

**AltiVate**<sup>™</sup> Anatomic

SURGICAL TECHNIQUE







## **AltiVate**<sup>™</sup> Anatomic

DJO Surgical is a manufacturer of orthopedic implants and does not practice medicine. This surgical technique was prepared in conjunction with licensed health care professionals. The treating surgeon is responsible for determining the appropriate treatment, technique(s), and product(s) for each individual patient.





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### > Indications

#### **Anatomic Total Shoulder Indications:**

The AltiVate™ Anatomic Shoulder System is indicated as an anatomic shoulder joint replacement for patients suffering from pain and dysfunction due to:

- Non-inflammatory degenerative joint disease including osteoarthritis, avascular necrosis of the natural humeral head and/or glenoid, and post traumatic arthritis
- Rheumatoid and other inflammatory arthritis
- Correction of functional deformity, including fracture malunion
- Humeral head fracture
- Revision of other devices if sufficient bone stock remains

The assembled humeral component may be used alone for hemiarthroplasty or combined with the glenoid component for a total shoulder arthroplasty.

Humeral components with a porous coated surface are indicated for either cemented or uncemented applications.

Glenoid components are indicated for cemented use only.

#### Hemi Shoulder Indications:

The AltiVate™ Anatomic Shoulder System is indicated as a hemiarthroplasty shoulder joint replacement for patients with a functional deltoid muscle suffering from pain and dysfunction due to:

- Non-inflammatory degenerative joint disease including osteoarthritis, avascular necrosis of the natural humeral head and/or glenoid, and post traumatic arthritis
- Rheumatoid and other inflammatory arthritis
- Correction of functional deformity, including fracture malunion
- Humeral head fracture
- Rotator cuff tear arthropathy
- Revision of other devices if sufficient bone stock remains

### ➤ Contraindications

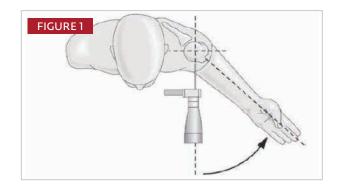
Total joint replacement is contraindicated where there is:

- Active local or systemic infection
- Insufficient bone quality which may affect the stability of the implant
- Muscular, neurological, or vascular deficiencies, which compromise the affected extremity

- Alcoholism or other addictions
- Materials sensitivity
- Loss of ligamentous structures
- High levels of physical activity (e.g. competitive sports, heavy physical labor)



## > Humeral Osteotomy







#### **HUMERAL PREPARATION - OSTEOTOMY**

Measure the level of the humeral head resection intraoperatively by reviewing the preoperative plan. Trim any osteophytes from the proximal humerus as needed using a straight rongeur to improve visualization of the anatomic neck of the humerus. Position the Extramedullary Osteotomy Guide onto the anterior humeral shaft to determine the varus-valgus angle of the humeral head osteotomy. For a right shoulder, the Right label should be facing outward and for a left shoulder, the Left label should be facing outward. Humeral retroversion is determined by using the forearm as a reference point to the flexed elbow. Externally rotate the forearm, and align the Retroversion Alignment Rod parallel to the forearm to recreate a preferred humeral neck resection in 30 degrees of humeral retroversion. (FIGURE 1)

Note that the height of the osteotomy should be at the anatomic neck. The intersection between the medial portion of the rotator cuff footprint and the articular surface is a helpful landmark. (FIGURE 2)

The Pin Driver is used to advance the Quick Release Bone Pins. (**FIGURE 3**) Begin the humeral head resection by cutting parallel to the top of the osteotomy guide until the humeral head is completely resected. Pull out the bone pins using the Bone Pin Puller/Extractor and remove the Osteotomy Guide.



## > Humeral Preparation and Trialing



### **Humeral Canal Reaming**

The humerus must be extended, externally rotated and adducted to avoid the patient's head while accessing the medullary canal. Start at the top of the osteotomy and use the Humeral Canal Finder to sound the medullary canal. (FIGURE 4) Attach the modular T-Handle to the Canal Reamers and ream the lateral cortical wall of the humeral canal. Sequentially increase the size of the Canal Reamers until cortical chatter is present. Reaming should be done carefully in all patients, especially those with poor bone quality.



For primary, press-fit applications, the Humeral Reamers should be inserted into the humerus such that the (SHORT) arrow is even with the proximal lateral level of the humeral osteotomy. (FIGURE 5)

**NOTE:** The Canal Reamers have additional markings that correlate to the standard length Turon Humeral Stem. If the decision to use a short or standard length stem is being made intraoperatively then it is recommended to canal ream to the (STANDARD-PRESS FIT) arrow.

## > Humeral Preparation and Trialing









### **Humeral Canal Broaching**

Humeral Broaches are designed to be consistent in shape and size with the Humeral Implants. If cementing, to allow for adequate cement mantle, a stem smaller than the final broach size should be selected. If using a cementless technique, a stem size equal to the final broach size should be selected, creating line-to-line preparation for areas of the stem not coated with P2.

The Humeral Broach is secured to the Humeral Broach Handle by placing the taper on the distal end of the handle into the reverse taper of the Broach and aligning the tab on the handle with the scallop on the Broach. (FIGURE 6)

As a guide for proper alignment and retroversion, attach the Retroversion Alignment Rod to the right or left hole in the Humeral Broach Handle. Externally rotate the forearm and align the Retroversion Alignment Rod parallel to the patient's forearm to maintain the preferred amount of retroversion.

Gently impact the Humeral Broach Handle using a mallet until the broach face is flush with the osteotomy. (FIGURE 7)

Continue to sequentially broach, increasing in size, until a firm and stable fit is achieved.

Rotational stability of the broach can be tested by gently rotating the broach handle.

Remove the Humeral Broach Handle, and leave the final Humeral Broach in the humerus. (FIGURE 8) The osteotomy may also be covered by threading the appropriate sized Proximal Humeral Protector to the broach. The humeral protector can be rotated for optimal coverage before final tightening. (FIGURE 9)

**NOTE:** The dimension of the AltiVate Anatomic stems may allow for implant sizes that are larger than the native humeral canal. Transitioning to a standard length Turon stem will require the use of the Turon Humeral Instrument set. Please refer to the Turon Surgical Technique for further instructions. In addition, achieving sufficient long stem stability may require an impaction grafting technique or cementation.



