ADVANCE®
Knee System Family

Medial-Pivot Kinematics. Sound Clinical History. Superior Instrumentation.

WRIGHT.
The Leader in Knee Implants with Stability

Two different design philosophies, the progressive and the traditional, have been combined to form the ADVANCE® Knee System.

Progressive Philosophy (Natural Kinematic Design)

The ADVANCE® Medial-Pivot, Double-High, and Unicompartmental Knee Systems are pioneering the future of knee replacement. They are based on contemporary medial-pivoting kinematic studies by prominent researchers such as Rick Komistek, PhD; David Blaha, MD; and Michael Freeman MAR.1,2,3

- Superior patient stability
- Highest contact through range of motion (Figure 1)
- Minimal polyethylene wear6

Traditional Philosophy (Insall Berstein Design Legacy)

The ADVANCE® Posterior Stabilized and Revision Systems are clinically-proven implants designed in conjunction with the Hospital for Special Surgery; a preeminent institution for total knee development.

- Long-term clinical history
- Literature-supported security
- Predictable performance

The History of the ADVANCE® Knee System

FIGURE 1
ADVANCE® Medial-Pivot Knee

ADVANCE® Medial-Pivot/Double-High Femoral Component with Constant Radius

Due to the high stability and rotation provided by the partial ball-in-socket articulation, the ADVANCE® Medial-Pivot Knee functions like a normal knee. In fact, studies have shown it is preferred by 8 out of 10 patients with an ADVANCE® Medial-Pivot Knee in one leg and a competitive design in the other.7,8

In the normal knee, the medial femoral condyle exhibits less roll than the lateral condyle during motion. The ADVANCE® Medial-Pivot Knee was the first major system to address and replicate these kinematics. Medial-pivoting kinematics is a critical design rationale, which has grown through the acceptance of modern kinematic studies and clinical success.1,2,3,7,8,9

Constant radius from 0° - 90° (1)
- High contact area throughout ROM
- Maintains constant ligamentous tension throughout range of motion

Patella track at anatomic angle and depth

Does not require a large intercondylar resection

Raised anterior lip (2)
- Replaces the spine of a traditional posterior stabilized knee
- Allows PCL-substitution

Lateral trough
- Allows 15° of natural rotation for deep flexion
- Allows freedom of rotational alignment

Ball-in-socket articulation
- Provides patient stability through range of motion7,8
- Highest contact area through range of motion

Intra-operative Options without Additional Resections

PCL SACRIFICING ADVANCE® Medial-Pivot Insert

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Tibial Bases
- Available in porous coated or non-porous
- Modular stem options
- Locking mechanism resists micromotion
The Leader in PCL-retaining Knees

The ADVANCE® Double-High Knee received its name because it provides high flexion and high stability in PCL-retaining knees. To manage more dynamic function, the articular surface features a raised anterior lip like the ADVANCE® Medial-Pivot Knee and a PCL-guided flexion path to provide anterior stability and deep natural flexion.

The ADVANCE® Double-High Knee utilizes the same femoral, tibial and patellar components as the ADVANCE® Medial-Pivot Knee. An insert exchange (with no additional bone cuts) is required to convert from PCL-retaining to sacrificing intraoperatively.

Raised Anterior Lip

» Reduces anterior sliding (paradoxical motion) by maintaining the femoral placement through flexion5,10

» May share anterior stresses with the posterior cruciate ligament (PCL), allowing longer, more effective PCL function

» Designed to minimize PCL loosening11,12,13

PCL-guided Flexion Path

» Designed to allow the PCL-dictated translation and rotation demonstrated in deep flexion4,14

» Medial side – Features low-profile articular surfaces to allow PCL-guided flexion4

» Lateral Side – Allows the anterior/posterior translation found in the normal knee
ADVANCE®
Stature Specific Knees

Designed for the Man or Woman with a Narrow Femur.

The ADVANCE® Medial-Pivot and Double-High Knees are designed to reproduce normal motion and anatomy.

However, determining correct femoral size is difficult in men or women with a narrow distal femur. An implant that fits anterior/posterior may overhang medial/lateral. To prevent overhang, a smaller implant with a shorter anterior/posterior dimension may be utilized. Respectively, this can lead to soft tissue interference or mid-flexion instability due to excessive posterior condyle resection.

ADVANCE STATURE™ Femoral Components (represented in teal) are designed to accommodate those male or female femora with a larger anterior/posterior dimension than medial/lateral. This helps ensure your patients will receive the best implant fit possible.
The Leader in Bone Conserving Revision

The ADVANCE® Stemmed Medial-Pivot Knee offers the same kinematic benefits as the primary ADVANCE® Medial-Pivot Knee, yet accepts a full line of augments, stems, and tibial bases. Unlike other revision systems, the ADVANCE® Stemmed Medial-Pivot Knee significantly reduces femoral bone loss by not requiring a full housing resection.

