



Taperloc Hip
Surgical Technique

BIOMET



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Taperloc Hip

Surgical Technique

1. 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, or digitally by means of a PACS system.

Manual pre-operative planning

The Taperloc Hip provides a comprehensive selection of femoral x-ray templates in 110%, 115% and 120% magnification. These templates are positioned over the AP and Lateral x-rays to best decide the correct implant size, modular head neck length and whether a standard or lateralised Taperloc® stem is required to restore the patient's natural anatomy.



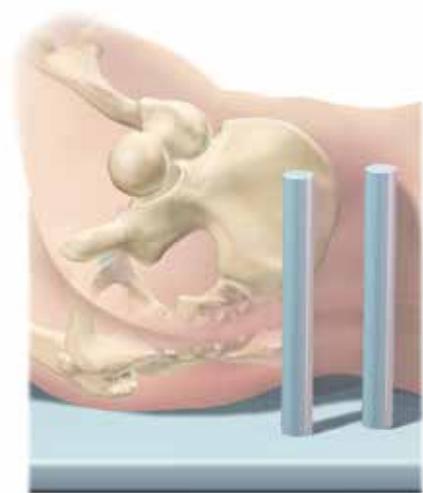
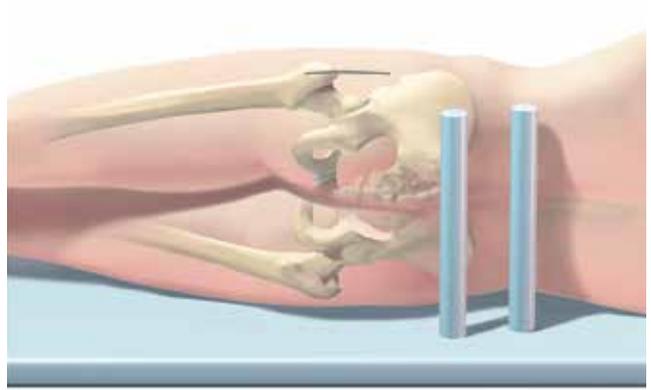
Digital pre-operative planning

The Taperloc Hip digital templates are available through various digital template providers. When using digital templating for a primary THR, it is necessary to use a magnification marker with a known dimension. This is required in order for the system to calculate the correct magnification. As soon as the correct magnification has been determined, the system can be used to best decide the correct implant size, modular head neck length and whether a standard or lateralised Taperloc stem is required to restore the patient's natural anatomy.



2. Surgical exposure

The Taperloc femoral component can be implanted using any of the standard approaches for total hip replacement. The aim of the approach selected is to provide adequate visualisation of both the acetabulum and proximal femur.



3. Femoral neck osteotomy

Once the femoral head has been dislocated from the acetabulum, the femoral neck resection can be completed using the femoral resection template. (Figure 3 & 4)



figure 3



figure 4

4. Preparation of the acetabulum and insertion of acetabular component

When complete visualization of the acetabulum is achieved, preparation of the acetabulum and acetabular component insertion must be carried out as instructed in the appropriate operative technique.

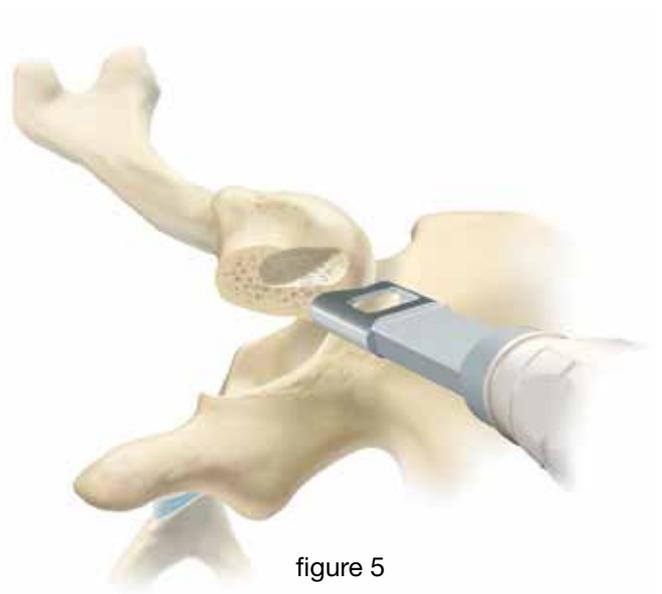


figure 5

5. Preparation of the femur

To help avoid undersizing, varus positioning and to allow for correct alignment of the reamer and broach, it may be necessary to remove a small section of the medial cortex from the greater trochanter.

