JUST®
MEDICAL

# HIP

## PRODUCT BROCHURE OF HIP PROSTHESIS

HIP Replacement Solutions

# COMPANY INTRODUCTION

Just Medical Devices (Tianjin) Co., Ltd., established in 1958, is a leading Chinese manufacturer of hip and knee joint implants and instruments dedicated to providing high-quality solutions for joint diseases to patients worldwide. We are integrating R&D, manufacturing, sales, training, and service to provide customers with safe, effective, and exquisite medical products and services to the fullest extent possible.

Just Medical offers six product lines: Hip Reconstruction, Knee Reconstruction, Partial Reconstruction, New Interface Prosthesis, Regenerative Repair, and AI Digitalization.

Our products have a wide range of specifications, are easy to operate, and meet the needs of various clinical procedures, including minimally invasive, primary, complex primary, primary revision, and complex revision surgeries. We provide end-to-end process, digital, stepwise product solutions for treating joint diseases.

Our products are certified by GMP, ISO, CE, and NMPA. We have obtained 33 global Class III medical device registrations and applied for 245 patents, including over 100 invention patents. With a sales network spanning 49 countries and regions globally and over 550,000 implants worldwide, we have gained the trust of doctors and patients worldwide, leading to an increasing reputation in the international market.

We possess multiple advanced product core technologies and have introduced groundbreaking innovations to the market, including the world's first clinically validated 3D-printed trabecular modular femoral stem and the world's first 3D-printed zonal trabecular knee prosthesis system, addressing market gaps. In the future, Just Medical will continue to invest in innovative platforms such as AI, 3D printing, new material applications, and regenerative medicine. Adheres to the principles of "Full product line, On-time supply, Value for money," focusing on joint step therapy to elevate the quality of human life.

# CONTENT

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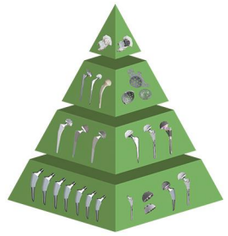
# HIP PRODUCTS FOR ALL-ROUND SURGICAL SOLUTIONS



Dynamic fatigue tests of femoral stem's head-neck conjunction and body after 10 million cycles in the international CNAS laboratory shows excellent results and no risk of fracture.
Dynamic wear tests after 5 million cycles in the international Endolab® laboratory in Germany shows excellent wear resistance.

## ACETABULAR CUP

### *HARMONY™ ACETABULAR CUP SYSTEM*

HARMONY Cup (Ti+HA, DDH)
HARMONY Cup (Ti+HA)
HARMONY Cup (Ti-Porous)

### *SEE® 3D PRINTING TRABECULAR ACETABULAR CUP SYSTEM*

SEE Trabecular Cup (Titanium, DDH)
SEE Trabecular Cup (Titanium)
SEE Trabecular Cup (Titanium, MRI)
JCT Trabecular Cup (Titanium, Revision)
SEE Trabecular Cup (Titanium, Revision)

### *CAGE AND MESH SYSTEM*

AOS Cage (Revision)
AOS Ring (Revision)
Acetabular Mesh (Revision)

### *CEMENTED ACETABULAR CUP*

Cemented Acetabular Cup

## LINER

22/32Standard (UHMWPE)
28/10° (UHMWPE)
32/10° (UHMWPE)
28/10° (HPE)
32/10° (HPE)
32/10° (HPE)
(38-50) Dual Mobility Metal Liner (CoCrMo)
(46-58) Dual Mobility PE Liner (UHMWPE)
36-54 Ceramic Lining
28 Cemented Liners (HPE)
32 Cemented Liners (HPE)
36 Cemented Liners (HPE)
Bone Model Restoration

## FEMORAL HEAD

Φ22 (0/+3.5)
Φ24 (+0/3.5/7)
Φ28 (0/±3.5/+7)
Φ32 (0/±3.5/+7)
Φ28 (S/M/L) Mysmond™ Zirconium-niobium
Φ32 (S/M/L/XL) Mysmond™ Zirconium-niobium
Φ36 (S/M/L/XL) Mysmond™ Zirconium-niobium
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

## FEMORAL STEM

MINI® Minimally Invasive Stem
DELTA® CLASSIC Rectangular Stem (Ti+HA)
HARMONY Tapered Stem (Ti-porous)
DELTA® Rectangular Stem (Ti-porous)
TAICH® Cemented Stem
ASM Modular Stem
SEE 3D Printed Trabecular Modular Stem
Hip Spacer
TAICH® LONG Cemented Revision Stem
RSL® Revision Stem
Customized product simulated implantation

