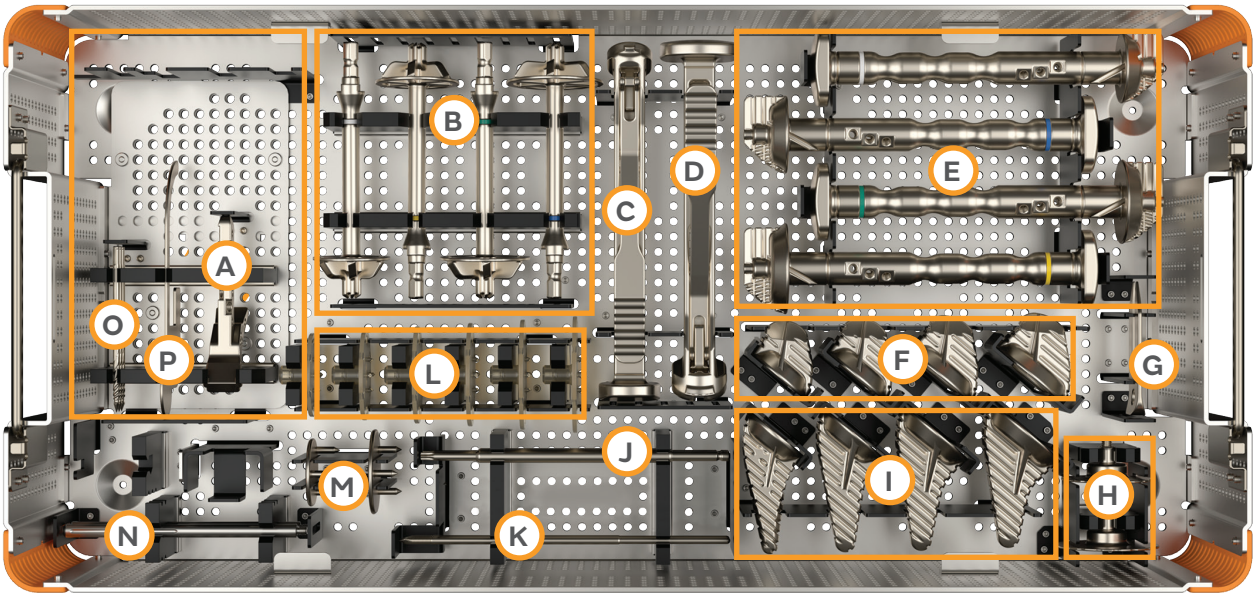
SCW-0990-505-15	4.5mm Non-Locking Screw, 15mm
SCW-0990-505-20	4.5mm Non-Locking Screw, 20mm
SCW-0990-505-25	4.5mm Non-Locking Screw, 25mm
SCW-0990-505-30	4.5mm Non-Locking Screw, 30mm
SCW-0990-505-35	4.5mm Non-Locking Screw, 35mm
SCW-0990-505-40	4.5mm Non-Locking Screw, 40mm
SCW-0990-505-45	4.5mm Non-Locking Screw, 45mm
SCW-0990-505-50	4.5mm Non-Locking Screw, 50mm

SCW-0990-507-25	4.5mm Center Screw, 25mm
SCW-0990-507-30	4.5mm Center Screw, 30mm
SCW-0990-507-35	4.5mm Center Screw, 35mm
SCW-0990-507-40	4.5mm Center Screw, 40mm
SCW-0990-507-45	4.5mm Center Screw, 45mm
SCW-0990-507-50	4.5mm Center Screw, 50mm
SCW-0990-507-55	4.5mm Center Screw, 55mm

AETOS◊ Instrument Tray, General – Base

Tray components:

CSA-0990-911: General Instrument Tray 1, Base Assembly
CSA-0990-902: General Instrument Tray 2, Base Assembly
CSA-0000-001: Generic Instrument Tray Lid



Cat no	Description	Qty	Ref
71935994	AETOS Extramedullary Cutting Guide	1	A
RMR-0990-806-01	Humeral Reamer, Size 1	1	B
RMR-0990-806-02	Humeral Reamer, Size 2	1	B
RMR-0990-806-03	Humeral Reamer, Size 3	1	B
RMR-0990-806-04	Humeral Reamer, Size 4	1	B
INS-0990-804S	Stem Inserter, Small	1	C
INS-0990-804L	Stem Inserter, Large	1	D
BRH-0990-898-01	Cruciate Broach, Size 1	1	E
BRH-0990-898-02	Cruciate Broach, Size 2	1	E
BRH-0990-898-03	Cruciate Broach, Size 3	1	E
BRH-0990-898-04	Cruciate Broach, Size 4	1	E
COM-0990-809-01	ST Compactor, Size 1	1	F
COM-0990-809-02	ST Compactor, Size 2	1	F
COM-0990-809-03	ST Compactor, Size 3	1	F
COM-0990-809-04	ST Compactor, Size 4	1	F
BRH-0990-899	Cruciate Broach Osteotome	1	G
CVR-0990-811-L	Cut Protector, Large	1	H
CVR-0990-811-S	Cut Protector, Small	1	H

