

ANTEA

RADIAL HEAD PROSTHESIS

SURGICAL TECHNIQUE



ADLER
ORTHO

A-EXTREMITY

The ANTEA Radial Head Prosthesis

COMPONENTS



Radial Head

- Radiolucent.
- Anatomical surface.
- Hypoallergenic.
- 5 different sizes.

Bipolar collar

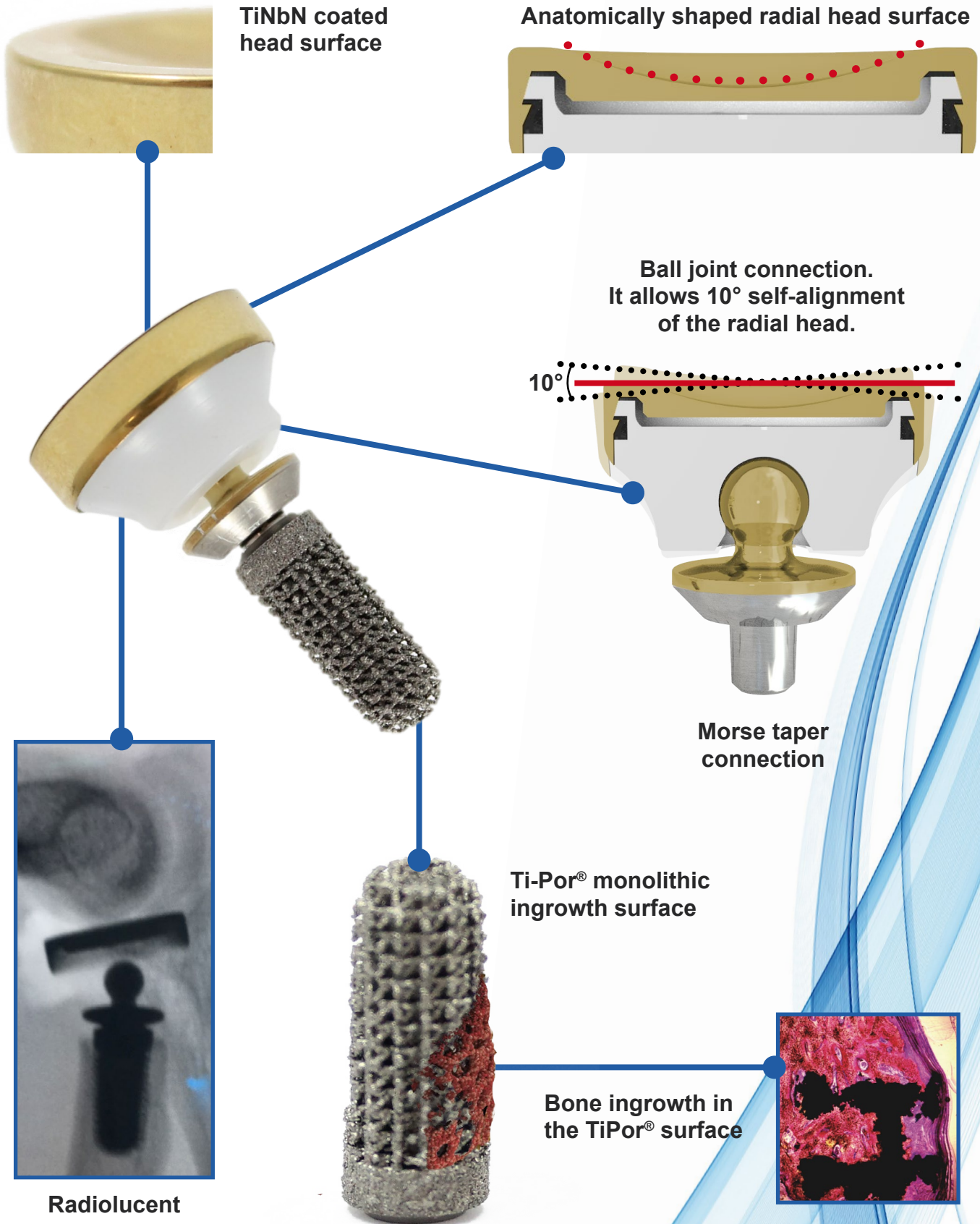
- Three sizes with increasing offset.
- It allows 10° self-alignment freedom to the radial head.
- Connected to the radial stem with a Morse taper.

Radial Stem

- Cementless made of Titanium alloy.
- Produced with the powder manufacturing technology.
- Ti-Por® three-dimensional monolithic ingrowth surface.
- 9 proportionally growing diameters.

