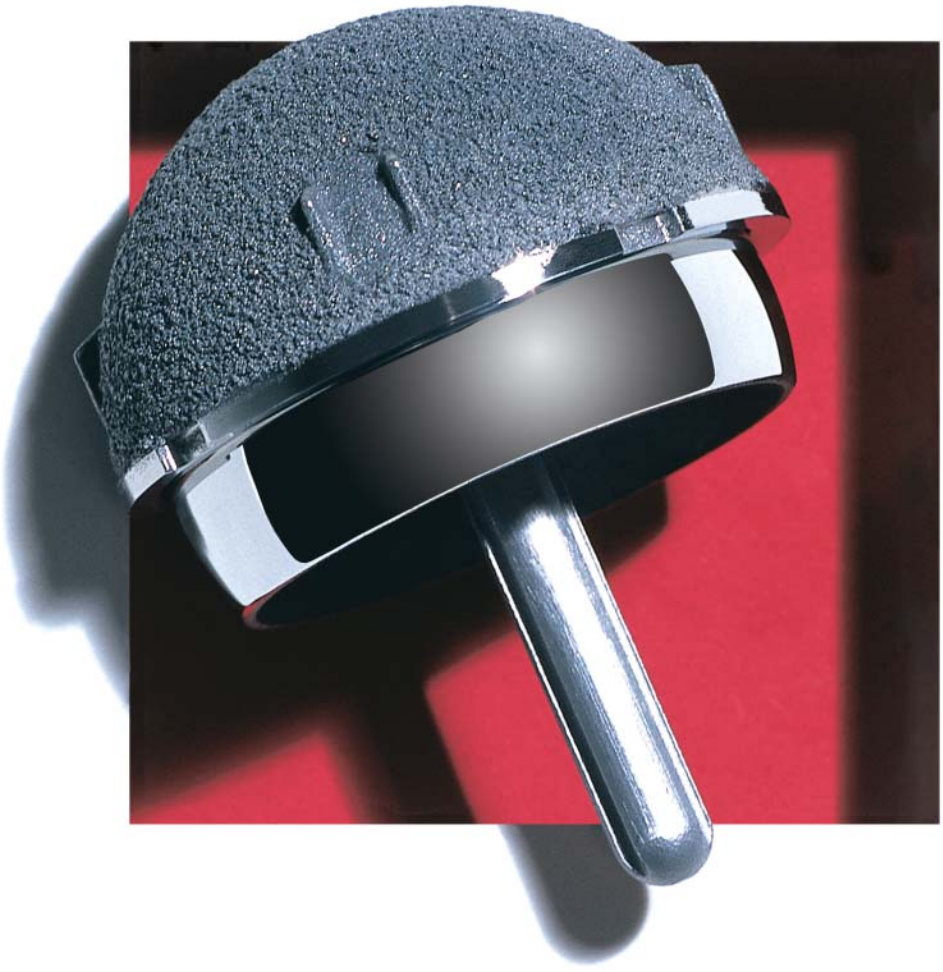
ReCap™

Total Resurfacing System

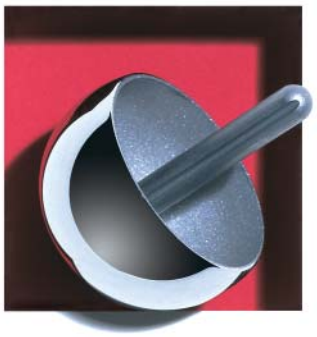
BIOMET INTERNATIONAL

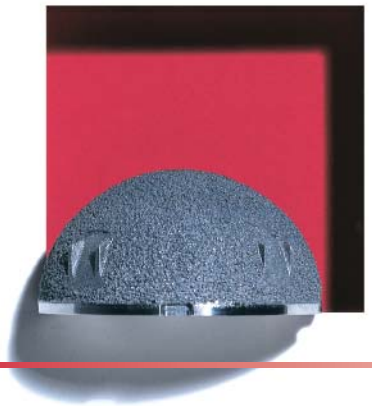
A bone preserving solution... to help recapture a patient's way of life.

Biomet's ReCap™ Total Resurfacing System offers:



- **Bone-sparing alternative to total hip arthroplasty**—engineered to duplicate normal biomechanics and stress transfer.
- **2mm cup and head sizing**—provides twice the sizing options of competitive designs, and allows precise acetabulum/femoral head matching.
- **Interlok® bead blast surface**—a clinically proven surface for cementing, providing enhanced fixation.
- **Titanium porous plasma spray (PPS™) coated cups (optional on the resurfacing heads)**—provides unmatched rotational stability and a proven in-growth surface for press-fit applications.
- **HA option for titanium plasma sprayed cups and resurfacing heads**—all the benefits of Biomet's proven porous coating with the added in-growth advantage of hydroxyappatite.
- **As cast, high carbon, cobalt chrome cups and resurfacing heads**—optimally polished to meet Biomet's clinically proven $M^2a^{™}$ metal-on-metal tolerances for optimum tribology and minimal wear.
- **No polyethylene**—eliminating the potential affects 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.