This can be achieved by one of two methods. The first involves the use of the special box chisel (Figure 5), or by using the starter drill and intramedullary reamer (Figures 6 & 7). Whatever technique is employed, the aim is to provide a lateral starting point for the intra-medullary reamer and broaches.



figure 6

figure 7

5a. Reaming the distal femur

Once the femoral canal has been located, ream the intramedullary canal with the tapered reamer. (Figure 8)
Reaming should not be carried out using power tools.



figure 8

5b. Broaching the proximal femur

Starting with the smallest broach available, attach the broach to the broach handle as shown (Figure 9) and begin preparing the proximal femur (Figure 10). It is important to ensure the broach is orientated so that the medial/lateral axis of the broach is parallel with that of the anatomic medial/lateral axis of the femoral neck, as this will determine the angle of anteversion for the implanted femoral component. Sequentially larger broaches are then used until either complete stability is achieved, or the stem size selected during pre-operative planning has been reached. The angled surface of the femoral broach should then be level with the resected femoral neck. (Figure 11) If the femoral broach has finished below the level of the resected calcar, a calcar trimmer can then be used to plane the calcar flush with the angled surface of the broach. (Figure 12)



figure 9



figure 10



figure 11



figure 12

Taperloc Microplasty Femoral Component

Note: When preparing for the Taperloc Microplasty stem placement, be sure to use the appropriate broach as shown (Figure 12b). Insertion technique is the same for all Taperloc broaches and stems.

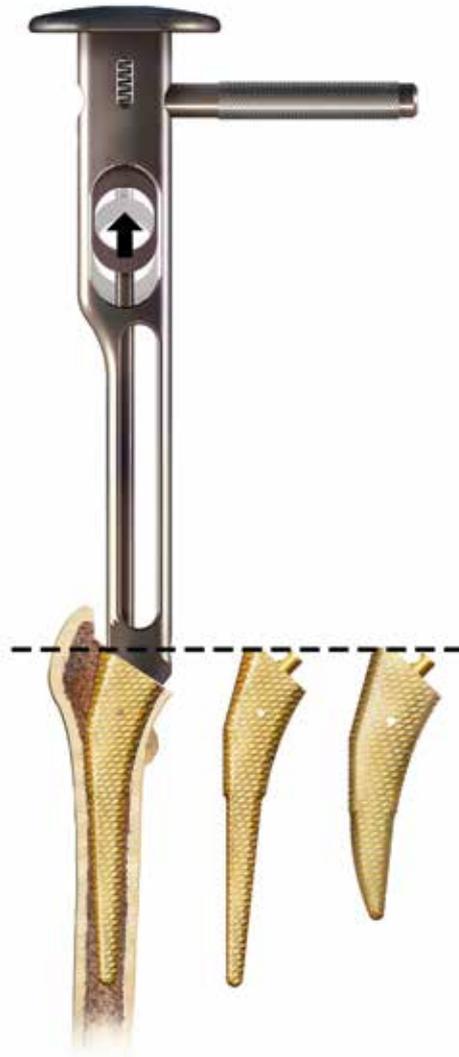


Figure 12b

6. Trial reduction - Broach

For cementless and cemented implants the final broach used corresponds with the femoral component to be implanted. (i.e. 12.5mm broach = 12.5mm implant)

With the final broach in position, the trial neck can be attached. (Figure 13) The desired trial modular head is then attached to the trial neck and the hip joint reduced. The joint is then assessed for joint stability and leg length. Trial modular heads are available in numerous offsets to facilitate a stable joint. However, should it not be possible to attain joint stability without over increasing the leg length, the trial neck is removed and the lateralised version of the trial neck is attached to the broach. The trial reduction procedure is repeated until joint stability and the desired leg length has been achieved. (Figure 14 & 15)

Once the trial reduction has been completed, carefully remove the trial modular head and trial neck from the broach. The broach handle is then re-attached to the broach and the complete assembly carefully removed from the femur to avoid enlarging the prepared canal. To promote the in-growth of bone into the porous coating, irrigation and drying of the femoral canal is not recommended.



