

Aesculap[®] VEGA System[®] PS

Natural Rotation



Aesculap Orthopaedics

Aesculap® VEGA System® PS



Natural Rotation

The posterior stabilized VEGA Knee System was developed to fulfill the modern-day requirements of patient and surgeons for a modern knee implant system. The following objectives were considered in its design:

- 1 | Natural kinematics through a rollback and a pivotal motion around the medial condyle
- 2 | Stability even in high flexion
- 3 | Soft tissue friendly and bone sparing implant design
- 4 | Long-term performance through innovative materials
- 5 | Easy handling and precise results with the new generation of IQ instruments as well as the OrthoPilot® Navigation System





Stability improves mobility

Natural Rotation



1 | Natural Kinematics

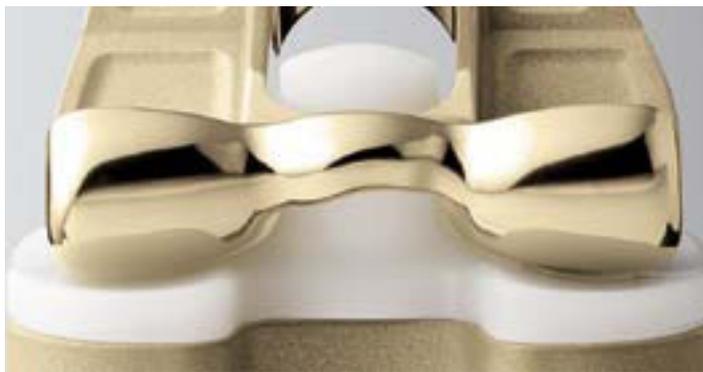


Fig. 1: Asymmetric cam design of VEGA enables pivotal motion

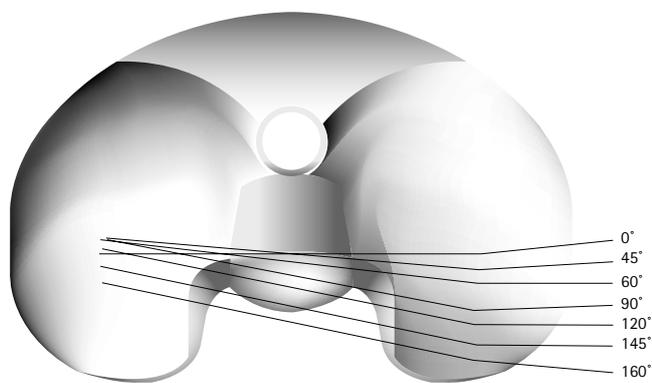


Fig. 2: Lateral rollback in flexion and medial pivoting

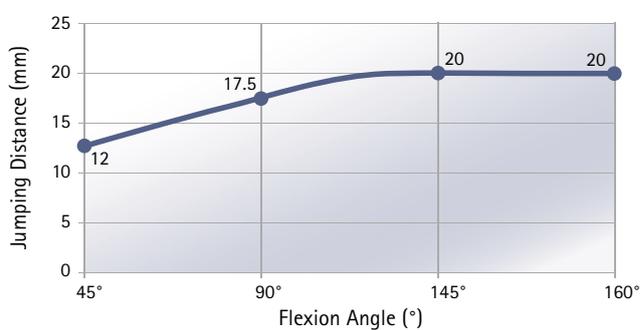
During flexion, the natural knee shows increased rollback of the femur on the lateral side while the femur rotates around the medial center.¹

The asymmetric cam design of VEGA facilitates this lateral rollback and medial rotation, and therefore enables a natural pivotal motion (see Fig. 2).²

2 | Stability in high degrees of flexion

Based on the design and the position of the PS box and post, the contact point of the box and post move distally with an increase of flexion. Therefore the increased jumping distance in flexion can reduce the subluxation risk. The synchronized contact surfaces between the articulating components maximize the bearing surface stress distribution in extension, reducing the risk of delamination. Furthermore the high congruency between femur and tibia in extension as well as the line contact up to 160° of flexion stabilizes the patient's movements and reduces wear. Posterior inclination of the post design prevents anterior impingement with the extensor mechanism and increases resistance to dislocation. To reach higher varus-valgus stability a PS+ gliding surface with a medio-laterally wider PS post is available.

