

# Steps of Latitud™ Total Hip Replacement & **Bipolar Surgery**



# Steps of Latitud<sup>TM</sup> Uncemented Femoral Stem



## Step 1 : Preparing the Femur/ Femoral Neck Resection

The angle of femoral neck resection should be 45°. For this purpose the neck resection guide should be used to determine the level of the femoral neck resection in conjunction with preoperative templating.



## Step 2 : Preparing the femoral canal

The medial section of the greater trochanter is carefully prepared with the box osteotome. A box osteotome can be used in a neutral or anteverted position appropriate to the patient's anatomy.



## Step 3 : Proximal Cancellous bone compaction

- The point of entry for stem is selected as postero-laterally to the Piriformis Fossa to avoid varus positioning. It is suggested to use IM initiator from the common instrument set to indicate the direction of the canal.
- The bone punch Instrument can be used to compact the cancellous bone proximally as the Latitud stem is based on bone preservation philosophy.



## Step 4 : Femoral Broaching / Rasping

- Femoral broach attached to broach handle should run parallel to the posterior cortex
- Begin with the smallest broach and increase the size of the broach sequentially.
- Careful preoperative planning is key to help selection of the final broach size. The proximal face of the final broach must sit flush with the resection line of the femur. You may check the anteversion alignment of the broach at this point .
- The size of each broach is equivalent to the corresponding implant without HA coating. If you impact a broach and it fails to seat fully, the previous broach can be used to re-establish the correct envelope to accept the smaller stem.



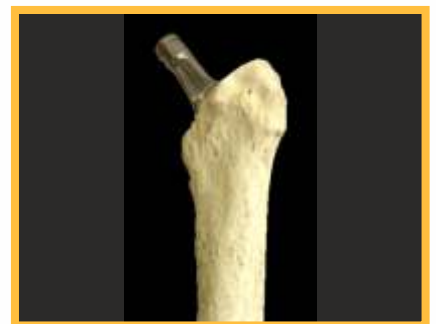
## Step 5 : Calcar Preparation

- Handle is removed from the broach and calcar reamer is used to remove excess bone from the resected neck.
- In the above step, once satisfactory stability is obtained with the broach that usually matches the planned size, the handle is removed from the broach and the calcar reamer is located onto the spigot of last broach used in place to remove excess bone from the resected neck. The calcar reamer will remove bone above 0.5mm from the face of the broach.
- It is recommended to initiate power to the calcar reamer prior to engagement with the bone to prevent damage to the femur.



## Step 6 : Trial Reduction

- The modular broach serves as trial prosthesis.
- Appropriate provisional neck & trial head are attached to the broach.
- Thereafter trial reduction is performed, checking for the leg length, muscle tension, range of motion and stability of the joint.
- Any differences in limb length are examined, the head and the provisional neck are then removed, the handle is reconnected to the broach and used for its removal, making space for the insertion of the final implant. Do not irrigate or dry the femoral canal. This will help to preserve the compacted cancellous bone quality and encourage biological fixation of the stem.



## Step 7 : Stem Implantation

- The Taper protective cover should be left on until the components are ready to be implanted. Before implanting a femoral head, the male taper on the femoral stem should be wiped clean of any blood, bone chips or other foreign materials.
- The final broach in above step indicates the definitive implants size to be used, when implanting the definitive Latitud stem (that has the same size as the final broach) in the femoral canal, ensure that it is directed in by hand. This will help avoid changing the version as a precautionary measure. There should not be more than a thumb's breadth between the resection line and the top of the HA coating on the stem. Impact the stem into the femoral canal so that the border of the HA coating is flush with the resection line.

- Once the Latitud stem is fully seated, cancellous bone from the resected femoral head is impacted around the proximal shoulder of the stem using the femoral bone tamp to seal the femoral canal. This also enhances stem stability & reduces the time for osseointegration which provides secondary stability.
- Using the trial head perform a trial reduction at this stage to check for muscle tension, range of motion, joint stability & leg length once again. Use of appropriate trial head size is recommended to achieve desired outcomes.

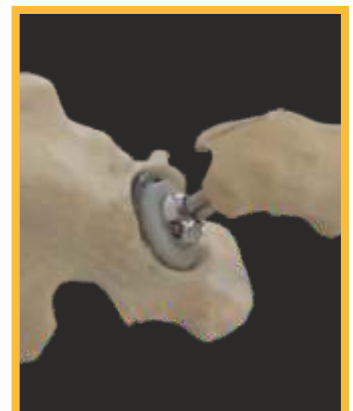


## Step 8 : Femoral Head Impaction

- Post the acetabular preparation clean and dry the stem taper carefully to remove any particulate debris. Place the definitive femoral head onto the taper and gently tap it using the head impactor. Ensure bearing surfaces are clean and finally hip joint is reduced and final closure is performed as per surgeons preferred technique.

## Step 9 : Final Reduction

- Perform a final reduction and assess range of motion, hip stability and limb length.







# LATITUD™ Uncemented Femoral Stem

## Latitud™ Uncemented Stem Instrument Set

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Single Tray		Uncemented Stem Instrument Set		
Sr. No.	Part No.	Item Description	Qty	Photo
1	Y12HMX/X	Neck Resection Guide (Uncemented)	1	
2	Y12CQ00/X	Broach For Uncemented Stem Size-0	1	
3	Y12CQ01/X	Broach For Uncemented Stem Size-1	1	
4	Y12CQ02/X	Broach For Uncemented Stem Size-2	1	
5	Y12CQ03/X	Broach For Uncemented Stem Size-3	1	
6	Y12CQ04/X	Broach For Uncemented Stem Size-4	1	
7	Y12CQ05/X	Broach For Uncemented Stem Size-5	1	
8	Y12CQ06/X	Broach For Uncemented Stem Size-6	1	
9	Y12CQ07/X	Broach For Uncemented Stem Size-7	1	
10	Y12CQ08/X	Broach For Uncemented Stem Size-8	1	
11	Y12CQ09/X	Broach For Uncemented Stem Size-9	1	
12	Y12CQ10/X	Broach For Uncemented Stem Size-10	1	
13	Q04KFXX/X	Trial Neck 125° Standard	1	
14	Q03KFXX/X	Trial Neck 135° Standard	1	
15	Q05KFXX/X	Trial Neck 135° Lateral	1	
16	U14CQ01/X	Femoral Bone Punch	1	

# LATITUD™ Uncemented Femoral Stem

## Latitud™ Uncemented Stem Instrument Set

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Single Tray		Uncemented Stem Instrument Set		
Sr. No.	Part No.	Item Description	Qty	Photo
17	U14CQ02/X	Femoral Bone Tamp	1	
18	Y18CAXX/X	Calcar Planer Dia 40 Larger	1	
19	W12KF22/C	Trial Femoral Head 22 +00 mm	1	
20	W12KF22/D	Trial Femoral Head 22 +3.5 mm	1	
21	W12KF28/A	Trial Femoral Head 28 -3.5 mm	1	
22	W12KF28/C	Trial Femoral Head 28 +00 mm	1	
23	W12KF28/D	Trial Femoral Head 28 +3.5 mm	1	
24	W12KF28/F	Trial Femoral Head 28 +7.0 mm	1	
25	W12KF32/B	Trial Femoral Head 32 -4.0 mm	1	
25	W12KF32/C	Trial Femoral Head 32 +00 mm	1	
26	W12KF32/E	Trial Femoral Head 32 +4.0 mm	1	
27	W12KF32/F	Trial Femoral Head 32 +7.0 mm	1	
28	W12KF36/B	Trial Femoral Head 36 -4.0 mm	1	
29	W12KF36/C	Trial Femoral Head 36 +00 mm	1	
30	W12KF36/E	Trial Femoral Head 36 +4.0 mm	1	
31	W12KF36/F	Trial Femoral Head 36 +7.0 mm	1	
32	W12KF40/B	Trial Femoral Head 40 -4.0 mm	1	
33	W12KF40/C	Trial Femoral Head 40 +00 mm	1	
34	W12KF40/E	Trial Femoral Head 40 +4.0 mm	1	
35	W12KF40/F	Trial Femoral Head 40 +7.0 mm	1	
36	PHIT-00006	Instrument Case for Uncemented Stem Set	1	

# Steps of Latitud<sup>TM</sup> Cemented Femoral Stem



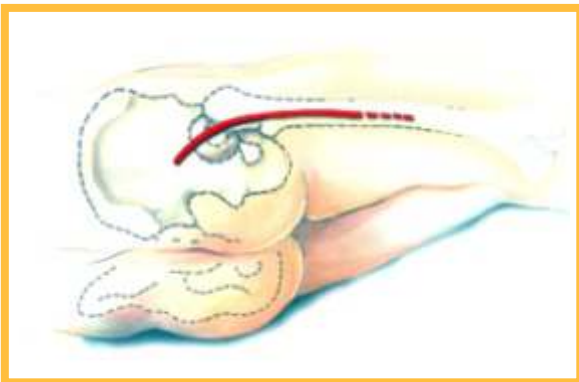
## Step 1 : Pre-operative Planning

- X-ray templates can be used over AP and lateral radiographs. It helps to determine the correct size to restore the patient's natural anatomy.
- Templates are 115% magnification.



