



BioBall
by merete

The Original BioBall[®] System

Enhanced Flexibility in Primary and
Revision Hip Arthroplasty



THE POWER

TO

ADAPT



Merete stands for expert orthopaedic and trauma surgery solutions.

The market for bone surgical medical devices relies upon tested solutions. By developing simple solutions for difficult problems, Merete has blazed trails that have now become gold standards in medical technology. The story of BioBall® as a simple yet unparalleled system has been continued through other Merete products and solutions. Merete GmbH's impressive product families are sophisticated modular systems that allow optimum results under practically any intraoperative circumstances.

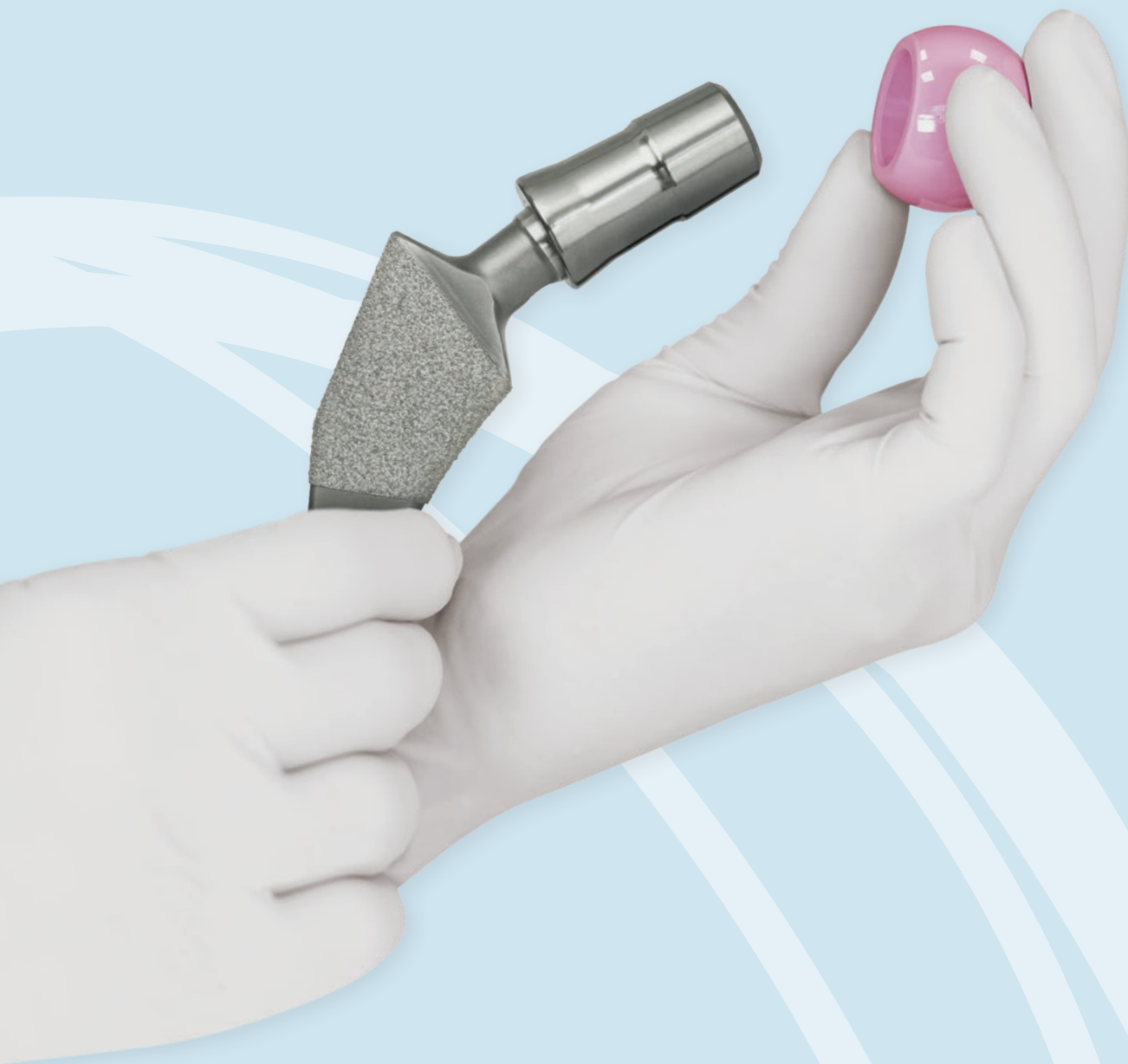
A stylized, handwritten signature in black ink, appearing to read 'A. Anapliotis'.