## > Humeral Head Osteotomy Evaluation







#### **HUMERAL PLANER GUIDE PIN ASSEMBLY**

Remove the Proximal Humeral Protector and use the Straight Torx Driver to thread the Humeral Planer Guide Pin into the broach. (**FIGURE 10**)

#### **HUMERAL PLANING**

A final check of version and neck shaft angle should be made. If satisfied, the osteotomy can be fine tuned with a humeral planer. If the version or neck-shaft angle are not satisfactory, changing the broach position may be considered.

Humeral Planers are available in Small and Large sizes . Select the appropriate size Humeral Planer and mount the planer over the Planer Guide Pin. (FIGURE 11)

Advance under power to the physical stop. The angle of the planer when fixed onto the planer guide will be perpendicular to the standard neck shaft angle of 135 degrees. (FIGURE 12)

Remove the Humeral Planer Guide Pin once the desired amount of bone has been removed.

**NOTE**: Humeral planing can also be performed before seating of the humeral head prosthesis to the humeral stem

## > Anatomic Humeral Head Trialing









## MODULAR ANATOMIC HUMERAL HEAD TRIAL AND HUMERAL NECK TRIAL ASSEMBLY

The Humeral Head Neck Adaptors determine if the Modular Humeral Head Trial is neutral or offset. (FIGURE 13)

Choose the appropriate size Modular Humeral Head Trial and insert the Trial Neck into the recess found on the bottom of the Modular Humeral Head trial. (FIGURE 14)

Use the Straight Torx Driver and Ratcheting Handle to thread the outer screw of the Neck Trial into the Modular Head Trial. (FIGURE 15) The Humeral Head Trial assembly is secured to the Humeral Broach with the central screw of the Humeral Head Neck Trial. Fully tightening the central screw will restrict rotation during offset Humeral Head trialling. (FIGURE 16)

The Humeral Head Trials have numerical markings on the peripheral rim and the underside to serve as reference in recording the optimal offset position.

All offset humeral heads have 4 mm of offset from the center of the female taper, allowing for rotation of the head into limitless head positions.

Coverage and height of the humeral head prosthesis are confirmed prior to reduction. The AltiVate Anatomic System includes variable thickness heads to optimize medial-lateral offset and soft tissue tension.

Once the desired position of the offset head is confirmed, mark a reference point of the humeral head on the humeral neck cut as a point of reference to determine the final humeral head implant position.

**NOTE:** Turon Humeral Neck Adapters are available for use with the AltiVate Anatomic Modular Head trials and Turon Humeral stems.



**NOTE:** After glenoid implantation, the surgeon may desire to proceed immediately to final humeral stem implantation and perform humeral head trialling off the final humeral stem implant.

**NOTE:** The trial construct can be used to define implant head orientation during back table assembly.

**NOTE:** The 38X14 and 40X14 Head Trials are only available in a neutral configuration.



## > Humeral Stem Press-Fit and In-Situ Assembly Technique







#### PRESS-FIT TECHNIQUE

For press-fit applications, the stem size chosen will be the same as that of the final broach. The proximal P<sup>2</sup> coating on the final humeral implant is slightly larger than its corresponding broach by 0.5mm on all sides.

Assemble the humeral component to the Broach Handle. The humeral stem is aligned as previously determined during broach technique. (**FIGURE 17**) The Retroversion Alignment Rod can be used to confirm and assist with maintaining proper retroversion.

Once the metaphysis is engaged, the Broach Handle is carefully tapped with a mallet until the Humeral Stem is 3 to 5mm proud of the osteotomy cut. (FIGURE 18) The assembled Humeral Head and Humeral Neck Implant construct is inserted into the humeral stem. Rotate the Humeral head to maximize coverage of the cut surface.

The Humeral Head Impactor is used to engage the taper lock between the Humeral Head, Humeral Neck and Humeral Stem. Continue impacting the assembled construct until the Humeral Head is fully engaged. (FIGURE 19)

**NOTE:** Depending on subscapularis repair technique (LTO or Peel) transosseous sutures should be placed before final implantation.

### Technique for Insertion with Cement

A humeral prosthesis one size smaller than the last broach used should be chosen for implantation; this provides a 1 mm cement mantle on all sides.

Insert the appropriately-sized cement restrictor and inject the Cobalt™ Bone Cement in a retrograde fashion. Attach the Humeral Stem to the Broach Handle and align the stem as previously determined during the broach technique. The Retroversion Alignment Rod can be used to confirm and assist with maintaining proper retroversion. Once the metaphysis is engaged, the broach handle is carefully tapped with a mallet, making sure that the component progresses slightly with each successive tap of the mallet. Once the component is fully seated, it is held firmly in position until the Cobalt Bone Cement has fully cured.



## > Back Table Implant Assembly







#### **HUMERAL HEAD AND NECK ASSEMBLY**

The Back-Table Assembly Fixture can facilitate the assembly of the humeral head to the neck.

The first method involves using the neck recess built into both sides of the fixture. Insert the bottom or smaller male tapered end of the straight neck implant into the recess so that the large male tapered end is facing up. Place and finger press the humeral head implant onto the humeral neck to initiate the Morse taper. (FIGURE 20)

Assemble the Humeral Head Impactor to the Impactor Handle, and use the impactor to gently tap the humeral head thus locking it with the humeral neck.

