

Comprehensive[®] Nano Stemless Shoulder

Surgical Technique



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Indications

1. Non-inflammatory degenerative joint disease including osteoarthritis and avascular necrosis
2. Rheumatoid arthritis
3. Revision where other devices or treatments have failed
4. Correction of functional deformity
5. Difficult clinical management problems where other methods of treatment may not be suitable or may be inadequate.

The Comprehensive nano Humeral Component is intended only for uncemented biological fixation.

Polyethylene glenoid components not attached to a metal back are indicated for cemented application only.

The Comprehensive Modular Hybrid® glenoid is indicated for cemented application only. The optional porous titanium peg may be inserted without bone cement. The optional polyethylene peg should be inserted with bone cement.

The Comprehensive nano Humeral Components are intended for use with the Bio-Modular® and Versa-Dial® Humeral Heads and the Bio-Modular and Comprehensive glenoid components.

Contraindications

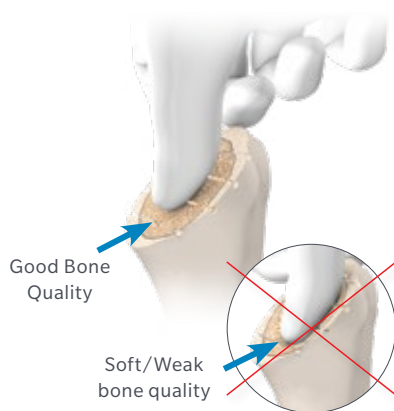
Absolute contraindications include infection, sepsis, and osteomyelitis.

Relative contraindications include:

1. Uncooperative patient or patient with neurologic disorders who is incapable or unwilling to follow directions.
2. Presence of a single cyst > 1 cm or multiple cysts at the implantation site
3. Osteoporosis.
4. Metabolic disorders which may impair bone formation.
5. Osteomalacia.
6. Distant foci of infections which may spread to the implant site.
7. Rapid joint destruction, marked bone loss or bone resorption apparent on roentgenogram.
8. Malunion or nonunion of the tuberosities of the proximal humerus.



Figure 1



Thumb Test

Figure 2a



Figure 2b

Preoperative Planning

Utilize preoperative templating to ensure the humeral neck is of sufficient diameter to implant the smallest Nano humeral component.

Surgical Position

The arm and shoulder are prepped and draped free (Figure 1). Utilize a modified beach chair position.

Intraoperative Considerations

Bone Test

- To achieve a good outcome, the patient must have adequate bone stock to support the fixation of the implant (Figure 2a).
- Poor metaphyseal bone quality assessment is not possible until the humeral head has been resected. As a result, you should always be prepared with a back-up system.

Surgical Incision

Utilize an extended deltopectoral anterior incision with an optional biceps tenodesis beginning immediately above the coracoid process and extending distally and laterally, following the deltopectoral groove along the anterior border of the deltoid (Figure 2b). Laterally retract the deltoid muscle, avoiding release of the deltoid from the clavicle. The deltoid may be partially released from its distal insertion by subperiosteal dissection. If needed, make a partial relaxing incision through the proximal coracoid tendon and medially retract the conjoined tendon. Additional exposure can be aided via a partial release of the upper 1/3 of the pectoralis major tendon at the distal aspect of the incision.

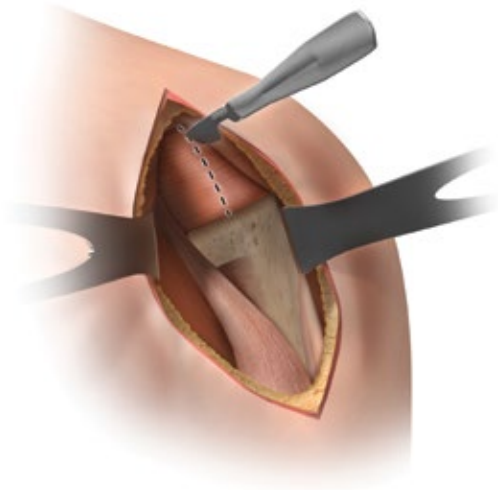


Figure 3



Figure 4

Surgical Incision (cont.)

Identify anterior structures and externally rotate the humerus. Make a longitudinal incision through the tendinous portion of the subscapularis muscle and capsule, just medial to the lesser tuberosity (Figure 3). In cases of severe contracture, subscapularis lengthening may be required (a lesser tuberosity osteotomy can be utilized based on surgeon preference).

Tag the subscapularis tendon with non-absorbent sutures. Externally rotate and extend the humerus to expose the humeral head, while protecting the axillary nerve. Mobilize the subscapularis tendon to restore excursion by releasing the upper border including the coracohumeral ligament, the anterior capsule from the glenoid rim and inferior subscapularis. It is not recommended to perform releases anterior to the subscapularis so as to avoid inadvertent denervation.

Humeral Head Resection

Remove osteophytes and assess the version of the head and the neck shaft angle. Position the appropriate sized cutting guide over the head to reproduce the patient's anatomy (Figure 4).



Figure 5

Insert the pin through the center of the humeral head guide. Cut at the anatomic neck using an oscillating saw parallel to the underside of the guide (Figure 5). Remove the pin and the humeral cut guide. Complete the cut if necessary. According to surgeon preference, an extramedullary guide is also available and may be used to resect the humerus.

If the guide is not used, perform an osteotomy along anatomic neck after removal of all osteophytes anteriorly and inferiorly. Aim saw toward junction of posterior articular cartilage and bare area. Avoid injury to the insertions of the supraspinatus and infraspinatus/teres minor.

Note: After completing humeral head resection, inspect resected surface for cysts. If there are single cysts greater than 1 cm or multiple cysts at implantation site, abandon stemless implantation and utilize a stemmed prosthesis.

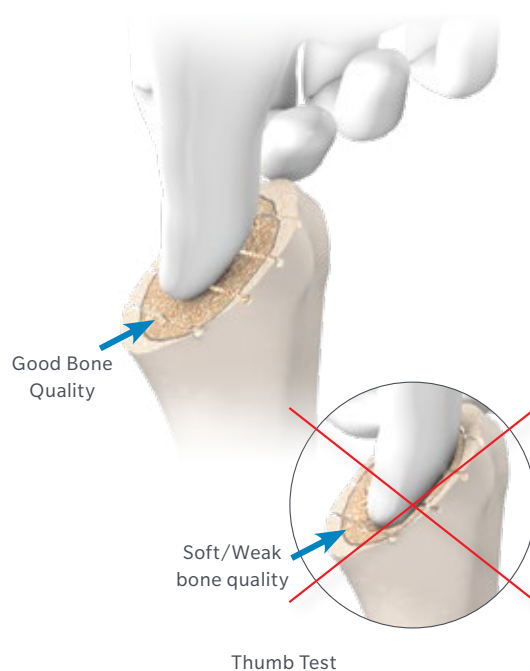


Figure 5a

Perform first bone test:

To achieve a good outcome, the patient must have adequate bone stock to support the fixation of the implant.