Alexia Anapliotis,
CEO Merete GmbH



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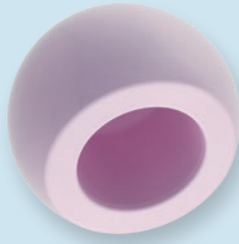


Overview of the BioBall® System

**BioBall®
Metal Head**



**BioBall DELTA™
Ceramic* Head**



BioBall® Bipolar Duo Head
with preassembled
BioBall® Metal Head



BioBall® AdapterSelector®

Instrument for Intraoperative
Inspection of Taper Geometry



**BioBall® Adapter
Standard 12/14**



**BioBall® Adapter
Offset 12/14**



10 additional adapter geometries
(tapers/angles) with corresponding
BioBall® AdapterSelector® available
(see p. 14 ff.).

*** Material:**

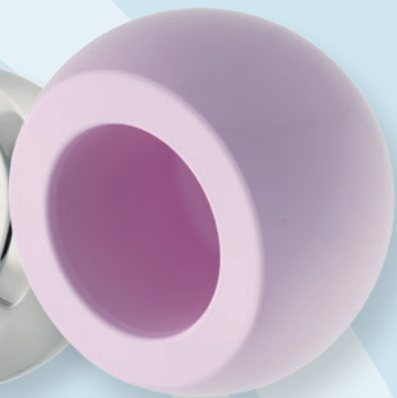
BIOLOX® delta ceramic from CeramTec GmbH.



BioBall® Adapter
Standard and Offset



BioBall®
Metal Head



BioBall DELTA™
Ceramic Head

BioBall® Adapter System

The Gold Standard in Revision Surgery

Merete brought the BioBall® System onto the market as a “modular joint prosthesis system” at the end of the 1990s. In the meantime, it has become the gold standard in revision hip arthroplasty surgery. The BioBall® Adapter, consisting of titanium alloy, allows intra-operative correction of neck length as well as antetorsion/retrotorsion and lateralisation/medialisation on in situ stems. This significantly improves the gait pattern and reduces the dislocation risk. With its offset components and special tapers, the system ought to be available in every hospital as a solution for unexpected situations in primary endoprosthetic care as well.

When it comes to revision surgeries, the BioBall® System offers another unique feature: With stems left in situ with previously used tapers, the BioBall® Adapter compensates mild deformation of the taper surface.

Depending on the specific model, BioBall® Adapters are available in sizes ranging from S - 5XL, as standard or offset versions, for 12/14 tapers. Special adapters for additional tapers are also available (see p. 16 ff.).

Characteristics

- Sliding pair revisions
- Intraoperative correction of neck length
- Intraoperative correction of retro-/antetorsion
- Intraoperative correction of lateralisation/medialisation
- Adjustment of leg length discrepancy in the context of soft tissue management



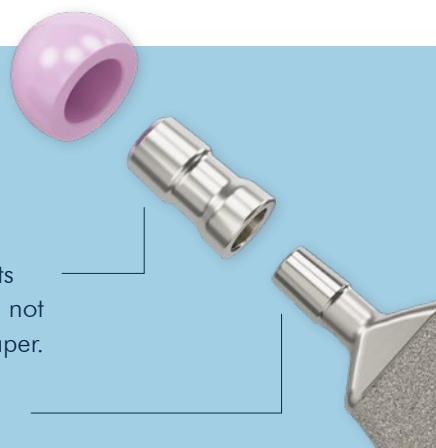
Scan the QR code and learn more about surgical techniques.

With kind support from PD Dr. med. Patrick Weber, ATOS Clinic, Munich.

Good to know

BioBall® Adapter has its own specific taper, it is not identical to the stem taper.

