HIGH TIBIAL OSTEOTOMY APPROACH

The technique presented below is one of the surgical techniques possibilities. The choice is made according to surgeon's preferences.
Use an antero-medial approach to expose the proximal tibia metaphysis.

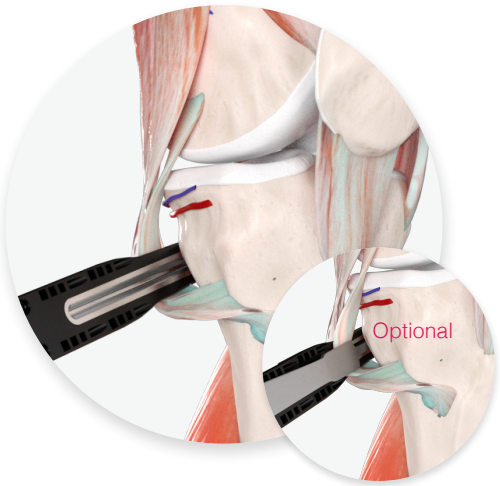
1. The patient is positioned in a supine position on the operating table. The procedure is performed under pneumatic tourniquet and a small pillow is placed under the buttock of the operated side in order to maintain the limb in neutral position.

2. An 8 cm slightly oblique vertical incision is made along the antero-medial surface, running over the joint space down to under the tibial tuberosity.

3. A single-plane incision is made through the periosteum; then the hamstring and the medial collateral ligament (MCL) are retracted posteriorly thanks to the Care + retractor.

   The wider the angular correction is, the more the hamstring and MCL should be released distally.

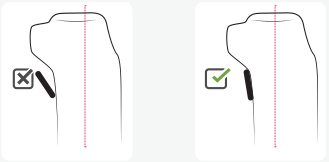
CAUTION: if the release is adequate, the opening of the osteotomy and the insertion of the bone graft can be performed with no risk of tearing the lateral cortical hinge. If it is not, forcing the graft in may tear the hinge, thus seriously jeopardizing complete bone healing. ie: pseudarthrosis.



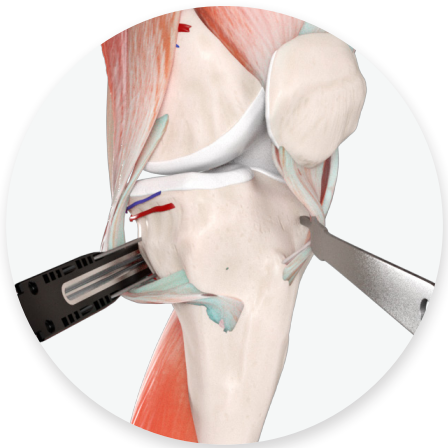
4. Position the Care+ retractor at the level of the wanted osteotomy cut in order to protect the vascular structures from the saw blade.

   Optional: If the Care+ is positionned between the hamstring and the MCL, use a smaller retractor to pull back the MCL.

CAUTION: the groove must be positioned parallel to the front plane.



5. When its position is validated under X-ray, secure the Care+ with two divergent 2.2 mm pins.



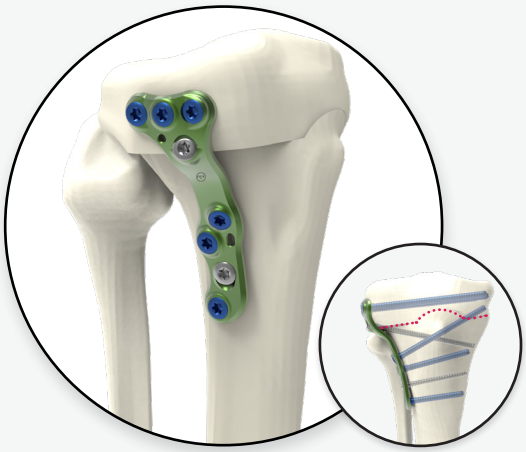
6. Clear the deepest part of the patellar tendon down to its attachment onto the tibial tuberosity, and protect it using a retractor during the osteotomy.

