



TAICH

TAICH™ Cemented Stem

Surgical technique

Moving and quiet, loose and steady

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 Trabecular Cup
(Titanium)

LINER



22/32Standard
(UHMWPE)



28/32 10°
(UHMWPE)



28/10°
(HPE)



32/10°
(HPE)



36/10° 内衬
(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 (±3.5)

FEMORAL STEM



MINI™
Minimally Invasive Stem



DELTA
CLASSIC Rectangular Stem



HARMONY
Tapered Stem (Ti-porous)



DELTA
Rectangular Stem (Ti-porous)



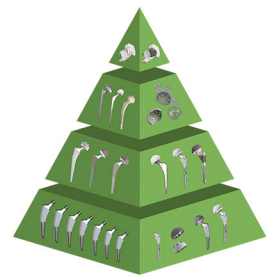
TAICH®
Cemented Stem

—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.



3D PRINTING TRABECULAR CUP SYSTEM®



Trabecular Cup
(Titanium)



SEE Trabecular Cup
(Titanium, Revision)



AOS Cage (Revision)



AOS Ring (Revision)



Acetabular Mesh (Revision)



Cemented Acetabular Cup



28 Constrained
(UHMWPE)



32 Constrained
(UHMWPE)



28 Cemented liners
(HPE)



32 Cemented liners
(HPE)



36 Cemented liners
(HPE)



Bone model restoration



32 (+3.5)



32 (+7)



Bipolar Head



28 (S/M/L)
BIOLOX® delta Ceramic



32 (S/M/L/XL)
BIOLOX® delta Ceramic



36 (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—

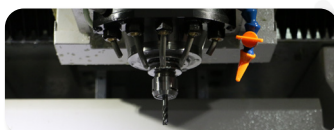
—CUSTOMIZED—

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.

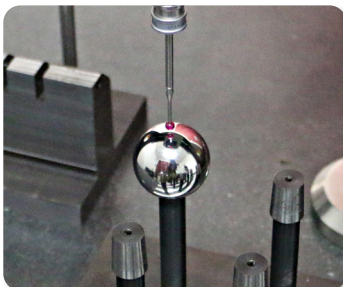


Precise Processing



Strict Inspection

JUST MEDICAL Inspection Center

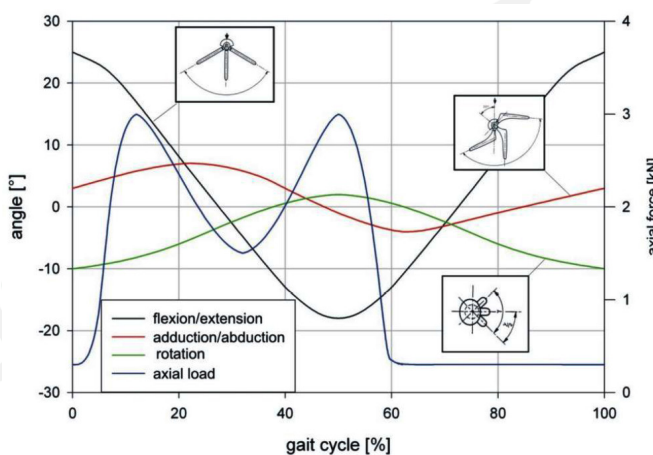
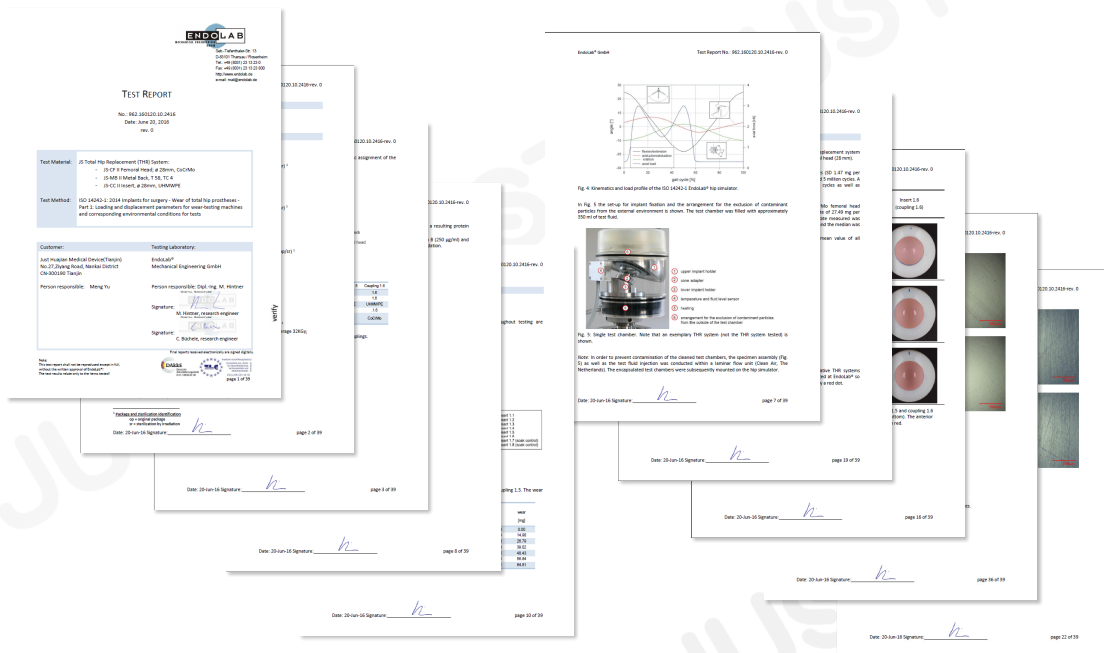