Stem taper e.g. 12/14



Implant Ordering Information



BioBall® Adapter Standard 12/14 Sterile								
Neck length	S (-3.0)	M (0)	L (+3.5)	XL (+7.0)	2XL (+10.5)	3XL (+14.0)	4XL (+17.5)	5XL (+21.0)
Ref.	HM30121	HM30122	HM30123	HM30124	HM30125	HM30126	HM30127	HM30128

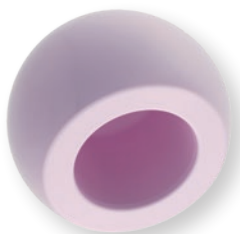


BioBall® Adapter Offset 12/14 Sterile							
Neck length	M (0)	L (+3.5)	XL (+7.0)	2XL (+10.5)	3XL (+14.0)	4XL (+17.5)	5XL (+21.0)
Offset (mm)	1.1	1.2	1.3	1.5	2.0	2.5	3.0
Ref.	HM30222	HM30223	HM30224	HM30225	HM30226	HM30227	HM30228

For information on how to order special adapter geometries, please see page 16.

Implant Ordering Information

BioBall DELTA™ Ceramic Head



Material:
BIOLOX® delta ceramic*

Size (mm)	Ref.
Ø 28	HM50028
Ø 32	HM50032
Ø 36	HM50036
Ø 40	HM50040

BioBall® Metal Head



Material:
Vivium®**

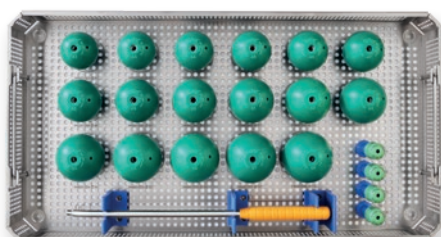
Size (mm)	Ref.
Ø 28	HM30028
Ø 32	HM30032
Ø 36	HM30036
Ø 38	HM30038

BioBall® Bipolar Duo Head

with preassembled BioBall® Metal Heads, suitable for all BioBall® Adapters



Material:
Vivium®**, UHMWPE



Description	Ref.
Instrument Tray	HM20500

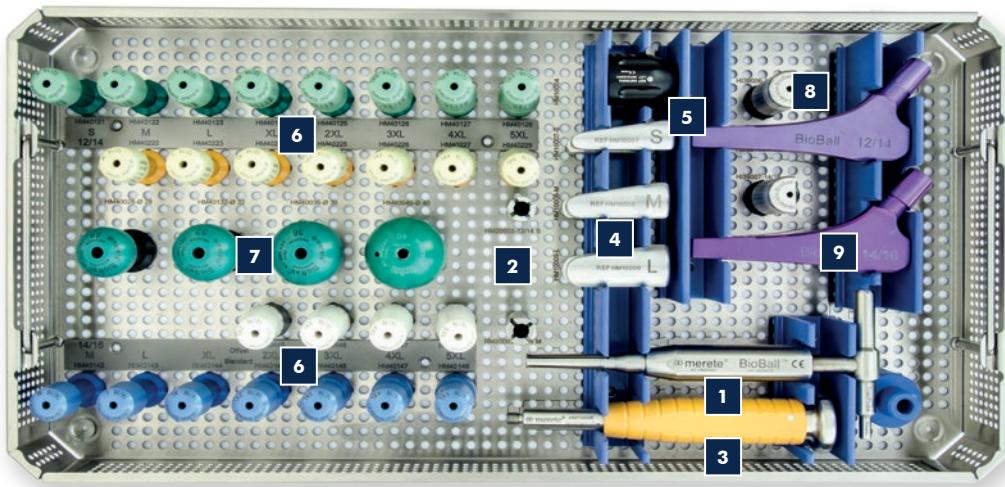
Size (mm)	Ref. Duo Head	Ref. Trial head	Size Metal Head (mm)
Ø 42	HM30342	HM40342	Ø 28
Ø 43	HM30343	HM40343	Ø 28
Ø 44	HM30344	HM40344	Ø 28
Ø 45	HM30345	HM40345	Ø 28
Ø 46	HM30346	HM40346	Ø 28
Ø 47	HM30347	HM40347	Ø 28
Ø 48	HM30348	HM40348	Ø 28
Ø 49	HM30349	HM40349	Ø 28
Ø 50	HM30350	HM40350	Ø 32
Ø 51	HM30351	HM40351	Ø 32
Ø 52	HM30352	HM40352	Ø 32
Ø 53	HM30353	HM40353	Ø 32
Ø 54	HM30354	HM40354	Ø 32
Ø 55	HM30355	HM40355	Ø 32
Ø 56	HM30356	HM40356	Ø 32
Ø 57	HM30357	HM40357	Ø 32
Ø 58	HM30358	HM40358	Ø 32

