Smith+Nephew

JOURNEY◊ II UK

Unicompartmental Knee System

Design Rationale

Smith+Nephew partial knee history

1974

First commercially produced UNI knee replacement- The Marmor

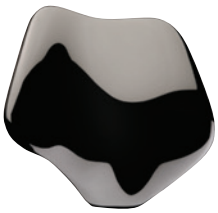
80's

Experience continued with the MOD I, II and III

Early 90's

GENESIS◊ UNI (ACCURIS)

2006



JOURNEY◊ PFJ

2008

JOURNEY UNI

2015

Acquired ZUK* in June

2016

Acquired Blue Belt/STRIDE◊ in January

2019

JOURNEY II UK

*Product sold in US only.

Continuing Smith+Nephew's legacy with partial knees

JOURNEY◊ II UK is built on the heritage of Smith+Nephew's long history with unicompartmental knees.

By leveraging Smith+Nephew's legacy in partial knees, JOURNEY II UK combines the most clinically successful features of each design to present a third-generation unicompartmental knee platform:

- Intraoperative sizing flexibility
- OXINIUM◊ bearing surface
- Tissue-conscious design
- Optimized instrumentation

These features, along with improvements in fit, sizing, and delivery model, provide a comprehensive solution for treating disease isolated to a single compartment.

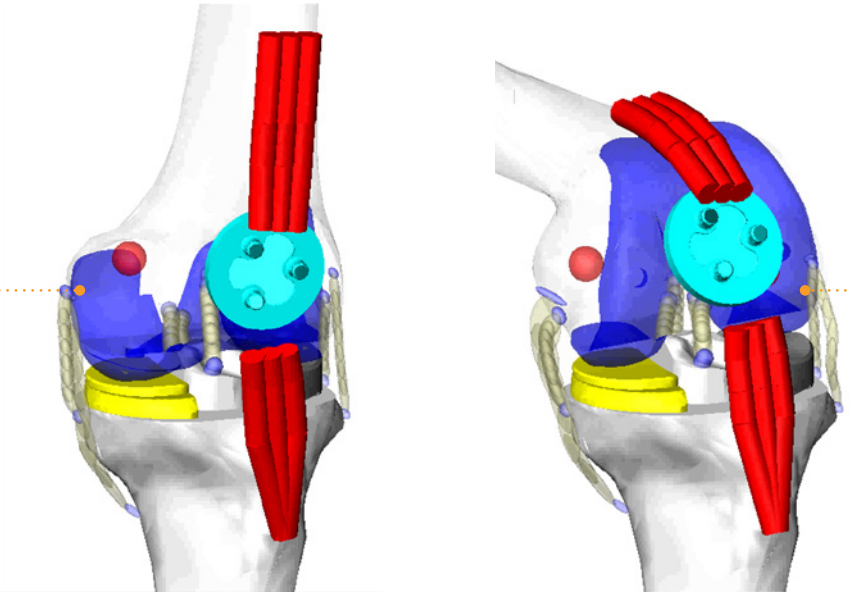
Intelligent kinematics

Designing JOURNEY◊ II UK

The JOURNEY II UK articular geometries and instrumented technique are optimized using Smith+Nephew's proprietary LifeMOD kinematic knee simulator, which was also used in the development of the JOURNEY II TKA system. This technology provides advanced kinematic and kinetic modeling of the knee.