The ANTEA Radial Head Prosthesis

THE DETAILS THAT MAKE THE DIFFERENCE



Capital Head resection

The resection level must be distal to the fracture line enabling, at least for the introduction of the S trial spacer (Fig 1). While performing the osteotomy the forearm should be pronated and supined, keeping the saw blade perpendicular to the rotation axis (Fig 2a-2b).

Fig 1

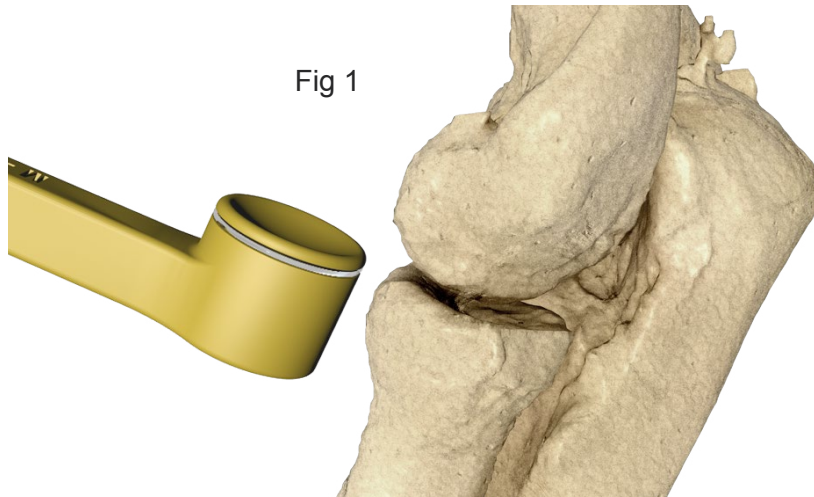


Fig 2a

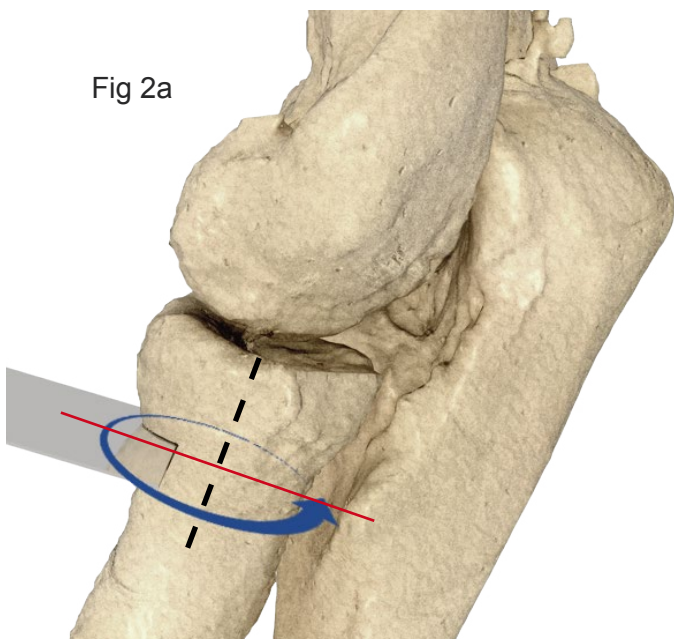
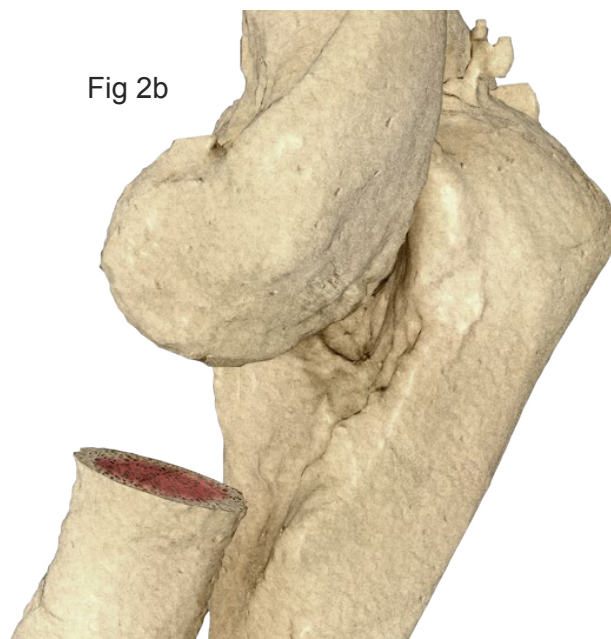


Fig 2b



The available space is checked using the radiolucent trial spacers.

