



**Zimmer®
Maxera™
Cup**

Surgical Technique



This device is not available for commercial distribution in the United States.

General Description of the Implant

The *Maxera* Cup (Fig. 1) is a monoblock *BIOLOX*®[†] *delta* acetabular solution that is intended to be used in conjunction with *BIOLOX OPTION** and *BIOLOX delta** heads with an appropriate, corresponding diameter.

Primary fixation is achieved by under-reaming the acetabulum to achieve a press-fit. The external surfaces of the cup include paired fins which provide supplemental fixation and a titanium vacuum plasma spray coating (Ti-VPS) to create a scratch fit.

Patient Selection

Indications/Intended Use**

- For non-cemented use in skeletally mature individuals undergoing primary surgery for rehabilitating hips damaged as a result of noninflammatory degenerative joint disease (NIDJD) including but not limited to osteoarthritis, avascular necrosis, post-traumatic arthritis and congenital hip dysplasia and inflammatory joint disease (IJD), e.g., rheumatoid arthritis, if bone quality is adequate.



Fig. 1

Maxera Cup

[†] Trademark of CeramTec GmbH

* For additional information on *BIOLOX OPTION* and *BIOLOX delta* heads, please refer to the latest version of Design Rationale Ref. 06.01454.012

**Please refer to the Package Insert for the list of contraindications



Fig. 2

A Maxera Cup size 36/46 has a nominal outside diameter of 46mm and an inside diameter of 36mm.

Overview of Implant Sizing

The true external diameter (Fig. 2) of the Maxera Cup component corresponds directly to the labeled size. Adequate bone stock is necessary for a press-fit application. Surgical judgment is required to assess appropriate reaming, in order to achieve an optimal press-fit. Optimal press-fit will be achieved by careful acetabular bone preparation and accurate implant placement.

- N** **Note:** The Maxera Cup in sizes 50mm to 66mm is a full hemisphere while sizes 42mm, 44mm, 46mm and 48mm have an extended cylinder making them taller than a full hemisphere. (Fig. 3)
- N** **Note:** The cups are labeled with their actual diameter, i.e., a cup size 44mm/56mm has an inside diameter of 44mm and an outside diameter of 56mm. An implant sized 2mm over the reamed preparation (size of last reamer used) will provide 2mm press-fit. A 1mm press-fit may be desired with hard bone.
- N** **Note:** The 40mm through 47mm Shell Provisionals have an extended cylinder and duplicate the height of the implant.



Fig. 3

Cylinder Height Comparison.

WARNING: Do not attempt to remove the preassembled ceramic liner which is locked into the shell's cavity.

The height of the Shell Provisional corresponds to the appropriate implant, i.e., the 44mm and 45mm Shell Provisional is the same height as the 46mm Maxera Cup. This allows the surgeon to accurately assess the depth and orientation of the final implant based on the trial position. We recommend careful Shell Provisional placement to assess for adequate bone preparation. When inserting the actual implant, the previous position of the Shell Provisional provides important visual cues to the surgeon that the final implant is fully seated in the desired position.

Cup component corresponds to the appropriate BIOLOX OPTION or BIOLOX delta femoral head component. (Fig. 4)

For further combination options please refer to www.productcompatibility.zimmer.com.

Cup Sizes		42	44	46	48	50	52	54	56	58	60	62	64	66
BIOLOX Head Sizes	BIOLOX delta	32mm												
				36mm										
						40mm								
	BIOLOX OPTION	32mm												
				36mm										
						40mm								
								44mm						
										48mm				

Fig. 4

Sizing Guide Matrix.

Preoperative Planning

Accurate preoperative planning and acetabular templating are essential.

Important Parameters for Planning the Procedure

- planned optimal position of the acetabular component
- center of rotation
- size of the implant
- depth
- final component position
- achieving the recommended abduction angle

Templates of the *Maxera* Cup component are available for preoperative planning (Fig. 5). They are available in 115% magnification for conventional radiographs and 100% magnification for digital X-rays. It is necessary to combine these templates with that of the chosen stem by making the centers of rotation correspond. The final size of the prosthesis is determined during the surgical procedure. When templating, it is important to establish the planned optimal position of the acetabular component, center of rotation, size of the implant, depth, and final component position. **Achieving an abduction angle to a maximum of 45 degrees and 10 to a maximum of 20 degrees of anteversion is appropriate in most cases.**¹ Variation in placement of the cup will depend on the patient's anatomy and intraoperative surgical judgement.

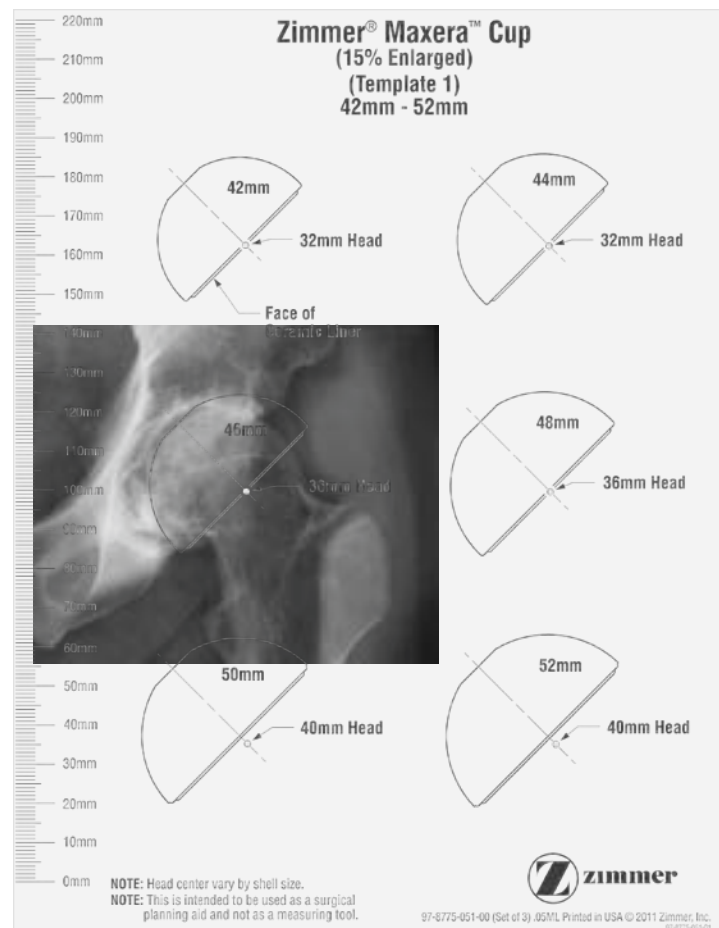


Fig. 5

AP Templating View.

