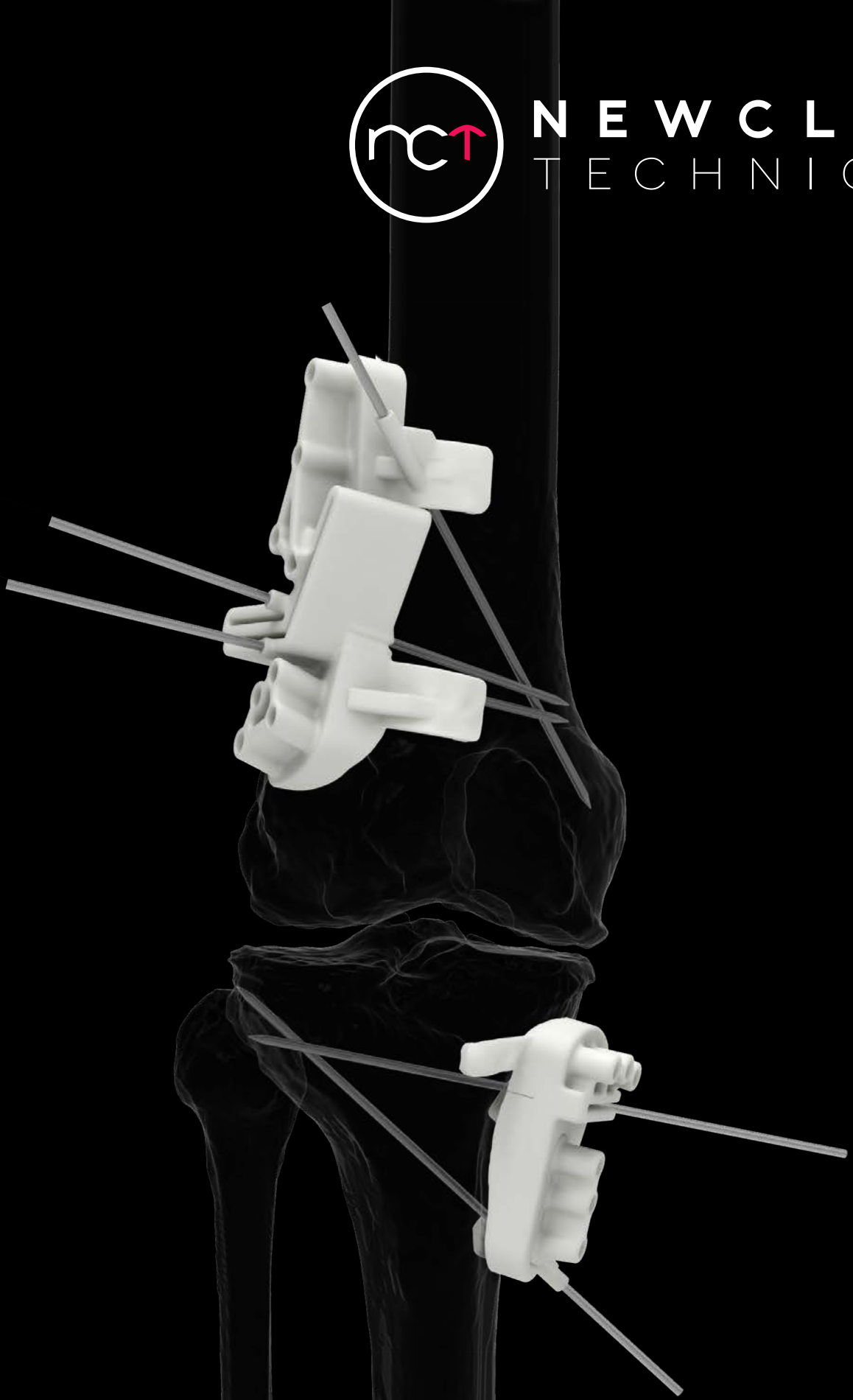
NEWCLIP TECHNICS



PSI SOLUTION

PATIENT-MATCHED CUTTING GUIDES

ONE

PSI SOLUTION WITH ACTIVMOTION S

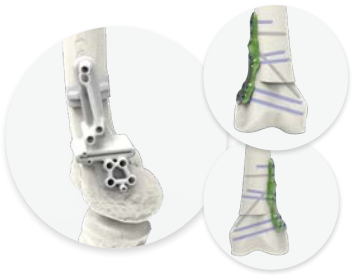
Intended purpose: The implants of the Activmotion S range are intended for knee osteotomy in adults.
The patient-matched cutting guides are intended for measuring anatomical parameters, fixing instruments or implants, and guiding instruments.

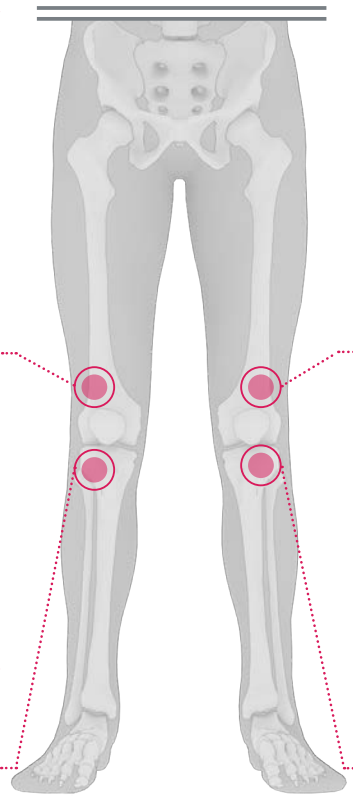
Contraindications:

- Pregnancy.
- Acute or chronic local or systemic infections.
- Allergy to one of the materials used or sensitivity to foreign bodies.

GET THE FULL PICTURE

FEMORAL CLOSING AND DEROTATION PLATES

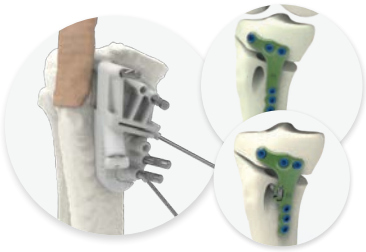




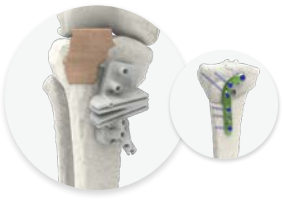
FEMORAL OPENING PLATES

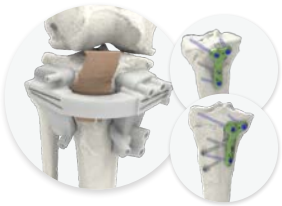
TIBIAL CLOSING PLATES

TIBIAL OPENING PLATES



DEFLEXION PLATES





N.B.: Some of the patient-matched cutting guides and/or implants may not be available depending on your country.

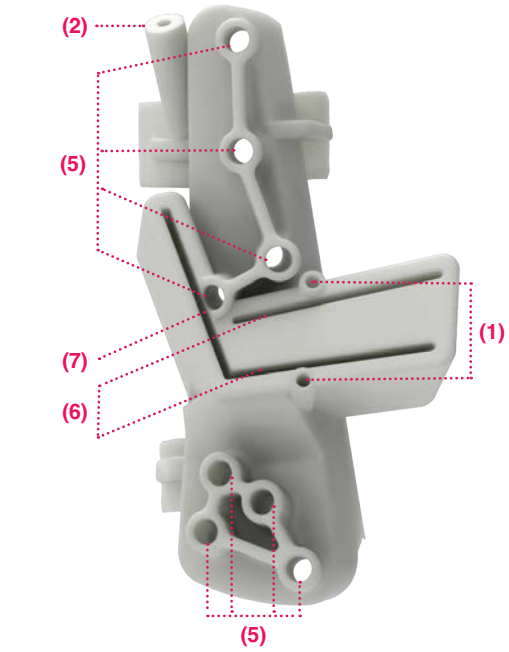
TECHNICAL FEATURES

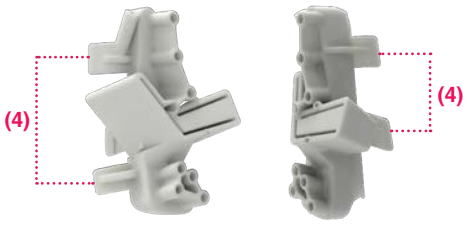
PATIENT-MATCHED CUTTING GUIDE

The PSI solution is based on the CT scan of the patient and allows a correction of the knee in the three planes.