figure 13

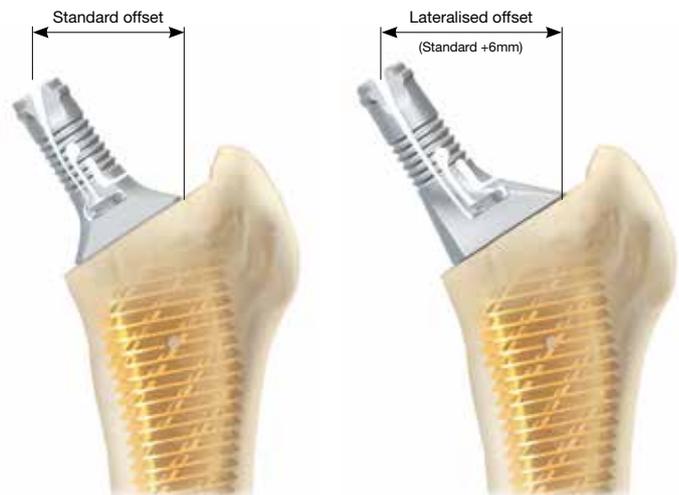


figure 14

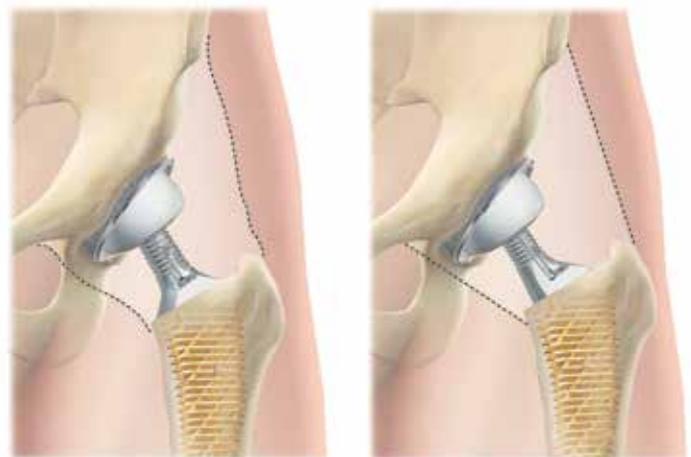


figure 15

7. Femoral component insertion – Cementless

When implanting a cementless implant, the definitive implant is equivalent to the last broach used. (ie. 12.5mm broach = 12.5mm implant)

Select the desired stem and attach it to the inserter handle. (Figure 16) The stem is then impacted until the edge of the porous coating is aligned with the rim of the planed calcar. (Figure 17) The inserter handle is then removed.



figure 16



figure 17

8. Femoral component insertion – Cemented

When implanting a cemented implant, the definitive implant also corresponds to the last broach used.
(i.e. 12.5mm broach = 12.5mm implant)

Prior to implanting the desired stem, the femoral canal must be prepared in the following manner. First, the femoral canal must be closed with an adequate cement restrictor. This is used to facilitate the pressurisation of the cement within the femur. The correct size restrictor is selected by using the trials/gauges to correctly size the femoral canal and the restrictor is driven into the femur using the insertion device. It is essential that the restrictor is tight inside the femur and that it is placed at least 2cm distal to the distal tip of the selected implant.

Prior to insertion of the cement, it is important that the femur is thoroughly cleaned by pulse lavage and dried to provide a clean dry surface into which the cement can interdigitate.

Cementing should always take place in a retrograde fashion. When the canal has been sufficiently filled with cement, the nozzle of the cement gun is shortened and the proximal pressurisation flange attached. The cement gun and pressurisation flange is then re-inserted into the proximal femur and pressurisation continues until immediately prior to stem insertion. The time at which the stem is inserted into the cement will vary on the type of cement used and the theatre temperature. Typically, for Refobacin



figure 18



figure 19

+R bone cement with a theatre temperature of 21°C mixed in the OptiVac cement-mixing system, the stem can be introduced 4 - 5 minutes after mixing has commenced.

Select the desired stem and attach it to the inserter handle as shown. (Figure 18) The stem is then inserted down the centre of the canal in one continuous movement. During insertion of the stem, pressure must be maintained within the canal by sealing or closing the medial calcar. (Figure 19) Pressure is then maintained on the stem through the inserter handle until the cement has polymerised.



figure 20



figure 21



figure 22

9. Trial reduction - Implant

If desired, a further trial reduction can be completed after the implantation of the femoral stem and prior to placement of the modular head onto the taper. (Figure 20) This is important because the femoral component may not in every instance seat exactly to the same depth as the broach and planed calcar. If this is the case, then it is recommended that a further trial reduction is carried out.



figure 23

10. Modular head impaction

The selected modular head is positioned on the clean male taper of the femoral stem with hand pressure only. Alternatively, a combination of hand pressure and a twisting motion can be used. The modular head is finally seated in position by means of a gentle tap utilising the femoral head impaction device and mallet. (Figure 21)

Modular heads should never be heavily impacted onto the trunnion as this may cause damage to highly polished surface of the modular head.

