

S U M M I T TM

T A P E R E D H I P S Y S T E M



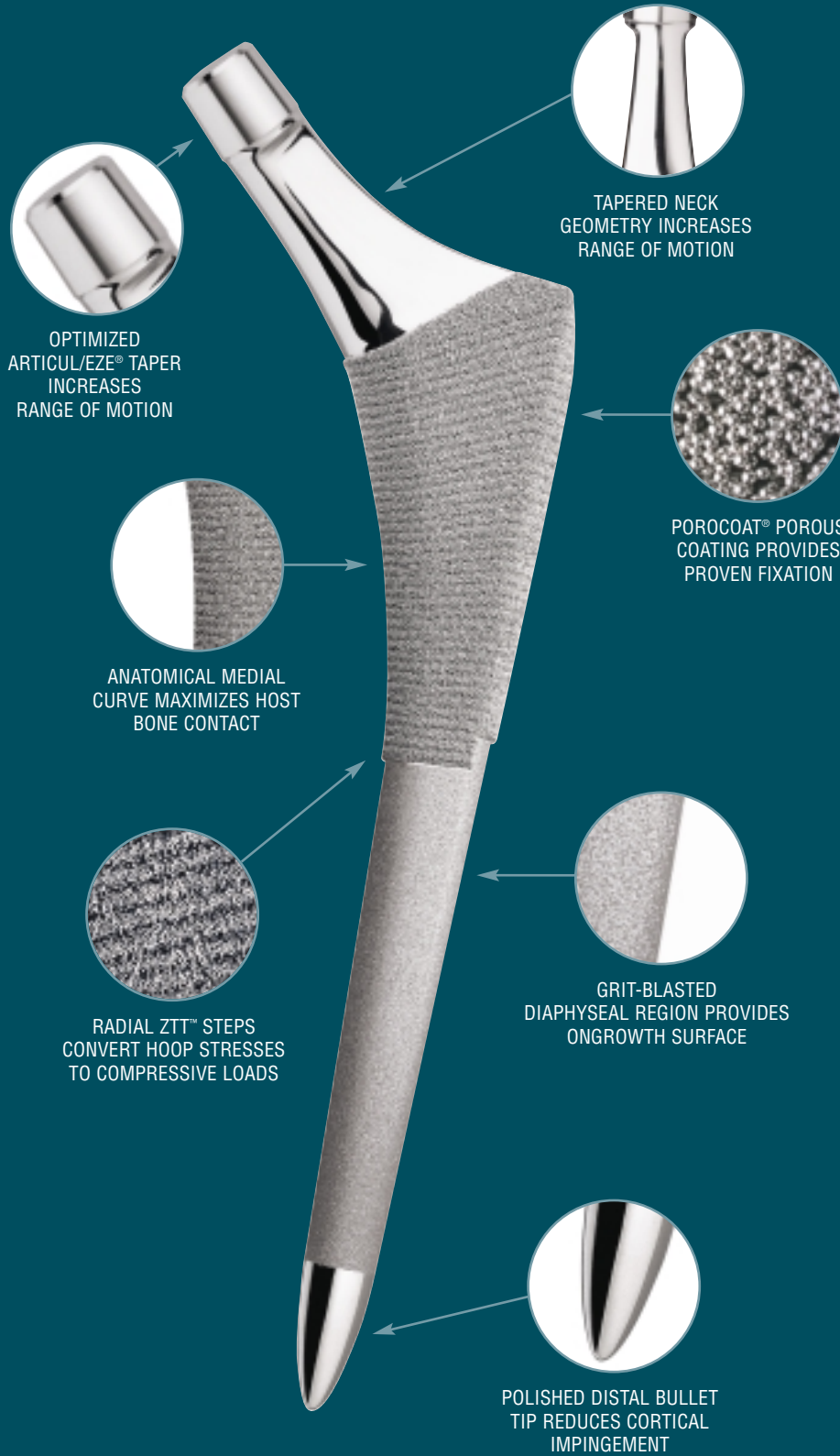
DESIGN RATIONALE

POROCOAT[®]
&
DUOFIX[™] HA

- ▶ TAPERED PHILOSOPHY
- ▶ PROVEN FIXATION
- ▶ BIOMECHANICAL EXCELLENCE

SUMMIT™ TAPERED HIP SYSTEM

Advancing the Successful Tapered Stem Philosophy



SUMMIT TAPERED HIP SYSTEM

Advancing the Successful Tapered Stem Philosophy

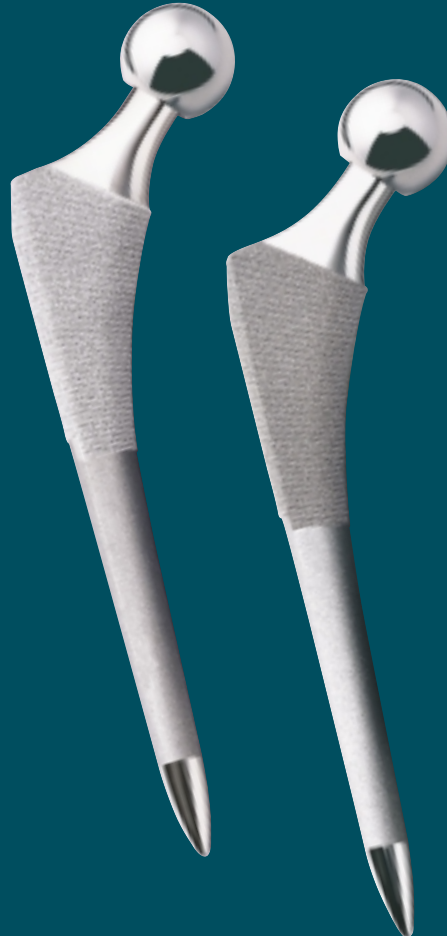
The 3-degree proximal to distal taper creates a stem geometry with proven stability.²

The medially rounded, laterally flared, proximal cross-sectional geometry has been refined to fit most femora and provide rotational stability.³

The length of the stem provides immediate three-point fixation while the conical contact created by the 3-degree taper results in proximal stress transfer.^{1,4}

Manufactured from high-strength, low-stiffness, forged titanium alloy, Summit stems are precision crafted from proven biocompatible materials.⁵

Titanium tapered stems have been clinically established in cementless total hip arthroplasty.¹ The Summit™ Tapered Hip System is an advanced version of the tapered stem geometry that draws from DePuy's heritage as the leader in cementless hip technology. The Summit implant has its foundation in critical anatomical analysis, modified by surgical experience and optimized by sound engineering principles. This, plus a commitment to research and development, state-of-the-art manufacturing methods and precision instrumentation, has been combined to advance tapered stem design with the Summit Tapered Hip System.



The DePuy Global CT database was combined with computer-assisted design to create the implant cross-sectional geometry within the 3-degree tapered envelope. In addition, CT database analysis and extensive radiograph reviews have resulted in a global proportional size range, which will fit most femora.³

PROVEN FIXATION

Only From the Leader in Cementless Technology