FEMORAL GUIDE

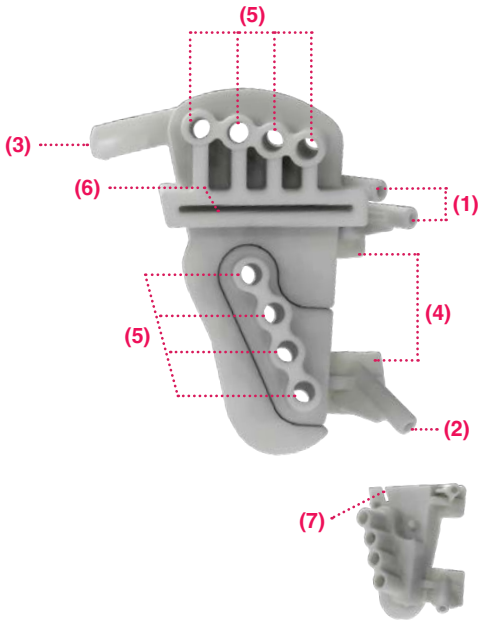
Example of a femoral guide v vvv

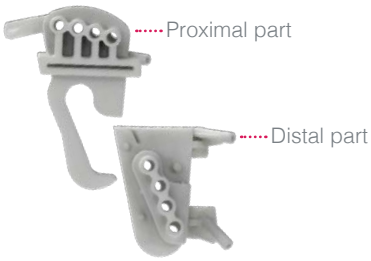




TIBIAL GUIDE

Example of a tibial guide associated to the ATxP2D plate





1. The «**cutting K-wire(s)**» allow(s):
- to verify the direction of the cut(s);
- to vizualize the bone wedge to remove;
- to confirm the position of the patient-matched cutting guide.

2. The «**hinge K-wire(s)**» allow(s):
- to stop the cut;
- to protect the hinge during the opening;
- to confirm the position of the patient-matched cutting guide;
- to vizualize the location and thickness of the hinge.

3. The anterior bracket is positioned under the patellar tendon in line with its insertion.

4. The brackets are congruent with the surface of the bone and allow a better positioning of the patient-matched cutting guide.

5. Drill guides, when the holes of the bone will align with the holes of the plate, the desired correction will be achieved in the three planes.

6. Patient-matched cutting guide slot adapted to the surgeon's **sawblade.**

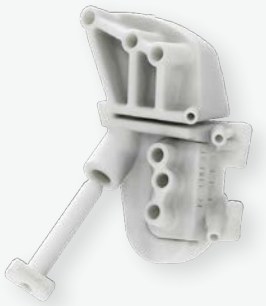
7. Patient-matched cutting guide slot for the **biplanar cut.**

TECHNICAL FEATURES

PATIENT-MATCHED CUTTING GUIDE - OPTIONS

The options shown are available on request and **must be selected** when creating a case on the dedicated portal.

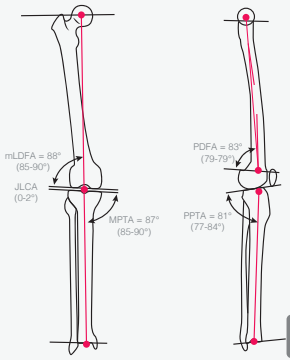
TUNNEL FOR LIGAMENTOPLASTY



PATIENT-MATCHED WEDGE

ATT GUIDE

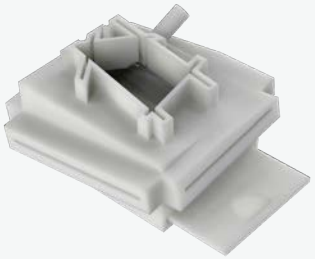
MEASURES



FEMORAL HEAD CUTTING GUIDE*

ILIAC CREST CUTTING GUIDE*

BONE SUBSTITUTE CUTTING GUIDE*



N.B.: Some of the patient-matched cutting guides options may not be available depending on your country.

** For more information see the brochure **PSI - Graft cutting options***

THE ADVANTAGES OF THE PSI SOLUTION

PRECISION & REPEATABILITY OF THE CORRECTION

The PSI solution allows to perform a precise correction. The solution includes in its design the correction that will be applied and the position of the plate at its optimized position.

How is created the patient-matched cutting guide to ensure the precision of the correction on all the planes?

STEP 1 : WANTED CORRECTION APPLIED ON THE PREOPERATIVE BONE

STEP 2 : PLATE APPLIED AT ITS OPTIMIZED POSITION

STEP 3 : HOLES OF THE PLATE SIMULATED ON THE POSTOPERATIVE BONE

STEP 4 : PLATE REMOVED

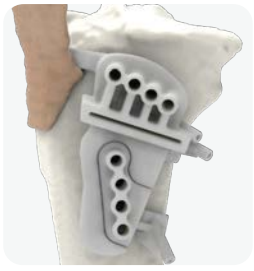
STEP 5 : RETRO-ENGINEERING : BONE POSITIONNED IN THE PREOPERATIVE CONFIGURATION

STEP 6 : PATIENT MATCHED CUTTING GUIDE DESIGNED

SAFETY

The PSI solution brings safety to the key steps of your surgical procedure.

- The hinge K-wire allows:
  - To stop the sawblade;
  - To preserve the hinge thickness;
  - To limit the risk of hinge fracture during opening.
- Protection of the patellar tendon.
- Secure the position of the plate and screws.

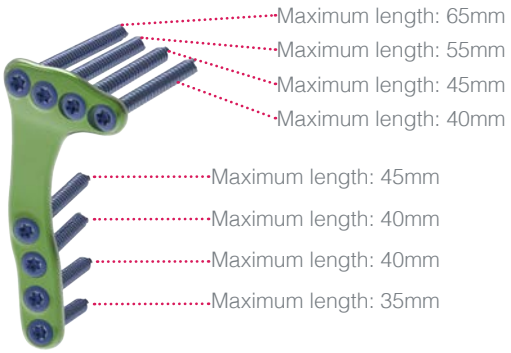


THE ADVANTAGES OF THE PSI SOLUTION

TIME SAVING IN THE OPERATING ROOM

The PSI solution allows to decrease the time of surgery:

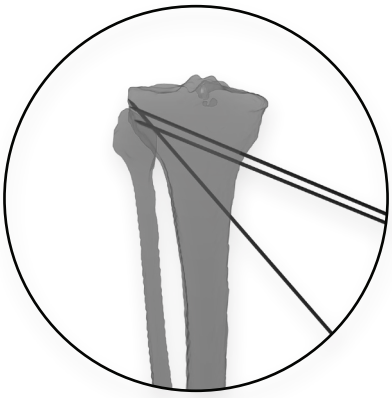
- Surgical technique already validated
- Position of the plate pre-established
- Screws lengths already calculated



Example of information on the patient-matched surgical technique

REDUCTION OF THE NUMBER OF FLUOROSCOPY SHOTS

The PSI solution allows to reduce the number of fluoroscopy shots during surgery. They are only necessary to validate the position of the patient-matched cutting guide and to validate the final assembly.



FOR ALL KIND OF SURGERY

The PSI solution allows to manage classic cases routinely, as well as to deal with complex surgeries.

Derotation

Slope change

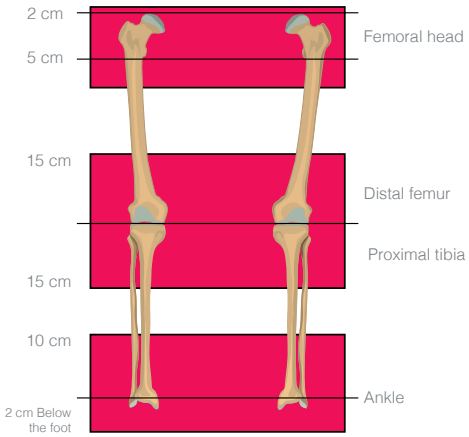
HTO with ligamentoplasty

NEWCLIP PSI PROCESS

HOW TO START THE PSI PROCESS ?