Press thumb on resected humeral surface to assess bone quality (Figure 5a).

If you can depress thumb into humerus without much resistance then primary stability of the implant may be insufficient. In this case a stemmed prosthesis will provide better fixation.

Poor metaphyseal bone quality assessment is not possible until the humeral head has been resected. As a result, you should always be prepared with a back-up system.



Figure 6



Figure 7

Humeral Sizing

Choose the size of the Nano humeral component by laying a humeral sizing template onto the head resection (Figure 6). The most appropriate size is the one which gives maximum coverage of cancellous bone without involving the cortical bone. The minimum distance recommended between the template and cortex should be 1 mm.

Insert a 3.2 mm Steinmann pin into the center of the humeral template and to the lateral cortex of the humerus (Figure 7). Avoid deep penetration of the lateral humeral cortex with the pin to avoid potential injury to the axillary nerve, as it courses around the lateral side of the humerus. Remove the humeral sizing template, leaving the pin in place.



Figure 8

Perform second bone quality test:

If the 3.2 mm Steinmann Pin is unstable in the humerus, then this may indicate that the bone is soft/weak. A stemmed prosthesis is recommended for soft/weak bone.

Calcar Planer

If desired, use the calcar planer to refine the resected surface. Attach the planer blade that most closely matches the diameter of the resected surface to the barrel of the calcar planer. Place the planer over the Steinmann pin. Begin rotation of the calcar planer before contacting the resected surface. Apply slight pressure and plane the resected surface (Figure 8).



Figure 9



Figure 10a



Figure 10b

Select a reamer that is the same size as the humeral sizing template used previously. Pass the reamer over the pin until the stop bottoms out on the head resection (Figure 9). The reamer should be moving when it comes in contact with bone. If the reamer should reach the lateral cortex before bottoming out, stop and repeat reaming with the next smaller reamer, or until lateral cortex is not contacted with reamer.

Note: Take care to not lean or lever on the reamer as this can change the plane of reaming.

Humeral Broaching

Select a broach that is the same size as the humeral sizing template used previously and attach it to the inserter handle. Advance the broach into the humerus in several successive motions ensuring that proper version and inclination are achieved (Figure 10a). Do not forcibly impact the broach.

The broach is fully seated when the collar on the inserter handle rests on the resected surface of the humerus (Figure 10b).

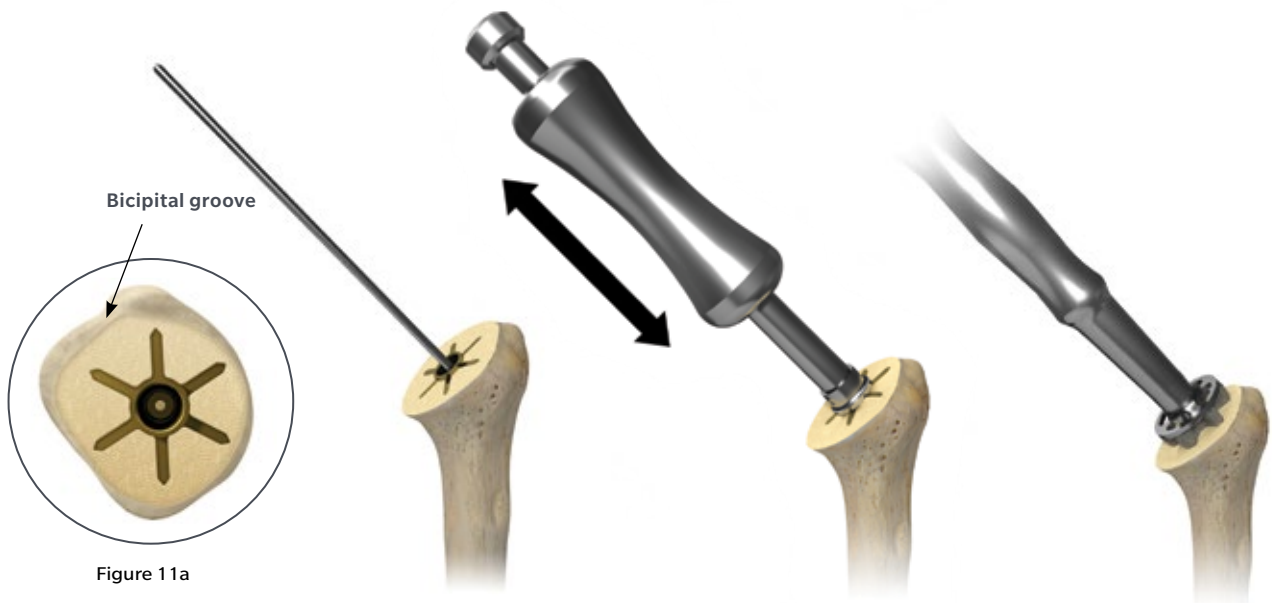


Figure 11a

Figure 11

Figure 12

Figure 13

Humeral Broaching (cont.)

If the initial broach is sized incorrectly, repeat steps for reaming and broaching with a larger size. It is not recommended to size smaller. Remove the inserter handle, leaving the broach in place (Figure 11).

ⓘ **Note:** The broach should be inserted into the humerus so the wings are not in line with the bicipital groove (Figure 11a).

Perform third bone quality test:

- If the broach is unstable after impaction, this indicates the bone is weak/soft and a stemmed prosthesis is recommended.

After placement of the broach, one has the option of placing the final Nano implant or waiting until after placement of the glenoid component and trialing the humeral head.

Nano Humeral Component Insertion

Remove the pin. Attach the slap hammer to the broach/trial and remove it from the humerus (Figure 12). Select a Nano humeral component that matches the final broach/trial used. Assemble the Comprehensive Nano Humeral Component onto the inserter handle. Insert the Nano humeral component into the proximal humerus ensuring proper version and inclination are achieved (Figure 13). This typically will result in an implant that is flush with the cut surface of the osteotomy in anatomic version and inclination. Tilting of the device superior/inferior will modify inclination. Tilting the device anterior/posterior will alter version.

