

SEVIIN®

Primary & Reverse
Shoulder Systems



ingen orthopedics

One Set of Implants

One Set of Instruments

Seven Shoulder Solutions



I SEVIIN® Surface Replacement



II SEVIIN® Primary Fracture



III SEVIIN® Reverse Fracture



IV SEVIIN® Primary Hemi



V SEVIIN® Primary
Keeled



VI SEVIIN® Primary
Pegged



VII SEVIIN® Primary
Reverse

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DESCRIPTION

The Ingen SEVIIN Primary Shoulder System includes an individually packaged metal humeral stem, a metal head and a glenoid component manufactured from ultra-high molecular weight polyethylene. A hemi-shoulder includes the humeral stem and metal head.

The Ingen SEVIIN Reverse Shoulder includes an individually packaged metal humeral cup and a poly inlay manufactured from ultra-high molecular weight polyethylene on the humeral side. The glenoid components include a Titanium Plasma Spray (TPS) coated metaglene plate, a metal glenosphere and reverse bone screws. These components are intended for use with the SEVIIN Humeral Primary Stems.

INDICATIONS

Total shoulder or hemi-shoulder replacement is indicated for a severely painful and disabled joint due to osteoarthritis, traumatic or rheumatoid arthritis. The device may also be used for fracture-dislocations of the proximal humerus where the articular surface is severely comminuted, separated from blood supply or where experience indicates that alternative treatment is unsatisfactory. Hemi-shoulder replacement is indicated for un-united or malunited humeral head fractures or avascular necrosis of the humeral head.

Reverse shoulder replacement is indicated for primary, fracture or revision total shoulder arthroplasty for the relief of pain and to improve function in patients with a massive and non-repairable rotator cuff tear.

The patient's joint must be anatomically and structurally suited to receive the selected implants and a functional deltoid muscle is necessary to use the device.

The humeral component is intended for cemented use and the TPS coated metaglene component is intended for cementless use with the addition of screws for fixation.

WARNINGS

A number of pre-existing conditions can affect the outcome of shoulder arthroplasty. These include: tumors in the operative area, osteoporosis (see contraindications), a history of allergic reactions to cobalt, chromium, nickel or molybdenum, previous tissue reactions to UHMW polyethylene or metallic debris, severe bony deformities which may lead to improper fixation or positioning of the implants, metabolic diseases (i.e., diabetes), prolonged immunosuppressive or steroid therapy, and a history of generalized or local infections.

It is critical that implants from different manufacturers are not used together in an arthroplasty procedure. Specifications are not the same and there is no assurance of a proper fit or tolerances between components.

Implants should never be reused. Previous use may lead to stress risers or other imperfections which would jeopardize performance of the device and its longevity.

The surgeon should use provisional prostheses for trials to avoid damaging the device intended for final implantation. Proper handling of all implantable components is critical to the success of total joint replacement.

CONTRAINDICATIONS

Shoulder arthroplasty is contraindicated in patients with active localized or systemic infections, inadequate bone stock in the operative area which would preclude a successful result, or where poor bone quality would compromise the overall success and result in migration of the components or fracture of the humerus or glenoid. Other relative contraindications relate to absent, irreparable, or nonfunctional rotator cuff or other essential muscles.

PRECAUTIONS

Preoperative planning and the surgical technique are based on principles that provide for sound surgical handling. Complete familiarity with the surgical technique is essential in reverse shoulder arthroplasty. The use of specific surgical instruments is recommended for each operation.

A number of patient conditions could affect the long-term success of shoulder arthroplasty, and the surgeon should consider them carefully. They include: active sports participation, the type of labor performed by the patient, alcohol or drug addiction, and the patient's ability to understand and participate in the post-surgical regimen.

Patients should be advised about the limitations and precautions related to shoulder replacement surgery, written instructions should be considered. It may be advisable to restrict certain activities to preclude dislocation or loosening of the prostheses. Patients should be told to report any unusual changes in the operated arm as soon as practical. Regular follow-up visits are advised.

ADVERSE EFFECTS

Premature device failure related to excessive physical activity or trauma has been reported. The most frequently reported adverse effects are as follows, some may not be device-related: early or late loosening of components, infection, device subsidence or subluxation, decreased range of motion, absence of external shoulder rotation, damage of the prosthetic components or surrounding tissues, hematoma or delayed wound healing, venous thrombosis, cardiopulmonary problems, and continued pain.

STERILITY

The implantable components are provided presterile by gamma irradiation. The device is intended for single use. The instrument set and individual instruments are available nonsterile and must be sterilized prior to clinical use. Steam sterilization is recommended for the instrument case.

MRI INFORMATION

The Ingen SEVIIN Shoulder System has not been evaluated for safety and compatibility in the MR environment and has not been tested for heating or migration in the MR environment.

Rx-Only

Ingen *SEVIIN*® Shoulder System

Primary Shoulder System

Stems

Titanium 6Al-4V alloy

On-Growth Surface: carborundum-blast surface on proximal end of the stem

Reverse Morse Taper: designed to mate with humeral heads and humeral cup

Lateral, Anterior and Posterior Fins: provide for soft tissue attachment

Smooth Distal Stem: to minimize stress shielding of the humerus

Anatomical Medial Curve: improves fit of the stem to proximal humerus

Distal Flutes: increase stem flexibility; allows for medullary revascularization

Reduced Collar Size: increases visibility of the stem/bone interface

Sizes

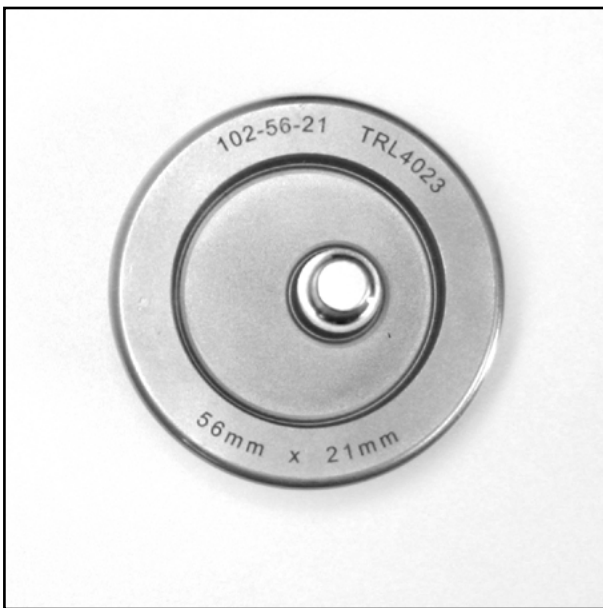
Size 1: 6mm x 100mm

Size 2: 8mm x 110mm

Size 3: 10mm x 120mm

Size 4: 12mm x 120mm

Size 5: 14mm x 125mm



Heads

Co-Cr Alloy

Morse Taper Trunion: designed to mate with the humeral stems

Low Profile Design: optimizes articulating surface area

4mm Offset: accommodates anatomical variations

Sizes

Standard

Diameter: 40, 44, 48, 52, 56mm

Height: 15, 18, 21mm

Offset

Diameter: 44, 48, 52, 56mm

Height: 18, 21mm

Glenoids

UHMWP

Pear-Shaped Frontal Profile: provides for anatomical fit and helps prevent soft tissue impingement

Articulating Surface: radius is oversized to provide translation and accommodate multiple humeral heads

Peg Design: 3 linear pegs, designed to avoid punch-through of thin cortical walls of glenoid periphery

Keel Design: allows for easy intra-operative conversion from Pegged to Keeled Glenoid

Sizes

X-Small
Small
Medium
Large



Ingen *SEVIIN*® Shoulder System

Reverse Shoulder System

PE-Inlay

UHMWP

Two Cup Depths: Centered and Retentive

Retentive Option: 2.4mm deeper cup to provide additional joint stability, if needed

