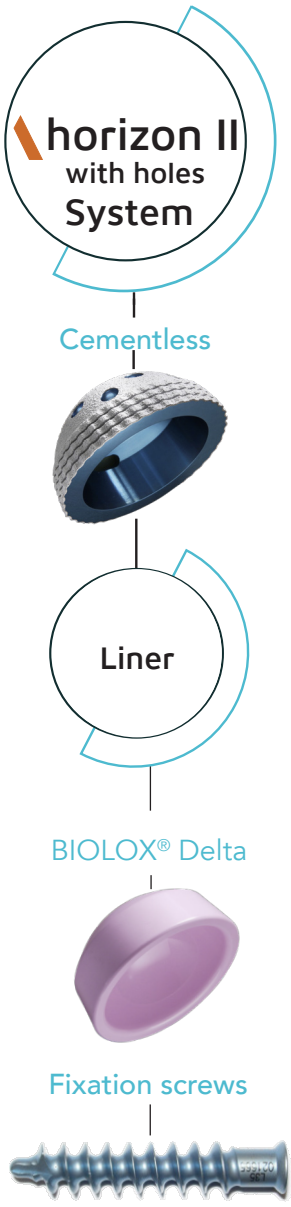
horizon II

amplitude

Surgical technique

Summary

Range



HORIZON II WITH HOLES

	Ø46 mm	Ø48 mm	Ø50 mm	Ø52 mm	Ø54 mm	Ø56 mm	Ø58 mm	Ø60 mm	Ø62 mm	Ø64 mm (option)
Metal cup		●	●	●	●	●	●	●	●	●
Liner Ø28mm		●								
Liner Ø32mm			●	●	●	●	●			
Liner Ø36mm					●	●	●	●	●	●

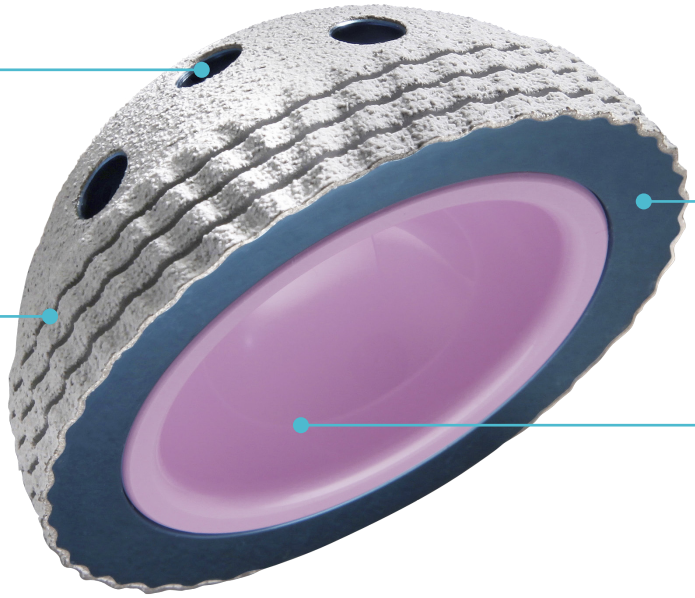
Ø6.5mm screws
Length 16, 20 to 45mm
In 5 mm increments

Range

HORIZON II With holes Cup

Dual coating of plasma-sprayed titanium (80 µm) and HA (80 µm) ensures secondary fixation through bone ongrowth

Inverted chevron-shaped notches provide equatorial press-fit, evolves with cup size



Material (cup): Anodized Titanium Alloy(Ti6Al4V)

BIOLOX® delta ceramic liner

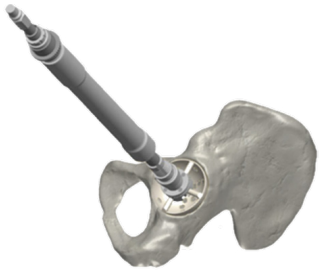
Hemispherical cup with flat superior end

Upper quadrant of cup has 3 to 5 holes (depending on cup size) for Ø6.5 mm screws (available in lengths of 16 mm, 20 mm and then in 5 mm increments up to 45 mm).

Surgical technique summary

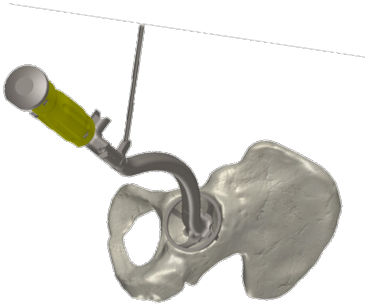
1

Acetabulum reaming



2

Reaming control

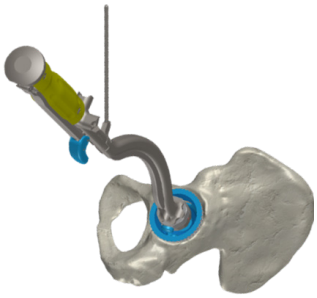


3

Holding the cup

4

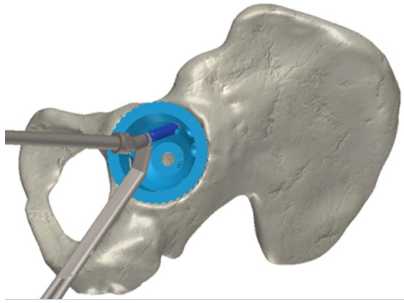
Final cup impaction



Surgical technique summary

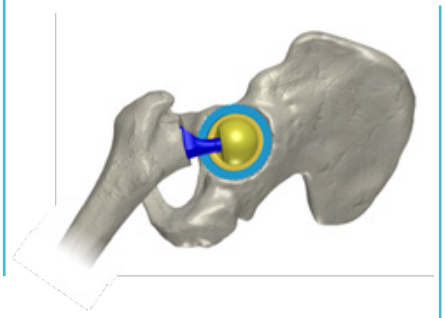
5

Fixation screws insertion (optional)



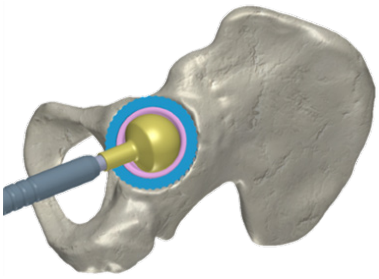
6

Trials with trial liner (optional)

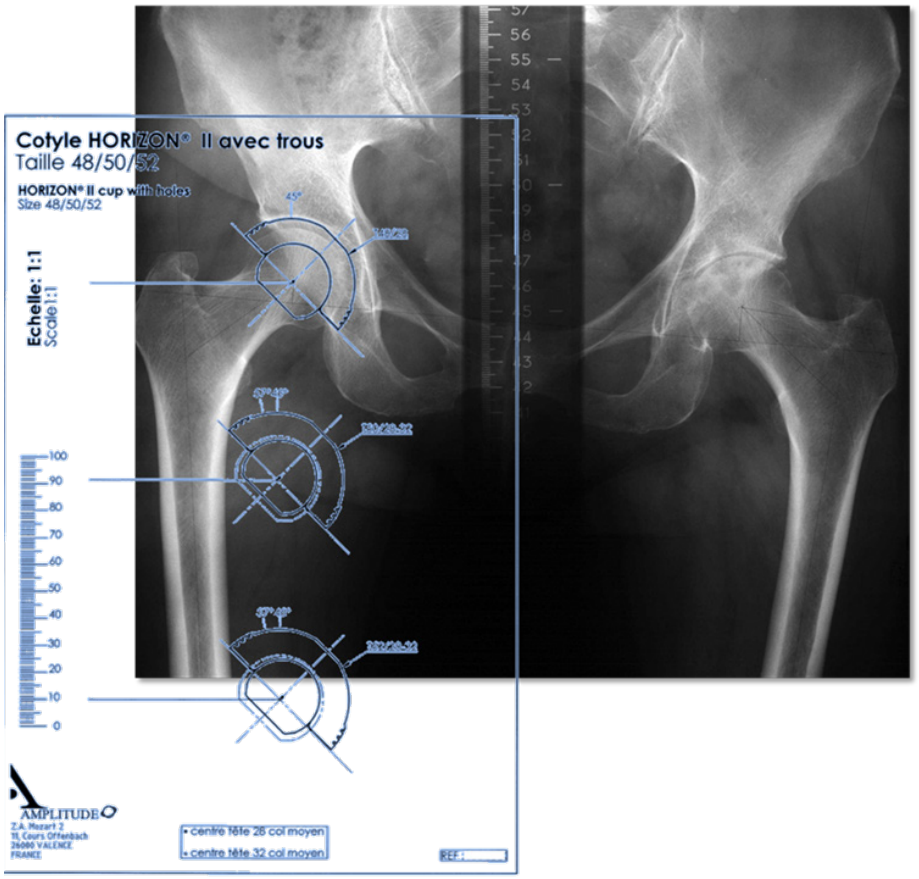


7

Final liner impaction



1 Preoperative planning



Using the radiographs and templates :

- Determine the joint centre
- Identify the depth of the acetabulum
- Assess the position of the cup
- Determine the cup size

NOTE

The provided templates have a 1:15 scale, but are also available with other scaling upon request.

