

OURO EXCEL MPK



MarFlow[®]
SWITZERLAND

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Preservation
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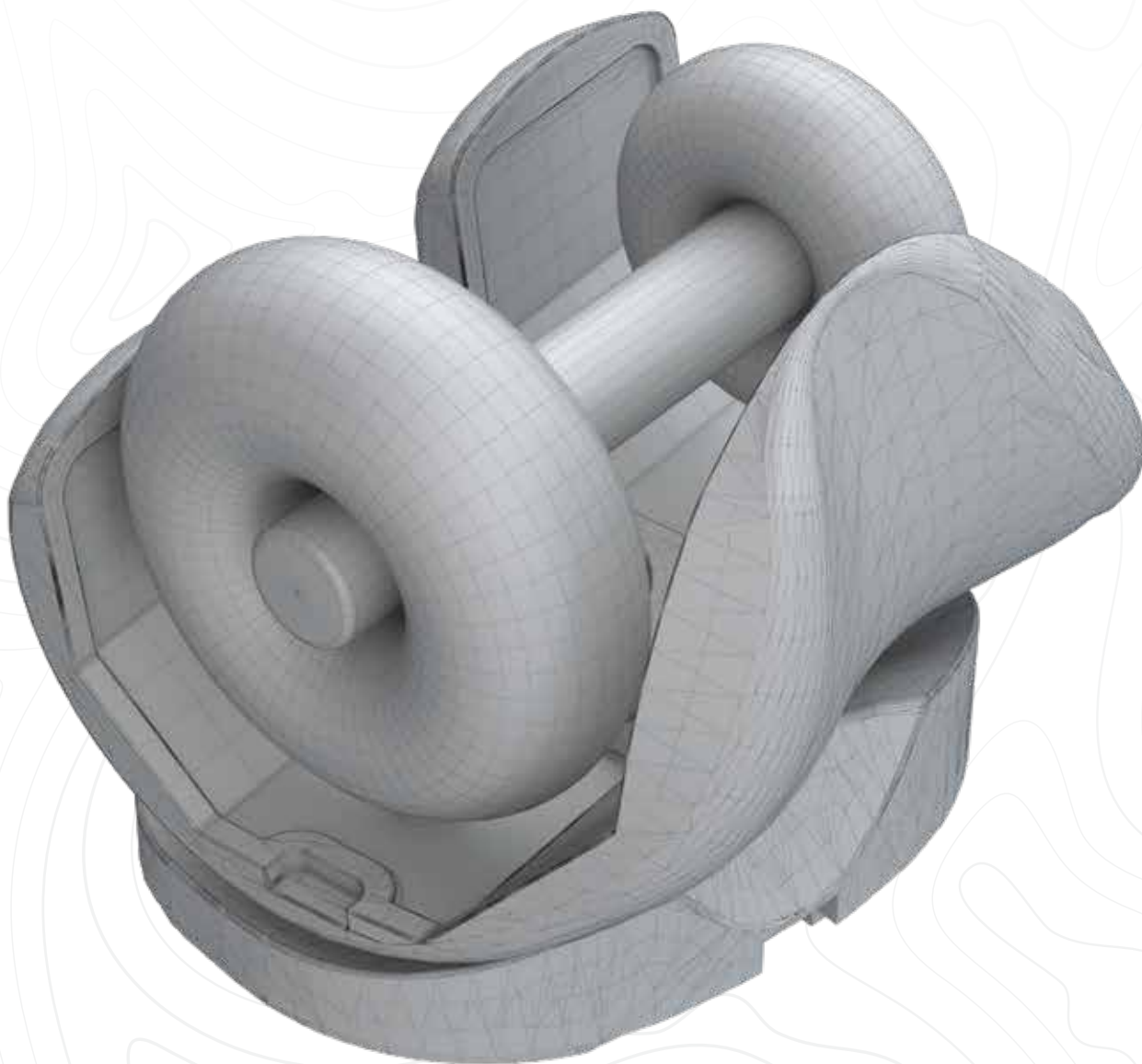
Revolutionizing Knee Arthroplasty

with **OURO**
EXCEL MPK

Setting the standard for knee arthroplasty, Ouro Excel MPK delivers a natural feel for patients and unmatched confidence for surgeons, ensuring swift recovery and procedural excellence.



