





The Challenge of Non-Standardized Hip Stems

Today, there are still no uniform standards for the taper geometries of hip stems. Implant manufacturers design stems with different taper geometries, structural properties and surface characteristics.

Even neck length sizes (S, M, L, etc.) are not standardized and can be **significantly** different from one manufacturer to another.



As a result, significant differences exist between the products. These differences include not only the **taper angle**, but also **taper diameters** as well as the **taper length**.

All of these parameters are critical for the fit and mechanical stability of the connection between stem and head ¹

The BioBall® System supports 11 different taper geometries, ensuring exceptional flexibility for a wide variety of hip stem designs.

Merete® Taper Identification Service



We support you in identifying the stem taper.

Submit your taper request here.

1. Mueller U, Braun S, Schroeder S, Sonntag R, Kretzer JP. Same Same but Different? 12/14 Stem and Head Tapers in Total Hip Arthroplasty. J Arthroplasty 2017;32(10):3191-3199. doi: 10.1016/j.arth.2017.04.027. Epub 2017 Apr 27. PMID: 28552447.





- **13/14** 2°52′ BioBall® Adapter – MSPC
- **10/12** 6°00′ BioBall® Adapter – MSZI



The Perfect Fit for Special Tapers

BioBall® Special Adapters



Preserve Stem

BioBall® Adapters allow intraoperative adjustments without removing the existing stem – minimizing risks associated with the removal of cemented or non-cemented stems.



Flexible Compatibility

BioBall® Adapters are compatible with BioBall® Metal and Ceramic Heads – ensuring a secure and versatile implant solution.



Select Precisely - Verify Quickly

The BioBall® AdapterSelector® enables reliable intraoperative confirmation of the stem taper size – available for every BioBall® Adapter taper geometry.



Perfect Match

BioBall® Adapter for Special Tapers offer ten additional taper geometries, beside the 12/14 Adapter – ensuring a precise and secure connection with a wide range of existing anchored hip stems.



Trial Fit with Confidence

BioBall® Trial Adapters & Heads enable trial repositioning and adjustment of neck length, range of motion and soft tissue tension – with X-ray opaque materials for secure control during trial repositioning.



Go Long - Go Short - Go Offset

The titanium BioBall® Adapter permits intraoperative correction of neck length and offset – including retro-/antetorsion and lateralisation/medialization.







The BioBall® AdapterSelector®



Inspection Challenges

Visual and haptic checks alone are often inadequate to identify taper material



Taper Variability

Identifies taper geometries and conditions for 11 stem taper types



Legal Security

Documenting the use provides legal proof of an intraoperative fit check



Broad Market Acceptance

Approved instrument for clinical assessment of taper geometry



Included in Trays

Part of BioBall® instrument trays, ready for immediate use

Verifying compatibility beforehand is crucial to support surgical workflow, enhance implant longevity and minimize the risk of complications.

Always use the BioBall® AdapterSelector® to check the precise match between the Adapter and the stem taper, preventing misalignment and instability.

Selection of different Taper Geometries

Manufacturer	Description	Taper	Validated by AdapterSelector®
Aesculap ¹	8/10	8/10	MS 8/10
	12/14	12/14	12/14
Amplitude ²	12/14	12/14	12/14
	10/12	10/12	MS 10/12
Biomet/Zimmer³	12/14	12/14	12/14
	Туре І	11/13	MST1
	6 Degree Taper	10/12	MSZ1
DePuy⁴	Articul/eze® Taper	12/14	12/14
	Large Taper	14/16	14/16
	S-ROM® Taper	11/13	MSSR
Waldemar Link⁵	12/14	12/14	12/14
	14/16	14/16	14/16
Smith & Nephew ⁶	12/14	12/14	12/14
	10/12	10/12	MS 10/12
Stryker ⁷ /Howmedica ⁸	C-Taper	12/14	12/14
	14/16	14/16	14/16
	V40 [™]	11/12	MSV4
	6°-Taper	14/16	MSBG
	PCA® Taper	13/14	MSPC
Symbios ⁹	6°	10/12	MSSY
-,	12/14	12/14	12/14

^{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 Zimmer is a registered trademark of Zimmer, Inc., Warsaw Ind., US/Biomet is a registered trademark of BIOMET Inc., Warsaw Ind., US.