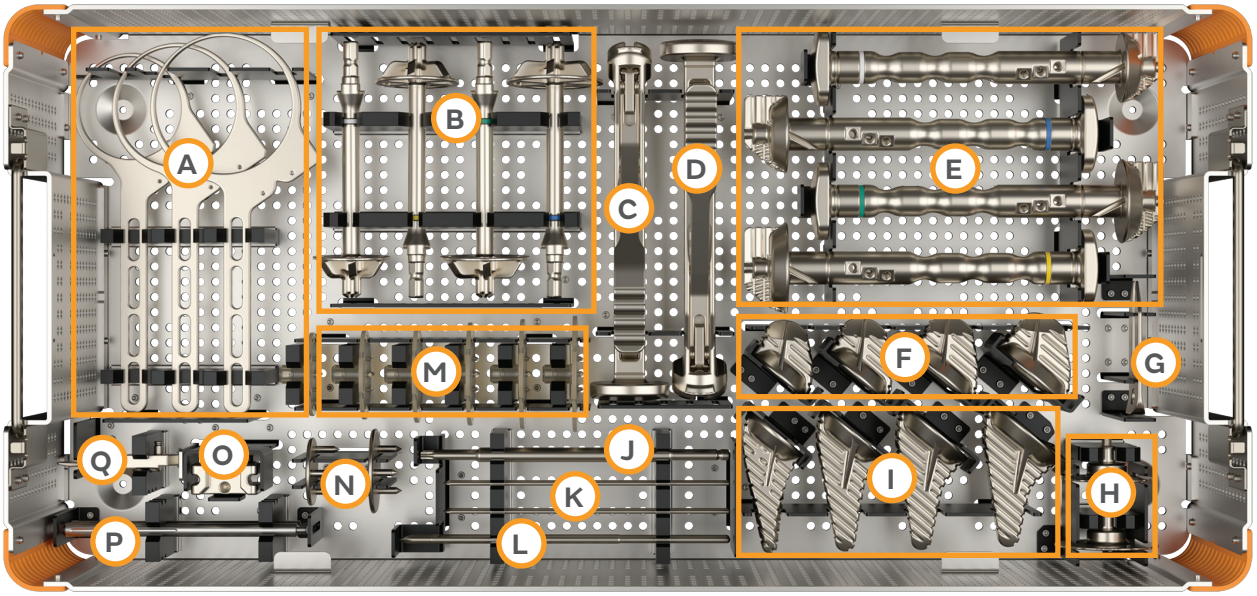
Cat no	Description	Qty	Ref
COM-0990-808-01	Stem Compactor, Size 1	1	I
COM-0990-808-02	Stem Compactor, Size 2	1	I
COM-0990-808-03	Stem Compactor, Size 3	1	I
COM-0990-808-04	Stem Compactor, Size 4	1	I
SCR-0990-862	T-20 Driver for 4.5mm Screws	2	J
GDW-0990-839	Humeral Guide Pin, Threaded*	1	K
GDW-0990-839NT	Humeral Guide Pin, Non-Threaded	1	K
HOS-0990-805-01	Osteotomy Sizer / Pin Guide, Size 38	1	L
HOS-0990-805-02	Osteotomy Sizer / Pin Guide, Size 41	1	L
HOS-0990-805-03	Osteotomy Sizer / Pin Guide, Size 44	1	L
HOS-0990-805-04	Osteotomy Sizer / Pin Guide, Size 47	1	L
HOS-0990-805-05	Osteotomy Sizer / Pin Guide, Size 50	1	L
HOS-0990-805-06	Osteotomy Sizer / Pin Guide, Size 53	1	L
CVR-0920-077L	Canal Osteotomy Cover -L	1	M
CVR-0920-077S	Canal Osteotomy Cover -S	1	M
VER-0990-803	Version Rod	2	N
74016467	3.2 x 75mm Non-Rimmed Trocar Speed Pin	3	O
71935995	AETOS Resection Check	1	P
74016464	Speed Pin Driver* (Not pictured)		

*Special Order Item

AETOS◊ Instrument Tray, General – Base

Tray components:

CSA-0990-901: General Instrument Tray 1, Base Assembly
CSA-0990-902: General Instrument Tray 2, Base Assembly
CSA-0000-001: Generic Instrument Tray Lid

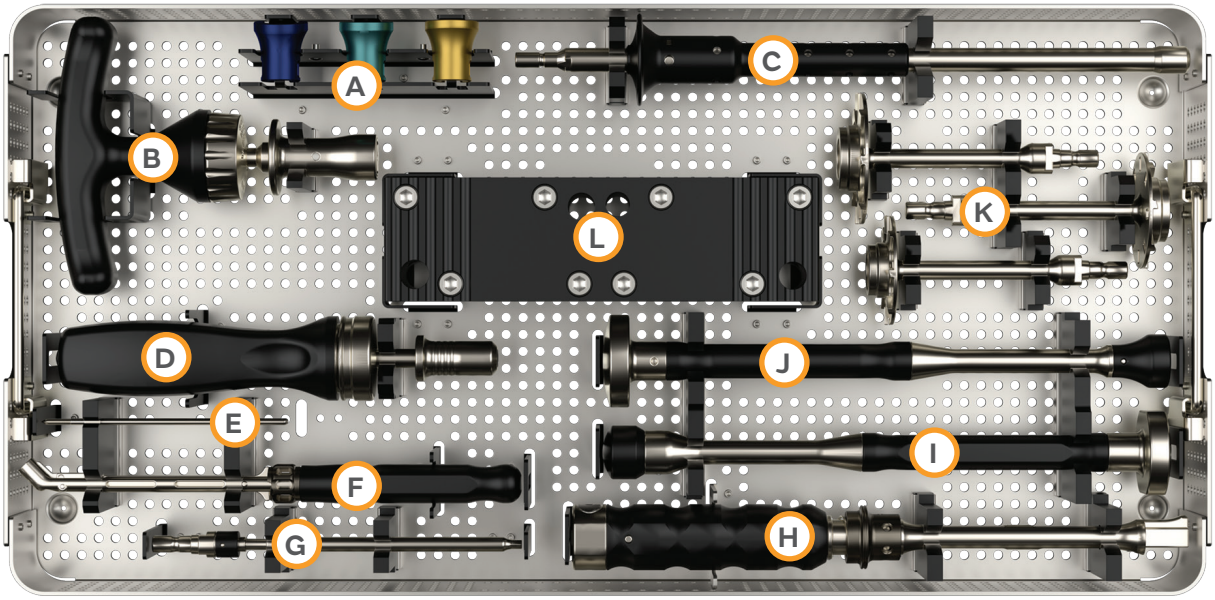


Cat no	Description	Qty	Ref
CUT-0990-800-1	Resection Guide, Small	1	A
CUT-0990-800-2	Resection Guide, Medium	1	A
CUT-0990-800-3	Resection Guide, Large	1	A
RMR-0990-806-01	Humeral Reamer, Size 1	1	B
RMR-0990-806-02	Humeral Reamer, Size 2	1	B
RMR-0990-806-03	Humeral Reamer, Size 3	1	B
RMR-0990-806-04	Humeral Reamer, Size 4	1	B
INS-0990-804S	Stem Inserter, Small	1	C
INS-0990-804L	Stem Inserter, Large	1	D
BRH-0990-898-01	Cruciate Broach, Size 1	1	E
BRH-0990-898-02	Cruciate Broach, Size 2	1	E
BRH-0990-898-03	Cruciate Broach, Size 3	1	E
BRH-0990-898-04	Cruciate Broach, Size 4	1	E
COM-0990-809-01	ST Compactor, Size 1	1	F
COM-0990-809-02	ST Compactor, Size 2	1	F
COM-0990-809-03	ST Compactor, Size 3	1	F
COM-0990-809-04	ST Compactor, Size 4	1	F
BRH-0990-899	Cruciate Broach Osteotome	1	G
CVR-0990-811-L	Cut Protector, Large	1	H
CVR-0990-811-S	Cut Protector, Small	1	H