*–MINIMAL INVASIVE–* *PRIMARY* *COMPLEX PRIMARY* *REVISION* *–CUSTOMIZED–*

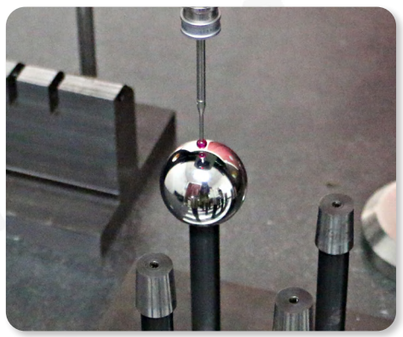
## Germany Raw Material

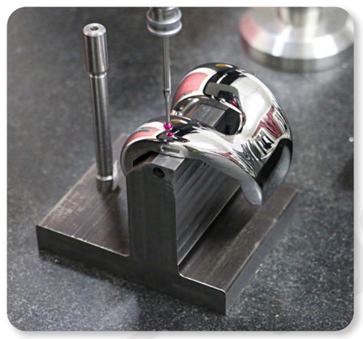
All raw material of UHMWPE inserts were manufactured in Germany, meeting the technical requirements in ISO 5834 part 2 and ASTM F648.

## Precise Processing

## Strict Inspection

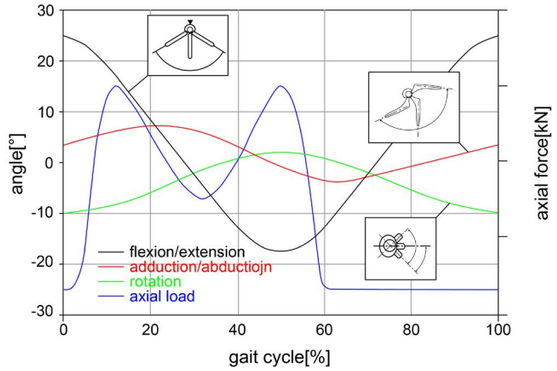
### JUST MEDICAL Inspection Center



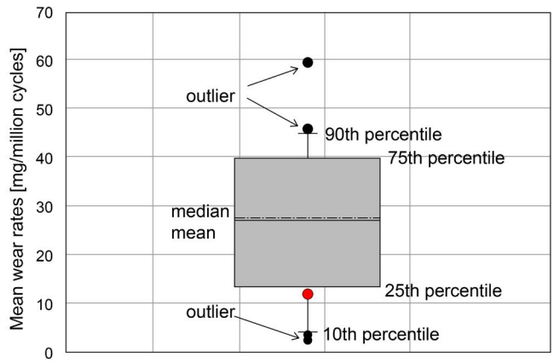


## Wear Test in EndoLab®

**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 lliner (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.

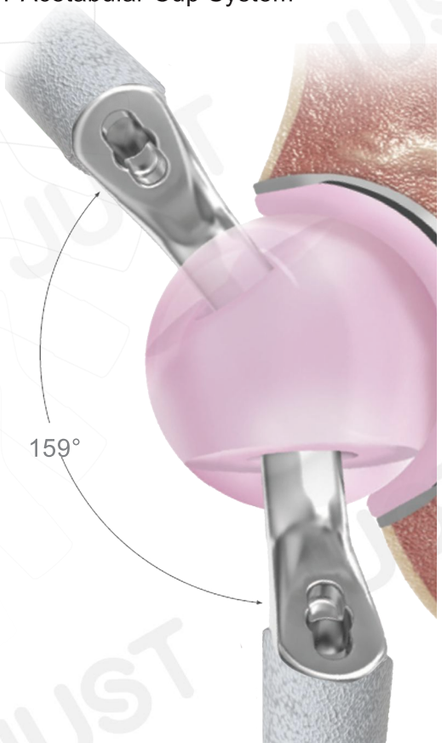
MINI

## Minimally Invasive Stem

- Minimally invasive: soft tissue preservation and bone conservation
- Stability: initial fixation and axial & rotational stability
- Specification: 6-15#, 1mm increment in M/L and 2mm in length
- Ti+HA proximal coating provides extensive bone ingrowth

Flat rectangular cross-section provides for rotational stability

Optimized neck geometry, 159° ROM can be achieved when coupled with HARMONY Acetabular Cup System