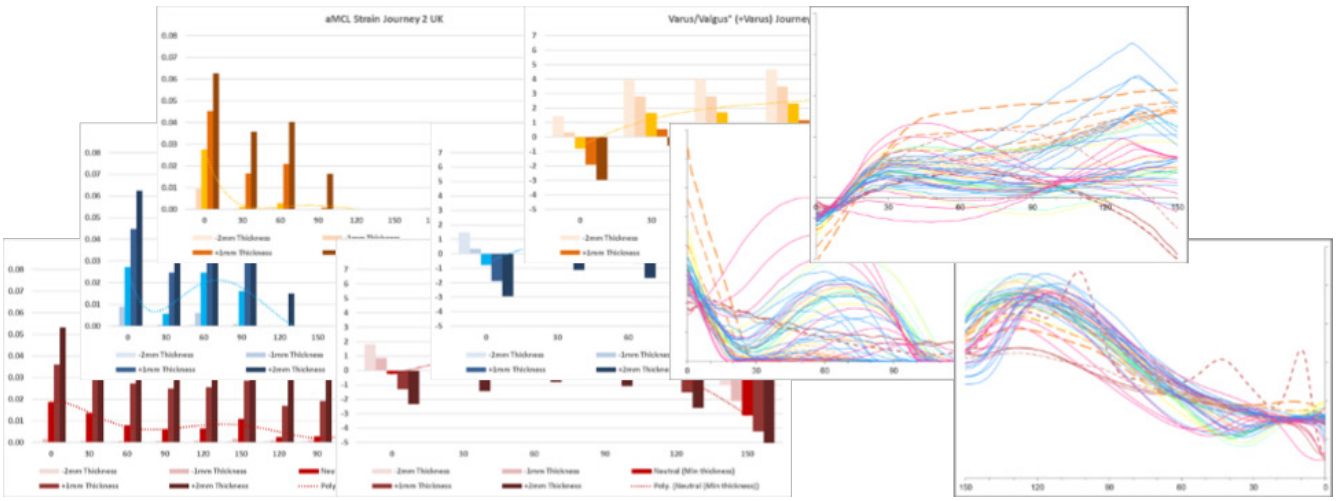
CAD models were virtually implanted within LifeMOD and analyzed during multiple activities, including deep knee bend and gait. Biomechanical performance was then characterized by analyzing kinematic and ligament strain data (previously correlated by *in-vivo* and *in-vitro* independent data).[1,2]

JOURNEY II UK



JOURNEY II CR simulates patellofemoral and contra-compartmental kinematics

The JOURNEY II UK construct was tested with ideal implantation, and with reasonable surgical variation, to ensure consistent performance, through manipulation of sixty-four unique variables.



Based on the outputs of the LifeMOD studies, the JOURNEY◊ II UK system has been designed to ensure implants and instruments provide optimal performance, with a consistent and forgiving technique.

Smith+Nephew's proprietary OXINIUM◊ Technology was chosen as the femoral bearing surface for the JOURNEY II UK system. Through pairing OXINIUM with XLPE tibial inserts, the JOURNEY II UK construct is designed for longevity.

Intelligent kinematics

Enabling technologies

JOURNEY◊ II UK is compatible with robotically-enabled technologies offered by Smith+Nephew.

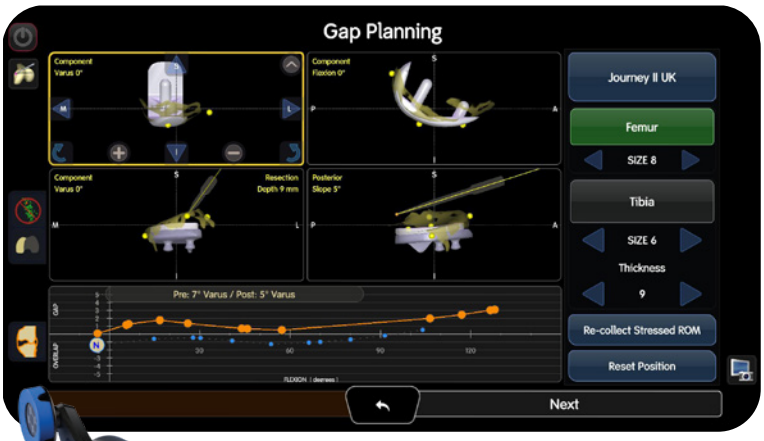
CORI◊ Handheld Robotics + JOURNEY II UK

Intelligent platform supports robotics, software, smart tools and data.

Enhanced* robotic solution designed to deliver[3]:

- Image-free smart mapping
- Real-time planning and gap assessment
- Optimized alignment and balance
- Safe and accurate robotically-controlled resection

Surgeon-controlled, handheld intelligence for a modern robotic approach.



*Compared to NAVIO◊ Handheld Robotics

Real flexibility

Tailored fit

JOURNEY◊ II UK offers an expanded size offering of femoral and tibial components, including medial and lateral specific tibial baseplates.

