JUST®
MEDICAL

DELTA

CLASSIC DELTA™ Rectangular Stem

Surgical technique

30+ Years of Clinical Use

JUST®
MEDICAL

HIP PRODUCTS FOR ALL-RO

Dynamic fatigue tests of femoral stem's head-neck conjunction and body after 10 million
Dynamic wear tests after 5 million cycles in the international E

HARMONY™ ACETABULAR CUP SYSTEM

SEE 3D PR
TRABECULAR ACETAB

ACETABULAR CUP


HARMONY Cup
(Ti+HA, DDH)


HARMONY Cup
(Ti+HA)


HARMONY Cup
(Ti-Porous)


HARMONY Cup
(Ti+HA, Revision)


SEE Trabecular Cup
(Titanium, DDH)


SEE Trabe
(Titan

LINER


22/32Standard
（UHMWPE）


28/32 10°
（UHMWPE）


28/10°
（HPE）


32/10°
（HPE）


36/10° 内衬
（HPE）

FEMORAL HEAD


Φ22 (0/+3.5)


Φ24（+0/3.5/7）


Φ28


Φ28（±3.5）


Φ28（+7）


Φ32


Φ32（±

FEMORAL STEM


MINI™
Minimally Invasive Stem


DELTA
CLASSIC Rectangular Stem

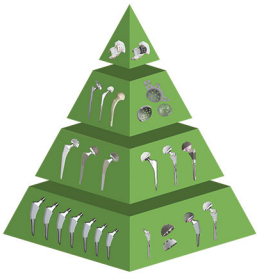

HARMONY
Tapered Stem (Ti-porous)


DELTA
Rectangular Stem (Ti-porous)


TAICH®
Cemented Stem

–MINIMAL INVASIVE–

PRIMARY



OUND SURGICAL SOLUTIONS

cycles in the international CNAS laboratory shows excellent results and no risk of fracture.
Endolab® laboratory in Germany shows excellent wear resistance.

RINTING BULAR CUP SYSTEM®

cular Cup
ium)

SEE Trabecular Cup
(Titanium, Revision)

CAGE AND MESH SYSTEM

AOS Cage (Revision)

AOS Ring (Revision)

Acetabular Mesh (Revision)

CEMENTED ACETABULAR CUP

Cemented Acetabular Cup

28 Constrained
(UHMWPE)

32 Constrained
(UHMWPE)

28 Cemented liners
(HPE)

32 Cemented liners
(HPE)

36 Cemented liners
(HPE)

Bone model restoration

3.5)

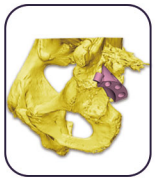
Φ32 (+7)

Bipolar Head

Φ28 (S/M/L)
BIOLOX® delta Ceramic

Φ32 (S/M/L/XL)
BIOLOX® delta Ceramic

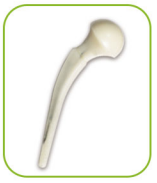
Φ36 (S/M/L/XL)
BIOLOX® delta Ceramic



Customized prosthesis design

ASM®
Modular Stem

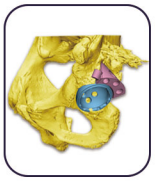
SEE® 3D Printing
Trabecular Modular Stem



Hip Spacer

TAICH® LONG
Cemented Revision Stem

RSL®
Revision Stem



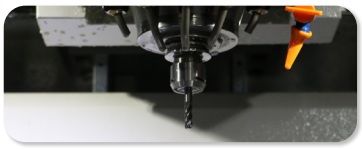
Customized product
simulated implantation

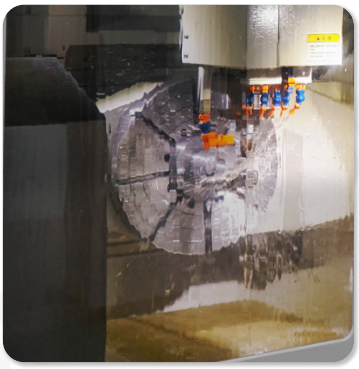
COMPLEX PRIMARY *REVISION* *CUSTOMIZED*

Imported Raw Material

All raw material of UHMWPE inserts were manufactured in Germany, meeting the technical requirements in ISO 5834 part 2 and ASTM F648.