Anti-rotational Design

Snap-Fit Mechanism: laboratory tested

Sizes

Centered & Retentive

Diameter: 36mm & 40mm

Thicknesses: 0, +3mm, +6mm

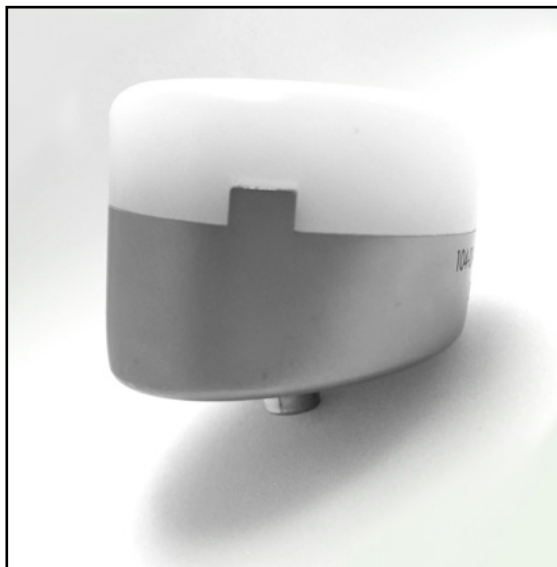
Humeral Cup

Co-Cr Alloy

Morse Taper Fixation: designed to mate with the humeral stems

+9mm Option: available to provide for lengthening the prosthesis

12° Angle: to make the scapular neck-humeral shaft angle 147°



Screws

Titanium Alloy: self-tapping 4.5mm bone screws

Sizes

15, 20, 25, 30, 35, 40mm

Metaglene Plate

Titanium 6Al-4V Alloy

9mm Cannulated Central Screw: to provide for primary fixation

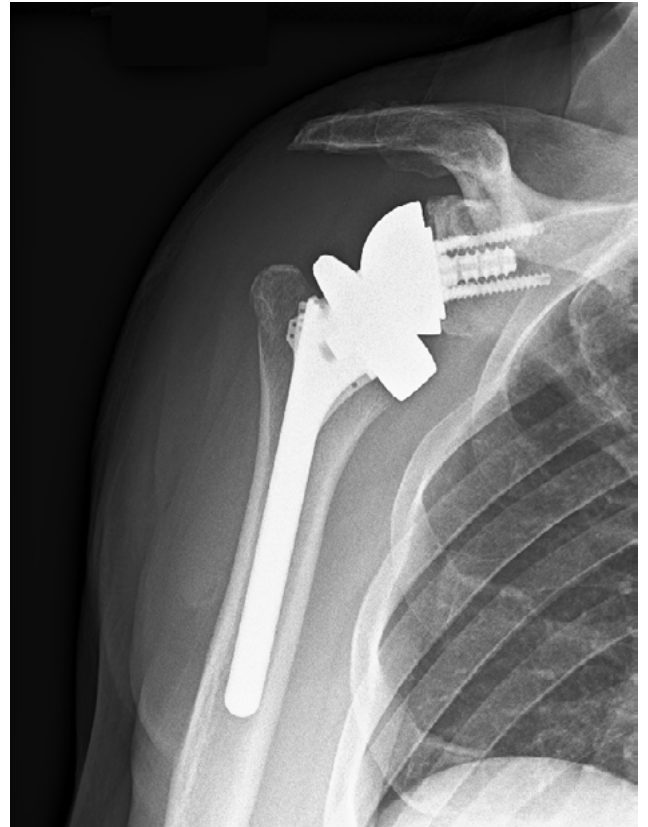
Morse Taper Trunion: designed to mate with the reverse glenosphere

Titanium Plasma Spray Coated

4 Holes: for peripheral screw fixation

Sizes

25mm & 29mm



Glenosphere

Co-Cr Alloy

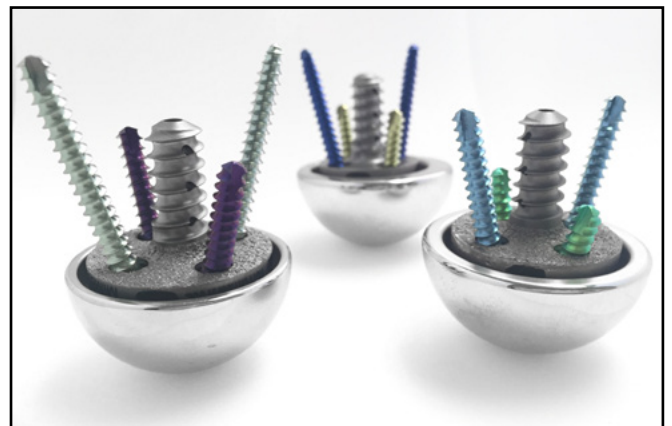
Reverse Morse Taper: fixation to the metaglene plate

Recessed Glenosphere Screw: for added security of fixation

1mm Clearance Gap: between the glenosphere and bottom of the metaglene plate

Sizes

Standard, +4mm, & Eccentric
Diameter: 36mm & 40mm



Ingen SEVIIN® Shoulder System

Humerus Preparation

Humeral Head Resection

The head of the humerus is resected exactly at the level of the anatomical neck of the humerus. Above and to the upper anterior aspect, the anatomical neck of the humerus corresponds to the tendon insertions of the rotator cuff. In the region of the infraspinatus muscle and the teres minor muscle, there is a bare area without cartilage and without tendon insertions. The osteotomy should be made here, directly on the edge of the cartilage. The cartilage-free area is not restricted.

Free Hand Technique

Place the appropriate Osteotomy Guide and adjust it to the appropriate level for the head resection. Using an oscillating saw, cut parallel to the Osteotomy Guide until the humeral head is resected.

Sizing the Humeral Head

Using the resected humeral head, assess the height and diameter with the Humeral Head Gauge.



Humeral Head Resection

Using a high-speed burr, bore a pilot hole through the humeral head along the axis of the humeral shaft. Starting with the 6mm hand reamer, begin reaming and continue to ream using successively larger reamers as required (8, 10, 12, 14mm).

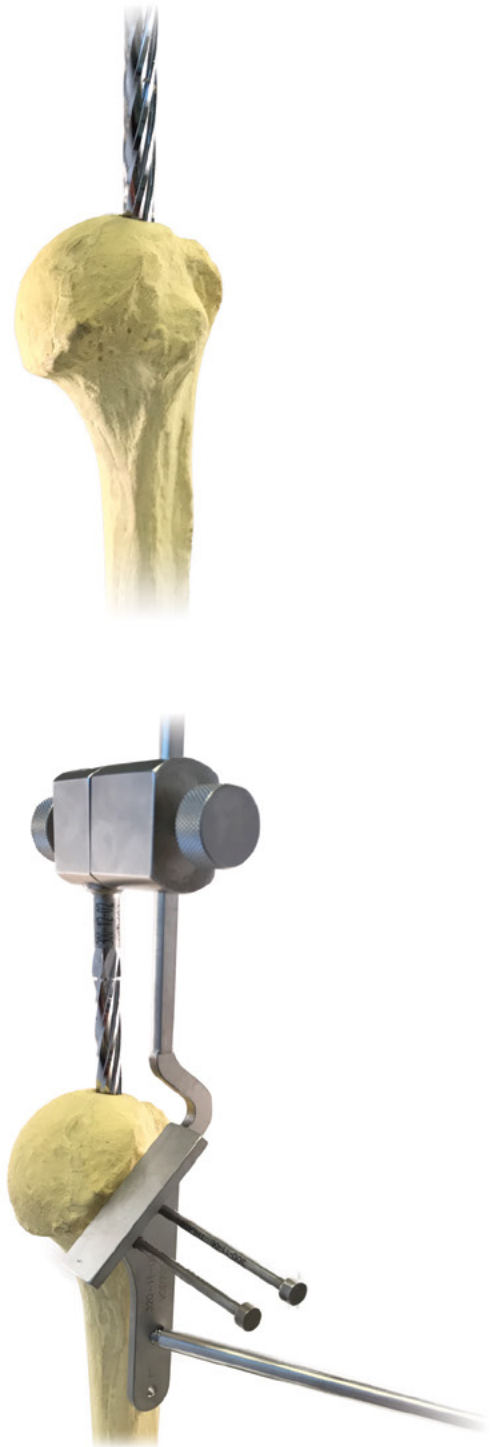
Each Humeral Reamer has two grooves to indicate depth. The lower, distal groove indicates the depth of reaming for standard size stems; the upper, proximal groove indicates the depth for long stems.