To start the process for a patient-matched cutting guide, you should give the information below:

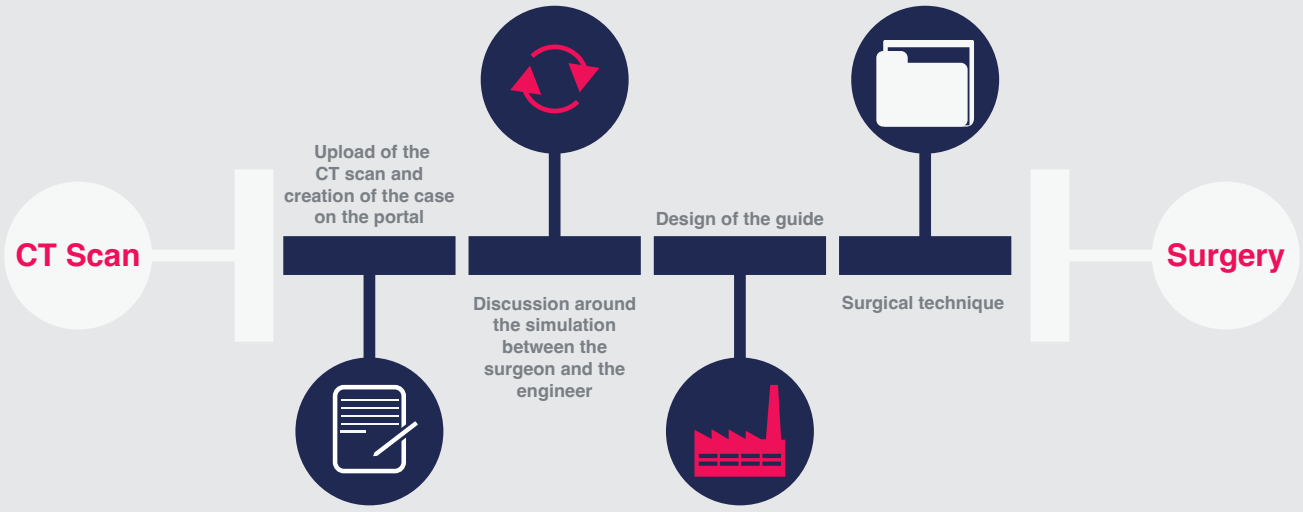
- ☑ CT Scan (see Newclip protocol)
- ☑ Type of surgery
- ☑ Operative side
- ☑ Date of surgery
- ☑ Type of Plate
- ☑ Additional options



CT scan protocol

STEPS OF THE PSI PROCESS

FROM CT SCAN TO SURGERY IN MINIMUM 25 WORKING DAYS



A DEDICATED PORTAL

WHY A WEB PORTAL ?

- To request patient-matched cutting guides;
- To exchange documents (Medical imaging, patient-matched surgical technique, simulation file...);
- To follow the process;
- To communicate about the case.

In accordance with the personal data protection laws, the Provider will do its best efforts to take all useful precautions, in particular with regards to the nature of the Personal Data and the risks of the processing, to preserve the security and confidentiality of the Personal Data transmitted, processed or stored and to prevent their distortion, alteration, damage, accidental or unlawful destruction, loss disclosure and/or access by third parties not previously authorized.

MOWHTO WITH BIPLANAR CUT - GUIDE POSITIONING (STEP 1/3)

The following surgical technique illustrates the Activmotion S medial opening wedge high tibial osteotomy plate size 1 (ATxP1D). The same steps apply to the Activmotion S medial opening wedge high tibial osteotomy plate size 2 (ATxP2D).

1. **Guide positioning**

   Position the patient-matched (PM) cutting guide (ANC656) on the antero-medial surface of the tibia using the congruence of the PM cutting guide and the anterior and medial brackets.

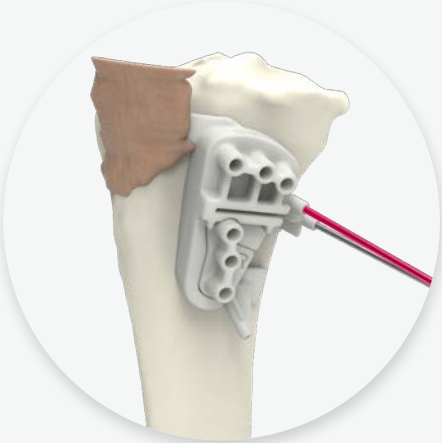
   Caution: Please do not modify the insertion of the patellar tendon.

2. **«Cutting K-wire» insertion**

   Insert a Ø2.2 mm K-wire (33.0222.200) in the «cutting K-wire» hole positioned on the medio-proximal bracket.

   To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

OPTION - STEP 3 BIS



Optional second «cutting K-wire»

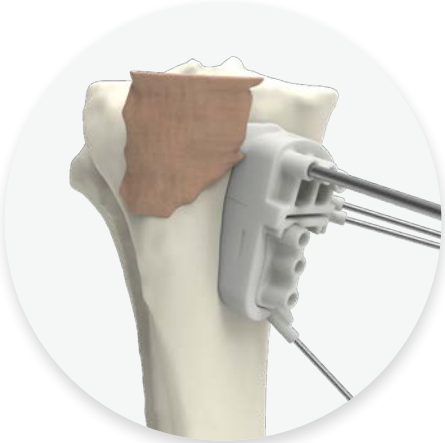
A second Ø2.2 mm K-wire (33.0222.200) can be inserted above the first one. It will secure the sawblade path.

3. **«Hinge K-wire» insertion**

   Insert a Ø2.2 mm K-wire (33.0222.200) in the «hinge K-wire» hole positioned on the medio-distal bracket.

   To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

   Check the position of the PM cutting guide by comparing the fluoroscopy shot with the PM surgical technique.



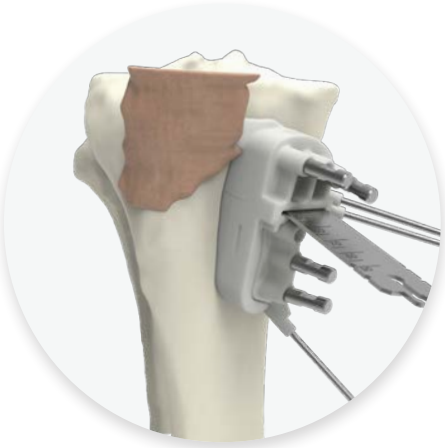
4. **Drill the holes**

   Drill bicortically with the Ø4.0 mm drill bit (ANC211) through the 3 distal holes of the PM cutting guide (4 holes for the ATxP2D) and monocortically (ANC211) through the 3 proximal holes (4 holes for the ATxP2D).

5. **Fixation pins insertion**

   Insert four long pins (ANC657), two in the proximal part of the PM cutting guide and two distal, by using a mallet.

MOWHTO WITH BIPLANAR CUT - CUTTING (STEP 2/3)



6. **Initiate the cut**

Insert the sawblade in the PM cutting guide slot and initiate the cut in the antero-posterior direction.

7. **Remove the proximal part of the PM cutting guide**

Remove the proximal long pins (ANC657) and the second «cutting K-wire» (33.0222.200).

Then remove the proximal part of the PM cutting guide (ANC656).

8a. **Finalize the cut**

Reinsert the sawblade and finalize the cut in medio-lateral direction.

Once the sawblade reaches the «hinge K-wire», the cut is complete.

8b. **Biplanar cut**

Insert the sawblade in the biplanar slot **(1)**. The cut must be bicortical.

9. **Remove the distal part of the PM cutting guide**

Remove the distal long pin (ANC657) and the «cutting K-wire» (33.0222.200). Then remove the distal part of the PM cutting guide (ANC656) by sliding it over the «hinge K-wire».

10. **Perform the opening**

Insert a patient-matched wedge (ANC956) or a metallic wedge for knee osteotomy (ANC019 to ANC023 and ANC025), to perform the opening.

☑ The patient-matched wedge is an option and **must be selected** when the case is uploaded on the portal.

MOWHTO WITH BIPLANAR CUT - PLATE FIXATION (STEP 3/3)

11a. **Plate positioning**

Insert two short pins (ANC774) into the two distal holes of the plate.

11b. **Plate positioning**

The planned osteotomy is reached when the holes of the bone are facing the holes of the plate. Insert two short pins (ANC774) in the most lateral and the most medial hole.