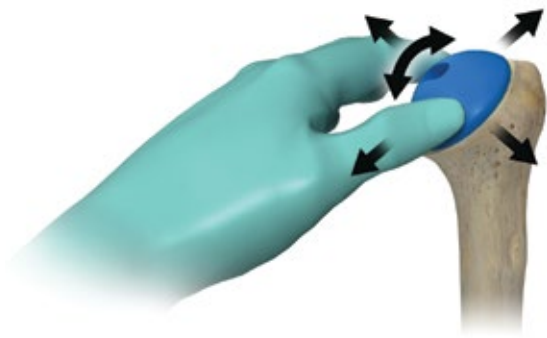


Figure 14

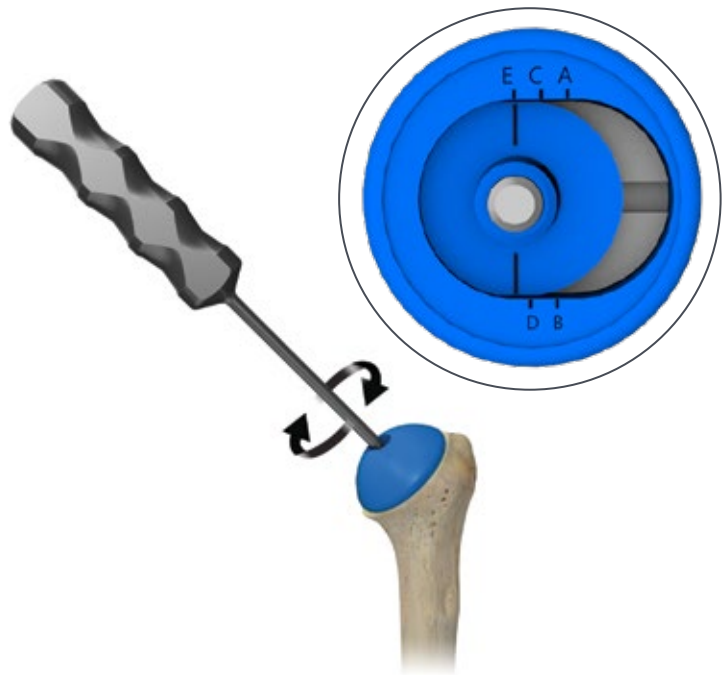


Figure 15

Backup Options

Should it be determined that the Comprehensive Nano Humeral Component is not implantable at any point intraoperatively according to the criteria provided in the device package insert, proceed with implantation of a stemmed prosthesis.

Head Selection

Using the resected humeral head for comparison, select an appropriately sized head trial and assemble to a standard trial taper adaptor. Determine the amount of desired offset by maximizing the coverage of the Versa-Dial® provisional over the resected surface of the humerus (Figure 14). After maximum coverage of the resected surface is achieved, tighten the taper adaptor trial in the head trial with a hex driver (Figure 15). Reduce the joint and perform a trial range of motion.

Note: It is recommended to impact the Versa-Dial provisional head flush with the humeral osteotomy prior to performing a trial range of motion.

Head Offset

Remove the Versa-Dial trial assembly from the humeral component. Determine the amount of offset needed by referencing the indications on the underside of the trial head and trial adaptor (Figure 15 inset).



Figure 16



Figure 17

Head Assembly

Place the Versa-Dial head into the impactor tray. Ensuring the components are clean and dry, insert the Versa-Dial taper adaptor into the head (Figure 16). Rotate the taper adaptor until the trial offset is replicated. For example, if trialing indicated halfway between the B and C hashmarks, the implant taper adaptor is aligned so its hashmark is halfway between the B and C on the head.

Engage the Morse taper with two strikes, using the taper impactor tool and mallet (Figure 17). The taper/head assembly is now securely fastened.



Figure 18



Figure 19

Head Insertion

Clean and dry the reverse Morse taper. Gently place the Versa-Dial head onto the humeral component and rotate to achieve maximum coverage of the resected surface (Figure 18). Impact the head onto the humeral component to complete humeral head implantation by using at least two blows with an appropriately sized surgical mallet and the head impactor tool.

ⓘ **Note:** It is recommended to impact the Versa-Dial humeral head flush with the osteotomy.

Humeral Component Extraction

Should the Comprehensive Nano device need to be extracted, place the extractor device on the inserter handle. Position the extractor with the blades surrounding the humeral component (Figure 19) and tap the inserter with a mallet until the extractor device is seated. Remove the extractor device. Thread the slap hammer to the Comprehensive Nano Humeral Component and extract by slapping out with the slap hammer.



Figure 20

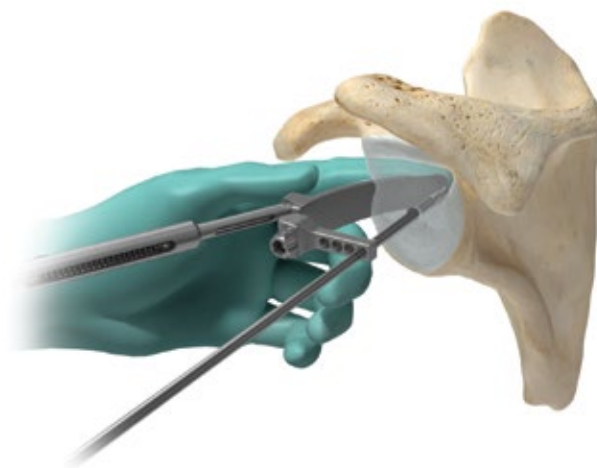


Figure 21

Sizer Pin Guides

Based on the operative shoulder, attach the quick-connect guide handle to the appropriate Sizer Pin Guide (Figure 20). Place the sizer in the middle of the glenoid in the correct orientation. Slots in the guide are provided for visualization if the glenoid has been sectioned into quadrants by using a bovie.

Insert the 3.2 mm threaded Steinmann pin through the sizer and carefully drill under power until the Steinmann pin has engaged the medial cortex of the glenoid vault. Once the Steinmann pin is securely placed, back the guide out over the pin and remove from the joint.

Caution: Always engage the button on the quick-connect guide handle while assembling or disassembling with the Sizer Pin Guide.

Glenoid Vault Pin Guide

As an alternative method of placing the initial Steinmann pin, the Glenoid Vault Pin Guide can be used to place the guide pin by referencing

the junction of the anterior glenoid neck and the scapular body.

Attach the quick-connect guide handle to the Glenoid Vault Pin Guide. Prior to inserting into the joint, be sure that the screw is locked into place to prevent the guide hinge from moving. Insert the Glenoid Vault Pin Guide into the joint and proceed to slide the tip of the guide down the anterior wall of the glenoid until it reaches the lateral aspect of the subscapularis fossa. A finger can be used to assess the correct placement of the guide along the scapular body. Once desired placement is found, identify the pin hole that best locates the center of the glenoid and insert the 3.2 mm Glenoid Vault Pin Guide (Figure 21).

Note: This guide will help control version, however, careful attention should be made to the inclination of the pin. Each hole in the guide will direct the Steinmann pin towards the tip of the guide.