Intramedullary Resection Technique

Place the Cutting Guide Holder on the top of the Humeral Reamer and lock it into place. Slide the appropriate Cutting Guide (Left or Right) into the Cutting Guide Holder and adjust it to the required resection level.

Humeral retroversion is determined by using the forearm as a reference point to the bicondylar axis of the humerus. Align the retroversion Alignment Rod parallel to the forearm to recreate a preferred humeral neck resection. The Alignment Rod is angled at 30 degrees.

Using an oscillating saw, cut parallel to the Cutting Guide until the humeral head is resected.



Ingen SEVIIN® Shoulder System

Humerus Preparation

Humeral Canal Reaming

Proceeding stepwise, the medullary cavity is reamed, starting with the 6mm hand reamer and using successively larger reamers as required (8, 10, 12, 14mm).

Each Humeral Reamer has two grooves to indicate depth. The lower, distal groove indicates the depth of reaming for standard size stems; the upper, proximal groove indicates the depth for long stems.

Humeral Canal Rasping

The proximal portion of the humerus is prepared proceeding stepwise, starting with the body-sizing Rasp corresponding to the largest reamer previously used.

Reamers and body-sizing rasps correspond as follows:

Reamer Body	Sizing Rasp
6mm	#1
8mm	#2
10mm	#3
12mm	#4
14mm	#5

Care must be taken to ensure that the Rasps are introduced completely, until the collar rests on the cut surface of the humerus. Do not drive the collar into the cancellous bone. If the top of the body-sizing Rasp penetrates below the level of the osteotomy of the head, an uncemented, or press-fit, stem of this size may not be used.



Humeral Canal Rasping

As a guide for proper alignment and retroversion, attach the Alignment Rod to the right or left hole in the Rasp Handle. Externally rotate the forearm, and align the Rod parallel to the forearm maintaining approximately 30 degrees of humeral retroversion.

The correct stem size is determined by reaming and rasping with the Body-Sizing Rasps.

Starting with the Body-Sizing Rasp having the same diameter as the largest Reamer previously used, rasp the proximal humerus with successively larger Rasps until cortical bone is reached.

To help ensure a correct press-fit, the final humeral prosthesis is designed to be 1 mm larger than the corresponding Rasp size.

With the Rasp in place, remove any osteophytes that might extend from the cut surface of the neck of the humerus, using an osteotome or rongeur.

Leaving the Body-Sizing Rasp in the humerus while preparing the glenoid is recommended. This protects the proximal humerus from compression fracture or deformation by the retractor.



Ingen *SEVIIN*® Shoulder System Glenoid Preparation

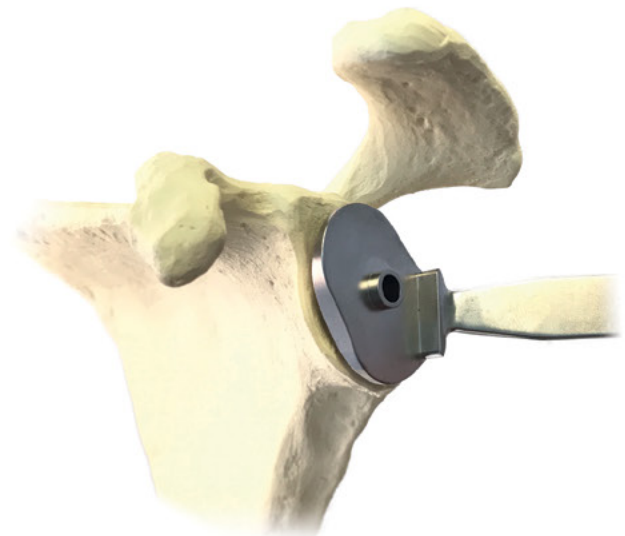
Glenoid Templating

A set of four Glenoid Templates (X-Small, Small, Medium, Large) are provided to help determine the proper size glenoid to select.



Glenoid Preparation

To create the central hole in the glenoid, use the appropriate Center Hole Drill Guide (X-Small, Small, Medium, Large). Advance the Glenoid Drill until the bit bottoms out on the guide. This will result in proper placement of the Glenoid Reamer.



Glenoid Reaming

Attach the appropriately sized Glenoid Reamer (X-Small, Small, Medium, Large) to the power drill. With the Reamer engaged, insert the central peg into the pilot hole in the glenoid and apply gentle pressure to the reamer.

Gradually increase pressure on the Reamer.

Ream only until the surface of the glenoid fossa is smooth.

The open-backed Ingen Glenoid Reamers provide for excellent visualization of the glenoid surface.



Pegged Glenoid Preparation

Following the glenoid reaming, place the post of the Peg Drill Guide into the central hole in the glenoid. Drill the superior hole first and place the anti-rotation peg to prevent any rotation of the guide while the other hole is being drilled. Drill the inferior hole in the same fashion. This will result in proper alignment of the peg holes.



Ingen SEVIIN® Shoulder System

Glenoid Preparation

Pegged Glenoid Preparation

Insert the previously selected Trial Pegged Glenoid and keep it in place during sizing of the Trial Humeral Head. The pegs of the Trial Glenoid prostheses are a little larger than the pegs on the final prosthesis.

The Ingen Glenoid diametric curvature is larger than the Humeral Head to allow for up to 6mm of diametric mismatch between the Humeral Head and Glenoid.

Size	Trial Color	"Mismatch"
X-Small	Red	40, 44mm
Small	Brown	40, 44mm
Medium	Purple	48, 52mm
Large	Gray	52, 56mm



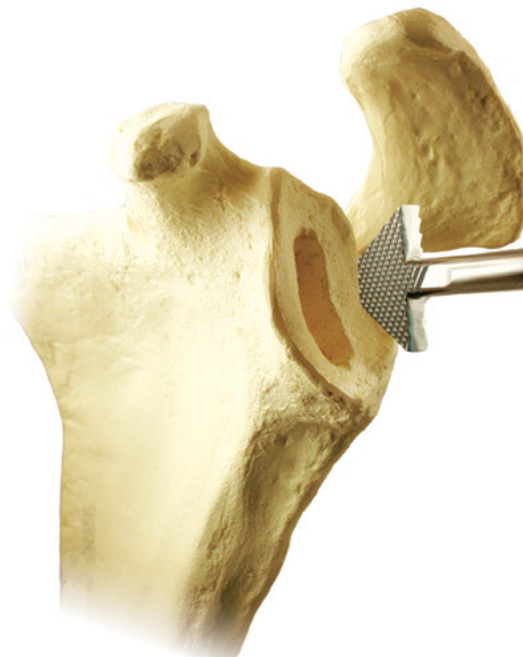
Keeled Glenoid Preparation

If using a Keeled Glenoid, prepare the glenoid fossa as previously described (see preceding sections, Glenoid Preparation and Pegged Glenoid Preparation).

Using a power burr, rongeur or curette, connect the holes for the keel of the prosthesis. Use the Keel Punch (rasp) for accurate sizing and fitting.

Insert the appropriate Keeled Glenoid Trial prosthesis.

Keep the trial prosthesis in place during sizing of the Trial Humeral Head.



Ingen SEVIIN® Shoulder System

Humeral Head Selection

Trial Humeral Head Selection

Select the Trial Head that matches the height and diameter of the measured resected head (see pg 15). Place the Trial Head in the Rasp that has been left in the Humerus.

For Offset Head Trials, rotate the head into the desired position and use the tightening screw to hold it in place during trial reduction.