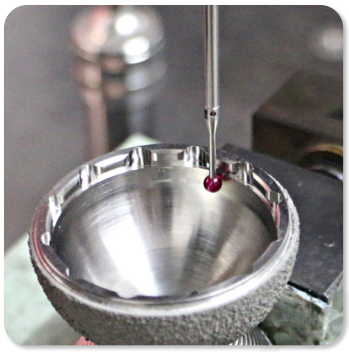
Precise Processing

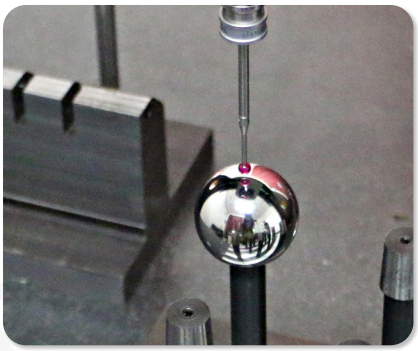




Strict Inspection

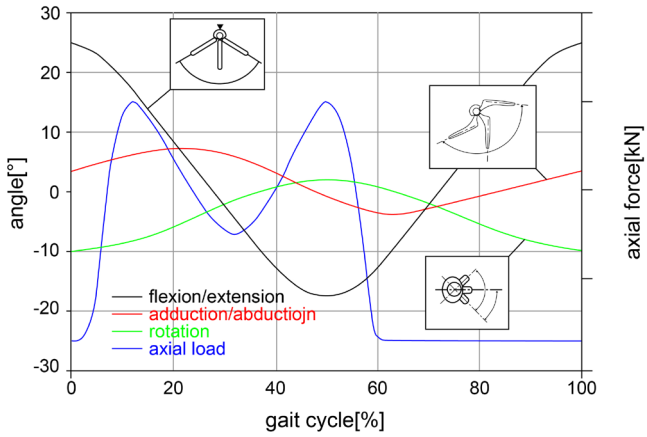
JUST MEDICAL Inspection Center



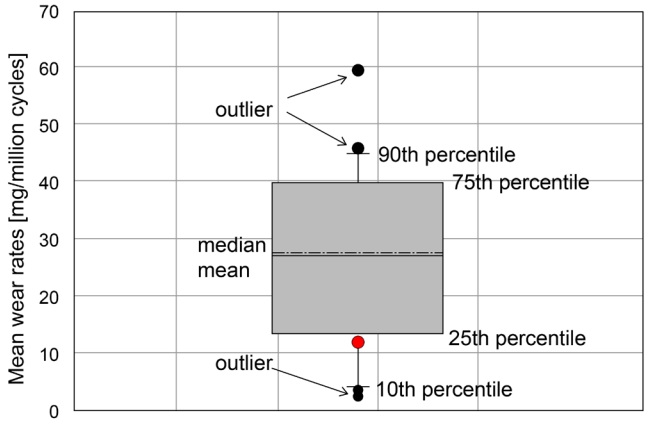


Wear Test in EndoLab®

EndoLab® GmbH, a spin-off from the Technical University of Munich, Germany, offers a variety of technological implant testing services to develop and certify medical products. It is an accredited (DAkkS O-PL-18838-02-00) and certified (ZLG-P-944.98.07) test laboratory according to DIN EN ISO/IEC 17025 and 93/42/ EWG.



Kinematics and load profile of the ISO 14242-1 EndoLab hip simulator.



Statistical data of the mean wear rate values found for all comparative THR systems tested at EndoLab® so far (n=21). The value established for the cup liner of the JUST MED THR system is indicated by a red dot.

The UHMWPE cup liners showed a mean wear rate of 12.53 mg per million cycles (SD 1.47 mg per million cycles) after 5 million cycles. The wear rate was determined between 0 and 5 million cycles.

To date, EndoLab® has tested n=21 comparative THR systems with a CoCrMo femoral head articulating against a conventional UHMWPE liner (not-aged). A mean wear rate of 27.49 mg per million cycles (SD 16.03 mg per million cycles) was found. The lowest wear rate measured was 2.71 mg per million cycles, the highest wear rate was 59.69 mg per million cycles and the median was 27.16 mg per million cycles.

