



Product Information

 **smith&nephew**

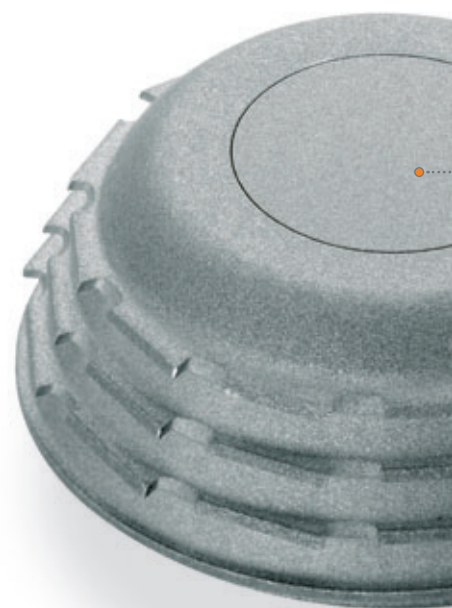
HI^o

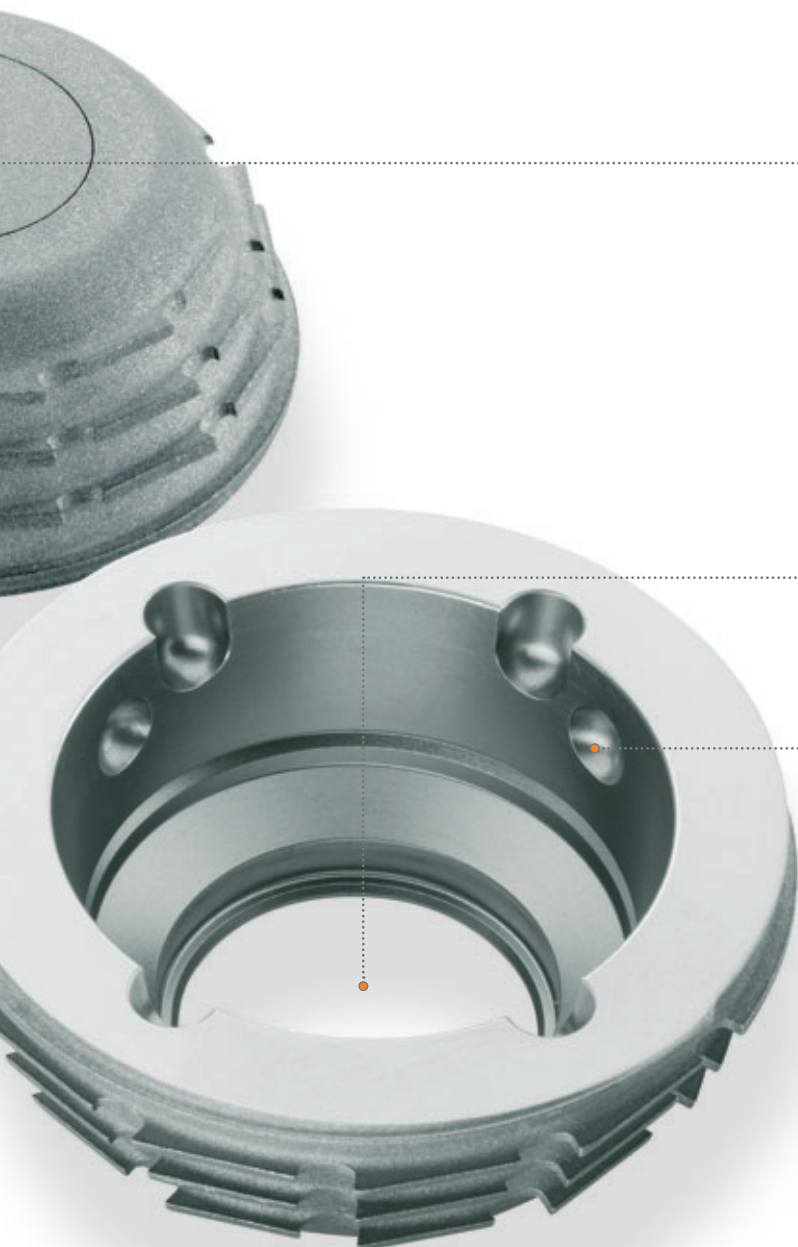
Cementless Threaded
Cup System

HI[◇]-Cup

Innovation Coupled with High Tech

Since the HI cup was first introduced in May 1988, it has been successfully implanted worldwide without changing either the design or the material. The typical features of the HI cup are its single-start flat thread and the bone-sparing parabolic shape, which leads to excellent screwing properties and high primary stability. Surgeons have ceramic, metal and polyethylene inserts option with direct anchoring in the titanium shell. Thanks to its excellent intra-operative handling and the convincing clinical results, the HI cup is implanted as a standard for primary surgery by many orthopaedic surgeons.





Material and surface

- The HI cup is made of pure titanium according to ISO 5832-2, well known for years for its high biocompatibility. The corundum-blasted surface has a surface roughness of 4–6 μm .

1 External geometry

- The parabolic shape of the HI cup fits well into the natural acetabular socket, which in coxarthrosis is likely to be flattened in the region of the roof of the socket. In addition, the parabolic shape also enables judicious and cortical-tissue-sparing preparation of the bony socket and thus preservation of the subchondral sclerosis. Further, the parabolic shape has the advantage that large shells can be made flatter. This leads to smaller loss of bone substance while preparing the acetabulum.

2 Internal geometry

• Open cup pole

The HI cup has a circular opening on the pole so that the cup can be positioned with precision in relation to the depth of implanting. If the distance between the implant and the inner surface of the bony socket is too great, e.g. in the case of protruding acetabular bone, this gap can be filled with cancellous bone. Once the cup is seated in its final position, the opening is closed with a titanium cover.

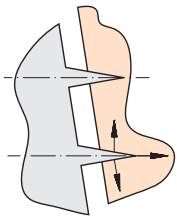
3 • Equatorial recesses