The Antea system has three different radial head heights (13mm-14.5mm-17mm) that are reproduced by the trial spacers set (Fig 3). On each trial spacer is engraved the corresponding bipolar collar offset. In case of "overstuffing" (overcompression of the epicondylar cartilage), it is necessary to increase the implant space by distalizing the osteotomy. If the medullary canal were not visible after the resection freshen, a mini canal finder can be used. The canal finder is identified as rasp size 0 in the Antea instrument set.

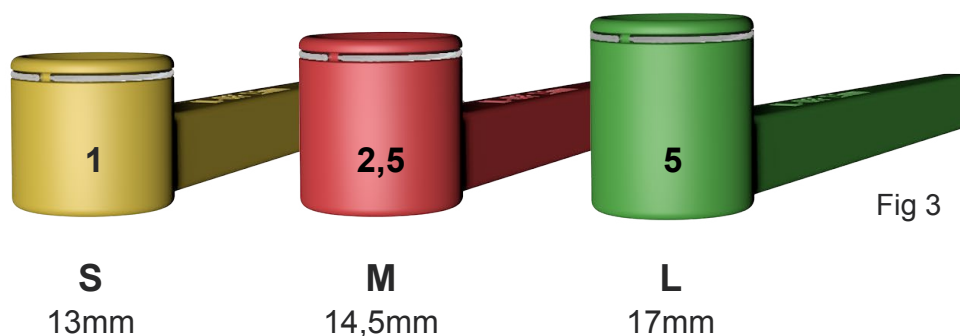


Fig 3

Resection level assessment

In case of trauma with complete epiphyseal detachment, regularization must be carried out below the fracture rhyme, checking the integrity of the cortical surface. The trial spacer should be used to evaluate the correct space (13mm - 14.5mm - 17mm / Fig 3).

In case of overstuffing (overcompression of the epicondylar cartilage), it is necessary to increase the implant space by lowering the osteotomy level. The trial spacer should be then inserted again to evaluate the correct implant filling and the humero-radial stability (Fig 4).

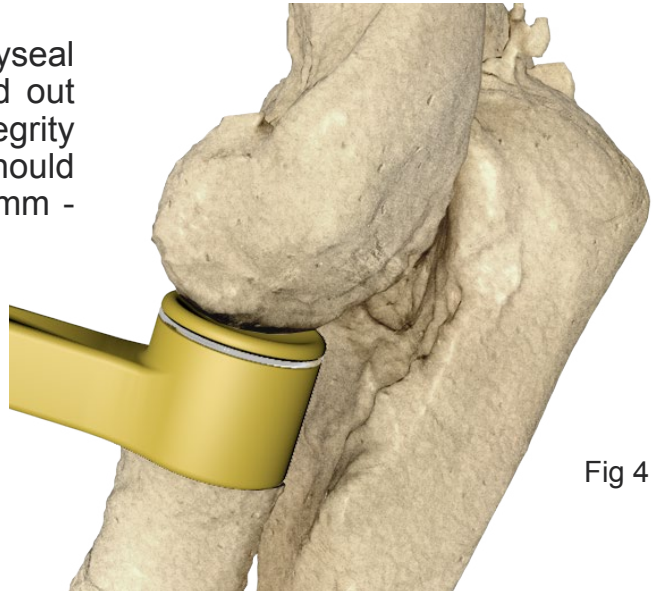


Fig 4

Spacer X-ray control

Insert the trial spacer and check the correct filling and humero-radial stability. It's suggested to perform an x-ray check to verify the trial spacer correspondence with the coronoid level (Fig 5).

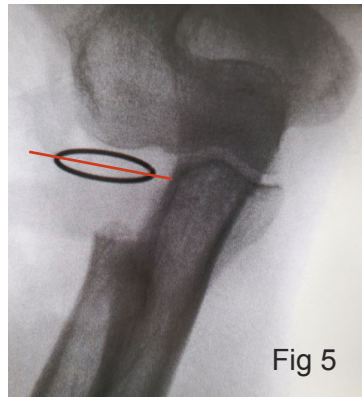
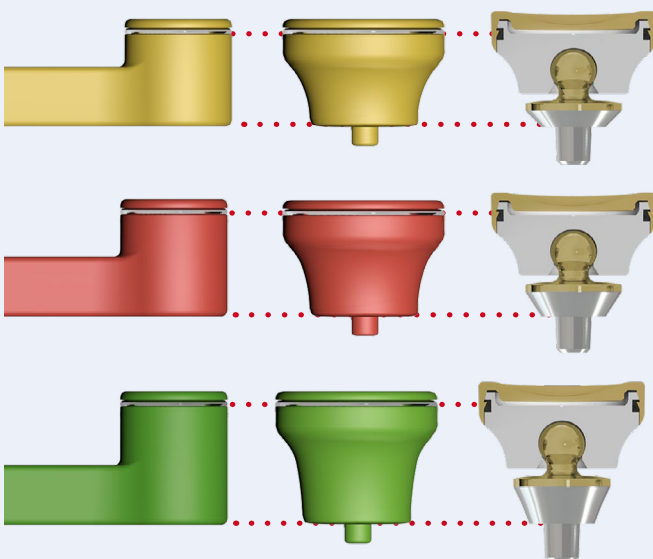