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Motion Preservation with Swiss Precision

Swiss precision means high level of accuracy, attention to detail, and quality associated with products manufactured in Switzerland

Ouro EXCEL is “designed with Swiss Precision”



Precision in Design:

The Ouro EXCEL Medial Pivot Knee is meticulously designed for optimal fit and natural function, mirroring Swiss precision.



Quality Manufacturing: The Ouro EXCEL Medial Pivot Knee is manufactured with advanced techniques and quality materials for ultimate Swiss precision and durability.



Reliability and Consistency: The Ouro EXCEL Medial Pivot Knee implant undergoes rigorous quality control, ensuring Swiss precision reliability.



Innovation and Tradition: Ouro EXCEL Medial Pivot Knee combines innovative technology with a legacy of precision engineering, drawn from the parent company Marflow for Swiss precision.



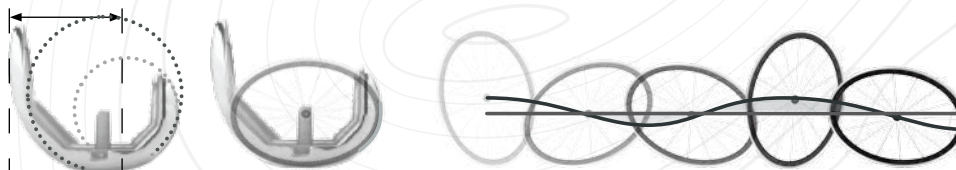
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Medial Pivot for Motion Preservation

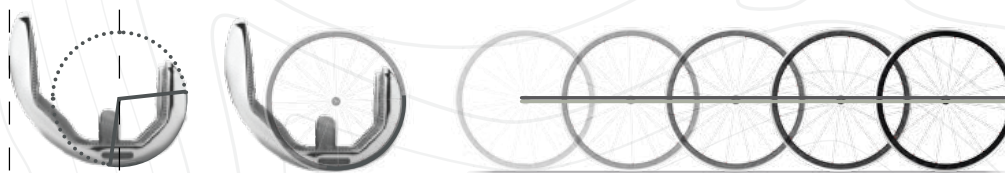
Medial Pivot implants are designed to restore the physiological kinematics of the natural knee, confining the roll back and avoiding the paradoxical motion of the femoral condyles.

Ouro Excel MPK is designed to replicate the kinematics of a natural knee to bring patients back to the full function faster. It can safely accommodate flexion of up to 155°.

Single radius arc to provide better anteroposterior stability through a single radius of curvature from 0° to 115°, optimized radius of curvature in posterior condyle with reduced radius of curvature for deep flexion without impinging poly insert.



'J' curve design unable to maintain ligament isometry creating mid-flexion instability



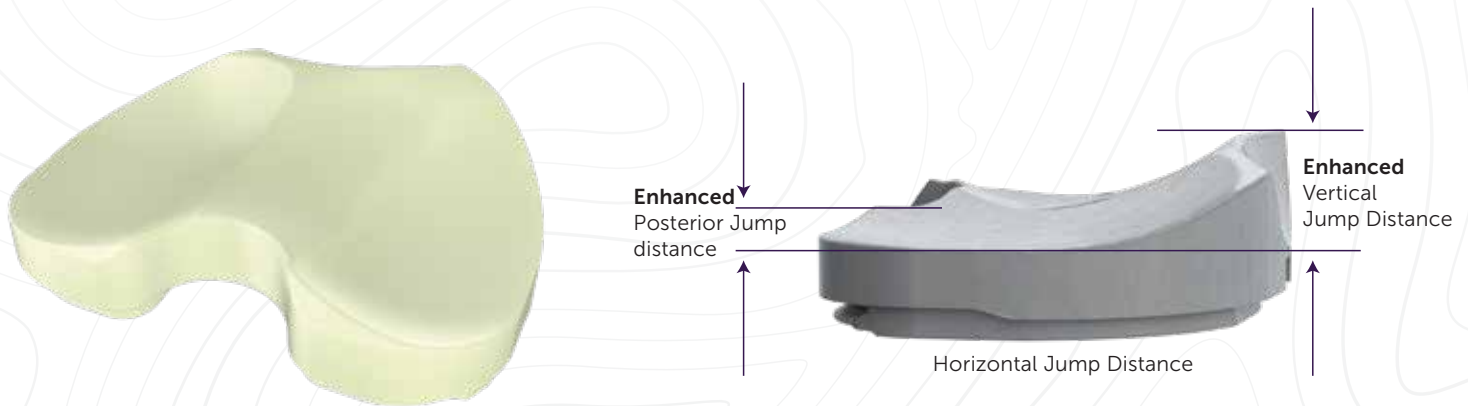
Ouro Excel MPK single radius design maintains a single radius on the femur leading to improved patient outcomes, reducing mid-flexion instability as seen in traditional knee replacements