*BIOLOX® delta is a registered trademark of CeramTec GmbH.

**Vivium® is a registered trademark of Merete GmbH.

Instrument Ordering Information

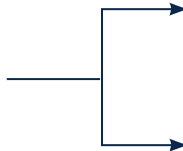
Instrument Tray



Description	Ref.
Instrument Tray	HM30770

1 Separator

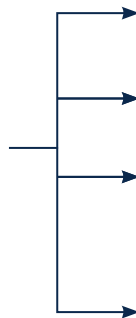
Description	Ref.
Separator	HM20001



Adapter Sleeve for Adapter 12/14 S	Ref.
<div style="display: flex; align-items: center;"> <div style="background-color: black; color: white; padding: 2px 5px; margin-right: 5px;">2</div>  </div>	HM20002
Adapter Sleeve for Adapter 14/16 M	Ref.
<div style="display: flex; align-items: center;"> <div style="background-color: black; color: white; padding: 2px 5px; margin-right: 5px;">2</div>  </div>	HM20003

3 Universal Handle

Description	Ref.
Universal Handle	HM10005



Separator Wedge	Size	Ref.
<div style="display: flex; align-items: center;"> <div style="background-color: black; color: white; padding: 2px 5px; margin-right: 5px;">4</div>  </div>	S	HM10007
<div style="display: flex; align-items: center;"> <div style="background-color: black; color: white; padding: 2px 5px; margin-right: 5px;">4</div>  </div>	M	HM10008
<div style="display: flex; align-items: center;"> <div style="background-color: black; color: white; padding: 2px 5px; margin-right: 5px;">4</div>  </div>	L	HM10009
Head Impactor		Ref.
<div style="display: flex; align-items: center;"> <div style="background-color: black; color: white; padding: 2px 5px; margin-right: 5px;">5</div>  </div>		HM10004

Instrument Ordering Information

6 Trial Adapter



Length	Ref. Standard 12/14	Ref. Offset 12/14	Ref. Standard 14/16	Ref. Offset 14/16
S (-3.0)	HM40121	–	–	–
M (0)	HM40122	HM40222	HM40142	–
L (+3.5)	HM40123	HM40223	HM40143	–
XL (+7.0)	HM40124	HM40224	HM40144	–
2XL (+10.5)	HM40125	HM40225	HM40145	HM40445
3XL (+14.0)	HM40126	HM40226	HM40146	HM40446
4XL (+17.5)	HM40127	HM40227	HM40147	HM40447
5XL (+21.0)	HM40128	HM40228	HM40148	HM40448

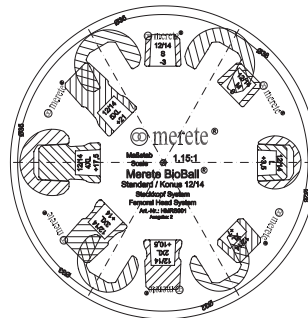
7 BioBall® Trial Heads



Ø	Ref.
28	HM40028
32	HM40132
36	HM40036
40	HM40040

Additional sizes on request.