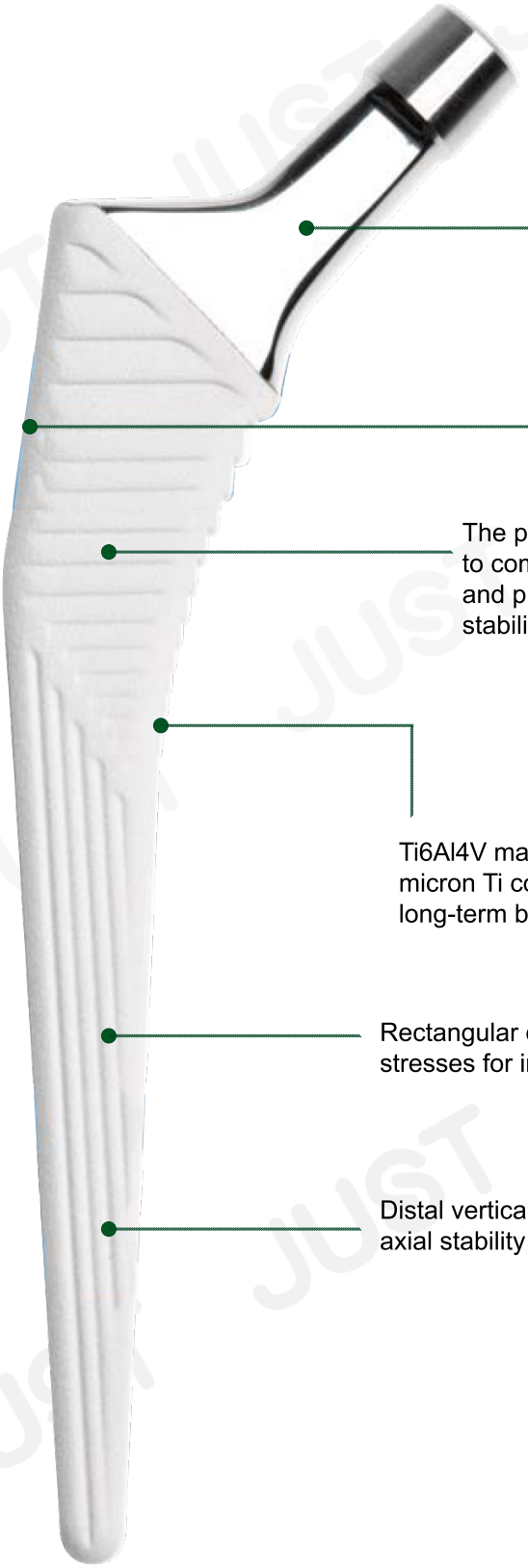
The mean UHMWPE cup liner wear rate of the JUST MED THR system is below the mean value of all comparative THR systems tested at EndoLab®, so far.

专利证书

Patent name: A hip joint prosthesis
Patent No.：ZL 2013 1 0530967.6

Patent name: A double-coating hip prosthesis
Patent No.：ZL 2012 2 0389033.6

Patent name: A modular press-fit acetabular prosthesis with multi-liner eccentric design
Patent No.：ZL 2015 2 0336953.5



Optimal offset aiming to restore hip biomechanics

The reduced lateral shoulder eases stem insertion

The proximal steps designed to convert hoop stresses to compression loads to avoid intra-operative fracture, and provide consistent implant seating height and initial stability

Ti6Al4V material and Ti+HA double layered coating (225 micron Ti coating plus 70 micron HA coating) ensure long-term bone ingrowth

Rectangular cross section design resists axial/torsional stresses for initial stability

Distal vertical/horizontal grooves provide rotational and axial stability

Step 1: Pre-Operative Planning and X-Ray Evaluation

Mechanically, the goals of total hip arthroplasty are to create a stable articulation with an optimized range of motion, restore biomechanics for muscular efficiency and equalize limb lengths. Meeting these goals begins with a thorough analysis of the hip with comparison to the contralateral side in A/P and lateral X-Ray projections. Pre-operative planning aids in the determination of probable implant style and size and can facilitate operating room preparation. Optimal femoral stem fit, prosthetic neck length, and neck offset can be more closely evaluated with the use of pre-operative X-Ray analysis. Magnification markers taped to the patient's leg at the level of the trochanter will assist in determining actual magnification.

