MEDGAL-HIP

HEMIFIT ACETABULAR CUP - OPERATIVE TECHNIQUE

TERAZ POLSKA

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MEDGAL®

ORTHOPAEDIC IMPLANTS & INSTRUMENTS

Silicon-carbon coating

The Si-DLC coating inscreases the biocompatibility of the implants, creates better conditions for bone fusion and osseointegration.

Increased bacteriostaticity

Microstructural properties of the DLC coating are the main factor of the bacteriostatic mechanism [1-2].

Decreased ion migration

The Si-DLC coating prevents the migration of the element ions from the implant to the body, consequently reducing the possibility of allergic reactions [3-5]

Better osseointegration

The use of the silicon increases the bone formation on the implant by more than 12% compared to hydroxyapatite. Silicon also stimulates the synthesis of type I collagen [6-9].

Higher biocompatibility

The Si-DLC coating increases the biotolerance of the implant, intensifies the hemocompatibility and the adhesion of human cells, without causing the cytotoxicity [10-12].

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Publications Si-DLC:

[1] F.R. Marciano, L.F. Bonetti, L.V. Santos, N.S. Da-Silva, E.J. Corat, V.J. Trava-Airoldi (2009) Antibacterial activity of DLC and Ag-DLC films produced by PECVD technique. Diamond & Related Materials 18, 1010-1014.

[2] J.M. Gutiérrez B., K. Conceição, V. M. de Andrade, V.J. Trava-Airoldi, G. Capote (2019) High antibacterial properties of DLC film doped with nanodiamond. Surface & Coatings Technology 375, 395-401.

[3] A. Ordine, C. Achete, O. Mattos, I. C. Margarit, S. Camargo, & T. Hirsch (2000) Magnetron sputtered SiC coatings as corrosion protection barriers for steels. Surface and Coatings Technology, 133-134, 583-588.

[4] D. Batory, A. Jedrzejczak, W. Kaczorowski, L. Kolodziejczyk, B. Burnat (2016) The effect of Si incorporation on the corrosion resistance of a-C:H:SiOx coatings. Diam Relat Mater 67:1-7.

[5] DD. Rylska, J. Sokołowski, M. Łukomska, M. Pers, L. Klimek (2006) Influence of protective Al2O3 and SiC coatings on corrosion resistance of Wirobond C alloy

[6] D. M. Reffitt, N. Ogston, R. Jugdaohsingh, H. F. Cheung, B. A. Evans, R. P. Thompson, J. J. Powell & G. N. Hampson (2003) Orthosilicic acid stimulates collagen type 1 synthesis and osteoblastic differentiation in human osteoblast-like cells in vitro. Bone, 32(2), 127-135.

[7] G. Lehmann , I. Cacciotti, P. Palmero, L. Montanaro, A. Bianco, L. Campagnolo, & A. Camaioni (2012)Differentiation of osteoblast and osteoclast precursors on pure and silicon-substituted synthesized hydroxyapatites. Biomedical Materials 7(5), 055001.

[8] K. Koryszewski, D. Bociąga & R. Skowroński (2015) Results of peritrochanteric fracture treatment with carbon (DLC) and silicon-carbon (Si-DLC) coated Gamma nail - preliminary report

[9] M. Navarro, A. Michiardi, O. Castaño & J. A. Planell (2008) Biomaterials in orthopaedics. Journal of the Royal Society, Interface, 5(27), 1137-1158.

[10] A. Grill (2003) Diamond-like carbon coatings as biocompatible materials—an overview. Diamond and Related Materials, 12(2), 166-170.

[11] D. Bociaga & K. Mitura (2008) Biomedical effect of tissue contact with metallic material used for body piercing modified by DLC coatings. Diamond and Related Materials 17(7-10), 1410-1415.

[12] D. Bociąga, A.Olejnik, K.Jastrzębski, A. Jędrzejczak, L. Świątek, J. Grabarczyk, A. Sobczyk - Guzenda, M. Kamińska, W. Jakubowski, P.Komorowski, P.Niedzielski (2016) Control of the biological response to metallic biomaterials through application of the dlc coatings with dopants. ENGINEERING OF BIOMATERIALS 138 94.

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First part of the catalogue number	Materials
1 -XX-XX-XX	titanium alloy
4 -XX-XX-XX	implantation steel
9 -XX-XX-XX	UHMW-PE polyethylene with witamin E
21 -XX-XX-XX	titanium alloy coated with Si-DLC
41 -XX-XX-XX	titanium alloy coated with Ti + Hap
61 -XX-XX-XX	titanium alloy coated with Ti + Si-DLC
103 -XX-XX-XX	cobalt-chromium-molybdenum alloy
156 -XX-XX-XX	ceramics - Biolox® delta

MEDGAL-HIP Endoprosthesis

INTENDED TO USE

Endoprosthesis can be used in the following cases:

- degenerative changes or serious ailments in the course of hip rheumatoid disease,
- extensive hip damage that significantly reduces the efficiency of the musculoskeletal system,
- joint post-traumatic changes,
- femoral head necrosis,
- non-promising union of a hip fracture.

CONTRAINDICATIONS

- infection of a joint or joint area,
- bone defect that prevents the primary stability of the joint stem as a result of alloplasty,
- patient's allergic reactions to the implant's alloying components,
- body infection,
- cardiovascular disease,
- anticipated overload of the hip endoprosthesis (e.g. overweight or excessive physical activity of the patient),
- patients unable or willing to cooperate during treatment,
- limited patient's ability to understand doctor's recommendations and not to follow them in the postoperative period.

PRE-OPERATIONAL RECOMMENDATIONS

- The treatment should be carefully planned.
- The size of the endoprosthesis (stem and head) must be carefully selected for the anatomical structure of the hip, based on X-Ray tests using appropriate MEDGAL templates.
- In the pre-operative period, any existing infectious outbreaks in the body should be eradicated.
- The physician should carry out allergy tests of the patient's body on the components of the implants.
- The use of an endoprosthesis is not allowed if allergy tests show positive reactions.
- Please read the instructions for using the instruments and follow the recommendations contained therein.
- The physician is responsible for choosing the appropriate surgical technique for a particular clinical case.

Before the procedure, the doctor should make sure that:

- all implants to be implanted in the operating room,
- surgical instruments / tools are completed and functional.

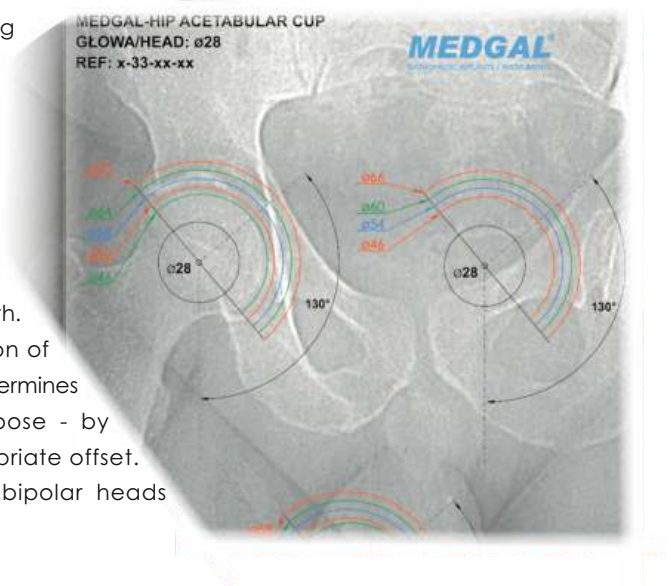
PRE-OPERATIVE PLANNING

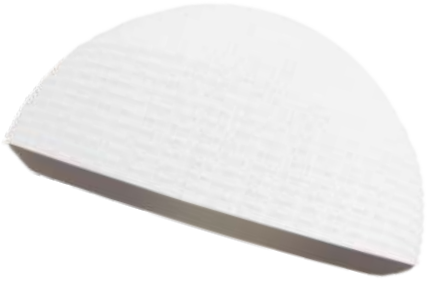
Preoperative planning is key stage to determining the appropriate stem size and bipolar head offset prior to alloplasty.

The template should define the resection area necessary to restore the anatomical center of rotation in the hip joint. The selection of the height and angle of the femoral head resection defines the length and angle of the head neck and the correct bipolar head offset.

Necessary to carry out preoperative planning are:
- x-ray machine;
- templates containing the contours of the stems, femoral heads and shell heads in various sizes;

The femur should be placed in the neutral rotation position so that its orientation on the x-ray image corresponds to the template plane. The developed x-ray scan should have sufficient femoral stem length to determine the steml length. An adequate stem size should be selected by applying the template to an X-ray scan and finding the optimal implant adaptation to anatomical structures - neck angle and stem length. The center of rotation of the femoral head determines which head to choose - by selecting the appropriate offset. The template with bipolar heads allows you to adjust the head to the patient's natural acetabulum. The coverage line is specified on each of the templates.



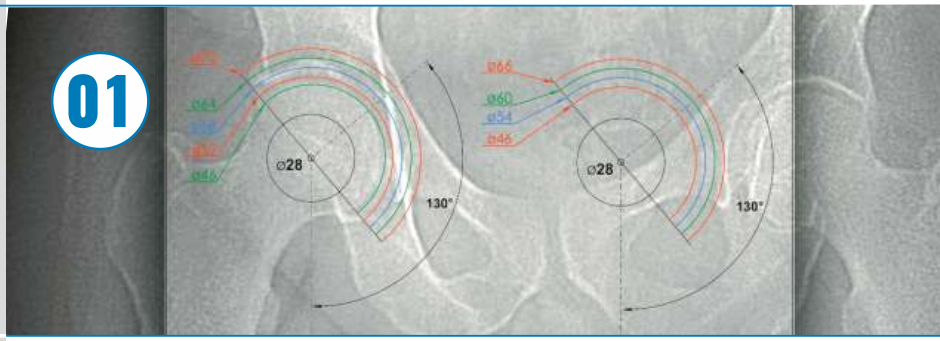


CEMENTLESS ACETABULAR CUP - HEMIFIT - SURGICAL TECHNIQUE

CEMENTLESS ACETABULAR CUP - 3BIOTI - MULTIHOLE - SURGICAL TECHNIQUE

PREOPERATIVE PLANNING

Before the surgery, the size of the acetabular cup should be selected using X-ray templates or software.



HEMIFIT ACETABULAR CUP

Reamer than the removed femoral head. It should sequentially ream the acetabulum by increase the size of reamers until the layer of the subchondral bone is exposed. The last reamer should be one size smaller than the acetabulars size for better PRESSFIT.

Example:

- the reamer 53 - true size 53
- the trial cup 54 - true size 54,
- the acetabular cup 54 - true size 55.

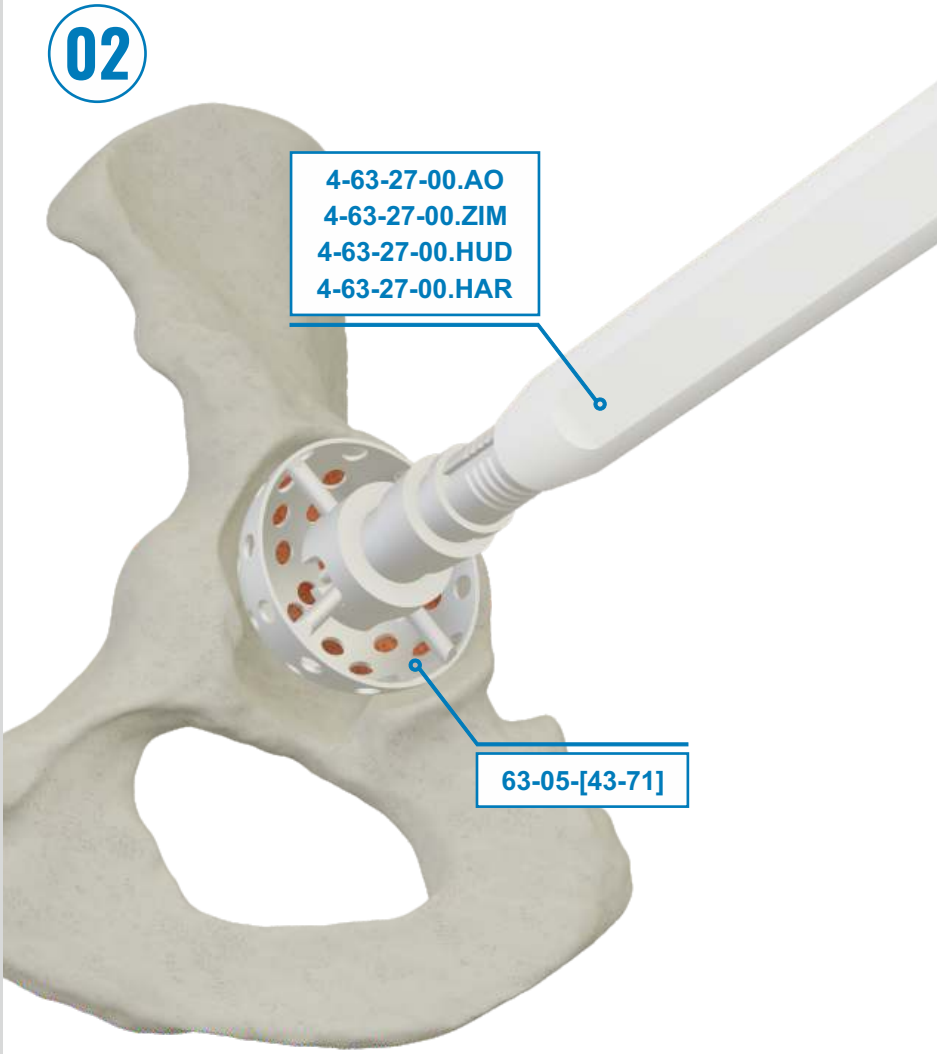
3BioTi ACETABULAR CUP

Reamer than the removed femoral head. It should sequentially ream the acetabulum by increase the size of reamers until the layer of the subchondral bone is exposed. The last reamer should be exactly the same than the acetabulars size for better PRESSFIT.

Example:

- the reamer 54 - true size 54
- the trial cup 54 - true size 54,
- the acetabular cup 54 - true size 56.