LATERAL CLOSING WEDGE HIGH TIBIAL OSTEOTOMY SIZE 2 (PAGE 1/4)

For the size 2 lateral closing wedge high tibial plate (BTxBD2D-ST), two cutting options can be performed, there are certain steps which can change. Please find the different options below and their surgical technique:

→ OPTION 1: OBLIQUE CUT

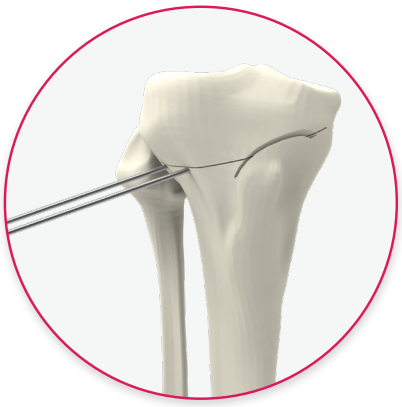
(FOR THIS OPTION THE SURGICAL TECHNIQUE IS IN PINK)



→ OPTION 2: HORIZONTAL CUT

(FOR THIS OPTION THE SURGICAL TECHNIQUE IS IN BLACK)

STEP 1

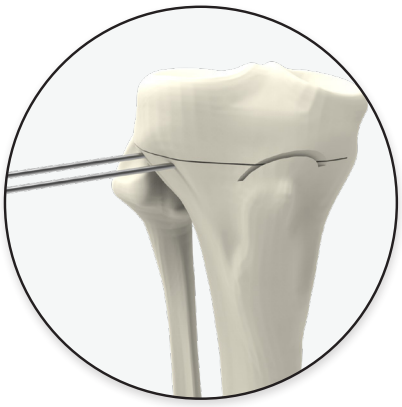


1. **Perform the first cut.**
   Insert two pins approximately 40-50 mm below the lateral articular surface and run oblique until reaching the medial cortex 15 mm below the tibial plateau.

   It is recommended to position **a third pin** in the opposite cortex to strengthen your hinge and prevents for cutting further.

   Protect the posterior aspect of the tibia and perform the cut stopping at 6 mm from the medial cortex. The biplanar tuberosity cut is then performed.

   An additional fibular osteotomy or release of the proximal tibiofibular joint must be performed.



1. **Perform the first cut.**
   Insert two pins approximately 30-40 mm below and parallele to the lateral articular surface.

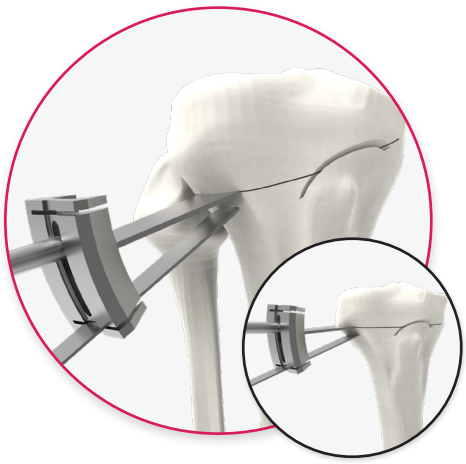
   It is recommended to position **a third pin** in the opposite cortex to strengthen your hinge and prevents for cutting further.

   Protect the posterior aspect of the tibia and perform the cut stopping at 6 mm from the medial cortex. The biplanar tuberosity cut is then performed.

   An additional fibular osteotomy or release of the proximal tibiofibular joint must be performed.

LATERAL CLOSING WEDGE HIGH TIBIAL OSTEOTOMY SIZE 2 (PAGE 2 /4)

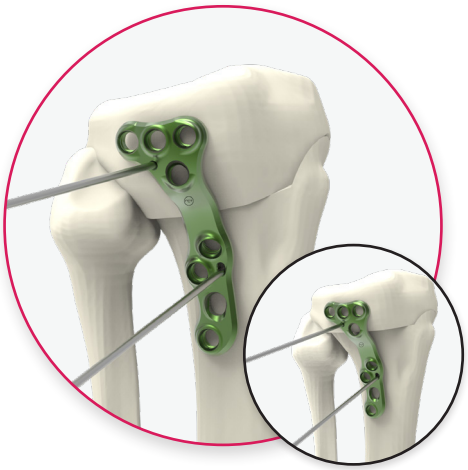
THE FOLLOWING STEPS APPLY TO THE **OPTION 1, OBLIQUE CUT** AND THE **OPTION 2, HORIZONTAL CUT**



2. Perform the distal 2nd cut by using the cutting guide *(see page 14 on how to use the guide)*:
   - Set the chosen correction angle on the cutting guide (ANC014-1 / ANC014-2).
   - Insert the blade of the cutting guide into the first cut until reaching the hinge.
   - Perform the second cut with an oscillating saw inserted in the slot of the guide.

   Remove the bone wedge and make sure that every residual bone fragment has been removed from the osteotomy.

   Then, carefully close the osteotomy by applying continuous pressure to the medial lower limb while stabilizing the knee joint region.