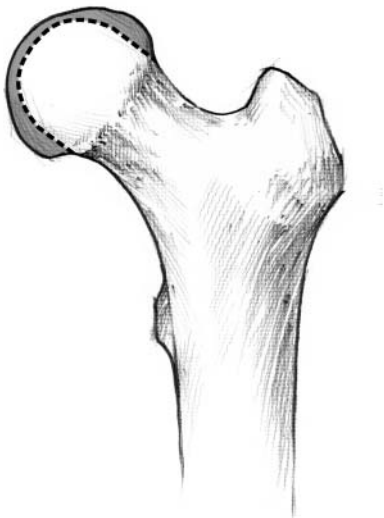


The ReCap™ Total Resurfacing System is designed to provide a bone preserving alternative to total hip arthroplasty for the younger, more active patient. The ReCap™ Total Resurfacing System offers several unique advantages over traditional hip replacement procedures:

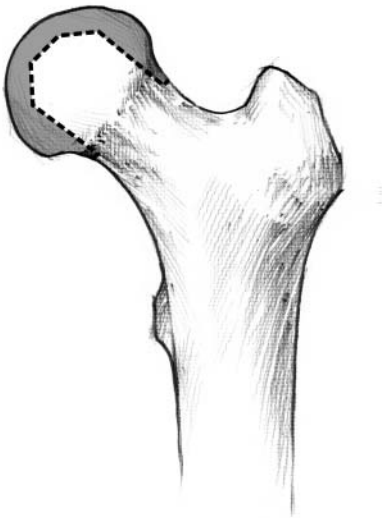
- **Large resurfacing heads** (38–60mm, 2mm increments)—more accurately replicate a patient's anatomy and provide increased range of motion and stability over a traditional 28mm total hip replacement.
- **Thin hemispherical cups** (6mm constant thickness, 44–66mm, 2mm increments)—allows each cup to mate with a 6mm smaller ReCap™ femoral component, preserving acetabular and femoral bone stock.
- **Metal-on-metal bearing surfaces**—eliminate the need for polyethylene and greatly reduce the possibility of osteolysis.
- **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 total hip (when needed) is as simple as resecting the femoral neck.

Bone Conserving Design

The ReCap™ Total 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™ Total 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.



The ReCap™ Femoral Resurfacing System removes only the bone necessary to apply a thin, yet durable, cobalt chrome, femoral head resurfacing component over the articulating surface.



Competitive designs remove more bone circumferentially from the femoral head, which can increase the chance of notching the femoral neck.

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

Revision = Primary

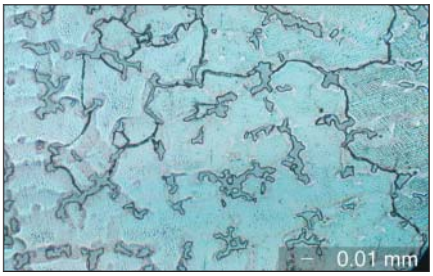
Should revision to a total hip arthroplasty ever become necessary, revision to a total hip prosthesis may be as simple as preparing for, and implanting primary hip implants. An M²a-Magnum™ head, designed to fit Biomet's femoral stems, may then be used to mate with the intact acetabular component.

For many younger, more active patients, metal-on-metal resurfacing can be a low wear alternative to total hip arthroplasty.

User-Friendly Instrumentation

Instrumentation is consolidated and color coded to promote efficiency during surgery as well as make it easier to identify the center of the femoral neck.

The ReCap™ acetabular cup is not cleared for use in the United States.



All ReCap™ M²a™ resurfacing components possess a high carbon, high carbide (> 20% carbide content) microstructure with "blocky" carbides resulting from "as cast" vacuum processed raw material.

Wear Properties

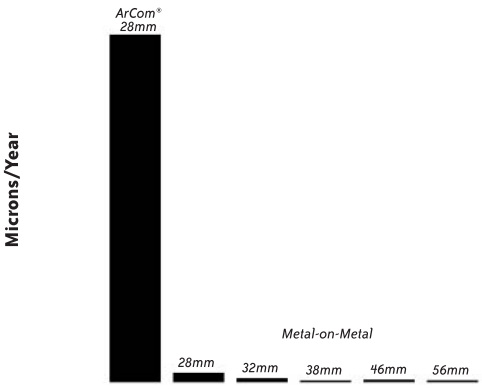
Biomet's extensive experience with metal-on-metal manufacturing allows for optimal wear performance for the high demand patient. All ReCap™ M²a™ metal-on-metal resurfacing components are precisely manufactured from as cast, high carbon, high carbide cobalt chrome (not hipped or heat treated).