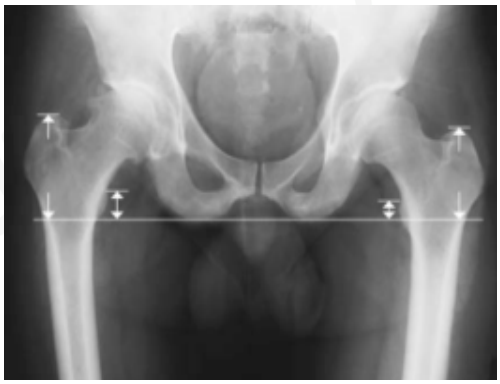


Figure 1: Determine leg length management

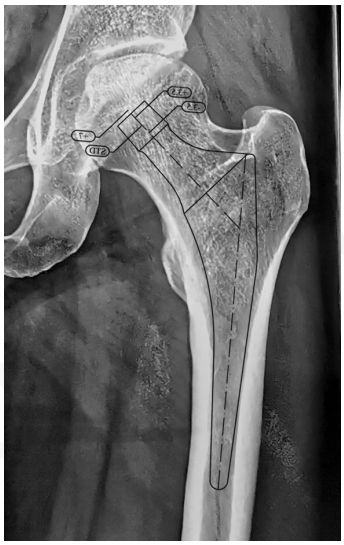


Figure 2

When templating ensure that the prosthesis does not make cortical contact. Understand the difference between fit and fill and optimum fit. The surgical objective is a 1–2 mm gap between the cortices and the implant. If in doubt template a size that contacts the cortex and then go down a size.

Step 2: Neck Resection

By using anatomic landmarks identified during templating, the Neck Resection Guide should be utilized for proper resection determination.

After careful pre-operative templating, the guide is placed on the exposed proximal femur (by aligning the tip of the guide with the tip of greater trochanter) and the planned femoral neck cut is marked using the electrocautery (Figure 3). Care should be taken to align the body of the guide with the axis of the femoral canal. Poor exposure can often result in an anteverted neck resection. Don't hesitate to re-cut an incorrect cut.

Figure 3

Step 3: Broaching the Femur and Seating Levels

Open the Femoral Canal at the junction of femoral neck and greater trochanter utilizing the box chisel (Figure 4). Enter the femoral canal as laterally as possible with a chisel to avoid varus positioning.

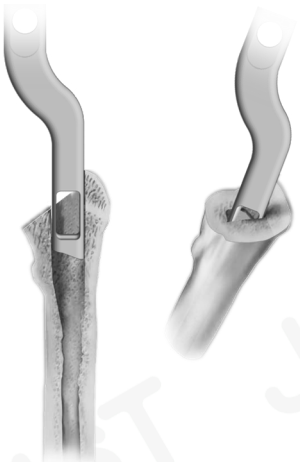


Figure 4

Use the bone tamp to compact the cancellous bone proximally. This is an important step as the philosophy of the DELTA CLASSIC stem is based on bone preservation.

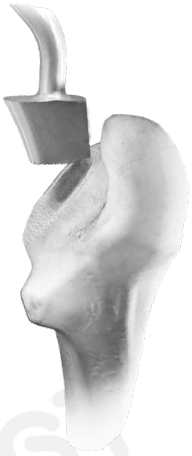


Figure 5

Figure 6

Starting with the smallest broach, advance sequentially upward in size until the broach matches that of the planned stem size and application. The final broach should seat firmly against medial and lateral cortical bone. For proper alignment of the implant, it is imperative that axial alignment of the broach be maintained at all times in the canal (Figure 6).

Generally, if a broach sinks below the level of the neck cut, advance to the next larger broach. If, on the other hand, the surgeon feels that the neck cut may have been slightly high, remove the broach and re-cut the neck at a slightly lower level. Once the broach sinks below the level of the neck cut, the surgeon typically loses the visual and auditory clues that tell him that the broach is properly seated.

Remember that the templated size may not exactly match the broach that fits properly within the femoral canal. Tactile, auditory, and visual clues in this regard are more important than the templated size. Proper insertion depth of the broach in the canal is achieved when it seats tightly within the canal based on visual and auditory clues. The surgeon's clues to firm implant fixation include increased pitch of sound with blows on Broach Handle and increased resistance to forward advancement. Reliance only on the neck cut may lead to improper sizing and inadequate component fixation.

Step 4: Trial Reduction

The trial assembly, which consists of the broach, trial neck and trial head, is used to provide a thorough evaluation of the hip mechanics during trial reduction (Figure 7). Before the selection and implantation of the final component, modifications to the pre-operative plan in terms of neck length and/or head diameter can be made.