## Step 2 : Surgical Approach

- The LATITUD™ Cemented Femoral Stem can be used with any surgical approach that the surgeon is comfortable with.



## Step 3 : Femoral Neck Resection

- The neck resection guide should be used in conjunction with preoperative planning, to determine the level of femoral neck resection.
- The guide is moved along the longitudinal axis of exposed proximal femur so that the centre of the femoral head matches the appropriate stem offset. There are resection markings for -4, +0 and +4 neck lengths for both 38mm and 45 mm offset stems.



## Step 4 : Femoral Canal Preparation

- Use the box osteotome to remove the medial aspect of the greater trochanter and insert at the anterior edge of the piriformis fossa, posterior to the midline of the neck.
- Use the box osteotome in a neutral or anteverted position appropriate to the patient's anatomy.
- Depending upon the size of the LATITUD Cemented Femoral Stem, either small or large box osteotome may be used to open the proximal femur.



## Step 5 : Establishing The Medullary Canal

- Use the IM Initiator to create a pilot hole in the proximal femur.
- Place the IM initiator at the posterior margin of the neck resection, lateral near the piriformis fossa.

## Step 6 : Medullary Canal Reaming

- The canal finder is attached to the T-handle and is used to open the natural axis of the femoral canal for broaching preparation and distal cement insertion.
- 8mm, 10mm or 12mm canal reamers are used sequentially, smallest first, to widen the femoral canal until the required diameter and depth are achieved whilst maintaining axial alignment within the femur.
- Depth lines are marked on all three reamers and when the required depth is achieved, reaming should be stopped.





## Step 7 : Broaching

- The medullary canal is then broached sequentially starting with the smallest broach, with appropriate offset, until the broach equivalent to the prosthesis chosen at the templating is seated within the femur. The broach handle may be impacted directly using a mallet, or the slap hammer may be used to both impact and loosen the rasp. ▶
- Seat the final broach slightly below the level of the femoral neck resection to facilitate calcar reaming if required.
- Alternatively locating pin can be used to keep the unstable rasp in the femoral cavity at the appropriate depth position.



## Step 8 : Calcar Reaming

- In the above step, once satisfactory stability is obtained with the broach that usually matches the planned size, the handle is removed from the rasp and the calcar reamer is located onto the spigot of last broach used in place to remove excess bone from the resected neck. ◀
- The calcar reamer will remove bone above 0.5 mm from the face of the broach. It is recommended to Initiate power to the calcar reamer prior to engagement with the bone to prevent damage to the femur.



## Step 9 : Trial Reduction

- The modular broach serves as trial prosthesis. Appropriate trial neck & trial head are attached to the broach.
- Thereafter Trial reduction is performed, checking for the leg length, muscle tension, range of motion and stability of the joint. ▶
- Any differences in limb length are examined, the head and the trial neck are then removed, the handle is reconnected to the broach and used for its removal, making space for the insertion of the final implant.





## Step 10 : Cement Plug Insertion

- A suitable size of cement restrictor is selected, depending on the size of the final canal reamer used. Cement restrictor is screwed onto the cement restrictor inserter using clock-wise motion.
- The depth of insertion is determined by placing the cement restrictor inserter alongside the femoral stem. The cement restrictor is aligned 1-2 cm beyond the distal tip of femoral stem and a measurement taken from the markings on the cement inserter handle. Lateral shoulder can be a good reference point.
- Once the cement restrictor is inserted at a predefined level, the inserter would be removed by turning inserter handle into anticlockwise to unscrew it from cement restrictor.



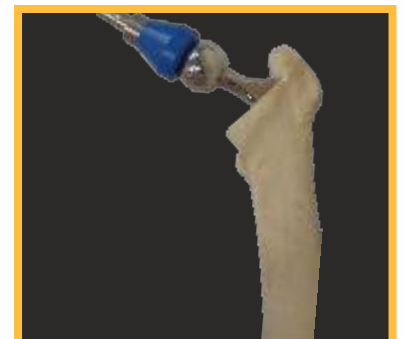
## Step 11 : Stem Insertion

- Before inserting LATITUD Cemented stem into femoral medullary canal. Canal is cleared of debris and cleaned using pulsed lavage and dried. Cement is then inserted using a cement gun until canal is almost filled. The definitive LATITUD™ Cemented Stem along with appropriate centralizer is attached to stem inserter.
- Stem is then pushed firmly into femoral canal filled with bone cement until it reaches the level at which broach sat during trial reduction (this may be checked by reference to the three marks on the implant)
- While inserting stem into femoral canal, pressure is applied by placing the thumb medial to the stem. Once bone cement has fully polymerized, excessive cement is removed and stem inserter is detached from stem.



## Step 12 : Femoral Head Impaction

- A further trial reduction is recommended and is performed using provisional modular femoral head, as shown in step 9. Before placing the actual modular femoral head, the taper portion of LATITUD™ Cemented stem should be cleaned and dried.
- The modular femoral head of choice is placed onto stem's 12/14 taper and impacted by using femoral head impactor and a mallet.
- A light tap is required to engage the taper.



### Step 13 : Final Reduction

- Perform a final reduction and assess range of motion, hip stability and limb length.



# LATITUD™ Cemented Femoral Stem

## Latitud™ Cemented Stem Instrument Set

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Single Tray		Cemented Stem Set		
Sr. No.	Part No.	Item Description	Qty	Photo
1	Z13HMX/X	Neck Resection Guide (Cemented)	1	
2	U13EIX/X	Cemented Stem Inserter	1	
3	Z09CAX/X	Calcar Planer (Dia 30)	1	
4	Z00EIX/X	Cement Restrictor Inserter Handle	1	
5	W12KF28/A	Trial Femoral Head 28 -3.5mm	1	
6	W12KF28/C	Trial Femoral Head 28 +00mm	1	
7	W12KF28/D	Trial Femoral Head 28 +3.5mm	1	
8	W12KF28/F	Trial Femoral Head 28 +7.0mm	1	
9	W12KF36/B	Trial Femoral Head 36 -4.0mm	1	
10	W12KF36/C	Trial Femoral Head 36 +00mm	1	
11	W12KF36/E	Trial Femoral Head 36 +4.0mm	1	
12	W12KF36/F	Trial Femoral Head 36 +7.0mm	1	

# LATITUD™ Cemented Femoral Stem

## Latitud™ Cemented Stem Instrument Set

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Single Tray		Cemented Stem Set		
Sr. No.	Part No.	Item Description	Qty	Photo
13	Z01CQ00/X	Broach For Cemented Stem Size - 0 Standard	1	
14	Z01CQ01/X	Broach For Cemented Stem Size - 1 Standard	1	
15	Z01CQ02/X	Broach For Cemented Stem Size - 2 Standard	1	
16	Z01CQ03/X	Broach For Cemented Stem Size - 3 Standard	1	
17	Z01CQ04/X	Broach For Cemented Stem Size - 4 Standard	1	
18	Z02CQ01/X	Broach For Cemented Stem Size - 1 Narrow	1	
19	Z02CQ02/X	Broach For Cemented Stem Size - 2 Narrow	1	
20	Z02CQ03/X	Broach For Cemented Stem Size - 3 Narrow	1	
21	Z02CQ04/X	Broach For Cemented Stem Size - 4 Narrow	1	
22	R01KFXX/X-1	Trial Neck Standard (Cemented)	1	
23	R02KFXX/X-1	Trial Neck Narrow (Cemented)	1	
24	Z13LGXX/X	Locating Pin	1	
25	O19EFXX/G	Cemented Cup Holder 10° - Ø22	1	
26	O19EFXX/I	Cemented Cup Holder 10° - Ø28	1	
27	O19EFXX/J	Cemented Cup Holder 10° - Ø32	1	
28	O19EFXX/K	Cemented Cup Holder 10° - Ø36	1	
29	O00CC08/X	Acetabular Step Drill Ø8mm	1	
30	PHIT-00002	Instrument Case for Cemented Stem	1	














# LATITUD™ Femoral Stem

## Latitud™ Common Instrument Set

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### Common Instruments Set – Top Tray

Top Tray		Common Instrument Set		
Sr. No.	Part No.	Item Description	Qty	Photo
1	R14GGXX/X	Femoral Head Extractor	1	
2	U14AJ02/X	T – Handle - 2	1	
3	U14CAXX/X	Intramedullary Reamer (IM)- Initiator	1	
4	U14AIXX/X	Universal Handle	1	
5	U14AIXX/X	Anti Versional Handle	1	
6	U12FJXX/X	Femoral Head Impactor Block	1	
7	U14FTXX/X	Mallet	1	
8	U13CAXX/X	Taper Reamer	1	
9	Z13CA08/X	Femoral Canal Reamer Ø8.0 mm	1	
10	Z13CA10/X	Femoral Canal Reamer Ø10 mm	1	
11	Z13CA12/X	Femoral Canal Reamer Ø12 mm	1	
12	U14CA06/X	Starter Reamer Ø 6 mm	1	
13	U14CA09/X	Starter Reamer Ø 9 mm	1	
14	U00CAXX/X	Canal Finder	1	
15	U17AJXX/X	Dual Offset Broach Handle (Left)	1	
16	U18AJXX/X	Dual Offset Broach Handle (Right)	1	








