



Femoral Resurfacing System

BIOMET
ORTHOPEDICS, INC.

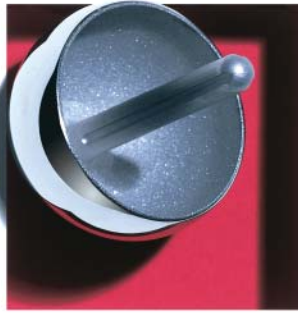
A bone preserving solution... to help recapture a patient's way of life.

Biomet's ReCap™ Femoral Resurfacing System offers:

- **Time-buying “bridge” between hemi and total hip arthroplasty**—for the patient suffering from early- to mid-stage avascular necrosis.
- **Bone-sparing alternative to total hip arthroplasty**—engineered to duplicate normal biomechanics and stress transfer.
- **1mm head sizing**—for precise acetabular/femoral head matching.
- **Interlok® bead blast surface**—a clinically proven surface for cementing, providing enhanced fixation.
- **As cast, high carbon, cobalt chrome resurfacing heads**—optimally polished to meet Biomet's clinically proven M²a™ metal-on-metal tolerances for optimum tribology and minimal cartilage wear.
- **Titanium porous plasma spray (PPS™) coating option**—provides unmatched rotational stability and a proven in-growth surface for press-fit application.
- **No polyethylene**—eliminating the potential effects associated with polyethylene wear debris.
- **Fluted, cylindrical stem design**—flutes provide rotational stability. Non-tapered stem encourages uniform stress transfer across the femoral head, not through the femoral stem.



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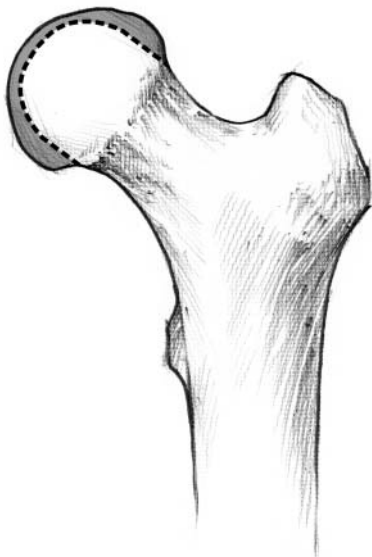


The ReCap™ Femoral Resurfacing System is designed to provide a time-buying alternative to traditional hemi and total hip arthroplasty for the patient suffering from early- to mid-stage avascular necrosis. The ReCap™ Femoral Resurfacing System offers several unique advantages over traditional hemi and total hip arthroplasty procedures:

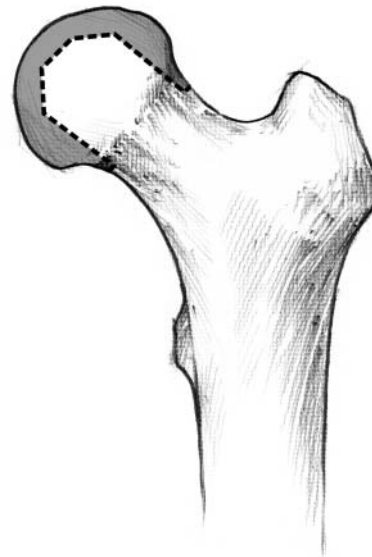
- **Large resurfacing heads** (38–60mm, available in 1mm increments)—more accurately replicate a patient's anatomy and provide increased range of motion and stability over a traditional 28mm femoral hip replacement.
- **Resurfacing heads are highly polished to M²a™ metal-on-metal tolerances**—providing a smooth bearing surface, reducing wear and tear on the acetabular cartilage.
- **Bone preserving**—by simply resurfacing the femoral head with a thin layer of highly polished metal, the femoral canal is untouched and conversion to a primary femoral hip is as simple as resecting the femoral neck.

Bone Conserving Design

The ReCap™ Femoral Resurfacing System is unique among femoral head resurfacing devices. The implant design and surgical technique minimize the amount of resected bone and provide intraoperative versatility. Competitive designs remove more bone circumferentially from the femoral head, which can increase the chance of notching the femoral neck, one of the reasons for component failure. The ReCap™ Femoral Resurfacing System utilizes anatomical geometric limits to define a technique that removes only the bone necessary to apply a thin, yet durable, cobalt chrome, femoral head resurfacing component over the articulating surface.