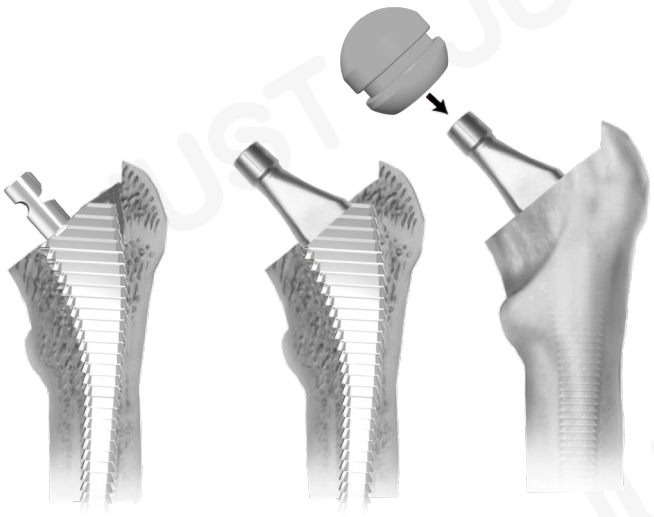


Figure 7

Upon confirmation of the selected components, remove the trial head and trial neck, and reassemble the Broach Handle. Remove the broach with the help of the Slotted Mallet.

Neck length is adjusted until leg lengths are equal and stability can be checked by telescoping the leg and performing a full range of motion. If the hip is unstable, (i.e., excessive telescoping >2mm) or dislocates, then +3.5 mm or +7 mm femoral head should be considered as an option.

Do not irrigate or dry the femoral canal. This will help to preserve the compacted cancellous bone quality and encourage osteointegration of the stem.

Step 5: Femoral Stem Insertion

Thread the Femoral Stem Impactor/Extractor into the recess on the proximal face of the stem. To help prevent damaging the threads on the implant or the instrument, be certain that the Femoral Stem Impactor/Extractor is fully seated against the proximal face of the stem. A mallet is then used to seat the stem into the canal (Figure 8).

Note: Prior to using the Femoral Stem Impactor/Extractor, the stem should be inserted by hand into the femoral canal with 1.5 to 2.0 cm of HA showing above the resection line.

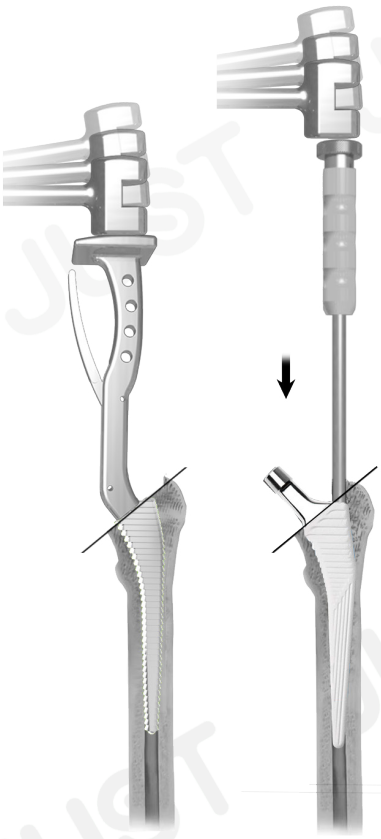


Figure 8

The surgeon should NOT attempt to continue impacting the femoral component if visual and auditory clues indicate that the resting position of the femoral component has been reached. This is true even if the femoral component is not yet down to the level of the broach. Continued aggressive impaction may lead to femoral fracture.

P.S.: In the event that dense bone is encountered intra-operatively and compounding anatomical factors (such as a “champagne flute” intramedullary canal) are present, the seating of the implant may not be consistent with the level of the broach due to the viscoelastic nature of the femoral bone; although the broach may seat flush with the resection plane or the desired height as determined through pre-operative planning. The impact of bone density on implant seating has been confirmed through in-vitro analysis, yielding a direct correlation between increased bone density and increased seating height relative to the level of the broach. If seating of the implant is difficult, continued aggressive impaction may lead to femoral fracture. To achieve implant seating that is more consistent with the level of the final broach, the surgeon can consider removing the prosthesis and performing additional broaching (with the broach that matches the final implant size). Repetitive and controlled mallet strikes can be used to advance and extract the broach to adequately prepare the distal femur to accept the final implant.

Once the DELTA CLASSIC stem is seated, cancellous bone from the resected femoral head is added around the proximal part of the stem using the bone tamp to seal the femoral canal and to encourage bone on-growth and reduce the time for osteointegration which provides definitive stability.