Fig 5



Correspondence between trial spacer, trial radial head and final implant.

Note how both the plastic trial spacer and the trial implant, while being radiolucent, have a radio-opaque landmark corresponding to the deepest point of the prosthetic head surface, in order to show the point of contact with the humeral capitulum.



The picture on the left shows the correspondence between trial spacers, trial heads and final head / collar implant assembly.

Trial spacers and trial heads are identified by a color code:

- **Yellow.** 13mm trial spacer.
For the final implant the collar with 1mm offset should be chosen.
- **Red.** 14.5mm trial spacer.
For the final implant the collar with 2.5mm offset should be chosen.
- **Green.** 17mm trial spacer.
For the final implant the collar with 5mm offset should be chosen.

Canal preparation

After locating the radial canal with a mini canal finder anatomical handle rasps are used. It is available a set of 7 progressive increasing rasps, from 7mm diameter until 13mm. Progressively increase the rasp size until the correct cortical contact is achieved. Rasp should be sunk until the last cutting tooth disappears underneath the osteotomy level (Fig. 6 and 7).

While using the rasps it is advisable not to exercise rotational stresses to allow better compaction of the internal cancellous bone. Rotating rasps may be appropriate only in the case in which excessive press-fit does not allow for the correct stem seating. In the instruments set it is also available a rasp size 0, which can be used as initiator or canal finder.

RASP	Diam. (mm)
1	7
2	8
3	9
4	10
5	11
6	12
7	13

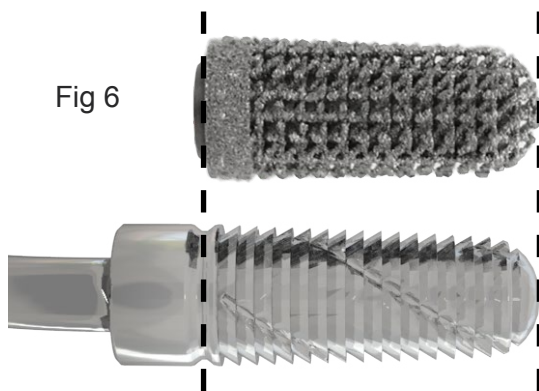


Fig 6

Fig 7



Final Stem insertion

After inserting the rasps in an increasing fashion and achieved a good stability inside the radial canal (Fig 7), the Surgeon can proceed with the final stem insertion. The chosen stem should be first manually inserted and then positioned in place with the dedicated stem positioner (Fig 8). Stem should be seated until it stays aligned with the osteotomy level (Fig 9).