REMINDER

The purpose of this surgical technique description is to provide instructions on how to use the instrumentation properly. The surgeon is fully responsible for choosing and performing the approach and surgical technique. This technique describes the use of curved impactors essentially. A straight impactor can also be used.

2 Acetabulum reaming

Remove any peripheral osteophytes and resect the labrum. Make sure to remove any posterior and inferior osteophytes that could hinder cup placement.

Prepare the acetabulum using the reamers starting with the smallest acetabular reamer available. The reamers can be used with either a straight or offset reamer handle.

Gradually increase the reamer diameter until good peripheral support is achieved and bleeding subchondral bone has been exposed. Make sure not to go past the acetabular fossa (external lamina). The reamed cavity must be completely circular.

Clean out the bottom of the acetabulum, making sure to remove any bone fragments that could interfere with placement of the trial cup.

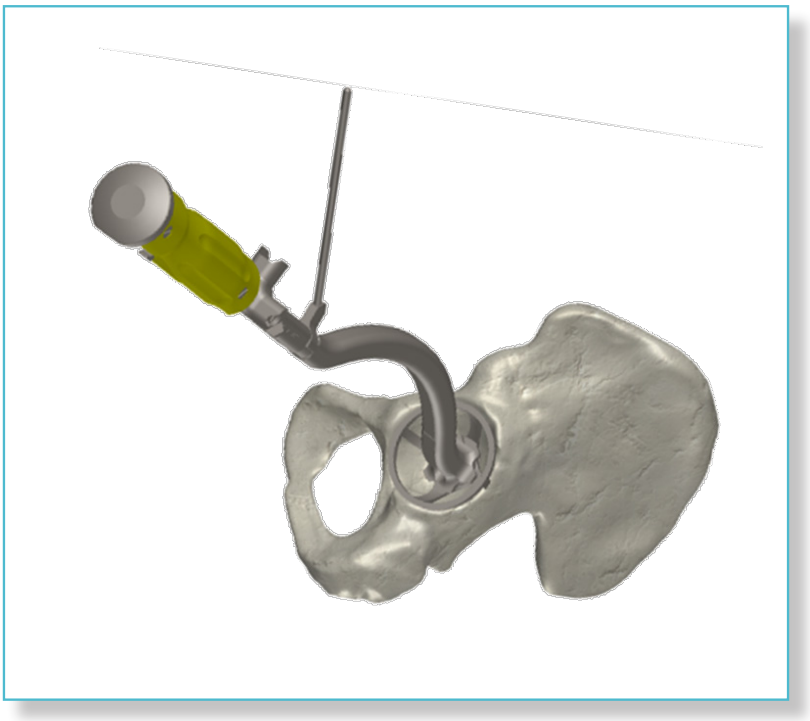
NOTE

The acetabular reamers size range covers all trial cups and implants. Depending on the adequation between the trial cup and reamed cavity, the reaming step might need to be performed again (see next page).

NOTE

Please refer to appendices B and C for reamer handles assembly.

3 Reaming control



Assemble a trial cup on the cup impactor (straight or curved). The chosen size must be based on the last reamer used (see next page). The trial has the same dimensions as the implant, without press-fit. The cup orientor can be placed on the cup impactor handle to set a 45° angle relative to the vertical plane.

Clean out the bottom and rim of the acetabulum to prevent small bone or tissue fragments from interfering with cup impaction.

Introduce the trial cup while maintaining the inclination and anteversion providing the best bone coverage. The cup is typically placed at 45° inclination and 10° to 15° anteversion, depending on the patient. It must make contact with the entire perimeter of the acetabulum and be stable without protruding.

When the cup diameter and position are validated, make a bony landmark on the acetabulum (with the electric scalpel) that will allow reproduction of the impaction level with the final implant.

Remove the trial cup when reaming is validated.

NOTE

If the trial cup must be impacted (due to sclerotic or hard bone), it is recommended to adjust acetabular cavity reaming, following instructions available next page. In every case, reaming is validated based on the trial cup stability.

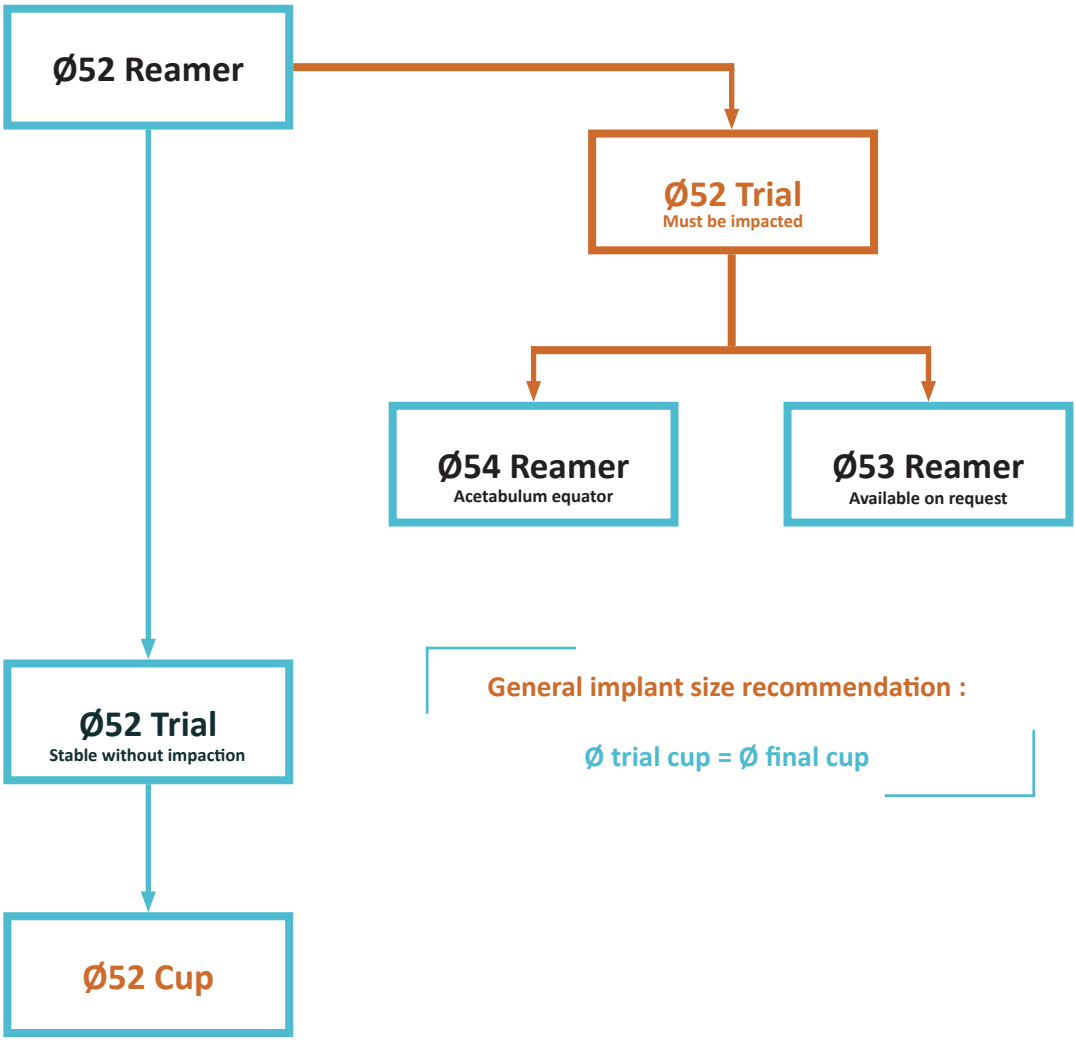
NOTE

When performing trials, the straight handle can be unscrewed to leave only the trial cup in the acetabulum.