Surgical Approach

The *Maxera* Cup may be implanted using a variety of surgical approaches. The specific approach depends on the surgeon's preference and therefore may differ from the procedure shown.

N **Note:** Each surgeon's approach may vary. The surgical approach must provide adequate exposure to visualize the entire acetabular rim.

The *Maxera* Cup should not be used in cases where there is inadequate or poor bone quality to support the implant.

Acetabular Preparation

The acetabular labrum is completely excised, and any large peripheral osteophytes are removed. The ligamentum teres is excised, and the true floor of the acetabulum (i.e., true acetabular region²) is identified. (Fig. 6)

Technique Tip: It is important to visualize the entire bony rim of the acetabulum (Fig. 7). This will help when using Shell Provisionals to assess the depth reamed. It will also reduce the likelihood of soft tissue entrapment which may prevent the cup from fully seating.

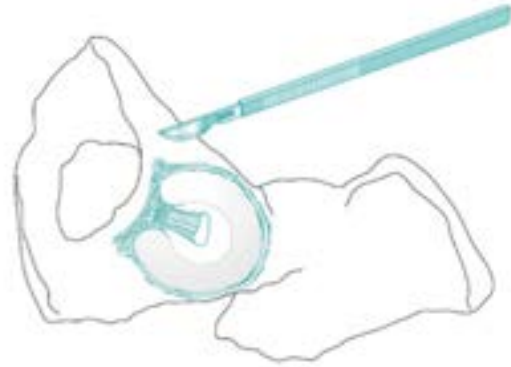


Fig. 6

Labrum excision.



Fig. 7

Entire bony rim is visualized.

Reaming

The *Maxera Cup* is a full 180° hemisphere for sizes 50mm to 66mm.

N **Note:** As previously mentioned (Page 3), the four smallest sizes (42mm, 44mm, 46mm, and 48mm) have an extended cylinder. The extended cylinder may be exposed or proud of the reamed acetabular cavity per surgeon assessment of the patient.

This technique demonstrates the use of 180° hemispherical reamers to prepare the acetabulum (Fig. 8). If another type of reamer is used, reaming should be adjusted per the surgeon's discretion.

- Hold the reamer steady and apply pressure in the same direction that the prosthesis will be implanted. Start with a reamer at least 2–4mm smaller than the templated implant size. Care should be taken not to over-medialize.
- Acetabular reaming must progress in 1–2mm increments with frequent assessment of the depth and orientation of the prepared acetabular bone, coverage, and rim integrity (Fig. 9). To achieve the appropriate abduction angle, some of the posterior-superior portion of the implant may be uncovered, as long as adequate initial press-fit is achieved.
- Sequential reaming should be carried out until adequate acetabular preparation has been achieved, as assessed by careful use of the Shell Provisionals.
- Regular use of Shell Provisionals as reaming progresses is highly recommended to determine the depth of reaming.
- **Technique Tip:** In hard bone, it is advisable to use reamers in 1mm increments when approaching the definitive acetabular size.



Fig. 8

180° hemispherical reamer.

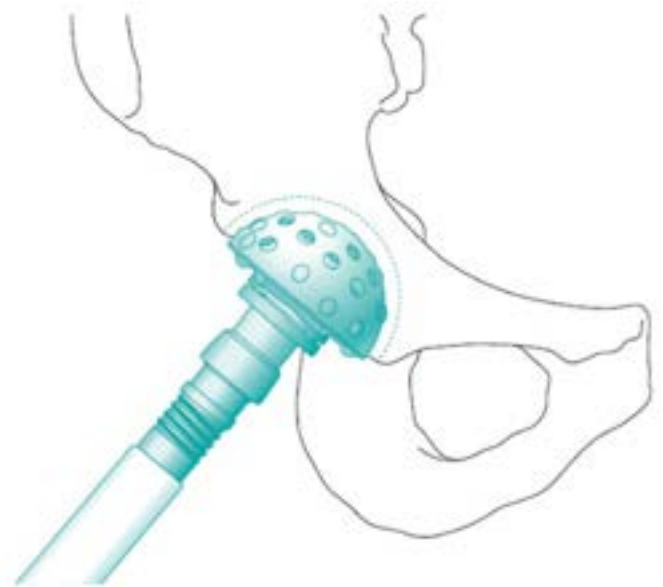


Fig. 9

Reaming procedure.

Use of the Acetabular Shell Provisionals

- Place the selected size Shell Provisional inverted (i.e., cup and pins facing up) so the Inserter Handle can mate with the two pins at the pole of the Shell Provisional. Ensure that the mating shape features of the Inserter Handle are aligned for insertion. (Fig. 10)
- Snap the Inserter Handle into the Shell Provisional for a temporary hold prior to locking the assembly with the Locking Screw.
- Insert Ball Head Hex Screwdriver through the window and into the Locking Screw at the tip of the Inserter Handle. (Fig. 11)
- While holding the Shell Provisional in place, securely thread the Locking Screw into the Polar Hole of the Shell Provisional.

N **Note:** This acetabular implant does not allow the option of cup repositioning after final implantation. The success of acetabular implantation and subsequent fixation is dependent on achieving adequate primary stability. For this reason, acetabular Shell Provisionals of 1mm increments are provided to allow optimal assessment of the acetabulum as preparation progresses. (Fig. 12)

N **Note:** It is highly recommended that the surgeon uses 1mm increments in Shell Provisional sizing to ensure optimal press-fit (either 1 or 2mm, based on surgeon preference and discretion) for the conditions present at the time of implantation. The accuracy of reaming and the optimal position of the implant are assessed using an acetabular Shell Provisional the same size as the last reamer used. (Fig. 13)

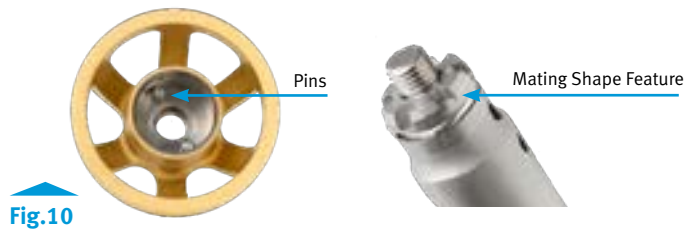


Fig. 10

The Shell Provisional inverted and the Insert Handle's mating shape feature.



Fig. 11

Attaching the Shell Provisional to the Inserter Handle using the Ball Head Hex Screwdriver.



Fig. 12

Shell Provisionals in 1mm increments.



Fig. 13

Last reamer used determines first Shell Provisional.