# LATITUD™ Femoral Stem

## Latitud™ Common Instrument Set

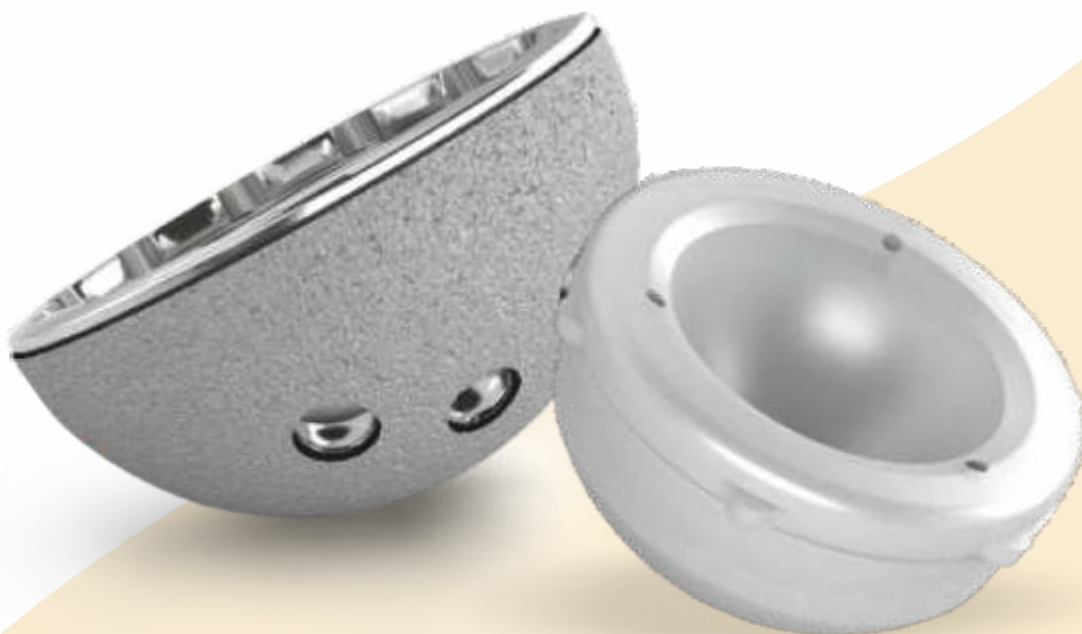
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### Common Instruments Set – Bottom Tray

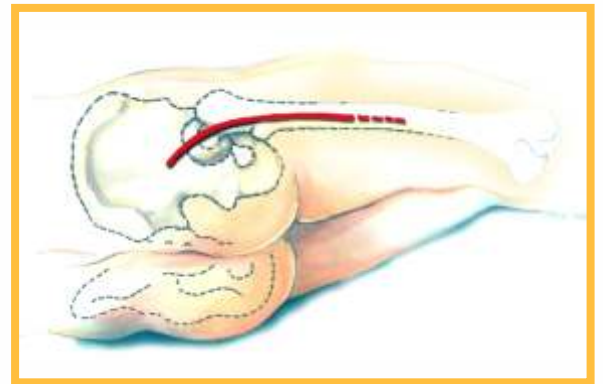
Bottom Tray		Common Instrument Set		
Sr. No.	Part No.	Item Description	Qty	Photo
1	U09CDXX/X	Box Osteotome-1	1	
2	U10CDXX/X	Box Osteotome-2	1	
3	U15AJXX/X	Broach Handle (Straight)	1	
4	U16AJXX/X	Broach Handle (Curved)	1	
5	U14EIXX/X	Stem Inserter	1	
6	U14FRXX/X	Sliding Slap Hammer	1	
7	PHIT-00007	Common Instrument set	1	

# Steps of Latitud<sup>TM</sup> Uncemented Acetabular Cup



## Step 1 : Preparing the Acetabulum

- Good visualization of the acetabular margins is necessary, and this is usually obtained by removing labrum remnants (which can be quite extensive). It may be necessary to also remove a hypertrophic capsular attachment and osteophytes division of the transverse ligament assists with exposure.
- Excise the acetabular labrum and remove any large peripheral osteophytes. Excise the ligamentum teres to expose the true floor of the acetabulum.
- *Note:* It is important to visualize the entire bony rim of the acetabulum to reduce the likelihood of soft tissue entrapment which may prevent the cup from proper seating during insertion. The smallest provisional cup is used to assess the size of the reamed cavity.



## Step 2 : Reaming the Acetabulum

- Determine the desired head position through templating and preoperative planning
- Start with smaller reamer, attach it to reamer handle
- Attach the alignment guide to the reamer shaft
- Check orientation with alignment guide-parallel to long axis of the patient, 45° inclination and 20° anteversion.
- Using the power tool on the "REAM" setting, start with a smaller reamer and proceed to the next largest reamer in 1-2mm increments.



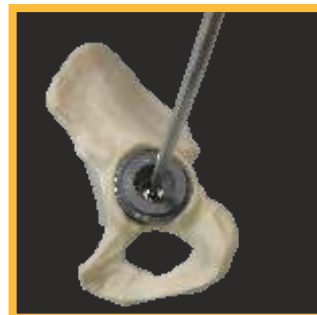




- A size 52mm shell is actually 53.3mm in diameter at the equator, and 52mm at the apex. In standard bone, when implanting a 52mm shell use of 52mm reamer is recommended.
- It is possible to increase the degree of pre-loading by using a shell size larger than the last reamer used, based on operating surgeons assessment of bone quality. This is important to consider in conditions such as osteoporosis, rheumatoid arthritis, and patients on steroid treatment etc.

## Step 4: Insertion of Trial Shell & Provisional Liner

- The trial shell is inserted onto the reamed acetabulum with the Universal handle.
- When the shell provisional is fully seated, remove the shell impactor and leave the shell provisional in acetabulum, select the appropriate provisional liner size that matches with selected shell provisional size.
- The provisional liner can be locked in provisional shell using the locking screw option in provisional liner.

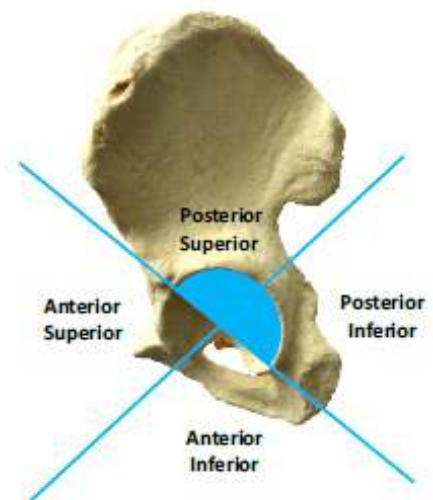


## Step 5 : Trial Range of Motion

- Insert a head/neck provisional onto the implanted stem or broach cone provisional and perform a trial reduction.
- Check for stability and range of motion.
- Remove the Provisional components.

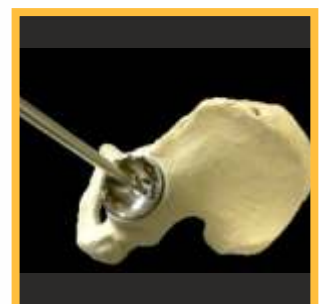
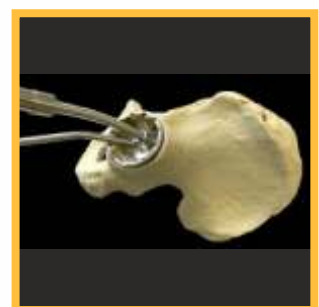
## Step 6 : Implant Insertion

- Once the implant is in appropriate position and alignment, it is impacted into the acetabulum with a series of firm mallet blows using the curved or straight cup impactor, and the depth of the shell is then checked through the apex or screw holes.
- Once shell orientation, depth and tightness are satisfactory the impaction tool is then removed, the curved or straight shell impaction tool is screwed onto the definitive shell selected for implantation, and the alignment guide may be fitted over the shaft to assist with shell orientation.
- For the straight cup impactor, ensure that the exterior shell adaptor is attached prior to the definitive shell.
- The screw holes need to be orientated in a cranio-dorsal position to avoid the nerves and vessels should the screws be inserted.
- To assist in this, the definitive shell has circumferential black itch mark at 11 o'clock & 1 o'clock position, these marking should align with prepared acetabulum's 11 o'clock & 1 o'clock, this will ensure the screw holes are placed in placement in the posterior superior and posterior inferior quadrants.



## Step 7 : Screw Fixation

- In case additional shell fixation is desired, the option is available using the provided screw holes.
- Carefully following these steps for screw insertion can help to minimize screw push through or torque out after initial implantation.
- Drill a pilot hole, using modular flex drill shaft with appropriate drill bit length, Position the adjustable drill guide and flex drill into the selected screw hole.
- It is necessary to use the drill guide provided, and the guide needs to be fully inserted into the shell screw hole, to ensure that the screw head will be completely countersunk.
- The screw hole is drilled with a 3.8mm drill bit, and in sclerotic bone the hole may need to be additionally pre-tapped with a tap.
- Screw length is assessed with the depth gauge provided, and the selected size screw firmly inserted with an articulated screwdriver. A pair of screw grasping forceps assists screw insertion into the prepared hole.
- It is essential to check that the screw head is completely countersunk, as otherwise it will interfere with taper locking of the liner and possible component failure.