Cat no	Description	Qty	Ref
COM-0990-808-01	Stem Compactor, Size 1	1	I
COM-0990-808-02	Stem Compactor, Size 2	1	I
COM-0990-808-03	Stem Compactor, Size 3	1	I
COM-0990-808-04	Stem Compactor, Size 4	1	I
SCR-0990-862	T-20 Driver for 4.5mm Screws	2	J
74016467	3.2 x 75mm Non-Rimmed Trocar Speed Pin	3	K
PIN-0990-801	Resection Guide Pin	4	K
GDW-0990-839	Humeral Guide Pin, Threaded*	1	L
GDW-0990-839NT	Humeral Guide Pin, Non-Threaded	1	L
HOS-0990-805-01	Osteotomy Sizer / Pin Guide, Size 38	1	M
HOS-0990-805-02	Osteotomy Sizer / Pin Guide, Size 41	1	M
HOS-0990-805-03	Osteotomy Sizer / Pin Guide, Size 44	1	M
HOS-0990-805-04	Osteotomy Sizer / Pin Guide, Size 47	1	M
HOS-0990-805-05	Osteotomy Sizer / Pin Guide, Size 50	1	M
HOS-0990-805-06	Osteotomy Sizer / Pin Guide, Size 53	1	M
CVR-0920-077L	Canal Osteotomy Cover -L	1	N
CVR-0920-077S	Canal Osteotomy Cover -S	1	N
RGH-0990-812	Machined, Resection Guide Holder	1	O
VER-0990-803	Version Rod	2	P
INC-0990-802	Inclination Angle Indicator	1	Q

*Special Order Item

AETOS◊ Instrument Tray, General – Insert



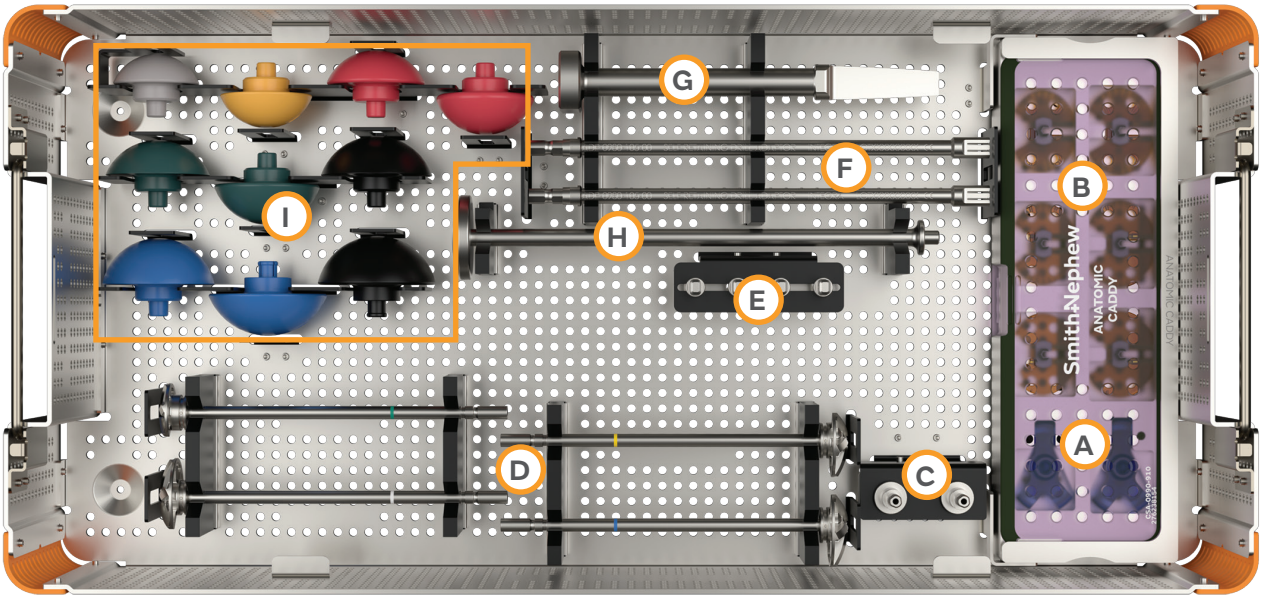
Cat no	Description	Qty	Ref
RMB-0990-870-00	Glenoid Reamer Angulator – 0°	1	A
RMB-0990-870-05F	Glenoid Reamer Angulator – 5° FW	1	A
RMB-0990-870-10F	Glenoid Reamer Angulator – 10° FW	1	A
HDL-0926-002	Hudson T-Handle	1	B
DRS-0926-001	2.8mm Glenoid Drill Shaft	1	C
G107992-B	Driver Handle w/SM AO	1	D
GDW-0990-840	Glenoid Guide Pin, 2.5mm, Threaded*	1	E
GDW-0990-840NT	Glenoid Guide Pin, 2.5mm, Non-Threaded	1	E
HDL-0990-816	Glenoid Sizer/Guide Handle	1	F
SCR-0990-822	Glenoid Reamer Driver	1	G
HDL-0990-821	Glenoid Reamer Handle	1	H
IMP-0990-835	Humeral Head/Glenosphere Impactor	1	I
IMP-0990-836	Glenoid/Humeral Liner Impactor	1	J
RMR-0990-810-L	Humeral Planer, Large	1	K
RMR-0990-810-M	Humeral Planer, Medium	1	K
RMR-0990-810-S	Humeral Planer, Small	1	K
STD-0990-837	Impaction Stand	1	L

*Special Order Item

AETOS◊ Instrument Tray, Anatomic – Base

Tray components:

