



# SupraLOC™

supracondylar plate

operative technique



Joint Replacement

Cement

BioMaterials

Spine

**Trauma**



[www.biometmerck.co.uk](http://www.biometmerck.co.uk)

FLT 018 12/02





## Introduction

Supracondylar and intracondylar fractures of the femur still pose one of the most controversial questions in fracture management. There is constant debate about the relative merits of operative versus non-operative treatment. It is now generally agreed however, that with the development of well engineered implants, better preoperative antibiotics, and improved anaesthetic techniques, operative intervention is now the preferred technique.

## Indications

Any supracondylar-intracondylar femur fracture with closed physes in which a minimum of 40mm of the medial femoral condyle is intact, so that sufficient bone is available for condylar screw insertion

## Exposure

A standard lateral exposure is used. Any articular fractures if present, are reduced using K-wires and clamps. Any coronal or sagittal split fractures are then fixed with lag screws or cannulated screws.

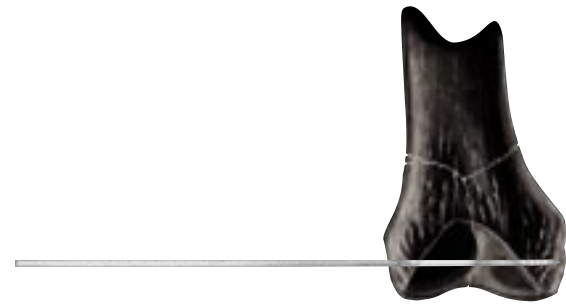
The position of any guide wires and/or lag screws, much be such, as to not interfere with the subsequent positioning of the "Supraloc" screw in the condyles or of the plate on the lateral condyles, of the femur.



### Disclaimer

Biomet Merck Ltd., as the manufacturer of this device, does not practice medicine and does not recommend any particular surgical technique for use on a specific patient. The surgeon who performs any implant procedure is responsible for determining and utilising the appropriate techniques for implanting prosthesis in each individual patient. Biomet Merck Ltd. is not responsible for selection of the appropriate surgical technique to be utilised on an individual patient.

>> STEP 1



Making sure that the guide pin template (401232, 401233) is correctly placed on the distal femur, a 230mm guide pin (401210) is introduced. The entry point of the pin is in the sagittal plane, anterior to the condyles of the femur, in line with the shaft axis, and approximately 20mm proximal to the articular cartilage.

The guide pin is advanced until anchored in the medial wall. At this point the guide pin has to be checked for correct placement. If it is not in a position parallel to the knee joint, it must be readjusted before proceeding. At this point the reduction is again checked before proceeding.

>> STEP 2



The direct measuring device (401217) is slid over the guide pin, and the length of the pin read off the measuring device directly.

STEP 3 <<



The Supraloc triple reamer (401234) is assembled. Making sure not to confuse the Supraloc reamer with the longer Hiploc reamer. Both reamers are suitably marked for identification.

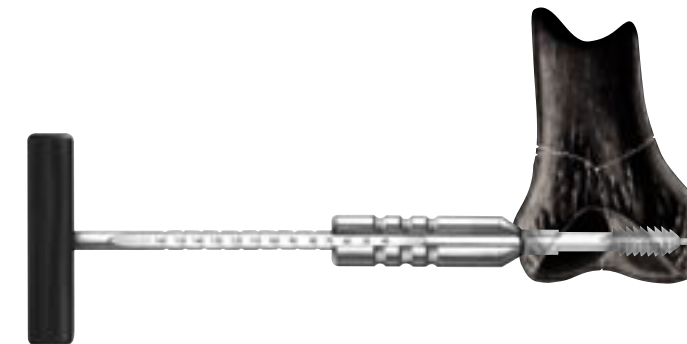
The ideal position for lag screw placement is 10mm before the medial wall. To ensure this position the reamer has to be set to the measured length of the guide pin minus 10mm,

e.g. If the measured length of the guide pin is 80mm, the length set on the reamer needs to be  $80\text{mm} - 10\text{mm} = 70\text{mm}$ .