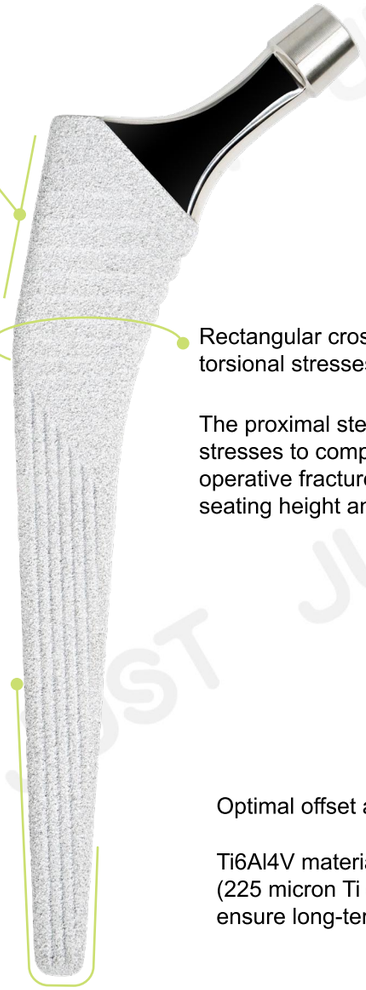



Reduced distal and M/L width, provide proper proximal press fit and preserves distal cortical bone in Dorr Type A femora

DELTA

## CLASSIC Rectangular Stem

- Rectangular design for excellent torsional stability
- Reliable initial stability
- Long-term biological fixation
- Simple instrumentation



The reduced lateral shoulder eases stem insertion

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

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

Distal vertical/horizontal grooves provide rotational and axial stability

Optimal offset aiming to restore hip biomechanics

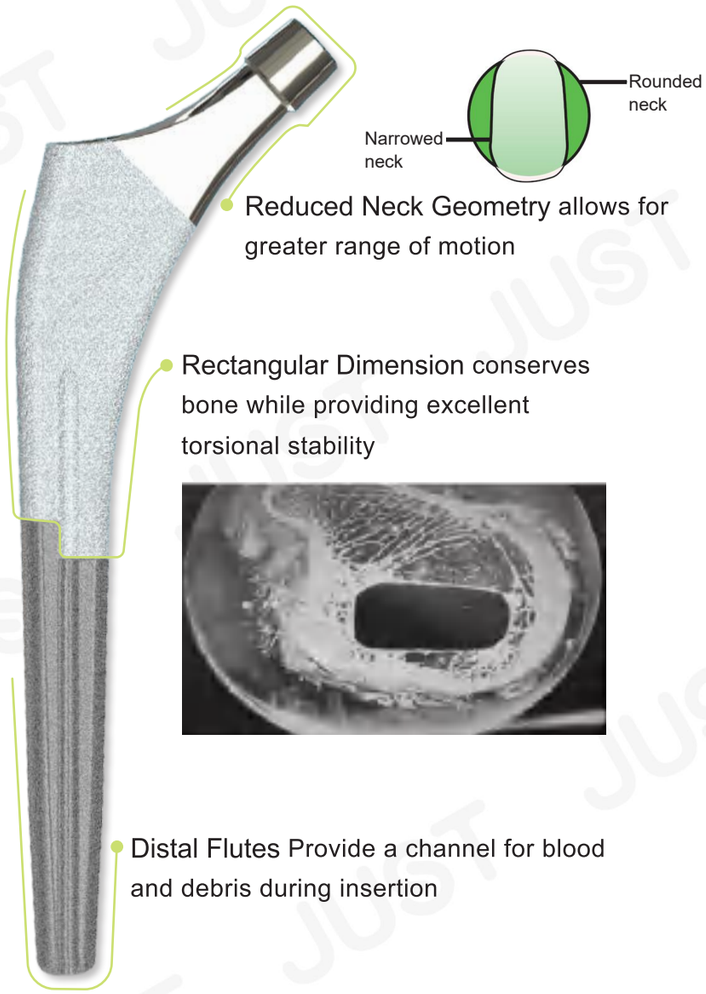
Ti6Al4V material and Ti+HA double layered coating (225 micron Ti coating plus 70 micron HA coating) ensure long-term bone ingrowth



JUST MEDICAL

## Rectangular Stem

- Rectangular Dimension conserves bone while providing excellent torsional stability
- HA+Ti Porous Coating allows for excellent biological fixation
- Simple Instrumentation




Reduced Neck Geometry allows for greater range of motion

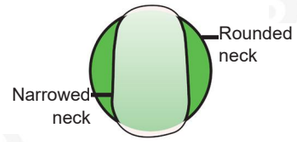
Rectangular Dimension conserves bone while providing excellent torsional stability