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Biomet's ReCap™ Femoral Resurfacing System is non-invasive to the femoral canal, reducing intraoperative blood loss, and leaving a virgin femoral canal should future total hip arthroplasty become necessary.

Revision = Primary

Should revision to total hip arthroplasty ever become necessary, revision to a total hip prosthesis may be as simple as preparing for, and implanting, primary hip implants. The femoral neck is resected and a traditional “primary” hip stem is put in place.

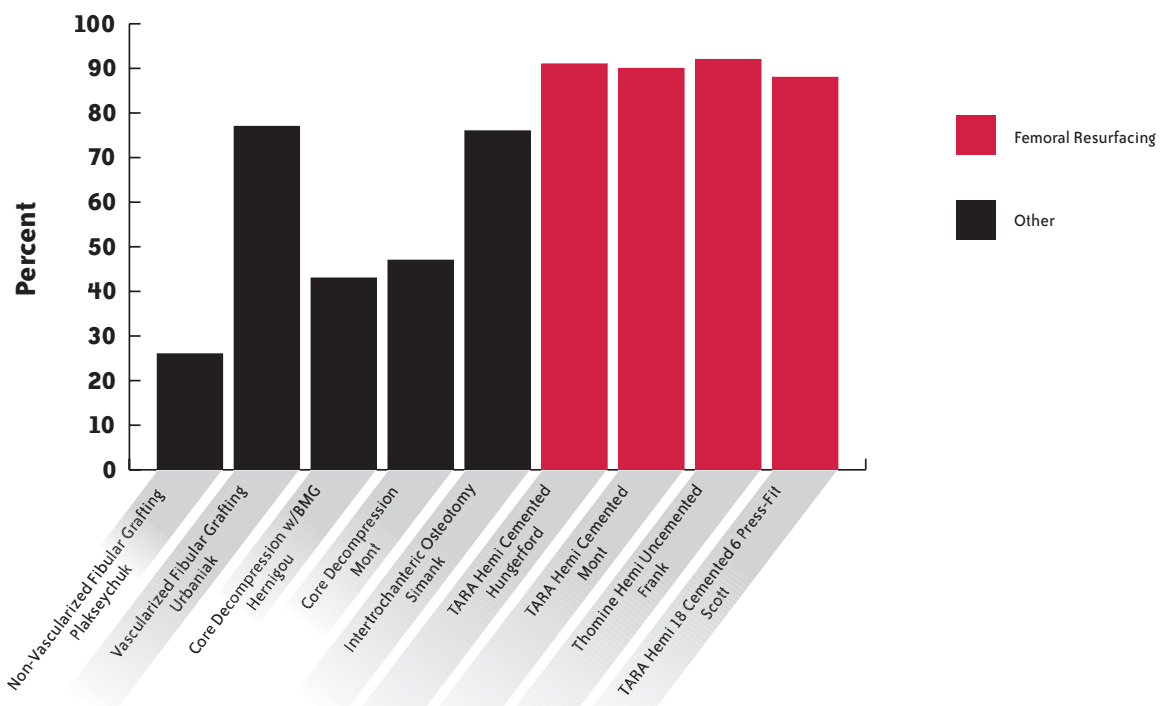
For many patients affected with early, to mid-stage avascular necrosis, femoral resurfacing can serve as a time-buying alternative to traditional hemi and total hip arthroplasty.



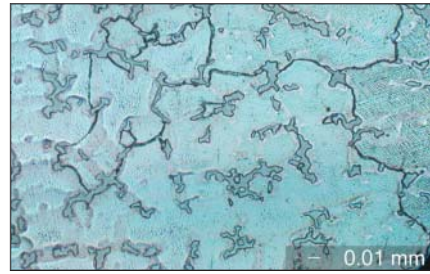
Survivorship Analysis

Femoral resurfacing has seen several designs over the past 20 years. Many consider femoral resurfacing to be a better alternative to other forms of treatment for early- to mid-stage avascular necrosis, based on survivorship studies at 5–10 years.

