

For Joint Replacement of the Radial Head

Radial Head Prosthesis System

Surgical Technique

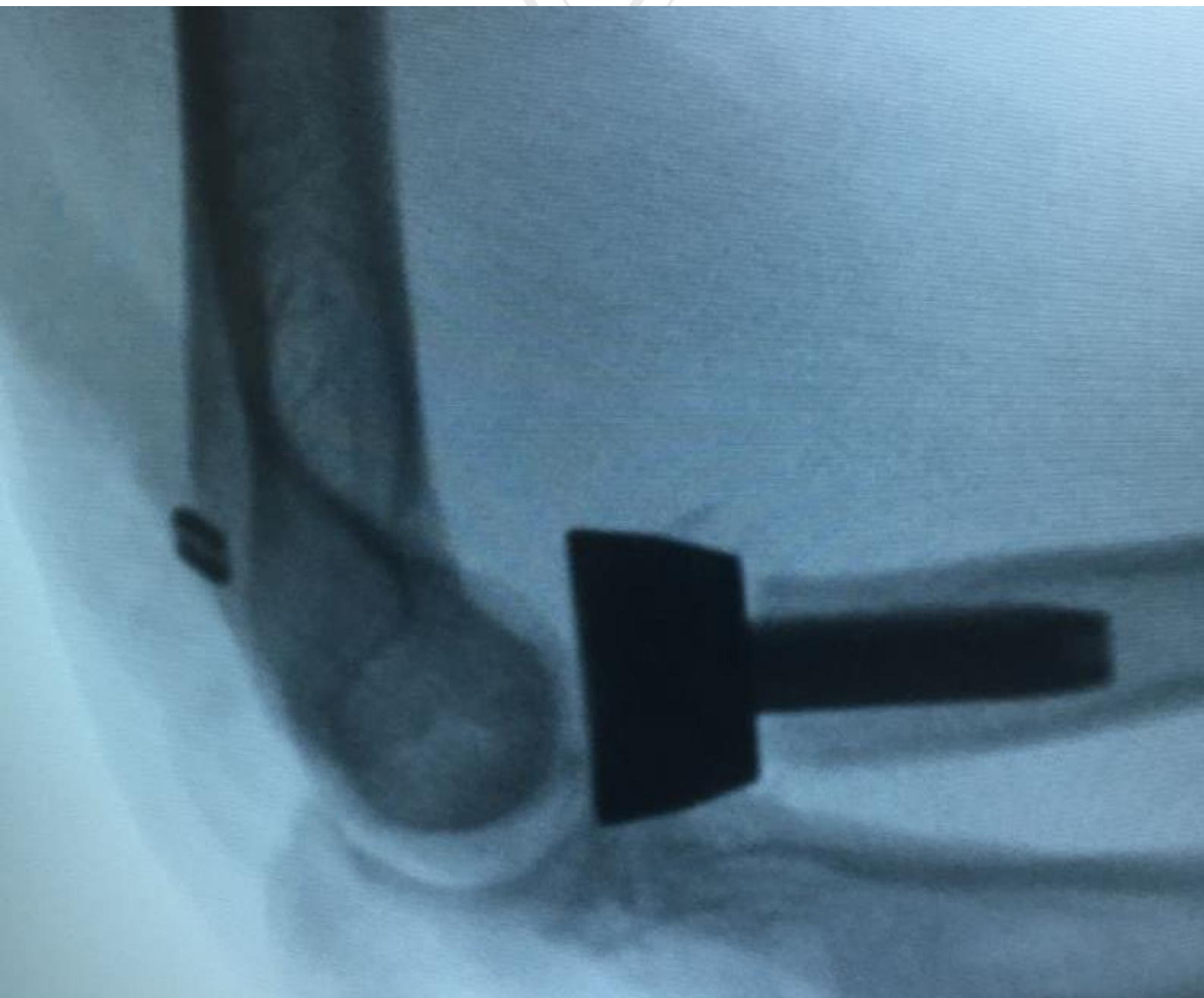


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Radial Head Prosthesis System

Features

- Modular: Three piece construct can accommodate a variety of patient anatomies.
- Implant Components are locked together by thread locking and connection screw.