4 Decision tree for reaming technique

Reaming must be performed using even reamers, by size increment (2 mm). The size of the last validated reamer (see p.9) determines the size of the trial cup. The size is validated if the trial is stable in the acetabulum, and introduced without need of impaction. If the trial must be impacted, the following techniques can be followed :

- Ream the equator of the acetabulum one size over (2 mm).
- Ream the whole acetabulum half a size over (1 mm): those reamers are available on request only.



5 Holding the cup

Take out the **HORIZON II cup with holes** of the same size as the trial cup.

Using the ratchet impactor :

Assemble the impactor handle **that corresponds with the cup being used** according to the instructions available in Appendix A.

With the ratchet handle closed, screw the expandable connector onto the handle, and then the cup of the same size as the trial cup.

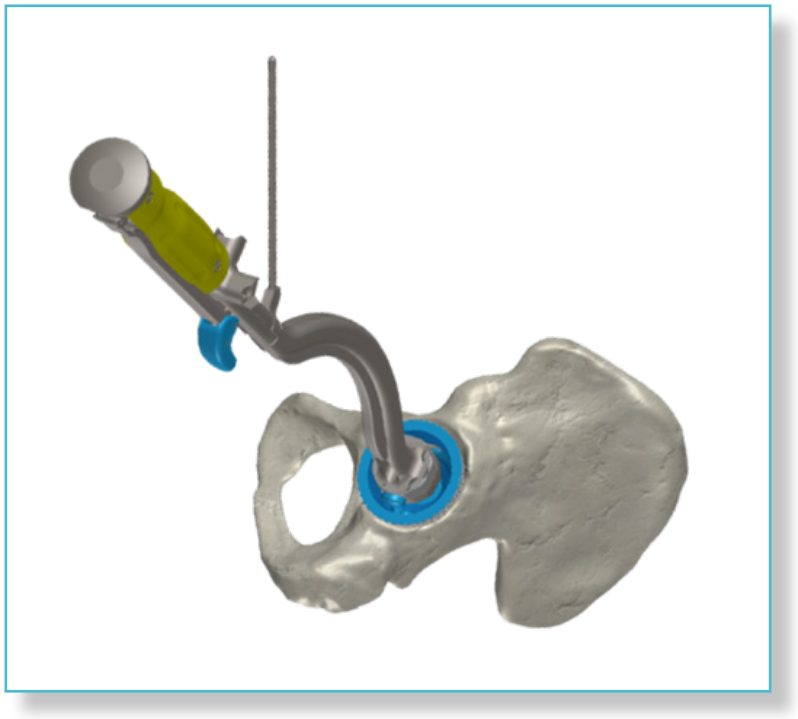
IMPORTANT

The impactor lever must remain closed from assembly with the cup until the impaction is complete. Make sure the cup is completely screwed (until it stops) on the connector.
The expandable connector must be handled with care.
The screw holes can be aligned in the desired orientation by pressing the blue button on the expandable connector.

Using the monoblock impactor :

Screw the final cup until it stops onto the impactor.

6 Final cup impaction



Assemble the cup orientor to the impactor handle.

Position the cup in the acetabulum in the desired inclination and orientation, remove the cup orientor and impact the cup.

NOTE

Holes should be oriented toward the roof of acetabulum.

Using the ratchet impactor :

Once the cup has been fully impacted, lift the blue impactor button and open the lever to release the **HORIZON II cup with holes**.

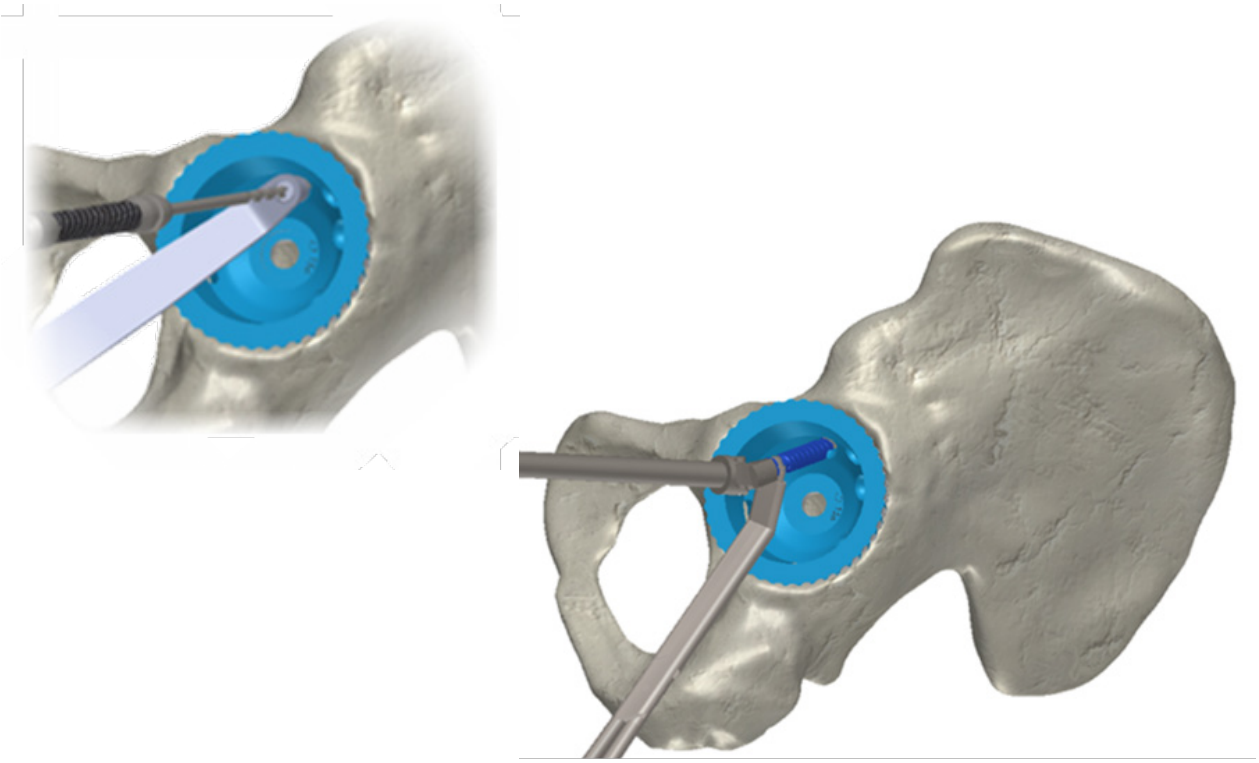
Remove the impactor.

Using the monoblock impactor :

Unscrew the impactor from the final cup.

Remove the impactor.

7 Fixation screw insertion (optional)



The cup's fixation can be reinforced with screws if needed.

Assemble the Ø3.2 mm drill bit (length 35, 50 or 70 mm) on the flexible drive shaft, and the assembly on the power tool.

Use the drill guide to drill into one of the cup holes (two different angles are possible).

Determine the required screw length using the screw measurer.