The correct measurement is set on the triple reamer. The hole for the lag screw is drilled, by passing the triple reamer over the guide wire to the correct depth.

After drilling is complete, the reamer is withdrawn

STEP 4 <<

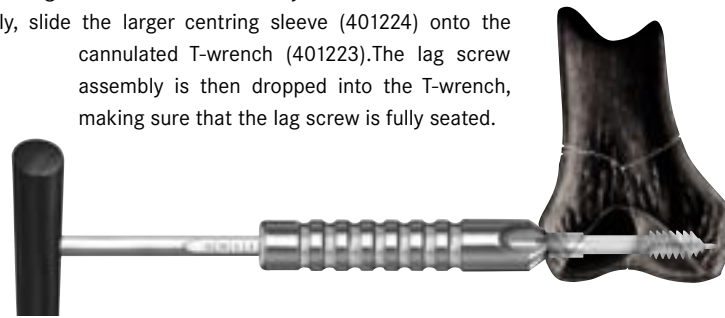


Although tapping of the hole is not usually required, if hard cancellous bone is present then the hole can be tapped at this stage.

If tapping of the hole is required, the tap centring sleeve (401220) is placed onto the tap (401219) and the hole is then tapped over the guide pin. The hole is tapped to the same depth as the triple reamer.

>> STEP 5

To introduce the lag screw. First pass the alignment screw (401222) down the guide shaft (401221) and screw it into the lag screw. Make sure the alignment lugs on the guide shaft mesh correctly with the slots in the lag screw. Secondly, slide the larger centring sleeve (401224) onto the cannulated T-wrench (401223). The lag screw assembly is then dropped into the T-wrench, making sure that the lag screw is fully seated.



This can be verified by observing the bottom of the lag screw through the hole in the T-wrench. Slide the T-wrench and lag screw assembly over the guide wire, inserting the centring sleeve into the reamed hole. Begin screwing the lag screw into position. Continue screwing the lag screw into the distal condyle until the zero mark on the wrench reaches the end of the centring sleeve. The tip of the lag screw will now be sitting 10mm from

the medial wall. In osteoporotic bone it may be beneficial to insert the lag screw an extra 5mm, to obtain better fixation into the cortical bone of the medial wall. This can be achieved by inserting the screw until the number 5 reaches the end of the centring sleeve. This will now place the screw 5mm nearer the medial wall. At the end of the screwing procedure the T-handle wrench must lie parallel to the femur to facilitate the correct positioning of the plate.

>> STEP 6

When the lag screw is fully seated, remove the cannulated T-wrench. The previously selected barrel plate is now slid over the cannulated barrel guide assembly, and advanced into the bone as far as possible. Remove the cannulated barrel guide assembly, remove the guide pin, and remove any stabilising guide pins if used. Using the barrel plate impactor (401226), drive the barrel plate until the plate seats firmly against the lateral cortex of the femur. At this point compression can be applied with the aid of the compression screw if needed.



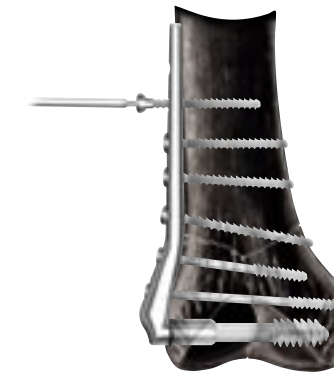
STEP 7 <<

The two distal holes of the Supraloc plate, are designed to accept 6.5mm cancellous screws. These can be utilised to achieve extra intra-fragmentary compression and increased stability across the fracture site.



STEP 8 <<

Compression along the transverse components can be achieved using the dynamic compression holes in the plate. The plate is fixed to the bone using 4.5mm cortical bone screws.