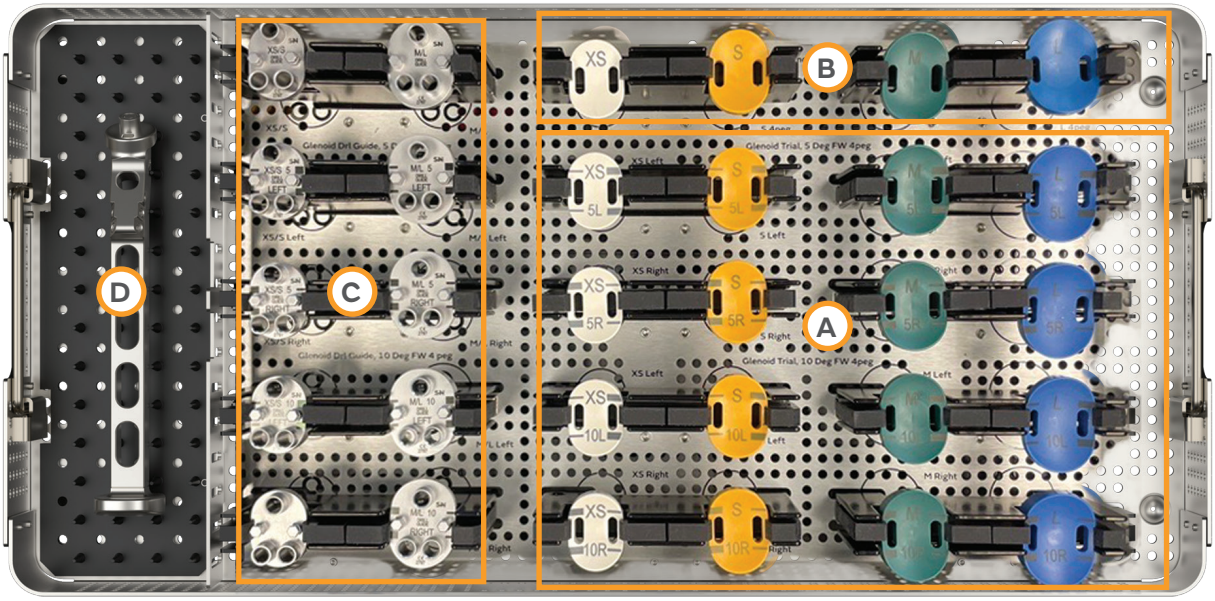
CSA-0990-907: Anatomic Instrument Tray, Base Assembly
CSA-0990-908: Anatomic Instrument Tray, 4 Peg Insert Assembly
CSA-0990-909: Anatomic Instrument Tray, Instrument Caddy
CSA-0990-910: Anatomic Instrument Tray, Instrument Caddy Lid
CSA-0000-001: Generic Instrument Tray Lid



Cat no	Description	Qty	Ref
INS-0990-830-00	Glenoid Inserter Tip, XS	1	A
INS-0990-830-01	Glenoid Inserter Tip, S	1	A
INS-0990-830-02	Glenoid Inserter Tip, M	1	A
INS-0990-830-03	Glenoid Inserter Tip, L	1	A
SZR-0990-815-000	Glenoid Sizer, XS	1	B
SZR-0990-815-100	Glenoid Sizer, S	1	B
SZR-0990-815-200	Glenoid Sizer, M	1	B
SZR-0990-815-300	Glenoid Sizer, L	1	B
SZR-0990-815-005	Glenoid Sizer, 5°, XS	1	B
SZR-0990-815-010	Glenoid Sizer, 10°, XS	1	B
SZR-0990-815-105	Glenoid Sizer, 5°, S	1	B
SZR-0990-815-110	Glenoid Sizer, 10°, S	1	B
SZR-0990-815-205	Glenoid Sizer, 5°, M	1	B
SZR-0990-815-210	Glenoid Sizer, 10°, M	1	B
SZR-0990-815-305	Glenoid Sizer, 5°, L	1	B
SZR-0990-815-310	Glenoid Sizer, 10°, L	1	B
DRL-0990-823	Glenoid Central Hole Drl Bit, Can	2	C

Cat no	Description	Qty	Ref
RMB-0990-818-00	Glenoid Ream Bit, XS, Cannulated	1	D
RMB-0990-818-01	Glenoid Ream Bit, S, Cannulated	1	D
RMB-0990-818-02	Glenoid Ream Bit, M, Cannulated	1	D
RMB-0990-818-03	Glenoid Ream Bit, L, Cannulated	1	D
DRL-0990-827	Glenoid Peripheral Drill Bit	4	E
ADP-0980-105-00	Self-Retaining Drill Adaptor	2	F
EXT-0990-866	Head Removal Tool	1	G
IMH-0926-000	Glenoid Impactor Handle	1	H
TRL-0990-813-3814	Humeral Head Trial, 38x14 concentric	1	I
TRL-0990-813-4115	Humeral Head Trial, 41x15 concentric	1	I
TRL-0990-813-4416	Humeral Head Trial, 44x16 concentric	1	I
TRL-0990-813-4418	Humeral Head Trial, 44x18 concentric	1	I
TRL-0990-813-4716	Humeral Head Trial, 47x16 concentric	1	I
TRL-0990-813-4718	Humeral Head Trial, 47x18 concentric	1	I
TRL-0990-813-5018	Humeral Head Trial, 50x18 concentric	1	I
TRL-0990-813-5021	Humeral Head Trial, 50x21 concentric	1	I
TRL-0990-813-5319	Humeral Head Trial, 53x19 concentric	1	I
TRL-0990-813-5322	Humeral Head Trial, 53x22 concentric	1	I

AETOS◊ Instrument Tray, Anatomic – Insert



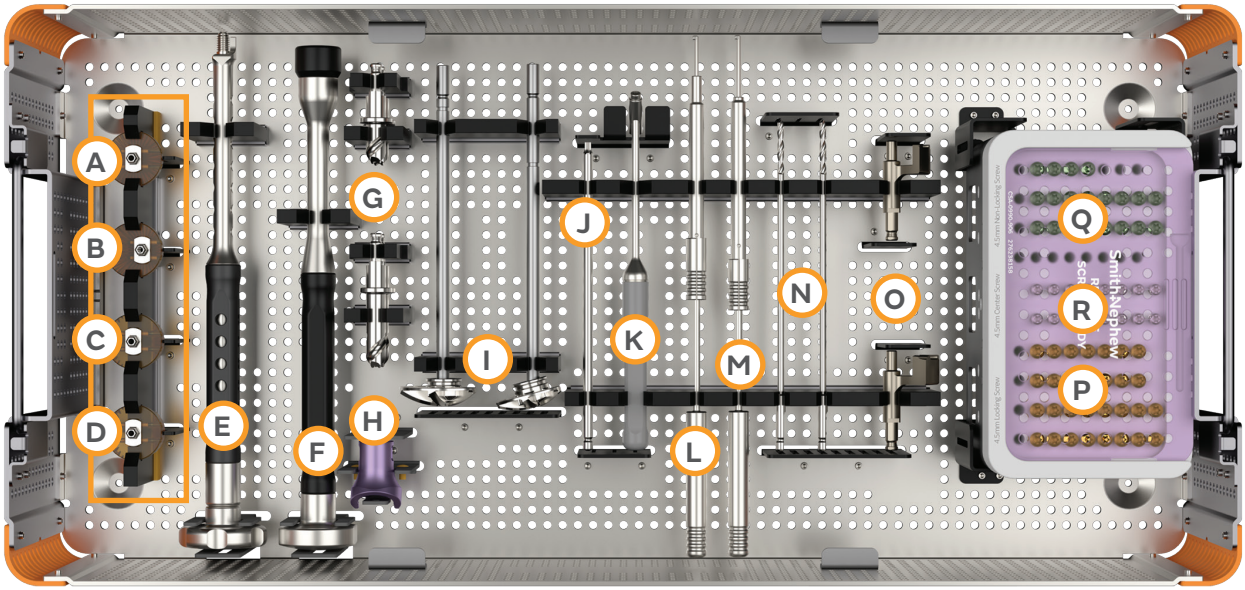
Cat no	Description	Qty	Ref
TRL 0990-833-005FL	Glenoid Trial, 5° FW 4peg, XS Left	1	A
TRL 0990-833-005FR	Glenoid Trial, 5° FW 4peg, XS Right	1	A
TRL 0990-833-010FL	Glenoid Trial, 10° FW 4peg, XS Left	1	A
TRL 0990-833-010FR	Glenoid Trial, 10° FW 4peg, XS Right	1	A
TRL 0990-833-105FL	Glenoid Trial, 5° FW 4peg, S Left	1	A
TRL 0990-833-105FR	Glenoid Trial, 5° FW 4peg, S Right	1	A
TRL 0990-833-110FL	Glenoid Trial, 10° FW 4peg, S Left	1	A
TRL 0990-833-110FR	Glenoid Trial, 10° FW 4peg, S Right	1	A
TRL 0990-833-205FL	Glenoid Trial, 5° FW 4peg, M Left	1	A
TRL 0990-833-205FR	Glenoid Trial, 5° FW 4peg, M Right	1	A
TRL 0990-833-210FL	Glenoid Trial, 10° FW 4peg, M Left	1	A
TRL 0990-833-210FR	Glenoid Trial, 10° FW 4peg, M Right	1	A
TRL 0990-833-305FL	Glenoid Trial, 5° FW 4peg, L Left	1	A
TRL 0990-833-305FR	Glenoid Trial, 5° FW 4peg, L Right	1	A
TRL 0990-833-310FL	Glenoid Trial, 10° FW 4peg, L Left	1	A
TRL 0990-833-310FR	Glenoid Trial, 10° FW 4peg, L Right	1	A
TRL-0990-834-000	Glenoid Trial, XS 4peg	1	B
TRL-0990-834-100	Glenoid Trial, S 4peg	1	B
TRL-0990-834-200	Glenoid Trial, M 4peg	1	B
TRL-0990-834-300	Glenoid Trial, L 4peg	1	B