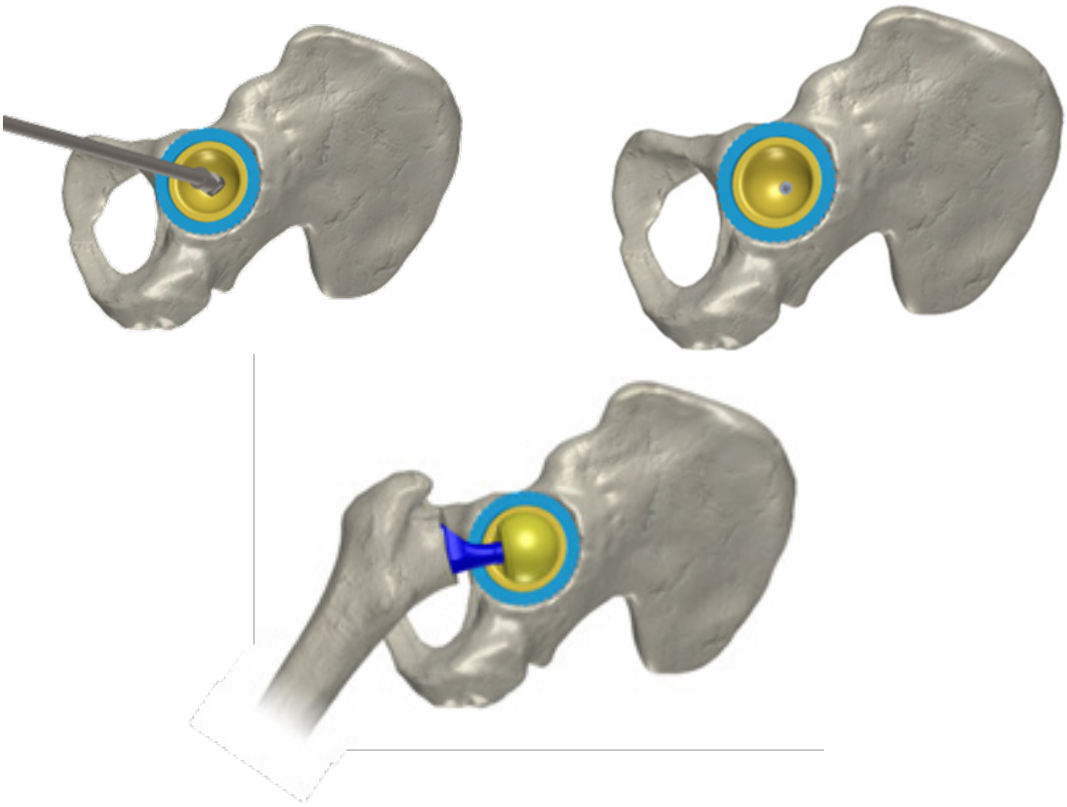
Choose the appropriate screw and place it into the screw holding clamp; position the screw in the implanted cup.

Fully insert the screw using the 3.5 mm Hex driver.

NOTE

Make sure the screw heads are completely embedded inside the cup so they do not interfere with liner placement.

8 Trials with trial liner (optional)



Perform femoral preparation following the implants dedicated surgical technique.

Screw the trial liner into the cup using the H3.5 screwdriver to carry out reduction trials.

Trial heads and liners color code

Blue	Yellow	Grey
Ø28mm	Ø32mm	Ø36mm

Trial heads neck length code*

Short neck	Medium neck	Long neck	Extra-long neck

Perform mobility and stability trials with the femoral stem in place.

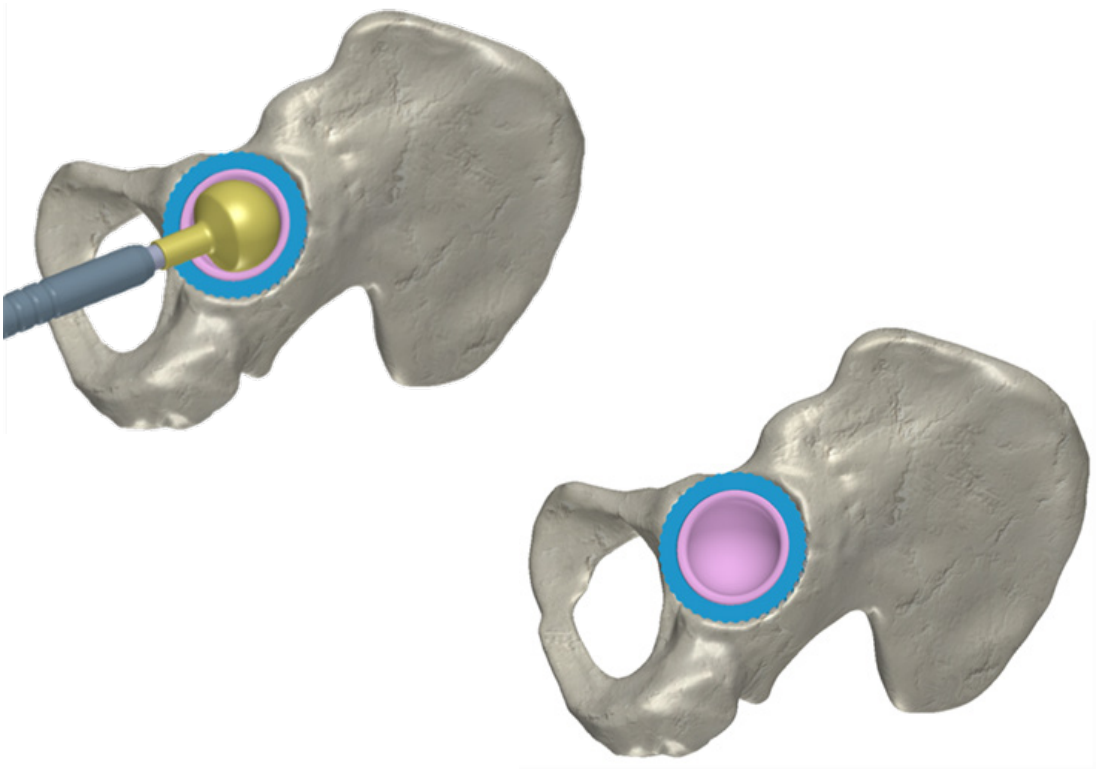
Remove trial components when stability is validated.

NOTE

Make sure the trial liner is compatible with the final cup (check engraving on the trial liner).

*Indications, contraindications and pairing restrictions are described in the IFU available with the femoral heads. Please read carefully.

9 Final liner impaction



After cleaning and drying out the implanted cup, slide the chosen BIOLOX® delta ceramic liner along the cup's Morse taper and in the same axis.

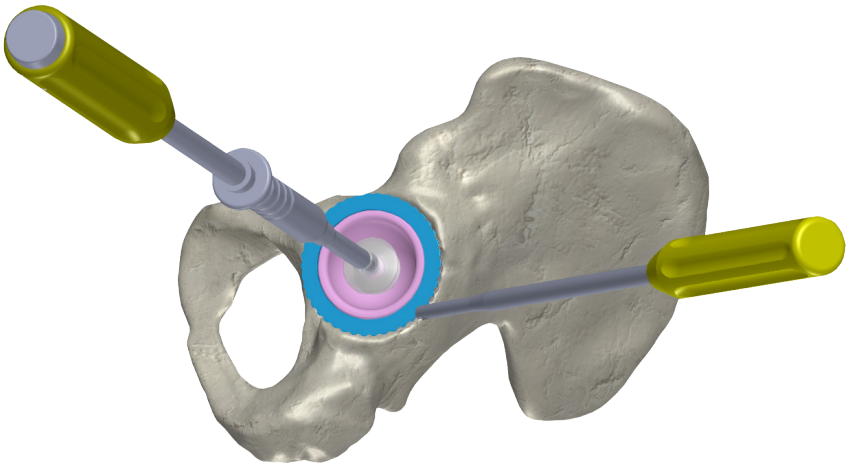
Check the liner positioning by running your finger along the cup's edge; the combined edges of the metal cup and ceramic liner must be completely flat.

Assemble the cup impactor tip (following the same color coding as the trials heads, described previously) with the universal handle and impact the liner.

NOTE

Make sure the chosen **liner** is compatible with the **implanted cup** (same size as the trial liner that was used, refer to page 3 for the sizes available for **HORIZON II with holes**).

