

Accolade
Introduction

Accolade System Concepts:

Accolade is a perfect balance of successful design and innovative technology. The implant integrates well established, clinically successful features with the highest standards of technology to achieve a new benchmark for surgical efficiency and clinical performance.

Accolade™ implants are based on a tapered wedge geometry that has demonstrated outstanding clinical success. It incorporates the highest standards of science and technology, including the proprietary TMZF™ alloy as well as the clinically successful PureFix™ HA coating.

Other features and benefits include:

V40™ Femoral Head

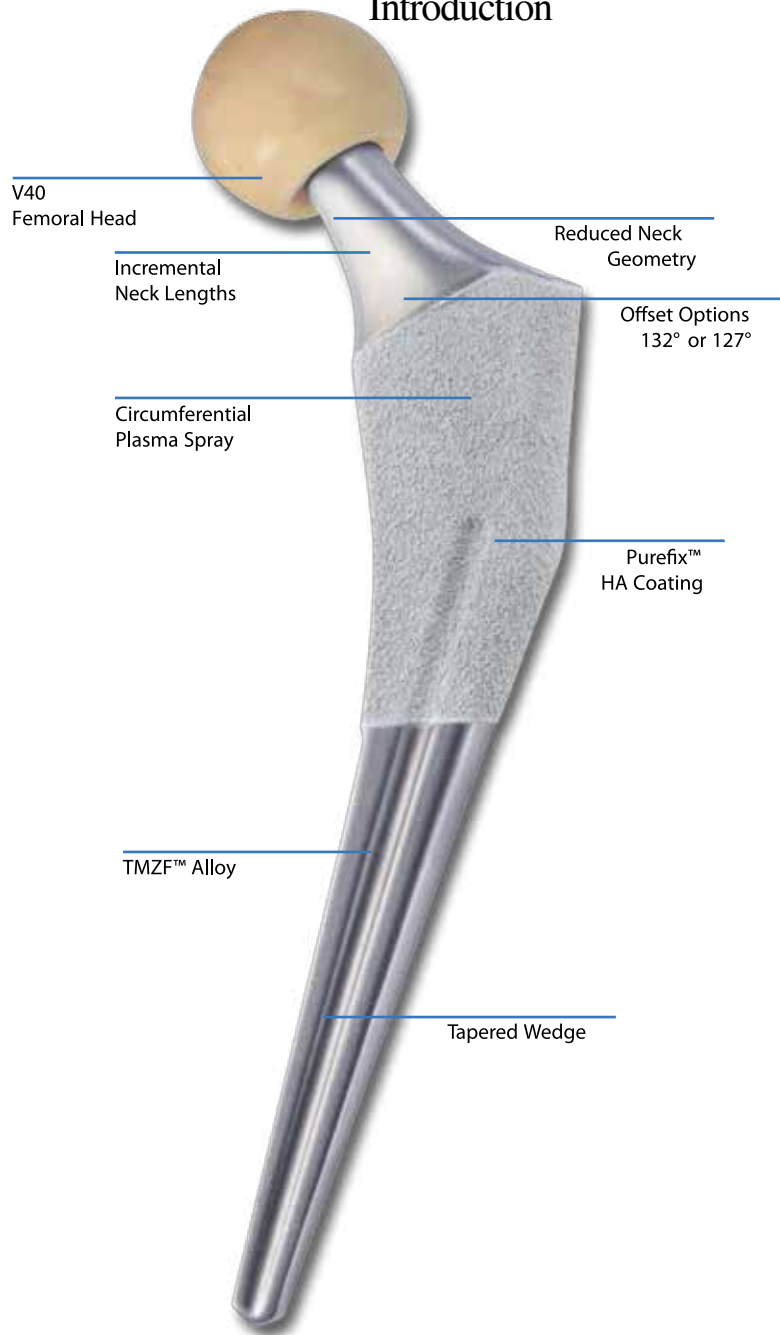
V40™ Femoral Heads offer a large range of offsets and neck lengths and are available in both forged Vitallium™ and Ceramic.

Reduced Neck Geometry

The TMZF Alloy provides the opportunity to reduce the neck geometry thus optimizing the available range of motion while maintaining strength.

Incremental Neck Lengths

Relative to body geometry, neck lengths grow proportionally in size to accommodate a wide patient population using a standard femoral head.



Offset Options 132° or 127°

Standard and extended offset options allow the surgeons to enhance soft tissue tensioning without significantly affecting leg length. The goal is to enhance patient quality of life by improving joint stability and range of motion.

Circumferential Plasma Spray

A circumferential plasma spray surface over the proximal body assists with mechanical engagement in bone, and provides an optimal interface for application of PureFix HA coating.

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Design Rationale

Anatomic Offsets

Stryker® understands that femoral neck angles vary from patient to patient. In order to address this anatomic variance, and accommodate a wider coverage of possible head centers, the Accolade implants offer two neck angle options (132° and 127°).