## Step 8 : Provisional Liner Insertion

At this stage if the operating surgeon thinks the need for taking a trial reduction, surgical step no. 4 as mentioned earlier can be repeated with the definitive shell implant and provisional liner combination. Otherwise he may proceed to next step.



## Step 9 : Liner Insertion

It is necessary to remove all soft tissue and fluid from the interior of the shell and especially the taper before inserting the definitive liner. A surgical cloth, wipe or sponge may be used for same. The highly cross linked polyethylene liner dome has a circumferential external taper, which needs to be inserted parallel to the cup taper in an uncompromised manner. Care must be taken when using this tool to ensure the external taper is accurately engaged with the shell.

## Step 10 : Final Reduction

Perform a final reduction and assess range of motion, hip stability and limb length.



Shell Size	Liner Size	Head Options										
		22		28		32		36		40		
OD (mm)	OD (mm)	Dome (mm)	45° (mm)	Dome (mm)	45° (mm)	Dome (mm)	45° (mm)	Dome (mm)	45° (mm)	Dome (mm)	45° (mm)	
40	35	9.2	9.1	6.2	6.1							
42	37	10.1	9.9	7.1	6.9							
44												
46	40			8.6	7.9	6.6	5.9					
48												
50	44			9.9	9.6	7.9	7.6					5.9
52												
54												
56	48				123	12	10.3	10	8.3	8	6.3	6
58												
60	52								12.5	11.9	10.5	9.9
62												
64												
66												
68												
70												







# Latitud™ Uncemented Acetabular Cup

## Latitud™ Uncemented Acetabular Instrument Set

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### Acetabular Instruments Set – Top Tray

Top Tray		Acetabulum Set		
Sr. No.	Part No.	Item Description	Qty	Photo
1	S12KO40/X	Trial Acetabular Shell 40/35 (40/MA)	1	
2	S12KO42/X	Trial Acetabular Shell 42/37 (42/MA)	1	
3	S12KO44/X	Trial Acetabular Shell 44/37 (44/MB)	1	
4	S12KO46/X	Trial Acetabular Shell 46/40 (46/MB)	1	
5	S12KO48/X	Trial Acetabular Shell 48/40 (48/MD)	1	
6	S12KO50/X	Trial Acetabular Shell 50/44 (50/MD)	1	
7	S12KO52/X	Trial Acetabular Shell 52/44 (52/MF)	1	
8	S12KO54/X	Trial Acetabular Shell 54/44 (54/MF)	1	
9	S12KO56/X	Trial Acetabular Shell 56/48 (56/MH)	1	
10	S12KO58/X	Trial Acetabular Shell 58/48 (58/MH)	1	
11	S12KO60/X	Trial Acetabular Shell 60/52 (60/MJ)	1	
12	S12KO62/X	Trial Acetabular Shell 62/52 (62/MJ)	1	
13	S12KO64/X	Trial Acetabular Shell 64/52 (64/MJ)	1	
14	S12KO66/X	Trial Acetabular Shell 66/52 (66/MK)	1	
15	S12KO68/X	Trial Acetabular Shell 68/52 (68/MK)	1	
16	S12KO70/X	Trial Acetabular Shell 70/52 (70/MK)	1	
Provisional Acetabular Liner				
17	P12KF35/G	Trial Acetabular Liner 35/22 (MA/22)	1	
18	P12KF37/G	Trial Acetabular Liner 37/22 (MB/22)	1	
19	P12KF37/G	Trial Acetabular Liner 37/22 (MB/22)	1	
20	P12KF35/I	Trial Acetabular Liner 35/28	1	
21	P12KF37/I	Trial Acetabular Liner 37/28 (MB/28)	1	
22	P12KF40/I	Trial Acetabular Liner 40/28 (MD/28)	1	
23	P12KF44/I	Trial Acetabular Liner 44/28 (MF/28)	1	
24	P12KF48/I	Trial Acetabular Liner 48/28 (MH/28)	1	
25	P12KF40/J	Trial Acetabular Liner 40/32 (MD/32)	1	
26	P12KF44/J	Trial Acetabular Liner 44/32 (MF/32)	1	
27	P12KF48/J	Trial Acetabular Liner 48/32 (MH/32)	1	
28	P12KF52/J	Trial Acetabular Liner 52/32 (MJ/32)	1	
29	P12KF54/J	Trial Acetabular Liner MK/32	1	
30	P12KF44/K	Trial Acetabular Liner 44/36 (MF/36)	1	
31	P12KF48/K	Trial Acetabular Liner 48/36 (MH/36)	1	
32	P12KF54/K	Trial Acetabular Liner MK/36	1	
33	P12KF52/K	Trial Acetabular Liner 52/36 (MJ/36)	1	
34	P12KF52/L	Trial Acetabular Liner 52/40 (MJ/40)	1	
35	P12KF54/L	Trial Acetabular Liner MK/40	1	
36	P12KF48/L	Trial Acetabular Liner 48/40	1	

# Latitud™ Uncemented Acetabular Cup

## Latitud™ Uncemented Acetabular Instrument Set








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### Acetabular Instruments Set – Top Tray

Top Tray		Acetabulum Set		
Sr. No.	Part No.	Item Description	Qty	Photo
37	U12HMX/X	Alignment Guide	1	
38	U12FFXX/G	Liner/Poly-Cup Impactor 22mm	1	
39	U12FFXX/I	Liner/Poly-Cup Impactor 28mm	1	
40	U12FFXX/J	Liner/Poly-Cup Impactor 32mm	1	
41	U12FFXX/K	Liner/Poly-Cup Impactor 36mm	1	
42	U12FFXX/L	Liner/Poly-Cup Impactor 40mm	1	

### Acetabular Instruments Set – Bottom Tray

Bottom Tray		Acetabulum Set		
Sr. No.	Part No.	Item Description	Qty	Photo
1	P12EJXX/X	Liner Inserter Handle	1	
2	S15FJXX/X	Acetabular Shell Impactor ( Straight)	1	
3	U12IPXX/X	Flexible Depth Gauge	1	
4	U12AJXX/X	Screw Holding Forcep	1	
6	U12JGXX/X	Hex Screw Driver 3.5 mm	1	
7	U12JUXX/X	Screw Driver (Ball Joint)	1	
8	U12CCXX/X	Flexible Drill Shaft	1	






# Latitud™ Uncemented Acetabular Cup

## Latitud™ Uncemented Acetabular Instrument Set

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### Acetabular Instruments Set – Bottom Tray

Bottom Tray		Acetabulum Set		
Sr. No.	Part No.	Item Description	Qty	Photo
9	S12CC38/R	Drill Bit Ø3.8, Length 25 mm	1	
10	S12CC38/S	Drill Bit Ø3.8, Length 35 mm	1	
11	S12CC38/T	Drill Bit Ø3.8, Length 45 mm	1	
12	S12CC38/R	Drill Bit Ø4.5, Length 25 mm	1	
13	S12CC38/S	Drill Bit Ø4.5, Length 35 mm	1	
14	S12CC38/T	Drill Bit Ø4.5, Length 45 mm	1	
15	U12AMXX/X	Angle Drill Guide Ø3.8	1	
16	U12AM04/X	Angle Drill Guide Ø4.5	1	
17	P12EFXX/G	Liner Inserter Holder – 22 mm	1	
18	P12EFXX/I	Liner Inserter Holder – 28 mm	1	
19	P12EFXX/J	Liner Inserter Holder – 32 mm	1	
20	P12EFXX/K	Liner Inserter Holder – 36 mm	1	
21	P12EFXX/L	Liner Inserter Holder – 40 mm	1	
22	P12GCXX/X	Poly Cup Liner Removal Drill	1	
23	P12GRXX/X	Liner removal Tool (Uncemented)	1	
24	PHIT-00005	Instrument Case - Acetabulum Reamer Odd	1	
25	PHIT-00005a	Instrument Case - Acetabulum Reamer Even	1	
26	PHIT-00004	Instrument Case for Acetabulum Set	1	



# Steps of Latitud<sup>TM</sup> Cemented Acetabular Cup





## Step 1 : Acetabular Preparation for Cemented Cup Fixation

- Clear the acetabular rim of soft tissues so that the rim is fully exposed. A retractor can be placed in the teardrop to improve access if required. The goal of acetabular reaming is to restore the centre of the original acetabulum.
- Progressively ream the acetabulum with the reamers introduced centrally, in 45° of abduction and 15° of anteversion.
- Over ream the acetabulum by approximately 4 mm till the acetabular surface starts bleeding to ensure atleast 2 mm cement mantle for optimal fixation. It is important to remember that if the posterior approach is employed, the pelvis will be in approximately 20° of anteversion and this must be compensated for, during both acetabular reaming and cup placement.
- Start reaming with reamer diameter atleast 4 to 6 mm smaller than the templated size of the cup & gradually increase the reamer diameter by 2 mm. Ream the acetabulum to a hemispherical dome of healthy bleeding subchondral, cortico-cancellous bone that will contain the cup and its surrounding mantle.
- A balanced approach is needed to create the right bony surface for a good cement interlock, while retaining sufficient subchondral bone to maintain the load bearing strength of the socket. Clear away any remaining soft tissues and capsule.
- Remove any osteophytes or cysts from the acetabular bed and repair the defects using a cancellous bone block. Sclerotic bone should also be removed at this stage since this will prevent cement penetration.