- Attach the Alignment Frame (or Alignment Guide) to the Insertor Handle and tighten the Thumb Screw (Fig. 14a).

Refer to the diagrams for use instructions on the lateral and supine approaches. (Pages 14, 15, 16, 17)

N Note: The Shell Provisional is often used in assessing press-fit, acetabular depth, coverage, orientation, and sphericity. (Fig. 14b).

N Note: For Shell Provisional sizes 40mm-47mm, utilize the GOLD-coated *Maxera* Shell Provisionals that are marked “Maxera”. For Shell Provisional sizes 48mm-65mm, only use Shell Provisionals compatible with the *Maxera* Cup (refer to the list of compatible components on Pages 18 through 22).

WARNING: Do not use any other Shell Provisionals for sizes 40mm-47mm due to the required extended cylinder on the *Maxera* Shell Provisionals for the noted size range.

- Resistance to fully seating and removing the Shell Provisional, which is the same size as the reamer, indicates that the rim is too tight and that it will be difficult to insert the corresponding acetabular component. In this case, the surgeon may decide to remain with the existing press-fit, or to use a reamer 1mm larger to achieve a lower press-fit.
 - Once the initial assessment with the line-to-line Shell Provisional suggests that the acetabular preparation is correct and complete, a Shell Provisional that is 1mm oversized may be used to assess bone quality, interference fit, and projected implant stability. (Fig. 15)
 - Press-fit check with the Shell Provisional should not exceed 1mm larger than the reamer used prior to assessment. A desired press-fit of 2mm should only be used during final implant placement.
- N** Note: For final implant placement, either a 1mm or 2mm press-fit is needed to ensure optimal fixation (based on surgeon preference and discretion for the conditions present at the time of implantation).
- N** Note: Instruments are available to support cup alignment. For further information, please refer to the alignment device explanation at the end of the surgical technique.



Fig. 14a

Assembly of the Alignment Frame.

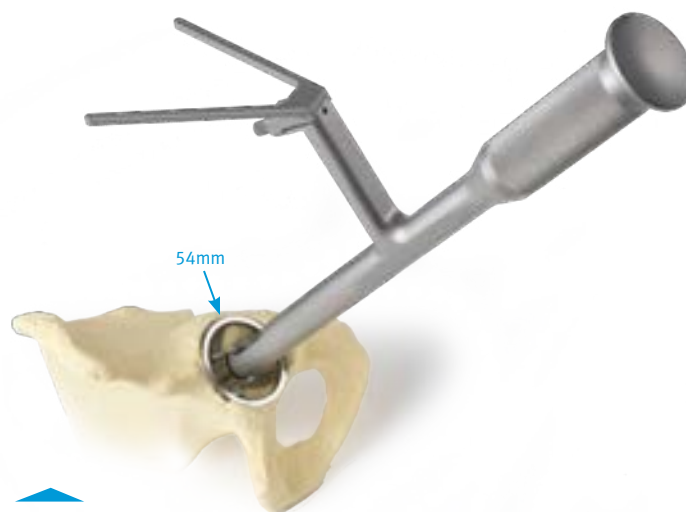


Fig. 14b

First Shell Provisional in place.



Fig. 15

Shell Provisional with 1mm press-fit.

Check for:

- interference or press-fit
- acetabular depth
- coverage
- orientation

- N** **Note:** It is important to remove any rim osteophytes that may block the full insertion or alter the optimal position of the final implant.
- N** **Note:** The Shell Provisionals duplicate the height of the implant and indicate the position of the rim of the acetabular component once it is fully seated.
- N** **Note:** If adequate implant stability is not achieved with a press-fit using the *Maxera Cup* design, a switch to a modular press-fit cup offering supplementary fixation options is suggested.
- **Technique Tip:** When final press-fit and cup position are determined with the Shell Provisional, it is important to note landmarks of cup depth, abduction angle, and anteversion. (Fig. 16)
- Carefully inspect the acetabulum to ensure that all surgical debris has been removed. After the final Shell Provisional is removed, irrigate with USP (United States Pharmacopeia) purified water or sterile saline solution before placement of the acetabular cup.



Fig. 16

Determine landmarks with Shell Provisional in place.

Acetabular Implant Insertion

The *Maxera* Cup is packaged with a Plastic Barrier over the ceramic cup surface. **The Plastic Barrier must be used with the appropriately sized *Maxera* Cup Inserter for the placement of the acetabular component into the acetabulum.**

- The Plastic Barrier is a single-use component that is utilized to protect and insert the *Maxera* Cup into its place. Take extra caution to not dispose of or drop the Plastic Barrier prior to implant placement. If sterility of the Plastic Barrier is compromised, it can be autoclaved once for reuse (refer to the Package Insert for the recommended sterilization specifications).

WARNING: The *Maxera* Cup Inserter MUST be used with the Plastic Barrier.

WARNING: The *Maxera* Cup must be implanted with a fully-seated Plastic Barrier and a *Maxera* Cup Inserter construct. Only use components compatible with the *Maxera* Cup (refer to the list of compatible components on Pages 18 through 22).

1. Mounting of the Acetabular Component

- The acetabular component is removed from the packaging and placed on the blister pack prior to mounting to the inserter assembly. For ease in assembly, insert and seat the Plastic Barrier onto the *Maxera* Cup Inserter prior to mounting the *Maxera* Cup onto the assembly. The appropriately sized *Maxera* Cup Inserter is then mounted on to the acetabular component (e.g., 56mm *Maxera* Cup with a 56mm *Maxera* Cup Inserter). (Fig. 17)
- Assemble the *Maxera* Cup Inserter to the Inserter Handle in the same manner as the Shell Provisional (i.e., mate two pins to shape feature on Inserter Handle).
- The *Maxera* Cup Inserter has three claws that are 120° apart and line up with the attachment points on the acetabular component. To ensure optimal fixation, one of the claws of the *Maxera* Cup Inserter should engage the *Maxera* Cup in alignment to the superior position (i.e., 12 o'clock) of placement with respect to the Inserter Handle. (Fig. 18)
- Prior to tightening assembly, place the *Maxera* Cup on a flat, sterile surface. Alternatively, the *Maxera* Cup can be mounted to the *Maxera* Cup Inserter and Inserter Handle assembly by inverting the handle and placing the *Maxera* Cup onto the Plastic Barrier for ease in claw alignment.
- The Locking Screw is tightened securely with the Ball Head Hex Screwdriver (Fig.19). This will secure the *Maxera* Cup to the *Maxera* Cup Inserter.
- Care should be taken to avoid contamination from blood, fluids, gauze, etc., before inserting the cup.