Cat no	Description	Qty	Ref
DRG 0990-825-005FL	Glenoid Drl Gd, 5 Dg FW 4 Peg, XS/S Left	1	C
DRG 0990-825-005FR	Glen Drill Gd, 5 Dg FW 4 Peg, XS/S Right	1	C
DRG 0990-825-010FL	Glenoid Drill Gd, 10 Dg FW 4 Peg, XS/S L	1	C
DRG 0990-825-010FR	Glenoid Drill Gd, 10 Dg FW 4 Peg, XS/S R	1	C
DRG 0990-825-205FL	Glenoid Drill Gd, 5 Dg FW 4 Peg, M/L L	1	C
DRG 0990-825-205FR	Glenoid Drill Gd, 5 Dg FW 4 Peg, M/L R	1	C
DRG 0990-825-210FL	Glenoid Drill Gd, 10 Dg FW 4 Peg, M/L L	1	C
DRG 0990-825-210FR	Glenoid Drill Gd, 10 Dg FW 4 Peg, M/L R	1	C
DRG-0990-825-000	Glenoid Drl Guide 4 peg, XS/S	1	C
DRG-0990-825-200	Glenoid Drl Guide 4 peg, M/L	1	C
INS-0990-804-INT	Stem Insertion Device	1	D

AETOS◊ Instrument Tray, Reverse – Base

Tray components:

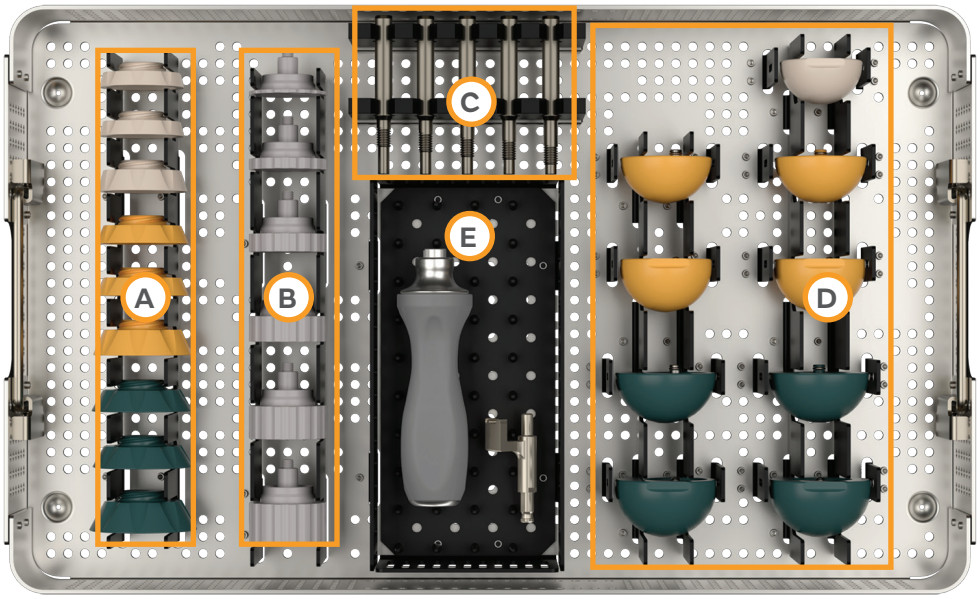
CSA-0000-001: Generic Instrument Tray Lid
CSA-0990-904: Reverse Instrument Tray, Insert Assembly
CSA-0990-903: Reverse Instrument Tray, Base Assembly
CSA-0990-905: Reverse Instrument Tray, Screw Caddy
CSA-0990-906: Reverse Instrument Tray, Screw Caddy Lid