Radial Head

- Round and symmetrical, allowing for adaptability and ease of sizing and implementation.
- Integrated connection screw aids in the construct assembly.



Radial Stem

- Polygon design for rotational stability.
- Straight stem has bevelled tip to facilitate insertion into the medullary cavity.
- Stems are designed to be uncemented.



18 Heads (6 Diameters x 3 Heights)

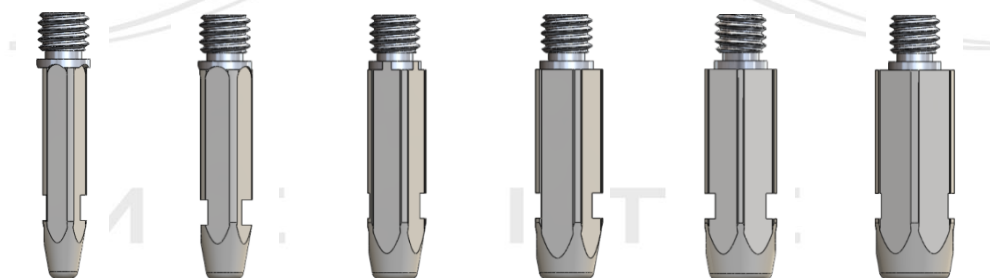


Head Diameter	+0	+2	+4
16mm	10.5	12.5	14.5
18mm	10.5	12.5	14.5
20mm	12.5	14.5	16.5
22mm	12.5	14.5	16.5
24mm	12.5	14.5	16.5
26mm	12.5	14.5	16.5

MATRIX

6 Stems (6 Diameters)

Diameters :	5.5mm	6.5mm	7.5mm	8.5mm	9.5mm	10.5mm
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Indications

The Matrix Meditec P. Ltd. Radial Head Prosthesis System is indicated for

- Primary replacement of the degenerative or post-traumatic disabilities having pain, decreased motion at the radioulnar joint
- Resistance to conservative treatment
- Revision following failed radial head arthroplasty



Preoperative Planning

Position Patient

Position the patient supine on the table. Prepare the extremity from the axilla to the hand. This allows rotation of the forearm and flexion and extension of the elbow during the operative replacement of the radial head.

Surgical Technique

Approach

- A lateral approach is most commonly used.

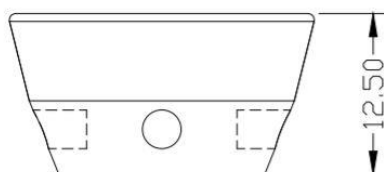
Precautions

- Take care to avoid the deep branch of the radial nerve, which runs anterior to the capsule and the radial head.
- To minimize the risk of operative disruption of the lateral collateral ligament, keep the capsular incision in front of the anterior margin of the anconeus muscle and parallel to the fascial limit of the extensor and carpi ulnaris

Open the annular ligament laterally or slightly anteriorly to allow full inspection of the damaged radial head. In selected cases, an osteotomy of the lateral epicondyle will allow an extensile approach.

Resect radial head

- If the radial head is fractured and is not repairable, remove the fragments to ensure no bone is left in the joint. Using a saw, reset any remaining radial head at the level of the radial neck, perpendicular to the axis of the neck.
- In order to determine the cut level, the shortest construct to consider yields a total height of 10.5mm (In 16mm, 18mm). The tallest construct is 12.5mm (In 20mm, 22mm, 24mm, 26mm). Be careful to avoid excessive neck resection.



Determine radial head diameter

- Determine the head diameter by placing the resected head into the circular cut outs in the sizing dish. When there are multiple articular fragments, these can be assembled to recreate the native radial head. If the resected head is in between sizes, select the smaller diameter.
- Compare the resected head with a trial head to assess the head height.