The second method is to position the Humeral Head in the appropriate sized humeral head concavity on the Impaction Fixture. There are two concavities, one on each side of the fixture, engraved with "38mm – 42mm" and "46mm – 56mm", respectively. Insert the neck implant into the female taper of the humeral head implant. Finger press the humeral neck into the humeral head to initiate the Morse taper. Position the Humeral Head Impactor over the humeral neck and humeral head construct. While cupping the humeral neck and head implants and the impactor tip, engage the Morse taper of the neck implant into the humeral head implant by gently tapping to complete a secure Morse taper lock. (FIGURE 21)

### Back Table Assembly of Humeral Head and Stem

For final implant assembly, position the chosen sized Humeral Stem into the corresponding stem size specific Impaction Fixture position. Secure the Humeral Stem by sliding the Impaction Fixture Locking Cover into the medial undercut of the Humeral stem. Secure the Hood by tightening the thumb screw. (FIGURE 22) Insert the Humeral Neck and the Humeral Head construct in the desired position into the internal taper of the Stem. Using the Humeral Head Impactor, engage the Morse taper of the Humeral Neck and Stem.

**NOTE:** Secure the Impaction Fixture with one hand while impacting the Humeral Head.

Following the back table assembly of the humeral head, trunion and stem, the complete assembly is placed into the prepared humeral canal. Care is taken to align the stem in proper version as the stem advances through the metaphysis and into the meta-diaphysis region. Once partially seated, the Humeral impactor is used to impact the assembly until the proximal stem/humeral head are flush with the humeral osteotomy resected plane.

## > Cannulated Glenoid Preparation









Place retractors around the glenoid to get optimal visualization of the glenoid face. Choose the appropriate Glenoid Sizer and snap to the self-retaining Drill Guide Handle. For a left shoulder the handle should be positioned to the left and conversely to the right for a right shoulder. (FIGURE 23)

With the Glenoid Sizer in position, the 2.4 mm Guide Wire is advanced approximately 15mm. (FIGURE 24)

Remove the Glenoid Sizer and advance the size 38 Cannulated Glenoid Reamer over the 2.4mm Guide Wire. Sequentially ream up to the corresponding Glenoid Sizing Trial. (FIGURE 25)



CANNULATED DRILL GUIDE, SMALL
38 and 42mm GLENOID TRIALS and IMPLANT



CANNULATED DRILL GUIDE, LARGE
46, 50, and 54mm GLENOID TRIALS and IMPLANT

Select the Cannulated Drill Guide that corresponds to the Glenoid Sizer used to size the glenoid. Attach the Drill Guide Handle to the Cannulated Drill Guide and advance the assembly over the 2.4mm Guide Wire. (FIGURE 26)

**NOTE:** Glenoid Reamer Handles are color coded to match the corresponding Trial Glenoids.

**NOTE:** The Cannulated Drill Guide - Small is to be used with the 38 and 42 Pegged Glenoid Trials and implants. The Cannulated Guide - Large is to be used with the 46, 50 and 54 Pegged Glenoid Trials and implants.

**NOTE:** Drill guides include spikes in the face to increase guide stability while drilling.



## > Cannulated Glenoid Preparation Continued









Use the Cannulated Impactor to fully seat the Cannulated Drill Guide against the face of the glenoid. Using the Peripheral Drill, drill for the peripheral pegs, starting with the superior peg hole. Drill to the physical stop. (FIGURE 27)

Drill Guide Lugs are recommended and are inserted into the peripheral holes for rotational stability. (FIGURE 28)

Remove the Cannulated Drill Guide and to drill the central peg hole. The 5.8mm or 4.8mm Cannulated Center Drill is used to expand the center hole to its final size. Drill to the physical stop. (FIGURE 29)

**NOTE:** Then 5.8mm Cannulated Center Drill creates a 1mm radial cement mantle. The 4.8mm Cannulated Center Drill will provide a slight interference fit with the bone.

Place the corresponding Pegged Glenoid Trial into the prepared glenoid using the Glenoid Trial Inserter. (FIGURE 30) Ensure that the trial sits flush on the prepared glenoid surface. Proper glenoid preparation should result in a glenoid trial that does not "rock" in any direction — this indicates that the surface between the final pegged prosthesis and glenoid have an identical radius of curvature. Since the trial pegs are slightly undersized, some movement may be felt.

## > Non-Cannulated Glenoid Preparation









Choose the appropriate Glenoid Sizer and snap to the self-retaining Drill Guide Handle. For a left shoulder the handle should be positioned to the left and conversely to the right for a right shoulder.

With the Glenoid Sizer in position, the 2.4mm Guide Wire is advanced to create a short pilot hole for the Non- Cannulated Center Drill. (FIGURE 31)

Remove the Glenoid Sizer and handle. Advance the Non-Cannulated Center Drill into the pilot hole and drill to the physical stop. (**FIGURE 32**)

Insert the tip of the Non-Cannulated Reamer into the drill hole and sequentially ream up to the corresponding Glenoid Sizer. (FIGURE 33)



NON-CANNULATED DRILL GUIDE, SMALL 38 and 42mm GLENOID TRIALS and IMPLANT



NON-CANNULATED DRILL GUIDE, LARGE 46, 50, and 54mm GLENOID TRIALS and IMPLANT

Select the Non-Cannulated Drill Guide that corresponds to the Glenoid Sizer used to size the glenoid. Attach the Drill Guide Handle to the Non-Cannulated Drill Guide and insert into the drill hole created by the Non-Cannulated Center Drill. (**FIGURE 34**)

**NOTE:** Glenoid Reamer Handles are color coded to match the corresponding Trial Glenoids.

**NOTE:** The Non-Cannulated Drill Guide - Small is to be used with the 38 and 42 Pegged Glenoid Trials and implants. The Non- Cannulated Guide - Large is to be used with the 46, 50 and 54 Pegged Glenoid Trials and implants.