12. **Plate fixation**

Press the plate against the bone and use the countersink (ANC120-US) to prepare the first cortical of the two remaining holes.

ANC120-US

Insert two locking screws (ST4.5LxxD) using the screwdriver (ANC975) without locking them.

ANC975

13. **Finalize the assembly**

Finalize the assembly by inserting the remaining Ø4.5 mm locking screws (ST4.5LxxD).

A screw must be inserted right after removing a short pin (ANC774).

Proceed by inserting alternatively proximal and distal screws getting further and further away from the osteotomy site. Use the countersink (ANC120-US) to prepare the first cortical.

Then, remove patient-matched wedge (ANC956).

14. FINAL RESULT

Remove the hinge K-wire (33.0222.200).

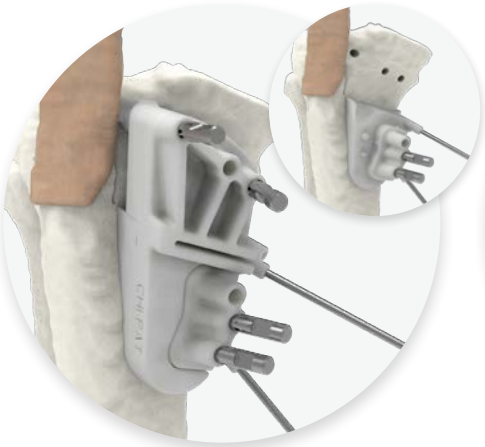
SURGICAL TECHNIQUE

ACL TUNNEL OPTION*

** The ligamentoplasty tunnel is an option and must be selected when the case is uploaded on the portal.*

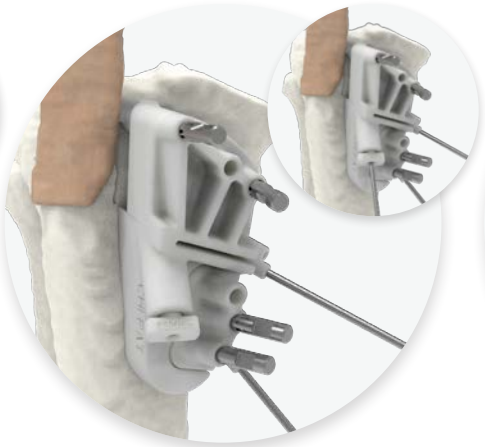
The following surgical technique illustrates the Activmotion S medial opening wedge high tibial osteotomy with ligamentoplasty plate (ALTxP1D). The same steps apply to the Activmotion S opening wedge high tibial osteotomy with ligamentoplasty and suture button plate (AETxP1D).

The surgical technique for a MOWHTO with ligamentoplasty follows the same first steps as the MOWHTO surgical technique from 1 through to 6 (see pages 8 and 9).



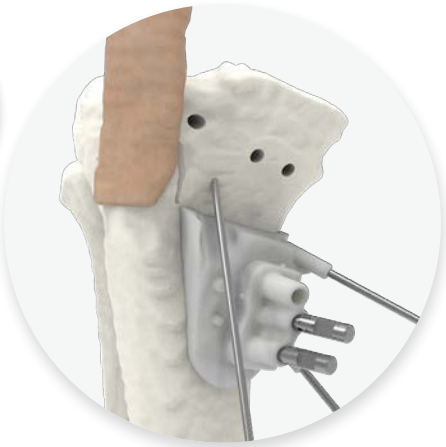
7a. **Remove the proximal part of the patient-matched cutting guide**

Remove the proximal long pins (ANC657). Then remove the proximal part of the patient-matched (PM) cutting guide (ANC656).



7b. **Position the second proximal part of the PM cutting guide**

Position the second proximal part of the PM cutting guide (ANC656) with the ACL tunnel and fix it with long pins (ANC657). Insert the holding plot (ANC1350) and a Ø2.2 mm K-wire (33.0222.200) into it.



7c. **Remove the second proximal part of the PM cutting guide**

Remove the proximal long pins (ANC657), the holding plot (ANC1350) and then remove the second proximal part of the PM cutting guide (ANC656) by sliding it over the ligamentoplasty K-wire.

The next steps of the surgical technique for a MOWHTO with ligamentoplasty, follow the same steps as the MOWHTO surgical technique from 8 to 13 (see pages 9 and 10).

13. **Finalize the assembly**

Finalize the assemby by inserting the remaining Ø4.5 mm locking screws (ST4.5LxxD).

A screw must be inserted right after removing a short pin (ANC774).

Proceed by inserting alternatively proximal and distal screws getting further and further away from the osteotomy site. Use the countersink (ANC120-US) to prepare the first cortical.

Remove the patient-matched wedge (ANC956).

14. FINAL RESULT

Remove the hinge K-wire (33.0222.200).

With the help of the ligamentoplasty K-wire (33.0222.200) previously placed, perform the ACL tunnel with your standard instruments.

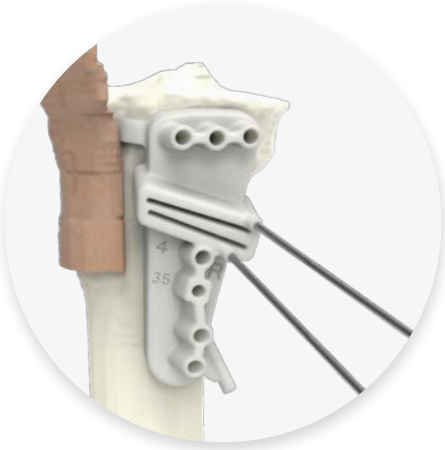
MCWHTO - GUIDE POSITIONING (STEP 1/3)

The following surgical technique illustrate the Activmotion S medial closing wedge high tibial osteotomy plate size 2 (BTxMD2D). The same steps apply to the Activmotion S medial closing wedge high tibial osteotomy size 1 (BTxMD1D), and to the Activmotion S lateral closing wedge high tibial osteotomy size 1 (BTxBD1D) and size 2 (BTxBD2D).

1. **Guide positioning**

Position the patient-matched (PM) cutting guide (ANC656) on the antero-medial surface (lateral surface for the lateral closing wedge) of the tibia using the congruence of the PM cutting guide and the anterior and medial brackets.

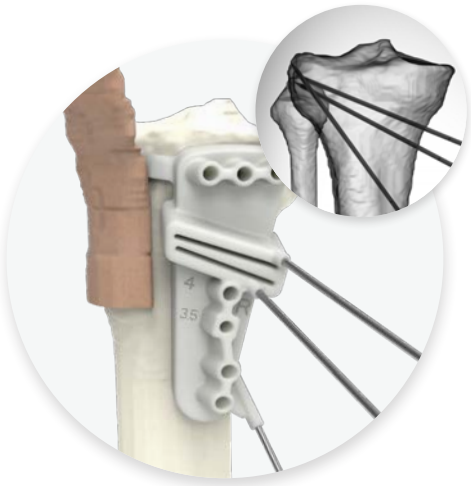
Caution: Please do not modify the insertion of the patellar tendon.



2. **«Cutting K-wires» insertion**

Insert the Ø2.2 mm K-wires (33.0222.200) in the «cutting K-wire» holes.

To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

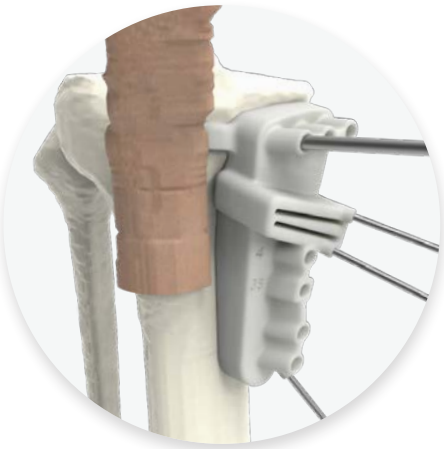


3. **«Hinge K-wire» insertion**

Insert the Ø2.2 mm K-wire (33.0222.200) in the «hinge K-wire» hole.

To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

Check the position of the PM cutting guide by comparing the fluoroscopy shot with the PM surgical technique.