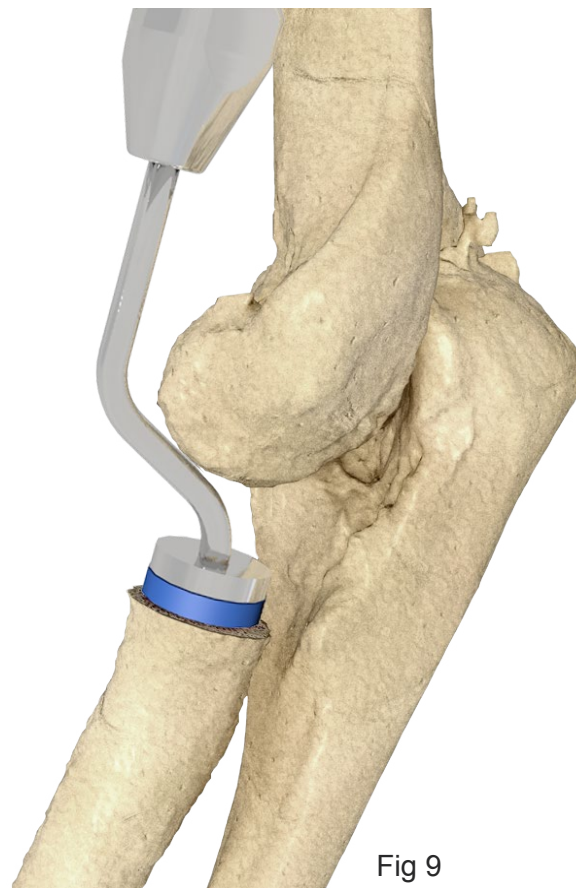


Fig 9



Fig 8

Ideal stem positioning

Prosthetic Head sizing

If possible reassemble the radial head fragments and proceed with calibration employing the radial head sizer available in the set (Fig. 10). The same procedure can be easily followed if the radial head is intact.

It is suggested to select a prosthetic head at least one size smaller Vs the patient one.

Fig 10



Trial reduction

Following the insertion of the final stem, proceed with the choice of the collar to be used with the already selected radial head. According to the trial spacer used at the beginning of the surgery (S-M-L) the trial implant (collar + head) is selected and it is positioned on the stem (Fig 11).

After having performed the joint reduction, it is suggested to perform a x-ray check, verifying that the radiopaque mark on the trial is aligned with the ulnar surface proximal at the coronoid level (Fig 12).

Surgeon should proceed with the flexion / extension and pronation / supination articular movements in order to evaluate if there is any need for further corrections.

		OFFSET		
		1	2,5	5
DIAMETER	17,5			
	19			
	20,5			
	22			
	23,5			

Bipolar collars and radial heads diameters couplings to be selected according to the trial implants used.

Fig 11



Fig 12



Final Head and Collar assembly

The selected final implant components should be assembled using a dedicated press. Position the collar in its appropriate housing with the head above it, and proceed by screwing the presser until the two components are finally assembled (Fig 13a - 13b - 13c).

Note: to facilitate the extraction of the implant from the press, it is recommended to interpose the removal fork (code IK01000) between the press and the collar.

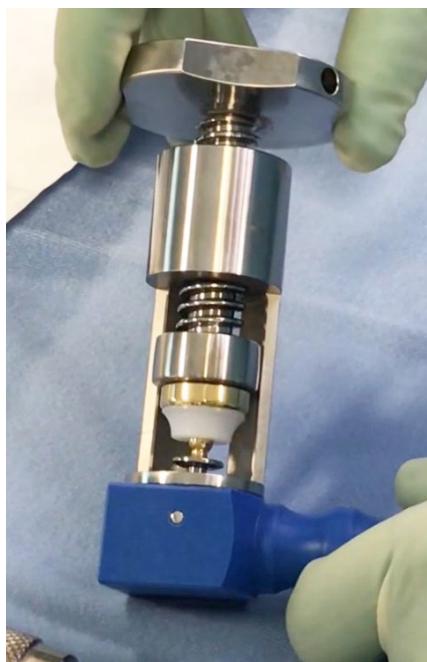


Fig 13a

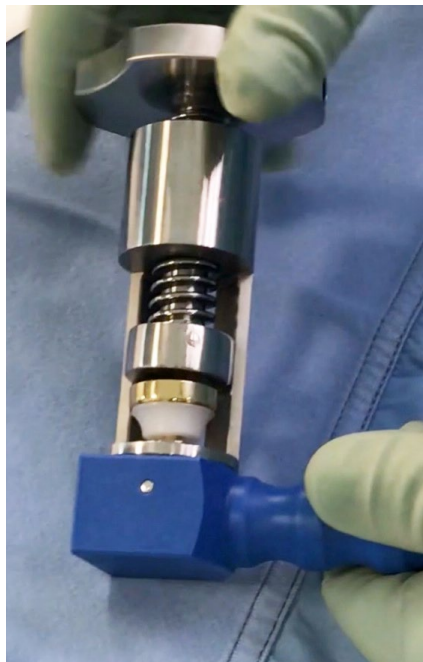


Fig 13b

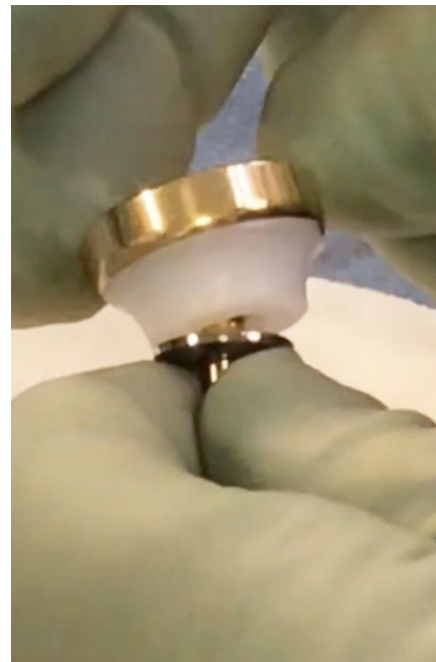


Fig 13c

Final Implants insertion

The Head + Collar assembly is then positioned on the final stem.