**>> Implant Removal**

For removal of the screw at a later date, the site is exposed initially, the 4.5mm cortical screws allocated and taken out. With the use of forceps the Supraloc plate is then removed. The T-wrench and centring sleeve are again fitted together and introduced into the reamed hole. The removal coupling screw (401227) is passed down the barrel of the cannulated T-wrench. The coupling screw is then used to lock the cannulated T-wrench onto the back of the impacted lag screw. The lag screw can then be removed.

**>> Post - Operative Care**

Closed suction drainage is used (RediVac) or alternatively passive motion can be employed. The patient can be out of bed 1st day post-op with slight weight-bearing (ie. Toe touching). The patient can usually be discharged at day 3. Early fracture healing should be expected at about 8 weeks, at which partial weight-bearing can be initiated. Full weight-bearing can be expected by 10- 12 weeks. Additional physiotherapy is continued with return to pre-injury level of activity to be expected after four to five months.

**<< Instrumentation**

401200	Hiploc Instr. T Case c/w Instr.
401205	Hiploc Instrument Case
401206	Hiploc Implant Ster. Case
401210	Hiploc Guide Pin 2.5 dia x 230mm Pk5
401211	Hiploc Drill Guide 130°
401212	Hiploc Drill Guide 135°
401213	Hiploc Drill Guide 140°
401214	Hiploc Drill Guide 145°
401215	Hiploc Drill Guide 150°
401217	Hiploc Direct Measuring Device
401218	Hiploc Combination Reamer (38mm)
401219	Hiploc Cannulated Bone Tap
401220	Hiploc Tap Centering Sleeve
401221	Hiploc Guide Shaft
401222	Hiploc Alignment Screw
401223	Hiploc Cannulated 'T' Wrench
401224	Hiploc Wrench Centering Sleeve
401225	Hiploc Plate Impactor
401227	Hiploc Removal Coupling Screw
401229	Hiploc Reamer (25mm)
34-513646	Screw Depth Gauge
401226	Hiploc Plate Impactor/Replacement Tip

*Additional Supracondylar Instruments, available separately.*

401232	Supraloc - 6 hole drill guide
401233	Supraloc - 12 hole drill guide
401234	Supraloc Reamer Assembly
236036	Compression Screw

>> **4.5mm Cortical Bone Screws**

self tapping		Pack of 6	
1917- 14	14 mm	1901- 01	14 mm
1917- 16	16 mm	1901- 03	16 mm
1917- 18	18 mm	1901- 05	18 mm
1917- 20	20 mm	1901- 07	20 mm
1917- 22	22 mm	1901- 09	22 mm
1917- 24	24 mm	1901- 11	24 mm
1917- 26	26 mm	1901- 85	25 mm
1917- 28	28 mm	1901- 13	26 mm
1917- 30	30 mm	1901- 15	28 mm
1917- 32	32 mm	1901- 17	30 mm
1917- 34	34 mm	1901- 19	32 mm
1917- 36	36 mm	1901- 21	34 mm
1917- 38	38 mm	1901- 87	35 mm
1917- 40	40 mm	1901- 27	36 mm
1917- 42	42 mm	1901- 29	38 mm
1917- 44	44 mm	1901- 31	40 mm
1917- 46	46 mm	1901- 25	42 mm
1917- 48	48 mm	1901- 35	44 mm
1917- 50	50 mm	1901- 39	45 mm
1917- 52	52 mm	1901- 41	46 mm
1917- 54	54 mm	1901- 45	48 mm
1917- 56	56 mm	1901- 46	50 mm
1917- 60	60 mm	1901- 47	52 mm
1917- 70	70mm	1901- 77	54 mm
		1901- 48	56 mm
		1901- 79	58 mm
		1901- 49	60 mm
		1901- 81	64 mm
		1901- 83	68 mm
		1901- 50	70 mm

>> **Plates 95°**

235006	6 hole
235008	8 hole
235010	10 hole
235012	12 hole
235014	14 hole