*F*ixation is the foundation of long-term clinical success. A biocompatible titanium alloy, combined with Porocoat Porous Coating and underlying radial ZTT macro texture, creates a surface that enhances initial stability and biologic ingrowth.^{6,7} The Summit stem is also available with DuoFix™ HA coating, which combines the clinically proven fixation of Porocoat Porous Coating with the potential benefits of hydroxyapatite (HA) coating.^{8,10}

Available since 1977, DePuy's Porocoat Porous Coating has been used with clinical success on numerous implant designs. Bead diameter, pore size and the mechanical integrity of Porocoat Porous Coating creates a proven platform for long-term fixation.^{8,9}

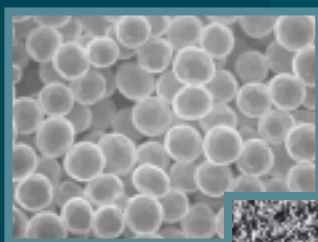
Porocoat Porous Coating provides initial scratch-fit at the host bone implant interface, maximizing implant stability and the opportunity for extensive tissue ingrowth.^{8,9}

Clinically established in 1983, ZTT macro texture converts hoop stresses to compressive loads.⁶

Circumferential proximal Porocoat Porous Coating, combined with proximal fit and fill, may provide a barrier that prevents osteolysis from gaining access to zones remote from the joint space.¹²

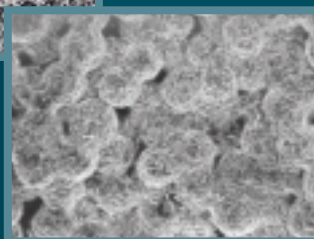
The grit-blasted distal region provides a roughened surface that enables the potential for bony ongrowth.¹³

The Porocoat Porous Coating process results in a strong bond of proud, randomly arranged beads that form interconnecting pores for ingrowth. Porocoat Porous Coating exhibits a pore size in the optimal range for bony ingrowth, resulting in a more efficient and uniform transmission of stresses.^{8,9}



Porocoat

The radial ZTT structure provides internal collars perpendicular to the trabeculae of the proximal femur. This transmits the vertical forces created by the tapered implant to the host bone in compression rather than in shear.³