10 Implants extraction



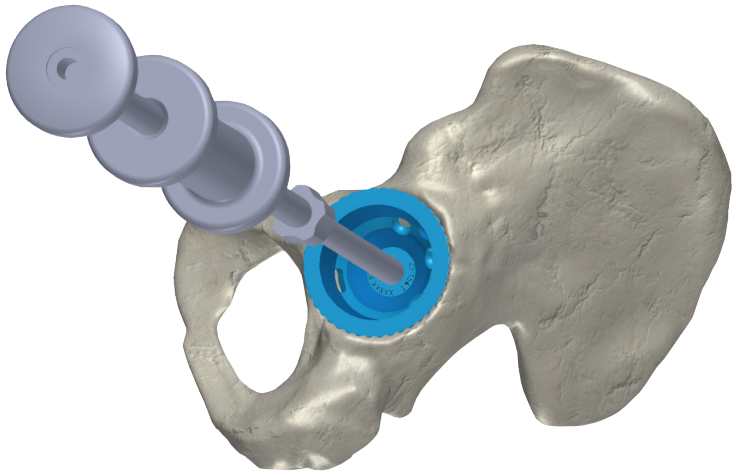
Assemble the liner extraction tip with the universal handle and attach the plunger end to the bottom of the ceramic liner.

While pulling on the liner extractor, use a metal instrument to tap on the periphery of the cup until the liner releases itself from the cup by resonance.

NOTE

Extraction instrumentation specific to HORIZON II cup with holes is available on request.

11 Implants extraction



Remove any fixation screws present using the 3.5 mm Hex driver.

Using K-wires and flexible chisels, scrape the space between the bone and the outer part of the cup to release it.

Assemble the slap hammer weight onto the slap hammer shaft and screw both components with the cup extractor.

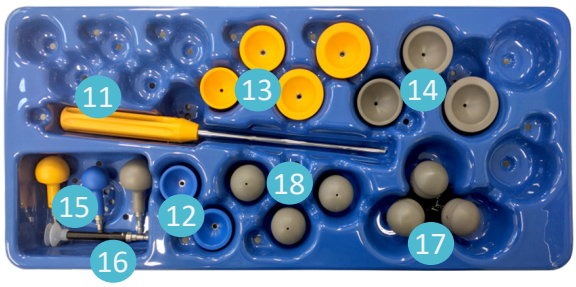
Screw and firmly tighten the assembly to the apical hole and proceed to extraction. The slap hammer movement must be in the cup axis.

NOTE

The holding hanlde can be assembled to the slap hammer shaft.

Instrumentation

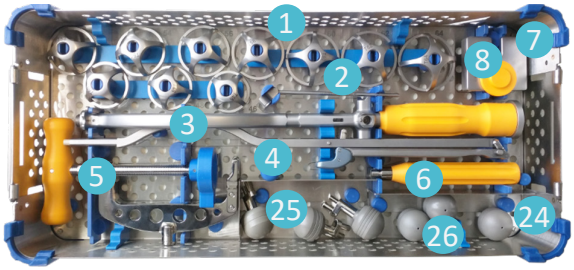
HORIZON II with holes : Straight impactor

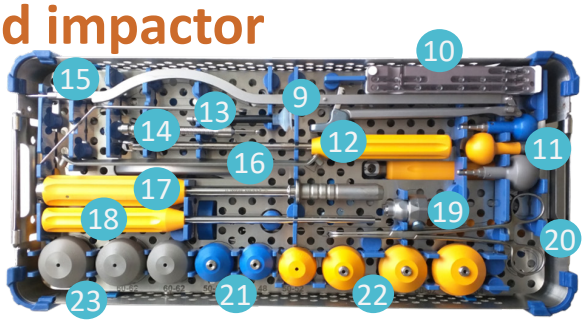


Item	Description	Reference	Qty
1	Trial Cup Size 48 to 64	2-0100148 to 2-0100164	1
2	Universal Handle	2-0101000	1
3	Cup Impactor	2-0100800	1
4	Cup Alignment Guide	2-0102000	1
5	Screwdriver shaft drive H3.5	2-0102100	1
6	Drill guide for Ø3.2 drill bit	2-0102200	1
7	Flexible Shaft	44000	1
8	Short drill bit Ø3.2 length 35 mm Short drill bit Ø3.2 length 50 mm Long drill bit Ø3.2 length 70 mm Drill bit Ø3.2 length 145 mm	2-0102400 2-0103800 2-0102500 2-0102600	1
9	Screw measurer	2-0102700	1
10	Screw Holder Clamp	2-0102800	1
11	H3.5 Retentive Straight Screwdriver	2-0101500	1
12	Trial ceramic liner Size 48/28 Trial ceramic liner Size 50/28 & 52/28	2-0104401 2-0104402	1
13	Trial ceramic liner Size 50/32 & 52/32 Trial ceramic liner Size 54/32 & 56/32 & 58/32 Trial ceramic liner Size 60/32 & 62/32 Trial ceramic liner Size 64/32	2-0118100 2-0124300 2-0104503 2-0104504	1
14	Trial ceramic liner Size 54/36 & 56/36 & 58/36 Trial ceramic liner Size 60/36 & 62/36 Trial ceramic liner Size 64/36	2-0124400 2-0116502 2-0116503	1
15	Cup impaction tip Ø28 to Ø36	2-0104128 to 2-0104136	1
16	Liner impactor/extractor	2-0107600	1
17	Trial neck Ø36 Short neck, Medium Neck and Long Neck Trial revision neck Ø36 Short neck, Medium Neck and Long Neck	2-0100512 to 2-0100514 2-0100612 to 2-0100614	1 of each
18	Trial head on stem Ø36 Short neck Trial head on stem Ø36 Medium neck Trial head on stem Ø36 Long neck	2-0100415 2-0100416 2-0100417	1

Instrumentation

HORIZON II shared : Curved impactor

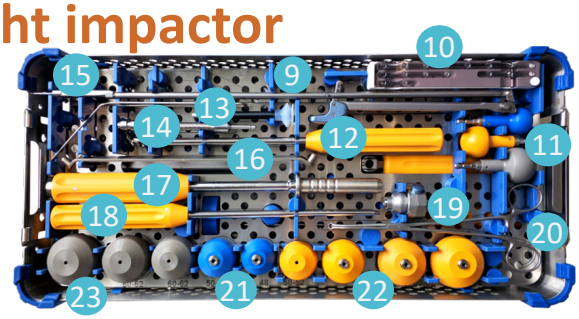




Item	Description	Reference	Qty
1	Trial cup HORIZON II - Size 48 to 64	2-0121248 to 2-0121264	1
2	Cup alignment guide for impactor handle Ø15	2-0126000	1
3	Curved cup impactor - Conventional / Navigated	2-0199600	1
4	Rod for preassembled cup curved impactor	2-0125400	1
5	Press for dual mobility cup AMPLITUDE tip for dual mobility press	2-0105900 2-0106000	1
6	Holding handle	2-0104200	1
7	Table base for press	2-0124100	1
8	Press teat for cap impaction	2-0124200	1
9	Rod for Curved Cup impactor - M9 screwing	2-0126200	1
10	Short drill bit Ø3.2 length 35 mm Short drill bit Ø3.2 length 50 mm Long drill bit Ø3.2 length 70 mm Long drill bit Ø3.2 length 145 mm	2-0103800 2-0102500 2-0102600 2-0102400	1
11	Cup impaction tip Ø28 to Ø36	2-0104128 to 2-0104136	1
12	Screwdriver shaft drive H3.5	2-0102100	1
13	Liner impactor/extractor	2-0107600	1
14	Flexible Shaft	44000	1
15	Screw gauge	2-0102700	1
16	Drill guide for Ø3.2 drill bit	2-0102200	1
17	Universal handle	2-0101000	1
18	H3.5 Retentive Straight Screwdriver	2-0101500	1
19	Expandable connector M9-M14	2-0122700	1
20	Screw Holder Clamp	2-0102800	1
21	Trial ceramic liner Size 48/28 Trial ceramic liner Size 50/28 & 52/28	2-0104401 2-0104402	1
22	Trial ceramic liner Size 50/32 & 52/32 Trial ceramic liner Size 54/32 & 56/32 & 58/32 Trial ceramic liner Size 60/32 & 62/32 Trial ceramic liner Size 64/32	2-0118100 2-0124300 2-0104503 2-0104504	1
23	Trial ceramic liner Size 54/36 & 56/36 & 58/36 Trial ceramic liner Size 60/36 & 62/36 Trial ceramic liner Size 64/36	2-0124400 2-0116502 2-0116503	1
24	H3 Wrench	2-0199400	1
25	Trial neck Ø36 Short neck, Medium Neck and Long Neck Trial revision neck Ø36 Short neck, Medium Neck and Long Neck	2-0100512 to 2-0100514 2-0100612 to 2-0100614	1 of each
26	Trial head on stem Ø36 Short neck Trial head on stem Ø36 Medium neck Trial head on stem Ø36 Long neck	2-0100415 2-0100416 2-0100417	1