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Motion Preservation

Anatomic insert designed to promote medial stability and lateral mobility

The insert has been designed with deep access to the patellar groove for patellar tendon relief, the raised anterior medial lip to provide medial stability, lateral condyle arcuate trough to support a path for natural knee function to facilitate rotation of lateral condyle about medial condyle and provide natural knee kinematics. Smooth posterior chamfer of poly insert prevents vital soft tissue impingement.



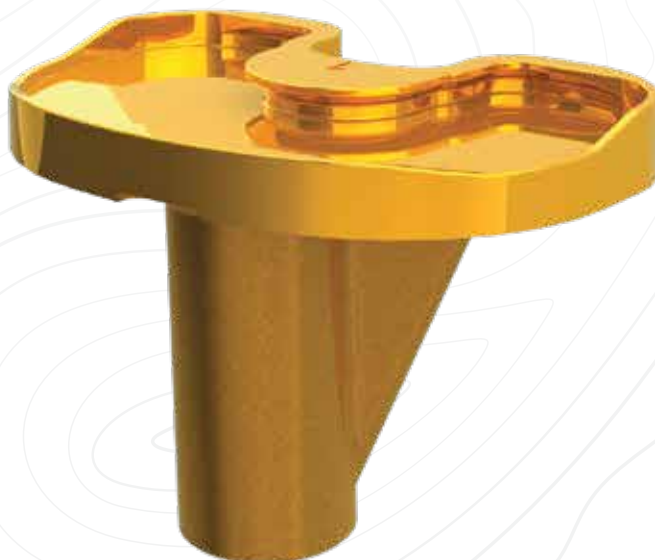
Medial side acts as partial **"Ball and Socket Joint"** providing minimum paradoxical motion and addressing mid-flexion to high flexion instability.

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The tibial implant has been designed to mimic the natural anatomy of the knee with a 3-degree posterior slope. It helps in achieving high flexion.

The proven dovetail locking and continuous peripheral rim locking mechanism helps minimize anterior-posterior and mediolateral micromotion leading to minimum backside wear.



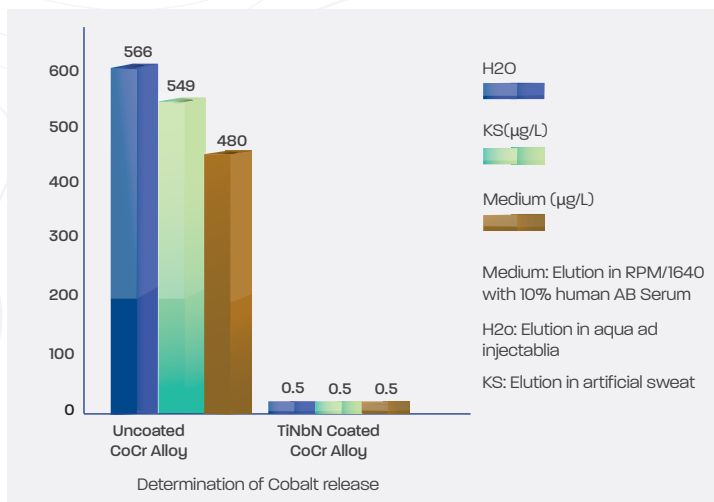
The keel of the Ouro Excel MPK tibial implant has been designed to fit the natural anatomy of the tibia and provide maximum rotational stability.