4a. **Drill the Ø4.0 holes**

Drill bicortically with the Ø4.0 mm drill bit (ANC211) through the 3 distal round shape holes (3 holes for the BTxBD2D, and 1 hole for the size 1 BTxMD1D and BTxBD1D), and monocortically (ANC211) through the 3 proximal holes (3 holes for the BTxBD2D) and 2 holes for the size 1 BTxMD1D and BTxBD1D).

4b. **Drill the Ø3.5 holes**

Drill bicortically with the Ø3.5 mm drill bit (ANC1075) through the 1 distal square shape hole (1 distal square shape hole with the BTxMD1D, BTxBD2D and BTxBD1D).

5. **Fixation pins insertion**

Insert four long pins (ANC657), two in the proximal part of the PM cutting guide and two in the most distal holes (two for the BTxBD2D but only 1 in distal for the size 1 BTxMD1D and BTxBD1D), by using a mallet.

MCWHTO - CUTTING (STEP 2/3)

6a. **Initiate the cuts**

Insert the sawblade in the distal PM cutting guide slot and initiate the cut.

6b. **Initiate the cuts**

Insert the sawblade in the proximal PM cutting guide slot and initiate the cut.

7. **Remove the PM cutting guide**

Remove the long pin (ANC657) and the «cutting K-wires» (33.0222.200). Then remove the PM cutting guide (ANC656) by sliding it over the «hinge K-wire».

8. **Finalize the cuts**

Reinsert the sawblade in the previous cuts and finalize the cuts.

Once the sawblade reaches the «hinge K-wire», the cuts are complete.

9. **Remove the bone wedge**

Remove the bone wedge cut and remove the «hinge K-wire» (33.0222.200).

MCWHTO - PLATE FIXATION (STEP 3/3)

10a. **Plate positioning**

Insert two short pins (ANC774) into the two distal holes of the plate (2 for the BTxBD2D and 1 for the size 1 BTxMD1D and BTxBD1D).

10b. **Plate positioning**

The planned closing is reached when the holes of the bone are facing the holes of the plate. Insert two short pins (ANC774) in the most lateral and most medial hole.

11. **Plate fixation**

Press the plate against the bone and use the countersink (ANC120-US) to prepare the first cortical of the two remaining holes.

ANC120-US

Insert two locking screws (ST4.5LxxD) using the screwdriver (ANC975) without locking them.

ANC975

Insert the Ø4.5 mm non-locking screw (CT4.5LxxD-ST) using the screwdriver (ANC975) in the ramp oblong hole.

12. FINAL RESULT

Finalize the assembly by inserting the remaining Ø4.5 mm locking screws (ST4.5LxxD).

A screw must be inserted right after removing a short pin (ANC774).

Proceed by inserted alternatively proximal and distal screws getting further and further away from the osteotomy site. Use the countersink (ANC120-US) to prepare the first cortical.

ACWHTO SUPRA-TUBERCLE - GUIDE POSITIONING (STEP 1/3)

The following surgical technique illustrate the Activmotion S anterior closing wedge high tibial osteotomy plate size 1 (BATxMD1D) with a supra-tubercle technique.

1. **Guide positioning**

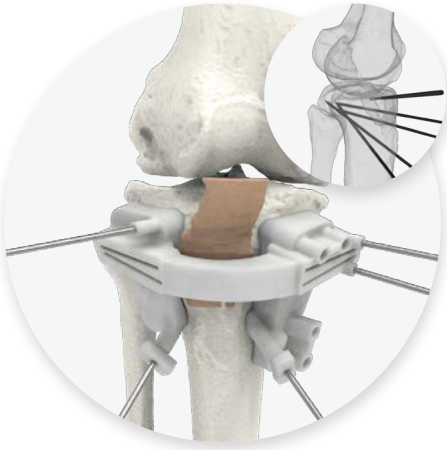
   Position the patient-matched (PM) cutting guide (ANC656) on the anterior surface of the tibia using the congruence of the PM cutting guide.

   Caution: Please do not modify the insertion of the patellar tendon.

2. **«Cutting K-wires» and «positioning K-wire» insertion**

   Insert a Ø2.2 mm K-wire (33.0222.200) in the «cutting K-wire» holes and in the «positioning K-wire » hole.

   To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

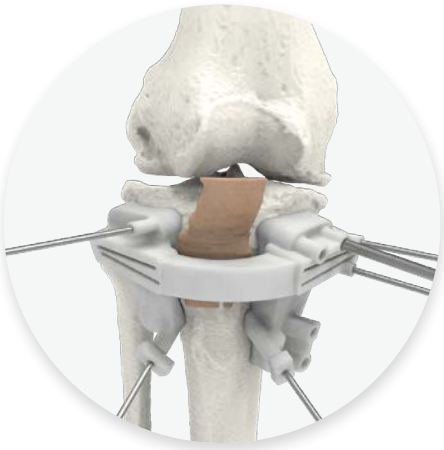


3. **«Hinge K-wires» insertion**

   Insert the holding plots (ANC1350) in the «hinge K-wire» holes and then a hinge K-wire (33.0222.200) into it.

   To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

   Check the position of the PM cutting guide by comparing the fluoroscopy shot with the PM surgical technique.



4a. **Drill the Ø 4.0mm holes**

   Drill monocortically with the Ø4.0 mm drill bit (ANC211) through the proximal holes of the PM cutting guide and bicortically (ANC211) through the round shape distal hole.

4b. **Drill the Ø 3.5mm holes**

   Drill bicortically with the Ø3.5 mm quick coupling drill bit (ANC1075) through the square shape distal hole.

5. **Fixation pins insertion**

   Insert three long pins (ANC657), two in the proximal part of the PM cutting guide and one in the distal hole, by using a mallet.

ACWHTO SUPRA-TUBERCLE - CUTTING (STEP 2/3)

6a. **Initiate the cut**

Insert the sawblade in the PM cutting guide slots in the medial part of the PM cutting guide and initiate the cut.

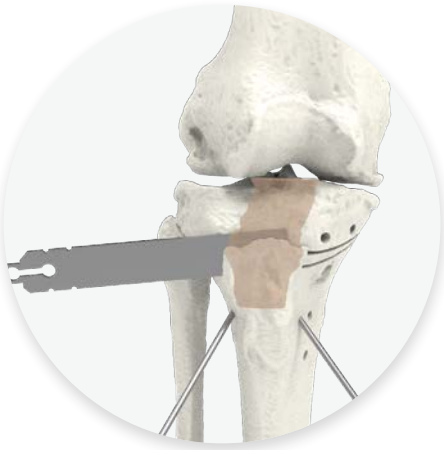
6b. **Initiate the cut**

Insert the sawblade in the PM cutting guide slots in the lateral part of the PM cutting guide and initiate the cut.

7. **Remove the PM cutting guide**

Remove the long pins (ANC657), the «cutting K-wires» (33.0222.200), «the positioning K-wire» (33.0222.200) and the holding plots (ANC1350).

Then remove the PM cutting guide (ANC656) by sliding it over the «hinge K-wires».



8. **Finalize the cut**

Realize the biplanar cut by hand.
Reinsert the sawblade and finalize the cuts. A slice of bone must be removed for the biplanar cut to allow the osteotomy closure.

Once the sawblade reaches the «hinge K-wires» the cuts are complete.

9. **Remove the bone wedge**

Remove the bone wedge cut and remove the «hinge K-wires» (33.0222.200).

ACWHTO SUPRA-TUBERCLE - PLATE FIXATION (STEP 3/3)

10a. **Plate positioning**

Insert a short pin (ANC774) into the distal hole of the plate.

10b. **Plate positioning**

The planned closing is reached when the holes of the bone are facing the holes of the plate. Insert two short pins (ANC774) in the proximal holes.

11. **Plate fixation**

Remove the most anterior short pin (ANC774). Press the plate against the bone and use the countersink (ANC120-US) to prepare the first cortical.

ANC120-US

Insert a locking screw (ST4.5LxxD) using the screwdriver (ANC975).

ANC975

Perform the same steps for the second proximal short pin (ANC774).

12. **Finalize the assembly**

Finalize the assembly by inserting a non-locking screw in the compression hole (CT4.5LxxD) thanks to the screwdriver (ANC975).

Replace the last remaining short pin (ANC774) by a locking screw (ST4.5LxxD).

Please, use the countersink (ANC120-US) to prepare the first cortical.