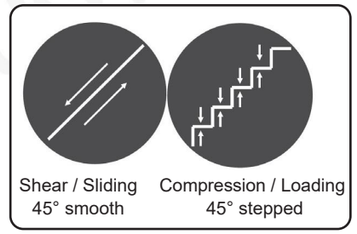


Distal Flutes Provide a channel for blood and debris during insertion

## Tapered Stem

- HA+Ti Porous Coating allows for excellent biological fixation to bone
- Reduced Neck Geometry allows for greater range of motion
- Excellent biomechanics performance






3-degree taper



▲ Pattern of load transmitting follows Wolff's Law

# TAICH

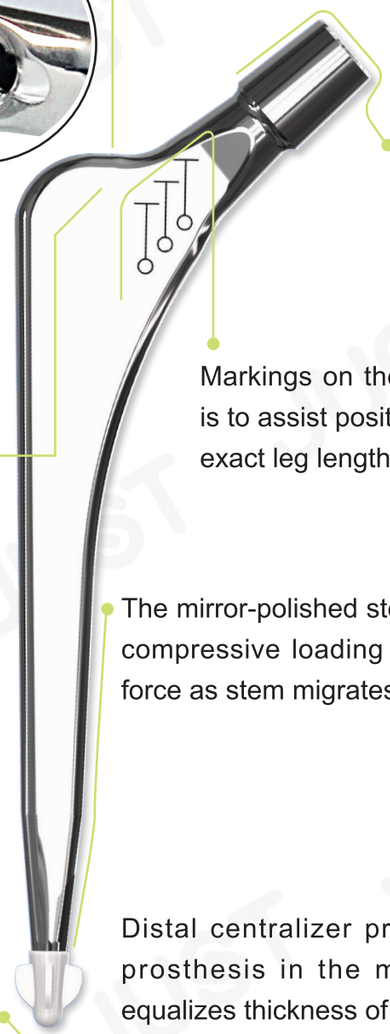
## Cemented Stem

The Threaded Hole is convenient to control rotation during implantation

Polished Narrowed Neck minimizes the risk of dislocation and increases the range of motion

132 degrees neck-shaft angle

Markings on the proximal stem is to assist positioning to restore exact leg length

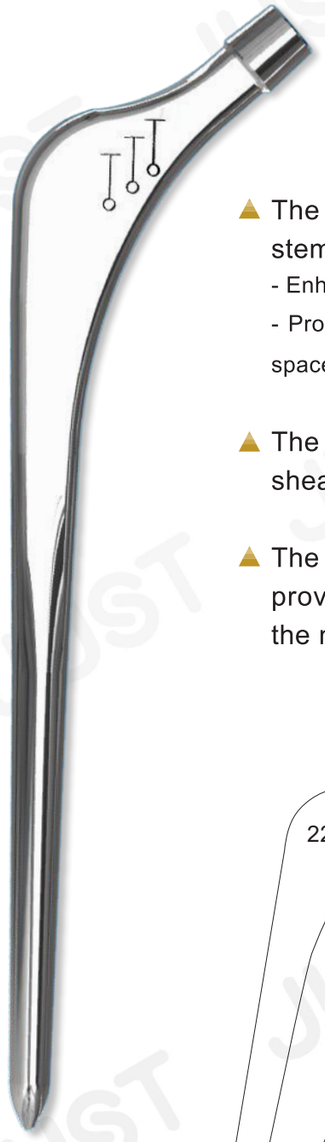


The mirror-polished stem creates radial compressive loading to reduce shear force as stem migrates distally

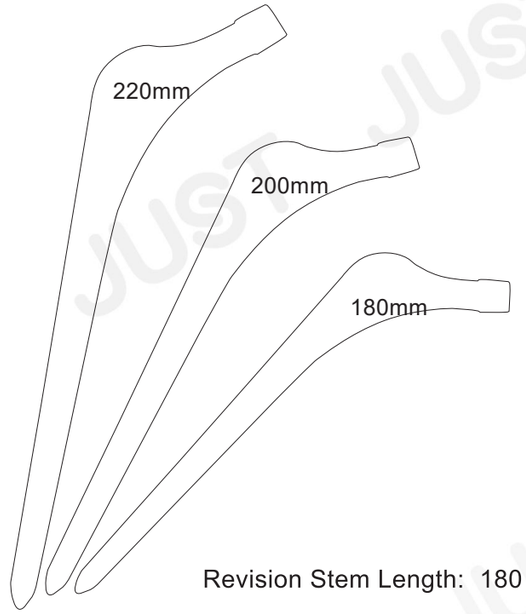
Distal centralizer prevents the tilt of the prosthesis in the medullary cavity and equalizes thickness of the cement mantle

# TAICH Long

## Cemented Revision Stem



- The double-tapered shape design is ideal for cemented stems.
  - Enhances rotational stability.
  - Promotes bone cement infiltration into cancellous bone trabecular spaces, forming multiple "micro-locking" mechanisms.
- The high-polish surface creates a complete bone cement sheath, reducing debris generation.
- The dual standard implantation lines at the proximal end provide the best reference for prosthesis positioning in the medullary cavity.




