

Modular Bipolar

Surgical Technique



Bipolar Cup is an alternative to total hip arthroplasty, particularly indicated in the treatment of displaced femoral neck fractures in elderly patients.

Bipolar Monoblock Cup

An outer stainless steel dome and an interior liner of ultra-high molecular weight polyethylene make up the bipolar monoblock cups. The primary design element of bipolar monoblock cups is as follows: Stainless steel 316 L is used to make the metal dome of Bipolar Monoblock cups. It is made out of an outer metal surface made of stainless steel 316L that is designed to press fit directly into the patient's acetabulum and has a surface roughness of $0.8\mu\text{m}$. It has an inner surface made of ultra-high molecular weight polyethylene (UHMWPE) that is integrated during the production process. In the liner, the modular femoral head will move. This articulating surface has a surface roughness of $Ra=0.08\mu\text{m}$. During implantation, the modular head will be assembled in a bipolar cup by the surgeon and will be used with a femoral stem.

Femoral Stem System Modular femoral head

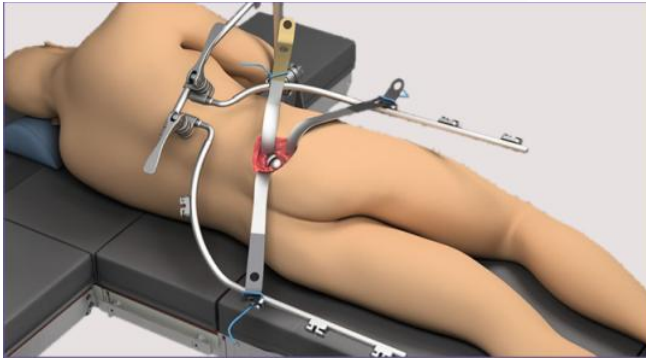
Modular head is meant to be articulated with Modular Liner and match with 12/14 taper of femoral stem through taper-locking system.

Modular head are Manufactured using Stainless Steel as per ISO 5832-1

Modular heads come in two different diameter sizes: 22mm and 28mm.
For 22mm, there are two offset options: +0.0 and -3.5.
For 28mm, there are four offset options: +0.0, -3.5, +3.5, +7.0.
The outside articulating surface has a roughness value of $Ra=0.8\mu\text{m}$.

Bipolar & Modular Head Compatibility

Sr. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Bipolar Cup Size	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	53	55	57	59	61	63
Modular Head	22	22	22	22	22	22	22	28	28	28	28	28	28	28	28	28	28	28	28	28	28



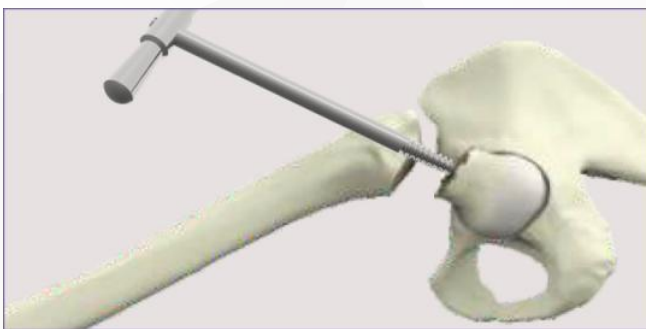
1.

Right situating of the patient, on the operating table is vital and the hip joint is uncovered utilizing a favored careful methodology for hemiarthroplasty.



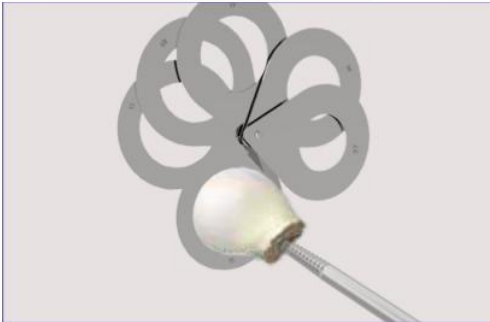
2.

The Saw cut is used orthogonal to the femoral neck and the position of the tibia should be straight up while the cut is made.