The HI cup has four recesses on the equator that are used to accommodate the introducer and for preventing rotation of the PE insert.

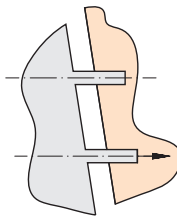
• Optimum grading of sizes with reference to the inserts

Only two insert sizes are sufficient for all HI cups, which is a great advantage in terms of storage arrangements.

HI[◇] – A Cup with Bite



Schematic illustration of a cross-section with an angular thread. The angular thread cuts into the bone and displaces bone substance.



With a flat thread, rather than widening out, the thread simply becomes deeper as the cup is screwed in, which does not lead to sticking. The flat thread sinks into the bone and removes the slivers of bone from the bed (no flank forces).

Thread

With threaded cups, placement is determined to a great extent by the thread. A threaded cup with an angular thread may get stuck while it is being screwed into sclerotic bone of the acetabulum after only a few turns.



HI flat thread with relief-ground teeth.



HI flat thread based on the saw-blade principle, i.e. parallel tooth sides.

The flat thread of the HI-Cup

The thread of the HI cup is flat, which means that the teeth of the thread remain the same for their whole depth, and the surfaces of the teeth run parallel to each other. This makes the cup genuinely self-tapping. Furthermore, this special thread shape enables self-centering and closely fitting implantation of the cup even in an extensively sclerotic acetabular socket, without any sticking of the thread. The last turn of the thread is continuous, thus preventing the soft tissues from being squeezed while screwing the cup into place.



Sliding pairings

The HI cup system includes inserts for the LUBRICER°/ BIOLOX® forte and BIOLOX® delta ceramic-ceramic pairing and for the LUBRIMET° metal-metal pairing as well as standard, retention and dysplasia inserts for polyethylene/ REXPOL° ceramic or polyethylene/REXPOL metal sliding pairings. All the inserts are anchored directly in the shell. For hard-hard pairings, polyethylene was strictly avoided in order to prevent risks of dislocation, micromovements and aging of the polyethylene.