Revision Stem Length: 180, 200, 220mm



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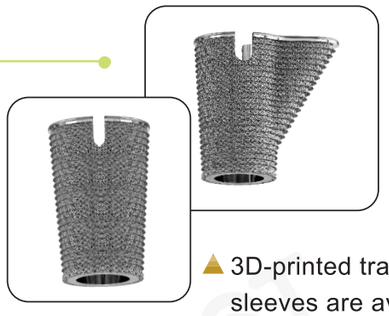
## Trabecular Modular Stem

**Modular**
**Versatile**
**Simple**

The Stepped Ti Porous and HA Coating Sleeve offers the optimal fixation effect by increasing 13% additional coating area

Straight Sleeves are available



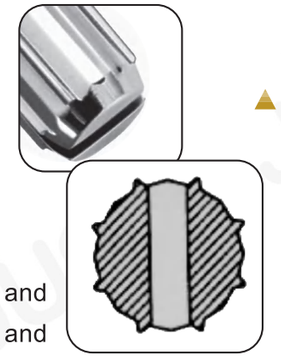
▲3D-printed trabecular sleeves are available in triangle and straight shape
-Titanium trabecular structure for better biocompatibility
-Reliable stability
-Superior bone ingrowth
-High strength

▲Independent neck and sleeve enables 360˚ of version
-Correct deformity of various DDH patients

▲Diversified combination of sleeve and stem
-1000 combinations



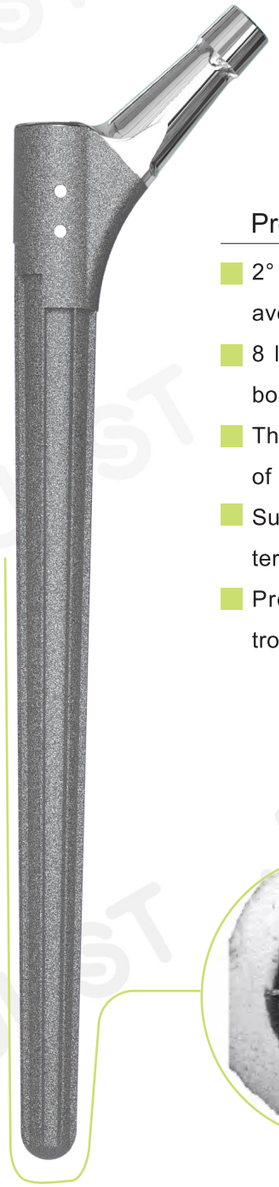
Multiple stem lengths offer a range of stability options, especially for fractures and discontinuities

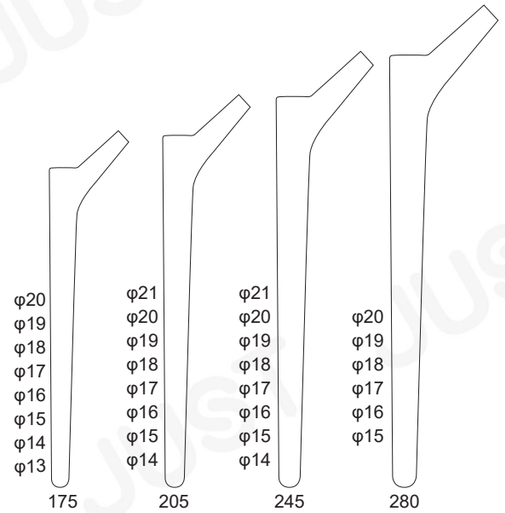


Distal flutes enhance rotational stability and coronal slot reduces distal stem stiffness and helps reduce end-stem thigh pain

※ The proliferation and growth experiment of osteoblasts shows the 3D printing trabecular structure of titanium alloy has good biocompatibility. The microporous structure is conducive to the growth of bone cell.