## Step 2 : Bone Preparation

- Use pulsatile or continuous lavage within the acetabulum to remove fat and debris from the cancellous bone interface. Use a brush to remove loose cancellous bone if necessary.
- Employ suction and dry swabs to clean and dry the bone surface. When the acetabular surface is dry and the bone surface is open, pack the socket with hydrogen peroxide impregnated swabs. These will prevent blood clots adhering to the bone and leave the surface ready for cement introduction.
- Using universal reamer handle with the acetabular reamer introduce multiple drill holes in the roof of the acetabulum superiorly and posteriorly in the safe quadrant to encourage intrusion of cement into acetabular bone (taking care to avoid the medial wall of the acetabulum - the triangle of bone based on the transverse ligament ). Smoothen the edges of the drill holes and remove debris using a small curette.



## Step 3 :Cup Sizing

Size the acetabulum using a trial cup attached to the cup introducer.



## Step 4 :Cement Technique

- The majority of surgeons introduce cement into the acetabulum by hand. Don clean gloves to avoid contaminating the cement. Take the bolus of mixed cement and knead to assess the viscosity in addition to visual evaluation. The cement is ready for insertion when it has taken on a dull, doughy appearance and does not adhere to the surgeon's glove. Remove the peroxide swabs from the acetabulum and use a dry swab to remove excess peroxide. Introduce the cement in one piece, distribute it to follow the acetabular hemisphere and push cement deep into the fixation holes. This should only take a few seconds.

## Step 5 : Cement Pressurisation

- Using an appropriately sized acetabular pressuriser, completely seal the acetabulum and apply maximum pressure to encourage interdigitation of bone cement into the cancellous bed. Retain a small piece of cement to finger test to assess the viscosity of the cement. When the cement can be pressed together without sticking to itself, implant the cup

## Step 6 : Cup Implantation

- Attach the cup to the cup introducer and align the introducer in  $10^{\circ}$  to  $15^{\circ}$  of anteversion (if the posterior approach is employed, the pelvis will be in approximately  $20^{\circ}$  of anteversion and this must be compensated for). The flange rim should sit just within the border of the acetabulum, so that the cement is contained behind the flange.
- A finger may be placed on the flange prior to insertion, to avoid air being trapped behind the flange. The cement should be contained behind the rim of the cup, and the rim fully supported by the cement. The cup pusher is then located on the back of the cup introducer and the cement is pressurised until polymerisation is complete.



## Step 7 : Final Cup Implantation

After implantation final impaction of the cup should be performed with the respective trial head and universal handle assembly.



## Step 8 : Final Reduction

- Perform a final reduction and assess range of motion, hip stability and limb length.
















# LATITUD™ Cemented Acetabular Cup

## Latitud™ Cemented Cup Instrument Set

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### Cemented Acetabular Cup Instrument Set

Sr. No.	Part No.	Item Description	Qty	Photo
1	O19EFXX/G	Cemented Cup Holder 10° - Ø22	1	
2	O19EFXX/I	Cemented Cup Holder 10° - Ø28	1	
3	O19EFXX/J	Cemented Cup Holder 10° - Ø32	1	
4	O19EFXX/K	Cemented Cup Holder 10° - Ø36	1	
5	O19K038/G	Trial 10° Cemented Cup Size 38/22	1	
6	O19K040/G	Trial 10° Cemented Cup Size 40/22	1	
7	O19K042/G	Trial 10° Cemented Cup Size 42/22	1	
8	O19K044/I	Trial 10° Cemented Cup Size 44/28	1	
9	O19K046/I	Trial 10° Cemented Cup Size 46/28	1	
10	O19K048/I	Trial 10° Cemented Cup Size 48/28	1	
11	O19K048/J	Trial 10° Cemented Cup Size 48/32	1	
12	O19K050/J	Trial 10° Cemented Cup Size 50/32	1	
13	O19K052/J	Trial 10° Cemented Cup Size 52/32	1	
14	O19K056/K	Trial 10° Cemented Cup Size 56/36	1	
15	O19K060/K	Trial 10° Cemented Cup Size 60/36	1	
16	O01K038/G	Trial Standard Cemented Cup Size 38/22	1	
17	O01K040/G	Trial Standard Cemented Cup Size 40/22	1	
18	O01K042/G	Trial Standard Cemented Cup Size 42/22	1	
19	O01K044/I	Trial Standard Cemented Cup Size 44/28	1	
20	O01K046/I	Trial Standard Cemented Cup Size 46/28	1	
21	O01K048/I	Trial Standard Cemented Cup Size 48/28	1	
22	O01K048/J	Trial Standard Cemented Cup Size 48/32	1	
23	O01K050/J	Trial Standard Cemented Cup Size 50/32	1	
24	O01K052/J	Trial Standard Cemented Cup Size 52/32	1	
25	O01K056/K	Trial Standard Cemented Cup Size 56/36	1	
26	O01K060/K	Trial Standard Cemented Cup Size 60/36	1	
27	O00CC08/X	Acetabular Step Drill Ø8mm	1	
28	U14AIXX/X	Universal Handle (taken from common instrument set)	1	
29	U12FFXX/G 29U12FFXX/I U12FFXX/J U12FFXX/K	Liner Impactor 22mm Liner Impactor 28mm Liner Impactor 32mm Liner Impactor 36mm	1	
30	PHIT-00009	Instrument Case for Cemented Cup	1	





# Latitud™ Acetabular Cup Reamers

## Latitud™ Acetabular Instrument Set

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### Acetabular Cup Reamers

Single Tray		Acetabular Cup Reamers Odd Sizes		
Sr. No.	Part No.	Item Description	Qty	Photo
1	S12CA37/X	Acetabular Cup Reamer 37 mm	1	
2	S12CA39/X	Acetabular Cup Reamer 39 mm	1	
3	S12CA41/X	Acetabular Cup Reamer 41 mm	1	
4	S12CA43/X	Acetabular Cup Reamer 43 mm	1	
5	S12CA45/X	Acetabular Cup Reamer 45 mm	1	
6	S12CA47/X	Acetabular Cup Reamer 47 mm	1	
7	S12CA49/X	Acetabular Cup Reamer 49 mm	1	
8	S12CA51/X	Acetabular Cup Reamer 51 mm	1	
9	S12CA53/X	Acetabular Cup Reamer 53 mm	1	
10	S12CA55/X	Acetabular Cup Reamer 55 mm	1	
11	S12CA57/X	Acetabular Cup Reamer 57 mm	1	
12	S12CA59/X	Acetabular Cup Reamer 59 mm	1	
13	S12CA61/X	Acetabular Cup Reamer 61 mm	1	
14	S12CA63/X	Acetabular Cup Reamer 63 mm	1	
15	S12CA65/X	Acetabular Cup Reamer 65 mm	1	
16	S12CA67/X	Acetabular Cup Reamer 67 mm	1	
17	S12CA69/X	Acetabular Cup Reamer 69 mm	1	
18	S12CA71/X	Acetabular Cup Reamer 71 mm	1	
19	S12JJXX/X	Acetabular Cup Reamer Handle	1	
Single Tray		Acetabular Cup Reamers Even Sizes		
Sr. No.	Part No.	Item Description	Qty	Photo
1	S12CA36/X	Acetabular Cup Reamer 36 mm	1	
2	S12CA38/X	Acetabular Cup Reamer 38 mm	1	
3	S12CA40/X	Acetabular Cup Reamer 40 mm	1	
4	S12CA42/X	Acetabular Cup Reamer 42 mm	1	
5	S12CA44/X	Acetabular Cup Reamer 44 mm	1	
6	S12CA46/X	Acetabular Cup Reamer 46 mm	1	
7	S12CA48/X	Acetabular Cup Reamer 48 mm	1	
8	S12CA50/X	Acetabular Cup Reamer 50 mm	1	
9	S12CA52/X	Acetabular Cup Reamer 52 mm	1	
10	S12CA54/X	Acetabular Cup Reamer 54 mm	1	
11	S12CA56/X	Acetabular Cup Reamer 56 mm	1	
12	S12CA58/X	Acetabular Cup Reamer 58 mm	1	
13	S12CA60/X	Acetabular Cup Reamer 60 mm	1	
14	S12CA62/X	Acetabular Cup Reamer 62 mm	1	
15	S12CA64/X	Acetabular Cup Reamer 64 mm	1	
16	S12CA66/X	Acetabular Cup Reamer 66 mm	1	
17	S12CA68/X	Acetabular Cup Reamer 68 mm	1	
18	S12CA70/X	Acetabular Cup Reamer 70 mm	1	
19	S12JJXX/X	Acetabular Cup Reamer Handle	1	