Fig. 17

Maxera Cup with Plastic Barrier and *Maxera* Cup Inserter.

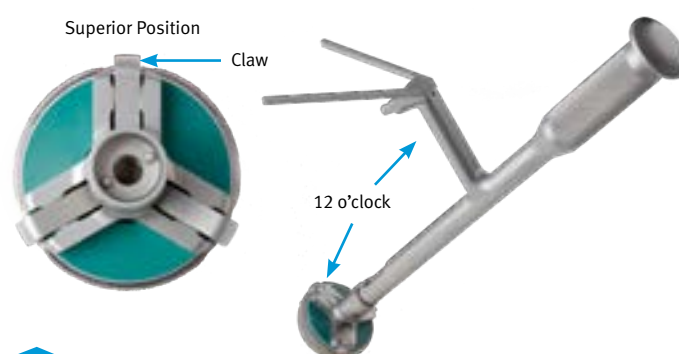


Fig. 18

Maxera Cup Inserter alignment with *Maxera* Cup.



Fig. 19

Tightening of fixation screw.

2. Insertion of the Acetabular Component

- Any remaining soft tissue which may prevent the acetabular component from seating during insertion should be excised.
- The insertion step is followed by a separate step of final impaction.

N **Note:** The *Maxera* Cup is impacted into the prepared acetabulum. The *Maxera* Cup must be in contact with reamed acetabulum prior to applying impact force.

- It is important to note that the ceramic-on-ceramic *Maxera* Cup may be stiffer than a modular titanium construct, and more force may be required to fully seat the acetabular component during final cup impaction.
- Multiple moderate magnitude impacts (similar in magnitude to a final stem seating impact strike) may be required to ensure complete seating of the cup.
- Check to ensure that the Locking Screw is not loose due to the seating impact. Retightening of the Locking Screw is required if it loosens during impaction.
- A Heavy Mallet may be used to ensure complete seating of the *Maxera* Cup (Fig. 20). Surgical judgement is required to achieve full seating and avoid complication.
- The optimal position of the component is dictated by the orientation and preparation of the true bony acetabulum. **Achieving an abduction angle of a maximum of 45 degrees and 10 to a maximum of 20 degrees of anteversion is appropriate in most cases.**¹ Variation in placement of the cup will depend on the patient's anatomy and intraoperative surgical judgement. The alignment instruments support 45 degree placement.
- The surgeon may choose to evaluate the femoral anteversion and make adjustments as necessary, to achieve the optimal net anteversion of the acetabular and femoral components.
- To remove the *Maxera* Cup Inserter assembly from the *Maxera* Cup, turn the fixation screw on the Inserter Handle one complete turn (counter-clockwise) with the Ball Head Hex Screwdriver. Additional turns could result in the premature disassembly of the *Maxera* Cup Inserter from the Inserter Handle.
- The Plastic Barrier is single-use and must be discarded following the placement of the *Maxera* Cup into the acetabulum, and its removal from the *Maxera* Cup Inserter.
- After the cup insertion, irrigate with USP purified water or sterile saline solution. Wipe the cup articulating surface with a sterile gauze.



Fig. 20

Cup impaction.

3. Final Impaction

- The *Maxera* Cup Inserter must not be reattached to the *Maxera* Cup following site placement and removal.
- The BONE-colored *Maxera* Cup Impactors (Fig. 21) are size specific to the inner diameter of each cup (i.e., 32mm, 36mm, 40mm, 44mm, 48mm).
- The *Maxera* Cup Impactor is utilized by the surgeon for final impaction of the *Maxera* Cup. *Maxera* Cup Impactors are used to ensure adequate press-fit is achieved. (Fig. 22)
- Assemble the *Maxera* Cup Impactor to the Inserter Handle in the same manner as the Shell Provisional (i.e., mate two pins to shape feature on Inserter Handle).

WARNING: Implants must only be combined with components intended for use with the *Maxera* acetabular system (refer to the list of compatible components on Pages 18 through 22).

WARNING: Do not attempt to remove the preassembled ceramic liner which is locked into the shell's cavity.

N Note: Ideally, the *Maxera* Cup will fully engage into the anterior and posterior walls, not only to maximize primary stability, but also to reduce the risk of soft tissue irritation. In many cases, in order to obtain optimal acetabular abduction, there will be a small area of cup left exposed superolaterally.

N Note: Off-axis impaction should be avoided when possible. Ensure the rim of the *Maxera* Cup Impactor is flat against the face of the *Maxera* Cup (Fig. 23). Off-axis impaction may result in a change in cup orientation and loss of initial stability.

N Note: The 42mm, 44mm, 46mm and 48mm *Maxera* Cup implants will seat based on Shell Provisional trialing and have an extended cylinder that protrudes out of the acetabulum. This is acceptable assuming adequate press-fit is achieved. The edge of the cup has been rounded to minimize soft tissue abrasion.

WARNING: The *Maxera* Cup must not be adjusted in the acetabulum after final impaction. Any attempt to move the implant will reduce the primary stability and may lead to early loosening.

N Note: Upon final seating of the *Maxera* Cup, inspect the cup and ceramic insert to confirm the stability of the construct.

- Carefully inspect the surgical field to ensure that all surgical debris has been removed. Additionally inspect the ceramic insert articulating surfaces for scratches and metal transfer.
- After the cup is fully seated, irrigate with USP purified water or sterile saline solution. Wipe the cup articulating surface with a sterile gauze before reduction of the femoral component, to avoid third body wear.



Fig. 21

Maxera Cup Impactor.



Fig. 22

Final impaction of cup.



Fig. 23

Off-axis impaction.

4. Reduction

- It is important to avoid contact of the ceramic acetabular liner with the metal instrumentation or the metal femoral neck, as this could result in scratching or metal transfer to the liner.
- It is important to avoid contact of the ceramic femoral head with the metal rim of the acetabular component, as this could result in scratching or metal transfer to the head.
- Following reduction, the circumference of the acetabular component should be checked to make sure that there is no entrapment of soft tissue. The hip is then checked for range of movement, impingement, stability and leg length.

