



M2a-Magnum™
Product **Rationale**



Porous Plasma Spray (PPS™)

- Twice the rotational stability of beads and clinically proven as a bone friendly in-growth surface¹⁻⁴

Hemispherical Design

- Maximises modular head coverage whilst providing a secure press-fit

M²a™ Precision

- Precise M²a™ tolerancing and 100% quality control enable low wear rates and fluid film lubrication

Recessed Flat

- Facilitates modular head removal

Sealed Design

- Tapered insert seals the head cavity from organic debris and leaves no sharp edges to impinge on soft tissue

Modular Design

- Modular inserts reduce head inventory while maintaining six neck length options:
-6mm to +9mm for type 1 taper
-2mm to +8mm for 12/14 taper

M2a-Magnum™



**M²a-RingLoc™ System
(May 1996)**

The 28mm M²a-RingLoc™ System is introduced in Europe.

**28mm M²a-Taper™
Acetabular Component
(May 2000)**

M²a-Taper™ 28mm components are cleared for use in the U.S.

**32mm M²a-Taper™
Acetabular Component
(September 2000)**

M²a-Taper™ 32mm components are cleared for use in the U.S.

**M²a-38™ System
(November 2001)**

M²a-38™ System is cleared for use in the U.S.

**ReCap® Total Resurfacing
System (June 2003)**

The ReCap® Total Resurfacing System is released in Europe.*

**M2a-Magnum™ System
(October 2004)**

The M2a-Magnum™ System is cleared for use in the U.S.

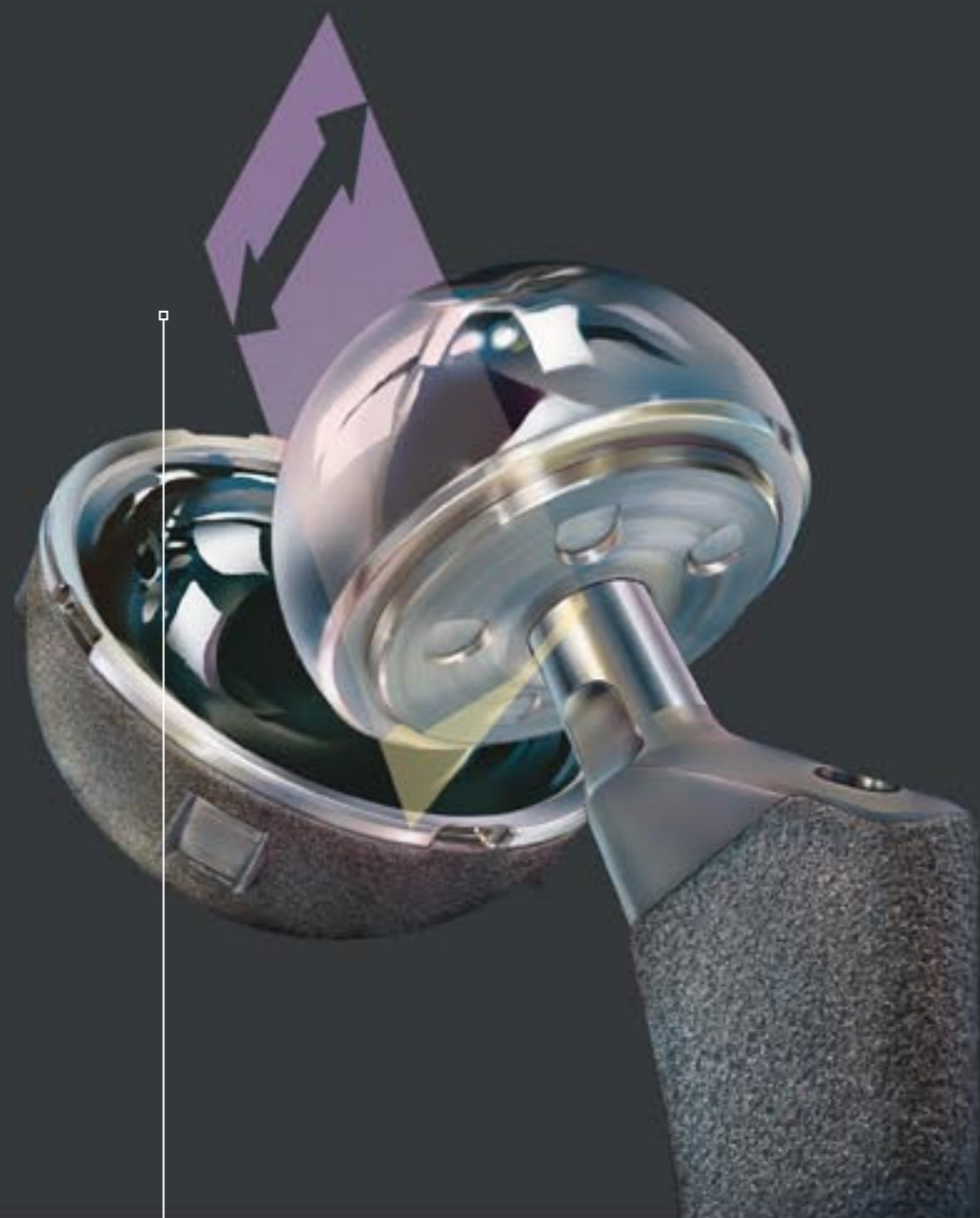
* For international use only. This information is relative to our global products distribution and is for international use only. ReCap® systems distributed in the United States can only be promoted for the indications for use cleared by the FDA in premarket notifications.