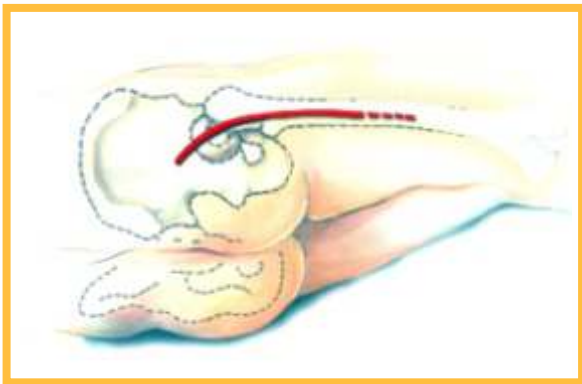
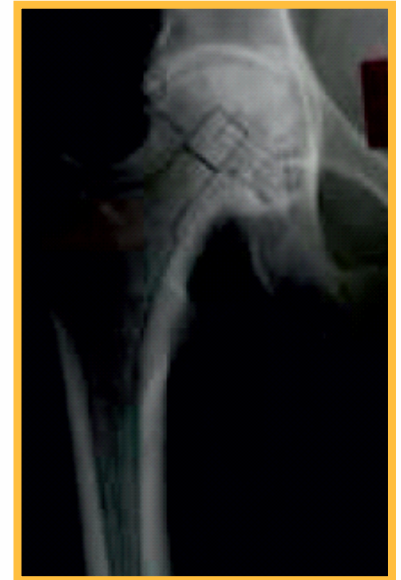
# Steps of Latitud<sup>™</sup> Bipolar Assembly





## Pre-operative Planning

- Selection of the correct femoral component is attained through careful pre-operative planning. This can be achieved manually by means of x-ray templates.
- X-ray templates can be used over AP and lateral radiograph to help determine the correct size to restore the patient's natural anatomy. Templates are 115% magnification.



## Surgical Approach

- The LATITUD™ Bipolar system can be used with any surgical approach that the surgeon selects and is comfortable with.

## Femoral Resection Guide

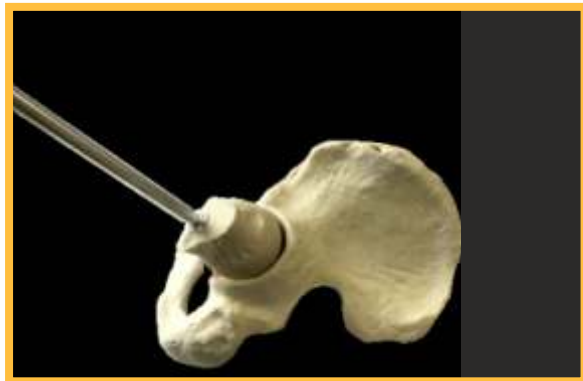
- Using neck resection guide, appropriate level of femoral neck resection is done based on the fracture and type of femoral stem being used along with the LATITUD™ Bipolar system.
- The neck resection guide is used along with preoperative template to identify the correct level of neck resection and a line is made using skin marker or a diathermy probe.





## Femoral Neck Resection

- The femoral neck is resected once the appropriate femoral stem size and offset are ascertained.



## Femoral Head Extraction

- The resected femoral head is removed using the femoral head extractor. A gentle tap may help to engage and purchase the femoral head extractor into the femoral head.

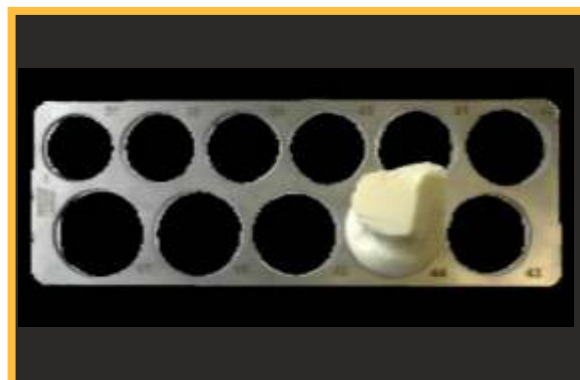


## Acetabulum Sizing

- Acetabular sizing can be completed using one of two method mentioned below.

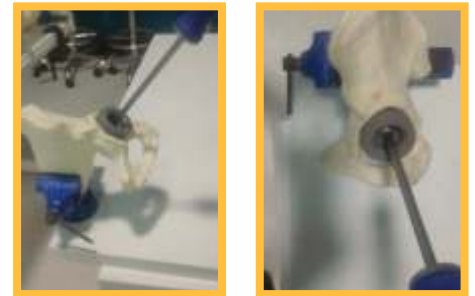
### First Method

- The acetabular size can be determined using the femoral head caliper.
- In first method the resected femoral head is passed through the circular cutouts in the caliper until the correct diameter is determined.



## Second Method

- In the second method the provisional Bipolar Cup is used along with the holder. The provisional Bipolar Cup of different diameters are placed against the acetabulum until the most appropriate provisional Bipolar Cup is determined
- In order to allow the correct Bipolar size. The labrum can be either removed or it can be left intact depending upon surgeon preference.



## Final Implant Assembly

- Final assembly of the LATITUD™ Bipolar Monoblock Shell with the Modular Femoral Head is achieved using the Bipolar cup press.

### Assembly Step 1

- Place the Bipolar Cup press on a flat surface. Remove the cap of Bipolar press and ensure all the surface of instrument is clean and dry before placing the Bipolar Cup in press.

### Assembly Step 2

- The threaded rod should be in the full open position by unscrewing it using the in built handle bar.
- The cap of Bipolar press should be in full open position as shown in figure to place the selected LATITUD™ Bipolar Cup on the base of the press.



### Assembly Step 3

- Place the cap over the LATITUD™ Bipolar Monoblock Shell to prevent tilting of the shell while the Modular Femoral Head is being inserted.



### Assembly Step 4

- Place the selected Modular Femoral Head on top of the LATITUD™ Bipolar Monoblock Shell. Ensuring that the tapered cone of the Modular Femoral Head faces upwards as shown.



### Assembly Step 5

- Rotate the handle of the press in clockwise direction till the plastic taper insert of the press enters the 12/14 taper of the Modular Femoral.
- Head by holding the body securely. Continue rotating the handle clockwise until an audible expulsion of air is heard. This ensures the full insertion and correct assembly of the Modular Femoral Head into the LATITUD™ Bipolar Modular Shell.

### Assembly Step 6

- Once the assembly is completed, rotate the handle of the press in counter clockwise direction till the threaded rod reaches the top most position as shown figure.

### Assembly Step 7

- Now the LATITUD™ Bipolar monoblock shell and modular femoral head assembly can be removed from the press & is ready for implantation.



# LATITUD™ Bipolar Assembly

Latitud™ Bipolar Instrument Set

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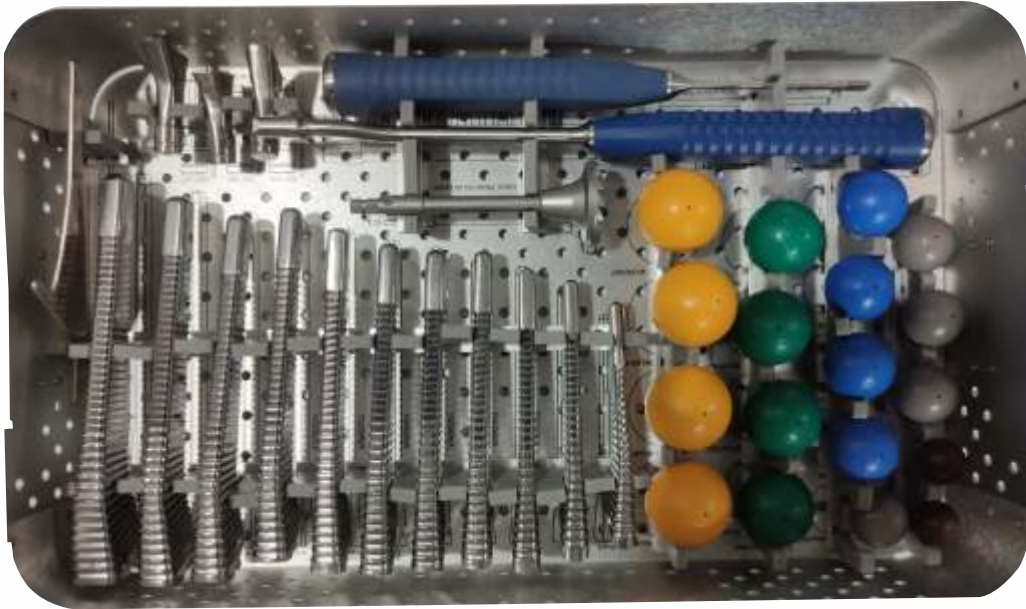
Top Tray		Bipolar Instrument Set		
Sr. No.	Part No.	Item Description	Qty	Photo
1	V13KO37/G-1	Trial Bipolar Head Ø 37mm	1	
2	V13KO38/G-1	Trial Bipolar Head Ø 38mm	1	
3	V13KO39/G-1	Trial Bipolar Head Ø 39mm	1	
4	V13KO40/G-1	Trial Bipolar Head Ø 40mm	1	
5	V13KO41/G-1	Trial Bipolar Head Ø 41mm	1	
6	V13KO42/G-1	Trial Bipolar Head Ø 42mm	1	
7	V13KO43/G-1	Trial Bipolar Head Ø 43mm	1	
8	V13KO44/I-1	Trial Bipolar Head Ø 44mm	1	
9	V13KO45/I-1	Trial Bipolar Head Ø 45mm	1	
10	V13KO46/I-1	Trial Bipolar Head Ø 46mm	1	
11	V13KO47/I-1	Trial Bipolar Head Ø 47mm	1	
12	V13KO48/I-1	Trial Bipolar Head Ø 48mm	1	
13	V13KO49/I-1	Trial Bipolar Head Ø 49mm	1	
14	X13KF22/C	Trial Femoral Head for Bipolar 22mm + 0	1	
15	X13KF22/D	Trial Femoral Head for Bipolar 22mm +3.5	1	
16	X13KF28/A	Trial Femoral Head for Bipolar 28mm -3.5	1	
17	X13KF28/C	Trial Femoral Head for Bipolar 28mm +0	1	
18	X13KF28/D	Trial Femoral Head for Bipolar 28mm +3.5	1	
19	X13KF28/F	Trial Femoral Head for Bipolar 28mm +7	1	
20	U14EJXX/X	Holder for Trial Head	1	
Bottom Tray		Bipolar Instrument Set		
Sr. No.	Part No.	Item Description	Qty	Photo
1	V13KO50/I-1	Trial Bipolar Head Ø 50mm	1	
2	V13KO51/I-1	Trial Bipolar Head Ø 51mm	1	
3	V13KO53/I-1	Trial Bipolar Head Ø 53mm	1	
4	V13KO55/I-1	Trial Bipolar Head Ø 55mm	1	
5	V13KO57/I-1	Trial Bipolar Head Ø 57mm	1	
6	V13KO59/I-1	Trial Bipolar Head Ø 59mm	1	
7	V13KO61/I-1	Trial Bipolar Head Ø 61mm	1	
8	V13KO63/I-1	Trial Bipolar Head Ø 63mm	1	
9	U00IPXX/P	Caliper Size 37 to 47	1	
10	U00IPXX/Q	Caliper Size 48 to 63	1	
11	X00EFXX/X	Bipolar Cup Press	1	
12	PHIT-00001	Instrument Case for Bipolar	1	