X-ray Template



For BioBall® Adapter	Ref.
12/14 Standard	HMRS0001
12/14 Offset	HMRS0005
14/16 Standard	HMRS0002
14/16 Offset	HMRS0006

8 BioBall® AdapterSelector®



For taper	Ref.
12/14	HI39006
14/16	HI39007

9 Offset PositionAssistant



Name	Ref.
Offset PositionAssistant 12/14	HM39106
Offset PositionAssistant 14/16	HM39107

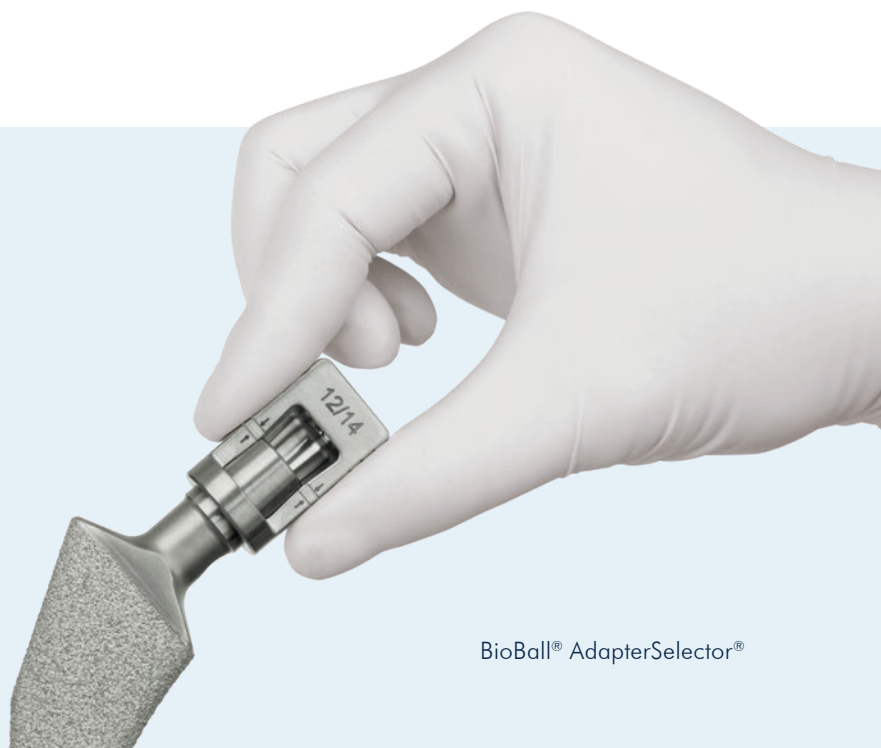
BioBall® AdapterSelector®

How do you identify and why do you document taper geometry on in situ stems during revision?
Four reasons why you should know the BioBall® AdapterSelector®.

- 1 Once a surgeon has decided to leave an existing prosthesis stem in place during revision, visual and haptic inspection of the smooth, reflective surfaces is often not enough to determine what the taper is made of. As a technical and mechanical testing instrument, the BioBall® AdapterSelector® provides information on whether this is the previously defined taper and whether it is damaged.
- 2 Many manufacturers offer hip stems with different taper geometries. In addition, patients from other countries, or those who underwent surgery abroad, often have very old or unfamiliar models and no endoprosthesis record cards. The patented BioBall® AdapterSelector® helps surgeons inspect the stem taper to determine the correct BioBall® Adapter with great certainty.
- 3 Documented proof that an intraoperative fit check was performed also offers additional security from a legal perspective. If you do a check using the AdapterSelector® prior to using the BioBall® System, you can document that check in your surgical report.
- 4 The BioBall® AdapterSelector® is the only testing instrument worldwide approved for testing taper geometry. No other instrument in the world allows you to perform an approved, recognised taper geometry check and thus ensure that your selected BioBall® Adapter will fit properly.



Scan the QR code
and learn more
about handling the
BioBall® AdapterSelector®.



Handling - Step by Step

Step 1

Remove the existing head of the in situ stem.



Step 2

The taper should be clean and dry before the BioBall® AdapterSelector® is inserted.



Step 3

Apply slight pressure and turn clockwise to place the BioBall® AdapterSelector® onto the stem taper. Check whether the taper's flat face is positioned between the two arrows.

If it is positioned above or below these markings on the BioBall® AdapterSelector®, the stem taper is not the same as the taper indicated on the BioBall® AdapterSelector®.