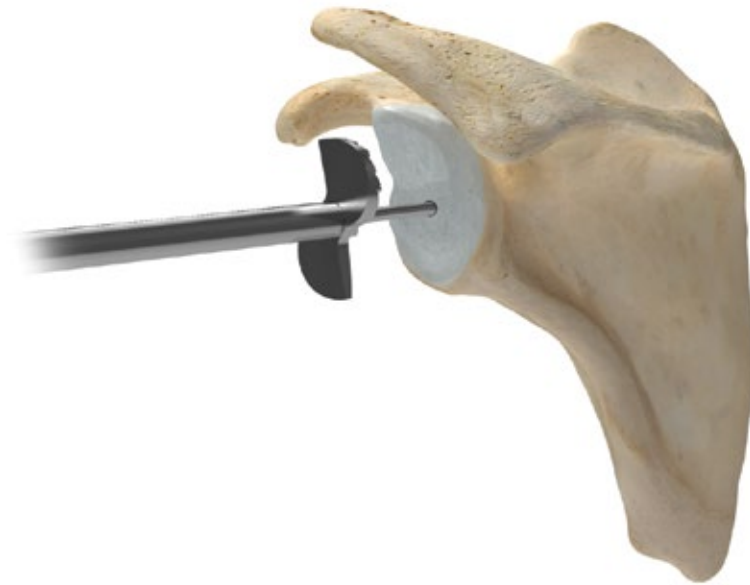


Figure 22

Proceed carefully under power until the medial cortex is engaged with the threaded tip of the Steinmann pin. Remove the drill from the pin, leaving the pin in place. Release the pin guide by unthreading the thumb screw and back the guide out over the pin and remove from the joint. The glenoid sizer can then be placed over the pin to determine appropriate glenoid size.

ⓘ **Note:** The Versa-Dial screw driver can be used to unthread the thumb screw if needed.

Caution: Always engage the button on the quick connect guide handle while assembling or disassembling with the Glenoid Vault Pin Guide.

Glenoid Reaming/Central Post Preparation

Choose the appropriate size Glenoid Face Reamer based off of the previous glenoid sizer. Assemble the chosen Glenoid Face Reamer with the modular handle. Insert the reamer into the joint over the pin. The glenoid should be reamed to the proper version and inclination as determined by the preoperative plan and intraoperative observation (Figure 22).

ⓘ **Caution:** As with any reaming, it is important to start the reamer rotating prior to coming into contact with bone. This will ensure that the reamer is rotating freely and clear of any soft tissues or other instruments that may be an obstruction.

ⓘ **Caution:** Over-reaming can decrease the surface area of the glenoid and the depth of the glenoid vault which can lead to insufficient seating or subsidence of the implant.

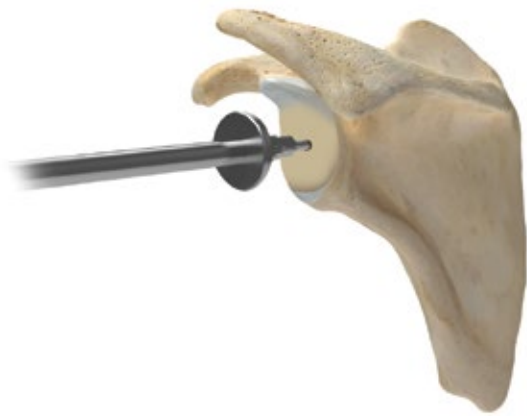


Figure 23

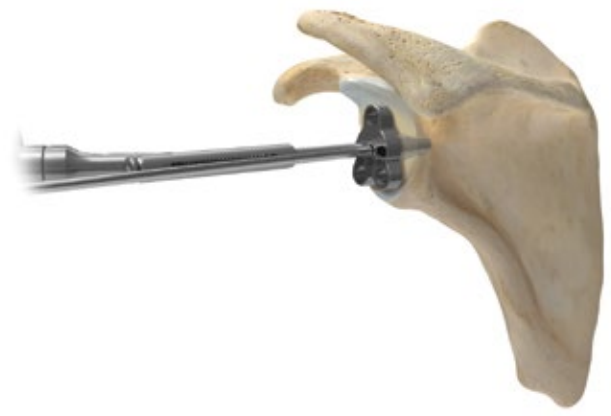


Figure 24

Glenoid Reaming/Central Post Preparation (cont.)

Once the desired amount of reaming is completed, the 2-in-1 Central Post Cutter will be used to prepare for the central boss and Regenerex® Central Post geometry. Insert the 2-in-1 central post cutter into the joint over the guide pin and proceed to ream until the stop is engaged against the newly reamed surface of the glenoid face (Figure 23).

ⓘ **Caution:** As with any reaming, it is important that the central post cutter is rotating prior to coming into contact with bone to avoid any undesirable outcomes.

Peripheral Peg Preparation

Select the appropriate size Cannulated Peripheral Peg Drill Guide and attach a quick-connect guide handle. Insert the guide over the Steinmann Pin and into the joint until it is fully seated against the face of the glenoid (Figure 24).



Figure 25

Insert a quick-release drill into the quick-release driver. Drill the superior hole until the stop is engaged. Remove the driver from the joint while leaving the drill bit in place to function as an anti-rotation peg. The drill bit is connected to the driver with a magnetic connection. Once drilled, the bone will provide enough friction to retain the drill bit as an anti-rotation peg.

ⓘ **Note:** Be sure that the drill driver has stopped rotating prior to disconnecting from the drill bit/anti-rotation peg.

Insert a second quick-release drill bit into the driver and drill the anterior-inferior hole. Remove the driver from the joint while leaving the drill bit in place to function as a second anti-rotation peg. Using a third drill bit, drill the remaining posterior-inferior hole (Figure 25).

Remove the guide and alignment pins/drill bits from the joint by backing the guide and drill bits out over the Steinmann pin. Remove the Steinmann pin from within the joint by using the drill on reverse.

ⓘ **Note:** The standard peripheral peg drill and anti-rotation pegs can be used in place of the quick-connect drill bits if needed.

Caution: Always engage the button on the quick-connect guide handle while assembling or disassembling with the Cannulated Peripheral Peg Drill Guide.



Figure 26

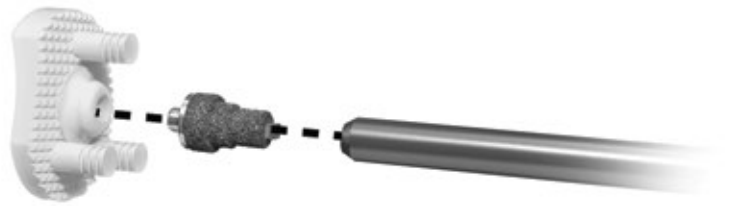


Figure 27

Trial Reduction

Seat the appropriate size glenoid trial firmly on the face of the glenoid (Figure 26). Ensure the trial is congruent with the reamed surface.

Reassemble the humeral head trial on the humeral broach/trial and evaluate range of motion. Make any necessary adjustments to the humeral head height and diameter to properly tension the joint.

Glenoid Fixation

Remove the glenoid trial. Using a high-speed irrigation lavage system, cleanse the cortical cancellous surface. If used, thread the central peg into the modular Hybrid glenoid with the central post driver (Figure 27). Digitally pressurize bone cement into the three peripheral holes.