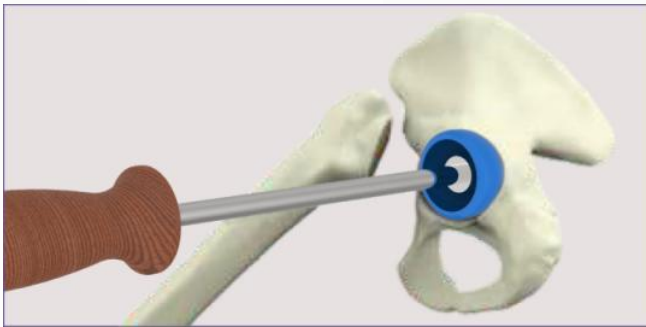
3.

Femoral head is removed using a Head Extractor Judet, for engagement of Head Extractor Judet and femoral head a light tap is made into femoral head.



4.

Size of femoral head can be identified using head gauge.



5.

Size is confirmed using trial head and introducer. The labrum is kept untouched but if necessary can be sectioned at the point for selection of right size head.



The polished dual-tapered latitude stem is based on the extremely successful loaded taper principle, which has accurate biomechanical features based on over 3 Decades of clinical use.

- The modular system allows the surgeon to choose the implants that are best suited to the clinical needs of the patient.
- Ergonomic design focused towards improving clinical outcomes.
- Available in a variety of stem sizes to ensure the best fit for the patient's needs.
- The system's versatility enables for simple conversion to a complete hip build if this is required during or after surgery.

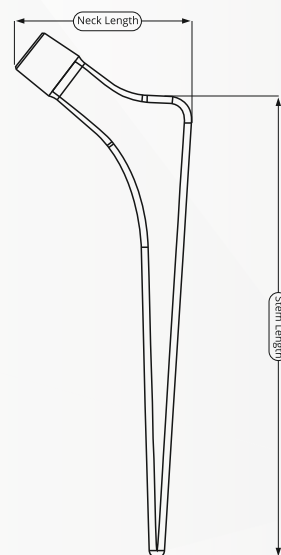
Cost effective system compared to a total hip replacement

- Double tapered, collarless and polished high nitrogen stainless steel stem, designed precise placement of the prosthesis in the cement mantle.
- Results are remarkably better than would be expected with conventional hemiarthroplasty in this group of patients.
- Comparable with results of total hip replacement but without the risk of dislocation.

Benefits

- Leg length and stem offset are determined independently.
- Polished, collarless design, double taper design allows the stem to load cement in compression.
- More sizing options allow surgeons to fit variety of patient.
- Hollow centralizer aids in neutral alignment of the distal stem.
- Hollow centralizer protects against end bearing and provides an area for the stem to settle down without disrupting the cement mantle
- Precise control of taper angle, form and finish ensured by 100% inspection using precision measurement technology taper characteristics that minimize fretting at the fretting at the bore-taper interface.
- The highly polished finish allows stepwise settling of the stem to a stable position, with the associated micromovement producing less and cement debris at the stem cement surface.

Code No.	Size	Offset	Neck Length	Stem Length
282.130	Cemented Stem Standard Size 00	37	49	125
282.131	Cemented Stem Standard Size 01	45	53	135
282.132	Cemented Stem Standard Size 02	45	57	146
282.133	Cemented Stem Standard Size 03	45	61	146
282.134	Cemented Stem Standard Size 04	45	63	146
282.135	Cemented Stem Standard Size 05	45	65	146





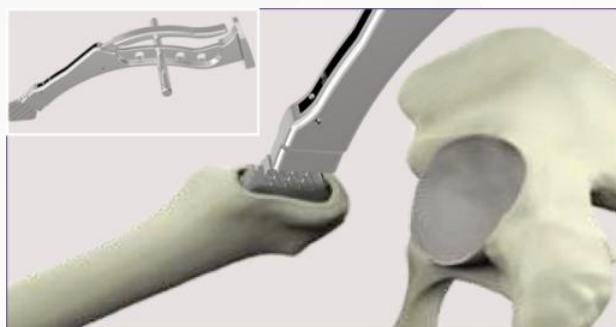
1.