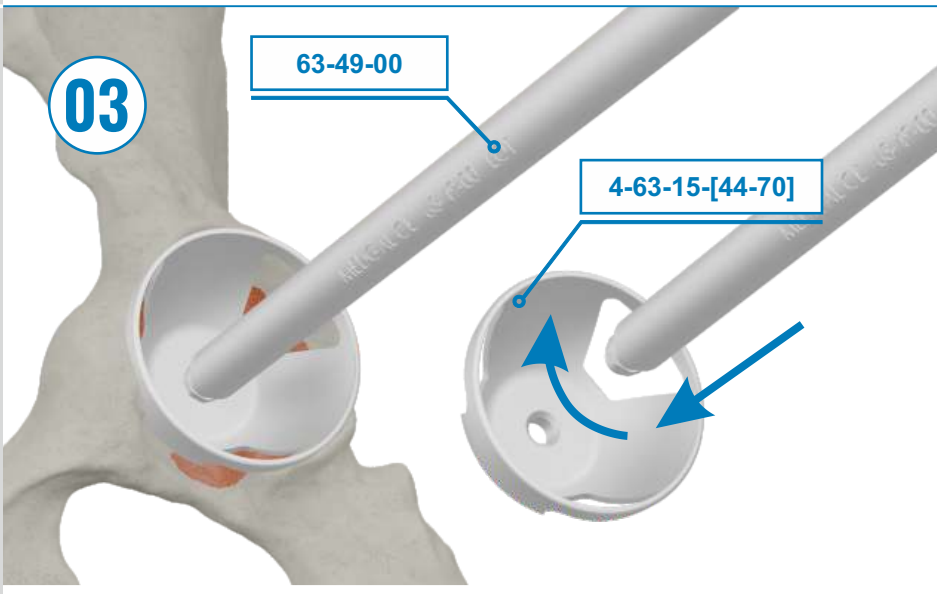
IMPORTANT: During reaming, particular attention should be paid to the reamaining bone at the bottom of the acetabulum. Too deep and wide reaming of the bone may cause excessive bone weakening and, consequently, reduce the stability of the implant.

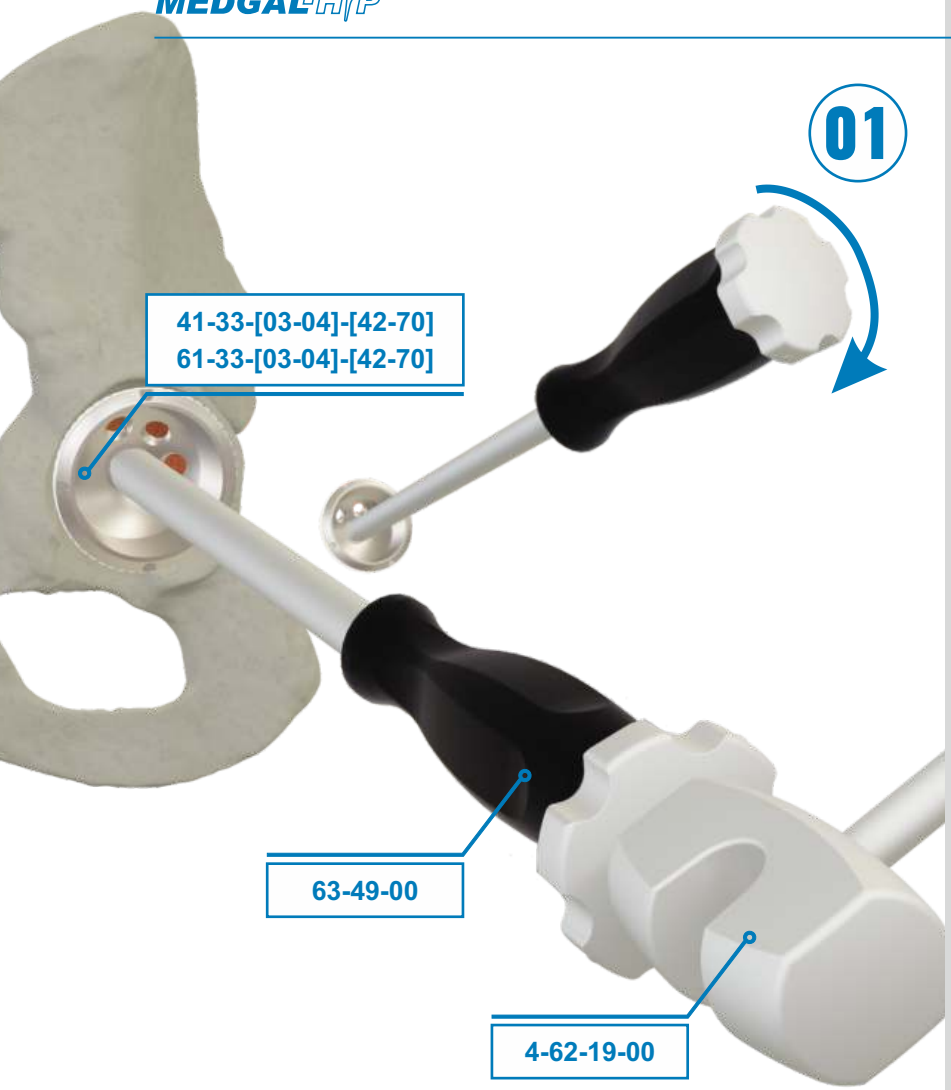


After preparation of the acetabulum, check it by insert the desired trial cup with insertion instrument: straight or curved.

The trial cup should freely enter to reamered acetabulum. The actual dimension of the trial cup is smaller than the dimension of the acetabulum. The trial cup should fit well to the subchondral surface.

IMPORTANT: Do not hit the trial cup inserter with a hammer! The breakdown of the socket base may reduce the primary stability of the acetabulum.

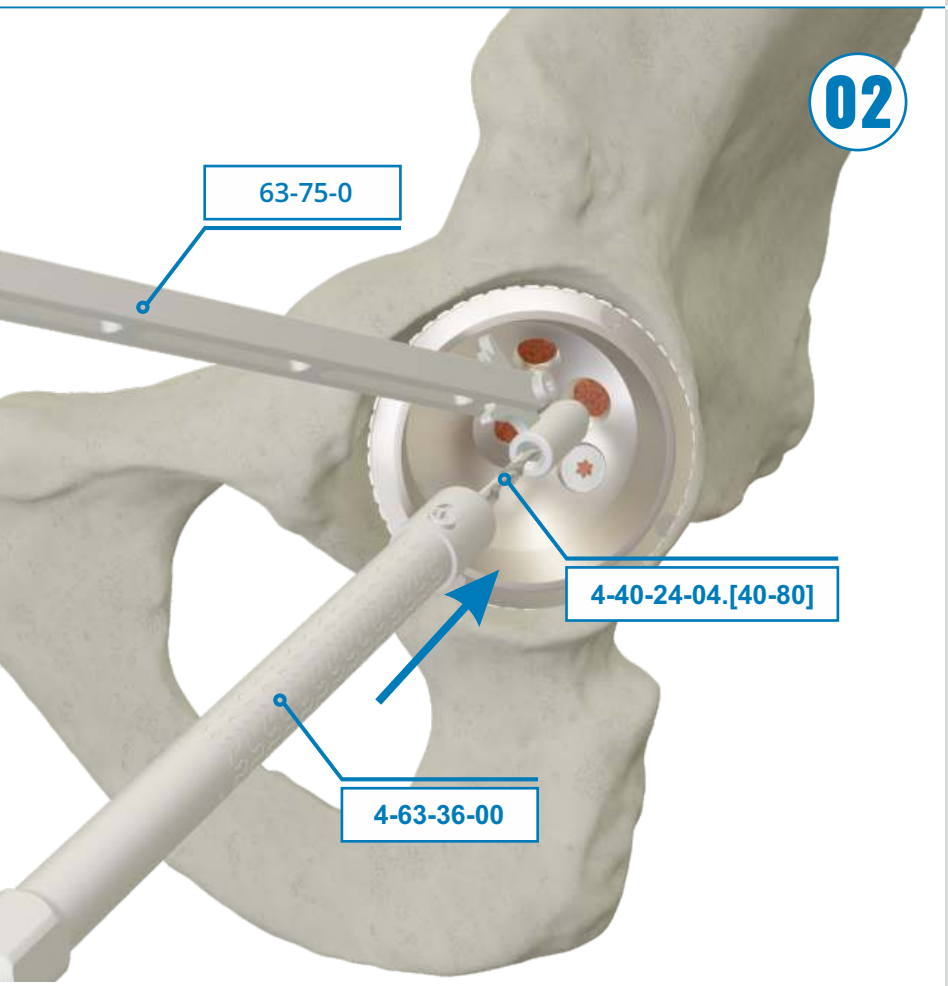




THE CEMENTLESS ACETABULAR CUP IMPLANTATION

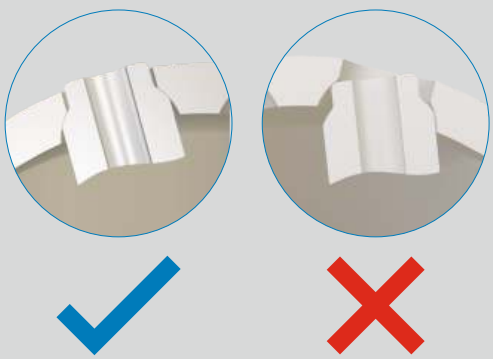
Insert the acetabular cup
41-33-[03-04]-[42-70]
61-33-[03-04]-[42-70]
into the acetabulum. Recommended orientation by acetabular inserting is 45° inclination and 20° of anteversion. After correctly positioning, hit the acetabular cup in with a hammer **4-62-19-00**.

IMPORTANT: Before inserting the acetabular cup, pay special attention to the position of the holes for the acetabular screws.

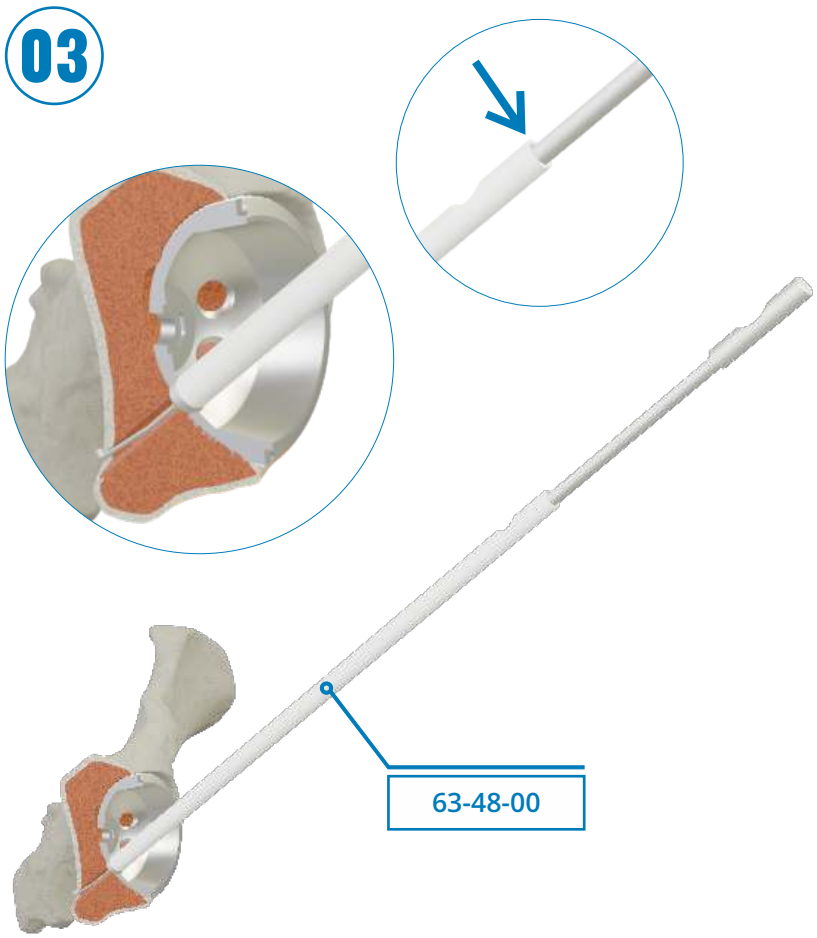


Optionally, when the stability of the acetabular cup is in doubt, it is recommended to secure the acetabular cup using the acetabular screws. All screw holes are factory blinded. Remove the plug from the selected hole with a screwdriver. Make the hole for the acetabular screw using a flexible drill guide **4-63-36-00**
and a drill **4-40-24-04.[40-80]** .

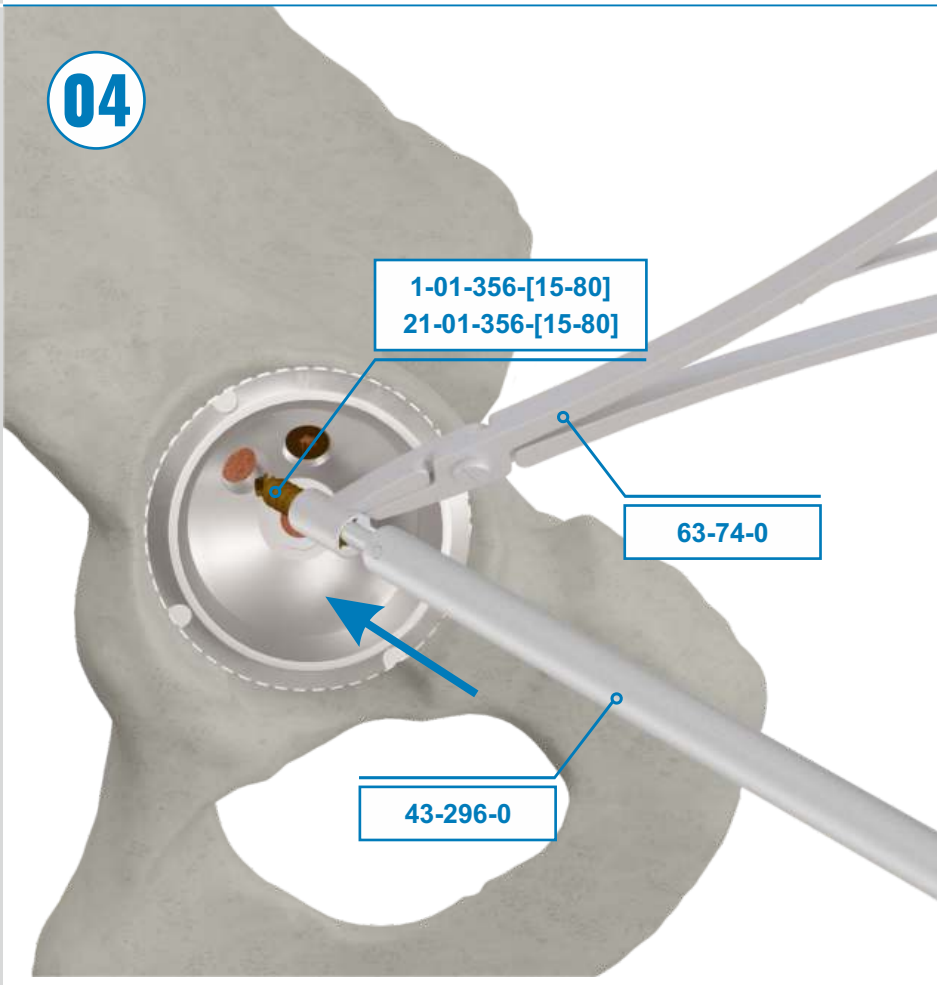
IMPORTANT: Inaccurate insertion of the drill guide into the hole in acetabular cup may result in insufficiently deep insertion of the acetabular screw, which will prevent the correct locking of the cup liner in the acetabular cup.