Eight Years of M²a™ Metal-on-Metal Experience

Biomet has been designing and manufacturing metal-on-metal hip articulations for over eight years. With the introduction of the M²a-RingLoc™ in Europe and the launch of the M²a-Taper™ in the United States, Biomet began what has become a heritage of success with metal-on-metal technology.

With the M²a-Magnum™, Biomet is once again setting a new standard for performance and design in hip systems.

M2a™ Family



22mm average jump distance



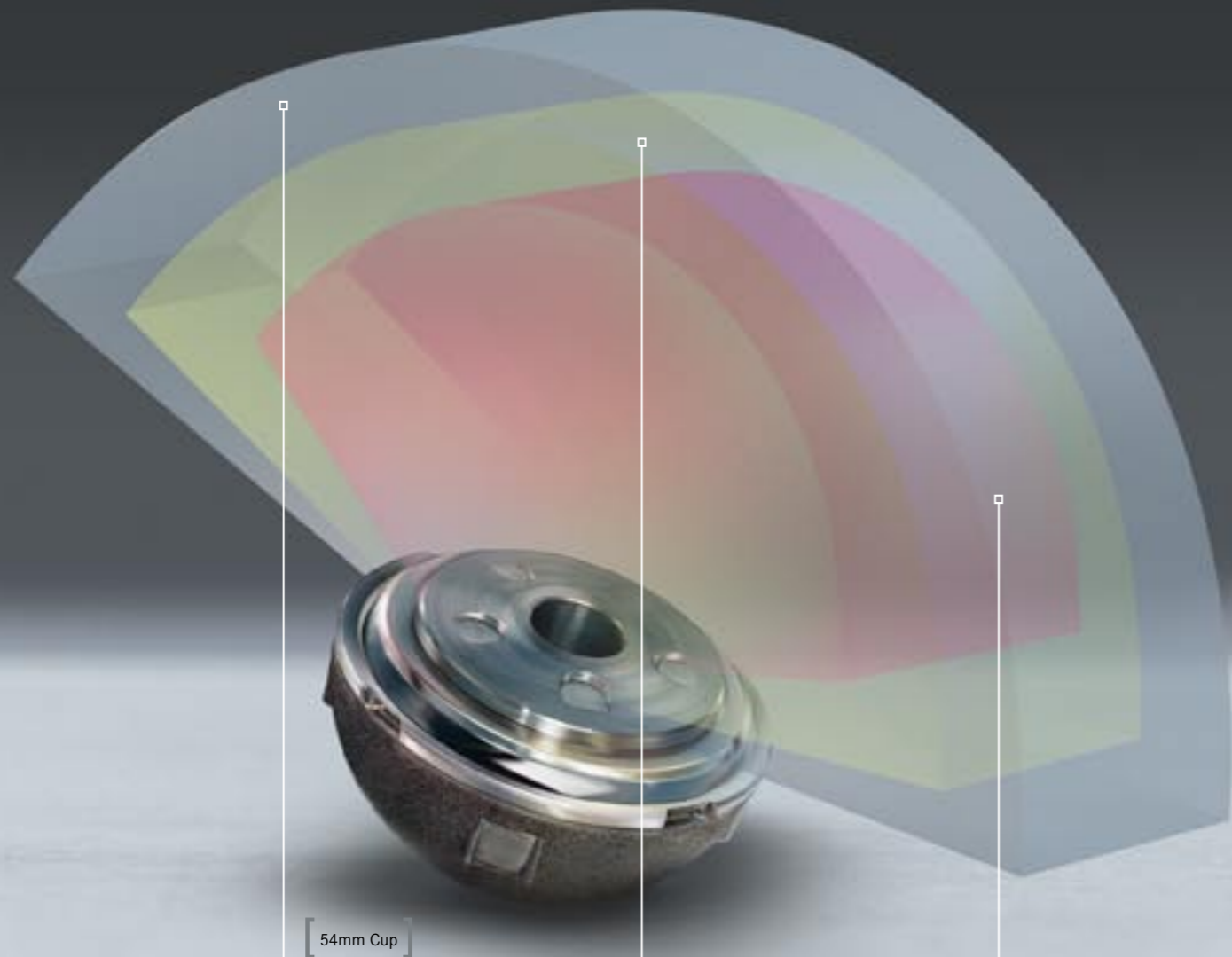
This photograph illustrates another mode of stability exclusive to the M²a™ system. Using laser technology, Biomet ensures that M²a™ implants are produced to the tightest tolerances. This allows just enough clearance for synovial fluid lubrication, effectively