Wear Test in EndoLab®

EndoLab® GmbH offers a variety of technological implant testingservices to develop and certify medical products.

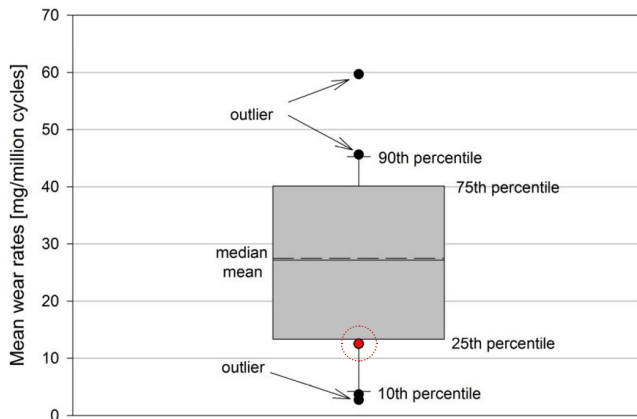
EndoLab® is an accredited (DAkkS O-PL-18838-02-00) and certified (ZLG-P-944.98.07) test laboratory according to DIN EN ISO/IEC 17025 and 93/42/EWG.

The company is a spin-off from the Technical University of Munich and is closely connected to several national and international research departments.



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

本实验旨在测试嘉思特医疗全髋关节系统（常规UHMWPE对28mm股骨头CoCrMo）的磨损表现。



经过 500 万次模拟人体正常运动的活动周期后，测得嘉思特医疗髋关节产品的平均磨损率为 12.53 mg/百万次。与 EndoLab® 数据库比较，嘉思特医疗全髋关节产品的平均磨损率低于 EndoLab® 目前测得的平均值 27.49mg/百万次。