Measure the depth of the hole using the bone thickness gauge **63-48-00**. The value on the measure corresponds to the length of the screw.



Insert the screws **1-01-356-[15-80]**; **21-01-356-[15-80]** into the drilled holes using the hinged screwdriver **43-296-0** and forceps **63-74-0**.



POLYETHYLENE AND CERAMIC INSERTS

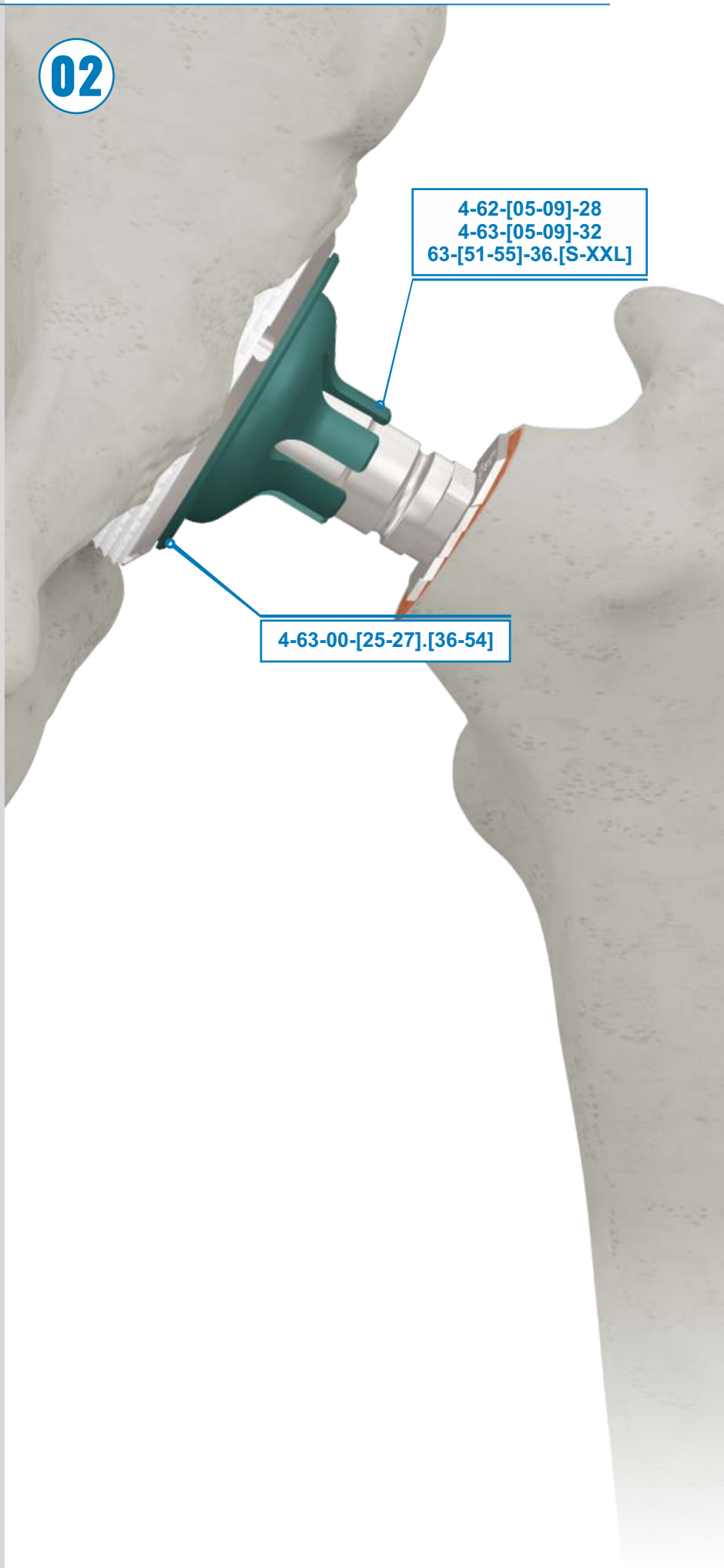
INSERTION OF THE TRAIL CUP LINERS
(optional)

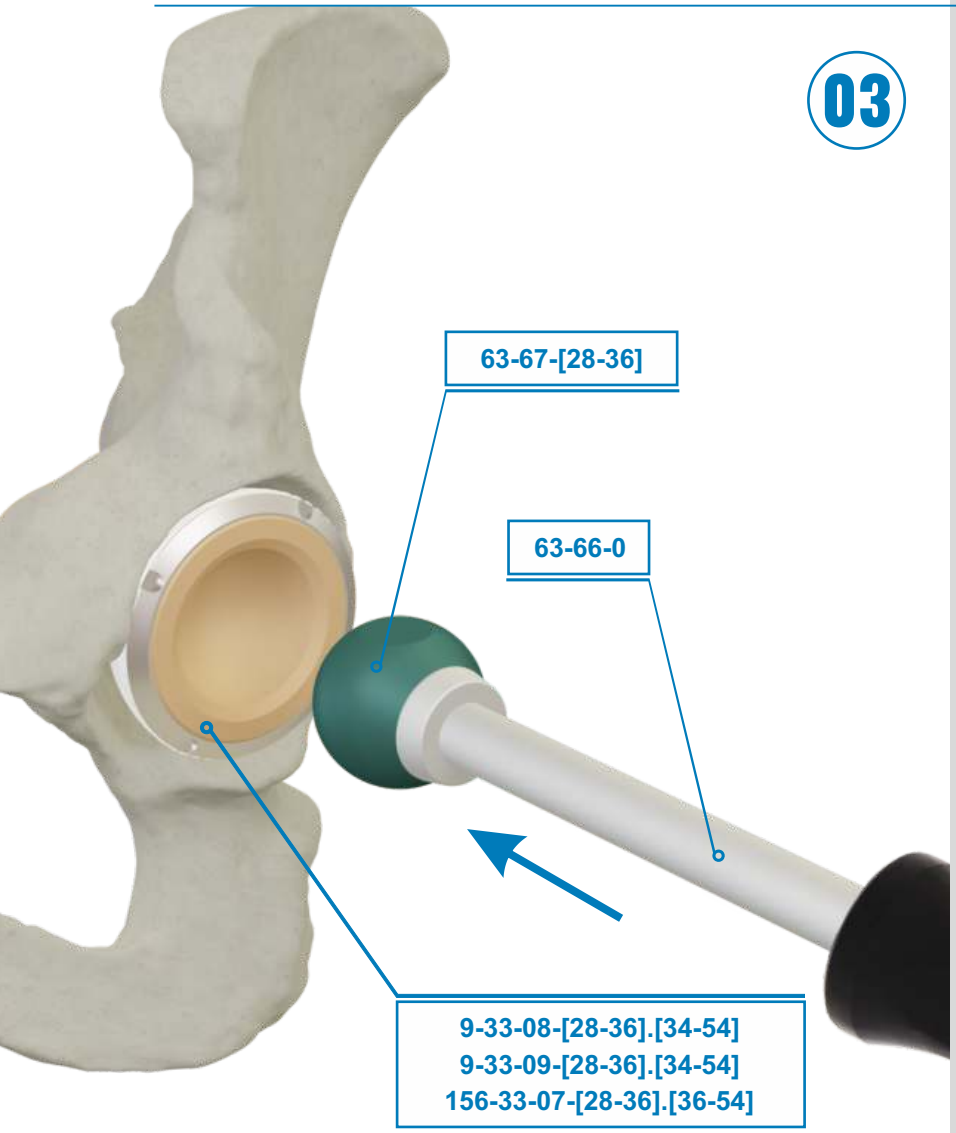
Insert the trail cup liners **4-63-00-[25-27].[36-54]** using the forceps **63-73-0**. The trial cup liner should be selected in accordance with the size of the acetabular cup and the size of the selected femoral head.

INSERTING THE TRIAL FEMORAL HEAD

02

Insert the trial femoral head
4-62-[05-09]-28
4-63-[05-09]-32
63-[51-55]-36.[S-XXL]
into the trial cup liner located in acetabular cup. Check the mobility of the hip joint and selected offset.





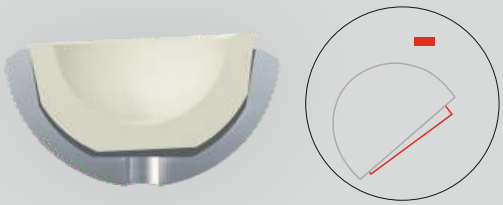
03

INSERTION OF THE CUP LINERS

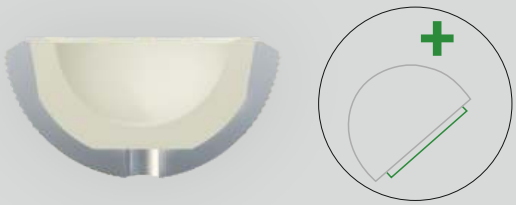
Insert the selected cup liner
9-33-08-[28-36].[34-54]
9-33-09-[28-36].[34-54]
156-33-07-[28-36].[36-54]
into the acetabular cup using the cup liner impactor **63-67-[28-36]** connected with impactor handle **63-66-0** and the hammer.

IMPORTANT: Before inserting the cup liner, precisely rinse and dry the bottom of the acetabular cup.

INSERTION OF THE CUP LINERS



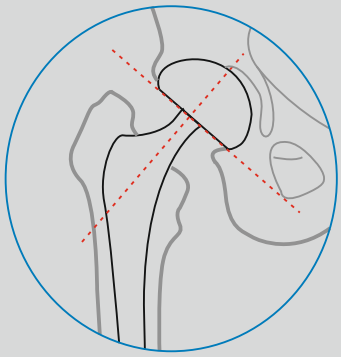
Incorrect cup liner placement
in the acetabular cup



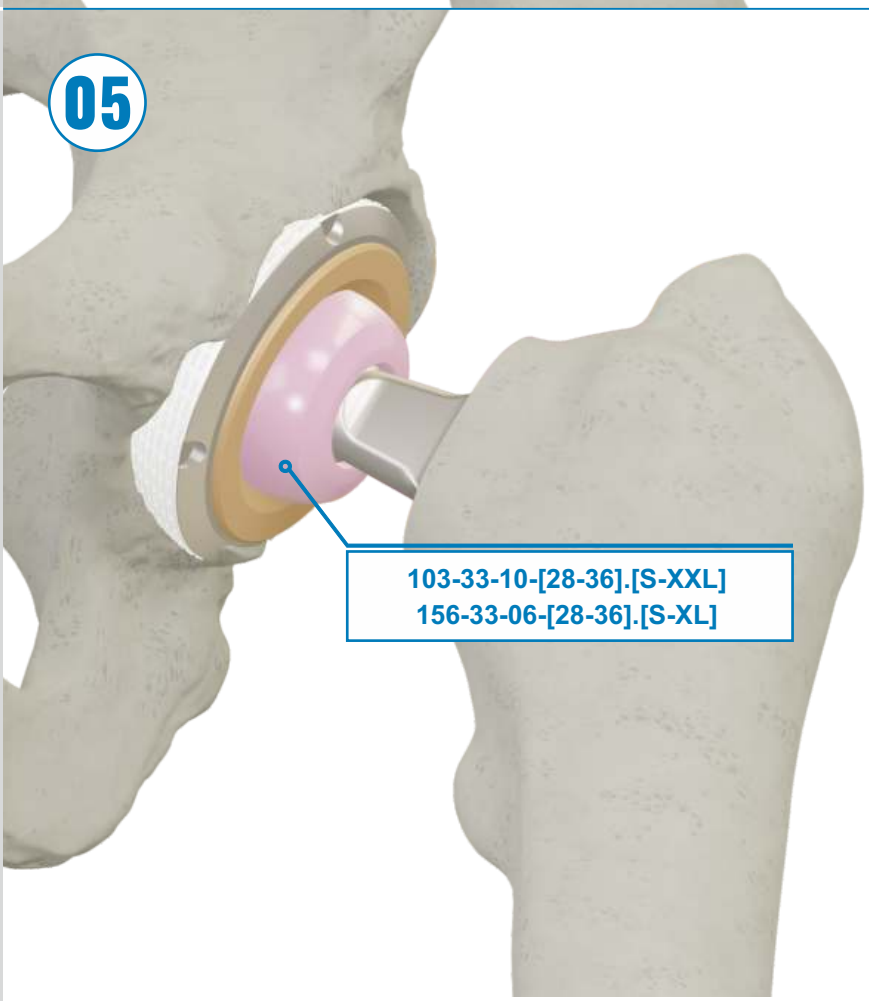
Correct cup liner placement
in the acetabular cup

CHECK THE MOBILITY OF THE HIP JOINT

Insert the femoral head into the cup liner
103-33-10-[28-36].[S-XXL]
156-33-06-[28-36].[S-XL]
Check the mobility of the hip joint.