Cat no	Description	Qty	Ref
GWG-0990-845	Baseplate Pin Guide, Concentric	1	A
GWG-0990-847-10F	Baseplate Pin Guide, 10° FW	1	B
GWG-0990-847-15F	Baseplate Pin Guide, 15° FW	1	C
GWG-0990-846	Baseplate Pin Guide, Eccentric	1	D
INS-0990-861	Baseplate & Glenosphere Inserter	1	E
IMP-0990-838	Humeral Spacer Impactor	1	F
DRL-0990-849	Central Post Drill Bit, Cannulated	2	G
DRL-0990-849S	Central Post Drill Bit, Cannulated	2	G
RMB-0990-870-15F	Glenoid Reamer Angulator – 15° FW	1	H
RMB-0990-818-R	Glenoid Ream Bit, Baseplate Centered	1	I
RMB-0990-818-RE	Glenoid Ream Bit, Baseplate Eccentric	1	I
SCR-0961-065-01	T-15 Star Driver for 4.5mm Screws	2	J
DRG-0990-852	Peripheral Screw Drill Guide	1	K
DPT-0990-858	Central Screw Depth Gauge	1	L
DPT-0990-857	Peripheral Screw Depth Gauge	1	M
DRL-0990-856	3mm Drill Bit for 4.5mm Screw	2	N
RMR-0990-859STD	Peripheral Glenoid Reamer Standard	1	O
RMR-0990-859 L	Peripheral Glenoid Reamer Large	1	O
SCW-0990-504-15	4.5mm Locking Screw, 15mm	4	P
SCW-0990-504-20	4.5mm Locking Screw, 20mm	4	P
SCW-0990-504-25	4.5mm Locking Screw, 25mm	4	P

Cat no	Description	Qty	Ref
SCW-0990-504-30	4.5mm Locking Screw, 30mm	4	P
SCW-0990-504-35	4.5mm Locking Screw, 35mm	3	P
SCW-0990-504-40	4.5mm Locking Screw, 40mm	3	P
SCW-0990-504-45	4.5mm Locking Screw, 45mm	2	P
SCW-0990-504-50	4.5mm Locking Screw, 50mm	2	P
SCW-0990-505-15	4.5mm Non-Locking Screw, 15mm	3	Q
SCW-0990-505-20	4.5mm Non-Locking Screw, 20mm	3	Q
SCW-0990-505-25	4.5mm Non-Locking Screw, 25mm	3	Q
SCW-0990-505-30	4.5mm Non-Locking Screw, 30mm	3	Q
SCW-0990-505-35	4.5mm Non-Locking Screw, 35mm	2	Q
SCW-0990-505-40	4.5mm Non-Locking Screw, 40mm	2	Q
SCW-0990-505-45	4.5mm Non-Locking Screw, 45mm	2	Q
SCW-0990-505-50	4.5mm Non-Locking Screw, 50mm	2	Q
SCW-0990-507-25	4.5mm Center-Screw, 25mm	2	R
SCW-0990-507-30	4.5mm Center-Screw, 30mm	2	R
SCW-0990-507-35	4.5mm Center-Screw, 35mm	2	R
SCW-0990-507-40	4.5mm Center-Screw, 40mm	2	R
SCW-0990-507-45	4.5mm Center-Screw, 45mm	2	R
SCW-0990-507-50	4.5mm Center-Screw, 50mm	2	R
SCW-0990-507-55	4.5mm Center-Screw, 55mm	2	R

AETOS◊ Instrument Tray, Reverse – Insert



Cat no	Description	Qty	Ref
TRL-0990-841-34A	Humeral Liner Trial, Articular, 34mm	2	A
TRL-0990-841-34AR	Humeral Liner Trial, Articular, 34mm, Retentive	1	A
TRL-0990-841-38A	Humeral Liner Trial, Articular, 38mm	2	A
TRL-0990-841-38AR	Humeral Liner Trial, Articular, 38mm, Retentive	1	A
TRL-0990-841-42A	Humeral Liner Trial, Articular, 42mm	2	A
TRL-0990-841-42AR	Humeral Liner Trial, Articular, 42mm, Retentive	1	A
TRL-0990-844-00H	Humeral Liner Trial, Height Offset, +0mm	1	B
TRL-0990-844-03H	Humeral Liner Trial, Height Offset, +3mm	1	B
TRL-0990-844-06H	Humeral Liner Trial, Height Offset, +6mm	1	B
TRL-0990-844-09H	Humeral Liner Trial, Height Offset, +9mm	1	B
TRL-0990-844-012H	Humeral Liner Trial, Height Offset, +12mm	1	B
TRL-0990-844-015H	Humeral Liner Trial, Height Offset, +15mm	1	B
REM-0990-865-1	Glenosphere Removal Tool, 38	1	C
REM-0990-865-2	Glenosphere Removal Tool, 42	1	C

Cat no	Description	Qty	Ref
REM-0990-865-3	Glenosphere Removal Tool, 34+1	1	C
REM-0990-865-4	Glenosphere Removal Tool, 38+3	1	C
REM-0990-865-5	Glenosphere Removal Tool, 42 +3	1	C
TRL 0990-860-3401 C	34mm Glenosphere TRL, +1mm	1	D
TRL 0990-860-3800 C	38mm Glenosphere TRL, Concentric	1	D
TRL 0990-860-3800 E	38mm Glenosphere TRL, Eccentric	1	D
TRL 0990-860-3803 C	38mm Glenosphere TRL, +3mm	1	D
TRL 0990-860-3803 E	38mm Glenosphere TRL, Eccentric, +3mm	1	D
TRL 0990-860-4200 C	42mm Glenosphere TRL, Concentric	1	D
TRL 0990-860-4200 E	42mm Glenosphere TRL, Eccentric	1	D
TRL 0990-860-4203 C	42mm Glenosphere TRL, +5mm	1	D
TRL 0990-860-4203 E	42mm Glenosphere TRL, Eccentric, +3mm	1	D
RMR-0990-859S	Peripheral Glenoid Reamer Small	1	E
1TM16-2NM-C04-SN	Torque Limiting Handle 2 NM	1	E
013661*	8mm Endoscopic Drill (Not pictured)		
7207494*	8.5mm Endoscopic Drill (Not pictured)		
DRL-0990-849L*	Central Post Drill Bit Cannulated 8.0mm (Not pictured)		
DRL-0990-84XL*	Central Post Drill Bit Cannulated 8.5mm (Not pictured)		