Standard Trials for Rasps

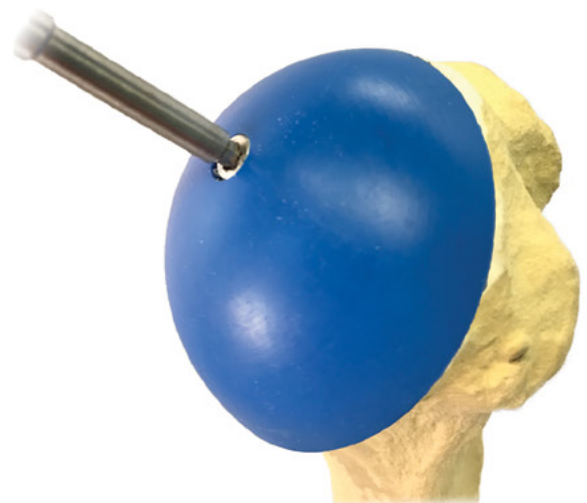
Diameter	Color	Height
40mm	Red	15, 18, 21mm
44mm	Yellow	15, 18, 21mm
48mm	Green	15, 18, 21mm
52mm	Blue	15, 18, 21mm
56mm	Black	15, 18, 21mm

Offset Trials for Rasps

Diameter	Color	Height
44mm	Yellow	18, 21mm
48mm	Green	18, 21mm
52mm	Blue	18, 21mm
56mm	Black	18, 21mm

Offset Trials with Tapers, for Stems

Diameter	Color	Height
44mm	Yellow	18, 21mm
48mm	Green	18, 21mm
52mm	Blue	18, 21mm
56mm	Black	18, 21mm



Inserting the Glenoid

The surface of the glenoid and the anchoring holes or keel slot are now carefully cleaned and dried.

The anchoring holes or keel slot are filled with bone cement, and the cement is pressed into the bone with a clean sponge.

Insert the Ingen Glenoid and hold it in place with the Glenoid Pusher until the cement is cured.



Ingen *SEVIIN*® Shoulder System

Inserting the Stem and Head

Inserting the Stem

The final prosthesis is 1mm larger than the Body-Sizing Rasp to facilitate, whenever possible, a firm press-fit.

If the Body-Sizing Rasp is loose after humeral canal preparation, use autogenous bone graft from the resected humeral head, or cement, to achieve good fixation of the final prosthesis. For this purpose, it is recommended that all of the cancellous bone in the humeral head be removed and saved on the back table. If bone graft is used, place the cancellous bone in the medullary canal, particularly into the inter-tuberosity region, and compact it by repeated insertion of the Body-Sizing Rasp. Do not advance the rasp or prosthesis beyond the humeral osteotomy plane.

The decision to use cement or a press-fit technique is the individual surgeon's prerogative.

If cement is used for fixation of the prosthesis, a humeral stem of a smaller size than the Rasp should be implanted to allow an appropriate cement mantle to be created. In certain circumstances, such as previous surgical procedures, fractures, osteoporosis or a degenerative cyst in the humerus, it may be necessary to use cement.

Inserting the Head

Use the Humeral Head Impactor to tap the appropriately sized head onto the stem to achieve a tight Morse taper fit.



Ingen, as a manufacturer of this device, does not practice medicine and does not recommend this device or technique. Each surgeon is responsible for determining the appropriate device and technique to use on each individual patient.

Primary



Reverse



Ingen *SEVIIN*® Shoulder System

Humeral Head Selection

The Humeral Stem for the Ingen Primary TSA and Ingen Reverse TSA is the same. See the Ingen Primary TSA Procedure Guide for instructions on preparing the humerus and implanting the Humeral Stem.

Resect the Humeral Head



Ream the Humeral Canal



Rasp the Humeral Canal



Glenoid Preparation

After exposure of the glenoid is obtained, use a drill and the Central Hole Drill Guide to insert the 2.4mm Guide Pin into the glenoid where the Metaglene Plate is to be placed.

Next, attach the cannulated, 29mm Glenoid Resurfacing Reamer to a drill or the T-Handle, depending on the preferred method of reaming.

Place the 29mm Glenoid Resurfacing Reamer over the 2.4mm guide pin and ream the glenoid until the surface of the glenoid is smooth and flat.

If necessary to remove osteophytes and other tissue from a wider diameter area, repeat the process with the 40mm Glenoid Peripheral Reamer.

The open design of the Ingen Glenoid Resurfacing Reamers provides for excellent visualization of the glenoid surface during the reaming process.

Leave the 2.4mm Guide Pin in place in the glenoid.



Ingen SEVIIN® Shoulder System

Inserting the Metaglene Plate

Inserting the Metaglene Plate

Primary objectives of placing the Metaglene Plate:

- Maximum contact area with the glenoid
- Secure placement of peripheral screws

The Metaglene Plate should be placed inferiorly, centered on the lower circle of the glenoid. Osteophytes, cartilage and soft tissue that might prevent contact between the glenoid bone and the Metaglene Plate must be removed prior to implantation.

After the glenoid surface is prepared, place the cannulated, 6.8mm Drill Bit into a drill and place it over the 2.4mm Guide Pin.

Drill until the 6.8mm Drill Bit bottoms out (until the wider edge of the drill is flush with the glenoid surface). This will provide the proper depth for the threaded, central post of the Metaglene Plate.

Remove the 2.4mm Guide Pin.

Place the Metaglene Plate onto the Metaglene Plate Inserter/Extractor and use the Inserter to insert the Metaglene Plate into the 6.8mm hole until it is fully seated against the reamed glenoid surface and the superior and inferior Peripheral Screw holes in the Metaglene Plate are properly oriented in the glenoid for placement of the superior and inferior screws.

If greater visualization of the Metaglene Plate is desired for insertion, the 4.5mm Hex Screwdriver can be used instead of the Metaglene Plate Inserter/Extractor to insert the Metaglene Plate.



Inserting the Peripheral Screws

- Peripheral screws are self-tapping 4.5mm bone screws, 15-40mm in length, in 5mm increments.

The Metaglene Plate has four screw holes to accommodate the placement of up to four self-tapping 4.5mm Peripheral Bone Screws to provide additional fixation of the Metaglene Plate.

The non-locking design of the Peripheral Bone Screws in the Metaglene Plate provides for placement of the Peripheral Bone Screws at any angle within a 12-degree arc.

Using the Angled Drill Guide and the 3mm Drill Bit, drill the holes for placement of the Peripheral Bone Screws.



Ingen *SEVIIN*® Shoulder System

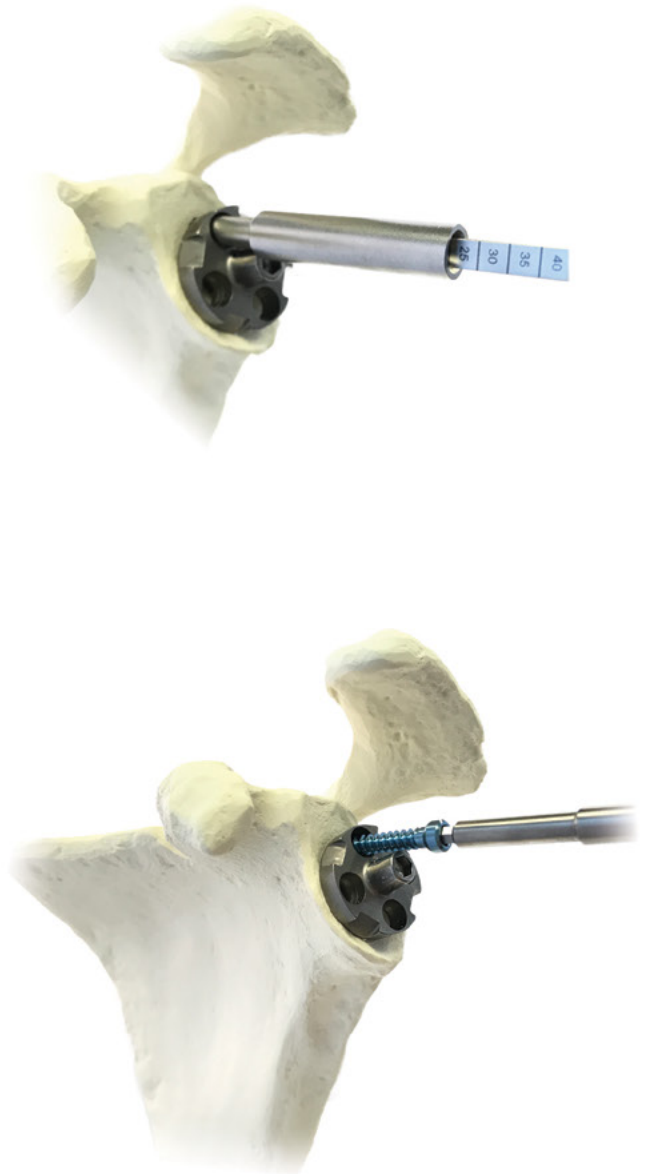
Inserting the Peripheral Screws

Inserting the Peripheral Screws

Depth of the screw holes can be measured using the 10mm-increment depth markings on the drill bit or the standard Depth Gauge provided.