OXINIUM◊ femoral components are offered in ten, handed sizes, with a 2mm incremental anterior-posterior change between sizes, and feature lug preparation and bony resections which are shared within three size ranges.

Size 1-3

Size 4-7

Size 8-10

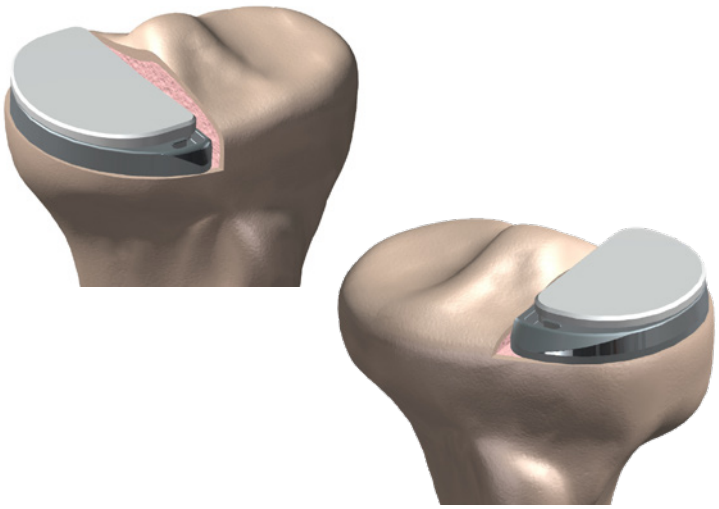
Tibial baseplates are offered in 10 medial and 8 lateral sizes; both feature 2mm anterior-posterior increments between sizes.

XLPE tibial inserts are available in 8-14mm thicknesses, with 1mm increments.

Tibial baseplates were designed to provide a tailored fit for each patient.

The innovative approach of the JOURNEY II UK implant offering is designed to give surgeons the flexibility to optimize the unicompartmental construct for each patient's unique anatomy.

Implant profiles are optimized to individual compartment profiles.



Real flexibility

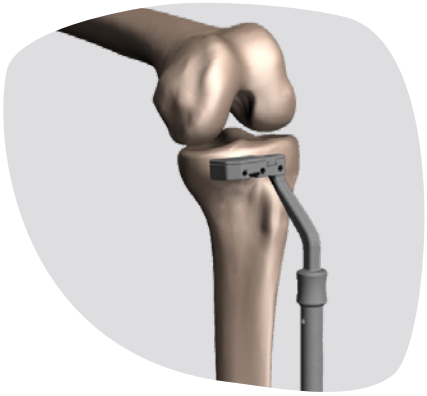
Technique and instrumentation

JOURNEY◊ II UK features a modular approach to instrumentation, allowing each set to be configured to fit the individual needs of each surgeon.

Tibia resection guide

Standard resection guide

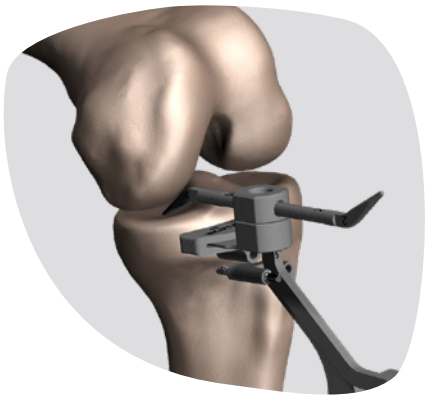
- Removable saw capture
- Sub-millimeter re-cut adjustment
- Sagittal saw capture option



Alternate resection guide

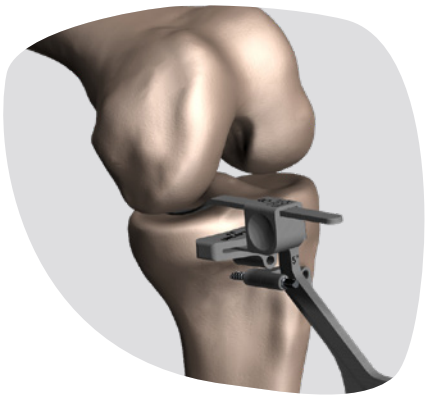
- Captured and uncaptured
- Removable shim for 2mm recut