▲ 嘉思特髋关节系统的数据为红色标记

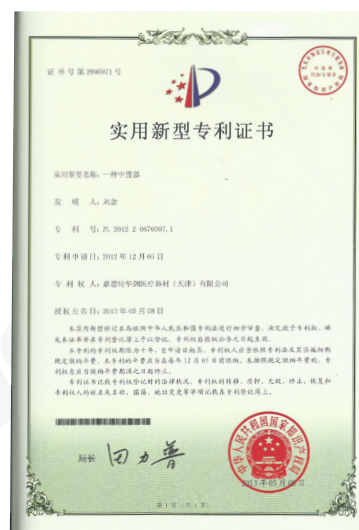
专利证书

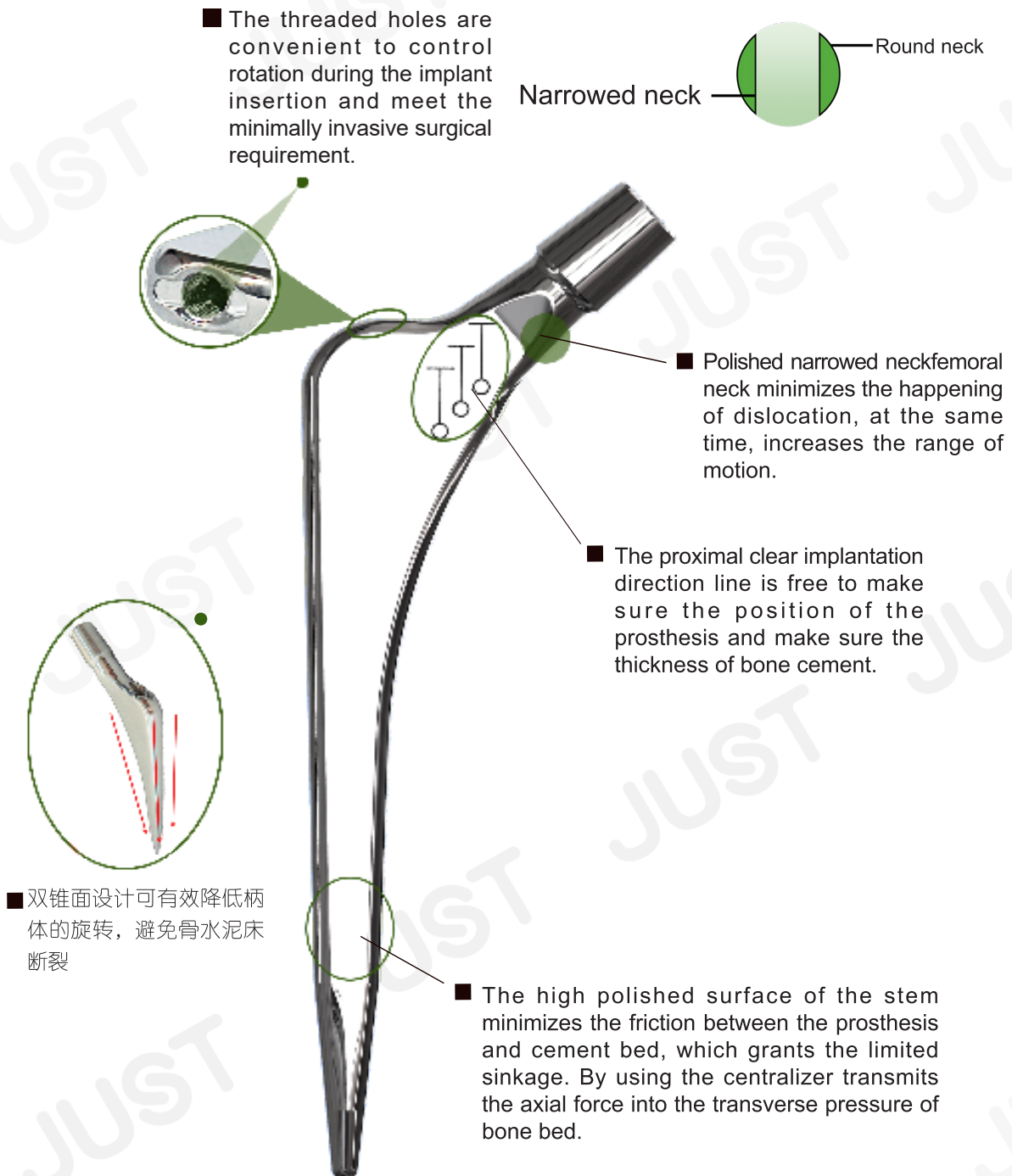
专利名：一种髋关节假体

专利号：ZL 2013 1 0530967.6

专利名：一种中置器

专利号：ZL 2012 2 0676007.1



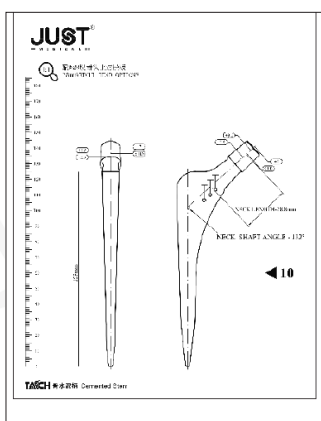


Preoperative Planning

Preoperative planning enables the surgeon to prepare for the case and anticipate situations that may arise during surgery. A thorough preoperative plan incorporates elements from the patient's history, physical examination and radiographic analysis.