creating suction between the acetabular component and the femoral head. This suction effect may play a role in resisting dislocation and decreasing wear.⁶

Jump Distance

Larger heads require the head to travel more distance before it can “jump” out of the cup. The large head sizes available with the M2a-Magnum™ system offer greater stability and resistance to dislocation in this manner.⁵

Stability and Fluid Film



54mm Cup

**M2a-Magnum™ System
(38–60mm heads)**

(Biomet Orthopedics, Inc.)
162° ROM

**Pinnacle™ System
(36mm head)**

(DePuy Orthopaedics, Inc.)
151° ROM

**Trident® System
(36mm head)**

(Stryker Orthopaedics, Inc.)
133° ROM

**25-years of cumulative
metal-on-metal wear debris**

**25-years of cumulative
polyethylene wear debris**

The M2a-Magnum™ system has been carefully designed to provide maximum range of motion before impingement, offering the potential for over 160 degrees range of motion. A constant, 6mm cup thickness enables a 6mm difference between cup size and femoral head size (i.e., 54mm cup matches with a 48mm head).

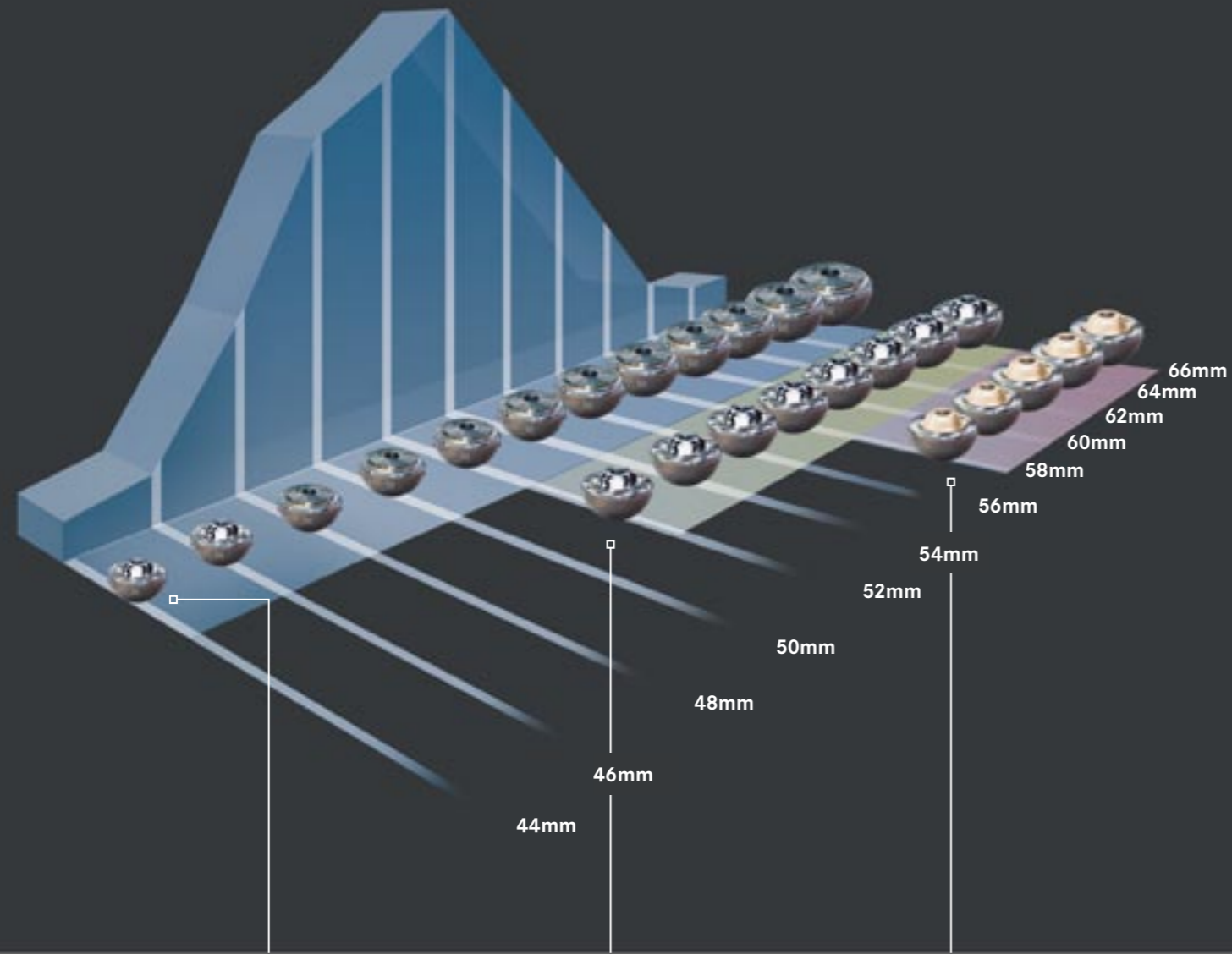
The combination of a hemispherical, non-modular design, and large femoral heads offers enhanced range of motion and stability over other bearing options and designs.