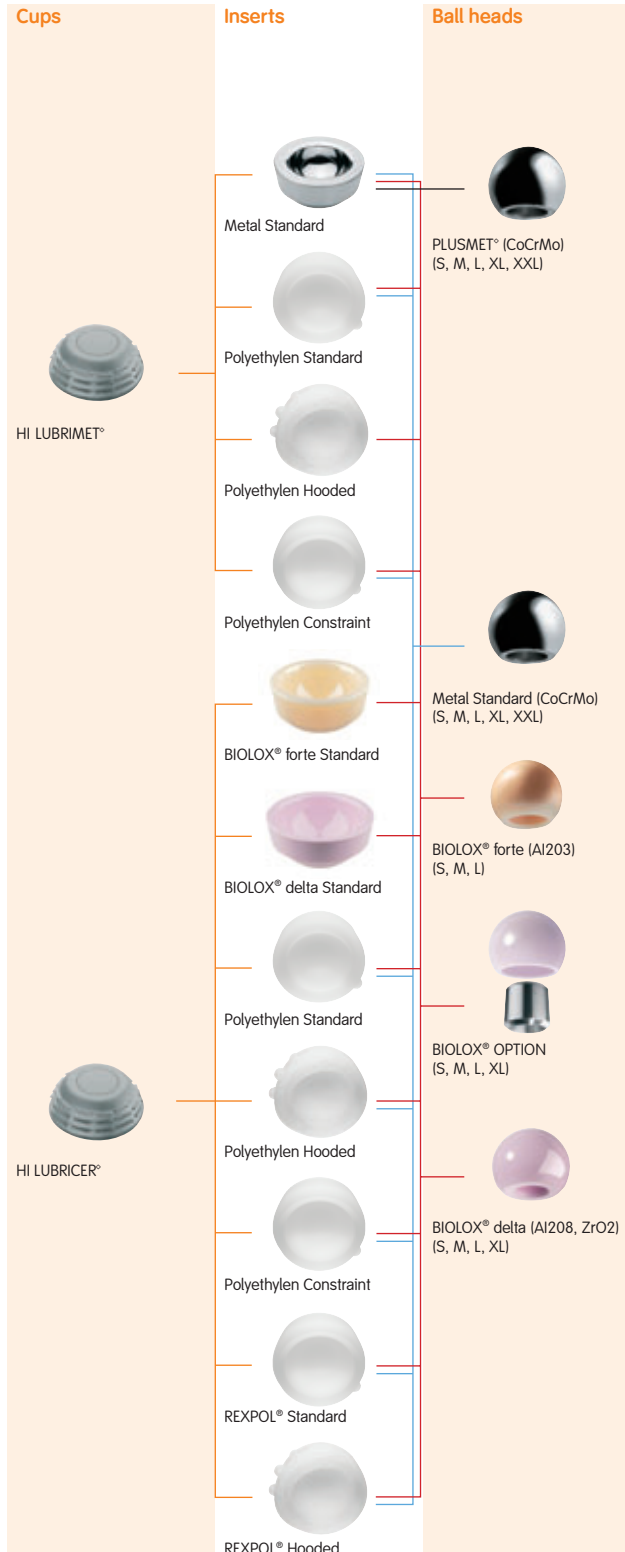
LUBRICER ceramic-ceramic pairing

The expected wear with a ceramic-ceramic pairing can be drastically reduced by comparison with polyethylene. Any wear particles are, according to current knowledge, bioinert. No immunological or carcinogenic effects are expected. This means that the LUBRICER/BIOLOX® forte and BIOLOX® delta sliding pairing is a genuine alternative for young and active patients with long life expectancies.

LUBRIMET metal-metal pairing

Examinations of explanted metal-metal hip prosthesis that had been in situ for up to twenty years have shown wear rates of only a few $\mu\text{m}/\text{year}$. A forged cobalt-chromium-molybdenum alloy is used for the LUBRIMET metal-metal pairing.