The collar morse taper cone is inserted in the stem proximal cavity, and the implant is assembled in place using the appropriate anatomical positioning tool (Fig 14a - 14b - 14c - 14d).

At the end of the procedure it is advisable to execute a pull-out test to verify the correct morse taper assembly.

Fig 14a

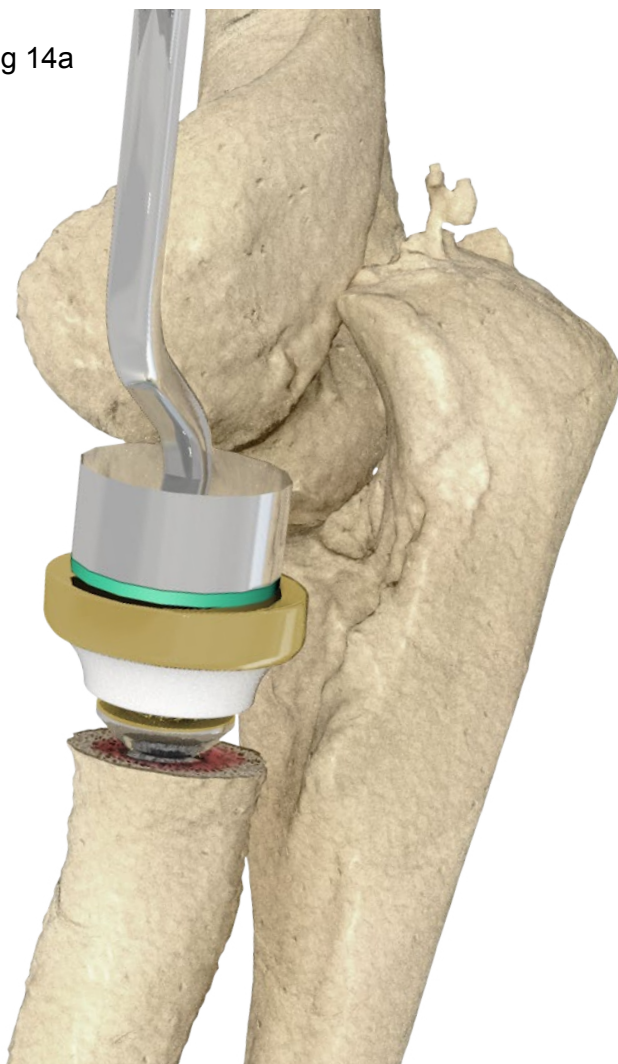


Fig 14b

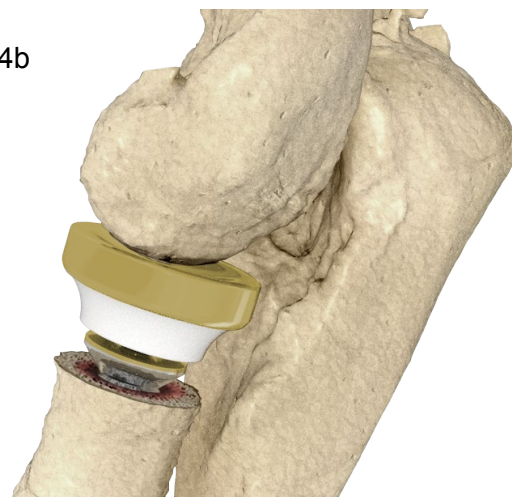


Fig 14c

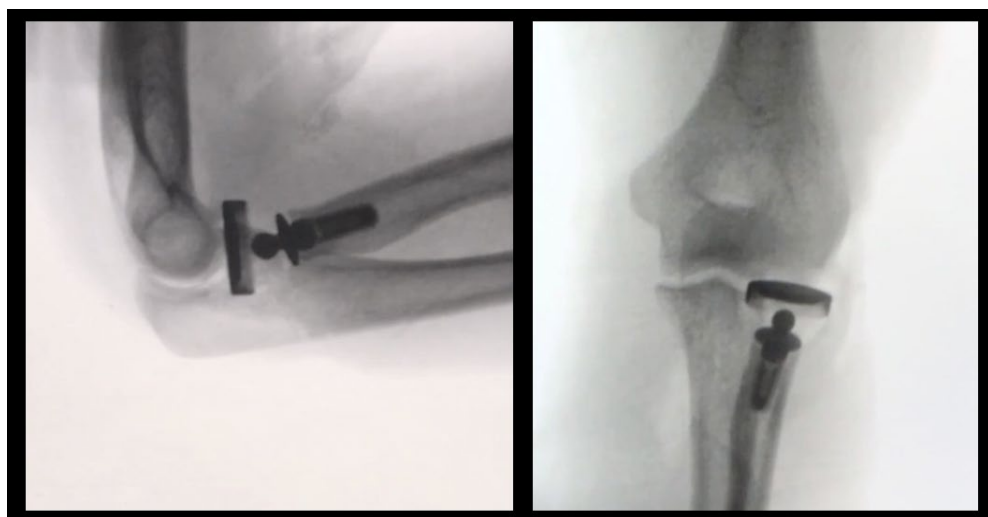