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Medial Pivot with Gold Coating

Key Highlights of OURO EXCEL MPK

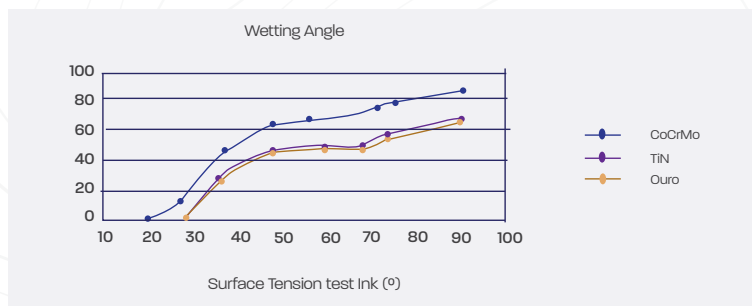
- 🏆 Improved biocompatibility
- 🏆 Allergy protective effect
- 🏆 Higher wettability with synovial fluids
- 🏆 Extreme adhesive strength
- 🏆 Long-term chemical stability



A **significant reduction in the release of metal ions** is obtained when the implant surface is coated with TiNbN. Coating with TiNbN prevents direct contact of the base material with the surrounding tissue and reduces the release of particles and ions due to wear and corrosion.

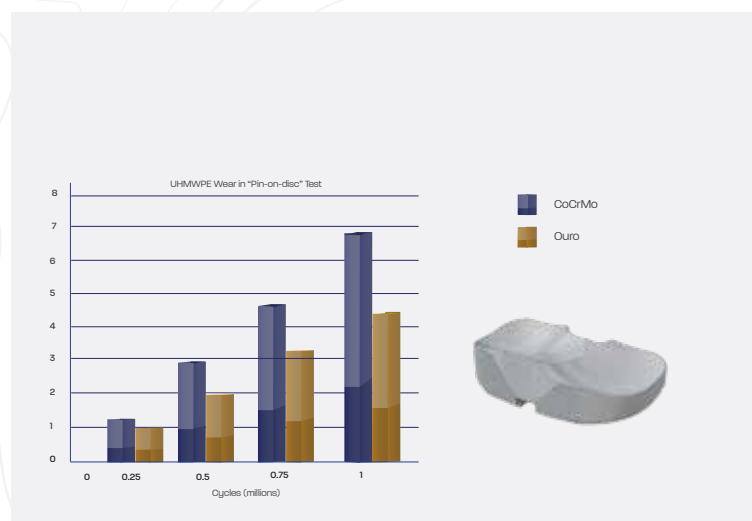
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Medial Pivot with Gold Coating



Higher **wettability** means lower contact angle, improved lubrication helps in reduced wear.

TiNbN coating **reduces contact angle by 20°** compared to CoCr.



Almost **40% reduction in wear of UHMWPE** is observed in a "Pin on disc" test when investigated with 1 million cycles between the uncoated and TiNbN-coated specimens.

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Medial Pivot With Vitamin E Poly

Benefits of VE-Stabilized UHMWPE in Joint Arthroplasty



Studies support use of Vitamin E poly in total joint arthroplasty

- Shows higher oxidative resistance compared to UHMWPE.
- Improved mechanical strength compared UHMWPE.

Biological Responses and Debris Potential

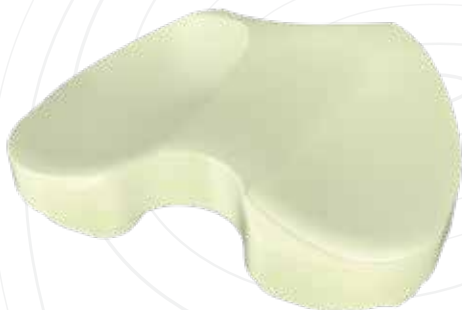
- In vitro and animal studies show no adverse biological reactions to VE-stabilized UHMWPE.
- Debris particles produced have lower osteolytic potential.

Advantages Beyond Biomechanics

- Reduces bacterial adhesion to prosthetic surfaces, lowering infection risks.

Material Characteristics

- Biocompatible with good mechanical, wear, and oxidative properties.



Ref*: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4598683/>

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Medial Pivot Knee demonstrates suitability for both PS and CR approaches in TKA

"Research findings from a comprehensive study involving 3,592 patients and 3,783 knees, comprising 1,811 knees with medial pivot (MP) prostheses and 1,972 knees with posterior-stabilized (PS) prosthesis, underscore a significant advantage. The existing literature robustly supports the superior functional outcomes and reduced complication rates associated with MP prosthesis over PS alternatives."

Medial pivot prosthesis has **a better functional score and lower complication rate** than posterior-stabilized prosthesis*

(consisting of 3592 patients and 3783 knees (MP: 1811 knees, PS: 1972 knees))

The existing literature provided evidence to support better clinical effect and lower complication rate of MP prosthesis compared to PS prosthesis.