Referencing method



Standard tibia styli

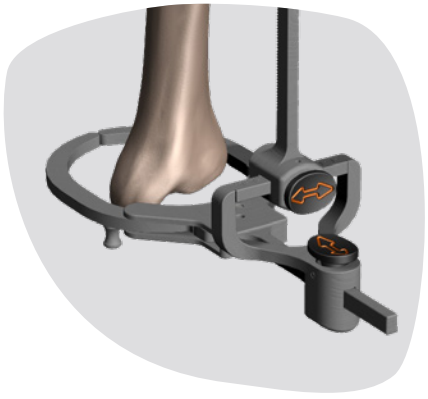
- Reference tibia plateau
- 2/4mm and 3/5mm styli



Referencing spoons

- Reference gaps
- 1mm, 2mm, and 3mm spoons

Ankle fixation method



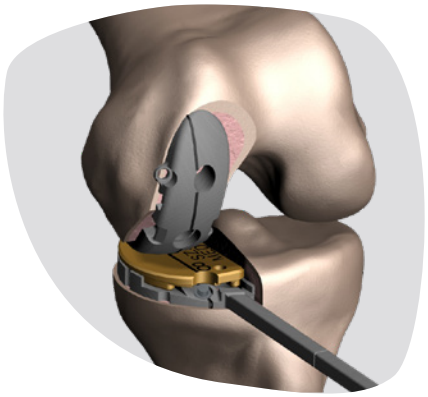
Mechanical ankle clamp

- Designed to open with one hand

Ankle clamp with strap

- Designed to provide traditional fixation option
- Strap compatible with mechanical ankle clamp, for additional stability

Femoral preparation and trialing



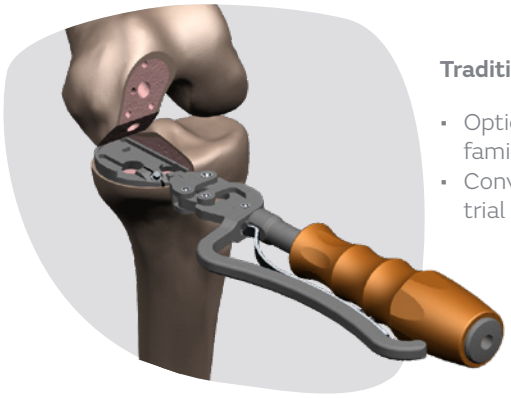
Drill-through trials

- Spiked track allows medial-lateral translation prior to lug preparation

Traditional trials

- Traditional option for familiar surgical flow

Tibia preparation and trialing



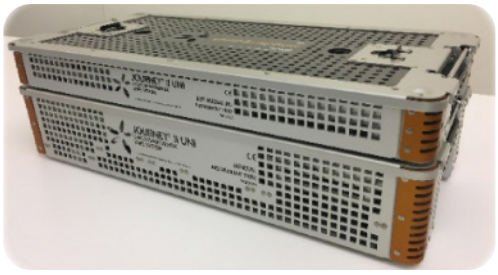
Traditional trials

- Option provided for familiar surgical flow
- Convenient handle aids trial positioning

Interactive sizing trials

- Allows for sizing and preparation in one step
- Hooked version enables posterior tibia referencing
- Non-hooked version enables anteriorization

Delivery method



Regardless of preferred options, instrumentation for a typical procedure is delivered in a two-tray configuration.

When paired with enabling technologies, this can be reduced to a single tray.

Additional tray configuration information may be found within the JOURNEY◊ II UK Tray Layouts document.

Notes

Notes

This design rationale is for informational and educational purposes only. It is not intended to serve as medical advice. It is the responsibility of treating physicians to determine and utilize the appropriate products and techniques according to their own clinical judgment for each of their patients.

For detailed product information, including indications for use, contraindications, effects, precautions and warnings, please consult the product's Instructions for Use (IFU) prior to use.

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References
1. Data on file with Smith+Nephew. K09-JRN2 KneeSim Analysys Rev A. **2.** Harfe DT, Chuinard CR, Espinoza LM, Thomas KA, Solomonow M. Elongation patterns of the collateral ligaments of the human knee. Clin Biomech. 1998;13(3):163-175. **3.** Smith+Nephew 2020. CORI and NAVIO Technical Specification Comparison. Internal Report. ER0488 REV B.