Fig. 3: Jumping distance of the VEGA PS Knee System



3 | Soft tissue friendly and bone sparing design



Besides the reconstruction of natural kinematics, two attributes were in the foreground during the development of the VEGA Knee System. A soft tissue friendly design as well as the reduction of bone loss. 13 femur sizes, including standard and narrow sizes, and 11 tibial sizes, including standard and AP+ sizes, offer a wide range for a better bone fit regardless of gender, size, morphotype or race. Additionally, the VEGA System®'s narrow low-profile box helps to preserve bone and results instable patellar tracking. A short tibial stem design as well as slim tibial wings support the bone sparing philosophy of VEGA. Furthermore the curved wing design facilitates a high rotational stability.



■ VEGA System®
■ Conventional femur design

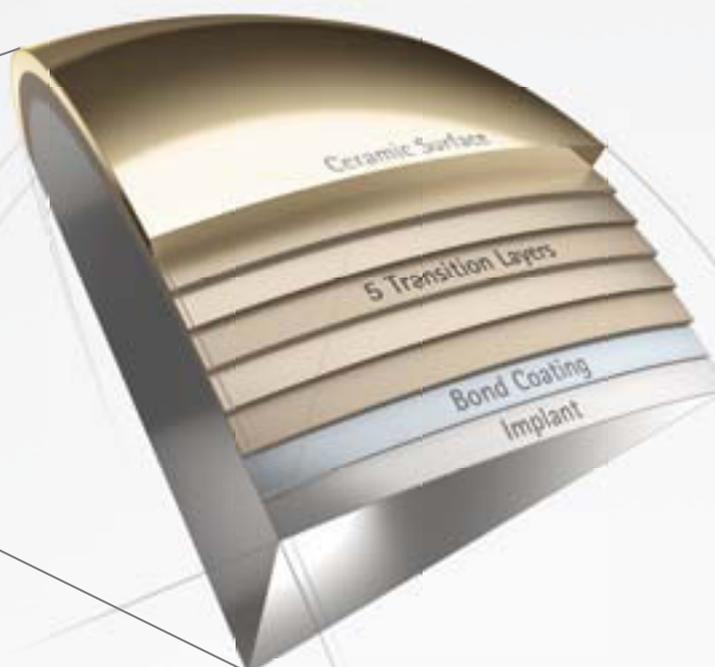


4 | Long-term performance through innovative materials

7 Layers to Protect You

Advanced Surface

Wear is the number one reason for long-term knee replacement revisions.³ To combat this issue, the AS coating can deliver up to a 65 % reduction in wear when compared to a CoCr prosthesis, as demonstrated in testing with other Aesculap knee designs. Furthermore with the AS coating, metal ion concentrations remain low and are below any biological threshold. This makes the AS coated implants an ideal solution for patients who are allergic to metal. The AS multilayer coating reduces the hardness from top to bottom in a gradient-like fashion, resulting in an improved elastic modulus. This makes it stable against mechanical stresses and strains.⁴⁻⁷



Beta Polyethylene

All of Aesculap's polyethylenes are sterilized under Beta radiation, which reduces oxidation, decelerates the aging process, and yields better wear rates.⁸⁻¹⁰

5 | Easy handling and precise results



Patient specific
with OrthoPilot®
Navigation

Instrument Options VEGA System® PS

OrthoPilot®

- 15 years of experience in navigation
- Precision
- Quality assurance
- Control¹¹⁻¹³

Imprint

- Patient specific cutting blocks
- Individuality
- Time saving
- Exact alignment

Size specific
with Imprint





IQ Instruments

- Intuitive and Quick
- Precise
- Color coding
- Choose your preferred OR Technique
 - Femur First
 - Tibia First

User-friendly
with IQ Instru-
ments

Aesculap® VEGA System® PS

Natural Rotation

Deep trochlear groove for reduced patellar pressure and high stability

13 Femur sizes incl. 8 standard and 5 smaller ML narrower sizes

Posterior inclination of the PS post prevents patellar impingement

Cut out to prevent patellar conflict

Smooth radius to prevent peak forces

Shorter dorsal condyles with small radius for high flexion

11 tibial sizes incl. 6 standard and 5 AP wider +sizes

Uniform stem length / optional extension stems

Large contact surface and a curved design for rotational stability

Ventral and dorsal slim design to prevent soft tissue impingement

Large contact surface between femur and gliding surface to avoid peak stress

Ventral cut out to prevent patellar conflict



High PS post for subluxation safety. Available in a PS standard and ML wider PS+ version for higher varus-valgus stability

Asymmetric cam design for lateral rollback of the femur and a medial femur rotation (medial pivoting)

Slim design in the ventral and dorsal region to prevent soft tissue impingement

Small PS box for low bone loss

Unique wing design for less bone loss and stable anchorage with press-fit design

3° anatomical slope in the gliding surface allows a 90° resection to avoid shear forces



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