The implant design is also suitable for Cruciate Retaining (CR) inTKA



Ref*: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9392246/> *Journal of Orthopedic Surgery and Research

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Medial Pivot Knee- Scores, Patient Satisfaction and Revision Requirement



Traditional total knee implant designs, usually, are not able to reproduce the physiological kinematics of the knee, leaving almost 20% of the patients, those who underwent a Total Knee Arthroplasty (TKA), not fully satisfied*

Modern inserts are nowadays designed with a fully congruent medial compartment to reproduce the normal medial pivoting biomechanics of the knee.

The Oxford Knee Score (OKS) and the Knee Society Score (KSS) have been assessed preoperatively and at 3-month, 6-month, and 1-year follow-up (FU).

Outcome Improvement:

- Average improvement in **OKS (Oxford Knee Score) from 19.5 to 41.2.**
- Improvement in **KSS (Knee Society Score) from 64.7 preoperatively to 167.5** at the final follow-up (FU).
- Good to excellent results observed in 95% of treated knees.

Range of Motion and Complications:

- Average maximum active movement measured at 124°.
- **No patients required revision surgery** or manipulation under anesthesia.
- No observed complications at the final follow-up, including septic or aseptic loosening, vascular, or neurologic injury.

This discussion shows the groundbreaking nature of the Ouro Excel MPK in the field of knee arthroplasty. This innovative solution sets a new standard by delivering enhanced patient satisfaction through improved movement and natural knee kinetics, along with exceptional durability, reduced infection risk, and minimized wear rates.

Ref*: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9464619/>. *Springer Journal

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Medial Pivot Knee: Exploring Clinical Evidences

Long-term clinical outcomes of medial pivot total knee arthroplasty for Asian patients:

A mean 10-year follow-up study

Hideki Ueyama 1, Narihiro Kanemoto 2, Yukihide Minoda 3, Nobuo Yamamoto 3, Yoshiki Taniguchi 2, Hiroaki Nakamura 3

Conclusions: Medial pivot total knee arthroplasty used for Asian patients showed good longevity and patient-reported outcome measurement in a mean 10-year follow-up study. Medial pivot total knee arthroplasty has long-term stability among patients who have a floor-based lifestyle.

Superior patient satisfaction in medial pivot as compared to posterior stabilized total knee arthroplasty: a prospective randomized study

Sahil Batra 1, Rajesh Malhotra 2 3, Vijay Kumar 1, Deep Narayan Srivastava 4, David Backstein # 5, Hemant Pandit # 6

Conclusion: MP TKAs provide superior patient satisfaction and patient expectations as compared to PS TKA. This may be related to better replication of natural knee kinematics with MP TKA.



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Femoral Component

Sizes	AP (mm)	ML (mm)
A	49.8	53.7
B	52.5	56.7
C	54.4	59
D	58.1	61.5
E	59.5	64.2
F	63.3	67
G	66.5	70
H	70.5	75

Tibial Component

Sizes	ML (mm)	AP (mm)
Tray 1	54.7	38
Tray 2	60	40
Tray 3	63	43
Tray 4	66	45
Tray 5	71	47
Tray 6	75	51
Tray 7	81	55

Tibial Insert

Sizes	Thickness (mm)
A-1,2	7,8,9,11,13,15,17, 20,23 mm
A-34	
BC-12	
BC-34	
DE-34	
DE-56	
F-4	
F-56	
GH-56	
GH-56	

Tibial Extension Rod

	SIZE-1	SIZE-2	SIZE-3	SIZE-4	SIZE-5	SIZE-6	SIZE-7	SIZE-8	SIZE-9
L(MM)	50	100	150	50	100	150	50	100	150
ø (MM)	10	10	10	12.5	12.5	12.5	15	15	15

24 Combinations Possible

Components Compatibility Chart

SIZES		TRAY SIZE 1	TRAY SIZE 2	TRAY SIZE 3	TRAY SIZE 4	TRAY SIZE 5	TRAY SIZE 6	TRAY SIZE 7
FEMUR SIZES	A	A 12						
	B	BC 12		BC34				
	C							
	D			DE-3,4		DE-5,6		
	E							
	F				F-4	F-5,6		
	G				G,H 5,6		GH 7	
	H							

**Advancing Total Knee Arthroplasty Towards
Natural Knee Kinematics**

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