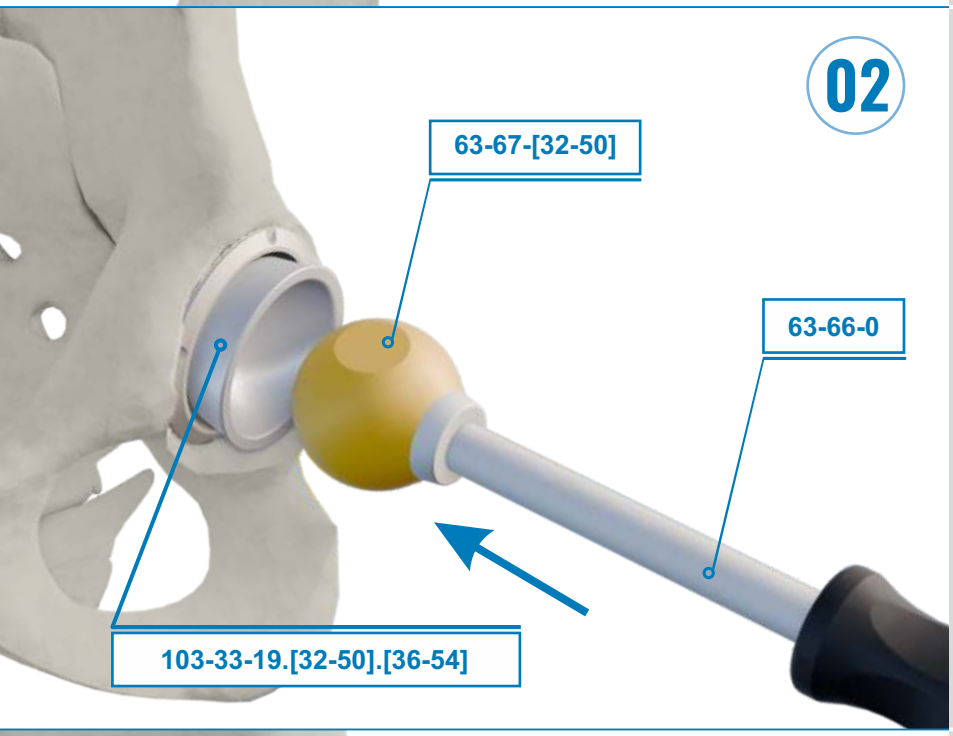
After use, the instruments must be properly prepared for cleaning by removing any remaining bone fragments, followed by the cleaning process and subsequent sterilization.



01

DUAL MOBILITY

Note: Before inserting the insert, clean the bottom of the cup thoroughly.



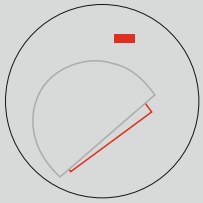
02

INSERTION OF THE ACETABULAR INSERTS

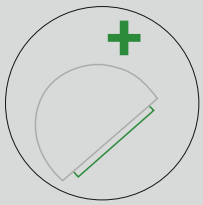
Insert the proper insert **103-33-19.[32-50].[36-54]** into the acetabular cup.63-66-0Verify whether it has been placed axially, and then hammer the insert using the insert impactor **63-67-[32-50]** in combination with the impactor handle **63-66-0** and the hammer.

03

INSERTION OF THE ACETABULAR INSERT



Incorrect positioning of the insert in the cup



Correct positioning of the insert in the cup

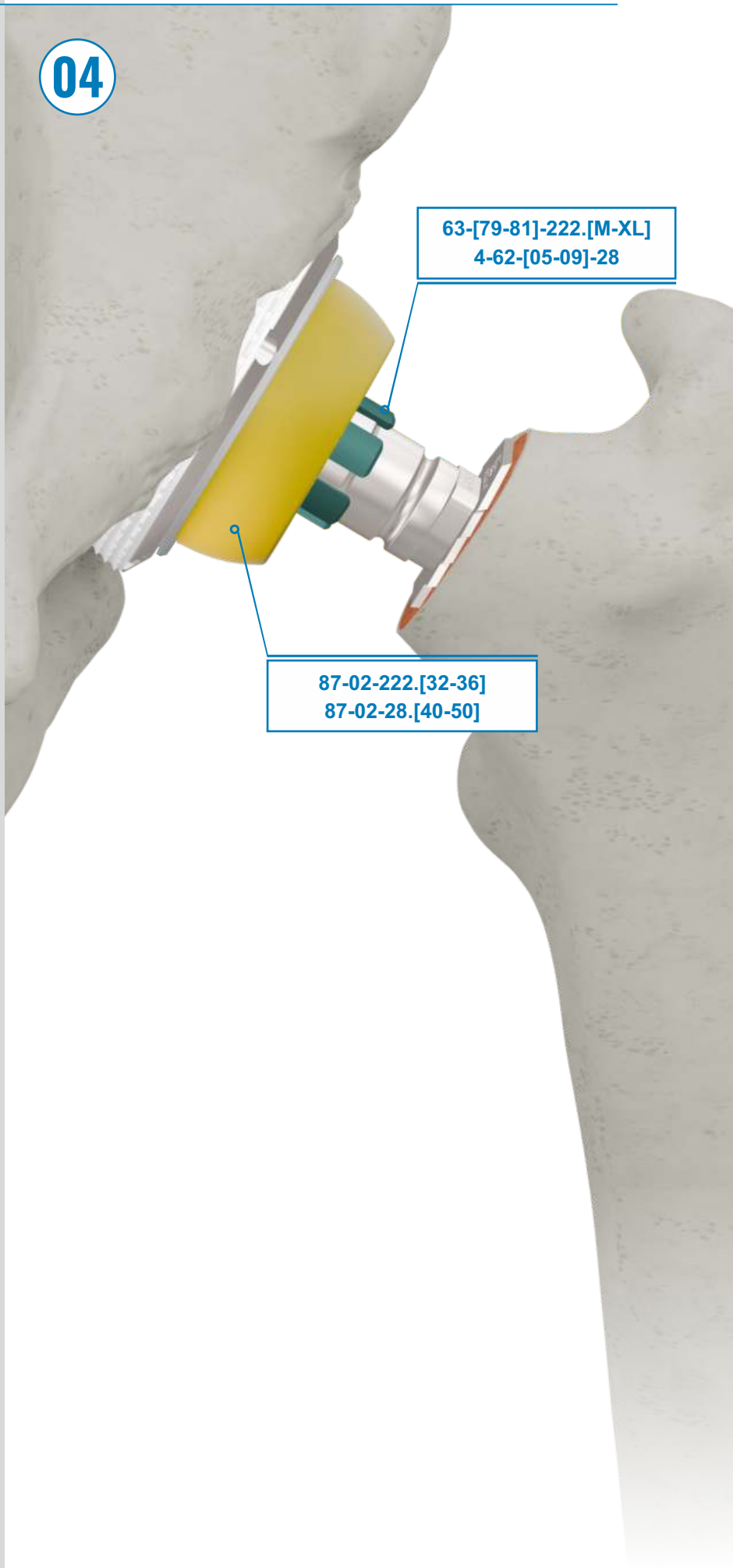
INSERTION OF THE TRIAL HEAD

04

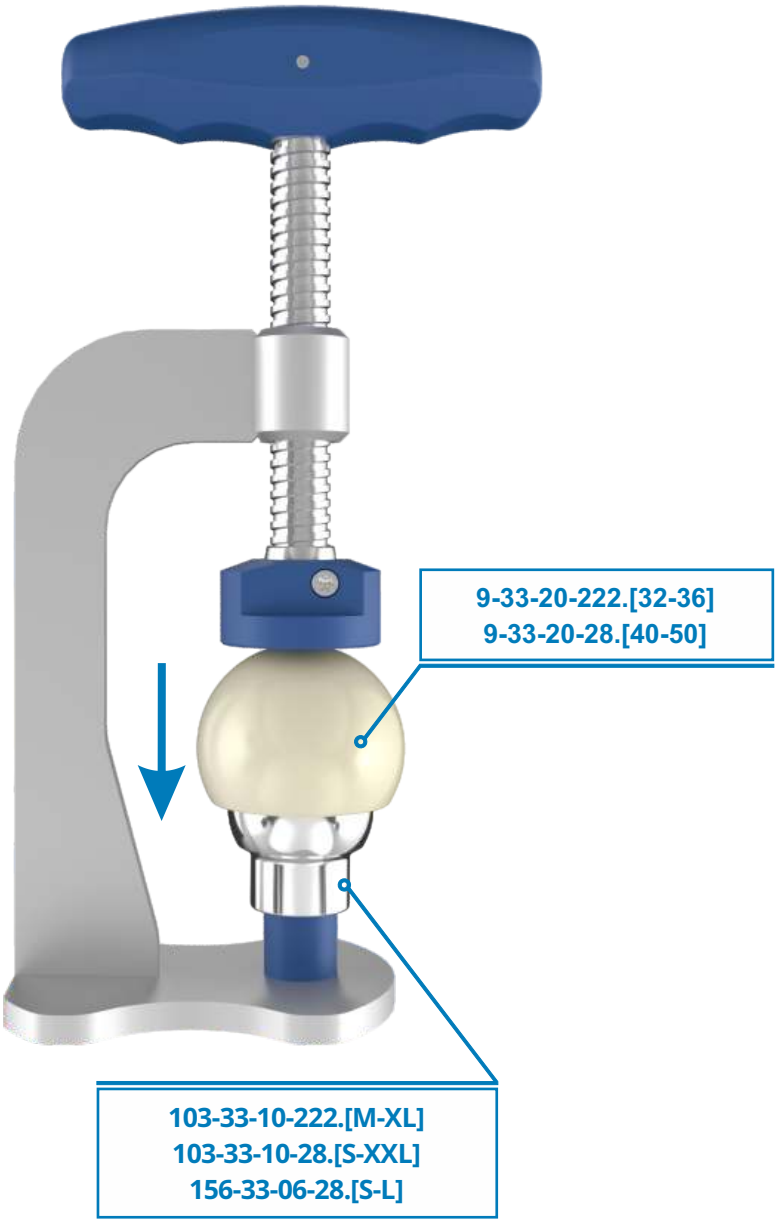
Based on the size of the acetabulum and the insert, select the appropriate dual-mobility trial head
87-02-222.[32-36]
87-02-28.[40-50].
Next, match the correct femoral trial head
63-[79-81]-222.[M-XL]
4-62-[05-09]-28.

After proper matching, insert the trial femoral head into the trial dual-mobility head and place the entire piece on the neck of the rasp.

Place the assembled set in the acetabulum. Check the mobility of the hip joint and the selected offset.



05



ASSEMBLY OF THE FEMORAL HEAD

Based on the selected trial head sizes, select the appropriate femoral head and dual-mobility head.
Using a press, place the femoral head in the dual-mobility head selected for the acetabular cup.

Assembly of the set on the instrument table:

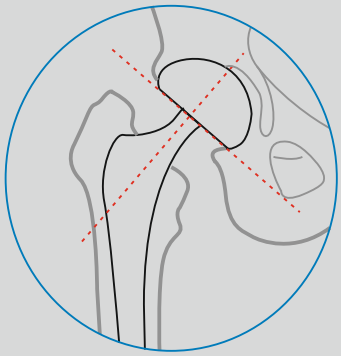
Open the press by turning the T-shaped handle counterclockwise to allow the main assembly components to be inserted.

Femoral head
103-33-10-222.[M-XL]
103-33-10-28.[S-XXL]
156-33-06-28.[S-L]
place on the support element.
Next, place the dual-mobility head
9-33-20-222.[32-36]
9-33-20-28.[40-50]
on the femoral head.

After positioning both heads vertically, compress until the femoral head is completely settled in the dual-mobility head.
After assembling the set, verify the correctness of the connection by checking the full range of movement of the components.

PLACING THE SET IN THE ACETABULUM

Place the set of heads on the mandrel, then hammer them in using the **4-62-02-00** head impactor. Insert the prepared set into the cup insert.



06

VERIFICATION OF THE ASSEMBLY CORRECTNESS

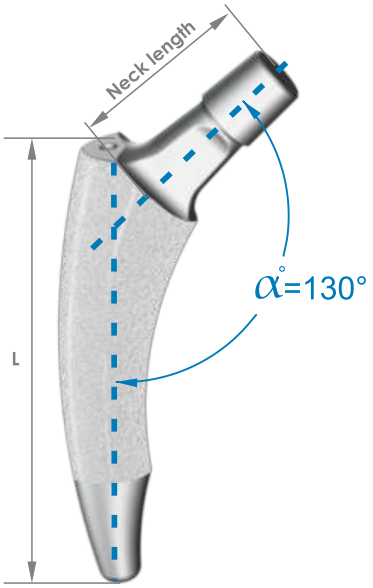
Verify hip joint mobility.

After the use, instruments should be properly prepared for cleaning by removing any remaining bone fragments, then cleaned and re-sterilized.