Instrumentation

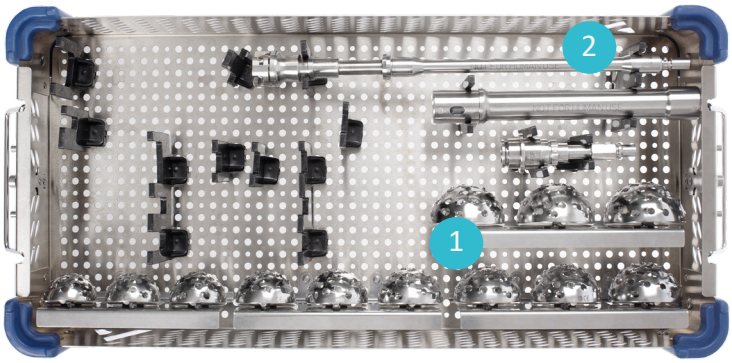
HORIZON II shared : Straight impactor



Item	Description	Reference	Qty
1	Trial cup HORIZON II - Size 48 to 64	2-0121248 to 2-0121264	1
2	Cup alignment guide for impactor handle Ø15	2-0126000	1
3	Straight cup impactor - Conventional / Navigated	2-0199700	1
4	Rod for preassembled cup straight impactor	2-0199800	1
5	Press for dual mobility cup AMPLITUDE tip for dual mobility press	2-0105900 2-0106000	1
6	Holding handle	2-0104200	1
7	Table base for press	2-0124100	1
8	Press teat for cap impaction	2-0124200	1
9	Rod for Straight Cup impactor - M9 screwing	2-0126300	1
10	Short drill bit Ø3.2 length 35 mm Short drill bit Ø3.2 length 50 mm Long drill bit Ø3.2 length 70 mm Long drill bit Ø3.2 length 145 mm	2-0103800 2-0102500 2-0102500 2-0102600	1
11	Cup impaction tip Ø28 to Ø36	2-0104128 to 2-0104136	1
12	Screwdriver shaft drive H3.5	2-0102100	1
13	Liner impactor/extractor	2-0107600	1
14	Flexible Shaft	44000	1
15	Screw gauge	2-0102700	1
16	Drill guide for Ø3.2 drill bit	2-0102200	1
17	Universal handle	2-0101000	1
18	H3.5 Retentive Straight Screwdriver	2-0101500	1
19	Expandable connector M9-M14	2-0122700	1
20	Screw Holder Clamp	2-0102800	1
21	Trial ceramic liner Size 48/28 Trial ceramic liner Size 50/28 & 52/28	2-0104401 2-0104402	1
22	Trial ceramic liner Size 50/32 & 52/32 Trial ceramic liner Size 54/32 & 56/32 & 58/32 Trial ceramic liner Size 60/32 & 62/32 Trial ceramic liner Size 64/32	2-0118100 2-0124300 2-0104503 2-0104504	1
23	Trial ceramic liner Size 54/36 & 56/36 & 58/36 Trial ceramic liner Size 60/36 & 62/36 Trial ceramic liner Size 64/36	2-0124400 2-0116502 2-0116503	1
24	H3 Wrench	2-0199400	1
25	Trial neck Ø36 Short neck, Medium Neck and Long Neck Trial revision neck Ø36 Short neck, Medium Neck and Long Neck	2-0100512 to 2-0100514 2-0100612 to 2-0100614	1 of each
26	Trial head on stem Ø36 Short neck Trial head on stem Ø36 Medium neck Trial head on stem Ø36 Long neck	2-0100415 2-0100416 2-0100417	1

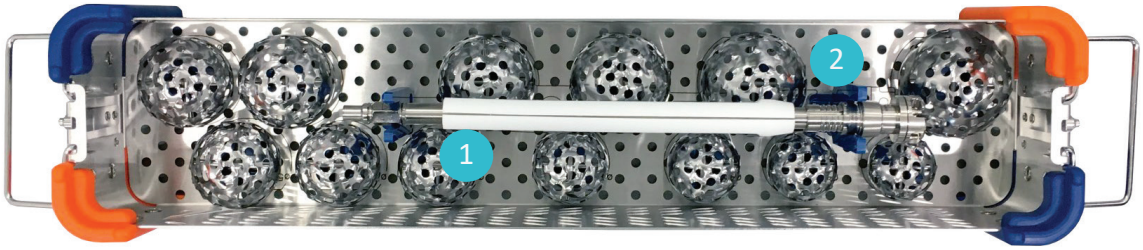
Instrumentation

Acetabular reamers set



Rep	Designation	Reference	Qty
1	Acetabular reamer Ø42 to Ø64	2-0192**42** to 2-0192**64**	1 each
2	Metallic Reamer handle - Straight + Connection Tip reamer Handle - Power Tool - Large AO	2-0131001 + 2-0131003	1 each

Acetabular reamers set - odd sizes



Rep	Designation	Reference	Qty
1	Acetabular reamer Ø41 to Ø65	2-0192**41** to 2-0192**65**	1 each
2	Straight Reamer Handle - AO coupling	T17780*	1

**optional if the tray of even sizes reamers has already been provided.*

Description	Reference
IMA reamer handle - Metallic – AO	50244501

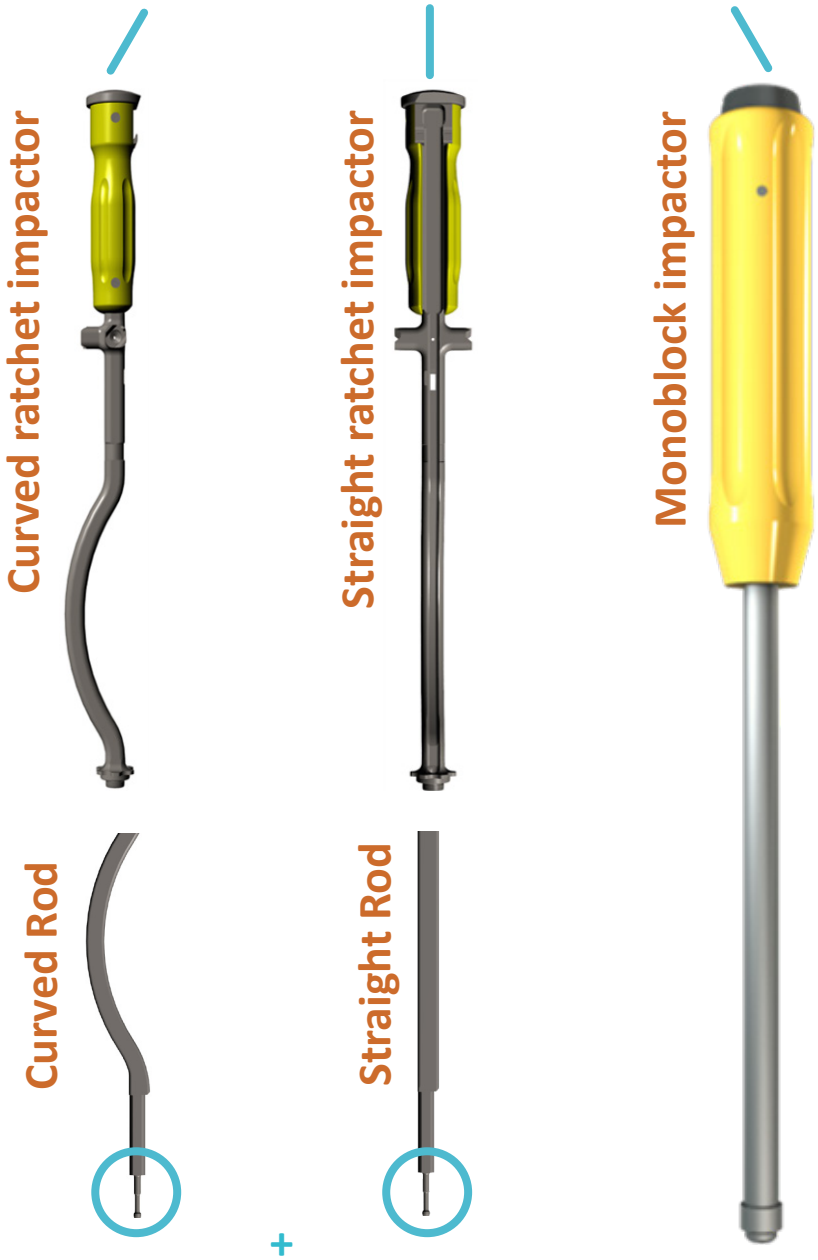
Description	Reference
Metallic Reamer handle - Offset + Connecting Shaft Assembly - Large AO	2-0131002 +2-0131005

Appendix

Appendix A

HORIZON II with holes Impactors range

Before assembly, make sure the cup/rod/impactor are compatible (see below).