13. FINAL RESULT

SURGICAL TECHNIQUE

ACWHTO TRANS-TUBERCLE - TRANSPOSITION OF THE ATT (STEP 1/4)

The following surgical technique illustrate the Activmotion S anterior closing wedge high tibial osteotomy plate size 1 (BATxMD1D) with a trans-tubercle technique.

1. **Guide positioning**

Position the patient matched (PM) cutting guide (ANC656) for the elevation of the anterior tibial tubercle on the antero-medial surface of the tibia using the congruence of the PM cutting guide.

Caution: Please do not modify the insertion of the patellar tendon.

2. **«Positioning pins» insertion**

Insert Ø2.2 mm K wires (33.0222.200) in the «positioning K-wires» holes.

To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

Check the position of the PM cutting guide by comparing the fluoroscopy shot with the PM surgical technique.

3. **Initiate the cut**

Insert the sawblade in the PM cutting guide slot and initiate the cut.

4. **Remove the guide**

Remove the «positioning K-wires» (33.0222.200) and the PM cutting guide (ANC656).

5. **Finalize the cut**

Reinsert the sawblade and finalize the cut in proximal and distal, the cut must be bicortical.

Then realize the elevation of the ATT.

ACWHTO TRANS-TUBERCLE - GUIDE POSITIONING (STEP 2/4)

6. **Guide positioning**

Position the PM cutting guide (ANC656) on the antero-medial surface of the tibia using the congruence of the PM cutting guide and the brackets.

7. **«Cutting K-wires» insertion**

Insert the Ø2.2 mm K-wires (33.0222.200) in the «cutting K-wire» holes.

To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

8. **«Hinge K-wires» insertion**

Insert the holding plots (ANC1350) in the «hinge K-wire» holes and insert the Ø2.2 mm K-wires (33.0222.200).

To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

Check the position of the PM cutting guide by comparing the fluoroscopy shot with the PM surgical technique.

Steps 9 to 10 for the ACWHTO trans-tubercle follow the steps 4 to 5 of the ACWHTO supra-tubercle (see page 15) .

ACWHTO TRANS-TUBERCLE - CUTTING AND PLATE FIXATION (STEP 3 & 4/4)

11. **Initiate the cuts**

Insert the sawblade in the PM cutting guide slots to initiate the cuts.

Steps 12 to 17 of the ACWHTO trans-tubercle follow the steps 7 to 12 of the ACWHTO supra-tubercle (see pages 16 & 17).

18. FINAL RESULT

Reattach the Anterior tibial tubercle and fix it with two screws.
Please use the countersink (ANC120-US) to prepare the first cortical.

ACWHTO INFRA-TUBERCLE

The following surgical technique illustrate the Activmotion S anterior closing wedge high tibial osteotomy plate size 2 (BATxMD2D) with an infra-tubercle technique.

Steps 1 to 9 of the ACWHTO infra-tubercle follow the steps 6 to 14 of the ACWHTO trans-tubercle (see page 19)

10a. **Plate positioning**

Insert a short pin (ANC774) into the proximal hole of the distal part of the plate.

Remove the «hinge K-wires».

Caution: Please note that the most distal and proximal holes are not yet drilled in order to reduce the size of the PM cutting guide.

10b. **Plate positioning**

The planned closing is reached when the holes of the bone are facing the holes of the plate. Insert two short pins (ANC774).

11. **Plate fixation**

Press the plate against the bone and remove the proximal short pin (ANC774) near to the cut. Use the countersink (ANC120-US) to prepare the first cortical.

ANC120-US

Insert a locking screw (ST4.5LxxD) using the screwdriver (ANC975) without locking it.

ANC975

Restart the step with the second short proximal pin (ANC774).

12. **Finalize the assembly**

Insert the Ø4.5 mm compression screw (CT4.5LxxD) using the screwdriver (ANC975).

Remove the short distal pin (ANC774) et replace it by a locking screw (ST4.5LxxD).

Please, use the countersink (ANC120-US) to prepare the first cortical.

13. **Final Result**

Drill the last two holes of the plate with the guide gauge (ANC210) and the drill bit (ANC211).

14. FINAL RESULT

Insert a locking screw (ST4.5LxxD) using the screwdriver (ANC975).
Please use the countersink (ANC120-US) to prepare the first cortical.

MEDIAL DISTAL FEMORAL DEROTATION - GUIDE POSITIONING (STEP 1/3)

The following surgical technique illustrates the Activmotion S medial distal femoral derotation plate (JCTxM1D). The same steps apply to the Activmotion S lateral distal femoral derotation plate (JCTxL1D).

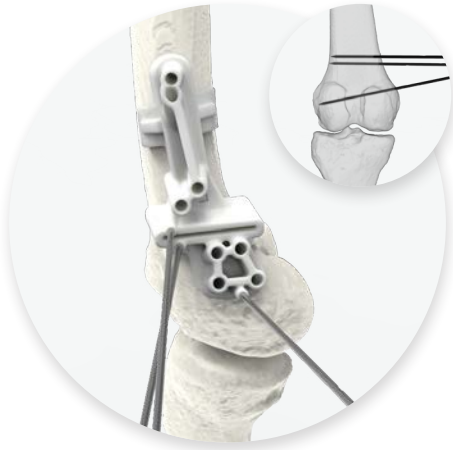
1. **Guide positioning**

   Position the patient-matched (PM) cutting guide (ANC717) on the medial surface (lateral surface for the JCTxL1D) of the femur using the congruence of the PM cutting guide and the anterior and posterior brackets.

2. **«Cutting K-wires» insertion**

   Insert the Ø2.2 mm K-wires (33.0222.200) in the «cutting K-wire» holes.

   To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

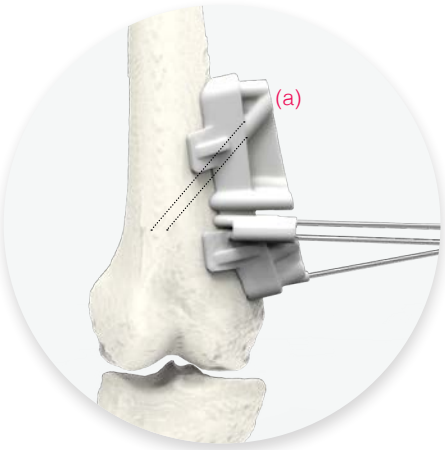


3. **Positioning K-wire insertion**

   Insert a Ø2.2 mm K-wire (33.0222.200) in the positioning K-wire hole.

   To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

   Check the position of the PM cutting guide by comparing the fluoroscopy shot with the PM surgical technique.



4. **Drilling of the holes**

   Drill bicortically with the Ø4.0 mm drill bit (ANC211) the proximal holes of the PM cutting guide and monocortically (ANC211) the distal holes.

   Caution: The oriented hole (a) on the proximal part of the PM cutting guide must be drilled monocortically.

5. **Fixation pin insertion**

   Insert four long pins (ANC657), two in the distal part of the PM cutting guide and two in the proximal part, by using a mallet.

MEDIAL DISTAL FEMORAL DEROTATION - CUTTING (STEP 2/3)

6. **Initiate the cut**

Insert the sawblade in the PM cutting guide slot and start the cut.

7. **Remove the PM cutting guide**

Remove the long pins (ANC657), the two cutting K-wires (33.0222.200) and the positioning K-wire (33.0222.200). Then remove the PM cutting guide (ANC717).

8. **Finalize the cut**

Reinsert the sawblade and finalize the cut. The cut should be bicortical.

MEDIAL DISTAL FEMORAL DEROTATION - PLATE FIXATION (STEP 3/3)

9a. **Plate positioning**

Insert two short pins (ANC774) into two proximal holes of the plate.

9b. **Plate positioning**

The planned derotation is reached when the holes of the bone are facing the holes of the plate. Insert two short pins (ANC774) in the distal part of the plate.