07

METHAFIT Femoral Neck Stem

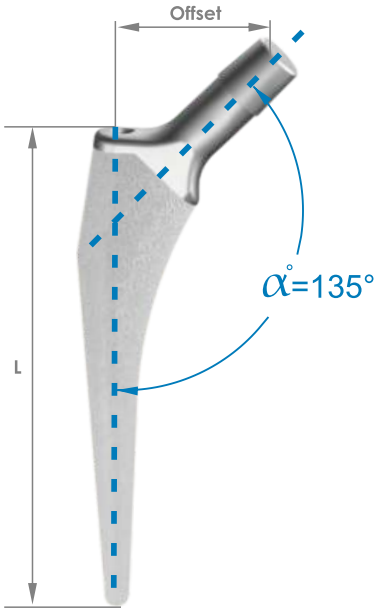
METHAFIT Stem



Neck length	Length L (mm)	REF No.	
		Titanium alloy+Ti+HAp	Titanium alloy+Ti+Si-DLC
29	79,3	41-38-01-01	61-38-01-01*
30	83,7	41-38-01-02	61-38-01-02*
31,5	88,5	41-38-01-03	61-38-01-03*
32,5	92,6	41-38-01-04	61-38-01-04*
33,5	97,1	41-38-01-05	61-38-01-05*
34,5	101,7	41-38-01-06	61-38-01-06*
35,5	106,3	41-38-01-07	61-38-01-07*
36,5	110,8	41-38-01-08	61-38-01-08*
37,5	115,5	41-38-01-09	61-38-01-09*
38,5	118,9	41-38-01-10*	61-38-01-10*
38,5	121,2	41-38-01-11*	61-38-01-11*
38,5	124,7	41-38-01-12*	61-38-01-12*

*available on request

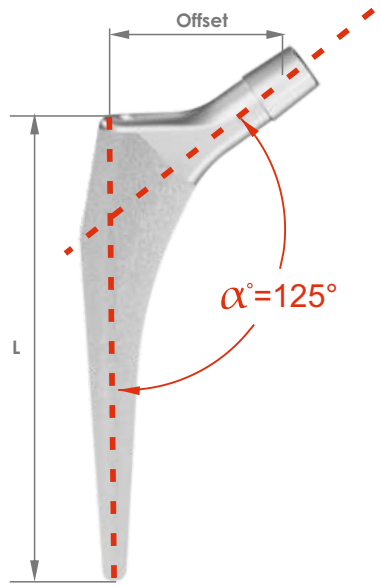
STANDARD Stem



ST 135

Offset (mm)	Length L (mm)	REF No.		
		Titanium alloy+Ti+HAp	Titanium alloy+Ti+Si-DLC	Titanium alloy-Cement
37,4	128	-	-	1-35-07-01*
37,8	130	41-35-07-01	61-35-07-01*	1-35-07-02*
38,3	133	41-35-07-02	61-35-07-02*	1-35-07-03*
39,0	136	41-35-07-03	61-35-07-03*	1-35-07-04*
39,5	139	41-35-07-04	61-35-07-04*	1-35-07-05*
40,0	143	41-35-07-05	61-35-07-05*	1-35-07-06*
40,7	146	41-35-07-06	61-35-07-06*	1-35-07-07*
41,2	150	41-35-07-07	61-35-07-07*	1-35-07-08*
41,8	155	41-35-07-08	61-35-07-08*	1-35-07-09*
42,5	160	41-35-07-09	61-35-07-09*	1-35-07-10*
43,2	165	41-35-07-10	61-35-07-10*	1-35-07-11*
43,9	170	41-35-07-11	61-35-07-11*	-

*available on request



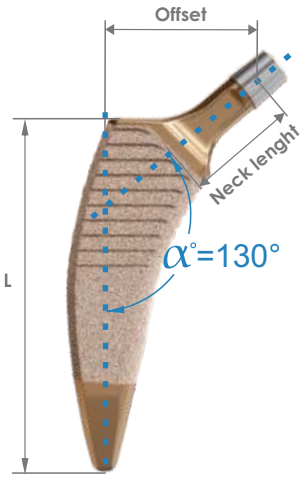
CV 125

Offset (mm)	Length L (mm)	REF No.		
		Titanium alloy+Ti+HAp	Titanium alloy+Ti+Si-DLC	Titanium alloy-Cement
43,1	128	-	-	1-35-08-01*
43,5	130	41-35-08-01	61-35-08-01*	1-35-08-02*
44,0	133	41-35-08-02	61-35-08-02*	1-35-08-03*
44,7	136	41-35-08-03	61-35-08-03*	1-35-08-04*
45,2	139	41-35-08-04	61-35-08-04*	1-35-08-05*
45,7	143	41-35-08-05	61-35-08-05*	1-35-08-06*
46,4	146	41-35-08-06	61-35-08-06*	1-35-08-07*
46,9	150	41-35-08-07	61-35-08-07*	1-35-08-08*
47,5	155	41-35-08-08	61-35-08-08*	1-35-08-09*
48,2	160	41-35-08-09	61-35-08-09*	1-35-08-10*
48,9	165	41-35-08-10	61-35-08-10*	1-35-08-11*
49,6	170	41-35-08-11	61-35-08-11*	-

*available on request

Femoral Neck Stem

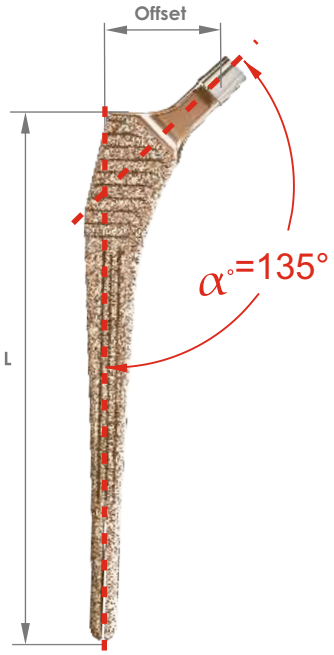
MEDGALIUS Stem



Offset (mm)	Neck length	Length L (mm)	REF No.	
			Titanium alloy+Ti+HAp	Titanium alloy+Ti+Si-DLC
34,54	27,5	83	41-35-13-130M.0*	61-35-13-130M.0
37,24	30	86	41-35-13-130M.1*	61-35-13-130M.1
38,03	30	89	41-35-13-130M.2*	61-35-13-130M.2
40,72	32,5	92	41-35-13-130M.3*	61-35-13-130M.3
41,50	32,5	95	41-35-13-130M.4*	61-35-13-130M.4
42,27	32,5	98	41-35-13-130M.5*	61-35-13-130M.5
45,50	35,5	101,5	41-35-13-130M.6*	61-35-13-130M.6
46,41	35,5	105	41-35-13-130M.7*	61-35-13-130M.7
48,85	37,5	108,5	41-35-13-130M.8*	61-35-13-130M.8
49,76	37,5	112	41-35-13-130M.9*	61-35-13-130M.9
51,42	38,5	115,5	41-35-13-130M.10*	61-35-13-130M.10
53,09	39,5	119	41-35-13-130M.11*	61-35-13-130M.11

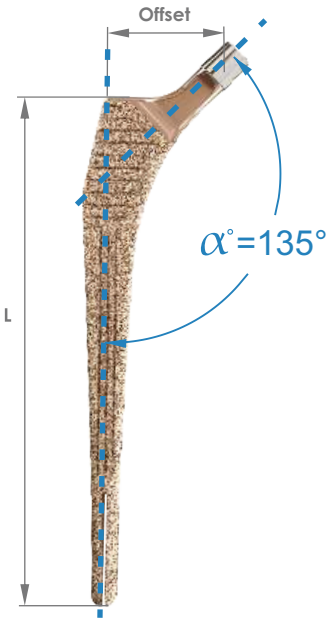
*available on request

REVISION Stem



STANDARD OFFSET

Offset (mm)	Length L (mm)	REF No.
39,4	180	61-35-13-R135.3
39,9	185	61-35-13-R135.4
40,7	190	61-35-13-R135.5
41,2	195	61-35-13-R135.6
41,9	200	61-35-13-R135.7
42,6	205	61-35-13-R135.8
43,4	210	61-35-13-R135.9
44,4	220	61-35-13-R135.10
45,4	230	61-35-13-R135.11

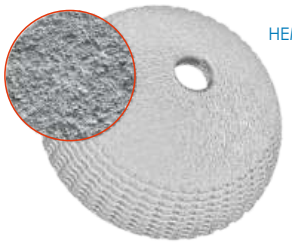


HIGH OFFSET

Offset (mm)	Length L (mm)	REF No.
44,4	180	61-35-13-R135H.3
44,9	185	61-35-13-R135H.4
45,6	190	61-35-13-R135H.5
46,2	195	61-35-13-R135H.6
46,9	200	61-35-13-R135H.7
47,6	205	61-35-13-R135H.8
48,4	210	61-35-13-R135H.9
49,4	220	61-35-13-R135H.10
50,4	230	61-35-13-R135H.11

MEDGAL-HIP Acetabular cup

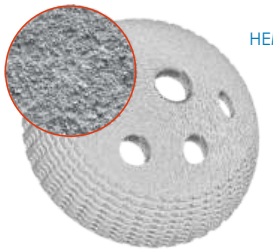
Cementless acetabular cup



Diameter Ø (mm)	REF No.	
	HEMIFIT (Ti+HAp)	HEMIFIT (Ti+SiDLC)
42	41-33-03-42*	61-33-03-42*
44	41-33-03-44*	61-33-03-44*
46	41-33-03-46*	61-33-03-46*
48	41-33-03-48*	61-33-03-48*
50	41-33-03-50*	61-33-03-50*
52	41-33-03-52*	61-33-03-52*
54	41-33-03-54*	61-33-03-54*
56	41-33-03-56*	61-33-03-56*
58	41-33-03-58*	61-33-03-58*
60	41-33-03-60*	61-33-03-60*
62	41-33-03-62*	61-33-03-62*
64	41-33-03-64*	61-33-03-64*
66	41-33-03-66*	61-33-03-66*
68	41-33-03-68*	61-33-03-68*
70	41-33-03-70*	61-33-03-70*

*available on request

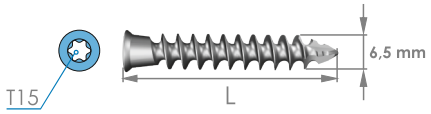
Cementless acetabular cup - **3 holes**



Diameter Ø (mm)	REF No.	
	HEMIFIT (Ti+HAp)	HEMIFIT (Ti+SiDLC)
42	41-33-04-42*	61-33-04-42*
44	**41-33-04-44**	61-33-04-44*
46	**41-33-04-46**	61-33-04-46*
48	**41-33-04-48**	61-33-04-48*
50	**41-33-04-50**	61-33-04-50*
52	**41-33-04-52**	61-33-04-52*
54	**41-33-04-54**	61-33-04-54*
56	**41-33-04-56**	61-33-04-56*
58	**41-33-04-58**	61-33-04-58*
60	**41-33-04-60**	61-33-04-60*
62	**41-33-04-62**	61-33-04-62*
64	**41-33-04-64**	61-33-04-64*
66	**41-33-04-66**	61-33-04-66*
68	**41-33-04-68**	61-33-04-68*
70	**41-33-04-70**	61-33-04-70*

*available on request

Acetabular screw



L(mm)	REF No.	
	Titanium alloy	Titanium alloy + Si-DLC
15-80 (every 5mm)	**1-01-356-L**	**21-01-356-L**

MEDGAL-HIP Acetabular cup

3D printed cementless acetabular cup - 3BioTi - multihole

3BioTi - 3D printed lattice structure improving osseointegration

Diameter Ø (mm)	3 holes	7 holes
	SiDLC	SiDLC
40	21-33-23-3.40*	21-33-23-7.40*
42	21-33-23-3.42*	21-33-23-7.42*
44	**21-33-23-3.44**	**2**1-33-23-7.44*
46	**21-33-23-3.46**	**2**1-33-23-7.46*
48	**21-33-23-3.48**	**2**1-33-23-7.48*
50	**21-33-23-3.50**	**2**1-33-23-7.50*
52	**21-33-23-3.52**	**2**1-33-23-7.52*
54	**21-33-23-3.54**	**2**1-33-23-7.54*
56	**21-33-23-3.56**	**2**1-33-23-7.56*
58	**21-33-23-3.58**	**2**1-33-23-7.58*
60	**21-33-23-3.60**	**2**1-33-23-7.60*
62	**21-33-23-3.62**	**2**1-33-23-7.62*
64	**21-33-23-3.64**	**2**1-33-23-7.64*
66	**21-33-23-3.66**	**2**1-33-23-7.66*
68	**21-33-23-3.68**	**2**1-33-23-7.68*
70	**21-33-23-3.70**	**2**1-33-23-7.70*
72	21-33-23-3.72*	21-33-23-7.72*
74	21-33-23-3.74*	21-33-23-7.74*
76	21-33-23-3.76*	21-33-23-7.76*
78	21-33-23-3.78*	21-33-23-7.78*
80	21-33-23-3.80*	21-33-23-7.80*

*available on request

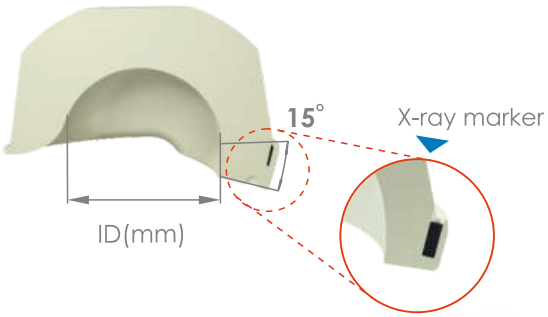
MEDGAL-HIP Cup liners

Cup liner (highly crosslinked UHMWPE with witamin E)

REF No.			Acetabular shell size
ID=28	ID=32	ID=36	
9-33-08-28.34*	-	-	40,42
9-33-08-28.36	-	-	**44**
9-33-08-28.37	-	-	**46**
9-33-08-28.38*	**9-33-08-32.38**	-	**48**
9-33-08-28.40*	**9-33-08-32.40**	-	**50**
9-33-08-28.42*	9-33-08-32.42*	**9-33-08-36.42**	**52**
9-33-08-28.44*	9-33-08-32.44*	**9-33-08-36.44**	**54**
9-33-08-28.46*	9-33-08-32.46*	**9-33-08-36.46**	**56, 58**
9-33-08-28.50*	9-33-08-32.50*	**9-33-08-36.50**	**60, 62**
9-33-08-28.54*	9-33-08-32.54*	**9-33-08-36.54**	**64, 66, 68, 70**

*available on request

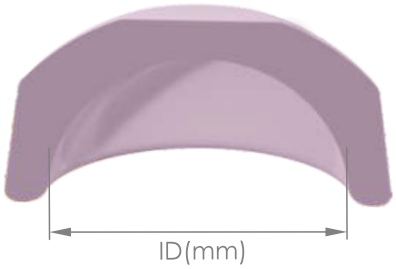
Anti-luxation cup liner (highly crosslinked UHMWPE with witamin E)



REF No.			Acetabular shell size
ID=28	ID=32	ID=36	
9-33-09-28.34*	-	-	40,42
9-33-09-28.36	-	-	**44**
9-33-09-28.37	-	-	**46**
9-33-09-28.38*	**9-33-09-32.38**	-	**48**
9-33-09-28.40*	**9-33-09-32.40**	-	**50**
9-33-09-28.42*	9-33-09-32.42*	**9-33-09-36.42**	**52**
9-33-09-28.44*	9-33-09-32.44*	**9-33-09-36.44**	**54**
9-33-09-28.46*	9-33-09-32.46*	**9-33-09-36.46**	**56, 58**
9-33-09-28.50*	9-33-09-32.50*	**9-33-09-36.50**	**60, 62**
9-33-09-28.54*	9-33-09-32.54*	**9-33-09-36.54**	**64, 66, 68, 70**

*available on request

Ceramic Cup Liner - Biolox® delta*



REF No.			Acetabular shell size
ID=28	ID=32	ID=36	
156-33-07-28.36*	-	-	44,46
156-33-07-28.38*	-	-	48
156-33-07-28.40*	156-33-07-32.40*	-	50
-	156-33-07-32.42*	-	52
-	156-33-07-32.44*	156-33-07-36.44*	54
-	-	156-33-07-36.46*	56, 58
-	-	156-33-07-36.50*	60, 62
-	-	156-33-07-36.54*	64, 66, 68, 70

*The product is available only on request.
Delivery time is determined individually and it may take up to 12 weeks.