When using the Regenerex Porous Titanium central peg, should not be used directly on the Regenerex peg (See Figure 28).



Figure 28

Place a thin layer of cement on the medial side of the glenoid component (except on the Regenerex Porous Titanium central peg - see Figure 28). Insert the glenoid and carefully remove any excess cement.

Closure

Repair or reattach the subscapularis with multiple non-absorbable sutures. Approximate the deltopectoral interval with simple absorbable sutures. Subcutaneous closure should be achieved with interrupted absorbable sutures and skin closure with staples or sutures in a routine manner.

Postoperative Care

Evaluate the limits of external rotation at the time of the subscapularis tendon repair to determine the maximum amount of external rotation during the rehabilitation period. Immobilize the patient in a sling and swathe for 24 hours; use the sling intermittently for up to three weeks to protect the subscapularis repair. Encourage early active motion of the hand and elbow. Begin gentle passive range of motion two days postoperatively. Initiate active assisted elevation three to four days after surgery, based on surgeon preference. Begin strengthening exercises two to three months postoperatively. Continue therapy for many months, with improvement in range of motion and function anticipated for up to one year.



Figure 29



Figure 30

Optional Poly Post Preparation Sizing and Reaming

Based on the operative shoulder, attach the threaded guide handle to the appropriate anatomic glenoid sizer. Place the sizer in the center of the glenoid with the wide side inferior and firmly seated against the face of the glenoid to give the appropriate position for the centering hole to be drilled. Drill the hole for the centering peg until the stop is engaged (Figure 29).

Attach the appropriate size glenoid reamer to the angled or straight reamer shaft. Position the reamer's center peg in the center hole on the glenoid. Ream the face of the glenoid until concentric reshaping is achieved (Figure 30). When finished, the glenoid face should be congruent with the medial side of the glenoid trial and implant. In cases of excessive glenoid wear, ream eccentrically to neutralize the glenoid and prevent instability.



Figure 31

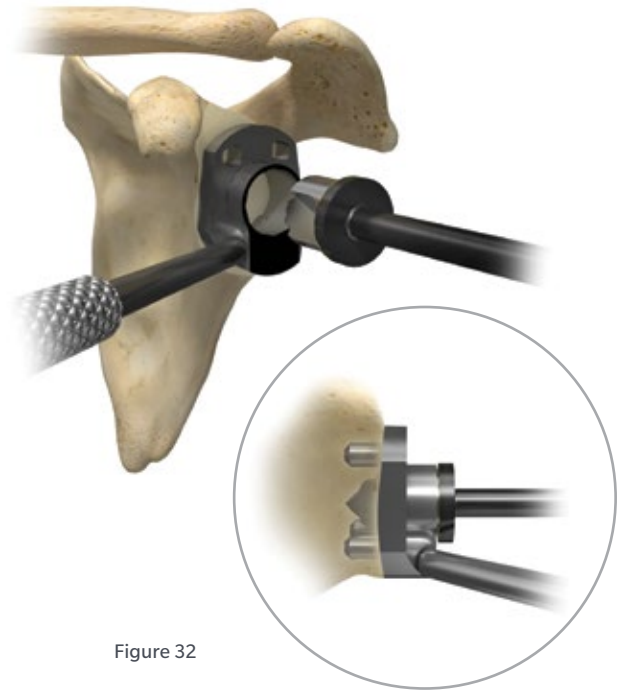


Figure 32

Outer Peg Drilling

Choose the appropriate anatomic drill guide and attach to the threaded guide handle. Place the centering peg in the center hole drilled in the prior step. Ensure the pegged glenoid drill guide is firmly seated on the face of the glenoid. Drill the posterior-inferior hole until the stop is engaged (Figure 31).

Use the alignment pin forceps to place an alignment pin through the guide and into the posterior-inferior hole. Move to the anterior-inferior hole and drill until the stop is engaged. Move an alignment pin to this hole following drilling. Move to the superior hole and drill until the stop is engaged, thereby creating the three outer peg holes.

Attach the threaded handle to the center peg drill guide. Firmly seat the alignment pegs on the medial side of the boss cutting guide in the outer peg holes just created. Use the boss cutter and drill until the stop is engaged (Figure 32).

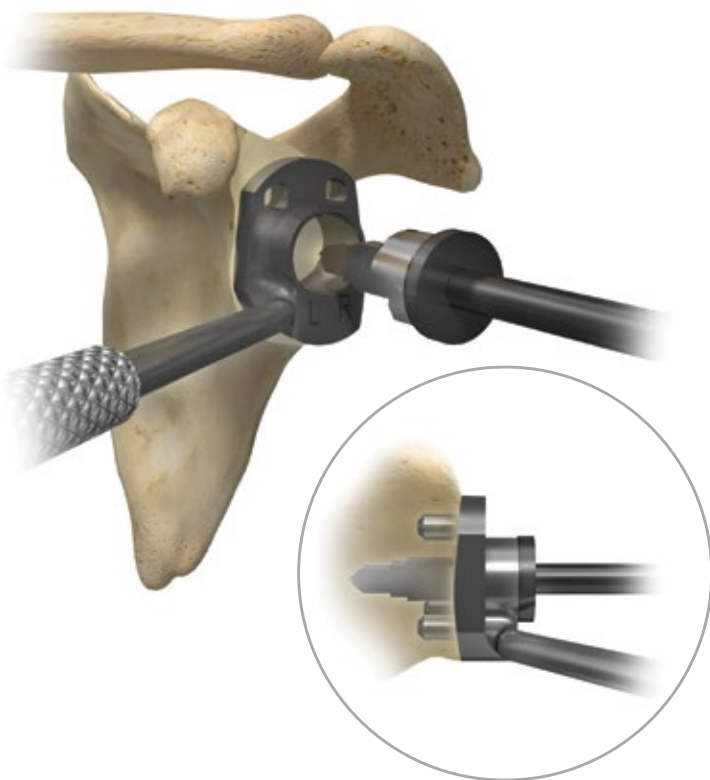


Figure 33



Figure 34

Regenerex Porous Titanium

Central Peg

Using the threaded handle attached to the center peg drill guide, place the guide on the face of the glenoid. Firmly seat the drill guide with the three pegs inserted into the outer holes. Drill with the Regenerex post cutter until the stop is engaged (Figure 33 inset).

Seat the appropriate size glenoid trial firmly on the face of the glenoid (Figure 34). Ensure the trial is congruent with the reamed surface.

Reassemble the humeral head trial on the humeral broach/trial and evaluate range of motion. Make any necessary adjustments to the humeral head height and diameter to properly tension the joint.