DuoFix HA

DuoFix HA is the application of plasma-sprayed HA over Porocoat Porous Coating. The precision controlled, 35 micron application ensures the HA does not occlude the pores in Porocoat Porous Coating.³

BIOMECHANICAL EXCELLENCE

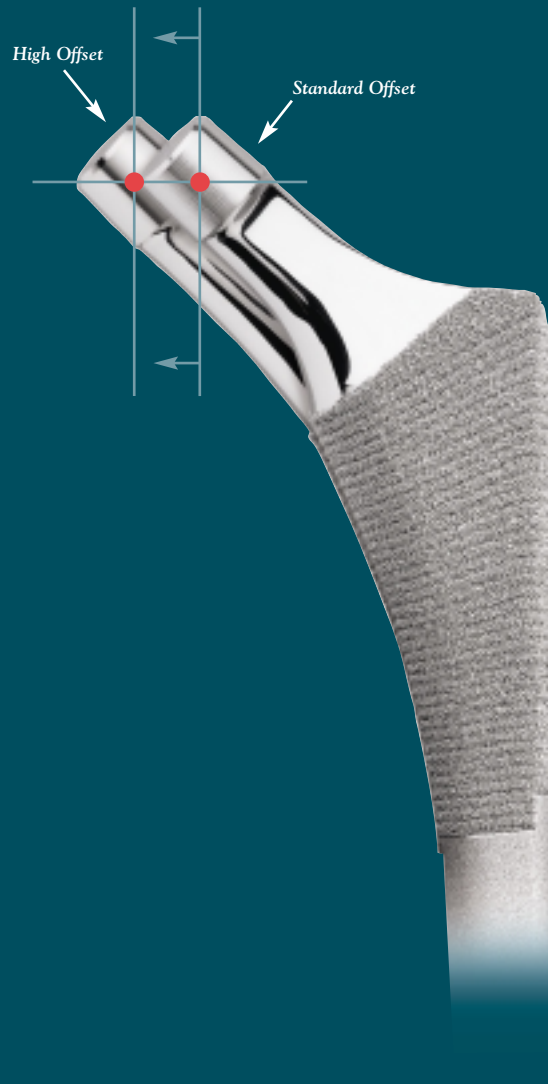
Dual Offsets for High-Function Biomechanical Restoration

Biomechanical restoration is critical to the functional outcome of hip arthroplasty and improves the longevity of the procedure.^{14, 15} Data from radiographic and prototype analysis resulted in a biomechanical architecture unmatched in restoring leg length, offset and range of motion for exceptionally high function.³

Progressive offset configuration enables optimal biomechanical restoration without increasing leg length.³

By increasing joint offset the surgeon can lower the joint reactive forces and minimize loosening, wear debris and dislocation.^{14, 16}

Biomechanical restoration is accomplished through dual offset options for each stem. The definitive offset can be determined intraoperatively with the use of trial neck segments.



- ◀ A 130-degree neck shaft angle, in both standard and high offset implants, enables femoral offset restoration and soft tissue tensioning without affecting leg length.
- ◀ The constant 130-degree neck shaft angle is achieved by shifting the neck geometry of the femoral component medially by a proportional amount.
- ◀ The high offset option directly lateralizes the stem 6-8 mm, depending on stem size.

BIOMECHANICAL EXCELLENCE

Exceptional Range
of Motion



▲ The Summit Tapered Hip System's optimized neck geometry offers maximum clearance with the acetabular component. The head/neck ratio of 3.85 with a 36 mm head results in exceptional range of motion and reduces the risk of dislocation secondary to prosthetic impingement.³



- ◀ The neck geometry has been optimized for increased range of motion. Enhancements include narrowed anterior-posterior neck flats and an optimized Articul/eze taper.³
- ◀ The clinically proven Articul/eze 12/14 taper has been optimized so that it is fully captured by all nonskirted Articul/eze heads, thus eliminating the creation of a false skirt due to trunnion protrusion.
- ◀ The polished neck is designed to reduce wear debris generation secondary to prosthetic impingement.^{3,4}



The Summit Porocoat stem combined with a 36 mm Ultamet™ Metal-on-Metal Articulation in the Pinnacle™ acetabular shell demonstrates exceptional range of motion.

Step One
CANAL
INITIATION



Step Two
CANAL
DEFINITION



Step Three
TAPERED
REAMING



Step Four
FEMORAL
BROACHING



Step Five
OFFSET
SELECTION
AND
HEAD TRIALING



Step Six
COMPONENT
INSERTION



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For more information about the Summit Tapered Hip System, visit our web site at www.jnjgateway.com/summithip.



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