The proximal femur is opened using hollow chisel, which is positioned laterally and posteriorly so the approach is in line with the femoral intramedullary canal.



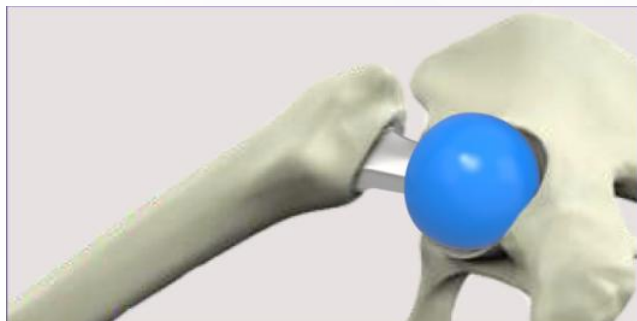
2.

The smallest size reamer mounted on T-handle is used to expose the femoral canal. Care should be taken with the first reaming. If bone quality is weak, 8 mm reamer should be used as it has round tip. Further straight reamer is used in 1 mm increment till desired reaming is achieved.



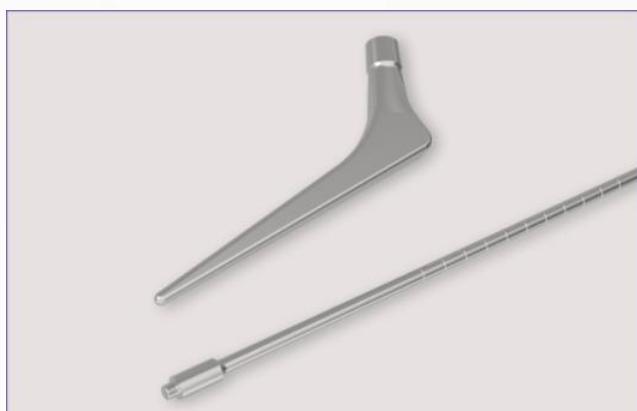
3.

Using a smallest rasp proximal femur is made and tommy bar is used to control the movement. However, the tip of first rasp is unsatisfactory then increasing the rasp size and repeat the procedure.



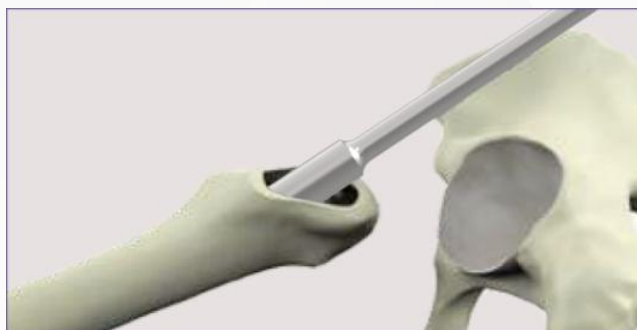
4.

The distinguished trail head is attached on the prosthesis and attempt is made where reduction is not possible or termed as a too tight. The neck is resected for the proper seating of stem. Seat the rasp again and repeat the trailing until the reduction is stable.



5.

At the given point, cement restrictor inserter is chosen on the size of the final intramedullary reamer is used and fixed to an introducer. The depth is identified by placing introducer 1-2 cm parallel to the trail prosthesis and measurement is taken from the marking on the introducer. The lateral shoulder of trail prosthesis is idle reference point.

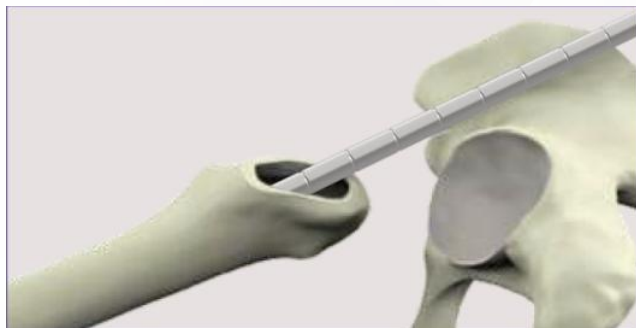


6.