Metal-on-metal implants demonstrate ultra-low wear rates in vivo.⁷ Metal-on-metal has ¹/350 the wear of polyethylene.^{7,8} Increasing the head size of metal-on-metal implants does not increase wear.⁹

The photos are representative of 25-years cumulative metal-on-metal wear debris vs. 25-years of cumulative polyethylene wear debris.^{7,8}

ROM and Wear

Bell Curve of Commonly Used Cup Sizes



M2a-Magnum™ System
(Biomet Orthopedics, Inc.)

Pinnacle™ System
(DePuy Orthopaedics, Inc.)

Trident® System
(Stryker Orthopaedics, Inc.)

Other alternate bearing systems only offer large heads (36mm and above) in larger cup sizes. The majority of total hip recipients fall within the 48–54mm acetabular size range as illustrated above. The M2a-Magnum™ system offers large heads in a full range of cup sizes to accommodate the needs of more patients beginning with a 38mm head in a 44mm cup and progressing to a 60mm head in a 66mm cup.

M2a-Magnum™ Modular Heads

Cat. No.	Description
157438	M2a Magnum Modular Head Sz 38mm
157440	M2a Magnum Modular Head Sz 40mm
157442	M2a Magnum Modular Head Sz 42mm
157444	M2a Magnum Modular Head Sz 44mm
157446	M2a Magnum Modular Head Sz 46mm
157448	M2a Magnum Modular Head Sz 48mm
157450	M2a Magnum Modular Head Sz 50mm
157452	M2a Magnum Modular Head Sz 52mm
157454	M2a Magnum Modular Head Sz 54mm
157456	M2a Magnum Modular Head Sz 56mm
157458	M2a Magnum Modular Head Sz 58mm
157460	M2a Magnum Modular Head Sz 60mm

M2a-Magnum™ Modular Head Type 1 Taper Adaptors

Cat. No.	Description
130818	ReCap Tpr Adptr 38-40mm -6mm (T1)
130819	ReCap Tpr Adptr 38-40mm -3mm (T1)
130820	ReCap Tpr Adptr 38-40mm STD (T1)
130821	ReCap Tpr Adptr 38-40mm +3mm (T1)
130822	ReCap Tpr Adptr 38-40mm +6mm (T1)
130823	ReCap Tpr Adptr 38-40mm +9mm (T1)
139252	ReCap Tpr Adptr 42-50mm -6mm (T1)
139254	ReCap Tpr Adptr 42-50mm -3mm (T1)
139256	ReCap Tpr Adptr 42-50mm STD (T1)
139258	ReCap Tpr Adptr 42-50mm +3mm (T1)
139260	ReCap Tpr Adptr 42-50mm +6mm (T1)
139262	ReCap Tpr Adptr 42-50mm +9mm (T1)
139264	ReCap Tpr Adptr 52-60mm -6mm (T1)
139266	ReCap Tpr Adptr 52-60mm -3mm (T1)
139268	ReCap Tpr Adptr 52-60mm STD (T1)
139270	ReCap Tpr Adptr 52-60mm +3mm (T1)
139272	ReCap Tpr Adptr 52-60mm +6mm (T1)
139274	ReCap Tpr Adptr 52-60mm +9mm (T1)