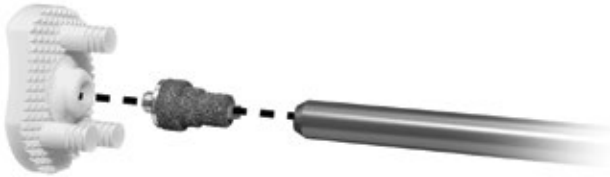


Figure 35



Figure 36

Glenoid Fixation

Remove the glenoid trial. Using a high-speed irrigation lavage system, cleanse the cortical cancellous surface. If used, thread the central peg into the modular Hybrid glenoid with the central post driver (Figure 35). Digitally pressurize bone cement into the three peripheral holes.

When using the Regenerex Porous Titanium central peg, should not be used directly on the Regenerex peg (See Figure 28).

Place a thin layer of cement on the medial side of the glenoid component (Figure 36–Regenerex Porous Titanium central peg). Insert the glenoid and carefully remove any excess cement.

Closure

Repair or reattach the subscapularis with multiple non-absorbable sutures. Approximate the deltopectoral interval with simple absorbable sutures.

Subcutaneous closure should be achieved with interrupted absorbable sutures and skin closure with staples or sutures in a routine manner.







Postoperative Care

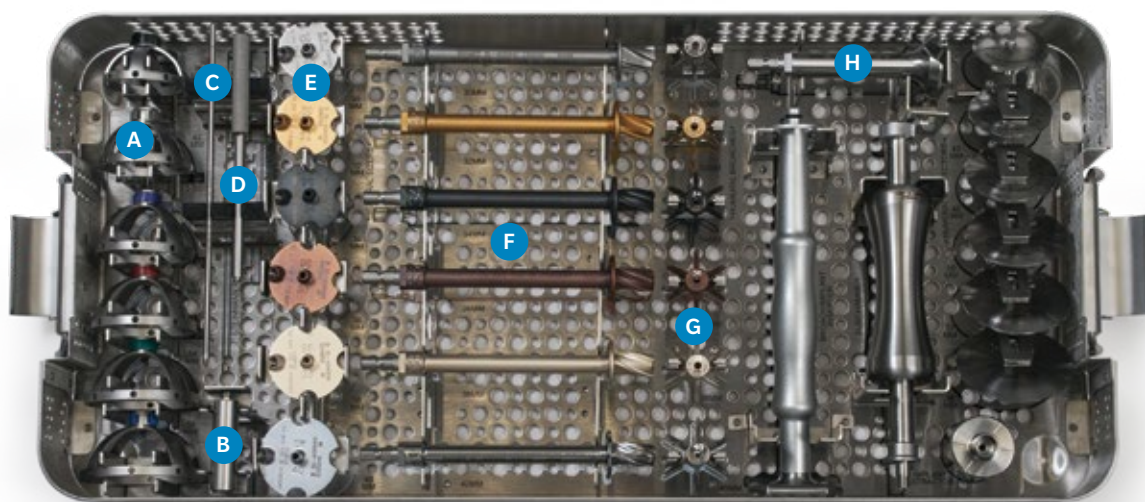
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Implants









Product	Description	Size	Implant Part Number	Trial Part Number
	Comprehensive Nano Humeral Component PPS®	30 mm	115730	—
		32 mm	115732	—
		34 mm	115734	—
		36 mm	115736	—
		38 mm	115738	—
		40 mm	115740	—
	Versa-Dial Humeral Head	38 X 19 X 39	113022	407222
		38 X 21 X 38	113024	407223
		42 X 18 X 46	113032	407232
		42 X 21 X 43	113034	407234
		42 X 24 X 42	113036	407236
		46 X 18 X 53	113042	407242
		46 X 21 X 50	113044	407244
		46 X 24 X 47	113046	407246
		46 X 27 X 46	113048	407248
		50 X 21 X 57	113053	407254
		50 X 24 X 52	113055	407256
		50 X 27 X 50	113057	407258
		54 X 21 X 64	113063	407264
		54 X 24 X 58	113065	407266
54 X 27 X 55	113067	407268		
58 X 24 X 64	113075	407276		
58 X 37 X 61	113077	407278		
	Versa-Dial Taper Adaptor	—	118001	—
	SM Modular Hybrid Glenoid Base	4 mm	113952	—
	MD Modular Hybrid Glenoid Base	4 mm	113954	—
	LG Modular Hybrid Glenoid Base	4 mm	113956	—
	Modular Hybrid Glenoid Post	—	PT-113950	—

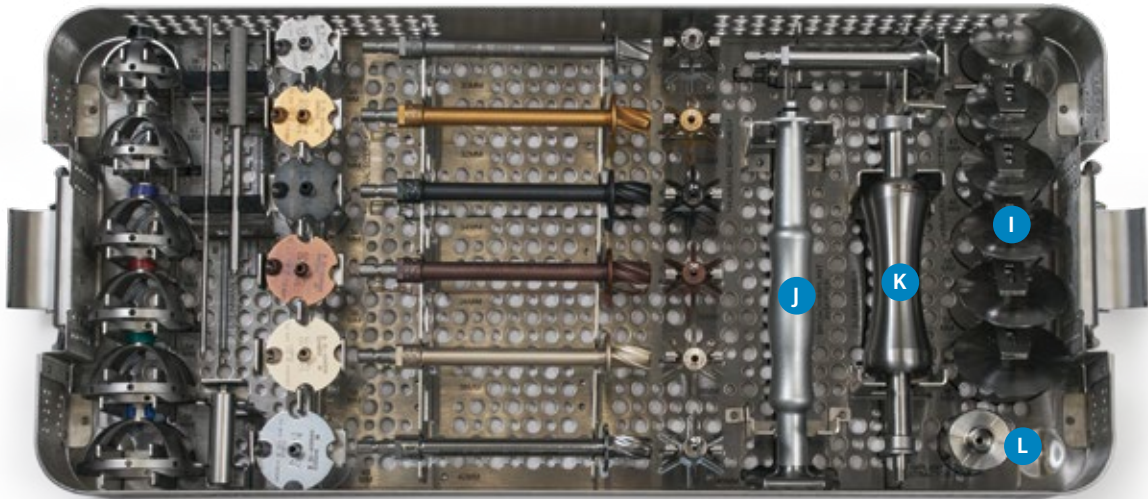
Versa-Dial Instruments

Product	Description	Size	Part Number
	Versa-Dial Taper Extractor	—	407298
	Versa-Dial Head Impactor	—	407297
	Versa-Dial Trial Head Screw Driver	—	407296
	Versa-Dial Taper Impactor Tool	—	407280
	Versa-Dial Taper Impactor Base	—	407281
	Humeral Head Removal Fork	—	406515
	Versa-Dial Humeral Head X-ray Templates	—	407294
	Comprehensive Primary Shoulder Total Instrument Case	—	595261
	Comprehensive Primary Shoulder Instrument Case Shell (with Lid)	—	595260
	Comprehensive Primary Versa-Dial Humeral Head Instrument Case	—	595259
	Comprehensive Primary Reamer Instrument Case	—	595258
	Comprehensive Primary Broach Instrument Case	—	595257