The introducer is inserted into femoral canal to the depth below the distal tip of prosthesis. To unscrew the handle of introducer turn the handle in anti-clockwise direction.

Note:

Do not remove the handle until the introducer is seated to the measured depth.



7.

Modern technique is now used (drying of the femoral canal and retrograde filling with a cement gun).



8.

Making beyond any doubt the tibia is vertical, the definitive femoral stem to be embedded in impartial arrangement, to guarantee a circumferential cement mantle, utilizing the stem impactor and embedded to the profundity decided by the path prosthesis. The profundity of the stem to be decided by the tallness of the centre of revolution of the femoral head on the contralateral side. In the event that the same estimate grate, trial and authoritative stem are utilized than a cement mantle of approx. 1-2 mm will be gotten. Ought to a thicker cement mantle be required, at that point a littler estimate of prosthesis than the estimate of the final grate utilized, ought to be chosen.



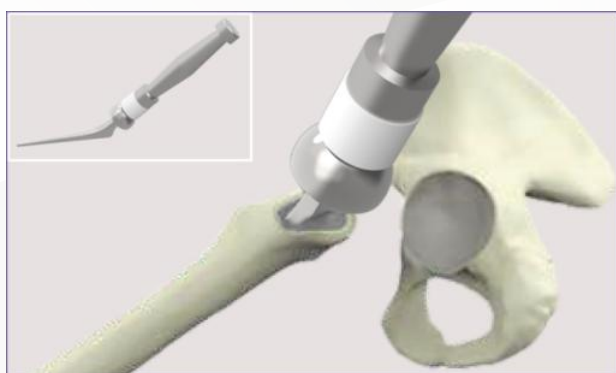
9.

Before placing the bi-polar into femoral head, check cement is cured and set.



10.

Place the designated modular cup on the modular cup press and on the other-side place the desired modular head and press the modular cup press in clockwise direction.



11.

The implant head is attached on the stem using a head impactor. A light push is required to engage the head with stem.



12.

At last, joint is covered and wound is filled.

654.006 Head Extractor Judet



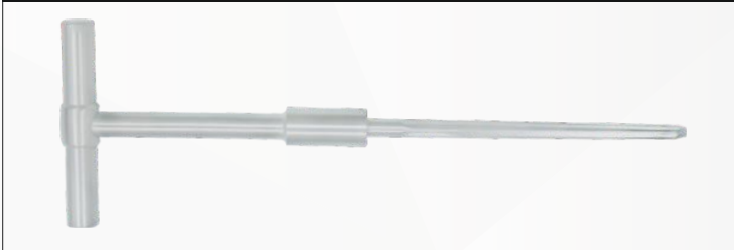
654.001 Head Gauge Odd Size 37 to 55
654A.001 Head Gauge Odd Size 38 to 50