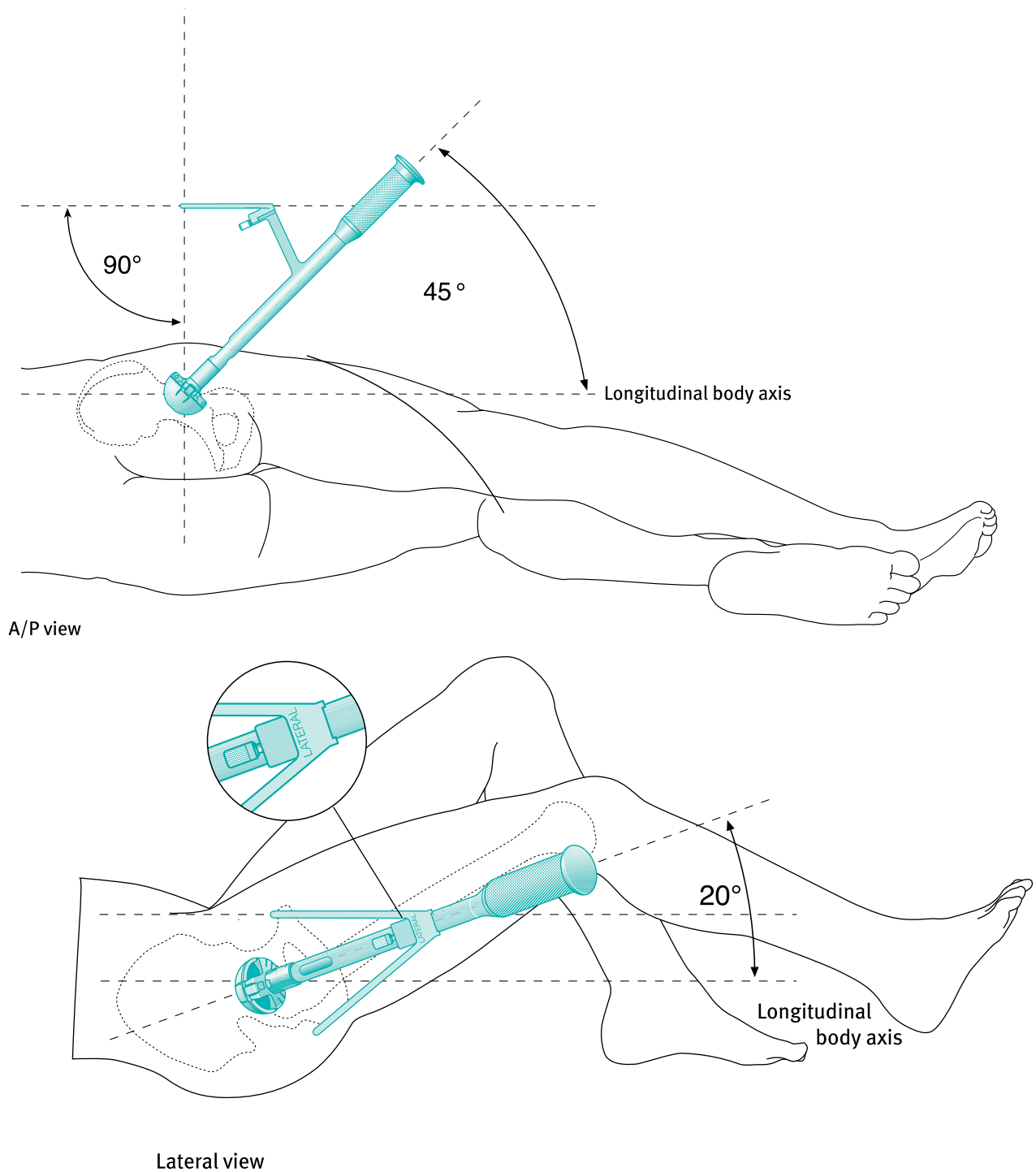
Technique Tip: Ceramic bearing surfaces (i.e., acetabular cups and femoral heads) should be protected from contact with other materials during hip replacement surgery to avoid minor scraping or damage.³



Note: Femoral Head Slides can be utilized to assist with reduction of the head into the cup. The Femoral Head Slides protect the ceramic surfaces during reduction of the ceramic head into the ceramic insert.

Alignment Device Explanation

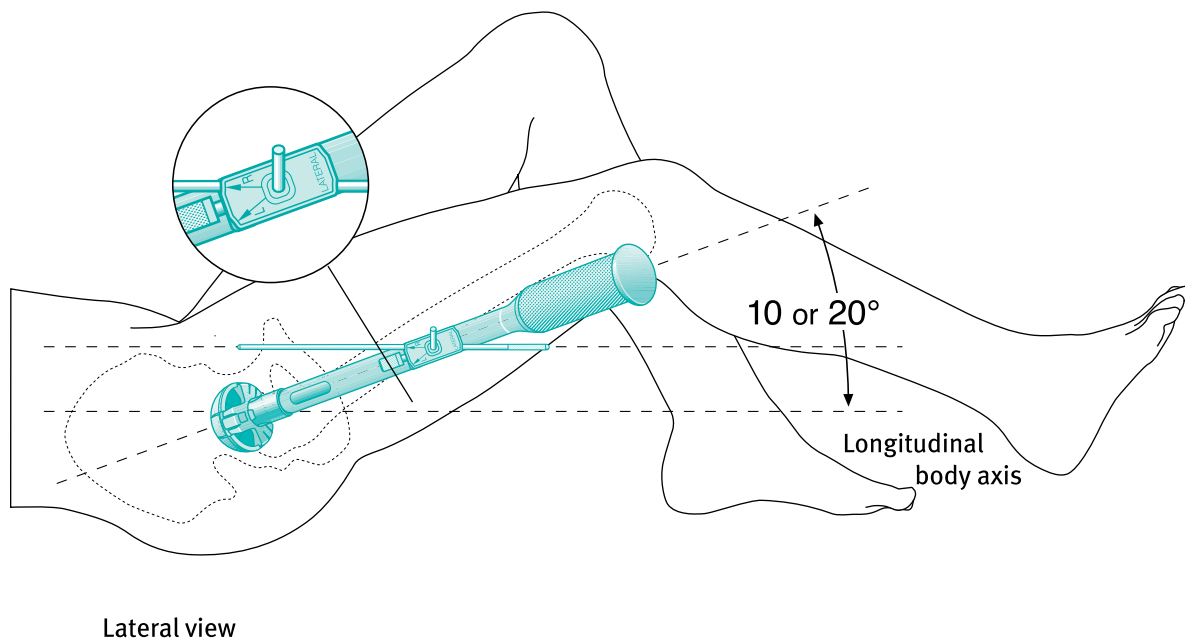
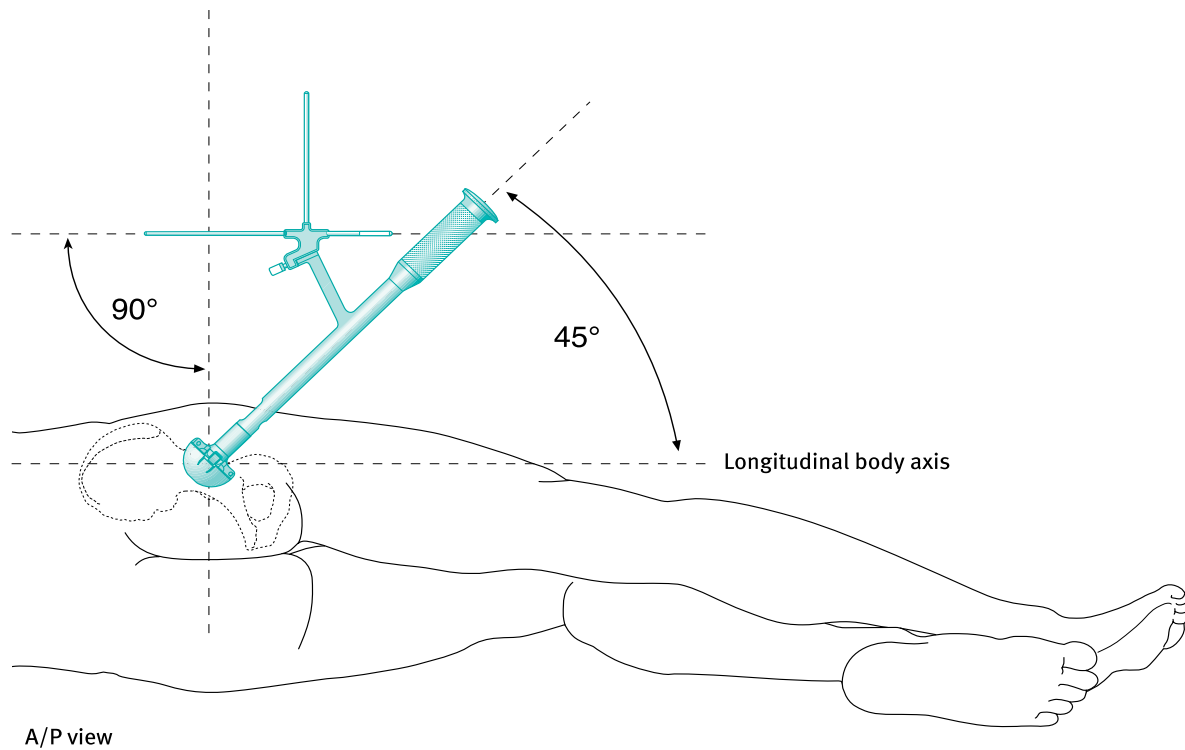
Example: Lateral Patient Positioning “A-Frame”