Preoperative Planning Goals

1. Access acetabular component size and placement
2. Determine preoperative leg length discrepancy
3. Determine femoral component size, position and fit



Radiographs

The first step in accurate templating is obtaining high-quality radiographs using a standardized protocol with known magnification. Use magnification markers attached to the patient's leg at the level of the greater trochanter to verify magnification.



Determination of Leg Length Discrepancy

To determine existing preoperative leg length, perform a clinical evaluation in conjunction with a radiographic analysis. Use both to determine intraoperative leg length management. As an estimate of leg length discrepancy radiographically, draw a reference line through the bottom of the obturator foramina.

Measure the distance from the lesser trochanter landmark to the reference line on each side. The difference between the two is the radiographic leg length discrepancy.

The tip of the greater trochanter may be used as an alternative reference mark in conjunction with the lines through the obturator foramina.

TAICH Hip Prosthesis Selection

Femoral prosthesis: TAICH hip prosthesis, the level of femoral neck osteotomy depends on the stem size and desired leg length. Verify that the selected stem size in the A/P plane also fit in the lateral plane, at the same time, reserve the thickness of bone cement.

Offset Requirements

The TAICH stem adopts the adjustable high offset design. We need to make sure the rotation center of acetabular component and femoral head component is uniform and that will restore the normal offset.



◆ Surgery Technique

Femoral Neck Cutting

Evaluate the proximal femur and align the neck resection guide down the long axis of the femur. Determine the resection level by aligning the top of the guide with the tip of the greater trochanter or by referencing a measured resection level above the lesser trochanter. Mark the resection line using electrocautery or methylene blue. Resect the femoral head.

If desired, make a conservative neck resection initially. The calcar planer may be used later to adjust the neck cut.



Acetabular Preparation

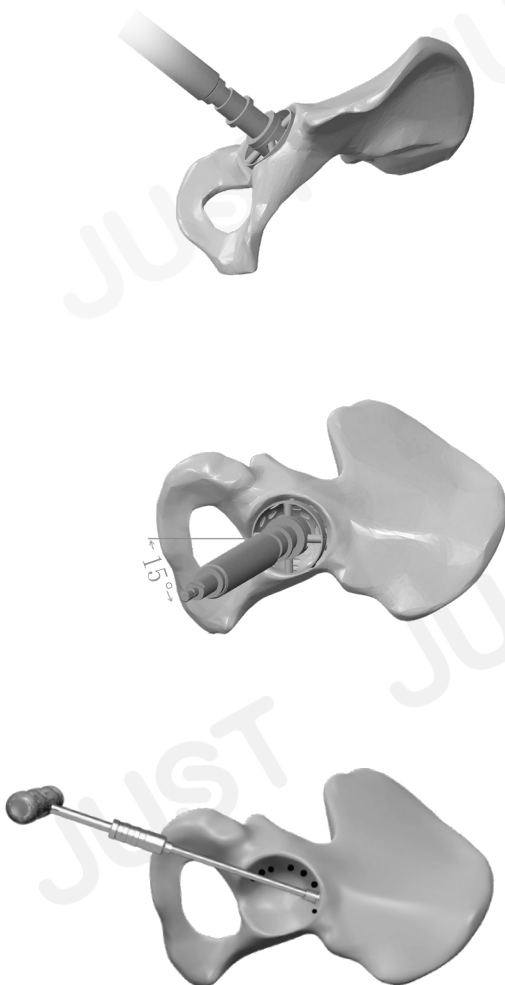
1. Make sure the acetabulum is fully exposed and remove soft tissue from the acetabular rim.