Stryker® has 20 years of successful clinical history with the standard neck 132° angle and more than 7 years of clinical success with the extended 127° offset design.

There are several methods utilized by competitors for creating additional offset with a femoral component. A strategy used by a number of competitors in the market is to medially shift a 135° neck for additional offset.

While this method does create additional offset, the high 135° neck angle and the constant neck may not be suitable for that patient. Stryker believe that changing the neck angle options, within the same stem geometry may provide the surgeon with a better change of replicating the patients anatomy.

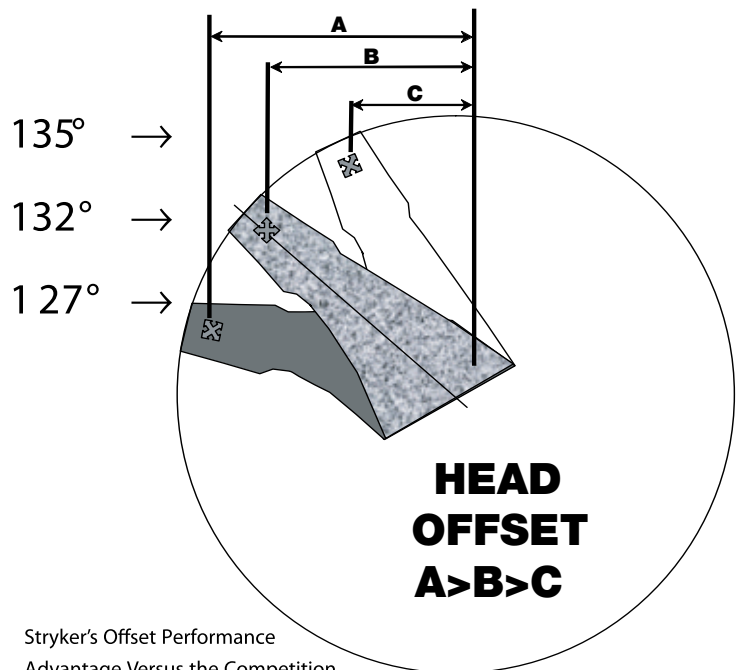
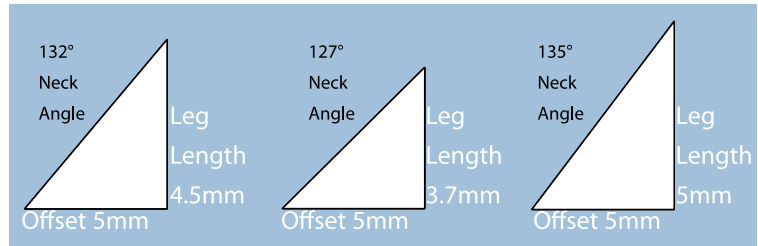
Every 1° decrease in neck angle= 1° extra ROM in flexion and internal rotation*



Taperloc 135° Medial Shift



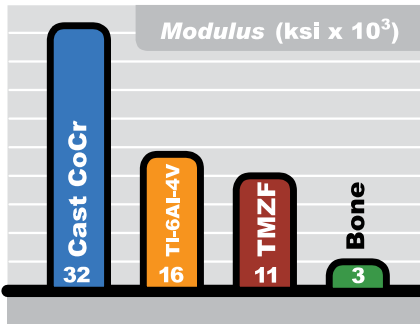
Accolade Implants are available in two neck angles -132° & 127°



Accolade
Material & Technology

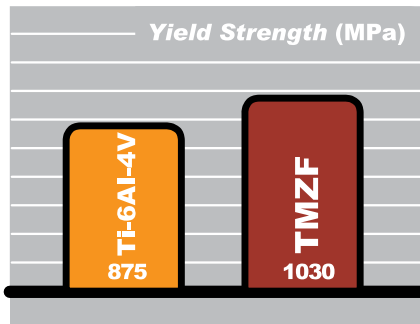
TMZF™

TMZF alloy is an advanced titanium alloy developed in 1986 through Stryker’s innovative research in orthopaedic metallurgy. With a unique composition of titanium, molybdenum, zirconium, and iron, it achieves a superior combination of flexibility, strength, and notch resistance when compared to other alloys used in orthopaedic implants, including Ti-6Al-4V. **TMZF™ alloy is specifically tailored for high performance in orthopaedic applications, optimizing the material properties that are key elements in the comfort of the patients and long-term clinical success of the implant.**



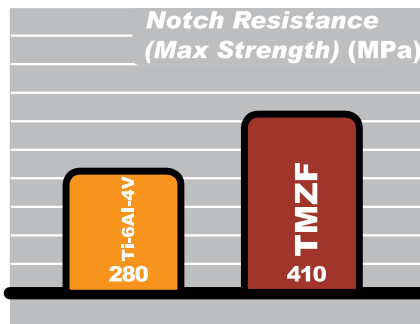
Increased Flexibility

The modulus of implant materials is a core factor in adequate transfer of stress to the surrounding bone. Decreasing material modulus, thereby increasing elasticity, enhances implants-to-bone stress loading and can reduce bone atrophy due to stress shielding. TMZF™ alloy, when compared to other alloys used in orthopaedics, has a modulus closer to that of bone, improving stress transfer and potentially decreasing thigh pain in patients which results from implant tip contact with the cortices.