The "A-Frame" Alignment device needs to be parallel with the longitudinal body axis to achieve a 45° inclination (abduction) and 20° anteversion.

Alignment Device Explanation

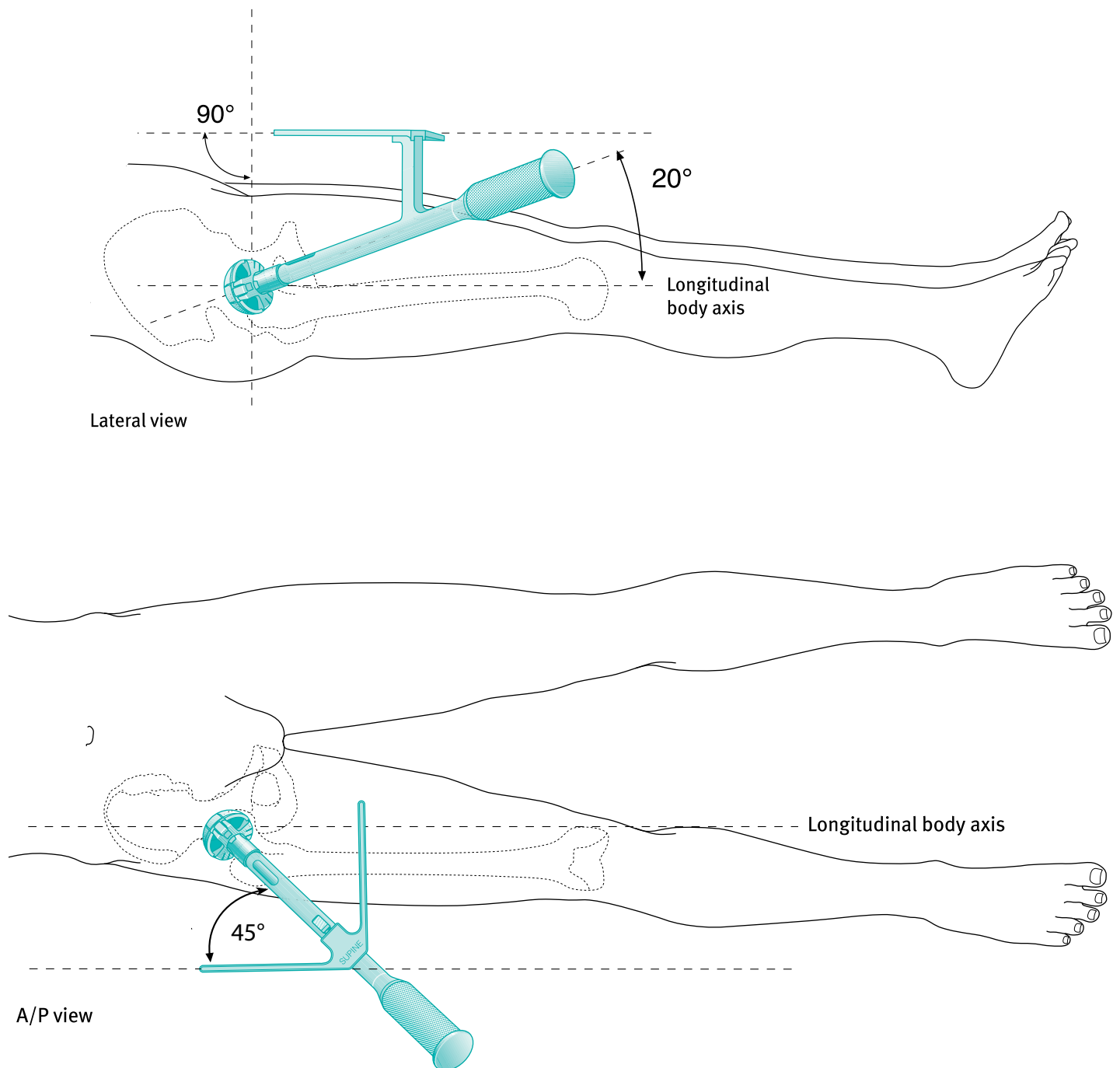
Example: Lateral Patient Positioning “Gunsight”



The “Gunsight” Alignment alignment extension needs to be parallel with the longitudinal body axis to achieve a 45° inclination (abduction) and a 10° or 20° anteversion depending on the type of alignment guide used.