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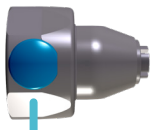
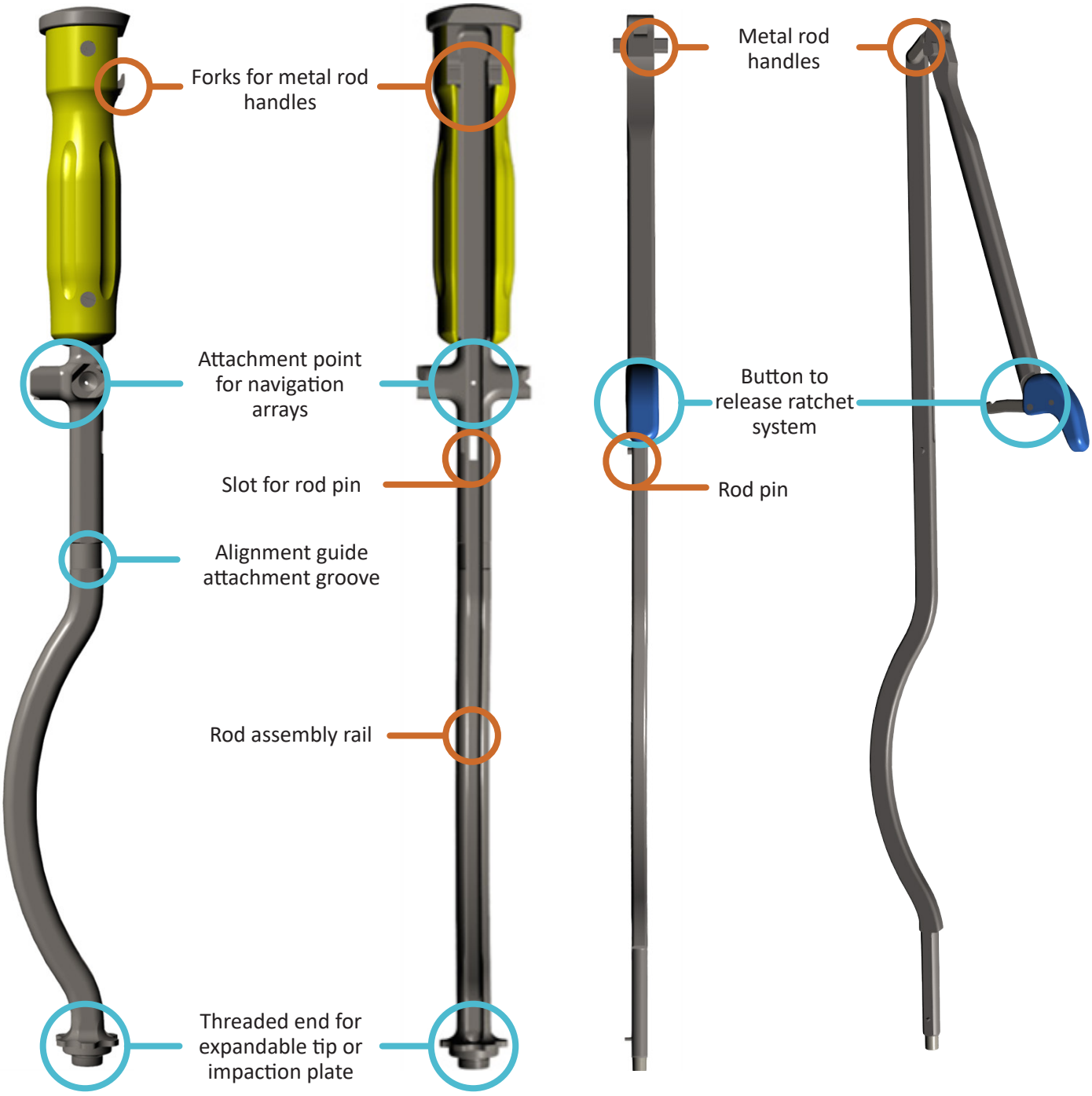
Expandable connector for cup



Button used to adjust orientation of the screw holes

Appendix A

Description of the « Ratchet » impactor



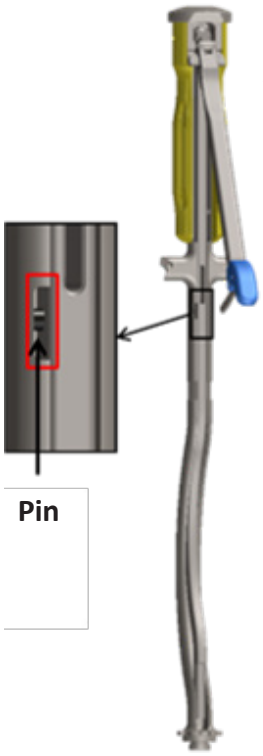
Appendix A

Assembly of the « Ratchet » impactor

1

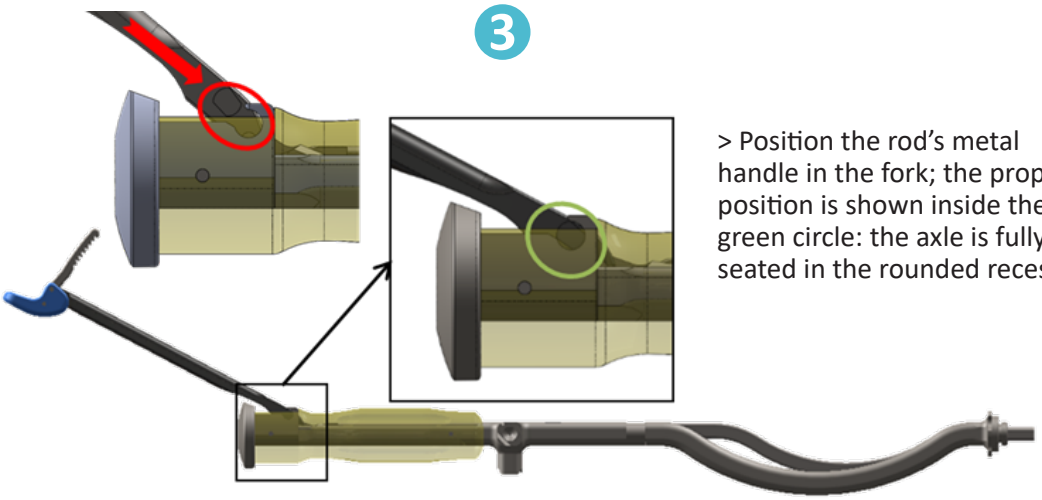
> Place the proximal part of the rod into the impactor handle.

2



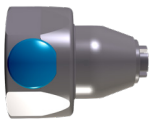
> Position the rod in the rail while making sure the guide pin is correctly seated in the rod.

3



> Position the rod's metal handle in the fork; the proper position is shown inside the green circle: the axle is fully seated in the rounded recess.

Screw the expandable connector to the end of the impactor shaft.