Using the Angled Drill Guide, the superior and inferior screws should be placed first, followed by the anterior and posterior screws.

Fully tighten all peripheral screws so that the heads of the screws do not interfere with the seating of the glenosphere.



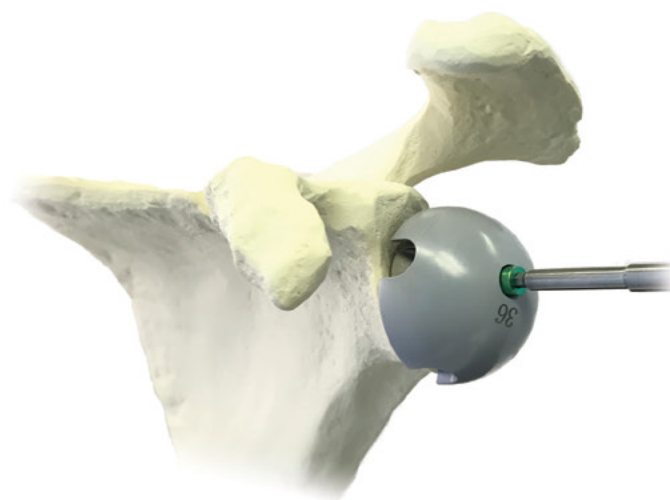
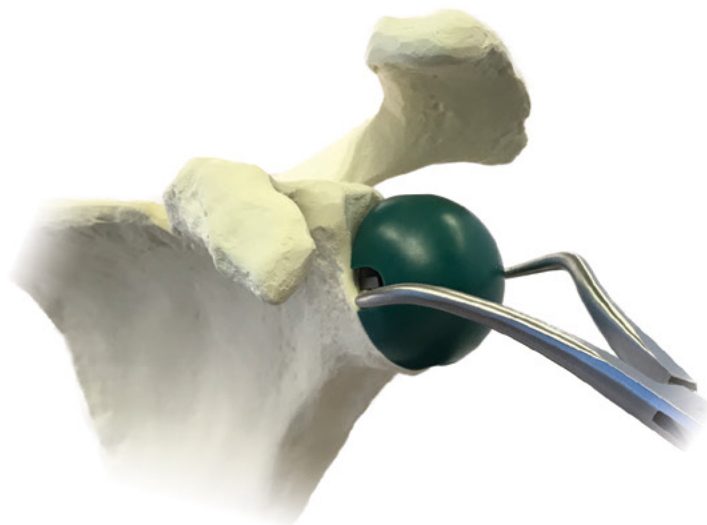
Reverse Glenosphere Trial

The Reverse Glenosphere Implants are available in two diameters, 36mm and 40mm, and come in a standard, +4mm, and eccentric option.

Fit the appropriate Trial Glenosphere to the Metaglene Plate and lock it into place using the Morse taper.

For the Eccentric Trial Glenospheres, a trial screw is provided to hold the Trial Glenosphere securely in place during the trial reduction.

Size	Option	Color
36mm	Standard	Green
36mm	+4mm	Blue
36mm	Eccentric	Gray
40mm	Standard	Yellow
40mm	+4mm	Purple
40mm	Eccentric	Brown



Ingen SEVIIN® Shoulder System

Trial Reduction

Humeral Cup/PE-Inlay Trial

Select the appropriate one-piece Trial Humeral Cup/PE-Inlay. Note the “SUPERIOR” markings on the trial. Place the Trial Humeral Cup/PE-Inlay into the Rasp that has been left in the Humerus.

Use the tightening screw to hold the Trial Humeral Cup/PE-Inlay in place during the trial reduction.

There are two PE-Inlay options, Centered and Retentive. Each option is available in both 36mm and 40mm Diameters and each is offered in 3 different thicknesses: +0mm, +3mm, and +6mm.

The Standard Humeral Cup is typically used; however a +9mm option is available if greater height is needed to increase joint stability.

Size	Option	Humeral Cup
36mm	Centered	Standard
36mm	Centered	+9mm
40mm	Centered	Standard
40mm	Centered	Standard
36mm	Retentive	+9mm
36mm	Retentive	Standard
40mm	Retentive	+9mm
40mm	Retentive	Standard



Inserting the Glenosphere

After the Metaglene Plate is in place, insert the 1.6mm Guide Pin into the cannulated trunnion (central hole) of the Metaglene Plate.

Place the central hole of the Glenosphere over the Guide Pin and guide it onto the trunnion of the Metaglene Plate.

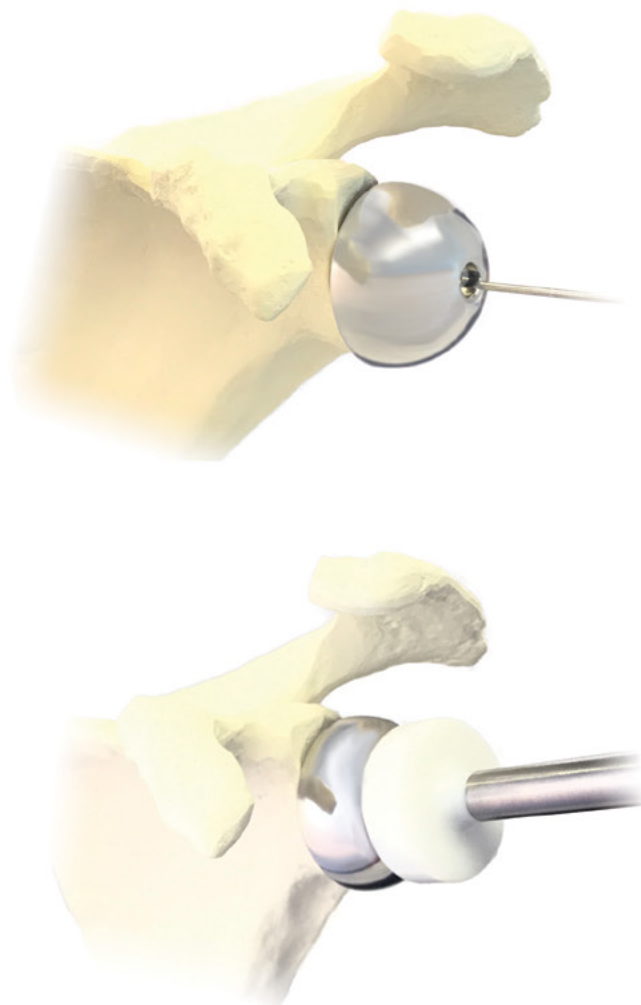
Complete the assembly of the Glenosphere and Metaglene Plate by placing the cannulated Glenosphere Impactor over the 1.6mm Guide Pin and locking the Morse taper with a mallet.

Once the Morse taper is set, remove the 1.6mm Guide Pin.

Insert the Glenosphere Screw through the center hole in the Glenosphere and into the trunnion of the Metaglene Plate.

Using the 2.5 mm Hex Screwdriver Bit and the Torque-Limiting screwdriver handle, tighten the Glenosphere Screw into the Metaglene Plate.

When the Glenosphere is fully seated, a 1mm clearance, or gap, will remain between the bottom of the Glenosphere and the bottom of the Metaglene Plate.



Ingen *SEVIIN*® Shoulder System

Inserting the Stem

The Humeral Stem for the Ingen Primary TSA and Ingen Reverse TSA is the same. See the Ingen Primary TSA Procedure Guide for instructions on preparing the humerus and implanting the Humeral Stem.