Once the correct modular femoral head has been attached to the femoral component, the hip joint can be reduced. (Figure 22)



figure 24

Ordering information

Taperloc Femoral Components - Type 1 Taper

Stem Diameter mm	Stem Length mm	Cementless						Cemented	
		Porous Coated		Porous & HA Coated		Porous & BoneMaster®		CoCrMo	
		Standard	Lateralised	Standard	Lateralised	Standard	Lateralised	Standard	Lateralised
6.0	132	103201	11-103201	21-103201	21-123201	103201BM	11-130201BM	-	-
7.5	135	164400	103807	21-103202	21-123202	103202BM	11-130202BM	650-0325	650-0331
9.0	137	103203	11-103203	21-103203	21-123203	103203BM	11-130203BM	-	-
10.0	140	164401	103808	21-103204	21-123204	103204BM	11-130204BM	650-0326	650-0332
11.0	142	103205	11-103205	21-103205	21-123205	103205BM	11-130205BM	-	-
12.5	145	164402	103809	21-103206	21-123206	103206BM	11-130206BM	650-0327	650-0333
13.5	147	103207	11-103207	21-103207	21-123207	103207BM	11-130207BM	-	-
15.0	150	164403	103810	21-103208	21-123208	103208BM	11-130208BM	650-0328	650-0334
17.5	155	164404	103811	21-103209	21-123209	103209BM	11-130209BM	650-0329	650-0335
20.0	160	164405	103812	21-103210	21-123210	103210BM	11-130210BM	650-0330	650-0336

Modular Femoral Head Components - Type 1 Taper (T1)

Neck Length	ABT CoCrMo M2A & UHMWPE			ABT Ceramic Biolox Delta Ceramic		
	28mm	32mm	36mm	28mm	32mm	36mm
-6mm	650-0863	650-0870	650-0839	-	-	-
-3mm	650-0864	650-0871	650-0840	164135	164185	650-0660
0mm	650-0865	650-0872	650-0841	164136	164186	650-0661
+3mm	650-0866	650-0873	650-0842	164137	164187	650-0662
+6mm	650-0867	650-0874	650-0843	-	12-115117	650-0663



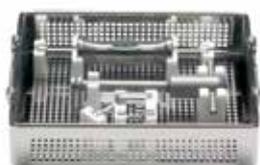
The modular heads listed above are only suitable for Biomet Femoral Components with Biomet Type1 Taper(T1).

Taperloc Femoral Instrumentation for Primary Components - Type 1 Taper (T1)

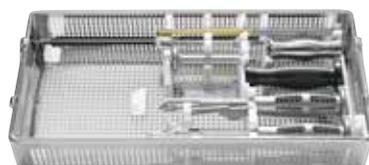
Catalogue Number	Description
31-600064	Taperloc Haptic General Instr Tray
31-600065	Taperloc Haptic Rasp Tray
31-600005	Modular Stem & Head Removal Tray
31-600066	Taperloc Haptic 28 & 32mm Trial Modular Head Tray Insert Complete (T1)
31-600432	Taperloc X-Ray Templates (T1)
31-601128	ABT Trial Modular Head Tray Insert Complete 22.2, 28, 32 & 36mm (T1)



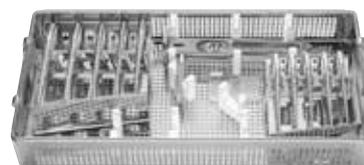
Taperloc Trial Head Tray Insert (T1)



Biomet Femoral Head and Stem Removal Instrument Tray



Taperloc Haptic General Instrument Tray



Taperloc Haptic Rasp Tray

Taperloc Femoral Components - 12/14 Taper (12/14)