4. The names DePuy and S-ROM are registered trademarks of DePuy Synthes, Inc. Warsaw Ind., US.

5. The name Waldemar 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.

Reliable Support – Including Special Tapers

BioBall® Instrument Trays

The BioBall® 12/14 instrument tray contains all essential instruments required for BioBall® surgery such as BioBall® Trial Heads, the BioBall® Head Separating Wedge and implanting instruments – needed for successful operative use.

- In addition, Merete® offers dedicated trays specifically designed for most Special Adapters.
- The instruments enable accurate trial repositioning and reliable intraoperative assessment of taper geometry prior to final implantation.



BioBall® 12/14 instrument tray

Trial Adapter Offset.

Components of the tray, e.g. the BioBall® MSV4 Instrument tray

BioBall® Extractor Sleeve Required to separate the BioBall® Head when using Adapters without upper top surface. BioBall® AdapterSelector® Instrument designed for intraoperative assessment of taper geometry. X-ray opaque BioBall® **Trial Adapters** BioBall® Offset Enable precise visualization **Position Assistant** via imaging techniques. Supports better visualization when adjusting the BioBall®



Interested in BioBall® Adapter Trays?

Contact us at **service@merete.de**Or scan the **QR Code** to view detailed order information.



Order Information

BioBall® Adapters for Special Tapers

	14,	14/16		MS 8/10 (8/10)		MS 10/12 (10/12)		MSBG (14/16)		MSPC (13/14)	
Compatibility with BioBall® Heads*	• •		•		• •		•		•		
	Standard	Offset	Standard	Offset	Standard	Offset	Standard	Offset	Standard	Offset	
Neck length	Ref.										
S (-3.0 mm)	-	-	HM32121	-	HM30101	-	-	-	-	-	
M (0 mm)	HM30142	-	HM32122	HM32222	HM30102	HM30202	HM31142	-	HM31132	-	
L (+3.5 mm)	HM30143	_	HM32123	HM32223	HM30103	HM30203	HM31143	-	HM31133	-	
XL (+7.0 mm)	HM30144	-	HM32124	HM32224	HM30104	HM30204	HM31144	-	-	-	
2XL (+10.5 mm)	HM30145	HM30445	HM32125	HM32225	HM30105	HM30205	HM31145	-	-	-	
3XL (+14.0 mm)	HM30146	HM30446	-	-	HM30106	HM30206	-	-	-	-	
4XL (+17.5 mm)	HM30147	HM30447	-	_	-	-	-	-	-	-	
5XL (+21.0 mm)	HM30148	HM30448	-	_	_	-	-	-	-	-	
BioBall® AdapterSelector®	HI39007		HI39005		HI39003		HI39008		HI39009		

	MSSR (11/13)	13) MSSY (10/12)		MST1 (11/13)		MSV4 (11/12)		MSZI (10/12)	
Compatibility with BioBall® Heads	•		• •		•		• •*		• •	
	Standard	Offset	Standard	Offset	Standard	Offset	Standard	Offset	Standard	Offset
Neck length	Ref.									
S (-3.0 mm)	-	-	HM37121	-	-	-	-	-	HM33121	-
M (0 mm)	HM31152	-	HM37122	-	HM36002	HM36022	HM34122	HM34222	HM33122	-
L (+3.5 mm)	HM31153	-	HM37123	-	HM36003	HM36023	HM34123	HM34223	HM33123	-
XL (+7.0 mm)	HM31154	-	HM37124	-	HM36004	HM36024	HM34124	HM34224	HM33124	-
2XL (+10.5 mm)	_	-	-	-	HM36005	HM36025	HM34125	HM34225	HM33125	-
3XL (+14.0 mm)	-	-	-	_	HM36006	HM36026	HM34126	HM34226	HM33126	-
4XL (+17.5 mm)	_	_	-	-	_	_	_	_	_	_
5XL (+21.0 mm)	-	_	-	-	-	-	-	-	-	-
BioBall® AdapterSelector®	HI39010		HI39012		HI39001		HI39002		HI39004	

BioBall® Metal Heads (sizes Ø 28, 32, 33, 35, 36, 38 mm)
 BioBall® Ceramic Heads (sizes Ø 28, 32, 36, 40, 44, 48 mm)





Discover the BioBall® Offset positioning in action – for targeted retro-/antetorsion and lateralisation/medialization adjustment.

 $^{^{\}ast}$ Offset version available only in sizes M, L, and XL for ceramic head





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