References

5. Data on file at Depuy Orthopaedics, Inc. Warsaw. Data from AMTI Knee Simulators (WR: 020065, 030058 and 050167)
DePuy's philosophy in knee replacement is to provide a system of implant options that specifically match the requirements of each patient. SIGMA® High Performance implants are designed to provide high function and low wear options, resulting in successful clinical outcomes and a long implant life.

Our experience in total knee replacement is extensive. The long clinical heritage of our SIGMA Knee systems has, over time, allowed us to evaluate and refine the product range. Today, you can choose fixed or mobile, cemented or cementless, low wear solutions, with complete confidence.

Efficient, precise and flexible, SIGMA High Performance instruments help to correctly position and balance the knee. You are able to follow your own familiar philosophy that is most appropriate for your patient.

With the increasing incidence of revisions, DePuy's modular revision system provides mobile bearings and fixation sleeves to reduce transmission of torsional stress to fixation interfaces and improve axial loading of bone.

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SIGMA CR femoral component is clinically proven with 99.6% survivorship at 8 years²

The SIGMA CR sagittal geometry is built on the P.F.C.® femoral component that has been clinically successful since 1984.⁶

The SIGMA CR femoral component coronal geometry is designed to maintain contact area on articulating tibial insert thereby reducing contact stress on polyethylene insert and reducing the risk of bearing damage.⁶

The SIGMA CR fixation lugs on the femoral components are symmetric to all sizes allowing proper sizing of the femoral components in the anterior/posterior and assists gaining equal flexion and extension gaps.⁶

Clinically proven single radius deep conforming long trochlear groove articulating with a matching spherical radius domed patellar implant.⁶

The blending radii around the medial and lateral edges of the SIGMA CR like all SIGMA family femoral components have been designed to provide a smooth soft tissue transition reducing the incidence of soft tissue impingement.

Flexibility as a clinically proven Cruciate Retaining or Sacrificing construct.⁷

SIGMA RP
Cruciate Retaining and Sacrificing Knee System

SIGMA RP
Posterior Stabilised Knee System

The evolution of proven geometry, based on the outstanding clinical survivorship of SIGMA CS femoral component;⁶, while maintaining the sagittal, coronal and cam geometries of the SIGMA CS femoral component, the SIGMA RP PS implant system is designed with revised trochlear groove transition and smoother implant edges.⁹

The SIGMA primary PS femoral components feature a closed box design allowing attachment point for stems and sleeves extension when needed in complex primary surgeries.⁶

SIGMA PS femoral component features increased sagittal and coronal radii in transition from the anterior flange to the box designed to enhance patellar tracking during flexion whilst reducing the risk of soft tissue impingement and associated patellar crepitus.⁹

The SIGMA PS femoral component is available in lugged version to aid anterior/posterior placement and non-lugged version to accommodate distal and posterior femoral augments for complex primary surgeries.

SIGMA RP Stabilised (STB) inserts rotate around a central stem location, minimising rotational constraint and maintaining cam-post congruency with SIGMA PS femoral component dependent of tibial tray placement.
SIGMA RPF
Posterior Stabilised Flexion Knee System

The Clinically Proven SIGMA RPF femoral component features traditional SIGMA J-Curve up to 100 degrees of flexion, then an extended sagittal curve to increase posterior condyle contact area in deep knee flexion. This feature results in an increased posterior condyle cut which is necessary to extend the curve of the implant and allow increased contact area between the posterior condyles and tibial insert providing conforming contact in deep flexion up to 155 degrees. Conforming cam and post functions as third weight-bearing condyle to increase contact area and reduce stress in deep flexion.

The Polyethylene insert is fully supported by the tibial tray accommodating up to 20 degrees of internal/external rotation without anterior or medial/lateral overhang at 155 degrees of flexion. The rounded coronal articulating geometry is designed to resist lift-off up to 3 degrees, preventing edge loading and peak stress that can result in high flexion. The SIGMA RPF Polyethylene insert post is reinforced with a cobalt chrome pin to ensure transfer of the shear stress from the post of the insert through the cone into the tibial tray.

SIGMA CR150 RP Cruciate Retaining and Sacrificing High Function Knee System

The evolution of proven geometry, based on the outstanding clinical success of SIGMA CR femoral component; the SIGMA CR150 with RP bearing system delivers a High Performance construct that accommodates safe deep flexion up to 150 degrees in both PCL Retaining and Sacrificing constructs, to deliver a true high function, low wear construct.

Based on clinically proven SIGMA CR J-Curve geometry, the SIGMA CR150 femur provides the equivalent component articulation in gait up to 120 degrees, with proven component congruency and effective load transfer.

At 135 degrees of flexion the SIGMA CR150 knee system provides a 31% increase in contact area resulting in a 19% decrease in contact stress compared to SIGMA CR helping to protect the tibial insert and reduce polyethylene damage.

The clinically proven SIGMA J-Curve provides curve-on-curve contact while the extended posterior J-Curve, assures conforming contact through 150 degrees of flexion, reducing the risk of point contact stress.

SIGMA RP Curved (CVD) inserts rotate around a central stem location, minimising constraint and enabling congruency with SIGMA CR150 femoral component independent of tibial tray placement leading to maximum OR flexibility as a Cruciate Retaining or Sacrificing construct.
The rotational freedom provided by the mobile bearing tray diffuses shear and torsion forces reducing stress on implant fixation points and polyethylene wear.\(^6\)

The unidirectional motion pattern produced by DePuy’s rotating platform designs reduces wear by 94% when compared to a competitor fixed bearing device.\(^14\)

The unique GVF polyethylene provides wear resistance for mobile bearing’s unidirectional motion.\(^14\)

The 4 Mrad irradiation dose provides mild cross-linking, while the patented vacuum foil packaging promotes hydrogen recombination and can protect from oxidation ensuring excellent clinical performance.\(^7\)

Built on the proven geometry of the clinically proven SIGMA CR femoral component\(^2\) and SIGMA RP mobile bearing tray\(^8\) with POROCOAT at the implant bone interface.

The beaded technology of the POROCOAT coating provides an initial scratch-fit at the host bone implant interface, for implant stability and extensive bone tissue in growth.

SIGMA RP uncemented components use the 20 year clinically proven POROCOAT technology\(^13\) ensuring excellent initial and long-term fixation with a structure that is optimal to bone in growth.\(^17\)

SIGMA RP Curved (CVD) inserts rotate around a central stem location, minimising constraint and enabling congruency with SIGMA CR POROCOAT femoral component independent of tibial tray placement leading to maximum OR versatility as a Cruciate Retaining or Sacrificing implant.\(^7\)

POROCOAT uncemented coating is offered in the SIGMA CR, Mobile Bearing keeled and coned versions which could be utilised as a Cruciate Retaining or Sacrificing construct.\(^7\)
SIGMA RP
Mobile Bearing Tibial Tray

Symmetrical tibial tray design to provide the maximum bone coverage on the proximal tibial cut. With the tibial insert size matching the femoral component size the SIGMA RP tibial tray can be positioned for maximum coverage on the tibial plateau for each individual patient.

With the SIGMA RP cone in cone design, the insert is free to rotate in the tibial tray thus disconnecting the torsional forces and protecting the tibial fixation.

Highly polished cobalt chrome tibial tray allows the insert to articulate freely and reduces abrasive wear on the insert backside.

One central stem location to accommodate SIGMA RP CVD, STB and RPF tibial inserts available with keeled and coned versions in both cemented and uncemented POROCOAT fixation options.