**NOTE:** Drill guides include spikes in the face to increase guide stability while drilling.



## > Non-Cannulated Glenoid Preparation Continued





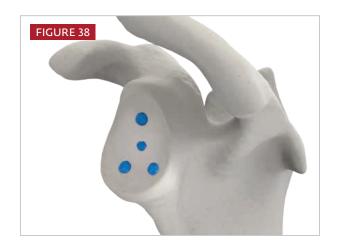
Use the Cannulated Impactor to fully seat the Non- Cannulated Drill Guide against the face of the glenoid. Using the Peripheral Drill, drill for the peripheral pegs, starting with the superior peg hole. Drill to the physical stop. (FIGURE 35)

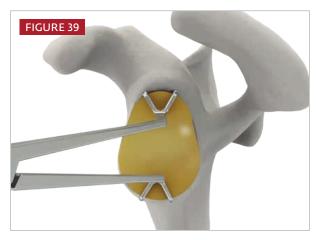
Drill Guide Lugs are recommended and are inserted into the peripheral holes for rotational stability. (FIGURE 36)



Place the corresponding Pegged Glenoid Trial into the prepared glenoid using the Glenoid Trial Inserter. (FIGURE 37) Ensure that the trial sits flush on the prepared glenoid surface. Proper glenoid preparation should result in a glenoid trial that does not "rock" in any direction — this indicates that the surface between the final pegged prosthesis and glenoid have an identical radius of curvature. Since the trial pegs are slightly undersized, some movement may be felt.

## > Glenoid Implant Cementing and Positioning







Remove the glenoid trial using the Glenoid Trial Inserter. A Toomey syringe with a catheter tip is filled with a single dose of Cobalt Bone Cement. The glenoid peg holes are then filled with cement. The cement should be in a doughy state when applied. (FIGURE 38)

Place the implant in the prepared bone by hand or by using the optional Glenoid Implant Inserter. (FIGURE 39)

6 6

38mm and 42mm Peg Pattern



46mm, 50mm, 54mm Peg Pattern

Thread the Glenoid Pusher Handle to the Glenoid Pusher. Align the Glenoid Pusher assembly so that it is in-line with the trajectory of the glenoid implant. Then lightly mallet the Glenoid Pusher handle until the implant is sits flush against the bone. (**FIGURE 40**)

The trilobes on the peripheral pegs allow for a DROP AND  $GO^{\mathbb{M}}$  technique that does not require continuous pressure on the implant while the cement cures.

The Glenoid Pusher can also be used to maintain pressure on the component while the cement cures.

**NOTE:** Please refer to Turon Modular Shoulder System Surgical Technique if the use of a Turon Keeled Glenoid in required.



### > Humeral Stem Revision







#### **HUMERAL HEAD REMOVAL**

Removal of the Humeral Head and Humeral Neck can be achieved without disturbing a well-fixed Humeral Stem. The humeral head implant can be removed using the Head Distractor. Place the two prongs of the distractor between the humeral head implant and the osteotomy surface.

Gently tap the distractor to disengage the Morse taper. (FIGURE 41)

#### **HUMERAL NECK REMOVAL**

The humeral neck implant can be removed using the Humeral Neck Extractor. Attach the Humeral Neck Extractor to the Ratcheting Handle. Thread the tip of the extractor into the threaded hole of the humeral neck implant. The threaded tip will bottom out against the humeral stem and disengage the Morse taper. (FIGURE 42)

#### **HUMERAL STEM REMOVAL**

The Humeral Broach Handle and Stem Extractor can be used to remove the humeral stem. Attach the Humeral Broach Handle. Gently tap the humeral stem out from the shaft until the face of the humeral stem is sufficiently clear from the osteotomy surface. There is a medial notch beneath the face of the humeral stem where the tip of the Stem Extractor engages.

The Stem Extractor greatly facilitates humeral stem removal. Place the tip of the Stem Extractor into this notch and gently tap in an upward motion to complete the humeral stem removal. (FIGURE 43)



### > AltiVate Anatomic Humeral Head and Glenoid Radius of Curvature Mismatch

Radial mismatch in mm

GLENOIDS			Н	UMERAL HEAI	DS		
GLENOID3	SIZE 38	SIZE 40	SIZE 42	SIZE 46	SIZE 50	SIZE 54	SIZE 56
SIZE 38	6	5	4	2	0	-2	-3
SIZE 42	8	7	6	4	2	0	-1
SIZE 46	10	9	8	6	4	2	1
SIZE 50	12	11	10	8	6	4	3
SIZE 54	14	13	12	10	8	6	5

## > AltiVate Anatomic Humeral Head and Turon Stem Configurations

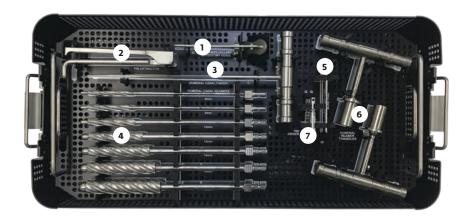
Certain AltiVate Humeral Heads and Turon Stems configurations are not compatible and may cause head/stem interferences.

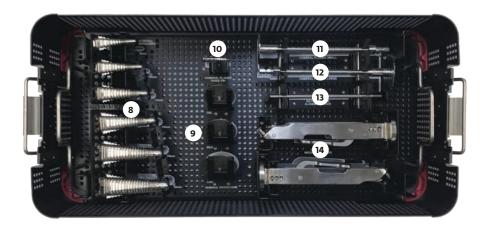
TURON	ALTIVATE ANATOMIC™ OFFSET HUMERAL HEADS									
HUMERAL STEMS	40X16	42X16	42X18	46X16	46X18	50X18	50X20	54X18	54X20	56X22
SIZE 6										
SIZE 8										
SIZE 10										
SIZE 12										
SIZE 14										
SIZE 16										