# Latitud<sup>TM</sup> Hip System Instrument Sets

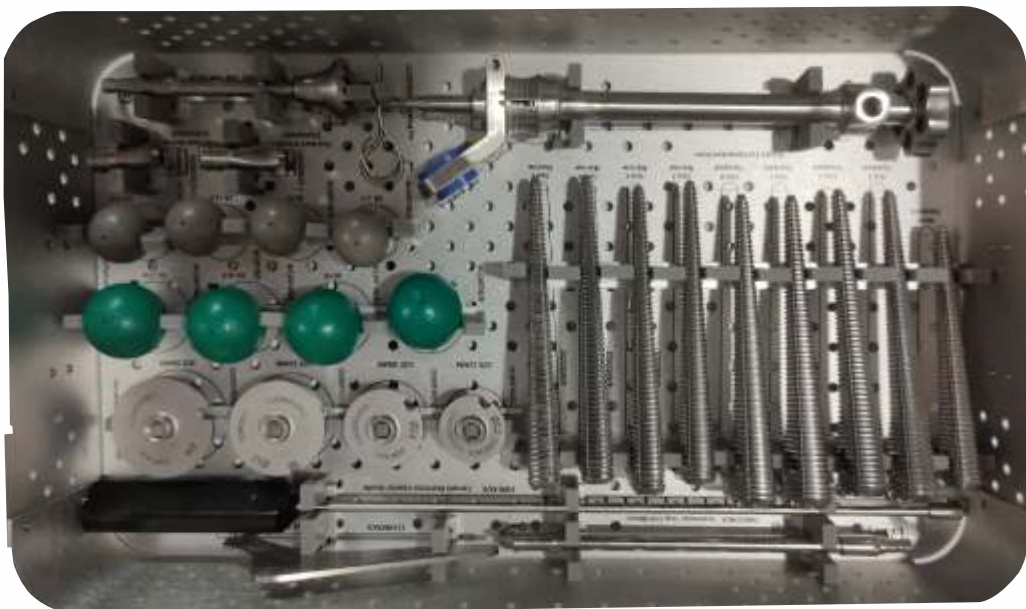




## Uncemented Femoral Stem Instrument Tray

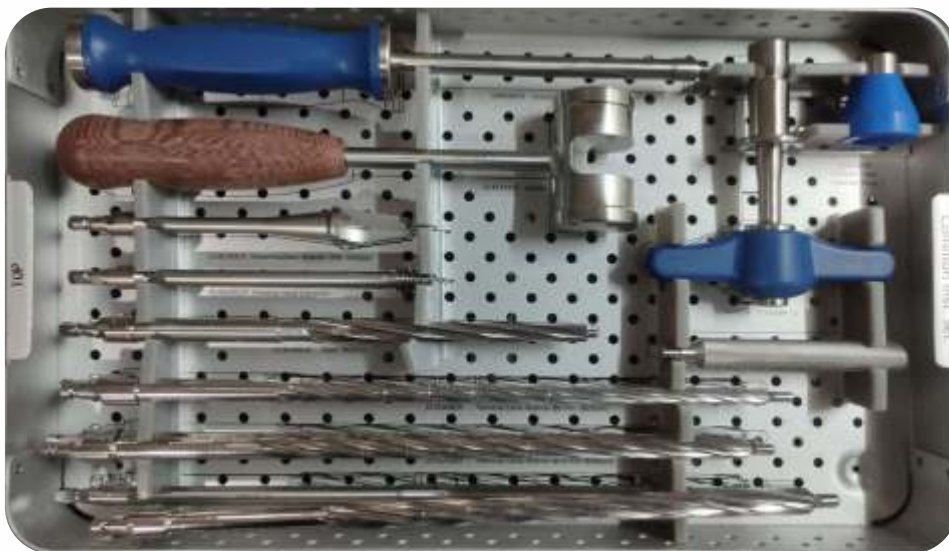


## Cemented Femoral Stem Instrument Tray

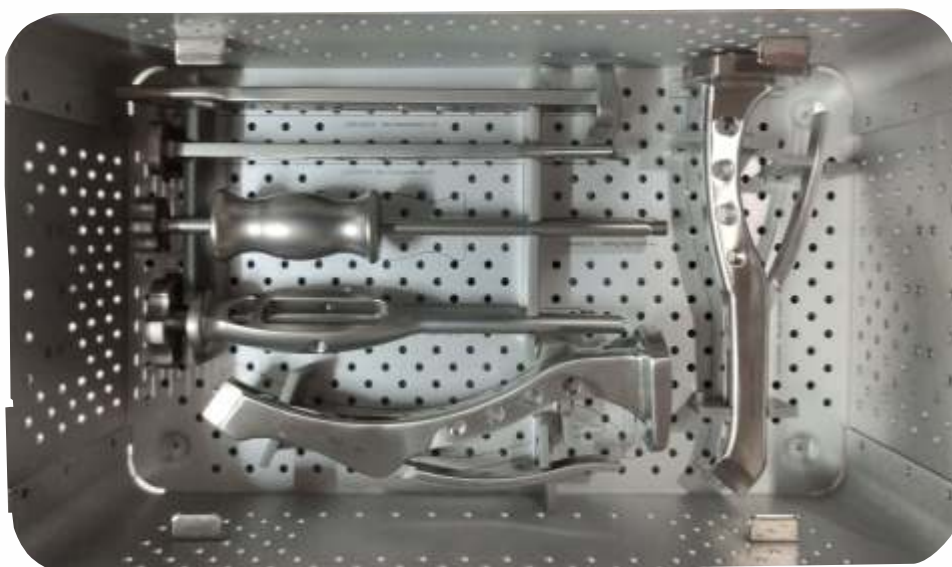


# Femoral Stem Common Instrument Set

## Top Tray



## Bottom Tray



# Acetabular Cup Reamer Instrument Set

Odd Size 37-71



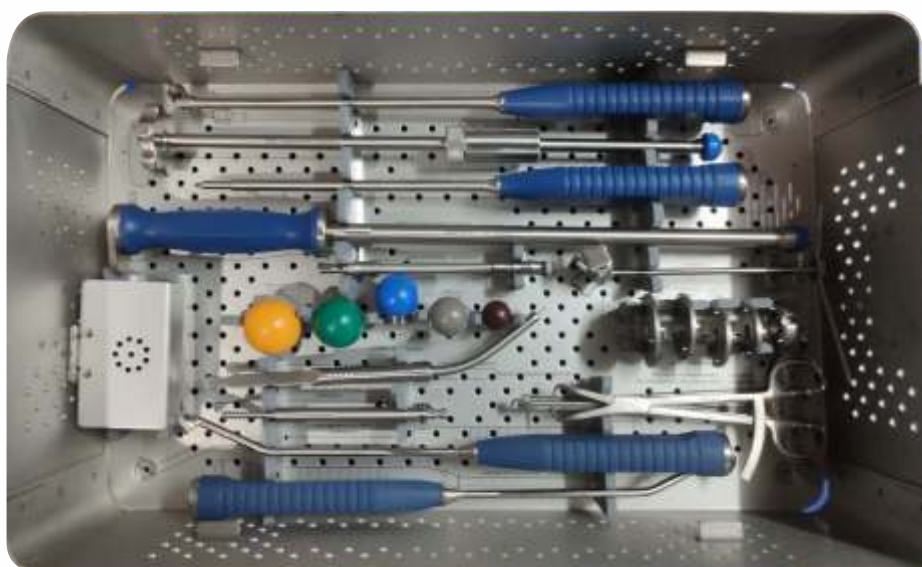
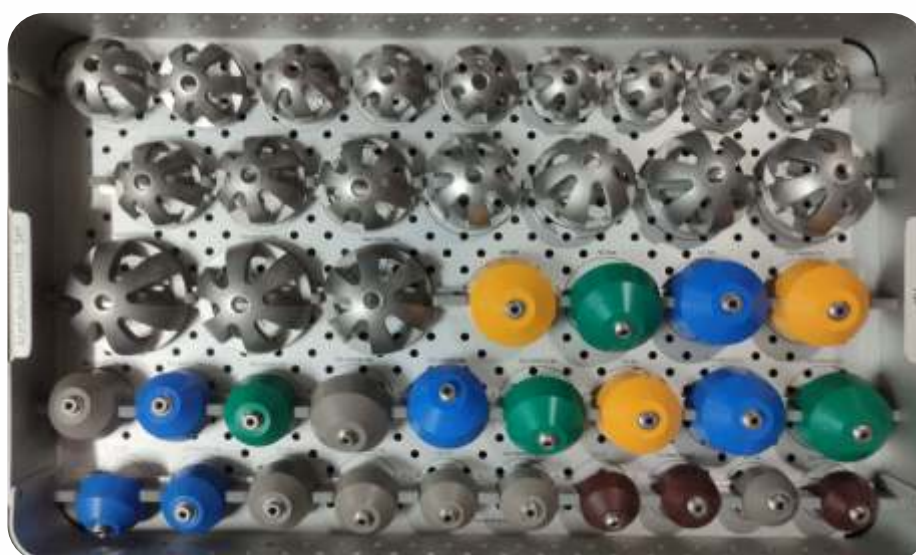
Even Size 36-70





# Uncemented Acetabular Cup Instrument Set

## Top Tray



## Uncemented Acetabular Cup Instrument Tray

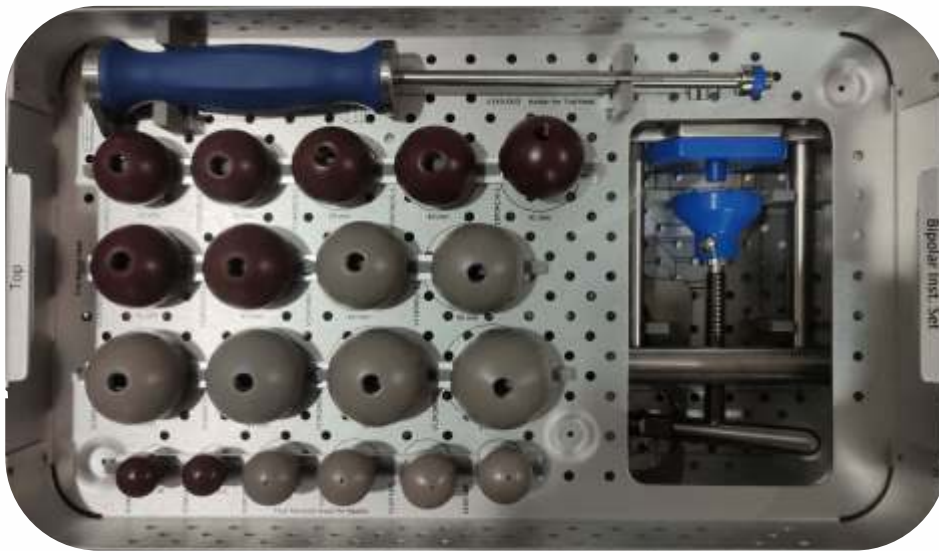


## Cemented Acetabular Cup Instrument Tray

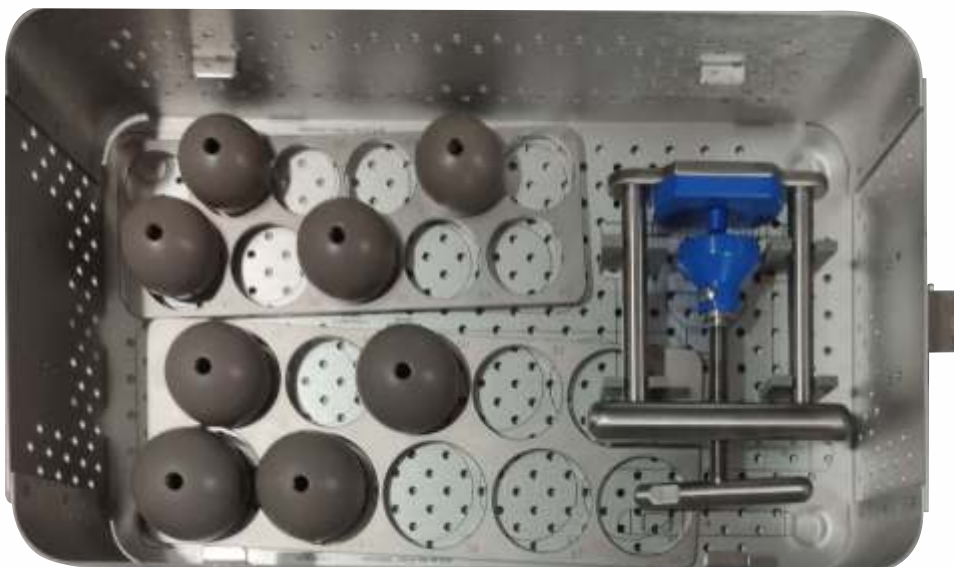


# Bipolar Instrument Set

## Top Tray



## Bottom Tray



## Meril's Global Presence

### Meril Tibbi Cihazlar

İmalat ve Ticaret A.Ş.  
İçerenköy Mah. Çetinkaya Sok.  
Prestij Plaza No:28, Kat:4 Ataşehir,  
34752 İstanbul / Turkey  
**T** : +90 216 641 44 24  
**F** : +90 216 641 44 25

### Meril Medical LLC

Nauchnyi Proezd 19,  
Moscow , Russia – 117 246.  
Office - +7 495 772 7643

### Meril UK Subsidiary

Crowe UK LLP, St. Brides  
House, 10 Salisbury Square,  
London EC4Y 8EH, UK

### Meril Health Care Pvt. Ltd

H1-H3, Meril Park,  
Survey Number 135/2/B & 174/2  
Muktanand Marg,  
Chala, Vapi 396 191,  
Gujarat, India.  
**T** : +91 260 3052 100  
**E** : askinfo@merillife.com

### Meril China Co. Ltd

2301b,23f, Lixin Plaza,  
no 90, South Hubin Road,  
Xiamen, China.  
**T** : 0086-592-5368505  
**F** : 0086-592-5368519

### Meril GmbH

Bornheimer Strasse 135-137,  
D-53119 Bonn.  
Germany.  
**T** : +49 228 7100 4000  
**F** : +49 228 7100 4001

### Meril, inc.

2436 Emrick Boulevard,  
