



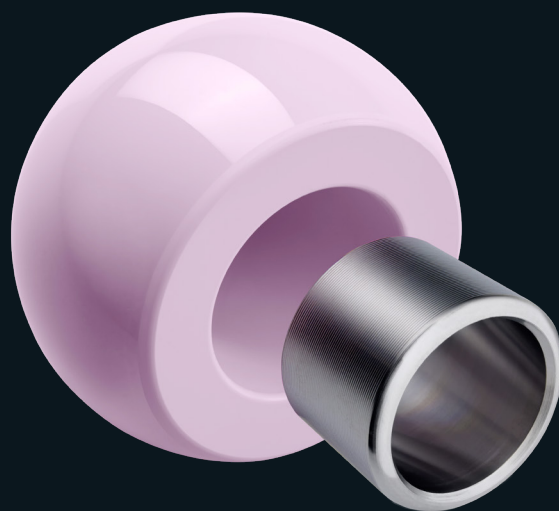
**BIOLOX<sup>®</sup>OPTION**

Safety First

**BIOLOX<sup>®</sup>**  
MATERIAL  
MATTERS<sup>®</sup>

## VERSATILE, ESSENTIAL AND PROVEN

Removing a well-fixed stem can be a challenging and costly procedure; also sometimes the general patient conditions advise against a stem revision. Sleeved ceramic heads such as BIOLOX<sup>®</sup>OPTION offer the possibility of revising a femoral head implant while retaining a well-fixed femoral stem with minor damage on the taper surface. The adapter sleeve is designed to recreate a pristine taper interface for the ceramic head before it is placed on a stem which remains *in situ*. BIOLOX<sup>®</sup>OPTION also offers the possibility of adjusting the offset intraoperatively in primary hip replacement.



1

### Protecting role of the sleeve

In hip revision, the metal taper of an otherwise intact and well-fixed stem can exhibit varying types of damage: scratches, scars, flattened or burnished areas which may be attributed to assembly or disassembly damage as well as black debris indicating fretting or even corrosion.

Adapter sleeves allow an even distribution of contact stresses between stem taper and head, compensating local taper damage. Since local taper damage cannot be totally excluded by visual inspection, a sleeve should always be used on stem tapers remaining *in situ* in order to create optimal conditions for BIOLOX<sup>®</sup>*delta* heads.

Thorough testing was carried out to secure mechanical fixation and to address the phenomenon of fretting. Studies have confirmed that even large ceramic heads with a titanium adapter sleeve had no significant effect on the corrosion of modular taper connections.

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### BIOLOX<sup>®</sup>*delta*

BIOLOX<sup>®</sup>OPTION consists of two components: a femoral head made of BIOLOX<sup>®</sup>*delta* ceramics and a titanium alloy Ti6Al4V sleeve.

BIOLOX<sup>®</sup>*delta* exhibits extraordinarily high fracture strength and fracture toughness. It is also known for its excellent biocompatibility, low immunological response, high wear resistance and reduced bacterial adhesion.



# BIOLOX<sup>®</sup> OPTION

## Safety First



## AVAILABLE SIZES

Femoral heads: 28, 32, 36, 40, 44, 48 mm

Sleeves: S, M, L, XL

Stem taper adapter: 12/14



## References

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Preuss R, Haeussler KL, Flohr M, Streicher RM. Fretting corrosion and trunnion wear – Is it also a problem for sleeved ceramic heads? *Semin Arthroplasty* 2012; 23(4): 251-257. doi:10.1053/j.sart.2013.01.008.

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Eichler D, Barry J, Lavigne M, Massé V, Vendittoli PA. No radiological and biological sign of trunnionosis with Large Diameter Head Ceramic Bearing Total Hip Arthroplasty after 5 years. *Orthop Traumatol Surg Res*. 2020;S1877-0568(20)30045-1. doi:10.1016/j.otsr.2019.12.015.

Koch CN, Figgie M Jr, Figgie MP, Elpers ME, Wright TM, Padgett DE. Ceramic bearings with titanium adapter sleeves implanted during revision hip arthroplasty show minimal fretting or corrosion: a retrieval analysis. *HSS J*. 2017;13(3):241-247. doi:10.1007/s11420-017-9566-4.