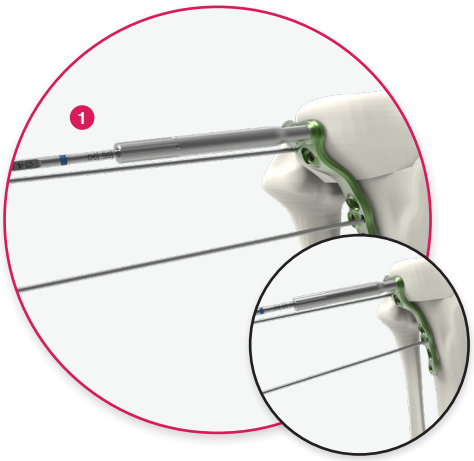
3. Position the plate onto the lateral surface of the proximal tibia. It is important to ensure that the zone between the distal and proximal screws is located on the osteotomy site and that the proximal screws do not penetrate the joint.

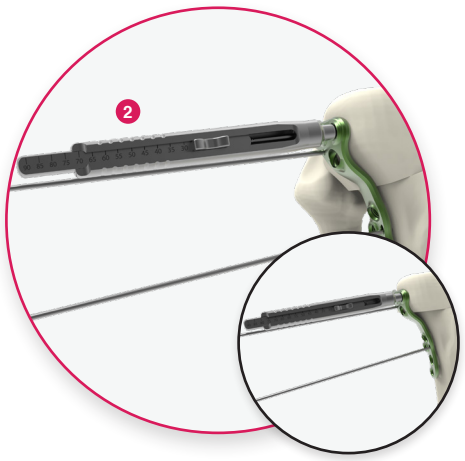
   The plate can be temporarily held in position with two Ø2.2 mm pins (33.0222.200). **The distal pin must be postionned in the distal part of the oblong pin hole.**

4. Lock the Ø4.0 mm drill guide (ANC998) into one of the three most proximal holes. Then, drill using the Ø4.0 mm drill bit (ANC211).

   N.B. *to help lock the drill guide in the plate, use the hexagonal part of the screwdriver (ANC975).*

ANC975





5. Determine the screw length directly at the rear of the Ø4.0 mm drill guide (ANC998) (1), or with the length gauge (ANC210) (2). When using the length gauge (ANC210) in the epiphyseal part of the bone, please add 3 mm to the markings read.

   Then, insert a Ø4.5 mm locking screw(ST4.5LxxD-ST) using the screwdriver (ANC975). Final tightening of the screws must be performed by hand.

ANC975

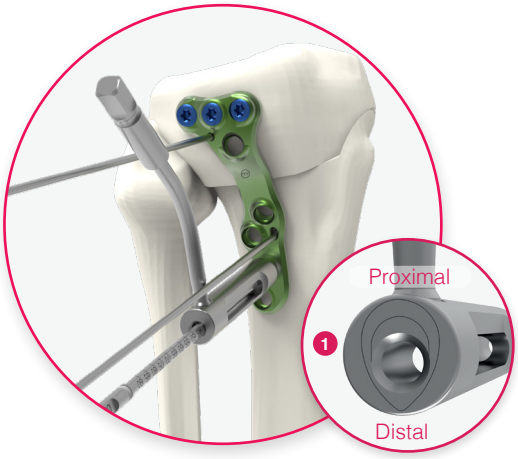
N.B. *To ease the insertion of the Ø4.5 mm locking screw, use the countersink (ANC120-US) to widen the first cortex previously drilled. If the insertion of the screw is difficult, remove the screw, countersink, and insert the screw.*

ANC120-US

6. Repeat the same procedure as steps 4 and 5 for the 2 remaining proximal screws.

LATERAL CLOSING WEDGE HIGH TIBIAL OSTEOTOMY SIZE 2 (PAGE 3/4)

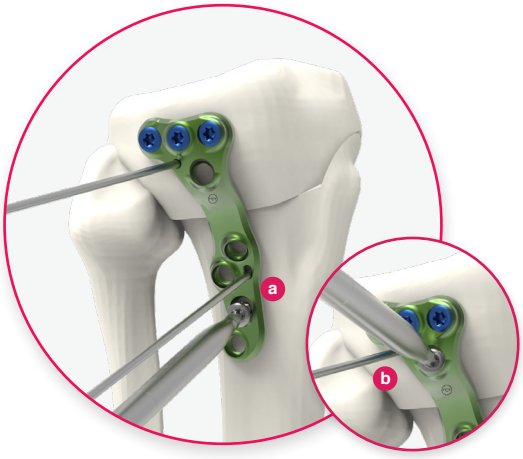
→ OPTION 1: OBLIQUE CUT



7. Drill into the **distal part of the oblong hole** using the dedicated drill guide (ANC1064) and the **Ø3.5 mm drill bit** (ANC1075). The orientation of the drill guide must be taken into account to allow compression (1).

   Determine the screw length directly on the drill at the rear of the drill guide or with the length gauge (ANC210).