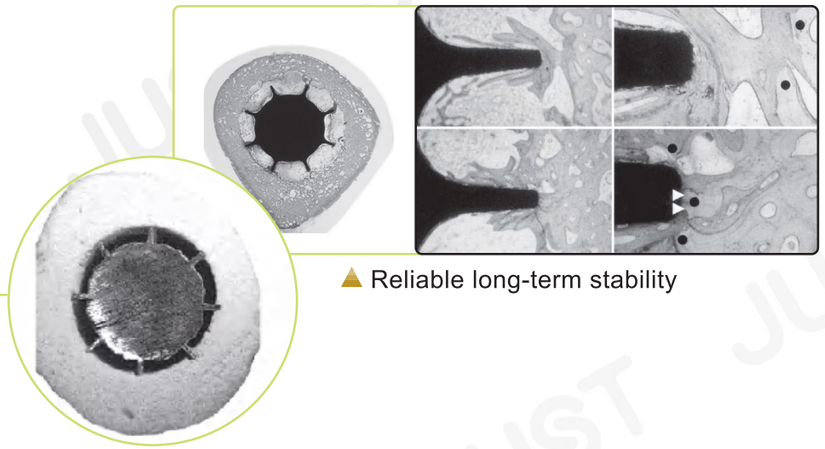
## Cementless Revision Stem






### Product Features

- 2° taper design provides a more even load distribution on the stem, avoiding proximal stress shielding.
- 8 longitudinal ridges offer excellent rotational stability and space for bone tissue regeneration.
- The circular cross-section design allows for intraoperative adjustment of anteversion, providing greater flexibility.
- Surface roughening of bio-compatible materials ensures excellent long-term stability.
- Proximal binding hole design accommodates patients with greater trochanter fractures.



▲Reliable long-term stability

## Revision Acetabular Components

### AOS Cage

- The groove design on the acetabular rim realizes better attachment between the prostheses and acetabular rim
- The post-lateral region of the cement buttress, provides more support for cement
- Three flanges enhance the cup fixation and provide more screw insertion choices
- Various screw holes meet requirements for different clinical cases
- Perfect rough surface for cement-bone interface

### Acetabular Mesh

## Trabecular Titanium Cup

- Titanium trabecular structure for greater biocompatibility and superior stability
  -Friction coefficient of 1.08 provides excellent initial stability
- Reliable long-term bone ingrowth
  -3D through-hole, 75%-80% porosity and 600-800μm pore size facilitate bone ingrowth
  -Modulus of elasticity similar to cancellous bone avoids stress shielding and osteolysis
  -Electron beam melting technology without risk of shedding
- Excellent Prosthesis Strength
- A variety of sizes available
  -DDH ,primary and revision type

SEE (DDH)

SEE (Primary)

SEE (MR-I)

- A specialized acetabular cup with a ceramic lining, featuring a 3D printed bone trabecular structure for precise replication of physiological bone trabecular micropores, resulting in optimal initial stability and long-term performance stability.

3DSEE

## Trabecular Titanium Cup

- The 6 screw holes at the edge and the 6 screw holes at the dome were designed with uniform distribution, The operation was flexible, It can make the doctor choose the position of the screw more reasonable during the operation
- Titanium trabecular bone structure has good biocompatibility
- Excellent initial stability: 1.08 Friction coefficient, Compact pressing design, The 180° hemisphere design
- Excellent osseointegration performance: 600-800μm pore size, 75%-80% porosity, Three dimensional through porous structure
- The cup and liner were fixed by a card lock connection, HPE-10° liner and Harmony10° liner were used to meet the needs of acetabular revision surgery
- Occlusion at a position without acetabular screw insertion increases the acetabular contact area and increases the overall strength of the cup

3D JCT（Revision）

**"Starry sky" screw hole design**

-Evenly distributed 9 screw holes in the outer edge and 6 in the dome, allowing surgeons for desired screw locations during the surgery

-The "starry sky" design is more suitable for hip revision patients with severe acetabular defect and irregular acetabulum

SEE (Revision)

## Highly Crosslinked Polyethylene Liner

HPE Liner (Standard)

- German highly cross-linked polyethylene material, 10 years clinical experience
- Gama irradiation with heat treatment post-process, achieve a perfect balance in wear resistance, oxidation resistance and mechanical properties
- The clinical proven design of HARMONY 10°liner
- Available in various options, meet different patient's need

HPE Liner (10°)