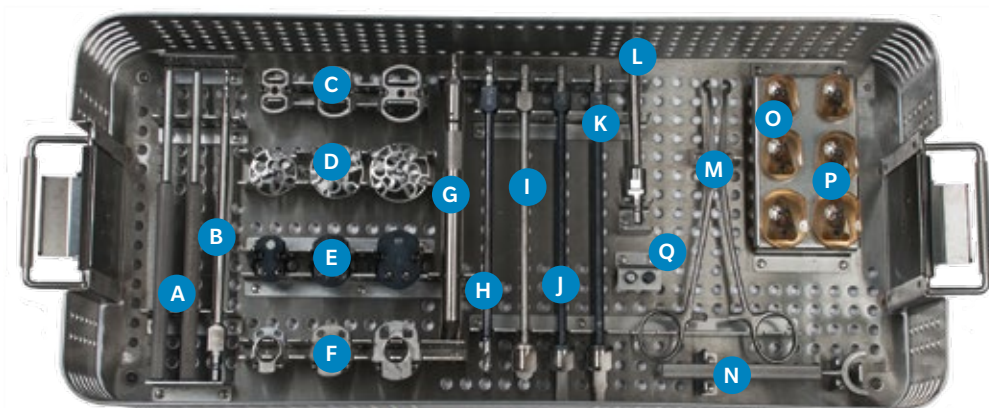
Comprehensive Nano Instruments

Product	Description	Label	Size	Part Number
	Comprehensive Nano Resection Guide	A	38 mm 42 mm 46 mm 52 mm 54 mm 58 mm	31-406994 31-406995 31-406996 31-406997 31-406998 31-406999
	Comprehensive Nano Resection Guide Handle	B	—	31-406993
	Comprehensive Nano Pin 3.2mm	C	7 in	31-406990/ 110045821
	Comprehensive Nano Sizer Handle	D	—	31-406917
	Comprehensive Nano Humeral Sizer	E	30 mm 32 mm 34 mm 36 mm 38 mm 40 mm	31-406930 31-406932 31-406934 31-406936 31-406938 31-406940
	Comprehensive Nano Humeral Reamer	F	30 mm 32 mm 34 mm 36 mm 38 mm 40 mm	31-406941 31-406942 31-406943 31-406944 31-406945 31-406946
	Comprehensive Nano Humeral Broach	G	30 mm 32 mm 34 mm 36 mm 38 mm 40 mm	31-406950 31-406952 31-406954 31-406956 31-406958 31-406960
	Comprehensive Nano Calcar Planer	H	—	31-406991










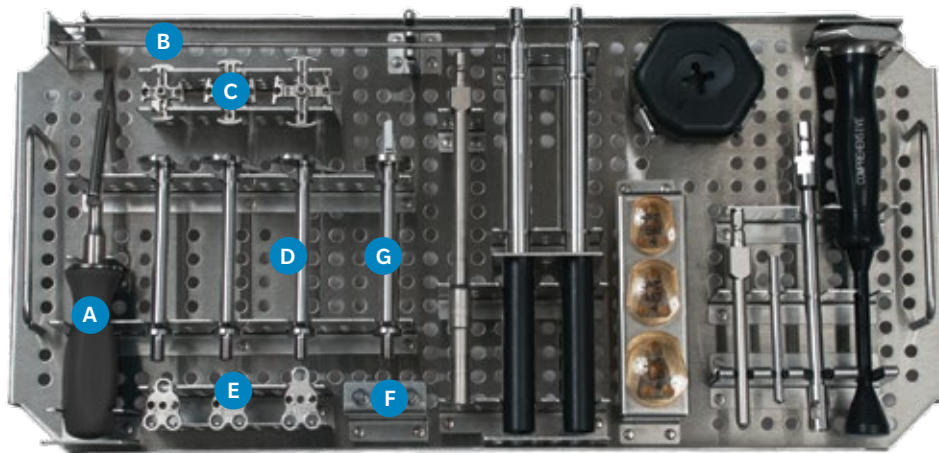
Comprehensive Nano Instruments

Product	Description	Label	Size	Part Number
	Comprehensive Nano Humeral Protector	I	38 mm 42 mm 46 mm 50 mm 54 mm 58 mm	31-406968 31-406972 31-406976 31-406980 31-406984 31-406988
	Comprehensive Nano Inserter	J	—	31-406919
	Comprehensive Nano Magnetic Inserter	J	—	31-406929
	Comprehensive Nano Slap Hammer	K	—	31-406921
	Comprehensive Nano Extractor	L	—	31-406920
	Comprehensive Extramedullary Resection Guidewith Version Rod	Not Included	—	407392
	Threaded Steinmann Pins	Not Included	—	406669
	Pin Driver	Not Included	—	32-486259
	Calcar Planer Blades	Not Included	38 mm 42 mm 46 mm 50 mm 54 mm 58 mm	406661 406662 406663 406664 406665 406666










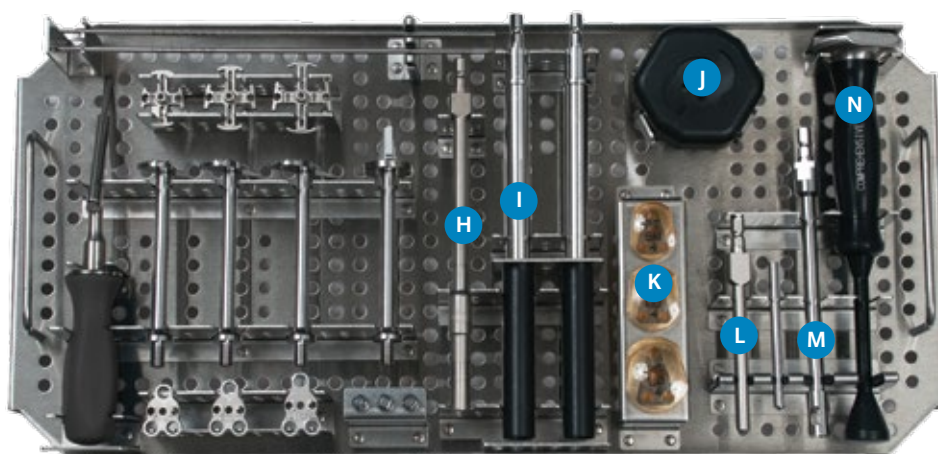
Comprehensive Access Instrumentation, Bottom Tray