Humeral Cup & PE-Inlay Assembly

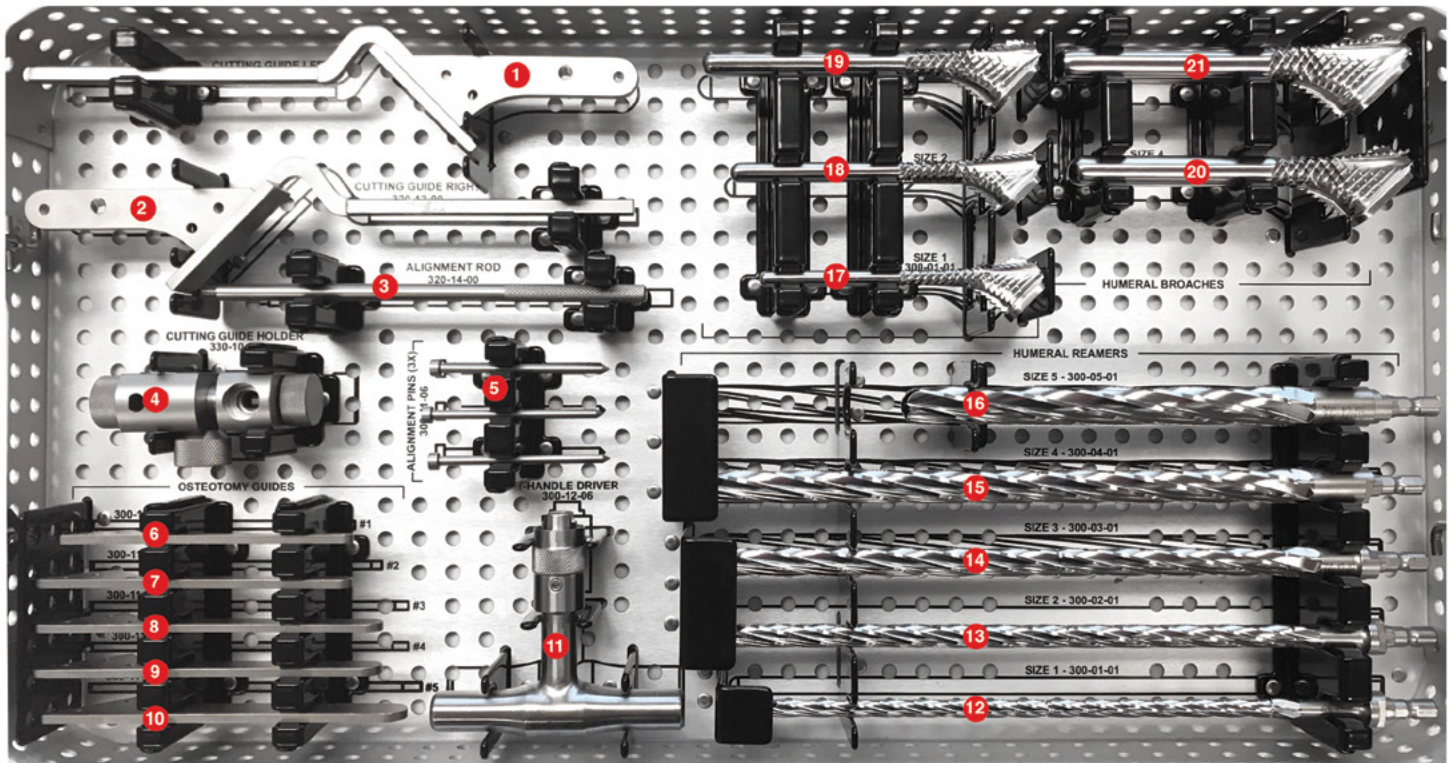
After selecting the appropriate Humeral Cup and PE-Inlay, use the assembly disc and PE-Inlay Impactor to snap lock the PE-Inlay into the Humeral Cup. An audible “CLICK” will be heard when the parts are fully engaged.

With two firm strikes of the PE-Inlay Impactor, Impact the assembled Humeral Cup and PE-Inlay into the Primary Stem. The Humeral Cup is marked “SUPERIOR” to aid in positioning the Humeral Cup and PE-Inlay with respect to the Stem.

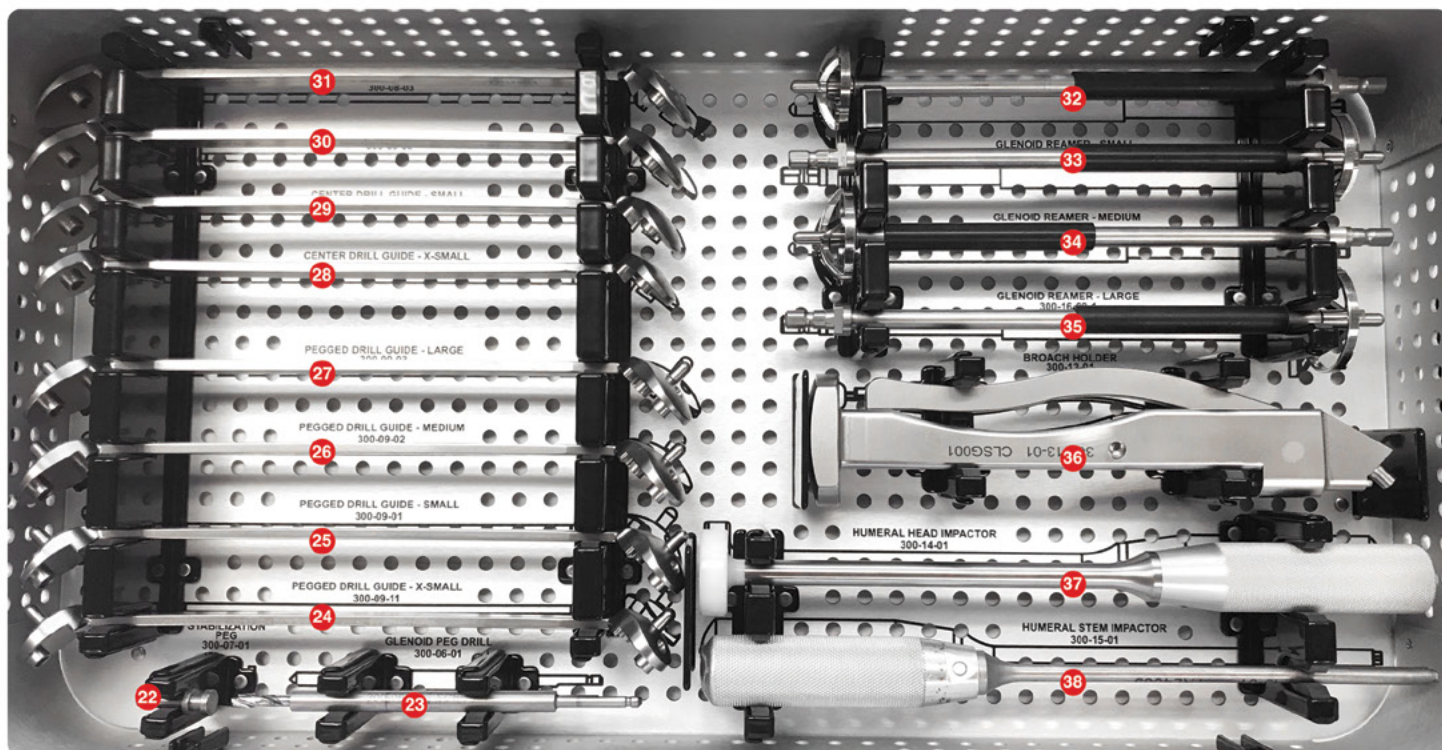


Ingen SEVIIN® Shoulder System

Humeral Instruments: *Top Tray*



- | | | |
|--------------------------|------------------------|-----------------------|
| 1. Cutting Guide – Left | 8. Osteotomy Guide #3 | 15. Humeral Reamer #4 |
| 2. Cutting Guide – Right | 9. Osteotomy Guide #4 | 16. Humeral Reamer #5 |
| 3. Alignment Rod | 10. Osteotomy Guide #5 | 17. Humeral Rasp #1 |
| 4. Cutting Guide Holder | 11. T-Handle Driver | 18. Humeral Rasp #2 |
| 5. Alignment Pins (3x) | 12. Humeral Reamer #1 | 19. Humeral Rasp #3 |
| 6. Osteotomy Guide #1 | 13. Humeral Reamer #2 | 20. Humeral Rasp #4 |
| 7. Osteotomy Guide #2 | 14. Humeral Reamer #3 | 21. Humeral Rasp #5 |