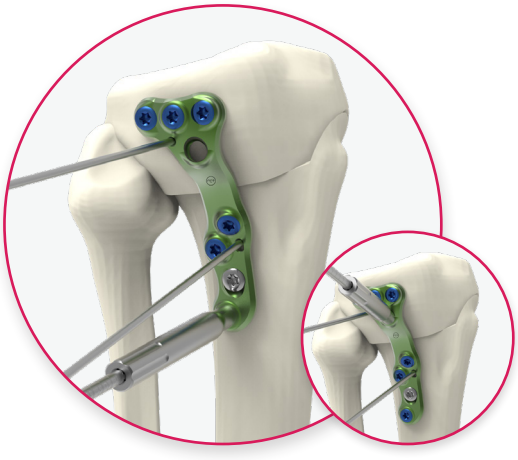
ANC210



8. **Compression of the osteotomy**

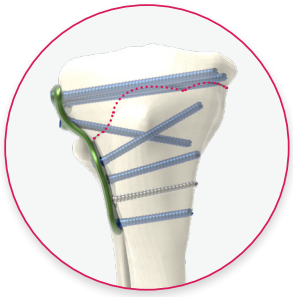
   a. Insert a Ø4.5 mm standard cortical screw (CT4.5LxxD-ST) using the screwdriver (ANC975) and perform the compression through the ramp oblong hole.

   b. Alternatively, a standard cortical screw can be inserted in the angulated hole to close and compress the osteotomy.



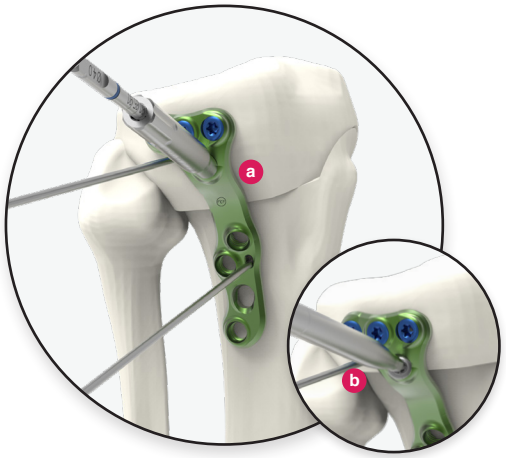
9. Repeat the same procedure as steps 4 and 5 for the remaining Ø4.5 mm locking screws (ST4.5LxxD-ST) in the distal holes. Do the same for the the insertion of the Ø4.5 mm locking screw (ST4.5LxxD-ST) in the remaing proximal hole situated above the osteotomy cut. The pins can then be removed.

FINAL RESULT



LATERAL CLOSING WEDGE HIGH TIBIAL OSTEOTOMY SIZE 2 (PAGE 4 /4)

→ OPTION 2: HORIZONTAL CUT

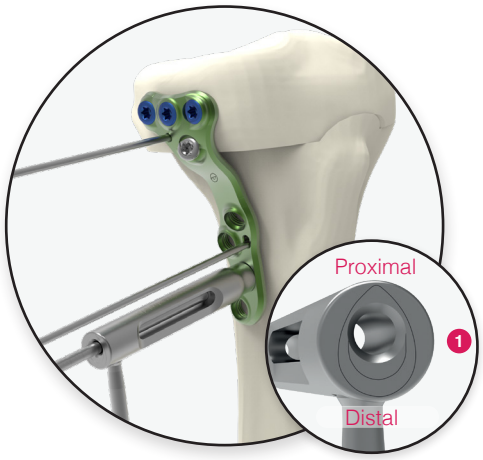


7. **Compression of the osteotomy**

a. Lock the Ø4.0 mm drill guide (ANC998) into the proximal hole situated above the osteotomy cut. Then, drill using the Ø3.5 mm drill bit (ANC1075).

b. Then, insert a Ø4.5 mm cortical screw (CT4.5LxxD-ST) and perform the compression using the screwdriver (ANC975).

ANC975



8. Drill into the **proximal part of the oblong hole** using the dedicated drill guide (ANC1064) and the **Ø3.5 mm drill bit** (ANC1075). The orientation of the drill guide must be taken into account as the compression of the oblong hole is not used (1).

Determine the screw length directly on the drill at the rear of the drill guide or with the length gauge (ANC210).

Insert a Ø4.5 mm standard cortical screw (CT4.5LxxD-ST) using the screwdriver (ANC975).

ANC975

9. **Improvement of the stability at the hinge with the oblique screw**

Repeat the same procedure as steps 4 and 5 for *(page 26)* the Ø4.5 mm locking screws (ST4.5LxxD-ST) in the remaining the distal holes. The pin can be removed during this step.

FINAL RESULT