*Special order item

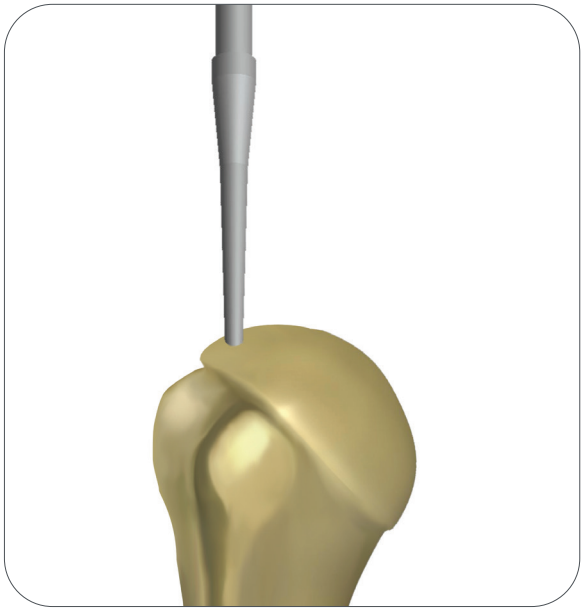


Figure 1

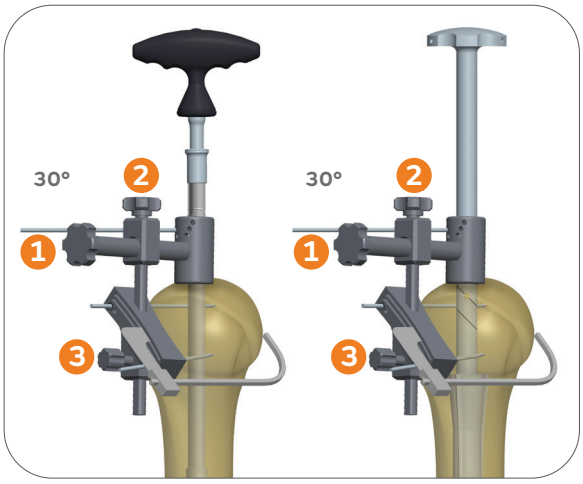


Figure 2

Appendix A

Option C: Head Resection with a TITAN Intramedullary Cutting Guide

Attach the T-Handle to the Starter Awl and create a pilot hole at the top of the humerus, in line with the long axis of the humerus just lateral to the articular surface of the head of the humerus and medial to the attachment of the rotator cuff. (Figure 1)

Note: This surgical step should not be performed with power reamers or drills.

Leave the Starter Awl in place and clamp the Head Cutting Guide around the awl by tightening knob 1. The Version Rod is then passed through the holes in the cutting guide and is rotated into the desired retroversion. The holes denote 20°, 30°, and 40° of retroversion, in reference to the forearm axis. If more or less retroversion is required, use the orientation holes on the cutting guide collar and rotate the forearm to desired angle accordingly. Slide the cutting plate against the humerus and tighten knob 2. Then adjust the resection level by sliding the cutting plate up or down and tightening knob 3.

The Head Cutting Depth Gauge can be used to assess the cutting plane. The gauge should enter the anterior surface of the humerus along the line of the anatomic neck and exit 2-3mm proximal to the posterior cuff attachment. Before the oscillating saw blade (33 x 0.8mm) is placed along the flat surface of the cutting plate, drill two 3.2mm Fixation Pins through the cutting plate and into the underlying bone which will stabilize the guide. Remove the Cutting Guide-Starter Awl assembly by loosening knob 3 on the cutting plate and removing the Starter Awl out of the humerus. Use an oscillating saw through the capture to remove the humeral head. If additional head resection is needed, lower the blade to the next slot. This will remove 3mm of additional bone. After removing the humeral head, extract the Fixation Pins using the Pin Puller. (Figure 2)

Continue to Step 7 Humeral sizing located on page 10.

Special Order:

Titan TSS 2.5 Humeral Tray 1 (page 71)

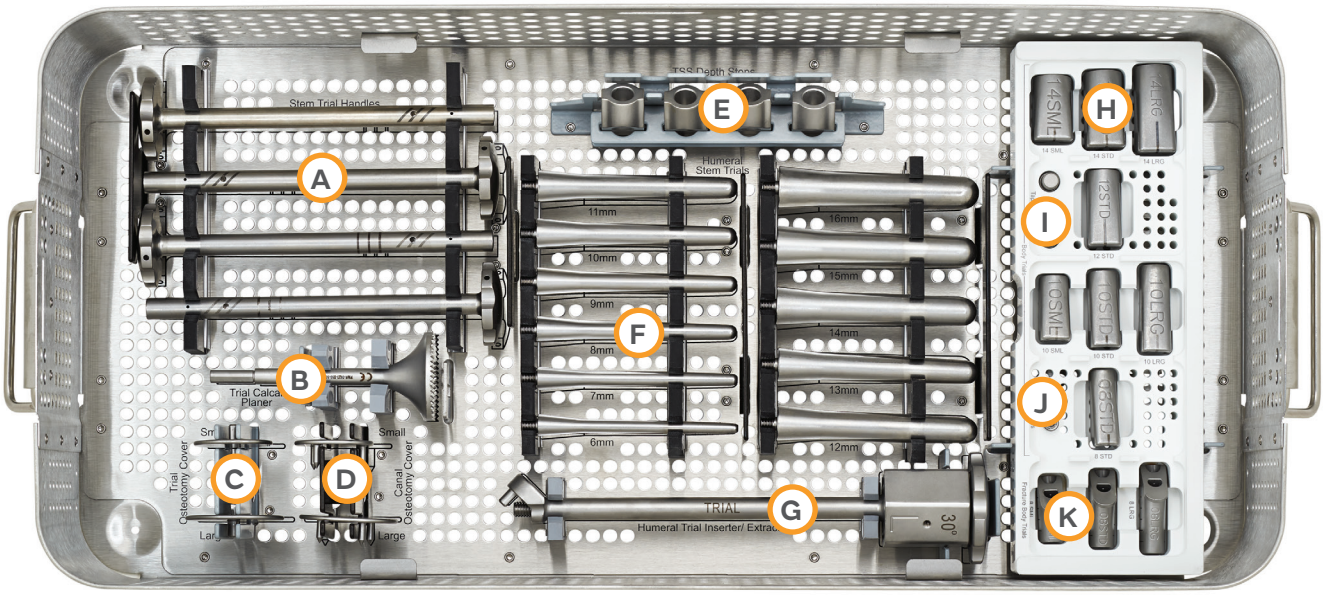
Items used:

SET189-A001 Head Cutting Guide
GAU-0920-058-001 Head Cutting Depth Gauge
SET189-D007 Version Rod
PUL-0920-087-01 Pin Puller
PIN-0920-051-001 Fixation Pin
AWL-0920-042-001 Starter Awl
NR135004-J-004 Quick Connect T-Handle

TITAN Humeral Tray 1 - Base

Tray components:

Stem Trial Handles
Trial Calcar Planer
Trial Osteotomy Cover
Canal Osteotomy Cover
Total Shoulder Depth Stops
Humeral Stem Trials
Humeral Trial Inserter/Extractor
Humeral Body Trials
Taper Adaptors
Locking Body Screws
Fracture Body