Cemented Liner-HPE

- Design of a combination of SEE cup (Revision) + Cemented liner



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## Acetabular Cup

- Multiple specifications meet the need of different patients
- 0.375mm coating thickness provides the optimal press-fit fixation effect, with over 15 years proven clinical experience
- Mirror polished inner surface reduces wear and debris

**—Primary—**

**—DDH—**

## Liner/Constrained Liner

—— HARMONY Standard Liner ——

- 180° femoral head coverage for greater range of motion
- Taper locking between the liner and cup for better transmission of force while reducing wear
- German polyethylene material reduces postoperative wear and debris

—— HARMONY Liner 10° ——

## Dual Mobility Acetabular System

▲ Metal Liner
- CoCrMo alloy
- Mirror polished inner surface to minimize PE wear
- The alignment peg guides the metal liner during insertion, ensuring the metal liner is aligned with the acetabular cup

▲ PE Liner
-Range of motion up to 200 degrees
-The entry chamfer avoids impingement with the stem neck
-The retention liner keeps the femoral head in place

## SAFETY™ Bipolar Head

▲ High polished Co-Cr-Mo Cup and Germany UHMWPE liner
▲ The special anti-dislocation snap ring is effective to prevent from dislocation
▲ The various sizes (with 1 mm increment) will meet different requirements

## Cemented Acetabular Cup

▲ Horizontally & Vertically grooved backside provides rotational stability

▲ 22° Anti-dislocation Lip provides greater range of motion and minimizes dislocation

## XLWzero Ceramic Liner

▲ Made of high-purity alumina-based and zirconia-based composite ceramic materials, providing a smoother surface finish, enhanced fracture resistance, and superior biocompatibility



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## Femoral Head

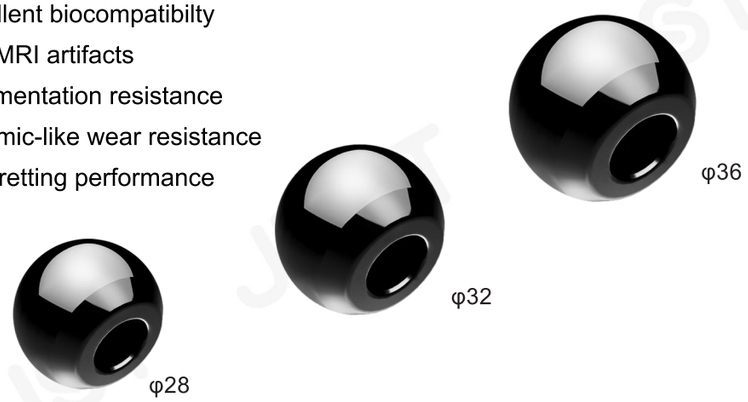
- ▲ Complete options in size: φ22, 24, 28, 32mm
- ▲ 2 options for material: stainless steel and Co-Cr-Mo

## Ceramic Head


MYSMOND™

## Zirconium-niobium Femoral Head

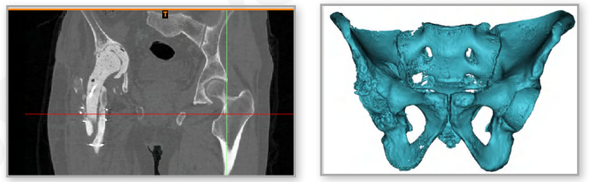
- ▲ - Excellent biocompatibilty
- Low MRI artifacts
- Fragmentation resistance
- Ceramic-like wear resistance
- Anti-fretting performance




## Customization process

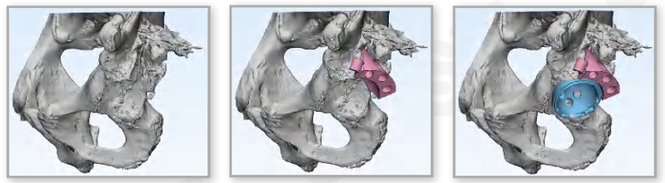
### ● Consultancy

Image data collection → 3D reconstruction of anatomical structure → Medicine-engineering Interaction



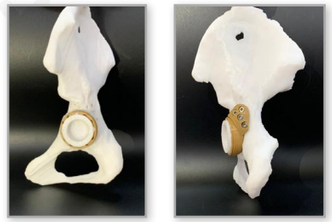
### ● Design

Product solutions → Prosthesis simulation assembly → Medicine-engineering Interaction



### ● Simulation

3D printing bone model → Medicine-engineering Interaction → preoperative simulation operation with model



### ● Customization

Image data collection → 3D reconstruction of anatomical structure → 3D printed bone model → Surgical plan simulation → Customized product design confirmation → Submit for record → 3D printed prosthesis or tools → Delivery and surgery implementation → Evaluation and follow-up