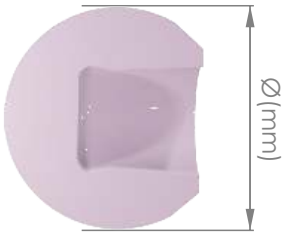
Dual Mobility MEDGAL-HIP

Acetabular shell size	Liner	Dual mobility head	Femoral head (CoCrMo)	Femoral head (ceramic)	Femoral head Ø
40, 42	103-33-19-32.34*	9-33-20-222.32	103-33-10-222.M/L/XL	-	22,2
44, 46	**103-33-19-32.36**	**9-33-20-222.32**	**103-33-10-222.M/L/XL**	-	
48	**103-33-19-36.38**	**9-33-20-222.36**	**103-33-10-222.M/L/XL**	-	
50	**103-33-19-36.40**	**9-33-20-222.36**	**103-33-10-222.M/L/XL**	-	
52	**103-33-19-40.42**	**9-33-20-28.40**	**103-33-10-28.S/M/L/XL/XXL**	**156-33-06-28.S/M/L**	28
54	**103-33-19-40.44**	**9-33-20-28.40**	**103-33-10-28.S/M/L/XL/XXL**	**156-33-06-28.S/M/L**	
56, 58	**103-33-19-40.46**	**9-33-20-28.40**	**103-33-10-28.S/M/L/XL/XXL**	**156-33-06-28.S/M/L**	
60, 62	**103-33-19-44.50**	**9-33-20-28.44**	**103-33-10-28.S/M/L/XL/XXL**	**156-33-06-28.S/M/L**	
64, 66, 68, 70	**103-33-19-50.54**	**9-33-20-28.50**	**103-33-10-28.S/M/L/XL/XXL**	**156-33-06-28.S/M/L**	
72, 74	103-33-19-56.60*	9-33-20-32.56*	103-33-10-32.S/M/L/XL/XXL	156-33-06-32.S/M/L/XL	32
76, 78, 80	103-33-19-56.62*	9-33-20-32.56*	103-33-10-32.S/M/L/XL/XXL	156-33-06-32.S/M/L/XL	

*available on request

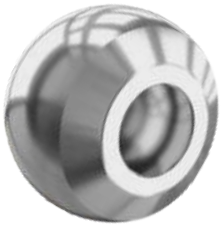
MEDGAL-HIP Heads

Ceramic Femoral Head - Biolox® delta



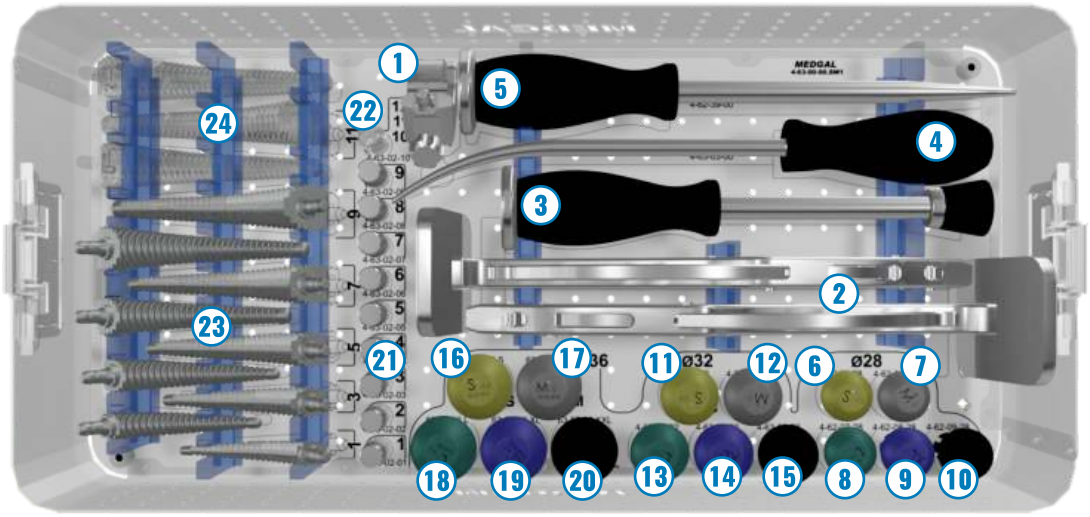
Size	Offset	REF			
		Ø=22,2	Ø=28	Ø=32	Ø=36
S	-3,5	-	156-33-06-28.S	156-33-06-32.S	156-33-06-36.S
M	0	-	156-33-06-28.M	156-33-06-32.M	156-33-06-36.M
L	3,5	-	156-33-06-28.L	156-33-06-32.L	156-33-06-36.L
XL	7	-	-	156-33-06-32.XL	156-33-06-36.XL

Femoral Head (CoCrMo)



Size	Offset	REF			
		Ø=22,2	Ø=28	Ø=32	Ø=36
S	-3,5	-	103-33-10-28.S	103-33-10-32.S	103-33-10-36.S
M	0	103-33-10-222.M	103-33-10-28.M	103-33-10-32.M	103-33-10-36.M
L	3,5	103-33-10-222.L	103-33-10-28.L	103-33-10-32.L	103-33-10-36.L
XL	7	103-33-10-222.XL	103-33-10-28.XL	103-33-10-32.XL	103-33-10-36.XL
XXL	10,5	-	103-33-10-28.XXL	103-33-10-32.XXL	103-33-10-36.XXL

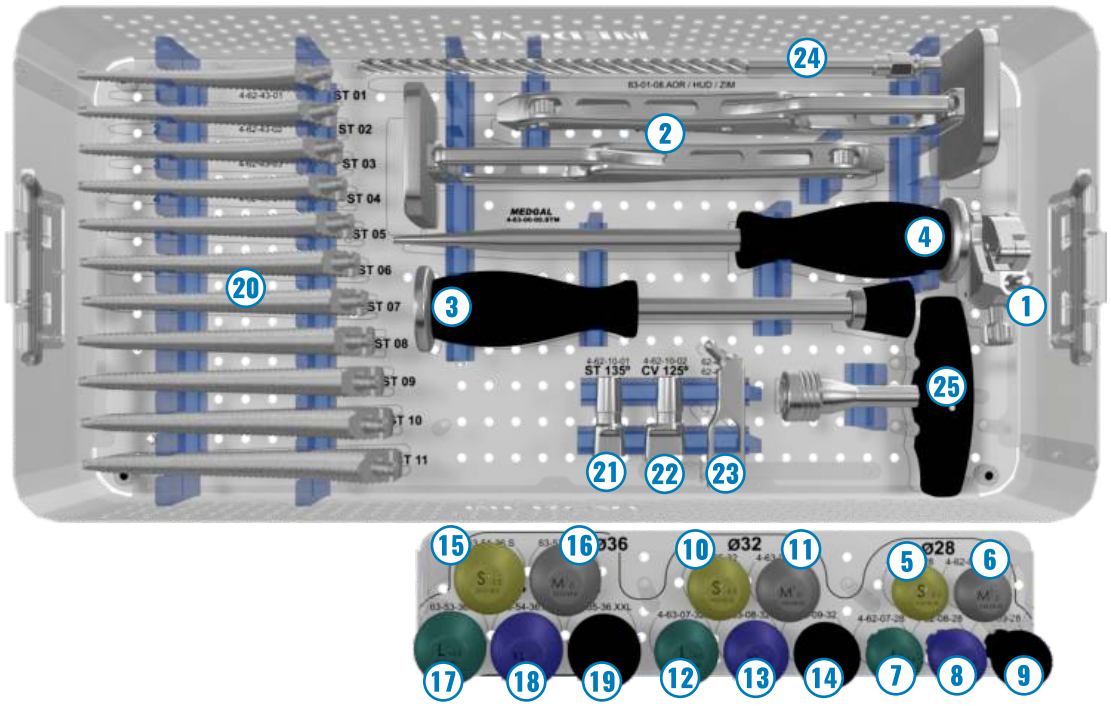
INSTRUMENT SET - METHAFIT STEM
4-63-00-00.SM1



1	Extractor	63-56-0
2	Rasp handle	4-62-01-01
3	Femoral head impactor	4-62-02-00
4	Opening broach curved	4-63-03-00
5	Stem impactor	4-62-39-00
6	Trial head 28 mm S	4-62-05-28
7	Trial head 28 mm M	4-62-06-28
8	Trial head 28 mm L	4-62-07-28
9	Trial head 28 mm XL	4-62-08-28
10	Trial head 28 mm XXL	4-62-09-28
11	Trial head 32 mm S	4-63-05-32
12	Trial head 32 mm M	4-63-06-32
13	Trial head 32 mm L	4-63-07-32
14	Trial head 32 mm XL	4-63-08-32
15	Trial head 32 mm XXL	4-63-09-32
16	Trial head 36 mm S	63-51-36.S
17	Trial head 36 mm M	63-52-36.M
18	Trial head 36 mm L	63-53-36.L
19	Trial head 36 mm XL	63-54-36.XL
20	Trial head 36 mm XXL	63-55-36.XXL
21	Trial neck S**1 - 9**	4-63-02-**01—09**
22	Trial neck S**10 - 12**	4-63-02-**10—12** *(optional)*
23	Rasp **1 - 9**	4-63-01-**01—09**
24	Rasp **10 - 12**	4-63-01-**10—12** *(optional)*