**Constant radius from 0° - 90° (A)**
- Highest contact through range of motion (Figure 1)
- Deepened and extended anatomic patellar groove (B)
- Maintains constant ligamentous tension throughout motion

**Raised anterior lip (C)**
- Replaces the spine of a traditional posterior stabilized knee
- Allows PCL-substitution
- Does not require a large intercondylar resection

**Lateral trough (D)**
- Allows 15° of natural rotation for deep flexion
- Allows freedom of rotational alignment

**Ball-in-socket articulation (E)**
- Provides patient stability
- May limit paradoxical motion

**Available in porous and nonporous femoral options**
- Nonporous option accepts stem extensions and augments
- Canal-filling stems in 100mm and 140mm lengths
  - Coronal slot conforms to endosteal bone changes
- Cemented stems in 30mm, 65mm, and 100mm lengths
- Femoral augments in 5mm and 10mm

**Tibial bases available in porous, nonporous, and offset options**
- Tibial block augments in 5mm, 10mm, and 15mm; 15° wedges

**Anterior femoral stem position (F)**
- Maximizes contact with anterior cortex
- Restores flexion gap
The ADVANCE® Posterior-Stabilized Knee employs a patented spine/cam mechanism for greater patient stability.
**ADVANCE® Revision Knee System**

**The Leader in Clinical History and Simplicity**

The ADVANCE® Revision Knee was designed in conjunction with the Hospital For Special Surgery to provide a complete revision system with exemplary clinical history. Its instrumentation simplifies revision surgery while providing options for any situation.

**Accepts stem extensions and augments (A)**
- Canal-filling stems in 100mm and 140mm lengths
  - Coronal slot conforms to endosteal bone changes
- Cemented stems in 30mm, 65mm, and 100mm lengths
- Femoral augments in 5mm and 10mm
- Tibial block augments in 5mm, 10mm, and 15mm; 15° wedges

**Reduced flange width minimizes M/L overhang (B)**

**HSS spine/cam mechanism (C)**
- 1 up/1 down size interchangeability

**Tibial bases available in porous, nonporous, and offset options (D)**

**Accepts standard Posterior Stabilized and Constrained (CCK) inserts**
- CCK & CCK Minus inserts
  - Allows 1° internal/external rotation
  - Allows .5° varus/valgus movement

**Anterior stem position (E)**
- Maximizes contact with anterior cortex
- Restores flexion gap

**Same femoral cuts as the Stemmed Medial-Pivot with the addition of a separate housing resection**
The Leader in Resurfacing Unicompartmental Knees

The ADVANCE® Unicompartmental Knee System is based on many of the same philosophies that have led to the success of the ADVANCE® Medial-Pivot Knee. It incorporates a constant radius of curvature and offers a constant contact area. In addition, the instrumentation brings reproducibility to resurfacing the knee.

» Constant radius from 10° - 100° (A)
  • Anatomic shape mimics posterior condyles
  • Bone conserving
  • Same radius as the Medial-Pivot femoral component

» Constant contact area beyond 10° flexion

» 7° angled anterior flange replicates the curvature of distal femur and promotes central tracking (B)

» Low profile distal tip minimizes patellar impingement (C)

» Conservative fin/peg (D)
  • Provides optimal fixation with minimal bone loss

» Dual pegs and peripheral cement capture improve tibial base fixation (E)

» Easily Converts to an ADVANCE® Total Knee Replacement
Instrumentation Options for ADVANCE® Knees

ODYSSEY™ MIS Knee Instruments: The Leader in Minimally-Invasive Approaches

Reduced Incisions with Uncompromised Results
In MIS, instrument accuracy is paramount. Instruments must help ensure the benefits of MIS without endangering long-term results. ODYSSEY™ MIS instruments are designed for stability, simplicity, and accuracy within a reduced surgical approach.

» All instruments are low-profile to reduce soft-tissue interference
» Simplified instruments affix rigidly to bone for greater accuracy
» Resection slots hold saw blades more rigidly than standard instruments to provide more accurate resections
» Measurement styli are sleek and rigid to slide under soft tissues without distortion
» All resections may be easily adjusted to prevent anterior notching, excess condyle resection and mal-alignment

Precision in Any Incision
ODYSSEY™ instruments offer an advantage for traditional approaches as well. For patients with excess soft tissue, the accuracy and reduced size of the ODYSSEY™ instruments allow for easy maneuvering within substantial soft tissues. ODYSSEY™ instruments are available in Distal Cut First or Anterior Rough Cut philosophies to match the technique you find most comfortable.

SRP® Knee Instruments
Twenty-five years ago, our patented SRP® instruments drastically increased the reproducibility of total knee instrumentation by featuring resection blocks linked to an intramedullary rod. This “single reference point” offered greater accuracy than other instrument systems of the day; allowing A/P guide adjustment and precision resections. Due to this impressive clinical history, SRP® instruments have been adapted to our primary ADVANCE® Knee Systems.
References
17. Wright Engineering Report, ER010034.