Greater Strength

Material elasticity is only useful when combined with suitable material strength. TMZF alloy offers increased implant flexibility without sacrificing component strength. In fact, TMZF alloy has up to a 20% higher yield strength than Ti-6Al-4V alloy.



Improved Notch Resistance

Improved notch resistance provides better tolerance to surface stress concentrations caused by the rigorous biomechanical forces experienced by an implant over time. Results for notched samples show that TMZF™ alloy is far superior to Ti-6Al-4V alloy, with a 47% higher fatigue strength. This notch resistance, coupled with improved wear and abrasion resistance, builds a better foundation for implant longevity.



Helpful Hint
TMZF™ does not contain controversial elements such as aluminium, vanadium or nickel.

Stryker Research and Development Technical Monograph: TMZF™ A Beta Titanium Alloy for Orthopaedic Implant. 2/01.

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Compatibility Chart

Accolade TMZF Femoral Stems

Accolade TMZF Cementless Femoral Stem (127° Neck Angle)				
Catalog Number	Stem Size	Stem Length (from Medial Calcar)	Neck Length	Offset (+0mm)
6021-0030	0	86mm	30mm	37mm
6021-0130	1	110mm	30mm	38mm
6021-0230	2	115mm	30mm	39mm
6021-2530	2.5	118mm	30mm	40mm
6021-0335	3	120mm	35mm	43mm
6021-3535	3.5	124mm	35mm	43mm
6021-0435	4	125mm	35mm	44mm
6021-4535	4.5	129mm	35mm	45mm
6021-0537	5	130mm	37mm	48mm
6021-5537	5.5	133mm	37mm	49mm
6021-0637	6	135mm	37mm	49mm
6021-0740	7	140mm	40mm	53mm
6021-0840	8	145mm	40mm	54mm

Accolade TMZF Cementless Femoral Stem (132° Neck Angle)				
Catalog Number	Stem Size	Stem Length (from Medial Calcar)	Neck Length	Offset (+0mm)
6020-0030	0	86mm	30mm	33mm
6020-0130	1	110mm	30mm	34mm
6020-0230	2	115mm	30mm	35mm
6020-2530	2.5	118mm	30mm	36mm
6020-0335	3	120mm	35mm	39mm
6020-3535	3.5	124mm	35mm	39mm
6020-0435	4	125mm	35mm	40mm
6020-4535	4.5	129mm	35mm	41mm
6020-0537	5	130mm	37mm	44mm
6020-5537	5.5	133mm	37mm	45mm
6020-0637	6	135mm	37mm	45mm
6020-0740	7	140mm	40mm	48mm
6020-0840	8	145mm	40mm	49mm

V40 Head

L-Fit

LFIT Technology

Improved Wear Performance with LFIT™ Femoral Head Technology

Low Friction Ion Treatment (LFIT) is a bombardment of nitrogen ions onto a CoCr surface, which enhances material properties of the metal, in turn reducing frictional forces against UHMWPE surfaces.

LFIT:

- Improves wettability
- Reduces coefficient of friction

Wettable materials are important in total hip arthroplasty

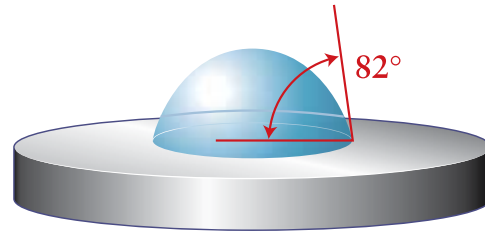
In an anatomic hip joint, the femoral head is cushioned by cartilage, which seeps lubrication into the joint. When the joint is diseased or removed, the natural lubrication surface is also removed, and the femoral head and acetabular insert contact each other. LFIT™ femoral heads are designed to increase lubrication.

Clinical Experience with LFIT™

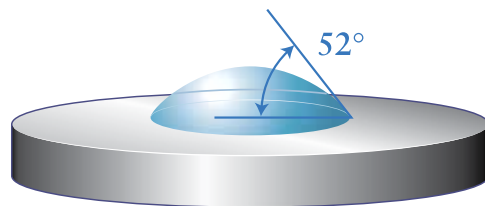
The LFIT heads demonstrated a 28% reduction in linear wear over CoCr heads in 110 patients at minimum 3-year follow up. This data coincides with hip simulation testing.

“These results are encouraging.

Nitrogen ion implanted femoral heads may be an effective way to decrease UHMWPE wear and increase implant longevity in THA.



CoCr



CoCr LFIT™

Wettable materials have a lower boundary angle between a liquid and a solid.



UHMWPE Linear Wear



LFIT™ heads demonstrated a 28% reduction in linear wear over CoCr heads