Alignment Device Explanation

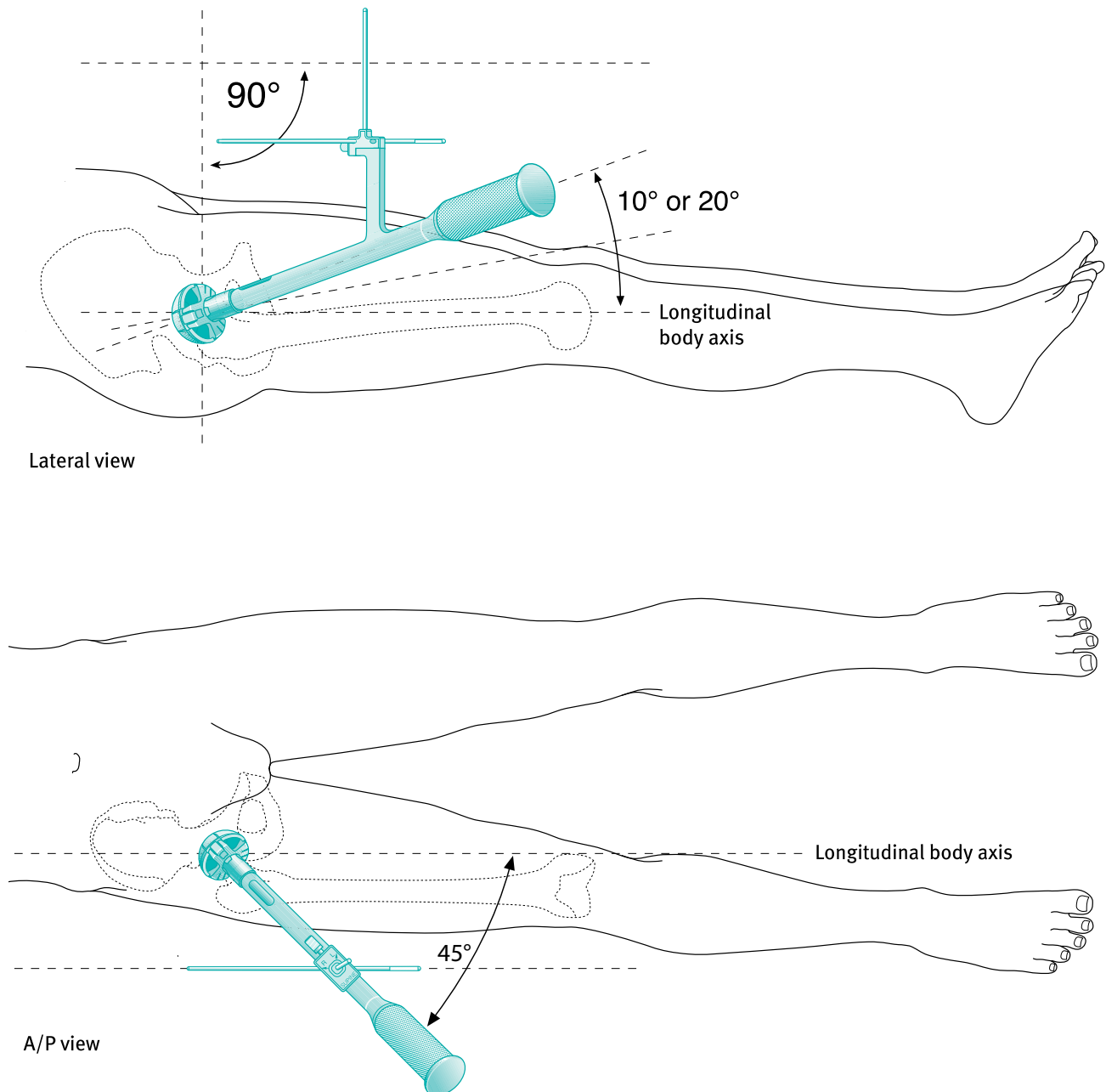
Example: Supine Patient Positioning “A-Frame”



The “A-Frame” Alignment alignment extension needs to be parallel with the longitudinal body axis to achieve a 45° inclination (abduction) and 20° anteversion.

Alignment Device Explanation

Example: Supine Patient Positioning “Gunsight”



The “Gunsight” Alignment alignment extension needs to be parallel with the longitudinal body axis to achieve a 45° inclination (abduction) and a 10° or 20° anteversion depending on the type of alignment guide used.

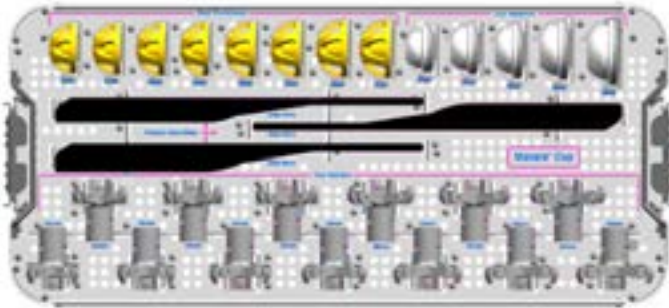
Implants



Maxera Cup

Item No.	Description
00-1515-042-32	Maxera Cup 32mm x 42mm
00-1515-044-32	Maxera Cup 32mm x 44mm
00-1515-046-36	Maxera Cup 36mm x 46mm
00-1515-048-36	Maxera Cup 36mm x 48mm
00-1515-050-40	Maxera Cup 40mm x 50mm
00-1515-052-40	Maxera Cup 40mm x 52mm
00-1515-054-44	Maxera Cup 44mm x 54mm
00-1515-056-44	Maxera Cup 44mm x 56mm
00-1515-058-48	Maxera Cup 48mm x 58mm
00-1515-060-48	Maxera Cup 48mm x 60mm
00-1515-062-48	Maxera Cup 48mm x 62mm
00-1515-064-48	Maxera Cup 48mm x 64mm
00-1515-066-48	Maxera Cup 48mm x 66mm

Maxera Standard Instruments



Kit # KT-1516-000-00

Item No.	Description
00-1516-001-00	Maxera Standard Instr Base
00-5900-099-00	Standard Sterilization Case Lid