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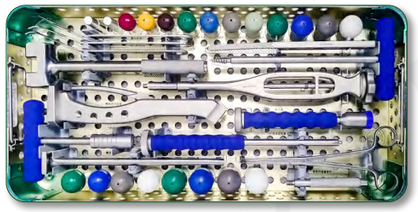
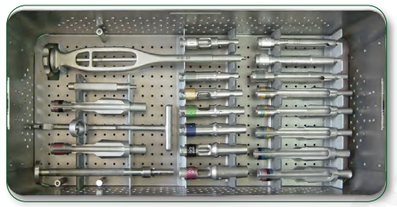
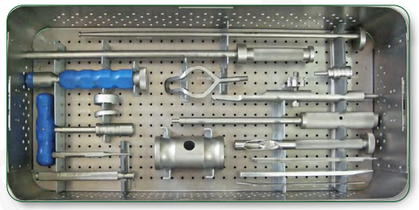
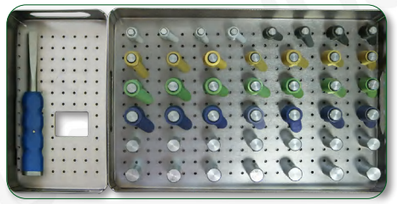
Total/Semi Hip Arthroplasty_Universal Instrumentation

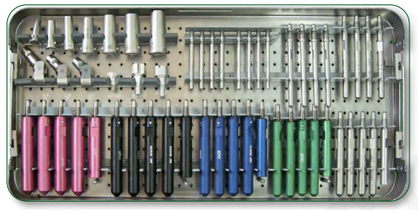


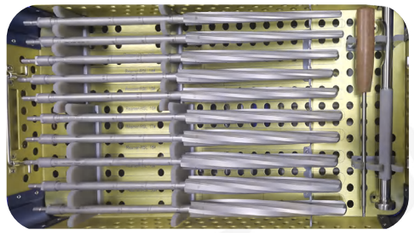
3D SEE Instrument Set

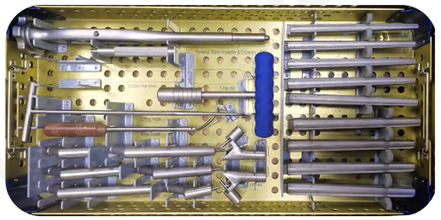






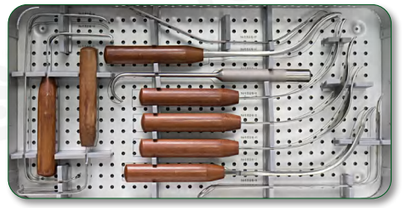




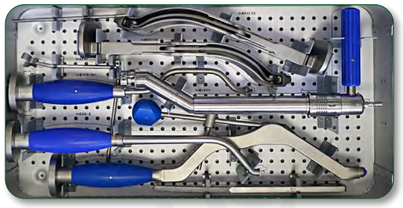


Hip Instrumentation

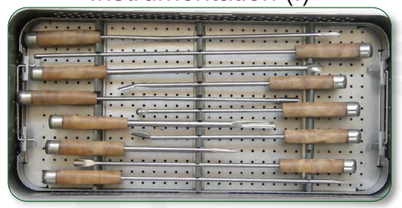
DAA Special Tools (1)



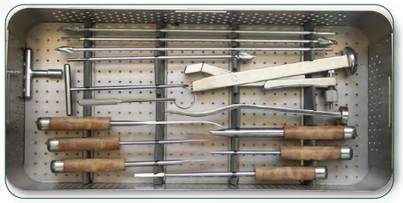
DAA Special Tools (2)



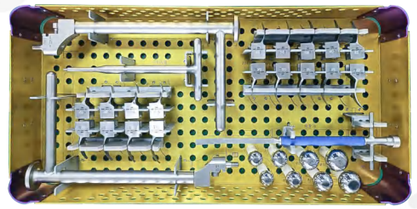
Revision Stem Removal Instrumentation (I)



Revision Stem Removal Instrumentation (II)



Revision Cup Removal Instrumentation



JUST MEDICAL DEVICES (TIANJIN) CO., LTD

Add: No.27, Ziyang Road, Nankai District, Tianjin, China
Tel: +86 22 2339 9501 Mobile: +86 178 2201 3519 (Whatsapp)
Web: www.just-ortho.com
E-mail: sales@justmedical.cn
Version: 202407-15