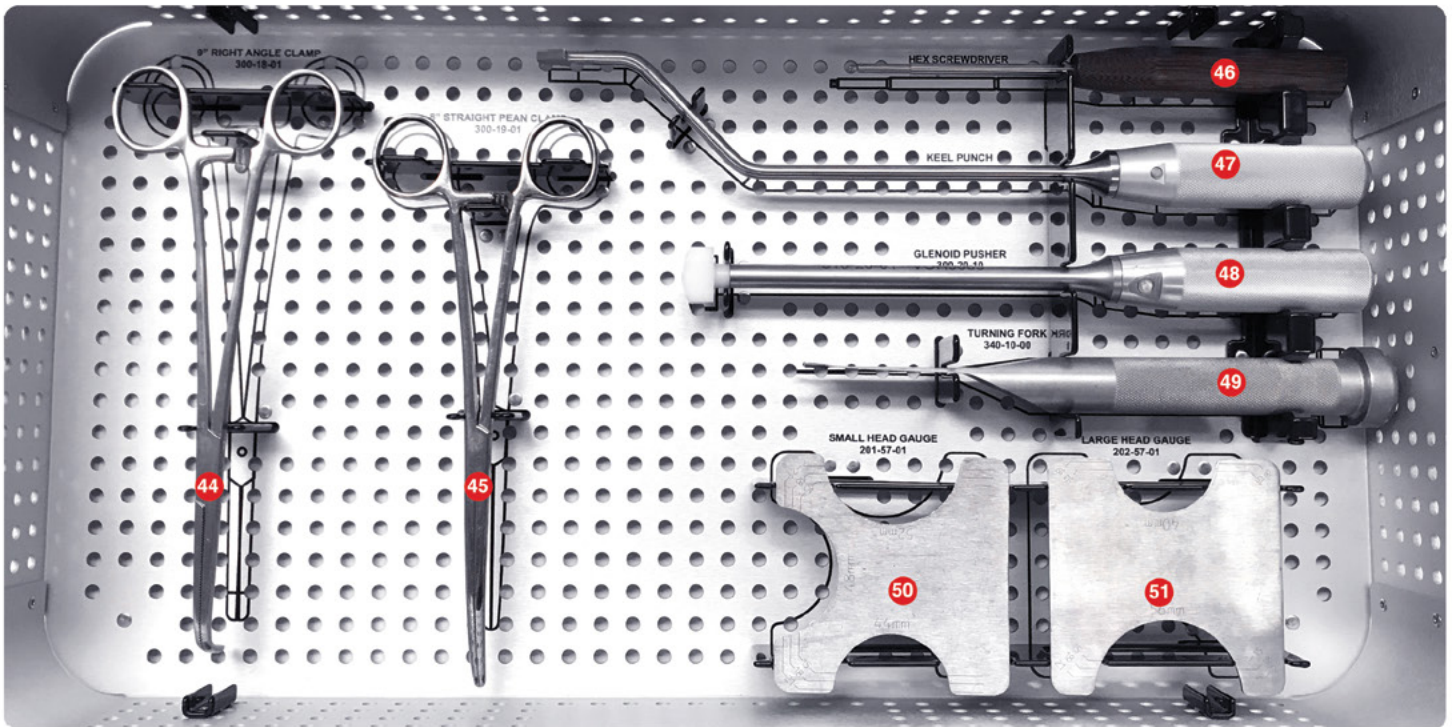
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|-------------------------------|----------------------------------|-----------------------------|
| 22. Stabilization Peg | 28. Center Drill Guide (X-SMALL) | 34. Glenoid Reamer (MEDIUM) |
| 23. Glenoid Peg Drill | 29. Center Drill Guide (SMALL) | 35. Glenoid Reamer (LARGE) |
| 24. Peg Drill Guide (X-SMALL) | 30. Center Drill Guide (MEDIUM) | 36. Broach Holder |
| 25. Peg Drill Guide (SMALL) | 31. Center Drill Guide (LARGE) | 37. Head Impactor |
| 26. Peg Drill Guide (MEDIUM) | 32. Glenoid Reamer (X-SMALL) | 38. Stem Impactor |
| 27. Peg Drill Guide (LARGE) | 33. Glenoid Reamer (SMALL) | |

Ingen SEVIIN® Shoulder System

Primary Trials: *Top Tray*



- | | | |
|----------------------|----------------------------|------------------------------|
| 1. Offset 44 x 18 | 16. Standard 48 x 18 | 31. Offset Tapered 56 x 21 |
| 2. Offset 44 x 21 | 17. Standard 48 x 21 | 32. Keeled X-SMALL |
| 3. Offset 48 x 18 | 18. Standard 52 x 15 | 33. Keeled SMALL |
| 4. Offset 48 x 21 | 19. Standard 52 x 18 | 34. Keeled MEDIUM |
| 5. Offset 52 x 18 | 20. Standard 52 x 21 | 35. Keeled LARGE |
| 6. Offset 52 x 21 | 21. Standard 56 x 15 | 36. Glenoid Template X-SMALL |
| 7. Offset 56 x 18 | 22. Standard 56 x 18 | 37. Glenoid Template SMALL |
| 8. Offset 56 x 21 | 23. Standard 56 x 21 | 38. Glenoid Template MEDIUM |
| 9. Standard 40 x 15 | 24. Offset Tapered 44 x 18 | 39. Glenoid Template LARGE |
| 10. Standard 40 x 18 | 25. Offset Tapered 44 x 21 | 40. Pegged X-SMALL |
| 11. Standard 40 x 21 | 26. Offset Tapered 48 x 18 | 41. Pegged SMALL |
| 12. Standard 44 x 15 | 27. Offset Tapered 48 x 21 | 42. Pegged MEDIUM |
| 13. Standard 44 x 18 | 28. Offset Tapered 52 x 18 | 43. Pegged LARGE |
| 14. Standard 44 x 21 | 29. Offset Tapered 52 x 21 | |
| 15. Standard 48 x 15 | 30. Offset Tapered 56 x 18 | |