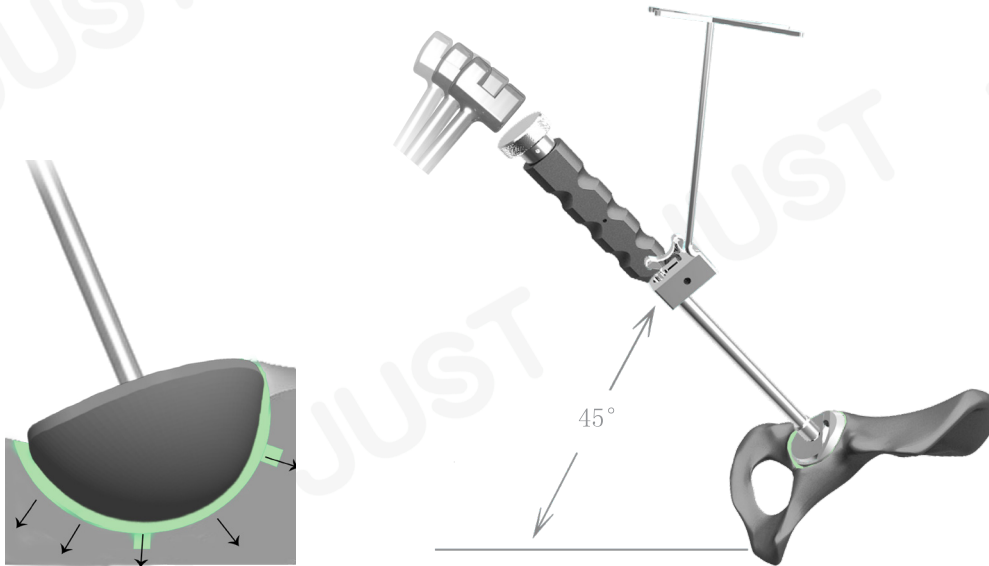
2. Progressively ream the acetabulum until healthy subchondral bone is reached and a hemispherical dome is achieved. Repeatedly wash the acetabulum to determine the grinding degree and direction, to ensure that the acetabulum are subject to grinding. Stop grinding, remove all acetabular cartilage after the acetabular filing had been cut to the bone of the acetabular edge, the hip acetabulum has become hemispherical. Revealed punctate bleeding subchondral bone. Scraping mortar bottom residual soft tissue resection overhanging acetabular peripheral soft tissue. (Note: the shape of the bony acetabulum not really a semicircle, and acetabular filing certain distinction. The the acetabular reamer complete, we must let the acetabulum to form a true semicircle, to ensure the the prosthetic acetabular's match.)

3. Make sure the specification of the acetabular cup by using the trial acetabular cup. Usually, the outer diameter of chosen acetabular cup is 2mm small than the final trial acetabular cup.

4. Connect the electronic instrument or T-handle with acetabular punching drill, make the holes on the inner side of acetabular (purpose: strengthen the fixation effect when the bone cement penetrated into the holes), the acetabular bottom is very thin; please do not make the holes on the bottom to avoid penetrating the bottom acetabular. Clean and dry the acetabular before filling the bone cement and ensure the acetabular clean, dry and no blood.

5. Insert the acetabular cup (Note: Make sure the patient in the right position before implanting the prosthesis.





Cementing and Acetabular Cup Insertion

Put the liquid into the container and then add the powder and stir clock wisely with a stirrer. Put the bone cement into the dry acetabular, pressurize the bone cement by using the acetabular pressurization, and then insert the acetabular cup to maintain the correct position immediately (anteversion 15-degree, abduction 45-degree), until the bone cement becomes solidified.

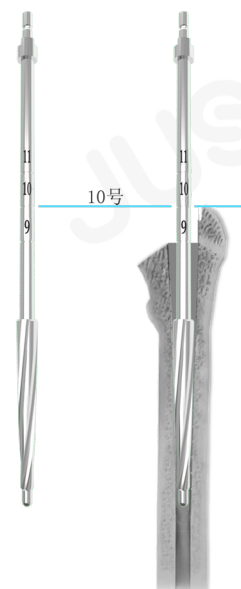


Medullary Canal Opening

The opening depth is about 1-1.5cm close to the direction of the great trochanter along the femoral medullary canal.