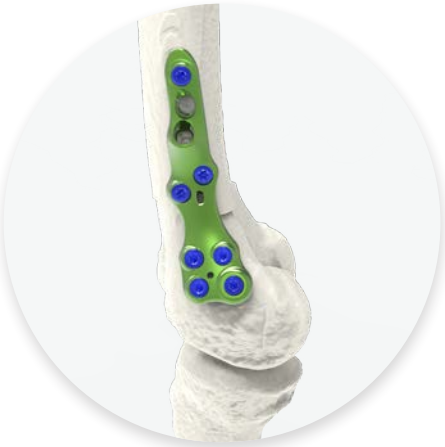
10. **Plate fixation**

Press the plate against the bone and use the countersink (ANC120-US) to prepare the first cortical of the distal and proximal holes the closest to the cut.

ANC120-US

Insert two locking screws (ST4.5LxxD) using the screwdriver (ANC975).

ANC975

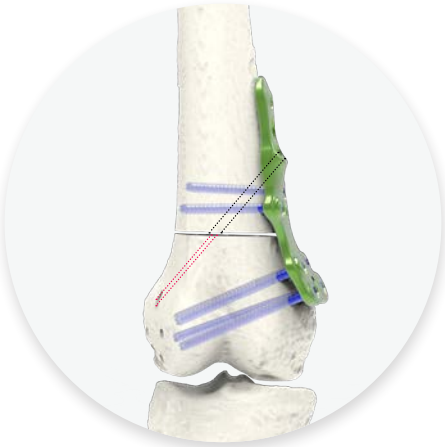


11. **Finalize the assembly**

Finalize the assembly by inserting the remaining Ø4.5 mm locking screws (ST4.5LxxD).

A screw must be inserted right after removing a short pin (ANC774).

Proceed by inserted alternatively proximal and distal screws getting further and further away from the osteotomy site. Use the countersink (ANC120-US) to prepare the first cortical.



12. **Insertion of the oblique screw**

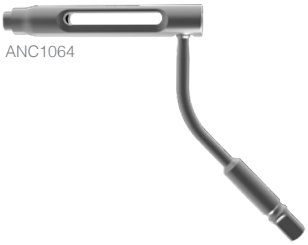
Complete the drilling of the oblique screw with the Ø3.5 mm drill bit (ANC1075) or the Ø4.0 mm drill bit (ANC1065) through the proximal hole previously performed.

Insert a non-locking screw (CT4.5LxxD) using the screwdriver (ANC975).

13. FINAL RESULT

Drill the oblong hole with the guide gauge (ANC1064) and the drill bit (ANC1075). The orientation of the drill bit must be taken into account as the compression of the oblong hole is not used (1).

Insert a non-locking screw (CT4.5LxxD) by using the screwdriver (ANC975).



MCWDFO - GUIDE POSITIONING (STEP 1/3)

The following surgical technique illustrate the Activmotion S medial closing wedge distal femoral osteotomy plate (JBTxM1D). The same steps apply for the Activmotions S lateral closing wedge distal femoral plate (JCTxL1D) and the medial closing wedge distal femoral plate (JCTxM1D).

1. **Guide positioning**

   Position the patient-matched (PM) cutting guide (ANC717) on the medial surface of the femur (medial for the JCTxM1D and lateral for the JCTxL1D), using the congruence of the PM cutting guide and the anterior and posterior brackets.

2. **«Cutting K-wires» insertion**

   Insert the Ø2.2 mm K-wires (33.0222.200) in the «cutting K-wire» holes.

   To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

3. **«Hinge K-wire» insertion**

   Insert a Ø2.2 mm K-wire (33.0222.200) in the «hinge K-wire» hole.

   To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

   Check the position of the PM cutting guide by comparing the fluoroscopy shot with the PM surgical technique.

4. **Drill the holes**

   Drill monocortically (ANC211) through the distal holes of the PM cutting guide and bicortically (ANC211) through the proximal holes.

5. **Fixation pins insertion**

   Insert four long pins (ANC657), two in the distal part of the PM cutting guide and two in the most proximal holes, by using a mallet.

MCWDFO - CUTTING (STEP 2/3)

6. **Realize the first cut**

Insert the sawblade in the distal PM cutting guide slot and initiate the cut. Once the sawblade reaches the «hinge K-wire», the cut is complete.

7. **Realize the second cut**

Insert the sawblade in the proximal PM cutting guide slot and initiate the cut. Once the sawblade reaches the «hinge K-wire», the cut is complete.

8. **Realize the biplanar cut**

Insert the sawblade in the anterior PM cutting guide slot to realize the biplanar cut.

☑ The biplanar slot is an option and **must be selected** when the case is uploaded on the portal.

9. **Remove the PM cutting guide**

Remove the long pins (ANC657) and the «cutting K-wires» (33.0222.200). Then remove the PM cutting guide (ANC717) by sliding it over the «hinge K-wire» (33.0222.200).

10. **Remove the bone wedge**

Remove the bone wedge.

11. **Remove the «hinge K-wire»**

Remove the «hinge K-wire» (33.0222.200).

MCWDFO - PLATE FIXATION (STEP 3/3)

12a. **Plate positioning**

Insert two short pins (ANC774) into the two proximal holes of the plate.

12b. **Plate positioning**

The planned closing is reached when the holes of the bone are facing the holes of the plate. Insert two short pins (ANC774) in the distal part of the plate.

13. **Plate fixation**

Press the plate against the bone and use the countersink (ANC120-US) to prepare the first cortical of the distal and proximal holes the closest to the cut.

ANC120-US

Insert two locking screws (ST4.5LxxD) using the screwdriver (ANC975) without locking them.

ANC975

14. **Finalize the assembly**

Finalize the assembly by inserting the remaining Ø4.5 mm locking screws (ST4.5LxxD).

A screw must be inserted right after removing a short pin (ANC774).

Proceed by inserted alternatively proximal and distal screws getting further and further away from the osteotomy site. Use the countersink (ANC120-US) to prepare the first cortical.

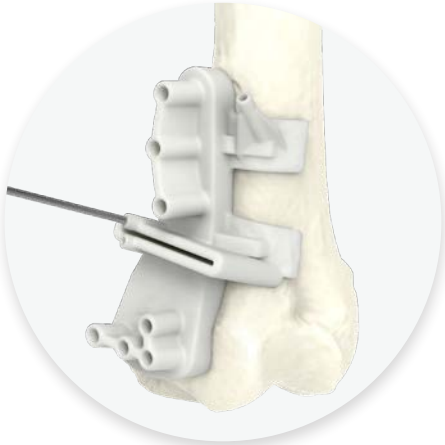
15. FINAL RESULT

LOWDFO - GUIDE POSITIONING (STEP 1/3)

The following surgical technique illustrate the Activmotion S lateral opening wedge distal femoral osteotomy plate (JATxL1D).

1. **Guide positioning**

Position the patient-matched (PM) cutting guide (ANC717) on the lateral surface of the femur using the congruence of the PM cutting guide and the anterior and posterior brackets.

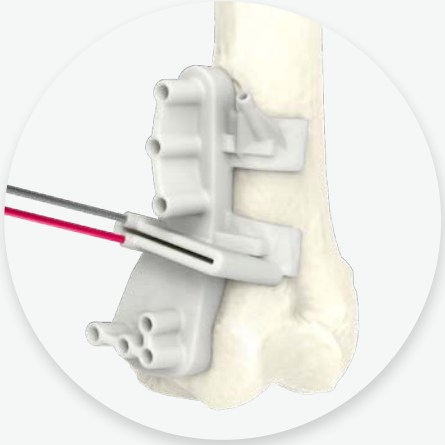


2. **«Cutting K-wire» Insertion**

Insert a Ø2.2 mm K-wire (33.0222.200) in the «cutting K-wire» hole.

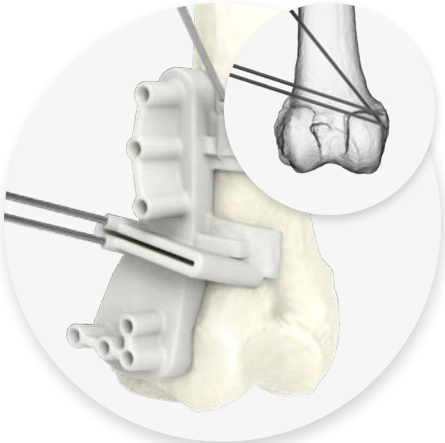
To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

OPTION - STEP 2 BIS



Optional second «cutting K-wire»

According to the PM surgical technique, a second K-wire hole can be added above the cutting slot in order to insert an optional Ø2.2 mm K-wire (33.0222.200). It will secure the sawblade path.