Prepare radial canal

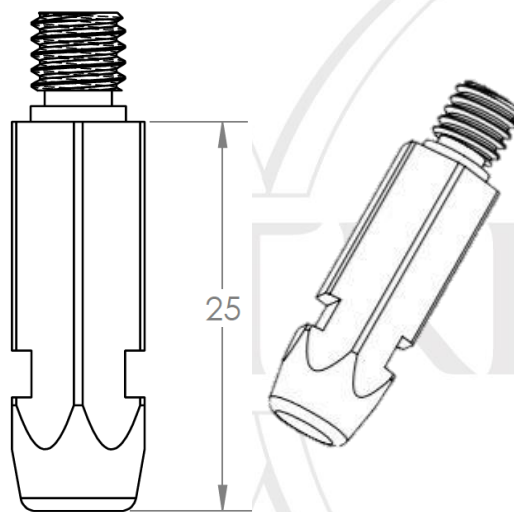
- If the elbow is unstable, varus stress and rotation of the forearm into supination allows improved access to the medullary canal. Retraction and elevation of the proximal radial shaft/neck can allow medullary access. Use trocar to initially enter the canal.

Ream radial canal

- It is important to identify the proper axial orientation. The forearm should be in mid rotation with the radial tuberosity directed medially. Starting with the smallest reamer, prepare the canal for the stem. Use sequentially larger reamers until an optimum size is achieved.
- Continuing to increase reamer size after optimum size is achieved, or using excessive force while reaming the canal, may produce a longitudinal radial neck fracture. Utilize special care during this step. Note that the implant stems are slightly larger than the reamer to ensure an adequate fit.
- If necessary, gently hammer to fully seat the reamer.

Insert trial

- Choose the trial stem that corresponds to the last reamer size used.
- Trial Stems are smooth to facilitate insertion. Trial stems are slightly smaller than the implants stems.
- Trial Heads can be attached to the trial or definitive stem for determination of the implant height.
- Select a trial head that appears to correctly fill the gap.
- Guide the trial head onto the trial stem by hand using thread and tighten it with the spanner.
- Continue using different trial heads until satisfied with the fit.
- Trial will not have connecting screw for the final tightening of stem and head.
- Do not over tighten the trial head onto trial stem.