Distal Reaming

Use reamers to prepare the distal femur. Proper alignment of the reamer along the long axis of the femur is important to ensure correct component positioning. Suquential reaming reference for the preoperatively templated size is recommended. It is suggested that should begin with the smallest size.





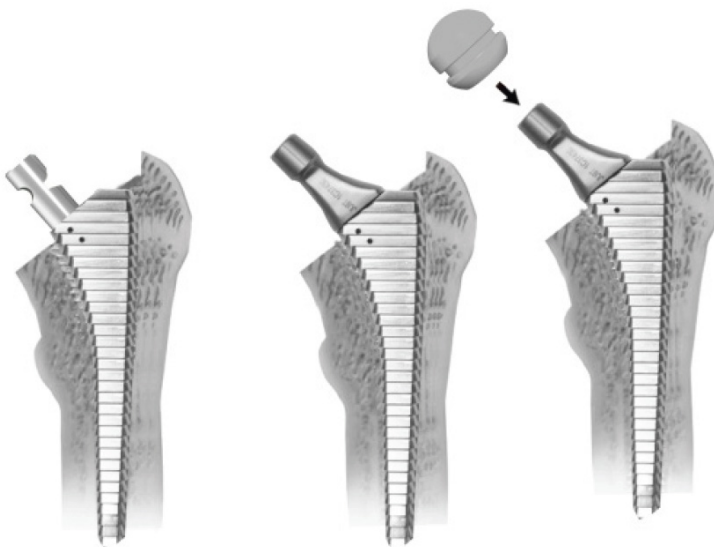
Proximal Femur Broaching

Should refer to the preoperatively templated size, it is suggested that should begin from small to big rasping. To ensure proper medullary rasp alignment, orient the broach laterally toward the greater trochanter. Ensure that any remaining superior lateral femoral neck remnants cleared to avoid malalignment. There is one medullary rasp for every implant size. Suquentially advance the medullary rasps down the medullary canal, ensuring proper alignment and anteversion are achieved.

Calcar Rasping

TAICH hip system is designed for collarless, therefore, the calcar femoral can be chose to rasp.

Put the calcar rasp on the tip of femoral medullary rasp , rasp the calcar femorale (the platform is rotating while the calcar rasp is connected, which will prevent the calcar rasp from lying on the calcar femorale). Platform can provide precise bone cutting level as a insertion mark to help femoral stem insertion.



Trial Reduction

Employ the trail neck and femoral head template to measure the prosthesis location, joint stability and motion range and leg length.

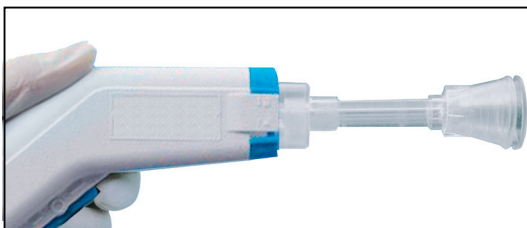
Plug Insertion

Apply the medullary rasp handle to take out the canal rasp after the dislocation. Rinse the femoral canal efficiently, and insert the plug to the distal femoral canal with distal plug impactor whose marks can be regarded as reference.

(the position of plug insertion : 1-2mm to the distal femoral stem)

Centralizer Insertion

Seat the centralizer on the distal end of the stem before the prosthesis insertion.



Pulse rinsing



Vacuum mixing



Cement sleeve



Cementing, Femoral Prosthesis Assembling

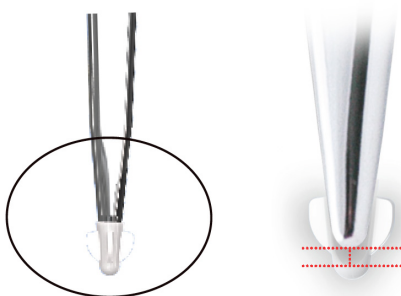
Cement modulation: put the cement into a container and add some powder, employ the stirrer to stir the cement along with the clockwise, then put the stirred cement into the cement sleeve which connects to cement gun to squeeze the air out. Insert the cement sleeve head to the dry distal femoral canal (the cement pressurizer is seated on the proximal sleeve), infuse the cement backward with fingers pressed on the proximal femoral cement pressurizer (cement should be put into the refrigerator crisper before the operation, which can lengthen the duration of cement fixation and increase the operative time of cement implantation during the surgery).