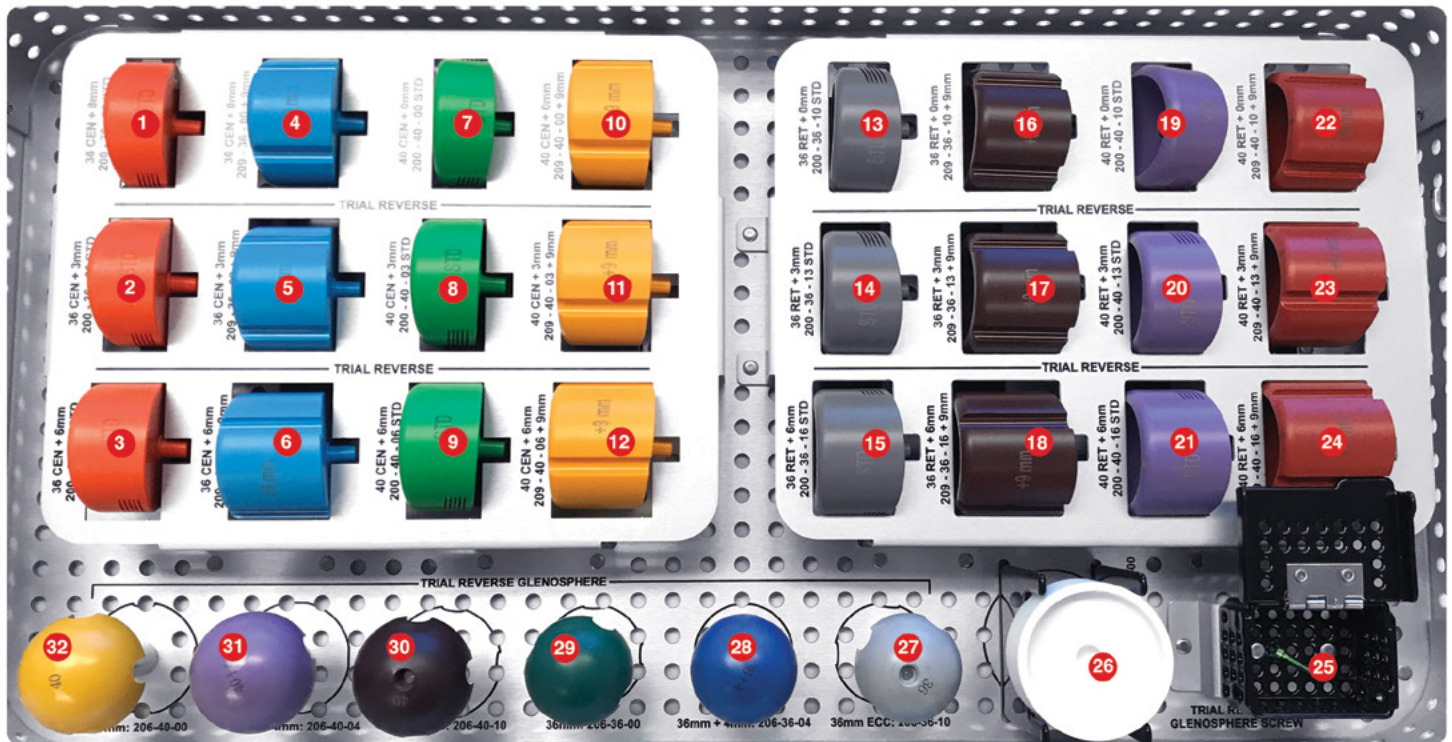


- 44. Right Angle Clamp
- 45. Straight Pean Clamp
- 46. 2.5mm Hex Screwdriver
- 47. Keel Punch

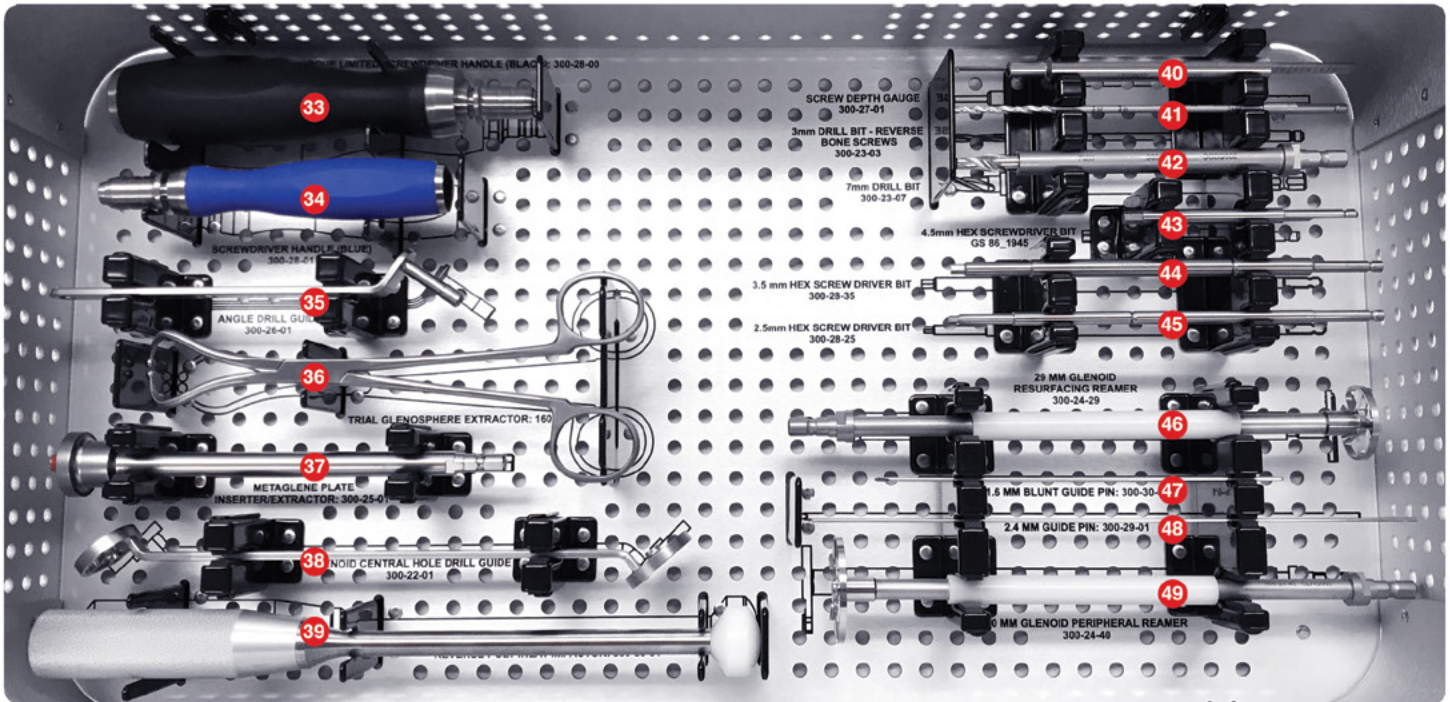
- 48. Glenoid Pusher
- 49. Turning Fork
- 50. Small Head Gauge
- 51. Large Head Gauge

Ingen SEVIIN® Shoulder System

Reverse Instruments: *Top Tray*



- | | |
|--|--|
| 1. Centered 36mm +0 (STD Humeral Cup) | 17. Retentive 36mm +3 (+9mm Humeral Cup) |
| 2. Centered 36mm +3 (STD Humeral Cup) | 18. Retentive 36mm +6 (+9mm Humeral Cup) |
| 3. Centered 36mm +6 (STD Humeral Cup) | 19. Retentive 40mm +0 (STD Humeral Cup) |
| 4. Centered 36mm +0 (+9mm Humeral Cup) | 20. Retentive 40mm +3 (STD Humeral Cup) |
| 5. Centered 36mm +3 (+9mm Humeral Cup) | 21. Retentive 40mm +6 (STD Humeral Cup) |
| 6. Centered 36mm +6 (+9mm Humeral Cup) | 22. Retentive 40mm +0 (+9mm Humeral Cup) |
| 7. Centered 40mm +0 (STD Humeral Cup) | 23. Retentive 40mm +0 (+9mm Humeral Cup) |
| 8. Centered 40mm +3 (STD Humeral Cup) | 24. Retentive 40mm +0 (+9mm Humeral Cup) |
| 9. Centered 40mm +6 (STD Humeral Cup) | 25. Trial Glenosphere Screw |
| 10. Centered 40mm +0 (+9mm Humeral Cup) | 26. Assembly Disc |
| 11. Centered 40mm +3 (+9mm Humeral Cup) | 27. 36mm Glenosphere ECCENTRIC |
| 12. Centered 40mm +6 (+9mm Humeral Cup) | 28. 36mm Glenosphere +4MM |
| 13. Retentive 36mm +0 (STD Humeral Cup) | 29. 36mm Glenosphere STANDARD |
| 14. Retentive 36mm +3 (STD Humeral Cup) | 30. 40mm Glenosphere ECCENTRIC |
| 15. Retentive 36mm +6 (STD Humeral Cup) | 31. 40mm Glenosphere +4MM |
| 16. Retentive 36mm +0 (+9mm Humeral Cup) | 32. 40mm Glenosphere STANDARD |



- 33. Torque Limited Handle
- 34. Screwdriver Handle
- 35. Angle Drill Guide
- 36. Trial Glenosphere Extractor
- 37. Metaglene Inserter/Extractor
- 38. Center Hole Drill Guide
- 39. PE-Inlay Impactor

- 40. Screw Depth Gauge
- 41. 3mm Bone Screw Drill Bit
- 42. 7mm Drill Bit
- 43. 4.5mm Hex Bit
- 44. 3.5mm Hex Bit
- 45. 2.5mm Hex Bit
- 46. 29mm Glenoid Reamer
- 47. 1.6mm Guide Pin
- 48. 2.4mm Guide Pin
- 49. 40mm Glenoid Peripheral Reamer

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