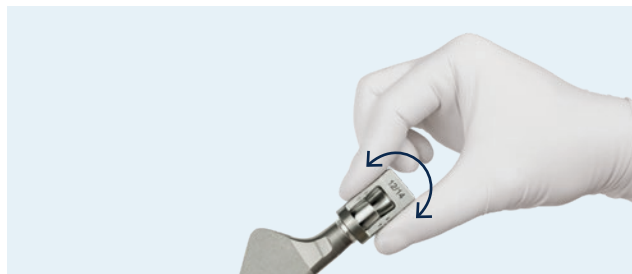
Step 4

Then visually inspect the lateral accuracy of fit and check to see whether there is a gap in the upper or lower taper region between the stem taper and the BioBall® AdapterSelector®.



Step 5

Test the clamp connection on the BioBall® AdapterSelector® with a sideways tipping movement. If this movement causes rattling or tipping in the BioBall® AdapterSelector®, the stem taper is not the same as the taper indicated on the BioBall® AdapterSelector®.



Step 6

After checking the taper geometry with the help of the BioBall® AdapterSelector®, examine the entire taper surface. Start with the taper's flat face visible in the opening of the BioBall® AdapterSelector®. Then remove the BioBall® AdapterSelector® and examine the entire taper surface.



BioBall® AdapterSelector® for Special Tapers – the Flexible-Use Head System for Various Taper Geometries.

There are still no uniform standards in place for prosthesis stem tapers. Implant manufacturers continue to use tapers designed to their own individual specifications that differ from the others in terms of geometry structure and surface. Neck length sizes (S, M, L, etc.) are not standardised and may vary significantly from manufacturer to manufacturer.

Besides standard and offset **BioBall® Adapters**, we also offer **BioBall® Adapters for special tapers**, for a wide variety of taper geometries from other manufacturers.

Characteristics

BioBall® Adapter for Special Tapers

The adapter can compensate misalignment between the prosthesis stem and the acetabular cup. Neck length and offset can be individually selected and adjusted.

- Sliding pair revisions
- Intraoperative correction of retro-/antetorsion
- Intraoperative correction of neck length
- Intraoperative correction of lateralisation/medialisation
- Adjustment of leg length discrepancy in the context of soft tissue management



BioBall® AdapterSelector®
MST1



BioBall® AdapterSelector®
MSV4



BioBall® AdapterSelector®
14/16

For final verification of the taper of the existing stem, and to ensure conformity with legal documentation requirements, always use the recommended BioBall® AdapterSelector®. This is the only reliable means of selecting the appropriate BioBall® Adapter and guaranteeing its technical and medical functionality.

Selection of different Taper Variants *

Manufacturer	Description	Taper	Taper checking with BioBall® Adapter Selector®											
			12/14	14/16	MST1	MSZI	MSSR	MSBG	MSV4	MSPC	MSSY	MS10/12	MS8/10	
Aesculap ¹	8/10	8/10												×
Amplitude ²	12/14	12/14	×											
	10/12	10/12										×		
Biomet/ Zimmer ³	12/14	12/14	×											
	Type I	11/13			×									
	6 Degree Taper	10/12				×								
DePuy ⁴	Articul/eze® Taper ²	12/14	×											
	Large Taper	14/16		×										
	S-ROM® Taper ²	11/13					×							
Link ⁵	12/14	12/14	×											
	14/16	14/16		×										
Smith & Nephew ⁶	12/14	12/14	×											
	10/12	10/12										×		
Stryker⁷/ How- medica ⁸	C-Taper	12/14	×											
	14/16	14/16		×										
	V40™	11/12							×					
	6° Taper	14/16						×						
	PCA® Taper	13/14								×				
Symbios ⁹	6°	10/12									×			

BioBall® Adapters for special tapers are only approved for use in combination with BioBall® Metal Heads. No biomechanical testing information is available on the usage of BioBall® Adapters with hip stems from other manufacturers. Consequently, only manufacturer-approved extensions may be used.

* Please see the overview for information on which BioBall® Adapters are available for special tapers. Our experienced staff would be glad to provide you with more in-depth consultation.