Overview Hi[◇]-Cup



Instrumentation

The small and functional instrument set makes handling simple and time-saving. There is an instrument set available for conventional or navigated surgical technique with PiGalileo[®]. The single-start flat thread means that the cup can be screwed into place without using much force.

Cup	Art. No.	Size
LUBRIMET	0030763 – 0030765	3 – 5
	0030766 – 0030771	6 – 11
LUBRICER	0030783 – 0030785	3 – 5
	0030786 – 0030791	6 – 11

Inserts LUBRIMET	Art. No.	Size
HI, ME Insert Standard (CoCrMo)	0030916	3 – 5/32
	0030917	6 – 11/32
HI, PE Insert Standard	0030848	3 – 5/28
	0030850	6 – 11/28
	0030849	6 – 11/32
HI, PE Insert Hooded	0030868	3 – 5/28
	0030870	6 – 11/28
	0030869	6 – 11/32
HI, PE Constraint Insert	0030864	3 – 5/28
	0030865	6 – 11/28
	0030866	6 – 11/32

Inserts LUBRICER	Art. No.	Size
HI, PE Insert Standard	0030858	3 – 5/28
	0030860	6 – 11/28
	0030859	6 – 11/32
HI, PE Insert Hooded	0030878	3 – 5/28
	0030880	6 – 11/28
	0030879	6 – 11/32
HI, PE Constraint Insert	0030844	3 – 5/28
	0030845	6 – 11/28
	0030846	6 – 11/32
BIOLOX [®] forte CE Insert (Al ₂ O ₃)	0030933	3 – 5/28
	0030934	6 – 11/28
	0030603	6 – 11/32
BIOLOX [®] delta CE Insert (Al ₂ O ₃ , ZrO ₂)	66021	6 – 11/36
	11000190	3 – 5/28
	11000193	6 – 11/32
HI, REXPOL [®] Insert Standard	66024	6 – 11/36
	030854	3 – 5/28
	0030856	6 – 11/28
HI, REXPOL Insert Hooded	0030855	6 – 11/32
	0030874	3 – 5/28
	0030876	6 – 11/28
	0030875	6 – 11/32

BIOLOX[®] forte, BIOLOX[®] OPTION, BIOLOX[®] delta are registered Trademarks of CeramTec AG, German

Ball heads	Description	Sizes
PLUSMET® (CoCrMo)	ME ball head Ø32 for ME Insert	S, M, L, XL, XXL
Metal Standard	Standard ME ball head Ø28 and Ø32 for PE- und REXPOL® Insert	S, M, L, XL, XXL
BIOLOX® forte (Al2O3)	BIOLOX® forte ceramic ball head Ø28 and Ø32 for CE, PE and REXPOL Insert	S, M, L
	BIOLOX® forte ceramic ball head Ø36 for CE Insert	S, M, L
BIOLOX® delta (Al2O3, ZrO2)	BIOLOX® delta ceramic ball head Ø28 for CE, PE and REXPOL Insert	S, M, L
	BIOLOX® delta ceramic ball head Ø32 for CE, PE and REXPOL Insert	S, M, L, XL
	BIOLOX® delta ceramic ball head Ø36 for CE Insert	S, M, L, XL
BIOLOX® OPTION (Al2O3, ZrO2)	BIOLOX® OPTION ball head Ø28 for CE, PE and REXPOL Insert	S, M, L, XL
	BIOLOX® OPTION ball head Ø32 for CE, PE and REXPOL Insert	S, M, L, XL
	BIOLOX® OPTION ball head Ø36 for CE Insert	S, M, L, XL

Scientific documentation

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- Zementfreie Hüftendoprothetik bei Patienten mit rheumatoider Arthritis**
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- Die Versorgung der Dysplasiecoxarthrose mit der Hofer-Imhof Pfanne plus Pfannendachplastik**
 Wagner R., Liesaus E., Böhm H.

Manufacturer

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For further information please
contact our local sales office.
www.smith-nephew.com