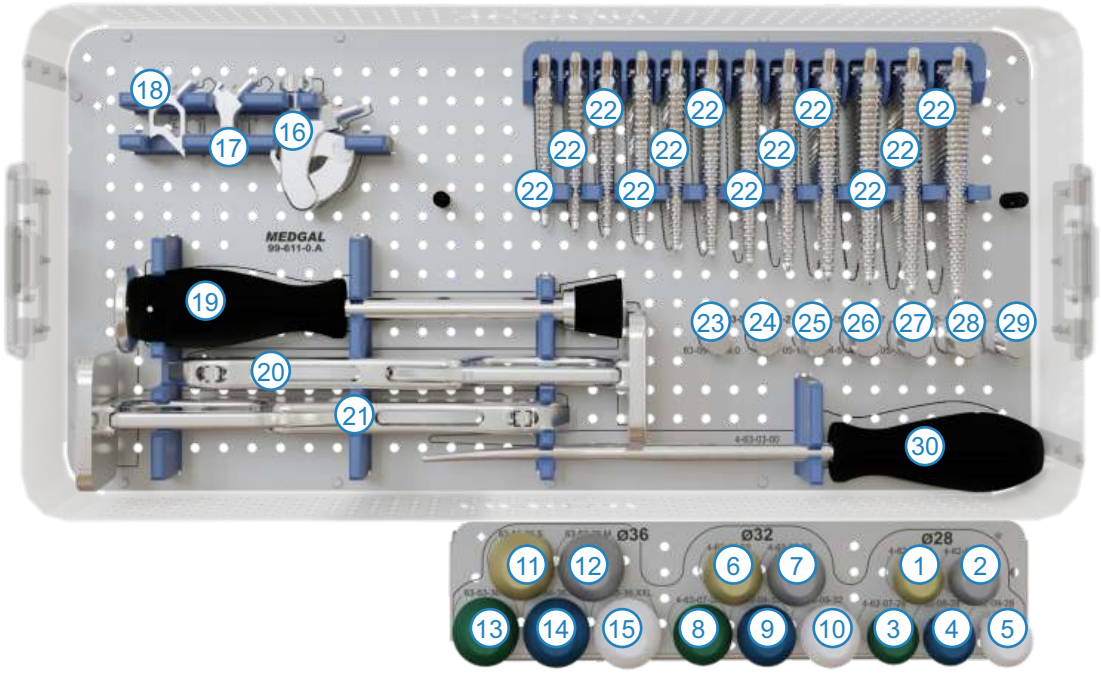
INSTRUMENT SET - STANDARD STEM

4-63-00-00.STM.AOR.1.OL/HUD.1.OL/ZIM.1.OL



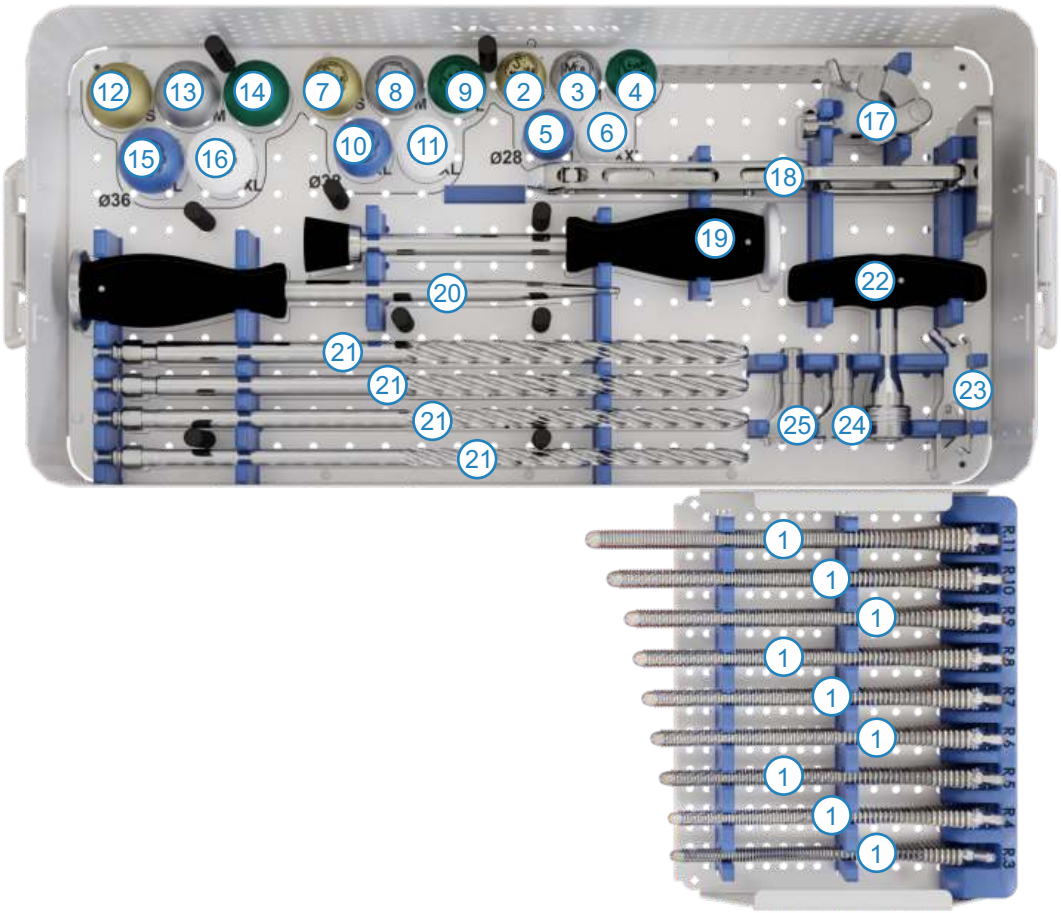
1	Extractor	63-56-0	
2	Rasp handle	4-62-01-01	
3	Femoral head impactor	4-62-02-00	
4	Stem impactor	4-62-39-00	
5	Trial head 28 mm S	4-62-05-28	
6	Trial head 28 mm M	4-62-06-28	
7	Trial head 28 mm L	4-62-07-28	
8	Trial head 28 mm XL	4-62-08-28	
9	Trial head 28 mm XXL	4-62-09-28	
10	Trial head 32 mm S	4-63-05-32	
11	Trial head 32 mm M	4-63-06-32	
12	Trial head 32 mm L	4-63-07-32	
13	Trial head 32 mm XL	4-63-08-32	
14	Trial head 32 mm XXL	4-63-09-32	
15	Trial head 36 mm S	63-51-36.S	
16	Trial head 36 mm M	63-52-36.M	
17	Trial head 36 mm L	63-53-36.L	
18	Trial head 36 mm XL	63-54-36.XL	
19	Trial head 36 mm XXL	63-55-36.XXL	
20	Rasp ST **1 - 11**	4-62-43-**01—11**	
21	Trial **neck** ST 135	4-62-10-01	
22	Trial **neck** CV 125	4-62-10-02	
23	Osteostarter 56 mm	62-46-56	
24	6-flute cutter:		Instrumentation REF:
	- chuck AO Reamer	83-01-08.AOR	4-63-00-00.STM.AOR.1.OL
	- chuck Hudson *(optional)*	83-01-08.HUD	4-63-00-00.STM.HUD.1.OL (optional)
	- chuck Zimmer *(optional)*	83-01-08.ZIM	4-63-00-00.STM.ZIM.1.OL (optional)
25	T-Handle:		
	- chuck AO Reamer	43-281-0	4-63-00-00.STM.AOR
	- chuck Hudson *(optional)*	43-282-0	4-63-00-00.STM.HUD (optional)
	- chuck Zimmer *(optional)*	43-273-0	4-63-00-00.STM.ZIM (optional)

INSTRUMENT SET - MEDGALIUS STEM
99-611-0



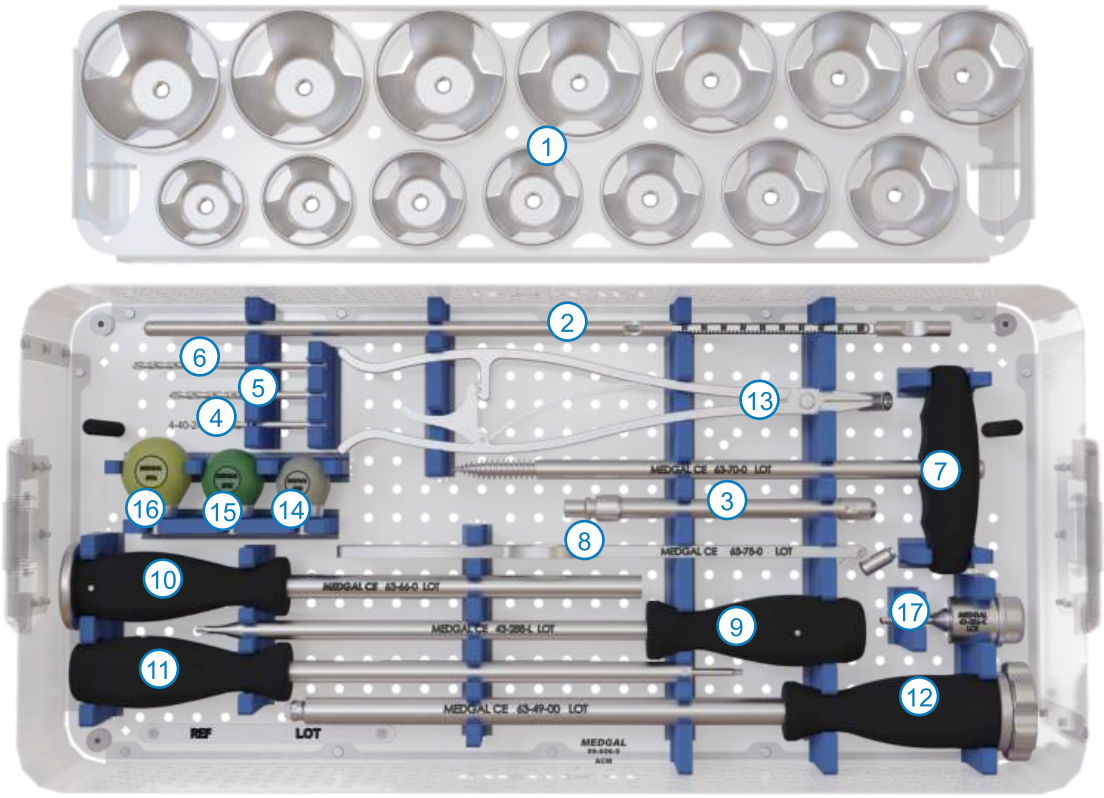
1	Trial head 28 mm S	4-62-05-28
2	Trial head 28 mm M	4-62-06-28
3	Trial head 28 mm L	4-62-07-28
4	Trial head 28 mm XL	4-62-08-28
5	Trial head 28 mm XXL	4-62-09-28
6	Trial head 32 mm S	4-63-05-32
7	Trial head 32 mm M	4-63-06-32
8	Trial head 32 mm L	4-63-07-32
9	Trial head 32 mm XL	4-63-08-32
10	Trial head 32 mm XXL	4-63-09-32
11	Trial head 36 mm S	63-51-36.S
12	Trial head 36 mm M	63-52-36.M.
13	Trial head 36 mm L	63-53-36.L
14	Trial head 36 mm XL	63-54-36.XL
15	Trial head 36 mm XXL	63-55-36.XXL
16	Extractor	63-56-0
17	Stem impactor	83-06-0
18	Osteostarter 24mm	62-46-24
19	Head impactor	4-62-02-00
20	Rasp handle with offset	4-62-38-00
21	Rasp handle	4-62-01-01
22	Rasp Medgalius **0 - 11**	83-04-130M.**0—11**
23	Trial liner	83-05-130M.0
24	Trial liner	83-05-130M.1-2
25	Trial liner	83-05-130M.3-4-5
26	Trial liner	83-05-130M.6-7
27	Trial liner	83-05-130M.8-9
28	Trial liner	83-05-130M.10
29	Trial liner	83-05-130M.11
30	Opening broach curved	4-63-03-00

INSTRUMENT SET - REVISION STEM
99-599-0



1	Rasp SIMPLE **3 - 11**	83-2-R.**3—11**
2	Trial head 28 mm S	4-62-05-28
3	Trial head 28 mm M	4-62-06-28
4	Trial head 28 mm L	4-62-07-28
5	Trial head 28 mm XL	4-62-08-28
6	Trial head 28 mm XXL	4-62-09-28
7	Trial head 32 mm S	4-63-05-32
8	Trial head 32 mm M	4-63-06-32
9	Trial head 32 mm L	4-63-07-32
10	Trial head 32 mm XL	4-63-08-32
11	Trial head 32 mm XXL	4-63-09-32
12	Trial head 36 mm S	63-51-36.S
13	Trial head 36 mm M	63-52-36.M
14	Trial head 36 mm L	63-53-36.L
15	Trial head 36 mm XL	63-54-36.XL
16	Trial head 36 mm XXL	63-55-36.XXL
17	Extractor	63-56-0
18	Rasp handle	4-62-01-01
19	Head impactor	4-62-02-00
20	Stem impactor	4-62-39-00
21	6-flute cutter Ø **10 - 13**	83-01-**10—13**.AOR
22	T handle (AO)	43-281-0.C
23	Osteostarter 56mm	62-46-56
24	Trial liner High Offset	83-03-135
25	Trial liner Standard Offset	83-03-135H

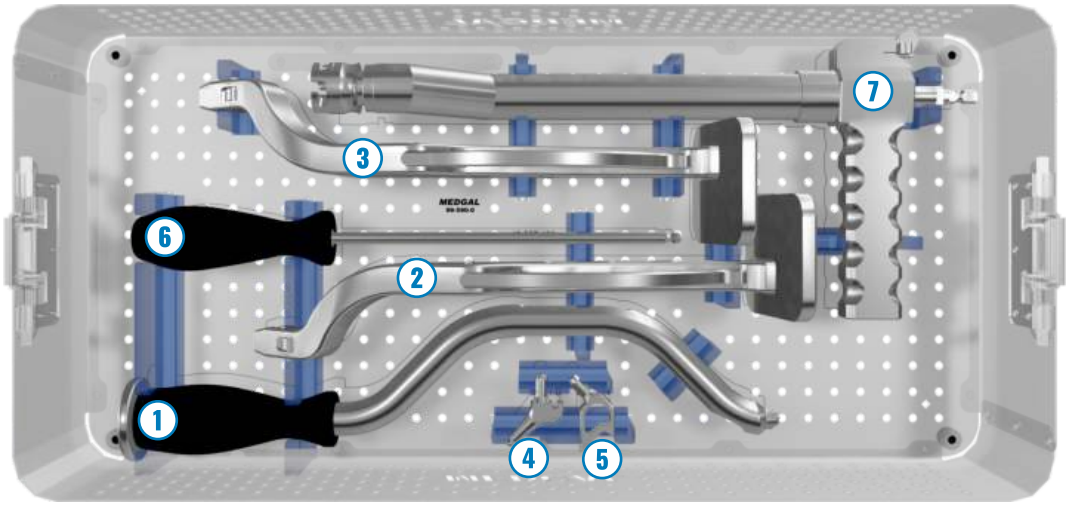
INSTRUMENT SET - CEMENTLESS ACETABULAR CUP
99-606-0



1	Trial Acetabular Cups **44 - 70**	4-63-15-**44—70**
2	Holes depth gauge	63-48-00
3	Flexible drill handle	4-63-36-00
4	Drill L=60 mm	4-40-24-04.40
5	Drill L=80 mm	4-40-24-04.60
6	Drill L=100 mm	4-40-24-04.80
7	Femoral Head Extractor	63-70-0
8	VA drill guide	63-75-0
9	TORX screwdriver T15	43-288-230
10	Impactor handle	63-66-0
11	Flexible TORX screwdriver	43-296-0
12	Acetabular cup impator	63-49-00
13	Screw Holding Forceps	63-74-0
14	Liner Impactor 28mm Head	63-67-28
15	Liner Impactor 32mm Head	63-67-32
16	Liner Impactor 36mm Head	63-67-36
17	AOreamer adapter chuck:	
	- chuck DIN	43-286.DIN *(optional)*
	- chuck AO Jacobs	43-286.AOJ *(optional)*
	- chuck Harris	43-286.HAR *(optional)*
	- chuck Hudson	43-286.HUD *(optional)*
	- chuck Zimmer	43-286.ZIM *(optional)*