Maxera Shell Provisionals

Item No.	Size
00-1516-000-40	40mm
00-1516-000-41	41mm
00-1516-000-42	42mm
00-1516-000-43	43mm
00-1516-000-44	44mm
00-1516-000-45	45mm
00-1516-000-46	46mm
00-1516-000-47	47mm



Maxera Cup Impactors

Item No.	OD (mm)	ID (mm)
00-1516-030-32	42/44	32
00-1516-030-36	46/48	36
00-1516-030-40	50/52	40
00-1516-030-44	54/56	44
00-1516-030-48	58-66	48



Maxera Cup Inserters

Item No.	OD (mm)
00-1516-010-42	42
00-1516-010-44	44
00-1516-010-46	46
00-1516-010-48	48
00-1516-010-50	50
00-1516-010-52	52
00-1516-010-54	54
00-1516-010-56	56
00-1516-010-58	58
00-1516-010-60	60
00-1516-010-62	62
00-1516-010-64	64
00-1516-010-66	66



Femoral Head Slides

Item No.	Head Size Range (mm)
00-1516-040-40	22 - 40
00-1516-040-48	40 - 48
00-1516-040-60	50 - 60

Maxera Extended Instruments



Kit # KT-1516-000-01

Item No.	Description
00-1516-002-00	Maxera Extended Instr Base
00-5900-099-00	Standard Sterilization Case Lid
00-1516-002-50	Maxera Femoral Head Provisionals Base
00-1516-002-55	Maxera Femoral Head Provisionals Lid



Zimmer MMC® Shell Provisionals

Item No.	Size
01.00639.483	48mm
01.00639.493	49mm
01.00639.503	50mm
01.00639.513	51mm
01.00639.523	52mm
01.00639.533	53mm
01.00639.543	54mm
01.00639.553	55mm
01.00639.563	56mm
01.00639.573	57mm
01.00639.583	58mm
01.00639.593	59mm
01.00639.603	60mm
01.00639.613	61mm
01.00639.623	62mm
01.00639.633	63mm
01.00639.643	64mm
01.00639.653	65mm

Femoral Head Provisionals & Adapter Extractor

Item No.	Description	Size(s)
00-7895-032-01	Femoral Head Provisional, 32mm	S
00-7895-032-02	Femoral Head Provisional, 32mm	M
00-7895-032-03	Femoral Head Provisional, 32mm	L
00-7803-032-14	Femoral Head Provisional, 32mm	XL
00-7895-036-01	Femoral Head Provisional, 36mm	S
00-7895-036-02	Femoral Head Provisional, 36mm	M
00-7895-036-03	Femoral Head Provisional, 36mm	L
00-7895-036-04	Femoral Head Provisional, 36mm	XL
00-7895-040-01	Femoral Head Provisional, 40mm	S
00-7895-040-02	Femoral Head Provisional, 40mm	M
00-7895-040-03	Femoral Head Provisional, 40mm	L
00-7895-040-04	Femoral Head Provisional, 40mm	XL
01.00189.441	Femoral Head Provisional, 44mm	S, M, L, XL with Trial Adapters
01.00189.481	Femoral Head Provisional, 48mm	S, M, L, XL with Trial Adapters
01.00189.145	Head Provisional Trial Adapter	S
01.00189.146	Head Provisional Trial Adapter	M
01.00189.147	Head Provisional Trial Adapter	L
01.00189.148	Head Provisional Trial Adapter	XL
01.00009.101	Adapter Extractor	

General Instrument Sets



Item No.	Description
ZS01.00639.150	General Instrument Set - Straight
00-7804-000-30	Tray
00-5900-099-00	Tray Cover
00-7804-015-20	Straight Inserter Handle (2 included in set)
9375-00-032	Ball Head Hex Screwdriver
00-2237-005-00	Mallet, 3-lb
01.00639.725	Lateral Positioning Guide 20°
01.00639.705	Positioning Guide Spoke (Lateral)



Straight Inserter Handle



Ball Head Hex Screwdriver

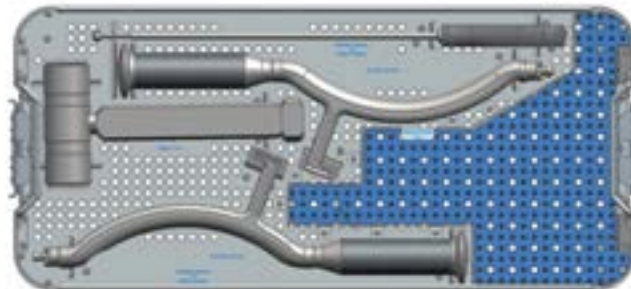


Mallet, 3-lb

Lateral Positioning Guide (20°)



Positioning Guide Spoke (Lateral)



Item No.	Description
ZS01.00639.175	General Instrument Set - Offset
00-7804-000-30	Tray
00-5900-099-00	Tray Cover
00-7804-025-20	Offset Inserter Handle (2 included in set)
9375-00-032	Ball Head Hex Screwdriver
00-2237-005-00	Mallet, 3-lb
01.00639.725	Lateral Positioning Guide 20°
01.00639.705	Positioning Guide Spoke (Lateral)



Offset Inserter Handle



Ball Head Hex Screwdriver



Mallet, 3-lb

Lateral Positioning Guide (20°)



Positioning Guide Spoke (Lateral)

On Request Alignment Guides



Item No. 00-7807-015-01
Description Supine Alignment Frame



00-7807-015-02 Lateral Alignment Frame



01.00639.715 Lateral Positioning Guide 10°
01.00639.705 Positioning Guide Spoke (Lateral)



01.00639.735 Supine Positioning Guide 10°
01.00639.755 Positioning Guide Spoke (Supine)



01.00639.745 Supine Positioning Guide 20°
01.00639.755 Positioning Guide Spoke (Supine)

References

1. Grammatopoulos G, Pandit H, Glyn-Jones S, et al. Optimal acetabular orientation for hip resurfacing. *J Bone Joint Surg [Br]*. 2010;92-B:1072-8.
2. Pagnano MW, Hanssen AD, Lewallen DG, Shaughnessy, WJ. The effect of superior placement of the acetabular component on the rate of loosening after total hip arthroplasty. Long-term results in patients who have Crowe Type-II congenital dysplasia of the hip. *J Bone Joint Surg [Am]*. 1996;78:1004-14.
3. Chang, C. B., Yoo, J. J., Song, W. S., Kim, D. J., Koo, K.-H. and Kim, H. J. Transfer of metallic debris from the metal surface of an acetabular cup to artificial femoral heads by scraping: Comparison between alumina and cobalt–chrome heads. *Journal of Biomedical Materials Research Part B: Applied Biomaterials*. 2008;85B: 204–209.

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