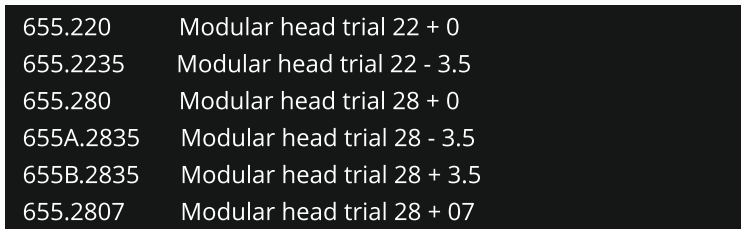
655.017 Holder for trial head Cup



655.014 Bipolar reamers 10mm
655.015 Bipolar reamers 12mm



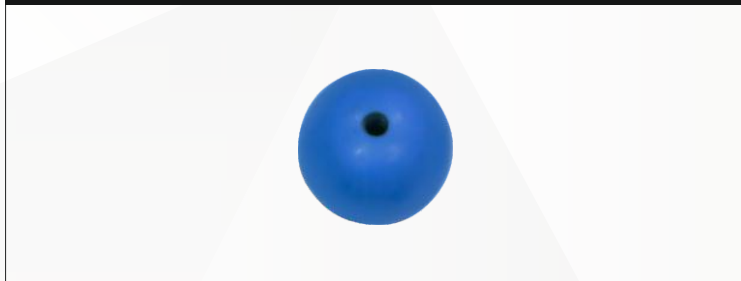
655.220 Modular head trial 22 + 0
655.2235 Modular head trial 22 - 3.5
655.280 Modular head trial 28 + 0
655A.2835 Modular head trial 28 - 3.5
655B.2835 Modular head trial 28 + 3.5
655.2807 Modular head trial 28 + 07



655.002 Hollow Chisel



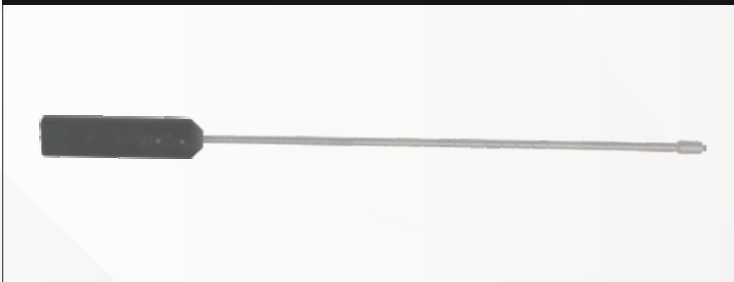
655 Modular trial cup Size 37 to 55 (1mm Increment)



655.013 Inserter for cemented stem Handle



655.021 Cement Restrictor Inserter



- 655.130 Cemented Rasp 00 (L=129mm, W=49, Offset=37)
- 655.131 Cemented Rasp 01 (L=139mm, W=49, Offset=37)
- 655.132 Cemented Rasp 02 (L=149mm, W=61, Offset=45)
- 655.133 Cemented Rasp 03 (L=149mm, W=63.5, Offset=45)
- 655.134 Cemented Rasp 04 (L=149mm, W=65, Offset=45)
- 655.135 Cemented Rasp 05 (L=149mm, W=65, Offset=45)



655.018 Final Stem Holder



655.019 Bipolar Cup Press



654.004 Head Impactor Nylon Faced





AGC.58 Modular Bipolar Instrument Set

Instruments

655	Modular trial cup - 37mm, 38mm, 39mm, 40mm, 41mm, 42mm, 43mm, 44mm, 45mm, 46mm, 47mm, 48mm, 49mm, 50mm, 51mm, 53mm, 55mm
655.220	Modular head trial 22 + 0
655.2235	Modular head trial 22 - 3.5
655.280	Modular head trial 28 + 0
655A.2835	Modular head trial 28 - 3.5
355B.2835	Modular head trial 28 + 3.5
655.2807	Modular head trial 28 + 07
654.001	Head Gauge 37 to 55
654A.001	Head Gauge 38 to 50
655.013	Insert stem Handle
655.130	Cemented Rasp 00 (L=129mm, W=49, Offset=37)
655.131	Cemented Rasp 01 (L=139mm, W=49, Offset=37)
655.132	Cemented Rasp 02 (L=149mm, W=61, Offset=45)
655.133	Cemented Rasp 03 (L=149mm, W=63.5, Offset=45)
655.134	Cemented Rasp 04 (L=149mm, W=65, Offset=45)
655.135	Cemented Rasp 05 (L=149mm, W=65, Offset=45)
655.016	Neck offset standard stem
655.017	Holder for trial head Cup
655.018	Final Stem Holder
655.019	Bipolar Cup Press
655.020	Neck Resection guide
655.021	Cement Restrictor Inserter
655.002	Hollow Chisel
654.006	Head Extractor Judet
654.004	Head Impactor Nylon Faced
655.014	Bipolar reamers 10mm
655.015	Bipolar reamers 12mm
655.022	Bone Scoop Curette Small
655.023	Bone Scoop Curette Medium



House of Ortho Tools

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