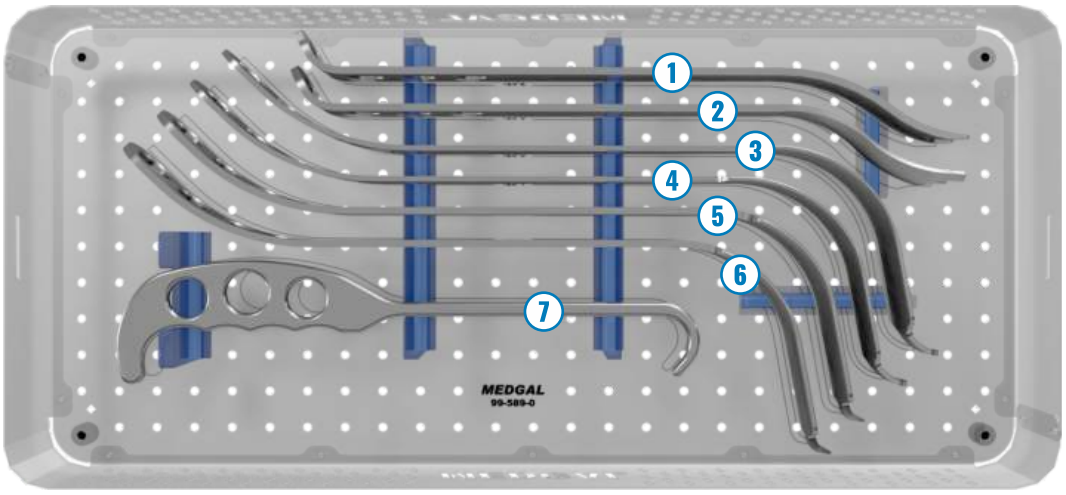
MIS - MINIMAL INVASIVE SET - MEDGAL-HIP

99-590-AOR/AOJ/HUD/ZIM



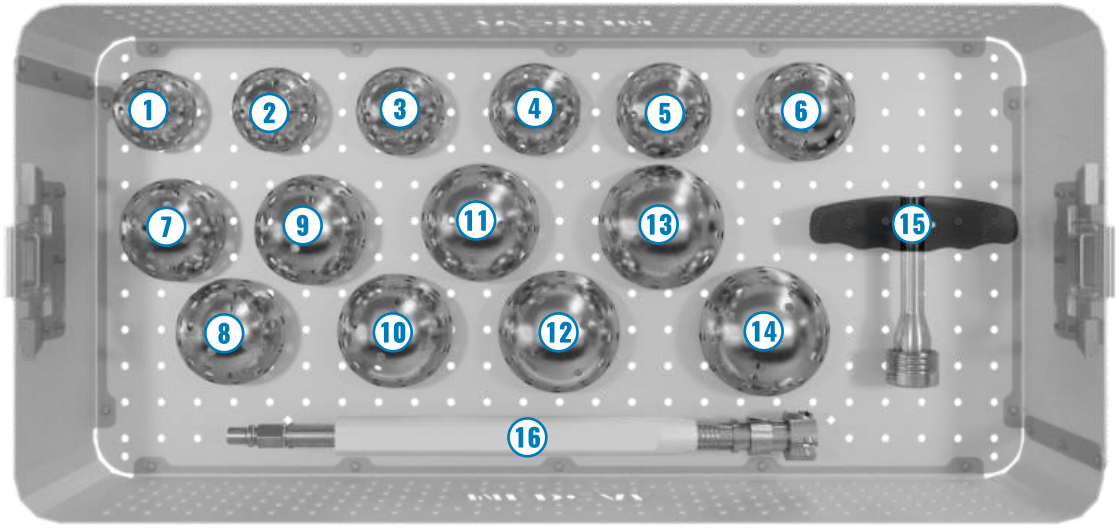
1	Offset acetabular cup impactor	63-68-0	
2	Rasp handle - right	4-63-06-02	
3	Rasp handle - left	4-63-06-01	
4	MIS stem impactor	63-61-0	
5	MIS box osteostarter	62-46-24	
6	Acetabular cup impactor screwdriver	43-287-190	
7	Offset Reamer Handle:		Instrumentation REF:
	- chuck AO Reamer	63-57-00.AOR	99-590-AOR
	- chuck AO Jacobs	63-57-00.AOJ	99-590-AOJ *(optional)*
	- chuck Hudson	63-57-00.HUD	99-590-HUD *(optional)*
	- chuck Zimmer	63-57-00.ZIM	99-590-ZIM *(optional)*

INSTRUMENT SET - DAA RETRACTORS
99-589-0



1	MUELLER RETRACTOR (width 20)	120-2
2	CURVED MURLLER RETRACTOR (width 20)	120-3
3	NARROW COBRA RETRACTOR (width 37)	120-5
4	WIDE COBRA RETRACTOR (width 30)	120-4
5	NARROW HOHMANN RETRACTOR (width 35)	120-6
6	WIDE HOHMANN RETRACTOR (width 30)	120-1
7	Hip Dislocation Hook	63-64-2

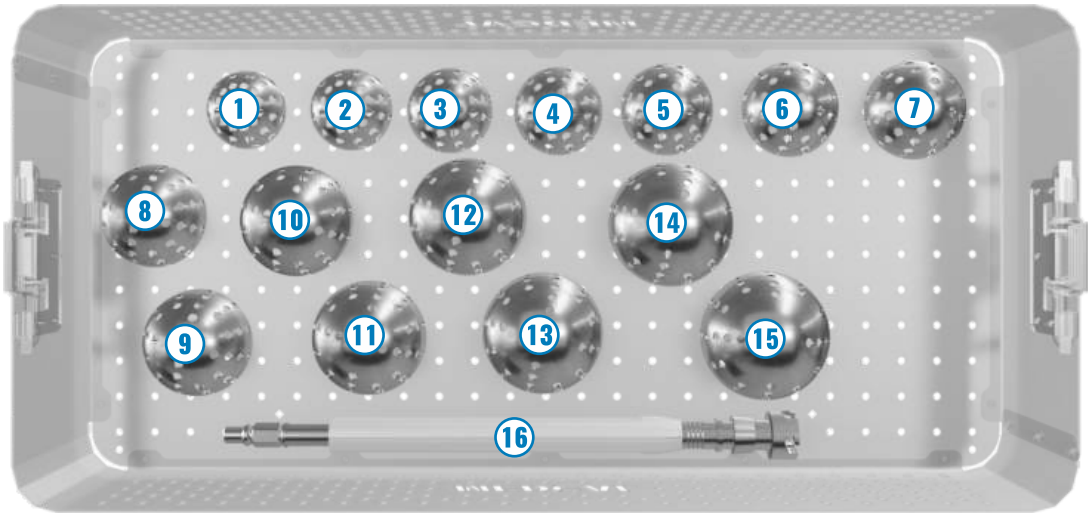
ACETABULAR REAMER SET
4-63-00-00.AR.AO/HAR/HUD/ZIM



1	Acetabular Reamer 44	63-05-44	
2	Acetabular Reamer 46	63-05-46	
3	Acetabular Reamer 48	63-05-48	
4	Acetabular Reamer 50	63-05-50	
5	Acetabular Reamer 52	63-05-52	
6	Acetabular Reamer 54	63-05-54	
7	Acetabular Reamer 56	63-05-56	
8	Acetabular Reamer 58	63-05-58	
9	Acetabular Reamer 60	63-05-60	
10	Acetabular Reamer 62	63-05-62	
11	Acetabular Reamer 64	63-05-64	
12	Acetabular Reamer 66	63-05-66	
13	Acetabular Reamer 68	63-05-68	
14	Acetabular Reamer 70	63-05-70	
15	T-Handle		Instrumentation REF:
	- chuck AO Reamer	43-281-0	4-63-00-00.AR.AO
	- chuck Hudson	43-273-0	4-63-00-00.AR.HUD *(optional)*
	- chuck Zimmer	43-282-0	4-63-00-00.AR.ZIM *(optional)*
16	Reamer Handle:		
	- chuck AO Reamer	4-63-27-00.AO	4-63-00-00.AR.AO
	- chuck Harris	4-63-27-00.HAR	4-63-00-00.AR.HAR *(optional)*
	- chuck Hudson	4-63-27-00.HUD	4-63-00-00.AR.HUD *(optional)*
	- chuck Zimmer	4-63-27-00.ZIM	4-63-00-00.AR.ZIM *(optional)*

ACETABULAR REAMER SET

4-63-00-00.ARN.AO/HAR/HUD/ZIM

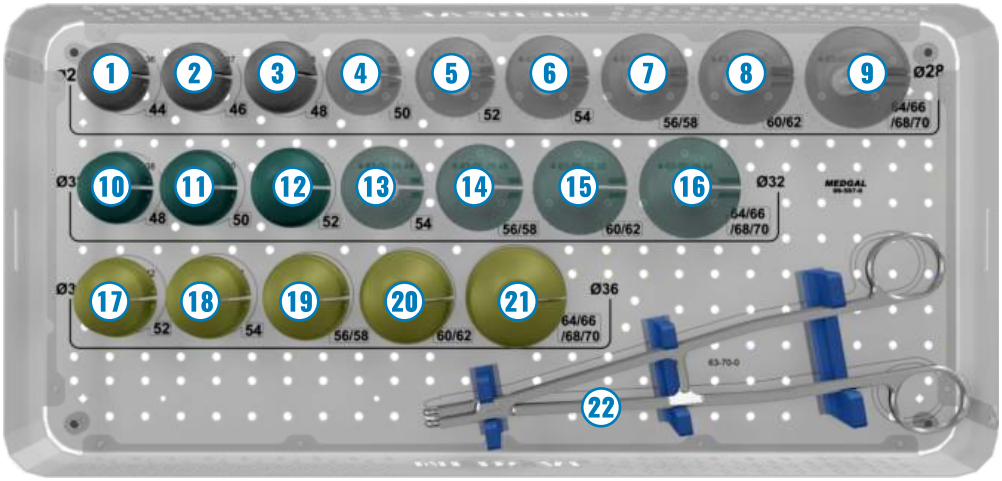


1	Acetabular Reamer 43	63-05-43	
2	Acetabular Reamer 45	63-05-45	
3	Acetabular Reamer 47	63-05-47	
4	Acetabular Reamer 49	63-05-49	
5	Acetabular Reamer 51	63-05-51	
6	Acetabular Reamer 53	63-05-53	
7	Acetabular Reamer 55	63-05-55	
8	Acetabular Reamer 57	63-05-57	
9	Acetabular Reamer 59	63-05-59	
10	Acetabular Reamer 61	63-05-61	
11	Acetabular Reamer 63	63-05-63	
12	Acetabular Reamer 65	63-05-65	
13	Acetabular Reamer 67	63-05-67	
14	Acetabular Reamer 69	63-05-69	
15	Acetabular Reamer 71	63-05-71	
16	Reamer Handle:		Instrumentation REF:
	- chuck AO Reamer	4-63-27-00.AO	4-63-00-00.ARN.AO
	- chuck Harris	4-63-27-00.HAR	4-63-00-00.ARN.HAR *(optional)*
	- chuck Hudson	4-63-27-00.HUD	4-63-00-00.ARN.HUD *(optional)*
	- chuck Zimmer	4-63-27-00.ZIM	4-63-00-00.ARN.ZIM *(optional)*

INSTRUMENT SET - LINER TRIALS

(An optional set for the instrument set "INSTRUMENT SET - CEMENTLESS ACETABULAR CUP - 4-63-00-00.ACM")

99-597-0



1	Trial insert 44	4-63-00-25.36
2	Trial insert 46	4-63-00-25.37
3	Trial insert 48	4-63-00-25.38
4	Trial insert 50	4-63-00-25.40 *(optional)*
5	Trial insert 52	4-63-00-25.42 *(optional)*
6	Trial insert 54	4-63-00-25.44 *(optional)*
7	Trial insert 56/58	4-63-00-25.46 *(optional)*
8	Trial insert 60/62	4-63-00-25.50 *(optional)*
9	Trial insert 64/66/68/70	4-63-00-25.54 *(optional)*
10	Trial insert 48	4-63-00-26.38
11	Trial insert 50	4-63-00-26.40
12	Trial insert 52	4-63-00-26.42
13	Trial insert 54	4-63-00-26.44 *(optional)*
14	Trial insert 56/58	4-63-00-26.46 *(optional)*
15	Trial insert 60/62	4-63-00-26.50 *(optional)*
16	Trial insert 64/66/68/70	4-63-00-26.54 *(optional)*
18	Trial insert 52	4-63-00-27.42
19	Trial insert 54	4-63-00-27.44
20	Trial insert 56/58	4-63-00-27.46
21	Trial insert 60/62	4-63-00-27.50
22	Trial insert 64/66/68/70	4-63-00-27.54
23	Trial insert forceps	63-73-0

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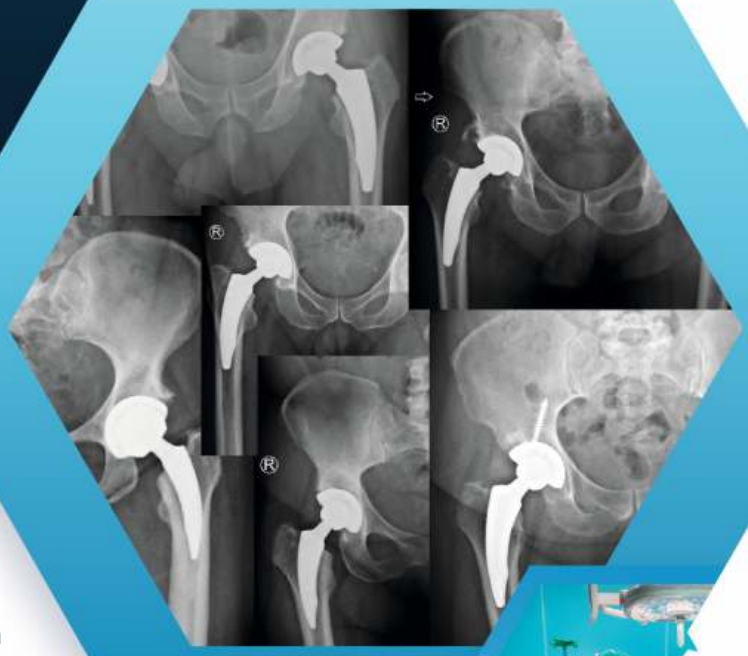

WE PROVIDE

- cementless acetabular cups coated with porous titanium with hydroxyapatite or Si-DLC layer
- polyethylene cup liners with vitamin E or ceramic (BIOLOX®delta)
- ceramic (BIOLOX®delta) and metal (CoCr) heads
- uniquely shaped or standard epiphyseal stems coated with porous titanium with hydroxyapatite or Si-DLC layer
- intuitive instrument set adapted to the individual needs of the operator

Si DLC

Innovative Si-DLC carbon-silicon layer coating.

SILICON stimulates the proliferation of osteoblasts, increases the expression of genes responsible for formation of callus through GMP-2 and can stimulate type I collagen synthesis.

CARBON is a basic and essential element included in all organic compounds. It make up approximately 18,5% of a healthy person's body weight.

Benefits of use

Si DLC

- increased biotolerance of the implant (V, VI, VII)
- prevention of migration of metal ions into the peri-implant area - no metallosis phenomenon (VIII, IX, X)
- very high corrosion resistance of the implanted implant in the body's tissue and its fluid environment (VIII, IX, X)
- minimisation of adverse toxic and allergic reactions to the organism and thus a significant reduction in post-operative complications (VIII, IX, X)

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