5–10 Year Survivorship Studies^{2–10}



Survivorship analysis of previous resurfacing designs demonstrate promising results when compared to core decompression, fibular grafting, and intertrochanteric osteotomy, averaging 90% survivorship at five years compared to 54% for other treatment modalities.



All ReCap™ Femoral Resurfacing components possess a high carbon, high carbide (> 20% carbide content) microstructure with “blocky” carbides resulting from a proprietary “as cast” argon shroud rollover processed raw material.

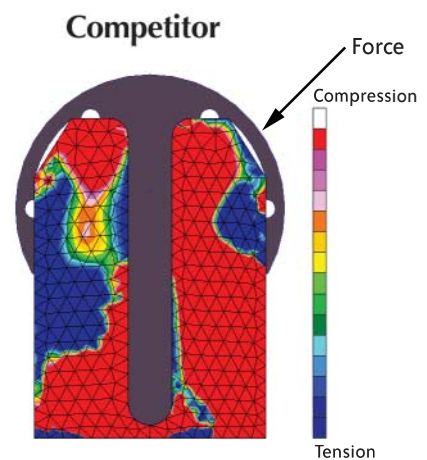
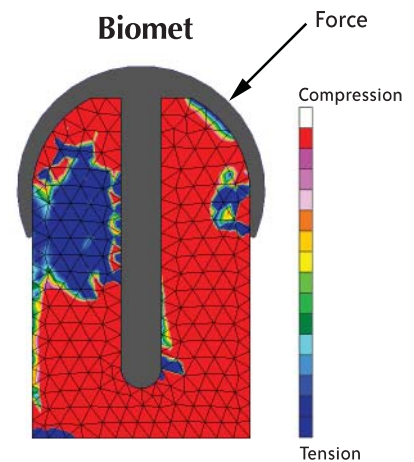
Metal Properties

Even though the ReCap™ femoral components are indicated for hemi arthroplasty, they are still held to M²a™ metal-on-metal tolerances in an effort to reduce wear and tear on the acetabular cartilage.

- Sphericity is carefully maintained at less than 5 microns deviation
- Surface roughness (Ra) is less than .01 microns
- Radial clearance is held to 75 to 150 microns

Normal Stress Transfer

The ReCap™ femoral resurfacing implants are designed to transfer more normal stresses to the proximal femur than competitive resurfacing designs currently on the market and may be expected to prevent proximal bone loss caused by stress shielding.¹



ReCap™, Interlok®, M²a™ and PPS™ are trademarks of Biomet Manufacturing Corp.

References

- ¹ Kwok, D.C. and Cruess, R.L.: “A retrospective study of Moore and Thompson hemiarthroplasty.” *Clinical Orthopedics*, 169: 179-185, 1982.
- ² Plakseychuk; *et al.*: “Vascularized Compared with Nonvascularized Fibular Grafting for the Treatment of Osteonecrosis of the Femoral Head.” *JBJS*, Vol.85-A, No.4, April 2003.
- ³ Urbaniak; *et al.*: “Treatment of Osteonecrosis of the Femoral Head with Free Vascularized Fibular Grafting.” *JBJS*, Vol. 77-A, No. 5, May 1995.
- ⁴ Hernigou; *et al.*: “Treatment of Osteonecrosis with Autologous Bone Marrow Grafting.” *Clin. Orthop.* (405):14–23, December 2002.
- ⁵ Mont; *et al.*: “Core Decompression Versus Non-Operative Management for Osteonecrosis of the Hip.” *CORR*, No. 324, pp.169–178, March 1996.
- ⁶ Simank; *et al.*: “Comparison of Results of Core Decompression and Intertrochanteric Osteotomy for Nontraumatic Osteonecrosis of the Femoral Head Using Cox Regression and Survivorship Analysis.” *JOA*, Vol. 16, No. 6, 2001.
- ⁷ Hungerford; *et al.*: “Surface Replacement Hemiarthroplasty for the Treatment of Osteonecrosis of the Femoral Head.” *JBJS*, Vol. 80-A, No. 11, November 1998.
- ⁸ Mont; *et al.*: “Outcomes of Limited Femoral Resurfacing Arthroplasty Compared with Total Hip Arthroplasty for Osteonecrosis of the Femoral Head.” *JOA*, Vol. 16, No. 8, Suppl. 1, December 2001.
- ⁹ Frank; *et al.*: “Uncemented Surface Replacement for Osteonecrosis of the Femoral Head.” *Acta Orthop Scand*, Vol. 60, No. 4, pp. 425–429, 1989.
- ¹⁰ Scott; *et al.*: “Use of TARA Hemiarthroplasty in Advanced Osteonecrosis.” *JOA*, Vol. 2, No. 3, September 1987.