¹ The name **Aesculap** is a registered trademark of B. Braun SE, Melsungen, Germany
² The name **Amplitude** is a registered trademark of AMPLITUDE SAS, Valence, France
³ The name **Biomet** is a registered trademark of BIOMET Inc., Warsaw Ind., US / **Zimmer** is a registered trademark of Zimmer, Inc., Warsaw Ind., US
⁴ The names **DePuy** and **S-ROM** are registered trademarks of DePuy Synthes, Inc. Warsaw Ind., US
⁵ The name **Link** is a registered trademark of Waldemar Link GmbH & Co. KG, 22339 Hamburg, Germany
⁶ The name **Smith & Nephew** is a registered trademark of Smith & Nephew Plc, WC2N 6LA, London, GB
⁷ The name **Stryker** is a registered trademark of Stryker Corp., Kalamazoo, MI US
⁸ The names **Howmedica** and **ABG** are registered trademarks of Howmedica Osteonics Corp., Mahwah, NJ US
⁹ The name **Symbios** is a registered trademark of Symbios Orthopédie SA, Yverdon-les-Bains, Switzerland

Ordering Information

BioBall® AdapterSelector®

Name	Ref.
BioBall® AdapterSelector® MST1	HI39001
BioBall® AdapterSelector® MSV4	HI39002
BioBall® AdapterSelector® MS 10/12	HI39003
BioBall® AdapterSelector® MSZI	HI39004
BioBall® AdapterSelector® MS 8/10	HI39005
BioBall® AdapterSelector® 12/14	HI39006

Name	Ref.
BioBall® AdapterSelector® 14/16	HI39007
BioBall® AdapterSelector® MSBG	HI39008
BioBall® AdapterSelector® MSPC	HI39009
BioBall® AdapterSelector® MSSR	HI39010
BioBall® AdapterSelector® MSSY	HI39012

BioBall® Adapter Standard for Special Tapers

BioBall® Adapter Neck length	14/16	MSZI (10/12)	MST1 (11/13)	MSV4 (11/12)	MSBG (14/16)	MSPC (13/14)	MSSR (11/13)	MSSY (10/12)	MS 10/12 (10/12)	MS 8/10 (8/10)
S (-3mm)	—	HM33121	—	—	—	—	—	HM37121	HM30101	HM32121
M (0mm)	HM30142	HM33122	HM36002	HM34122	HM31142	HM31132	HM31152	HM37122	HM30102	HM32122
L (3.5mm)	HM30143	HM33123	HM36003	HM34123	HM31143	HM31133	HM31153	HM37123	HM30103	HM32123
XL (7mm)	HM30144	HM33124	HM36004	HM34124	HM31144	—	HM31154	HM37124	HM30104	HM32124
2XL (10.5mm)	HM30145	HM33125	HM36005	HM34125	HM31145	—	—	—	HM30105	HM32125
3XL (14mm)	HM30146	HM33126	HM36006	HM34126	—	—	—	—	HM30106	—
4XL (17.5mm)	HM30147	—	—	—	—	—	—	—	—	—
5XL (21mm)	HM30148	—	—	—	—	—	—	—	—	—

BioBall® Adapter Offset for Special Tapers

BioBall® Adapter Neck length	14/16	MST1 (11/13)	MSV4 (11/12)	MS 10/12 (10/12)	MS 8/10 (8/10)
M (0mm)	—	HM36022	HM34222	HM30202	HM32222
L (3.5mm)	—	HM36023	HM34223	HM30203	HM32223
XL (7mm)	—	HM36024	HM34224	HM30204	HM32224
2XL (10.5mm)	HM30445	HM36025	HM34225	HM30205	HM32225
3XL (14mm)	HM30446	HM36026	HM34226	HM30206	—
4XL (17.5mm)	HM30447				
5XL (21.0mm)	HM30448				

Custom designs are available for other tapers on request.