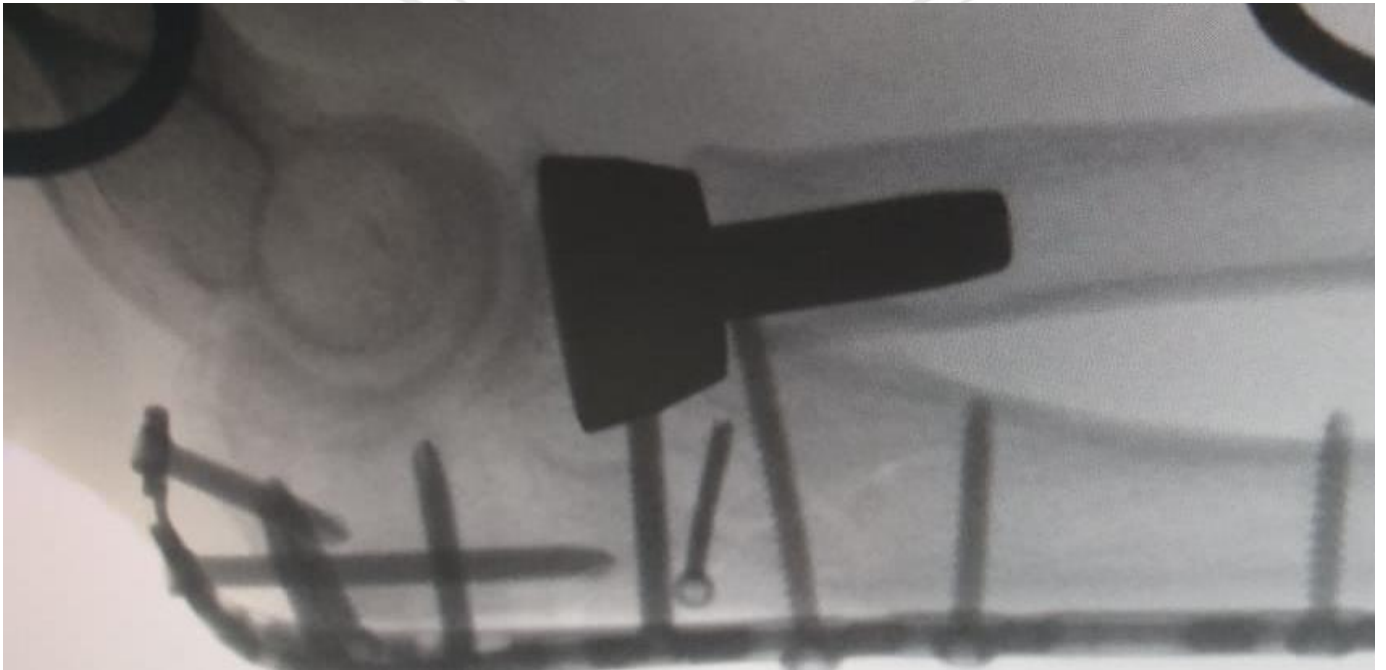


Trial reduction

- Manipulate the elbow through a full range of elbow flexion extension and forearm pronation-supination positions.
- The head should articulate with the capitellum and the sigmoid notch smoothly through a full arc of motion. Some translation of the trial head relative to the capitellum is normal with forearm rotation.
- The head should articulate up to the most proximal margin of the proximal radioulnar joint.
- Taking an image intensification view may be helpful to visualize the ulnohumeral joint.
- Confirm that the medial and lateral joints are close to symmetric and not overstuff.
- Continue to place different trial heads until satisfied with the size and motion.
- Once desired size is determined, remove the trial head and the trial stem.
- Loosen the trial head using the spanner to remove the trial head from stem.

Insert Implant

- Assemble the head to the stem on the table. Guide the implant stem into the implant head.
- Thread the integrated connecting screw in the head using the screwdriver.
- Tighten the screw on the head until head is secured to the stem.
- Insert the assembled implant using the Impactor and forceps.
- Gently hammer to fully seat the stem.



M E D I T E C

Implants

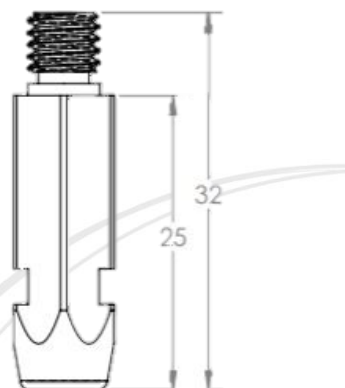
Titanium Radial Stem, Sterile

	Diameter (mm)	Height (mm)		
		Standard	+2mm	+4mm
5501.016	16	10.5	12.5	14.5
5501.018	18	10.5	12.5	14.5
5501.020	20	12.5	14.5	16.5
5501.022	22	12.5	14.5	16.5
5501.024	24	12.5	14.5	16.5
5501.026	26	12.5	14.5	16.5

Code	Name
5501.016.105	Radial Head 16.0mm, H10.5mm TIT
5501.016.125	Radial Head 16.0mm, H12.5mm TIT
5501.016.145	Radial Head 16.0mm, H14.5mm TIT
5501.018.105	Radial Head 18.0mm, H10.5mm TIT
5501.018.125	Radial Head 18.0mm, H12.5mm TIT
5501.018.145	Radial Head 18.0mm, H14.5mm TIT
5501.020.125	Radial Head 20.0mm, H12.5mm TIT
5501.020.145	Radial Head 20.0mm, H14.5mm TIT
5501.020.165	Radial Head 20.0mm, H16.5mm TIT
5501.022.125	Radial Head 22.0mm, H12.5mm TIT
5501.022.145	Radial Head 22.0mm, H14.5mm TIT
5501.022.165	Radial Head 22.0mm, H16.5mm TIT
5501.024.125	Radial Head 24.0mm, H12.5mm TIT
5501.024.145	Radial Head 24.0mm, H14.5mm TIT
5501.024.165	Radial Head 24.0mm, H16.5mm TIT
5501.026.125	Radial Head 26.0mm, H12.5mm TIT
5501.026.145	Radial Head 26.0mm, H14.5mm TIT
5501.026.165	Radial Head 26.0mm, H16.5mm TIT