Cat no	Description	Qty	Ref
CSA-000-14	Generic Case Lid - Full DIN	1	
HDL-0920-043-001	Stem Trial Handle	1	A
RMR-0923-050-002	TSS Trial Calcar Planer, 2.5	1	B
CVR-0920-076L	Trial Osteotomy Cover, Large	1	C
CVR-0920-076S	Trial Osteotomy Cover, Small	1	C
CVR-0920-077L	Canal Osteotomy Cover, Large	1	D
CVR-0920-077S	Canal Osteotomy Cover, Small	1	D
HDS-0920-069-001	Depth Stop	1	E
TRL-0920-026-06	Humeral Stem Trial, 6mm	1	F
TRL-0920-026-07	Humeral Stem Trial, 7mm	1	F
TRL-0920-026-08	Humeral Stem Trial, 8mm	1	F
TRL-0920-026-09	Humeral Stem Trial, 9mm	1	F
TRL-0920-026-10	Humeral Stem Trial, 10mm	1	F
TRL-0920-026-11	Humeral Stem Trial, 11mm	1	F
TRL-0920-026-12	Humeral Stem Trial, 12mm	1	F
TRL-0920-026-13	Humeral Stem Trial, 13mm	1	F
TRL-0920-026-14	Humeral Stem Trial, 14mm	1	F
TRL-0920-026-15	Humeral Stem Trial, 15mm	1	F

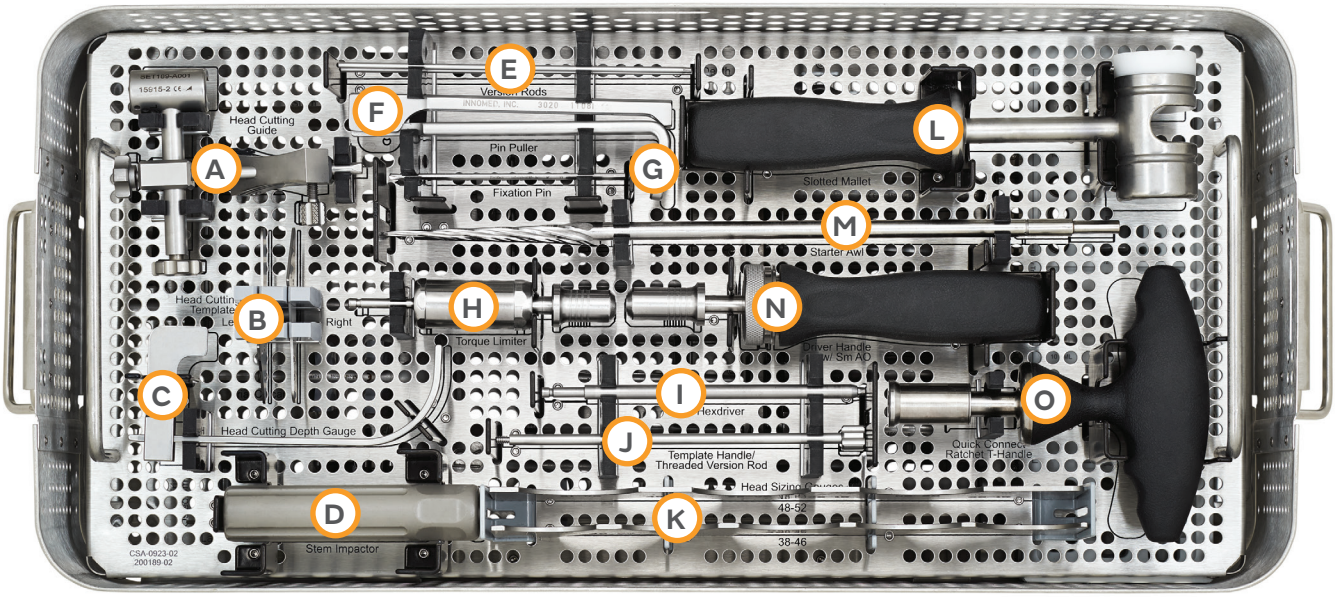
Cat no	Description	Qty	Ref
TRL-0920-026-16	Humeral Stem Trial, 16mm	1	F
INS-0923-046-001	TSS Trial Inserter/Extractor, 2.5	1	G
TRL-0920-020-08STD	Body Trial, 8 Standard	1	H
TRL-0920-020-10LRG	Body Trial, 10 Large	1	H
TRL-0920-020-10SML	Body Trial, 10 Small	1	H
TRL-0920-020-10STD	Body Trial, 10 Standard	1	H
TRL-0920-020-12STD	Body Trial, 12 Standard	1	H
TRL-0920-020-14LRG	Body Trial, 14 Large	1	H
TRL-0920-020-14SML	Body Trial, 14 Small	1	H
TRL-0920-020-14STD	Body Trial, 14 Standard	1	H
ADT-0923-065-001	TSS Taper Adapter, 2.5	1	I
BSW-0920-01NS	Locking Body Screw	1	J
TRL-0923-021-08LRG	TSS Fracture Body Trial Lrg, 2.5	1	K
TRL-0923-021-08SML	TSS Fracture Body Trial Sml, 2.5	1	K
TRL-0923-021-08STD	TSS Fracture Body Trial Std, 2.5	1	K

*Special Order Item

TITAN Humeral Tray 1 – Insert

Tray components:

Head Resection Guide
Head Cutting Templates
Head Cutting Depth Gauge
Body/Stem Impactor
Version Rods
Pin Puller
Fixation Pin
Torque Limiter
Hex Driver
Cutting Template Handle
Head Sizing Templates
Slotted Mallet
Starter Awl
Driver Handle
Quick Connect T-Handle



Cat no	Description	Qty	Ref
SET189-A001	Head Cutting Guide	1	A
TMP-0920-040-001L	Head Cutting Template, Left	1	B
TMP-0920-040-001R	Head Cutting Template, Right	1	B
GAU-0920-058-001	Head Cutting Depth Gauge	1	C
IMP-0920-055-001	Stem Impactor	2	D
SET189-D007	Version Rod	1	E
PUL-0920-087-01	Pin Puller	1	F
PIN-0920-051-001	Fixation Pin	1	G
TRQ-0920-086-01	Torque Limiter	1	H
SCR-0920-060-001	1/8 Hexdriver	1	I
ROD-0923-040-001	Head Cutting Template Handle	1	J
HSG-0920-041-001	Head Sizing Gauge 38-46	1	K
HSG-0920-041-002	Head Sizing Gauge 48-52	1	K

*Special Order Item

Cat no	Description	Qty	Ref
MAL-0920-085-01	Slotted Mallet	1	L
AWL-0920-042-001	Starter Awl	1	M
G107992_B	Driver Handle w/ Sm AO	1	N
NR135004-J-004	Quick Connect T-Handle	1	O

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35205 V6 71081190 REVF 11/24

Manufacturer:
1450 Brooks Road
Memphis, TN 38116
USA

References

1. Smith+Nephew 2023. AETOS Anatomic Humeral Head Design. Internal Report. ER-04-0990-0019.