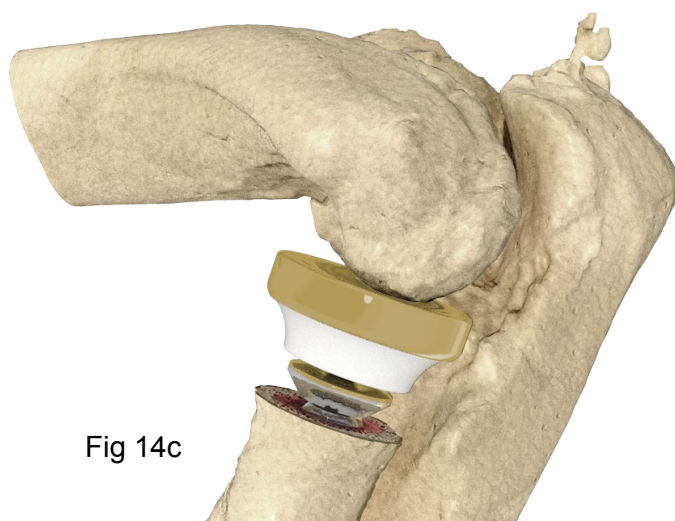


Fig 14d

Implants

CODE	DESCRIPTION
3300001	ANTEA RADIAL HEAD DIAM. 17.5
3300002	ANTEA RADIAL HEAD DIAM. 19
3300003	ANTEA RADIAL HEAD DIAM. 20.5
3300004	ANTEA RADIAL HEAD DIAM. 22
3300005	ANTEA RADIAL HEAD DIAM. 23.5



CODE	DESCRIPTION
3200101	ANTEA BIPOLAR COLLAR TiNbN COATED OFFSET 1 mm
3200102	ANTEA BIPOLAR COLLAR TiNbN COATED OFFSET 2.5 mm
3200103	ANTEA BIPOLAR COLLAR TiNbN COATED OFFSET 5 mm