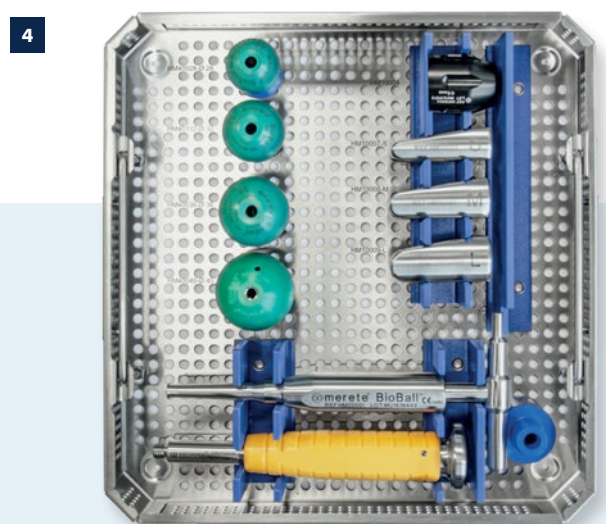
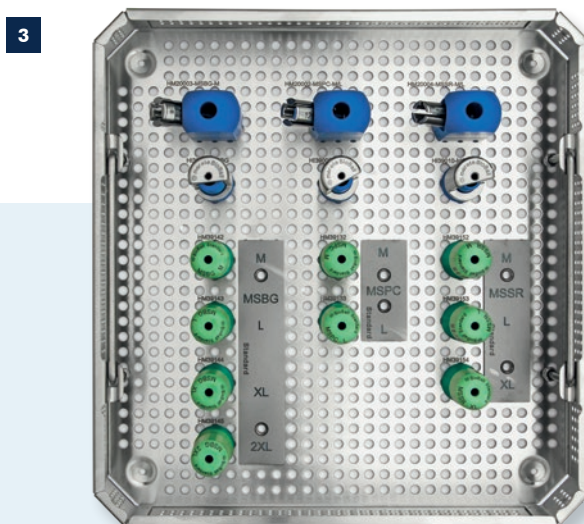
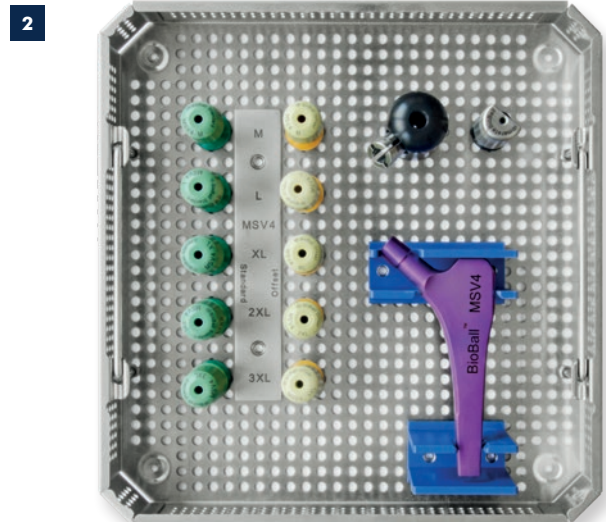
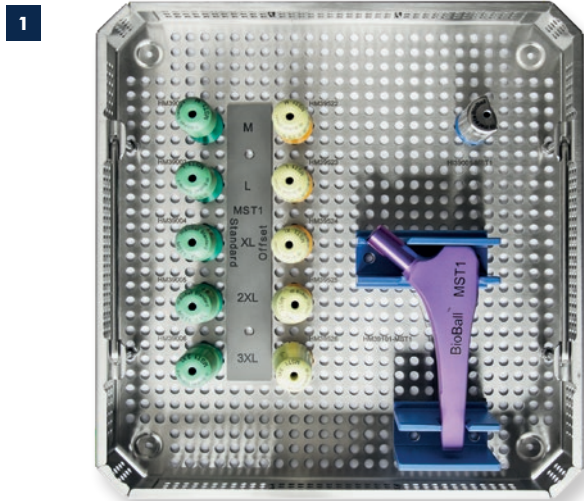
Note

Please see the overview in the surgical technique BioBall® (HDB001) for available combinations BioBall® Adapters with BioBall® Metal Heads and BioBall DELTA™ Ceramic Heads.

For information on how to order for 12/14 geometry, please see page 8.

Additional Instrument Trays

Name	Ref.
1 BioBall® Instrument Tray MST1	HM30730
2 BioBall® Instrument Tray MSV4	HM30750
3 BioBall® Instrument Tray MSBG/MSPC/ MSSR	HM30740
4 BioBall® Instrument Tray with General Instruments	HM30785
BioBall® Instrument Tray MSZI	on request
BioBall® Instrument Tray MSSYI	on request



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