Interference between AltiVate Anatomic Offset Humeral Heads and Turon Stems

# > Reference Guide INSTRUMENT GUIDE





### AltiVate Anatomic, Instrument Case, Humeral Stem Tray 1, Top

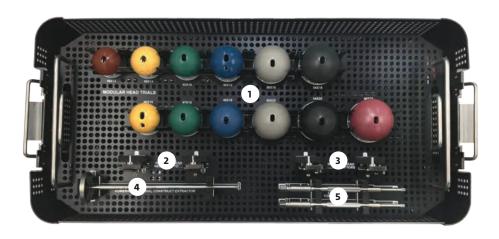
NUMBER	DESCRIPTION	PART NUMBER	QNTY
1	EXTRAMEDUALLARY OSTEOTOMY GUIDE	804-06-033	1
2	PIN EXTRACTOR	800-01-035	1
3	HUMERAL CANAL FINDER	804-00-002	1
	ALTIVATE ANATOMIC, HUMERAL CANAL REAMER, 6MM	804-07-006	1
	ALTIVATE ANATOMIC, HUMERAL CANAL REAMER, 8MM	804-07-008	1
	ALTIVATE ANATOMIC, HUMERAL CANAL REAMER, 10MM	804-07-010	1
4	ALTIVATE ANATOMIC, HUMERAL CANAL REAMER, 12MM	804-07-012	1
	ALTIVATE ANATOMIC, HUMERAL CANAL REAMER, 14MM	804-07-014	1
	ALTIVATE ANATOMIC, HUMERAL CANAL REAMER, 16MM	804-07-016	1
	ALTIVATE ANATOMIC, HUMERAL CANAL REAMER, 18MM	804-07-018	1
5	QUICK RELEASE BONE PIN	800-01-338	2
6	HUMERAL REAMER T-HANDLES	803-05-257	2
7	PIN DRIVER	800-01-339	1

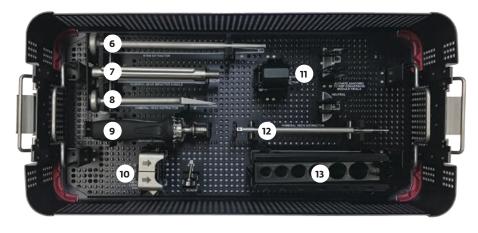
### AltiVate Anatomic, Instrument Case, Humeral Stem Tray 2, Bottom

NUMBER	DESCRIPTION	PN	QNTY
	ALTIVATE ANATOMIC, HUMERAL BROACH, 8MM	804-07-108	1
	ALTIVATE ANATOMIC, HUMERAL BROACH, 10MM	804-07-110	1
8	ALTIVATE ANATOMIC, HUMERAL BROACH, 12MM	804-07-120	1
٥	ALTIVATE ANATOMIC, HUMERAL BROACH, 14MM	804-07-140	1
	ALTIVATE ANATOMIC, HUMERAL BROACH, 16MM	804-07-160	1
	ALTIVATE ANATOMIC, HUMERAL BROACH, 18MM	804-07-180	1
	ALTIVATE ANATOMIC, HUMERAL PROTECTOR, SMALL	804-07-063*	1
9	ALTIVATE ANATOMIC, HUMERAL PROTECTOR, MEDIUM	804-07-064*	1
	ALTIVATE ANATOMIC, HUMERAL PROTECTOR, LARGE	804-07-065*	1
10	ALTIVATE ANATOMIC, HUMERAL PLANER GUIDE PIN	804-07-060	1
11	ALTIVATE ANATOMIC, HUMERAL PLANER, SMALL	804-07-071	1
12	ALTIVATE ANATOMIC, HUMERAL PLANER, LARGE	804-07-073	1
13	RETROVERSION ALIGNMENT ROD	803-01-057	2
14	ALTIVATE ANATOMIC, HUMERAL BROACH HANDLE	804-07-034	2

## > Reference Guide

**INSTRUMENT GUIDE** 





### AltiVate Anatomic, Instrument Case, Humeral Head Tray 1, Top

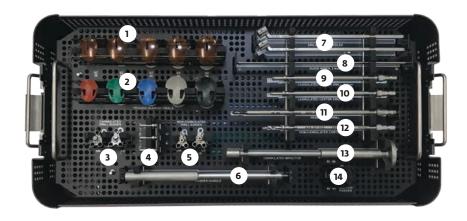
NUMBER	DESCRIPTION	PN	QNTY
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 38X14	804-38-214	1
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 40X14	804-40-214	1
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 40X16	804-40-216	1
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 42X16	804-42-216	1
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 42X18	804-42-218	1
1	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 46X16	804-46-216	1
I	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 46X18	804-46-218	1
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 50X18	804-50-218	1
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 50X20	804-50-220	1
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 54X18	804-54-218	1
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 54X20	804-54-220	1
	ALTIVATE ANATOMIC, MODULAR HEAD TRIAL, 56X22	804-56-222	1
2	ALTIVATE ANATOMIC, HUMERAL HEAD NECK ADAPTOR, NEUTRAL	804-07-001	2
3	ALTIVATE ANATOMIC, HUMERAL HEAD NECK ADAPTOR, OFFSET	804-07-002	2
4	ALTIVATE ANATOMIC, HUMERAL HEAD TRIAL CONSTRUCT EXTRACTOR	804-07-003	1
5	ALTIVATE ANATOMIC, STRAIGHT TORX DRIVER	804-07-167	2

### AltiVate Anatomic, Instrument Case, Humeral Head Tray 2, Bottom

NUMBER	DESCRIPTION	PN	QNTY
6	STEM EXTRACTOR	804-05-047	1
7	HUMERAL HEAD IMPACTOR HANDLE	800-01-018	1
8	HUMERAL HEAD DISTRACTOR	804-05-046	1
9	ALTIVATE ANATOMIC, RATCHET HANDLE	804-07-163	1
10	ALTIVATE ANATOMIC, IMPACTION FIXTURE LOCKING COVER	804-07-099	1
11	HUMERAL HEAD IMPACTOR	804-00-010	1
12	HUMERAL NECK EXTRACTOR	804-15-003	1
13	ALTIVATE ANATOMIC, IMPACTION FIXTURE	804-07-098	1