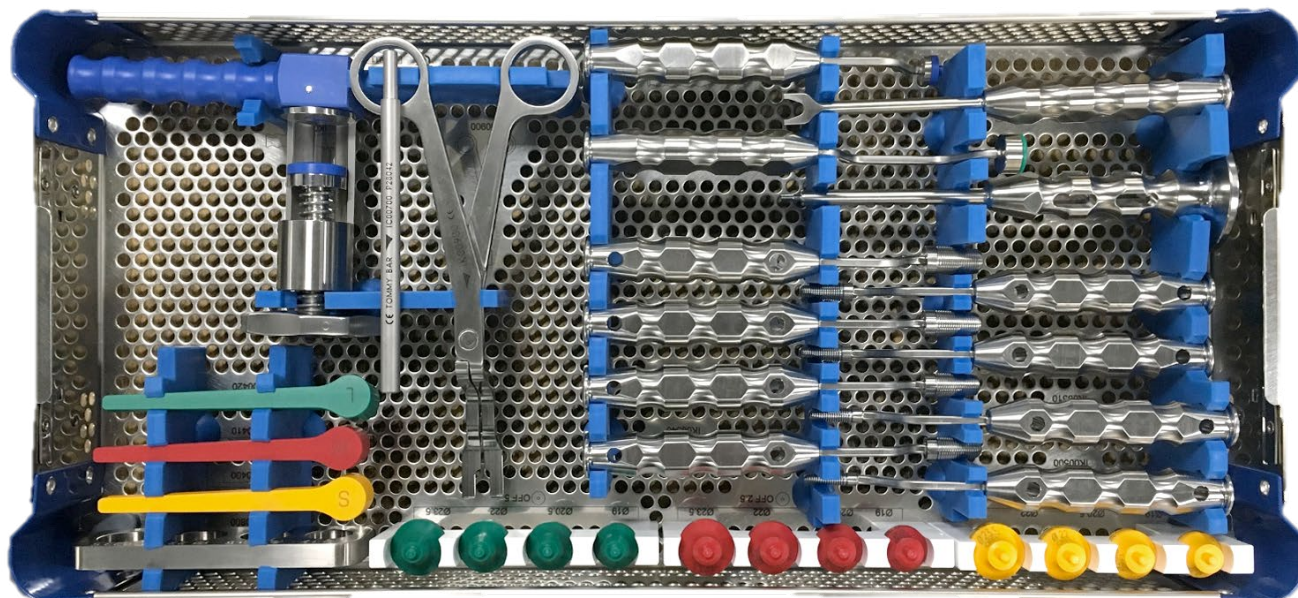


CODE	DESCRIPTION
3100001	ANTEA RADIAL STEM SIZE 1
3100115	ANTEA RADIAL STEM SIZE 1,5
3100002	ANTEA RADIAL STEM SIZE 2
3100125	ANTEA RADIAL STEM SIZE 2,5
3100003	ANTEA RADIAL STEM SIZE 3
3100004	ANTEA RADIAL STEM SIZE 4
3100005	ANTEA RADIAL STEM SIZE 5
3100006	ANTEA RADIAL STEM SIZE 6
3100007	ANTEA RADIAL STEM SIZE 7*



(*) Available on request

Instruments



CODE	DESCRIPTION	QUANTITY
IC00700	TOMMY BAR	1,00 P
IC90102	RADIAL HEAD INSTRUMENTS TRAY COVER	1,00 P
IC90103	INSTRUMENTS TRAY	1,00 P
IK00312	ANTEA TRIAL RADIAL HEAD D19 OFFSET 1	1,00 P
IK00313	ANTEA TRIAL RADIAL HEAD D20.5 OFFSET 1	1,00 P
IK00314	ANTEA TRIAL RADIAL HEAD D22 OFFSET 1	1,00 P
IK00315	ANTEA TRIAL RADIAL HEAD D23.5 OFFSET 1	1,00 P
IK00322	ANTEA TRIAL RADIAL HEAD D19 OFFSET 2.5	1,00 P
IK00323	ANTEA TRIAL RADIAL HEAD D20.5 OFFSET 2.5	1,00 P
IK00324	ANTEA TRIAL RADIAL HEAD D22 OFFSET 2.5	1,00 P
IK00325	ANTEA TRIAL RADIAL HEAD D23.5 OFFSET 2.5	1,00 P
IK00332	ANTEA TRIAL RADIAL HEAD D19 OFFSET 5	1,00 P
IK00333	ANTEA TRIAL RADIAL HEAD D20.5 OFFSET 5	1,00 P
IK00334	ANTEA TRIAL RADIAL HEAD D22 OFFSET 5	1,00 P
IK00335	ANTEA TRIAL RADIAL HEAD D23.5 OFFSET 5	1,00 P
IK00400	TRIAL SPACER SIZE S	1,00 P
IK00410	TRIAL SPACER SIZE M	1,00 P
IK00420	TRIAL SPACER SIZE L	1,00 P
IK00500	RADIAL STEM RASP SIZE 0	1,00 P
IK00510	RADIAL STEM RASP SIZE 1	1,00 P
IK00520	RADIAL STEM RASP SIZE 2	1,00 P
IK00530	RADIAL STEM RASP SIZE 3	1,00 P
IK00540	RADIAL STEM RASP SIZE 4	1,00 P
IK00550	RADIAL STEM RASP SIZE 5	1,00 P
IK00560	RADIAL STEM RASP SIZE 6	1,00 P
IK00570	RADIAL STEM RASP SIZE 7	1,00 P
IK00700	ANTEA RADIAL STEM POSITIONER	1,00 P
IK00750	ANTEA FINAL IMPACTOR	1,00 P
IK00800	RADIAL HEAD SIZER	1,00 P
IK00900	ANTEA HEAD / COLLAR DISASSEMBLY CLAMP	1,00 P
IK00950	ANTEA ASSEMBLY PRESS	1,00 P
IK01000	ANTEA STEM / COLLAR DISASSEMBLY TOOL	1,00 P
IK01100	ANTEA RADIAL STEM EXTRACTOR	1,00 P



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