The non-chamfered, spherical interior geometry of the ReCap™ Femoral Resurfacing Component demonstrates a normal distribution of stresses throughout the proximal femur as compared to the competitor. Note the even stresses throughout the spherical shaping of the femur with the Biomet resurfacing implant compared to the disrupted stresses concentrated around the chamfer peaks with the competitive femoral shaping, which can lead to breakdown of the cement mantle.

Ordering Information

Implants

ReCap™ Resurfacing Heads		
Cemented Part No.	Press-Fit Part No.	Size
US157238	US157138	38mm
US157239	US157139	39mm
US157240	US157140	40mm
US157241	US157141	41mm
US157242	US157142	42mm
US157243	US157143	43mm
US157244	US157144	44mm
US157245	US157145	45mm
US157246	US157146	46mm
US157247	US157147	47mm
US157248	US157148	48mm
US157249	US157149	49mm
US157250	US157150	50mm
US157251	US157151	51mm
US157252	US157152	52mm
US157253	US157153	53mm
US157254	US157154	54mm
US157255	US157155	55mm
US157256	US157156	56mm
US157257	US157157	57mm
US157258	US157158	58mm
US157259	US157159	59mm
US157260	US157160	60mm

Instrumentation

Head Sizing Gauges

31-500038	38mm
31-500039	39mm
31-500040	40mm
31-500041	41mm
31-500042	42mm
31-500043	43mm
31-500044	44mm
31-500045	45mm
31-500046	46mm
31-500047	47mm
31-500048	48mm
31-500049	49mm
31-500050	50mm
31-500051	51mm
31-500052	52mm
31-500053	53mm
31-500054	54mm
31-500055	55mm
31-500056	56mm
31-500057	57mm
31-500058	58mm
31-500059	59mm
31-500060	60mm

Neck Sizing Gauges

31-500238	38–39mm
31-500240	40–41mm
31-500242	42–43mm
31-500244	44–45mm
31-500246	46–47mm
31-500248	48–49mm
31-500250	50–51mm
31-500252	52–53mm
31-500254	54–55mm
31-500256	56–57mm
31-500258	58–59mm
31-500260	60mm

Neck Alignment Guides

31-500330	Small
31-500331	Medium
31-500332	Large

Cannulated Instruments

31-500401	Stem Drill
31-500402	Sleeve
31-500499	-3.0mm Guide Rod
31-500500	Standard Guide Rod
31-500501	+1.5mm Guide Rod
31-500502	+3.0mm Guide Rod
31-500503	+4.5mm Guide Rod
31-500504	+6.0mm Guide Rod

Guide Rod Removal Hook

US32-401111

Steinmann Pins (pkg/6)

27-361678 1/8" x 9"

Head Impactor

31-476948

Cylindrical Reamers

31-500638	38/39mm
31-500640	40/41mm
31-500642	42/43mm
31-500644	44/45mm
31-500646	46/47mm
31-500648	48/49mm
31-500650	50/51mm
31-500652	52/53mm
31-500654	54/55mm
31-500656	56/57mm
31-500658	58/59mm
31-500660	60mm

Spherical Reamers

31-500738	38/39mm
31-500740	40/41mm
31-500742	42/43mm
31-500744	44/45mm
31-500746	46/47mm
31-500748	48/49mm
31-500750	50/51mm
31-500752	52/53mm
31-500754	54/55mm
31-500756	56/57mm
31-500758	58/59mm
31-500760	60mm

Femoral Head Trials

31-500938	38mm
31-500939	39mm
31-500940	40mm
31-500941	41mm
31-500942	42mm
31-500943	43mm
31-500944	44mm
31-500945	45mm
31-500946	46mm
31-500947	47mm
31-500948	48mm
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31-500950	50mm
31-500951	51mm
31-500952	52mm
31-500953	53mm
31-500954	54mm
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31-500956	56mm
31-500957	57mm
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