A pivotal breakthrough in knee replacement.

VEGA System® PS Knee Replacement Technology

Based on a patent-pending post-cam design that optimizes pivotal motion while greatly reducing surface stress, the VEGA System represents a whole new way to think about PS knee replacement.

The VEGA System’s groundbreaking design concept works hand in hand with a unique 7-layer Advanced Surface (AS) coating, delivering exceptional kinematics, reduced wear rates, and excellent jump distances.

Aesculap Implant Systems aims to provide Innovations for Better Patient Outcomes.
Patent-Pending Post-Cam Design

Designed to mimic natural knee kinematics by enabling a physiological pivot around the medial condyle, the VEGA System's distinctive post-cam design facilitates a large range of motion and optimized surface contact between the femoral and gliding surfaces. The surface contact between the articulating components maximizes bearing surface stress distribution, reducing the risk of delamination.

- Enables pivotal motion, helps avoid excessive loading on posterior condyle edges, and reduces stress on bearing surfaces
- Dorsal fin polyethylene post and cam interactivity reconstructs natural knee kinematics
  - Posterior inclination of the polyethylene post design prevents anterior impingement with the extensor mechanism and increases resistance to dislocation
  - Deepened anterior cutout facilitates smooth articulation of the patellar tendon
  - In combination with unique cam engineering, allows for rollback and a pivot motion around the medial condyles that greatly mimics natural knee kinematics
- Soft-tissue-friendly: Anterior and posterior narrowing combined with minimal box resection minimizes interference with surrounding soft tissues

Excellent Jump Distances

In conjunction with the height and inclination of the polyethylene post, the design of the VEGA System's post-cam mechanism results in excellent jump distances, which increase with flexion and can reduce subluxation risks.
Unique 7-Layer AS Coating

Imagine a surface coating that delivers unparalleled surface hardness, substantially decreased wear rate, and greatly improved scratch resistance. Now imagine the performance of a unique 7-layer Advanced Surface (AS) coating.

Unmatched Surface Hardness
Small scratches in CoCrMo implants are common and can lead to surface damage and higher PE wear. Conversely, the AS coating’s zirconium nitride top surface layer yields unmatched surface hardness:¹⁻⁶

- Improved scratch resistance
- Excellent wettability
- Better articulation between bearing surfaces
- Minimizes mechanical ablation risk⁷
- No damage after extreme wear test with bone chips and cement particles:

60% Wear Rate Reduction
Wear is the number-one reason for long-term knee replacement revisions.⁶ To combat this issue, the AS coating can deliver up to a 60% reduction in wear when compared to a CoCr prosthesis, as demonstrated in testing with other Aesculap knee designs.⁹, ¹⁰

Innovative 7-layer AS coating brings leading-edge technology to knee replacement.

Wear simulation under extreme conditions⁷
**Exceptional Mechanical Integrity**

A hard surface on top of a relatively soft base material (CoCr) can lead to a higher risk of surface breakage (eggshell effect). The AS coating is designed to reduce hardness from top to bottom in a gradient-like fashion, resulting in an improved elastic modulus. This makes it extremely stable against mechanical stresses and strains.\(^\text{11}\)

The transition zone within the AS coating compensates for changes in surface hardness and results in a more resilient product. A powerful bonding layer between the base material and subsequent layers forms an alloy compound that ensures strong adhesion.

**Reduced Metal Ion Release**

With the AS coating, metal ion concentration is near the level of detection and below any biological threshold.\(^\text{7}\)

**Beta Radiation Sterilization**

All of Aesculap’s polyethylenes are sterilized under Beta radiation, which reduces oxidation, deaccelerates the aging process, and yields better wear rates.\(^\text{12}\)
Quick, Intuitive Instrumentation

The VEGA System’s IQ Instrumentation platform is highly intuitive, with dual-purpose instruments, fewer trays, and a simplistic design that allows surgeons to operate quickly and easily resize. Reduce steps in your workflow and save time and money.

Award-Winning Navigation

Aesculap’s award-winning OrthoPilot® Navigation System enables excellent implant alignment without the need for CT/MRI scans. Combine the VEGA System with OrthoPilot, and you’ve got today’s fastest, most versatile, most efficient navigated PS knee replacement system at your fingertips.
You need a knee replacement system that moves you quickly through your workflow and delivers accurate, efficient operation. Your patients need a knee replacement system that delivers lasting mobility. You both need the VEGA System.

Visit aesculapimplantsystems.com/VEGA today and see where the VEGA System can take you.

**Better Bone Fit**

13 femoral sizes, including standard and narrow design, and 11 tibial sizes, including standard and AP+ sizes, offer a wide range of soft-tissue-friendly implants for a better bone fit regardless of gender, size, morphotype, or race. Additionally, the VEGA System's low-profile box helps preserve more bone.