DESIGNED

SOMA™

Designed to fit more patients, designed to fit your approach.
Total hip arthroplasty (THA) with the use of cementless tapered wedge femoral stems has achieved high success rates. The demand for tapered wedge hip systems has increased substantially year after year – both as the overall size of the THA market has expanded, and as orthopaedic surgeons have selected tapered wedge designs because of their simplicity and clinical results.

Changing Patient Demographics

The expansion of the THA market is only partly due to an aging global population. The average age of total hip replacement recipient has actually declined in recent years as younger and more active patients are considered appropriate for hip replacement. This shift in THA demographics to include a broader range of patients – younger, more active, and more demanding patients – has brought with it a number of challenges.

Surgeons are increasingly relying on a variety of several implant systems to provide care for patients. There exists the need for a single device that can be used across a broad range of patients, restoring the simplicity and accuracy that made tapered wedge stems popular and successful. Accolade II has been designed to address this changing patient population through a proprietary technology.

SOMA Technology

Over the past four decades, implant development has been relatively rudimentary in its approach. Traditionally, designs were driven by industry engineers collaborating with orthopaedic surgeons; taking knowledge and learnings from past implant designs and applying them to new devices. Implant shape and size was often dictated by taking physical measurements of a small sample of cadaveric bones using mechanical measuring devices or by X-ray measurements limited to two anatomical planes.

Stryker has invested in a new, proprietary technology that is changing the way implants are designed. We call it SOMA. SOMA is the unique Stryker Orthopaedics Modeling and Analytics system for the design of orthopaedic devices. At the heart of SOMA is a large database of high resolution CT scanned bones from which size, shape, density, and inner and outer cortical boundaries can be drawn. The database is comprised of bones from a diverse population of people that includes a range of age, gender, and ethnicity.

SOMA, a system that enables population-based design, has powerful functionality with which to design, model, and analyze novel orthopaedic devices. SOMA is utilized to optimize the fit of orthopaedic devices for a broad range of patients.

SOMA was fundamental in the design and development of the Accolade II Femoral Hip System.
The Morphometric Wedge

Tapered Wedge stems are based off the cemented Mueller stem of the 1970s. They feature a constant medial curvature throughout the entire size range and the stems grow laterally with size.\(^9,10\)

Accolade II is the first Morphometric Wedge design, an evolution of the tapered wedge stem. The stem is uniquely designed with a size specific medial curvature to fit a broad range of bone sizes and shapes found in today’s patient population\(^7,8\). Mechanical testing has shown this design facilitates initial press-fit stability\(^11\) and load transmission in the proximal region of the femur.

Accolade II femoral stems are intended for cementless use only and are intended for total and hemiarthroplasty procedures.

Clinical Advantage of Accolade II

Accolade II has been designed to fit more patients\(^7,8\) while accommodating a variety of surgical approaches.

Addressing Implant Fit

SOMA was employed to match the Accolade II femoral components to the sizes and shapes of a broad range of patient bone morphology\(^*,7,8\), leading to fit optimization of the stem\(^7,8\).

Addressing New Surgical Approaches

As surgeons look for innovative ways to provide patient care, new surgical approaches that may offer patient benefits, including faster recovery and less pain, are gaining in popularity\(^12\).

The length of Accolade II has been optimized to accommodate a variety of surgical approaches\(^11,13\). Additionally, the instrumentation platform includes advanced cutting tooth broaches that feature a polished tip to aid a surgeon when utilizing the direct anterior approach.

Driving Efficiency

As the volume of THA procedures grows, efficiency is becoming more important. Accolade II features a streamlined, 2 tray, broach-only instrument system. The instrument system helps promote O.R. efficiency for both surgeon and staff and reduces the number of instruments that must go through sterilization after every surgery.

Designed to fit more patients, designed to fit your approach

Accolade II represents the future of orthopaedic implants. Using the proprietary SOMA technology, population-based design has become a reality. This technology has been developed by Stryker to design its orthopaedic devices including hips, knees and trauma products. SOMA is getting bigger every day. New bones from a diverse demographic of people are continually being added to the database.

To address the changing demographics of THA patients, Accolade II has been designed to fit a broad range of bone sizes and shapes found in today’s patients\(^*,7,8\).
### References

3. Stryker Sales Data on File
4. Surgical Procedure Volumes, 2010. MRG
5. U.S. Department of Health and Human Services. Health, United States. 2010
9. US Patent 4,310,931
10. Taperloc Hip System Surgical Technique. 2002

A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

The information presented is intended to demonstrate the breadth of Stryker product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any Stryker product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Stryker representative if you have questions about the availability of Stryker products in your area.

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### Accolade II Implant Catalog Numbers

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