Stem Diameter mm	Stem Length mm	Cementless						Cemented	
		Porous Coated		Porous & HA Coated		Porous & BoneMaster®		CoCrMo	
		Standard	Lateralised	Standard	Lateralised	Standard	Lateralised	Standard	Lateralised
6.0	132	650-0580	650-0590	650-0550	650-0560	650-0550BM	650-0560BM	-	-
7.5	135	650-0319	650-0349	650-0551	650-0561	650-0551BM	650-0561BM	650-0337	650-0343
9.0	137	650-0260	650-0263	650-0552	650-0562	650-0552BM	650-0562BM	-	-
10.0	140	650-0320	650-0350	650-0553	650-0563	650-0553BM	650-0563BM	650-0338	650-0344
11.0	142	650-0261	650-0264	650-0554	650-0564	650-0554BM	650-0564BM	-	-
12.5	145	650-0321	650-0351	650-0555	650-0565	650-0555BM	650-0565BM	650-0339	650-0345
13.5	147	650-0262	650-0265	650-0556	650-0566	650-0556BM	650-0566BM	-	-
15.0	150	650-0322	650-0352	650-0557	650-0567	650-0557BM	650-0567BM	650-0340	650-0346
17.5	155	650-0323	650-0353	650-0558	650-0568	650-0558BM	650-0568BM	650-0341	650-0347
20.0	160	650-0324	650-0354	650-0559	650-0569	650-0559BM	650-0569BM	650-0342	650-0348

Modular Femoral Head Components - 12/14 Taper (12/14)

Neck Length	ABT CoCrMo M2A & UHMWPE			ABT Ceramic Biolox Delta Ceramic		
	28mm	32mm	36mm	28mm	32mm	36mm
-4mm	-	650-0882	650-0887	-	650-0833	650-0836
-3.5mm	650-0877	-	-	650-0830	-	-
0mm	650-0878	650-0883	650-0888	-	650-0834	650-0837
+3.5mm	650-0879	-	-	650-0832	-	-
+4mm	-	650-0884	650-0889	-	650-0835	650-0838
+8mm	-	-	650-0890	-	-	650-0667

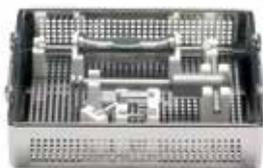


Taperloc Femoral Instrumentation for Primary Components - 12/14 Taper (12/14)

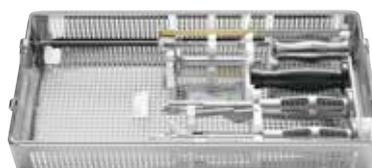
Catalogue Number	Description
31-600064	Taperloc Haptic General Instr Tray
31-600065	Taperloc Haptic Rasp Tray
31-600005	Modular Stem & Head Removal Tray
31-600068	Taperloc Haptic 28 & 32mm Trial Modular Head Tray Insert Complete (12/14)
31-100377	Taperloc X-Ray Templates (12/14)
31-601130	ABT Trial Modular Head Tray Insert Complete 22, 28, 32 & 36mm (12/14)



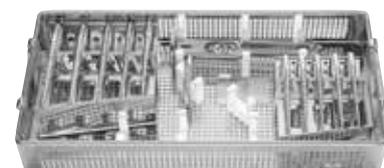
Taperloc Trial Head Tray Insert (12/14)



Biomet Femoral Head and Stem Removal Instrument Tray



Taperloc Haptic General Instrument Tray



Taperloc Haptic Rasp Tray

Taperloc Microplasty Femoral Components - Type 1 Taper

Stem Diameter mm	Stem Length mm	Porous Coated	
		Standard	Lateralised
6.0	97.5	14-103201	15-103201
7.5	100.0	14-103202	15-103202
9.0	102.5	14-103203	15-103203
10.0	105.0	14-103204	15-103204
11.0	107.5	14-103205	15-103205
12.5	110.0	14-103206	15-103206
13.5	112.5	14-103207	15-103207
15.0	115.0	14-103208	15-103208
17.5	120.0	14-103209	15-103209
20.0	125.0	14-103210	15-103210

Taperloc Microplasty Femoral Components - 12/14 Taper

Stem Diameter mm	Stem Length mm	Porous Coated	
		Standard	Lateralised
6.0	97.5	650-0951	650-0971
7.5	100.0	650-0952	650-0972
9.0	102.5	650-0953	650-0973
10.0	105.0	650-0954	650-0974
11.0	107.5	650-0955	650-0975
12.5	110.0	650-0956	650-0976
13.5	112.5	650-0957	650-0977
15.0	115.0	650-0958	650-0978
17.5	120.0	650-0959	650-0979
20.0	125.0	650-0960	650-0980

Taperloc Femoral Instrumentation for Microplasty Primary Components

Catalogue Number	Description
31-601231	Taperloc Microplasty Instrument Tray
31-601280	Taperloc Microplasty X-Ray Templates (T1)
31-601281	Taperloc Microplasty X-Ray Templates (12/14)

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