## > Reference Guide

### **INSTRUMENT GUIDE**





### AltiVate Anatomic, Instrument Case, Glenoid Tray 1, Top

NUMBER	DESCRIPTION	PN	QNTY
	ALTIVATE ANATOMIC, GLENOID SIZER, SIZE 38	804-07-038	1
	ALTIVATE ANATOMIC, GLENOID SIZER, SIZE 42	804-07-042	1
1	ALTIVATE ANATOMIC, GLENOID SIZER, SIZE 46	804-07-046	1
	ALTIVATE ANATOMIC, GLENOID SIZER, SIZE 50	804-07-050	1
	ALTIVATE ANATOMIC, GLENOID SIZER, SIZE 54	804-07-054	1
	ALTIVATE ANATOMIC, PEGGED GLENOID TRIAL, SIZE 38	804-07-380	1
	ALTIVATE ANATOMIC, PEGGED GLENOID TRIAL, SIZE 42	804-07-420	1
2	ALTIVATE ANATOMIC, PEGGED GLENOID TRIAL, SIZE 46	804-07-460	1
	ALTIVATE ANATOMIC, PEGGED GLENOID TRIAL, SIZE 50	804-07-500	1
	ALTIVATE ANATOMIC, PEGGED GLENOID TRIAL, SIZE 54	804-07-540	1
2	ALTIVATE ANATOMIC, NON-CANNULATED DRILL GUIDE, SMALL	804-07-126	1
3	ALTIVATE ANATOMIC, NON-CANNULATED DRILL GUIDE, LARGE	804-07-127	1
4	ALTIVATE ANATOMIC, DRILL GUIDE LUGS	804-07-129	3
-	ALTIVATE ANATOMIC, CANNULATED DRILL GUIDE, SMALL	804-07-124	1
5	ALTIVATE ANATOMIC, CANNULATED DRILL GUIDE, LARGE	804-07-125	1
6	PUSHER HANDLE	804-25-037	1
7	ALTIVATE ANATOMIC, DRILL GUIDE HANDLE	804-07-037	2

### AltiVate Anatomic, Instrument Case, Glenoid Tray 2, Middle

NUMBER	DESCRIPTION	PN	QNTY
8	ALTIVATE ANATOMIC, GUIDE WIRE, 24MM	804-07-338	3
9	ALTIVATE ANATOMIC, CANNULATED CENTER DRILL, 5.8MM	804-07-151	1
10	ALTIVATE ANATOMIC, CANNULATED CENTER DRILL, 4.8MM	804-07-149	1
11	ALTIVATE ANATOMIC, PERIPHERAL DRILL	804-07-147	1
12	ALTIVATE ANATOMIC, NON-CANNULATED CENTER DRILL	804-07-153	1
13	ALTIVATE ANATOMIC, CANNULATED IMPACTOR	804-07-136	1
14	GLENOID PUSHER	804-25-136	1
	ALTIVATE ANATOMIC, NON-CANNULATED GLENOID REAMER, SIZE 38	804-07-238	1
	ALTIVATE ANATOMIC, NON-CANNULATED GLENOID REAMER, SIZE 42	804-07-242	1
15	ALTIVATE ANATOMIC, NON-CANNULATED GLENOID REAMER, SIZE 46	804-07-246	1
	ALTIVATE ANATOMIC, NON-CANNULATED GLENOID REAMER, SIZE 50	804-07-250	1
	ALTIVATE ANATOMIC, NON-CANNULATED GLENOID REAMER, SIZE 54	804-07-254	1
	ALTIVATE ANATOMIC, CANNULATED GLENOID REAMER, SIZE 38	804-07-138	1
	ALTIVATE ANATOMIC, CANNULATED GLENOID REAMER, SIZE 42	804-07-142	1
16	ALTIVATE ANATOMIC, CANNULATED GLENOID REAMER, SIZE 46	804-07-146	1
	ALTIVATE ANATOMIC, CANNULATED GLENOID REAMER, SIZE 50	804-07-150	1
	ALTIVATE ANATOMIC, CANNULATED GLENOID REAMER, SIZE 54	804-07-154	1

# > Reference Guide INSTRUMENT GUIDE

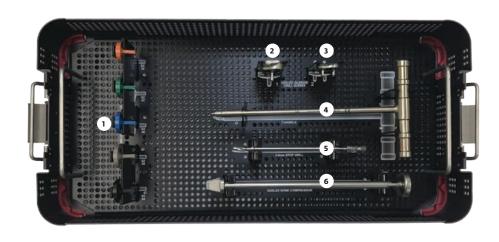


AltiVate Anatomic, Instrument Case, Glenoid Tray 3, Bottom

NUMBER	DESCRIPTION	PN	QNTY
17	GLENOID TRIAL INSERTER	804-25-134	1
18	ALTIVATE ANATOMIC, GLENOID IMPLANT INSERTER	804-07-134**	1
19	ALTIVATE ANATOMIC, LUG INSERTER/EXTRACTOR	804-25-130	1
20	ALTIVATE ANATOMIC, TURON HUMERAL HEAD NECK ADAPTOR, NEUTRAL	804-07-004	2
21	ALTIVATE ANATOMIC, TURON HUMERAL HEAD NECK ADAPTOR, OFFSET	804-07-005	2



# > Reference Guide INSTRUMENT GUIDE



Turon, Instrument Case, Keeled Glenoid (OPTIONAL)

NUMBER	DESCRIPTION	PN	QNTY
1	KEELED GLENOID TRIAL SIZE 38	804-25-111	1
	KEELED GLENOID TRIAL SIZE 42	804-25-112	1
	KEELED GLENOID TRIAL SIZE 46	804-25-113	1
	KEELED GLENOID TRIAL SIZE 50	804-25-114	1
	KEELED GLENOID TRIAL SIZE 54	804-25-115	1
2	KEELED GLENOID DRILL GUIDE 1	804-25-126	1
2	KEELED GLENOID DRILL GUIDE 2	804-25-127	1
3	KEELED GLENOID DRILL GUIDE 1	804-25-126	1
3	KEELED GLENOID DRILL GUIDE 2	804-25-127	1
4	T-HANDLE	804-25-040	1
5	5.0MM STOP DRILL	804-25-147	1
6	KEELED BONE COMPRESSOR	804-25-128	1

# > Reference Guide INSTRUMENT PART NUMBERS





DESCRIPTION	SIZE	PART NUMBER
ALTIVATE ANATOMIC, SHORT HUMERAL STEM	8mm X 63mm	520-08-000
ALTIVATE ANATOMIC, SHORT HUMERAL STEM	10mm X 65mm	520-10-000
ALTIVATE ANATOMIC, SHORT HUMERAL STEM	12mm X 67mm	520-12-000
ALTIVATE ANATOMIC, SHORT HUMERAL STEM	14mm X 70mm	520-14-000
ALTIVATE ANATOMIC, SHORT HUMERAL STEM	16mm X 78mm	520-16-000
ALTIVATE ANATOMIC, SHORT HUMERAL STEM	18mm X 85mm	520-18-000