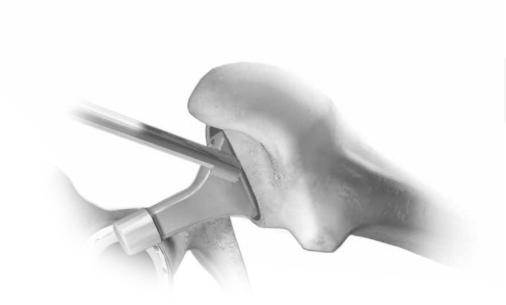


Figure 9: Addition of bone graft

Step 6: Head Assembly

Prior to head assembly, neck length selection may be re-evaluated using a Trial Head. Place the Trial Head onto the stem neck taper and reduce the hip to verify that the mechanics have not been altered due to implant seating.

Figure 10

Remove the Trial Head and dry the implant trunnion with a sterile towel. Before implanting a femoral head, the taper on the femoral stem should be wiped clean of any blood, bone chips or other foreign materials. Select the appropriate corresponding Femoral Head size and place it onto the dry trunnion of the femoral stem with a slight twist. Apply finger pressure to firmly seat the head onto the stem. Impact the head with two moderate blows using the Head Impactor.

Step 7: Closure

Relocate the femoral head into the acetabular cup and re-check the laxity and range of motion. The surgical site is then closed according to surgeon preference. If the capsule is retained, it is closed separately. The gluteus minimus and gluteus medius can be closed separately or as a single unit. At least one stitch is passed through bone. Tension is relieved during the repair with slight internal rotation. The repair should be tested throughout the hip range of motion.

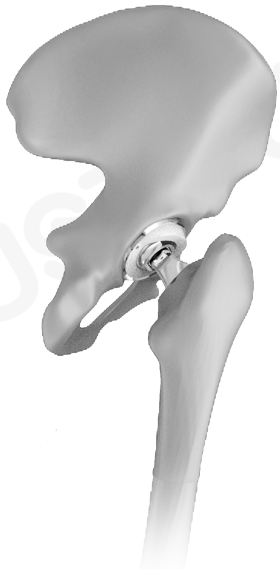


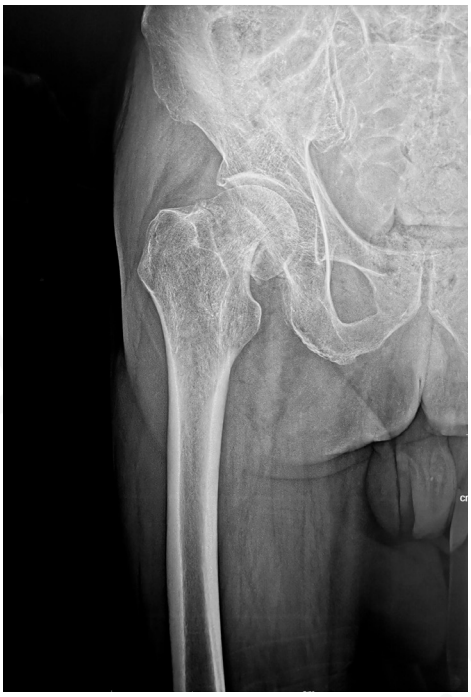
Figure 11

Parameter

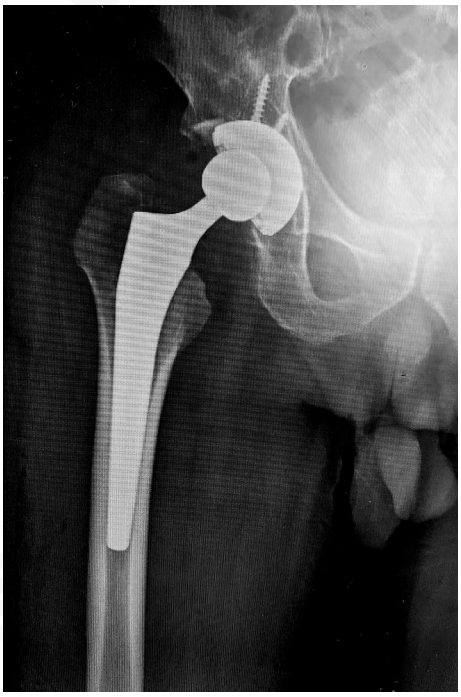
DELTA Classic Stem

REF	Spec	Stem Length (mm)	Offset (mm)	Neck Shaft Angle
8E3140	06	115	36	132°
54I752	09	130	38	
54I751	10	140	40	
54I750	11	145	40	
54I749	12	150	42	
54I748	13	155	42	
54I747	14	160	44	
54I746	15	165	44	
71J353	16	170	46	

X-ray film



Pre-op



Post-op

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