Appendix B

Straight reamer handle assembly

The acetabular reamer handle is composed of three elements:

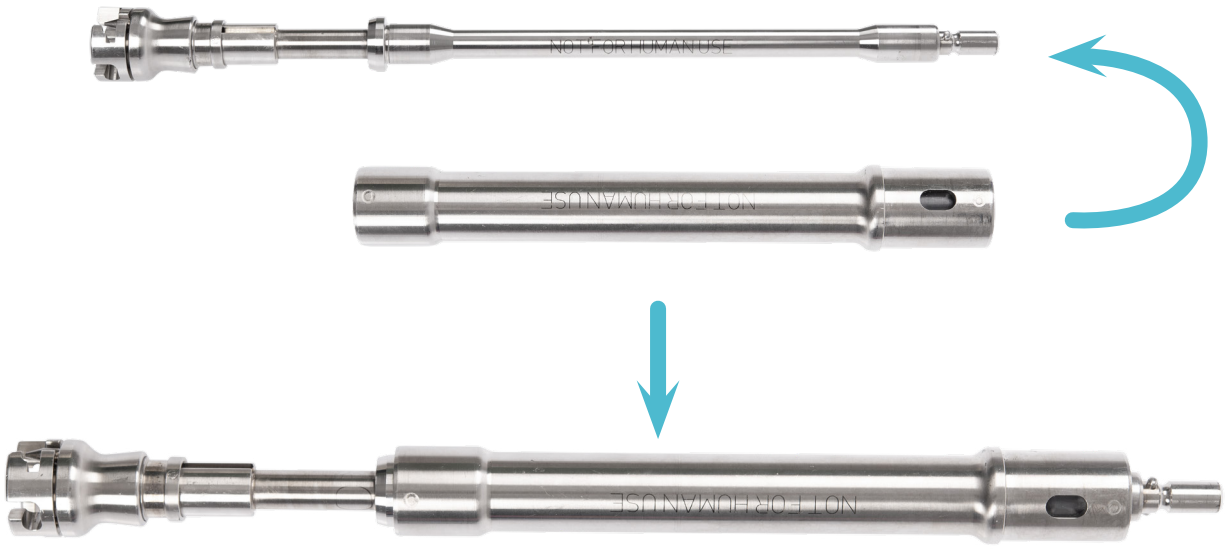
- The rod

- The sleeve

- The connection tip to power tool

Instructions for the assembly of the three parts:

1. The sleeve tip with the oblong hole should be oriented towards the power tool. If assembled in the wrong position, it will be impossible to join the connector to the power tool at a later stage. It is therefore crucial that this hole is on the same side as the power tool connection tip. The oblong hole is designed to accommodate the navigation tip in the case of navigated surgery.

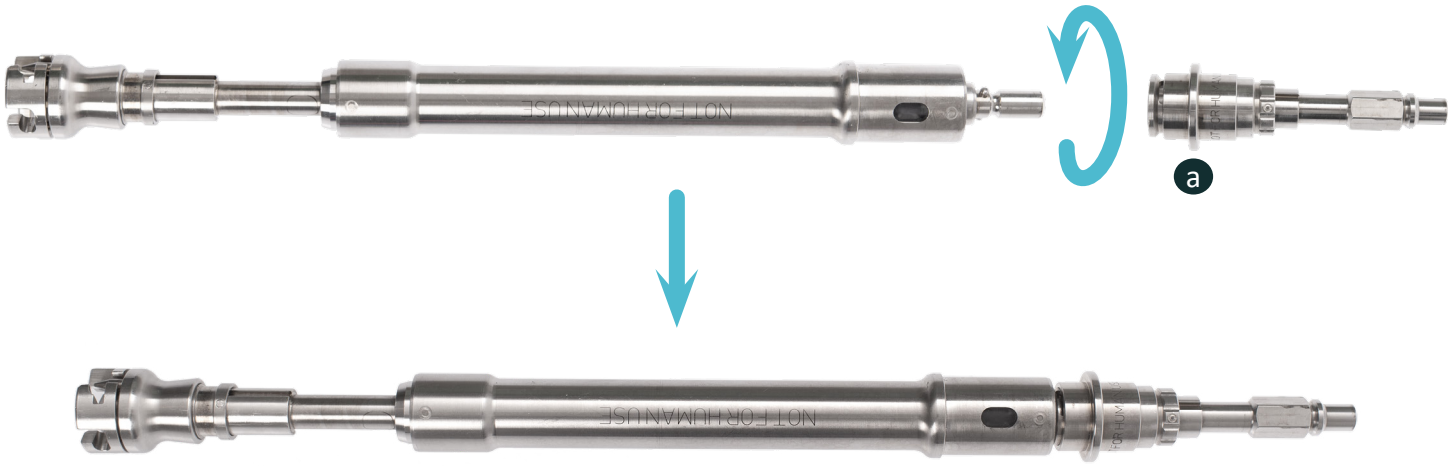


Appendix B

Straight reamer handle assembly

2 Assembly of the connection tip to the power tool:

Pull out the small ring (a) of the connection tip to the motor and position it on the previous assembly, turning it through a quarter-turn and then releasing the ring. Note that the instrument set is made up of either the Large AO option **(2-0131003)** or the Zimmer Hall option **(2-0131004).**



Check that the sleeve rotates freely around the rod.

For disassembly, follow the steps in reverse order.

Appendix C

Offset reamer handle assembly

The Offset acetabular reamer handle is composed of five elements:

- The power tool linking rod

(Large AO or Zimmer-Hall)

- The handle

- The reamer locking system

- The sleeve and the cover

Assembly instructions for these five elements:

1. Insert the reamer locking mechanism into the dedicated sleeve. The ring in peek should be positioned into the dedicated hole.

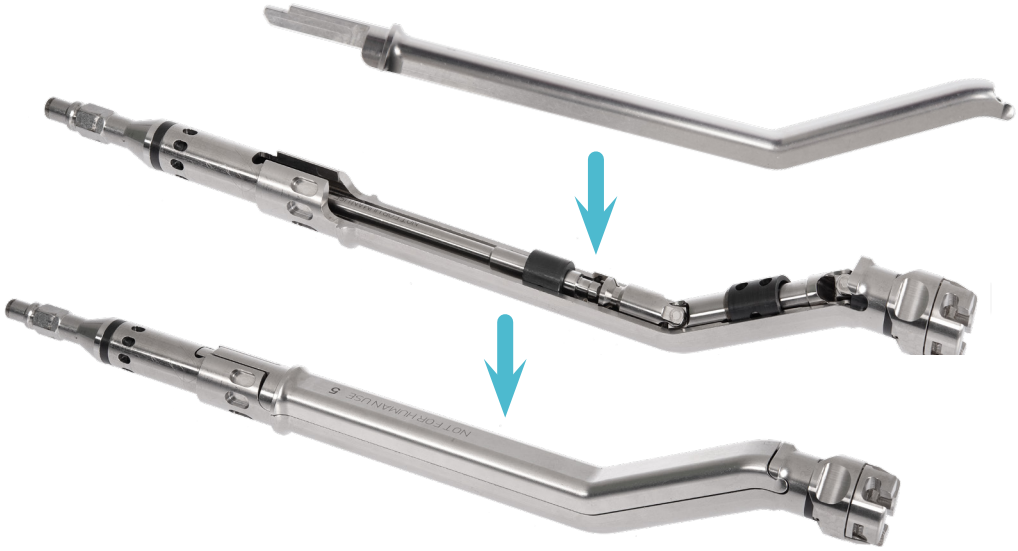
This mechanism features in option a disengaged position, allowing you to place the reamer in the acetabulum manually, position the reamer handle onto the reamer without locking, ream, and remove the handle while leaving the reamer into the bone. In this case, the reamer has to be removed manually. In order to use this option, simply pull and turn the ring.

2. Insert the power tool linking rod into the sleeve. Ensure that it is well clipped (a small click should be heard). Additionally, make sure to properly place the PEEK bearings: the one for the rod must be flush at the bottom. If the PEEK bearings are not correctly positioned, you will not be able to close the cover.
Please note that the linking rod can be either a Large AO tip **(2-0131005)** or a Zimmer Hall tip **(2-0131006)**.

Appendix C

Offset reamer handle assembly

3 Clip the cover onto the sleeve, beginning by the end located close to the reamer.



4 Secure the handle onto the sleeve by pressing the ratchet and locking it into one of the oblong holes for a secure assembly. Once assembled, the handle shouldn't turn without pressing the ratchet.

In case of navigated surgery, first assemble the navigation tip on one of the oblong holes of the handle before positionning the handle.
The handle is equipped with a ratchet system to allow an adequate orientation. It securely locks into the oblong holes of the handle.

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