Insert the prosthesis along with the medullary rasp direction. (notice the anteversion of prosthesis with implant impactor or extractor), make sure the assembling angle of prosthesis till the cement solidifies.

Note: the thickness of cement is 2-4mm (distal part), 5-7mm (proximal part)

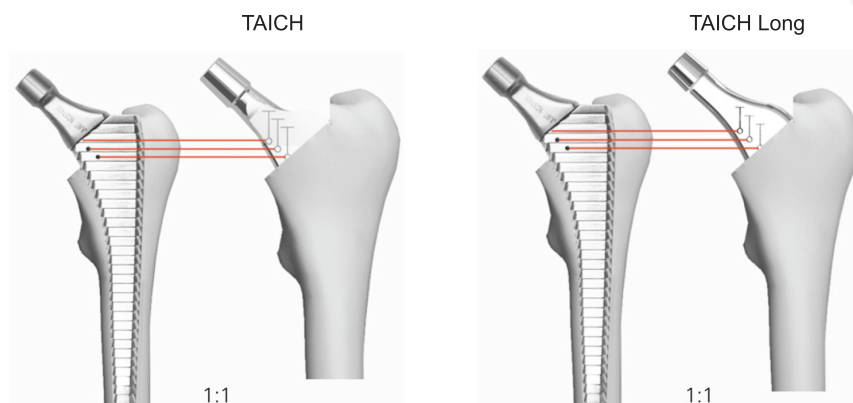
Limited Sinkage

The blind-hole centralizer mates with the distal part of the prosthesis to ensure the prosthesis be in the central position of medullary canal and then form the complete and even bone cement shell. Since the bone cement will creep in the medullary canal under the body temperature of 37-degrees. The cement has a subsidence to a new position because of its own weight. The bone cement and the prosthesis will have a new combination in the new position and form the new balance.



Centralizer Assembly

Assemble centralizer onto distal before implant impaction.



股骨柄假体与髓腔锉的对应关系

Implant Insertion

Femoral stem with centralizer was inserted into the medullary cavity along the medullary cavity file direction (Note:adjusting prosthesis anteversion angle), keep the prosthesis installation angle and depth until the bone cement solidification.



Femoral Head Assembling, Reduction

Clean and dry the taper of stem. Push and rotate with hands, assemble the suitable femoral head to the stem stably. Employ the femoral head impactor to punch several times for tightening the fit of femoral head.

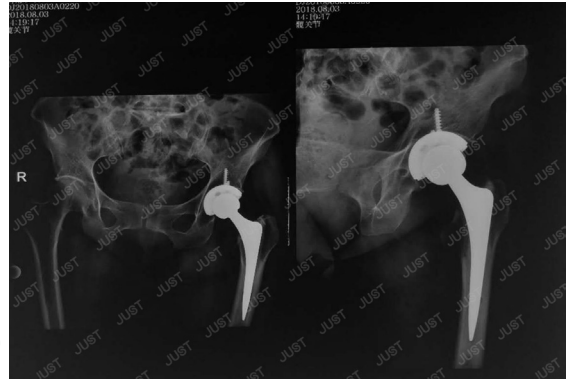
Parameter

Product name	REF No.	specifications	Stem length (mm)	Neck shaft angle	Offset(mm)	Material
TAICH	710069	09	120	132°	37.5	C
	710070	10	125		39.5	
	710071	11	130			
	710072	12	135			
	710073	13	140			
	710074	14	145			
TAICH Long	710452	21	180	132°	40	
	710454	25	200		42	
	710456	29	220		44	

X ray film



Preoperative



Postoperative

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