M2a-Magnum™ Modular Head 12/14 Taper Adaptors

Cat. No.	Descriptioners
130824	ReCap Tpr Adptr 38-40mm -2mm (12/14)
130825	ReCap Tpr Adptr 38-40mm STD (12/14)
130826	ReCap Tpr Adptr 38-40mm +4mm (12/14)
130827	ReCap Tpr Adptr 38-40mm +8mm (12/14)
130829	ReCap Tpr Adptr 42-50mm -2mm (12/14)
130830	ReCap Tpr Adptr 42-50mm STD (12/14)
130831	ReCap Tpr Adptr 42-50mm +4mm (12/14)
130832	ReCap Tpr Adptr 42-50mm +8mm (12/14)
130834	ReCap Tpr Adptr 52-60mm -2mm (12/14)
130835	ReCap Tpr Adptr 52-60mm STD (12/14)
130836	ReCap Tpr Adptr 52-60mm +4mm (12/14)
130837	ReCap Tpr Adptr 52-60mm +8mm (12/14)

ReCap®/Magnum™ Porous Coated Acetabular Component

Cat. No.	Description
157844	ReCap PF PC Acetabular Comp Ø 44/38mm
157846	ReCap PF PC Acetabular Comp Ø 46/40mm
157848	ReCap PF PC Acetabular Comp Ø 48/42mm
157850	ReCap PF PC Acetabular Comp Ø 50/44mm
157852	ReCap PF PC Acetabular Comp Ø 52/46mm
157854	ReCap PF PC Acetabular Comp Ø 54/48mm
157856	ReCap PF PC Acetabular Comp Ø 56/50mm
157858	ReCap PF PC Acetabular Comp Ø 58/52mm
157860	ReCap PF PC Acetabular Comp Ø 60/54mm
157862	ReCap PF PC Acetabular Comp Ø 62/56mm
157864	ReCap PF PC Acetabular Comp Ø 64/58mm
157866	ReCap PF PC Acetabular Comp Ø 66/60mm

ReCap®/Magnum™ HA/Porous Coated Acetabular Component

Cat. No.	Description
157944	ReCap PF HA/PC Acetabular Comp Ø 44/38mm
157946	ReCap PF HA/PC Acetabular Comp Ø 46/40mm
157948	ReCap PF HA/PC Acetabular Comp Ø 48/42mm
157950	ReCap PF HA/PC Acetabular Comp Ø 50/44mm
157952	ReCap PF HA/PC Acetabular Comp Ø 52/46mm
157954	ReCap PF HA/PC Acetabular Comp Ø 54/48mm
157956	ReCap PF HA/PC Acetabular Comp Ø 56/50mm
157958	ReCap PF HA/PC Acetabular Comp Ø 58/52mm
157960	ReCap PF HA/PC Acetabular Comp Ø 60/54mm
157962	ReCap PF HA/PC Acetabular Comp Ø 62/56mm
157964	ReCap PF HA/PC Acetabular Comp Ø 64/58mm
157966	ReCap PF HA/PC Acetabular Comp Ø 66/60mm

References

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- Markel, D.C.; et al.: "Initial Scratch Fit Stability of Acetabular Cups: Comparison of Three Porous Coating Systems." *ISTA*, San Diego, CA, 1997.
- Beaule, et al.: "Jumbo Femoral Head for the Treatment of Recurrent Dislocation Following Total Hip Replacement." *JBJS*, Vol. 84-A: 2, pp. 256-63, February 2002.
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- Head, W.; et al.: "Mechanical Properties and Clinical Evaluation of Isostatic Molded ArCom® Polyethylene." *SICOT*, San Diego, CA, August 2002.
- Data on file at Biomet.

Sizing

Ordering Information

M2a, M2a-Magnum, M2a-Taper, M2a-RingLoc, M2a-38, ReCap and PPS are trademarks of Biomet Manufacturing Corp. Pinnacle is a registered trademark of DePuy Orthopaedics, Inc. Trident is a trademark of Stryker Howmedica Orthopaedics, Inc.

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