Extensive wear testing show volumetric wear rates for the ReCap™ Total Resurfacing System to be 99% less than that of traditional metal-on-polyethylene total hip arthroplasty.[1,2]

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

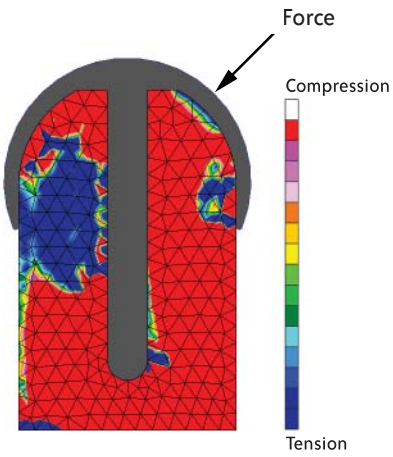
Normal Stress Transfer

The ReCap™ femoral resurfacing implant is 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.[3]



Wear Rates[1,2]

Metal-on-metal wear studies demonstrate a 97% decrease in volumetric wear below the industry's gold standard set by ArCom® polyethylene with no significant increase in wear with larger heads.



Finite Element Stress Analysis

The non-chamfered, spherical interior geometry of the ReCap™ femoral resurfacing component demonstrates a normal distribution of stresses throughout the proximal femur as seen above.

1 Head, W.; *et al.*: "Comparison of Polyethylene Wear in Machined Versus Molded Polyethylene Liners in Ringloc Acetabular Cups." Texas Center for Joint Replacement, Plano, TX.

2 Data on file at Biomet, Inc.

3 Kwok, D.C. and Cruess, R.L.: A retrospective study of Moore and Thompson hemiarthroplasty: *Clinical Orthopedics*, 169: 179-185, 1982.

Ordering Information

Implants

ReCap™ Resurfacing Heads			
Cemented Part No.	Press-Fit Part No.	Press-Fit w/HA Part No.	Size
157238	157138	157338	38mm
157240	157140	157340	40mm
157242	157142	157342	42mm
157244	157144	157344	44mm
157246	157146	157346	46mm
157248	157148	157348	48mm
157250	157150	157350	50mm
157252	157152	157352	52mm
157254	157154	157354	54mm
157256	157156	157356	56mm
157258	157158	157358	58mm
157260	157160	157360	60mm

ReCap™ M-M Acetabular Cups		
Press-Fit Part No.	Press-Fit w/HA Part No.	Size
157844	157944	44mm
157846	157946	46mm
157848	157948	48mm
157850	157950	50mm
157852	157952	52mm
157854	157954	54mm
157856	157956	56mm
157858	157958	58mm
157860	157960	60mm
157862	157962	62mm
157864	157964	64mm
157866	157966	66mm

Instrumentation

Head Sizing Gauges

31-500038	38mm
31-500040	40mm
31-500042	42mm
31-500044	44mm
31-500046	46mm
31-500048	48mm
31-500050	50mm
31-500052	52mm
31-500054	54mm
31-500056	56mm
31-500058	58mm
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	38–44mm
31-500331	46–52mm
31-500332	54–66mm

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

32-401111

Steinmann Pins (pkg/6)

27-361678 1/8" x 9"

Head Impactor

31-476948

Cylindrical Reamers

31-500638	38mm
31-500640	40mm
31-500642	42mm
31-500644	44mm
31-500646	46mm
31-500648	48mm
31-500650	50mm
31-500652	52mm
31-500654	54mm
31-500656	56mm
31-500658	58mm
31-500660	60mm

Spherical Reamers

31-500738	38mm
31-500740	40mm
31-500742	42mm
31-500744	44mm
31-500746	46mm
31-500748	48mm
31-500750	50mm
31-500752	52mm
31-500754	54mm
31-500756	56mm
31-500758	58mm
31-500760	60mm

Femoral Head Trials

31-500938	38mm
31-500940	40mm
31-500942	42mm
31-500944	44mm
31-500946	46mm
31-500948	48mm
31-500950	50mm
31-500952	52mm
31-500954	54mm
31-500956	56mm
31-500958	58mm
31-500960	60mm

Acetabular Ball Impactors

31-131038	38mm
31-131040	40mm
31-131042	42mm
31-131044	44mm
31-131046	46mm
31-131048	48mm
31-131050	50mm
31-131052	52mm
31-131054	54mm
31-131056	56mm
31-131058	58mm
31-131060	60mm

ReCap™ M-M Cup Inserter Plates

31-157944	44mm
31-157946	46mm
31-157948	48mm
31-157950	50mm
31-157952	52mm
31-157954	54mm
31-157956	56mm
31-157958	58mm
31-157960	60mm
31-157962	62mm
31-157964	64mm
31-157966	66mm

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