### AltiVate Anatomic, Neutral Humeral Heads

DESCRIPTION	SIZE	PART NUMBER
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	38mm X 14mm	520-38-214
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	40mm X 14mm	520-40-214
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	40mm X 16mm	520-40-216
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	42mm X 16mm	520-42-216
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	42mm X 18mm	520-42-218
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	46mm X 16mm	520-46-216
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	46mm X 18mm	520-46-218
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	50mm X 18mm	520-50-218
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	50mm X 20mm	520-50-220
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	54mm X 18mm	520-54-218
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	54mm X 20mm	520-54-220
ALTIVATE ANATOMIC, NEUTRAL HUMERAL HEAD	56mm X 22mm	520-56-222



### AltiVate Anatomic, Offset Humeral Heads

DESCRIPTION	SIZE	PART NUMBER
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	40mm X 16mm	520-40-316
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	42mm X 16mm	520-42-316
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	42mm X 18mm	520-42-318
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	46mm X 16mm	520-46-316
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	46mm X 18mm	520-46-318
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	50mm X 18mm	520-50-318
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	50mm X 20mm	520-50-320
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	54mm X 18mm	520-54-318
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	54mm X 20mm	520-54-320
ALTIVATE ANATOMIC, OFFSET HUMERAL HEAD	56mm X 22mm	520-56-322



# > Reference Guide INSTRUMENT PART NUMBERS







AltiVate Anatomic, Humeral Neck

DESCRIPTION	SIZE	PART NUMBER
ALTIVATE ANATOMIC, HUMERAL NECK, NEUTRAL		520-07-000

E+ All-Poly Pegged Glenoid

DESCRIPTION	SIZE	PART NUMBER
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID, E-PLUS	SIZE 38	521-07-238
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID, E-PLUS	SIZE 42	521-07-242
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID, E-PLUS	SIZE 46	521-07-246
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID, E-PLUS	SIZE 50	521-07-250
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID, E-PLUS	SIZE 54	521-07-254

All-Poly Pegged Glenoid

DESCRIPTION	SIZE	PART NUMBER	
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID	SIZE 38	520-07-238	
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID	SIZE 42	520-07-242	
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID	SIZE 46	520-07-246	
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID	SIZE 50	520-07-250	
ALTIVATE ANATOMIC, ALL-POLY PEGGED GLENOID	SIZE 54	520-07-254	



## > Instrument Materials List

PART NUMBER	DESCRIPTION	MATERIAL	COLORANT
804-07-006	HUMERAL CANAL REAMER, 6MM	STAINLESS STEEL	N/A
804-07-008	HUMERAL CANAL REAMER, 8MM	STAINLESS STEEL	N/A
804-07-010	HUMERAL CANAL REAMER, 10MM	STAINLESS STEEL	N/A
804-07-012	HUMERAL CANAL REAMER, 12MM	STAINLESS STEEL	N/A
804-07-014	HUMERAL CANAL REAMER, 14MM	STAINLESS STEEL	N/A
804-07-016	HUMERAL CANAL REAMER, 16MM	STAINLESS STEEL	N/A
804-07-018	HUMERAL CANAL REAMER, 18MM	STAINLESS STEEL	N/A
804-07-108	HUMERAL BROACH, 8MM	STAINLESS STEEL	N/A
804-07-110	HUMERAL BROACH, 10MM	STAINLESS STEEL	N/A
804-07-120	HUMERAL BROACH, 12MM	STAINLESS STEEL	N/A
804-07-140	HUMERAL BROACH, 14MM	STAINLESS STEEL	N/A
804-07-160	HUMERAL BROACH, 16MM	STAINLESS STEEL	N/A
804-07-180	HUMERAL BROACH, 18MM	STAINLESS STEEL	N/A
804-07-063	HUMERAL PROTECTOR, SMALL	STAINLESS STEEL	N/A
804-07-064	HUMERAL PROTECTOR, MEDIUM	STAINLESS STEEL	N/A
804-07-065	HUMERAL PROTECTOR, LARGE	STAINLESS STEEL	N/A
804-07-060	HUMERAL PLANER GUIDE PIN	STAINLESS STEEL	N/A
804-07-070	HUMERAL PLANER, X-SMALL	STAINLESS STEEL	N/A
804-07-071	HUMERAL PLANER, SMALL	STAINLESS STEEL	N/A
804-07-072	HUMERAL PLANER, MEDIUM	STAINLESS STEEL	N/A
804-07-073	HUMERAL PLANER, LARGE	STAINLESS STEEL	N/A
804-07-074	HUMERAL PLANER, X-LARGE	STAINLESS STEEL	N/A
804-07-034	HUMERAL BROACH HANDLE	STAINLESS STEEL	N/A
804-07-163	RATCHET HANDLE	STAINLESS STEEL/SILICONE	BLACK
804-07-098	IMPACTION FIXTURE	POLYPHENYLSULFONE	BLACK 7547C
804-07-099	IMPACTION FIXTURE LOCKING COVER	STAINLESS STEEL	N/A
804-38-214	MODULAR HEAD TRIAL, 38X14	STAINLESS STEEL/ POLYPHENYLSULFONE	RUST 174C
804-40-214	MODULAR HEAD TRIAL, 40X14	STAINLESS STEEL/ POLYPHENYLSULFONE	YELLOW 124C