Bethlehem, PA - 18020  
**T** : (610)500-2080  
**F** : (610)317-1672

### Meril Bangladesh Pvt. Ltd

Union Heights-01,  
55-2, Bir Uttam Qazi  
Nuruzzaman Sarak,  
West Panthapath,  
Dhaka-1205, Bangladesh  
**T** : 88 02 9122714/24

### Meril Australia Pty. Ltd

Level 14, 60 Martin Place  
Sydney NSW 2000, Australia Pty. Ltd.  
**T** : +61 28248 5800  
**F** : +61 28248 5899

### Meril South America

Doc Med LTDA Al. dos Tupiniquins,  
1079 - Cep: 04077-003 - Moema.  
Sao Paulo. Brazil.  
**T** : +55 11 3624 5935  
**F** : +55 11 3624 5936

### EU Representative

Obelis S.A.Bd, General Wahis 53,  
1030, Brussels, Belgium.  
**T** : +32 2 732 5954  
**F** : +32 2 732 6003  
**E** : mail@obelis.net

### Meril SA Pty Ltd

102, 104, S101 and S102, Boulevard  
West Office Park, 142 Western  
Service Road, Erf 813  
Woodmead Extension 17 Sandton,  
Johannesburg – 2191 South Africa  
**T** : +27 11 465-2049  
**F** : +27 86 471 7941

### Meril Life Sciences Pvt. Ltd

301, A - Wing, Business Square,  
Chakala, Andheri Kurla Road,  
Andheri East, Mumbai 400 093  
**T** : +91 22 39350700  
**F** : +91 22 39350777

**E** askinfo@merillife.com

**W** www.merillife.com

**For more information about Latitud™  
please contact your local representative.**

Please see the package insert for complete device description, product selection information, indications, contraindications, precautions, adverse effects, warning, materials, sterilization and patient guidance associated with the Latitud™ Hip System.

**CAUTION: THIS DEVICE IS RESTRICTED TO SALE BY OR ON THE ORDER OF A LICENSED PHYSICIAN.**

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