Product	Description	Label	Size	Part Number
—	Comprehensive Access Glenoid Instrument Case Only	—	—	110003488
—	Comprehensive Access Glenoid Instrument Case Kitted	—	—	110003489
	Glenoid Guide Handle	A	—	406849
	Hybrid Glenoid Straight Shank Drill	B	4 mm	406181
	Glenoid Sizer	C	SM MD LG	406831 406832 406833
	Glenoid Reamer	D	SM MD LG	406632 406633 406634
	Peripheral Drill Guide	E	SM MD LG	406160 406162 406164
	Hybrid Glenoid Central Peg Drill Guide	F	SM MD LG	406161 406163 406165
	Reamer Shaft Angled	G	—	RD481137










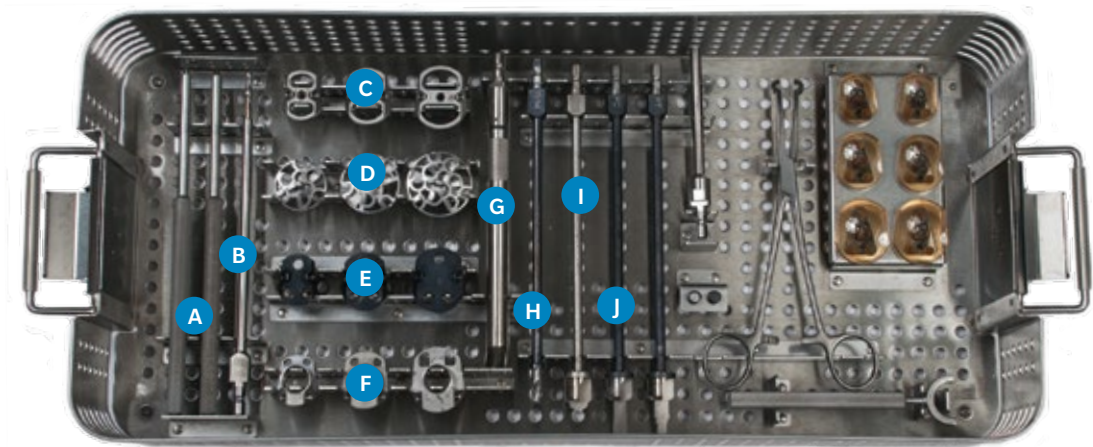
Comprehensive Access Instrumentation, Top Tray

Product	Description	Label	Size	Part Number
—	Comprehensive Access Glenoid Instrument Case Only	—	—	110003488
—	Comprehensive Access Glenoid Instrument Case Kitted	—	—	110003489
	Access Quick-connect Guide Handle	A	—	110004319
	Access Threaded Steinmann Pin (2)	B	3.2 mm	110003484
	Access Cannulated Glenoid Sizer	C	SM MD LG	010001790 010001791 010001792
	Access Cannulated Glenoid Reamer	D	SM MD LG	110003472 110003474 110003476
	Access Peripheral Drill Guide	E	SM MD LG	010001799 010001800 010001801
	Quick-Release Peripheral Drill/ Anti-rotation Peg	F	—	110003481
	Access 2-N-1 Regenerex Post/ Boss Cutter	G	—	110003478













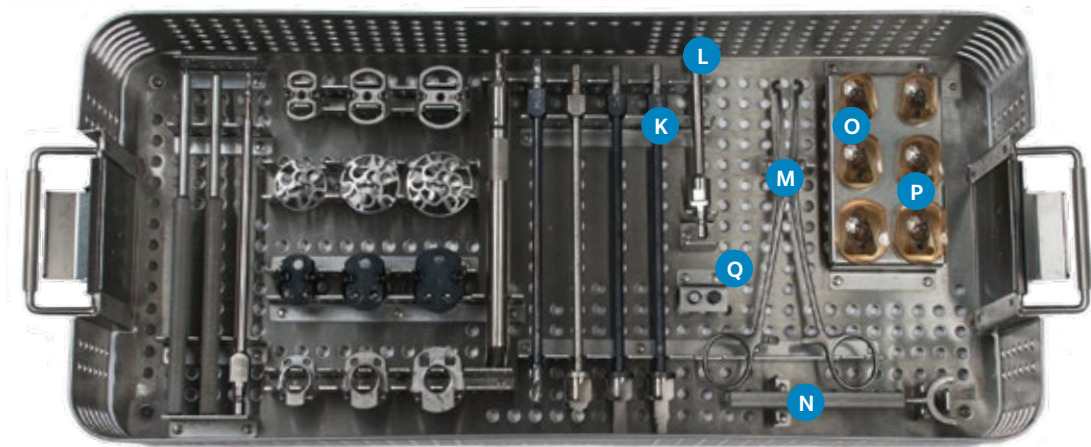
Comprehensive Access Instrumentation, Top Tray (cont.)

Product	Description	Label	Size	Part Number
	Access Quick-Release Peripheral Drill Shaft	H	—	110003483
	Cannulated Glenoid Reamer Shaft (2)	I	—	110004200
	Access Reamer Disassembly Puck	J	—	110004265
	Modular Hybrid Glenoid Base and Regenerex Glenoid Trial	K	SM MD LG	406192 406193 406194
	Hybrid Glenoid Central Post Driver	L	—	406183
	Hybrid Glenoid Removal Trephine and Rod	M	—	110003486
	Hybrid Glenoid Impactor	N	—	406156










Comprehensive Access Instrumentation, Bottom Tray

Product	Description	Label	Size	Part Number
—	Comprehensive Access Glenoid Instrument Case Only	—	—	110003488
—	Comprehensive Access Glenoid Instrument Case Kitted	—	—	110003489
	Glenoid Guide Handle	A	—	406849
	Hybrid Glenoid Straight Shank Drill	B	4 mm	406181
	Glenoid Sizer	C	SM MD LG	406831 406832 406833
	Glenoid Reamer	D	SM MD LG	406632 406633 406634
	Peripheral Drill Guide	E	SM MD LG	406160 406162 406164
	Hybrid Glenoid Central Peg Drill Guide	F	SM MD LG	406161 406163 406165
	Reamer Shaft Angled	G	—	RD481137
	Hybrid Glenoid Straight Shank Peripheral Drill	H	15/64 in	406182
	Hybrid Glenoid Boss Cutter	I	—	406150
	Hybrid Glenoid Polyethylene Post Cutter (PC)	J	—	406152



Comprehensive Access Instrumentation, Bottom Tray (cont.)

Product	Description	Label	Size	Part Number
	Hybrid Glenoid Regenerex Post Cutter (PT)	K	—	406151
	Straight Glenoid Reamer Shaft	L	—	402648
	Peripheral Peg Forceps	M	—	424417
	Glenoid Reamer Wrench	N	—	406525
	Modular Hybrid Glenoid Base Trial	O	SM	406112
			MD	406113
			LG	406114
	Modular Hybrid Glenoid Base & Polyethylene Post Trial	P	SM	406172
			MD	406173
			LG	406174
	Hybrid Glenoid Drill Guide Alignment Pin	Q	—	406180

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