PART NUMBER	DESCRIPTION	MATERIAL	COLORANT
804-40-216	MODULAR HEAD TRIAL, 40X16	STAINLESS STEEL/ POLYPHENYLSULFONE	YELLOW 124C
804-42-216	MODULAR HEAD TRIAL, 42X16	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK GREEN 3415C
804-42-218	MODULAR HEAD TRIAL, 42X18	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK GREEN 3415C
804-46-216	MODULAR HEAD TRIAL, 46X16	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK BLUE 2935C
804-46-218	MODULAR HEAD TRIAL, 46X18	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK BLUE 2935C
804-50-218	MODULAR HEAD TRIAL, 50X18	STAINLESS STEEL/ POLYPHENYLSULFONE	GREY 403C
804-50-220	MODULAR HEAD TRIAL, 50X20	STAINLESS STEEL/ POLYPHENYLSULFONE	GREY 403C
804-54-218	MODULAR HEAD TRIAL, 54X18	STAINLESS STEEL/ POLYPHENYLSULFONE	BLACK 7547C
804-54-220	MODULAR HEAD TRIAL, 54X20	STAINLESS STEEL/ POLYPHENYLSULFONE	BLACK 7547C
804-56-222	MODULAR HEAD TRIAL, 56X22	STAINLESS STEEL/ POLYPHENYLSULFONE	RED 193C
804-07-167	STRAIGHT TORX DRIVER	STAINLESS STEEL	N/A
804-07-001	HUMERAL HEAD NECK ADAPTOR, NEUTRAL	STAINLESS STEEL	N/A
804-07-002	HUMERAL HEAD NECK ADAPTOR, OFFSET	STAINLESS STEEL	N/A
804-07-003	HUMERAL HEAD TRIAL CONSTRUCT EXTRACTOR	STAINLESS STEEL	N/A
804-07-004	TURON HUMERAL HEAD NECK ADAPTOR, NEUTRAL	STAINLESS STEEL	N/A
804-07-005	TURON HUMERAL HEAD NECK ADAPTOR, OFFSET	STAINLESS STEEL	N/A
804-07-138	CANNULATED GLENOID REAMER, SIZE 38	STAINLESS STEEL/ POLYPHENYLSULFONE	RUST 174C
804-07-142	CANNULATED GLENOID REAMER, SIZE 42	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK GREEN 3415C
804-07-146	CANNULATED GLENOID REAMER, SIZE 46	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK BLUE 2935C
804-07-150	CANNULATED GLENOID REAMER, SIZE 50	STAINLESS STEEL/ POLYPHENYLSULFONE	GRAY 403C
804-07-154	CANNULATED GLENOID REAMER, SIZE 54	STAINLESS STEEL/ POLYPHENYLSULFONE	BLACK 7547C
804-07-238	NON-CANNULATED GLENOID REAMER, SIZE 38	STAINLESS STEEL/ POLYPHENYLSULFONE	RUST 174C
804-07-242	NON-CANNULATED GLENOID REAMER, SIZE 42	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK GREEN 3415C
804-07-246	NON-CANNULATED GLENOID REAMER, SIZE 46	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK BLUE 2935C
804-07-250	NON-CANNULATED GLENOID REAMER, SIZE 50	STAINLESS STEEL/ POLYPHENYLSULFONE	GRAY 403C
804-07-254	NON-CANNULATED GLENOID REAMER, SIZE 54	STAINLESS STEEL/ POLYPHENYLSULFONE	BLACK 7547C
804-07-136	CANNULATED IMPACTOR	STAINLESS STEEL	N/A
804-07-134	GLENOID IMPLANT INSERTER	STAINLESS STEEL	N/A
804-07-038	GLENOID SIZER, SIZE 38	POLYPHENYLSULFONE	QUADRANT R5500 NT (AMBER)



## > Instrument Materials List

PART NUMBER	DESCRIPTION	MATERIAL	COLORANT
804-07-042	GLENOID SIZER, SIZE 42	POLYPHENYLSULFONE	QUADRANT R5500 NT (AMBER)
804-07-046	GLENOID SIZER, SIZE 46	POLYPHENYLSULFONE	QUADRANT R5500 NT (AMBER)
804-07-050	GLENOID SIZER, SIZE 50	POLYPHENYLSULFONE	QUADRANT R5500 NT (AMBER)
804-07-054	GLENOID SIZER, SIZE 54	POLYPHENYLSULFONE	QUADRANT R5500 NT (AMBER)
804-07-037	DRILL GUIDE HANDLE	STAINLESS STEEL	N/A
804-07-338	GUIDE WIRE, 2.4MM	STAINLESS STEEL	N/A
804-07-124	CANNULATED DRILL GUIDE, SMALL	STAINLESS STEEL	N/A
804-07-125	CANNULATED DRILL GUIDE, LARGE	STAINLESS STEEL	N/A
804-07-126	NON-CANNULATED DRILL GUIDE, SMALL	STAINLESS STEEL	N/A
804-07-127	NON-CANNULATED DRILL GUIDE, LARGE	STAINLESS STEEL	N/A
804-07-129	DRILL GUIDE LUGS	STAINLESS STEEL	N/A
804-07-147	PERIPHERAL DRILL	STAINLESS STEEL	N/A
804-07-149	CANNULATED CENTER DRILL, 4.8MM	STAINLESS STEEL	N/A
804-07-151	CANNULATED CENTER DRILL, 5.8MM	STAINLESS STEEL	N/A
804-07-153	NON-CANNULATED CENTER DRILL	STAINLESS STEEL	N/A
804-07-380	PEGGED GLENOID TRIAL, SIZE 38	STAINLESS STEEL/ POLYPHENYLSULFONE	RUST 174C
804-07-420	PEGGED GLENOID TRIAL, SIZE 42	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK GREEN 3415C
804-07-460	PEGGED GLENOID TRIAL, SIZE 46	STAINLESS STEEL/ POLYPHENYLSULFONE	DARK BLUE 2935C
804-07-500	PEGGED GLENOID TRIAL, SIZE 50	STAINLESS STEEL/ POLYPHENYLSULFONE	GRAY 403C
804-07-540	PEGGED GLENOID TRIAL, SIZE 54	STAINLESS STEEL/ POLYPHENYLSULFONE	BLACK 7547C
804-07-130	LUG INSERTER/EXTRACTOR	STAINLESS STEEL	N/A

> DJO Shoulder Systems Compatibility









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