Titanium Radial Stem, HA Coated, Sterile

	Diameter (mm)	Height (mm)
5502.055	5.5	25
5502.065	6.5	25
5502.075	7.5	25
5502.085	8.5	25
5502.095	9.5	25
5502.105	10.5	25



Code	Name
5502.055	Radial Stem HA Coated 5.5mm TIT
5502.065	Radial Stem HA Coated 6.5mm TIT
5502.075	Radial Stem HA Coated 7.5mm TIT
5502.085	Radial Stem HA Coated 8.5mm TIT
5502.095	Radial Stem HA Coated 9.5mm TIT
5502.105	Radial Stem HA Coated 10.5mm TIT

Instruments

Radial Head Prosthesis Instrument Set

Code	Name
HS2.001	Introducer For Radial Head
HS2.002	Impactor For Radial Head
HS2.003.016	Trial For Radial Head Cup 16.0mm, 10.5mm
HS2.003.018	Trial For Radial Head Cup 18.0mm, 10.5mm
HS2.003.020	Trial For Radial Head Cup 20.0mm, 12.5mm
HS2.003.022	Trial For Radial Head Cup 22.0mm, 12.5mm
HS2.003.024	Trial For Radial Head Cup 24.0mm, 12.5mm
HS2.003.026	Trial For Radial Head Cup 26.0mm, 12.5mm
HS2.009.016	Trial For Radial Head Cup 16.0mm, 12.5mm
HS2.009.018	Trial For Radial Head Cup 18.0mm, 12.5mm
HS2.009.020	Trial For Radial Head Cup 20.0mm, 14.5mm
HS2.009.022	Trial For Radial Head Cup 22.0mm, 14.5mm
HS2.009.024	Trial For Radial Head Cup 24.0mm, 14.5mm
HS2.009.026	Trial For Radial Head Cup 26.0mm, 14.5mm
HS2.010.016	Trial For Radial Head Cup 16.0mm, 14.5mm
HS2.010.018	Trial For Radial Head Cup 18.0mm, 14.5mm
HS2.010.020	Trial For Radial Head Cup 20.0mm, 16.5mm
HS2.010.022	Trial For Radial Head Cup 22.0mm, 16.5mm
HS2.010.024	Trial For Radial Head Cup 24.0mm, 16.5mm
HS2.010.026	Trial For Radial Head Cup 26.0mm, 16.5mm
HS2.004.055	Trial For Radial Head Stem 5.5mm
HS2.004.065	Trial For Radial Head Stem 6.5mm
HS2.004.075	Trial For Radial Head Stem 7.5mm
HS2.004.085	Trial For Radial Head Stem 8.5mm
HS2.004.095	Trial For Radial Head Stem 9.5mm
HS2.004.105	Trial For Radial Head Stem 10.5mm
HS2.005	Radial Head Gauge
HS2.006.055	Reamer For Radial Stem 5.5mm
HS2.006.065	Reamer For Radial Stem 6.5mm
HS2.006.075	Reamer For Radial Stem 7.5mm
HS2.006.085	Reamer For Radial Stem 8.5mm
HS2.006.095	Reamer For Radial Stem 9.5mm
HS2.006.105	Reamer For Radial Stem 10.5mm
HS2.007	Combination Wrench Combined
MS1.0201	O Awl Straight Silicon Handle
MS1.036	120° Awl
520.003	Quick Coupling With T-Handle
HS2.008	Screw Driver Narrow 2.5mm
MS1.084	Rocker Forcep
BOX5	Flat Box 1