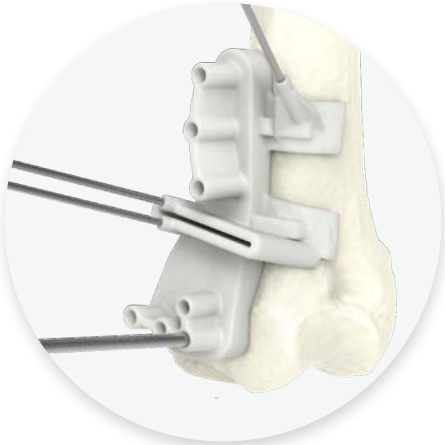


3. **«Hinge K-wire» insertion**

Insert the Ø2.2 mm K-wire (33.0222.200) in the «hinge K-wire» hole.

To check the insertion depth, measure the part of the K-wire remaining out of the hole and compare it to the one mentioned in the PM surgical technique.

Check the position of the PM cutting guide by comparing the fluoroscopy shot with the PM surgical technique.



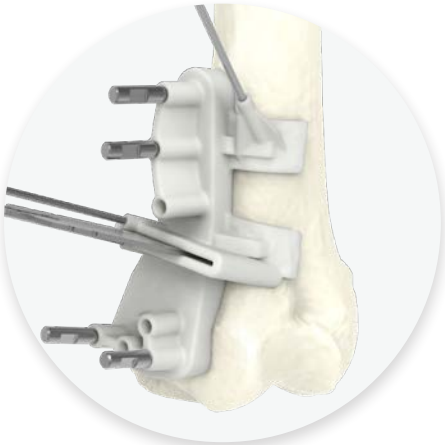
4. **Drill the holes**

Drill monocortically (ANC211) through the distal holes of the PM cutting guide and bicortically (ANC211) in the proximal holes.

5. **Fixation pins insertion**

Insert four pins (ANC657), two in the distal part of the PM cutting guide and two in the most proximal holes, by using a mallet.

LOWDFO - CUTTING (STEP 2/3)



6. **Realize the cut**

Insert the sawblade in the PM cutting guide slot and realize the cut. Once the sawblade reaches the «hinge K-wire» the cut is complete.

7. **Remove the PM cutting guide**

Remove the long pins (ANC657) and the «cutting K-wires» (33.0222.200). Then remove the PM cutting guide (ANC717) by sliding it over the «hinge K-wire» (33.0222.200).

8. **Perform the opening**

Insert a patient-matched wedge (ANC956) or a metallic wedge for knee osteotomy (ANC019 to ANC023 and ANC025), to perform the opening.

☑ The patient-matched wedge is an option and **must be selected** when the case is uploaded on the portal.

LOWDFO - PLATE FIXATION (STEP 3/3)

9a. **Plate positioning**

Insert two short pins (ANC774) into the two proximal holes of the plate.

9b. **Plate positioning**

The planned opening is reached when the holes of the bone are facing the holes of the plate. Insert two short pins (ANC774) in the most anterior and posterior holes.

10a. **Plate fixation**

Press the plate against the bone and use the countersink (ANC120-US) to prepare the first cortical of the distal and proximal screws the closest to the cut.

ANC120-US

Insert the locking screws (ST4.5LxxD) using the screwdriver (ANC975) without locking them.

ANC975

OPTION - STEP 10 BIS

10b. **Drill the remaining holes**

According to the size of the opening or the plate position, the holes of the plate the closest to the cut might not be included on the PM cutting guide.

Drill the remaining holes using the guide gauge (ANC998) and the Ø4.0mm drill bit (ANC211). Use the countersink (ANC120-US) to prepare the first cortical.

Insert a locking screw (ST4.5LxxD) by using the screwdriver (ANC975). Remove the wedge (ANC956).

11. **Finalize the assembly**

Finalize the assembly by inserting the remaining Ø4.5 mm locking screws (ST4.5LxxD).

A screw must be inserted right after removing a short pin (ANC774).

Proceed by inserted alternatively proximal and distal screws getting further and further away from the osteotomy site. Use the countersink (ANC120-US) to prepare the first cortical.

12. FINAL RESULT

Remove the «hinge K-wire» (33.0222.200).

REFERENCES

PSI

Ref.	Description
ANC656	Patient specific cutting guide for HTO
ANC717	Patient specific cutting guide for DFO
ANC927	Farabeuf pliers 170 mm
ANC657	Ø3.9 mm pin for cutting guide - L60 mm
ANC774	Ø3.9 mm pin for cutting guide - L35 mm

PSI OPTIONS

Ref.	Description
ANC1134	Patient specific cutting guide for iliac graft
ANC1135	Patient specific cutting guide for synthetic graft
ANC1184	Patient specific cutting guide for femoral head
ANC956	Patient specific wedge
ANC1350	Ø2.2 mm - L10 mm holding plot

OPTIONAL INSTRUMENTS

Ref.	Description	Qty
ANC652	HTO Alignment rod	3
ANC653	Support for HTO alignment rod	1

OPTIONAL BONE SUBSTITUTES

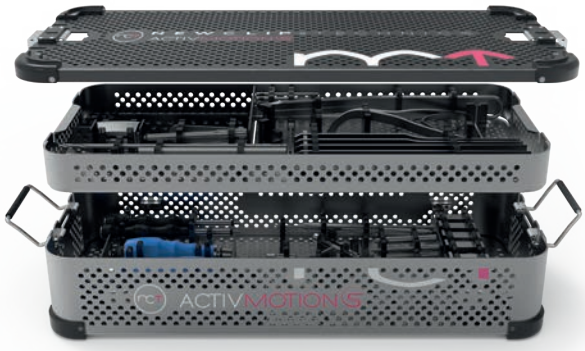
Ref.	Description	Qty
0106C01	Rounded wedge 06 mm	1
0108C01	Rounded wedge 08 mm	1
0110C01	Rounded wedge 10 mm	1
0112C01	Rounded wedge 12 mm	1
1414C01	Rounded wedge 14 mm	1

Manufacturer : BIOMATLANTE (FRANCE)
Class : III
Notified body: TUV - CE 0123

01xxC01

WARNING

All these products must be used with the Activmotion S instruments, make sure to order the **NewclipTechnics kit** which includes the necessary instruments.



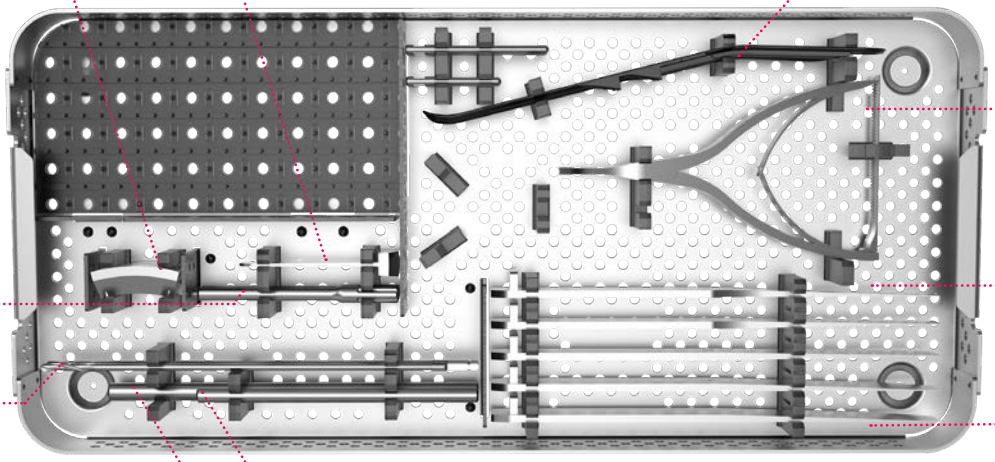
REMOVAL KIT

If you have to remove Activmotion S implants, make sure to order the **Newclip Technics removal set** which includes the following instruments:

- ANC975 : T20 screwdriver with US quick coupling system
- ANC352: Ø6 mm US quick coupling handle

An **extraction set** can also be ordered separately.

KIT DESCRIPTION



ANC014-2 NCT cutting guide – piece 2

ANC014-1 NCT cutting guide – piece 1

ANC214 Soft tissues protector

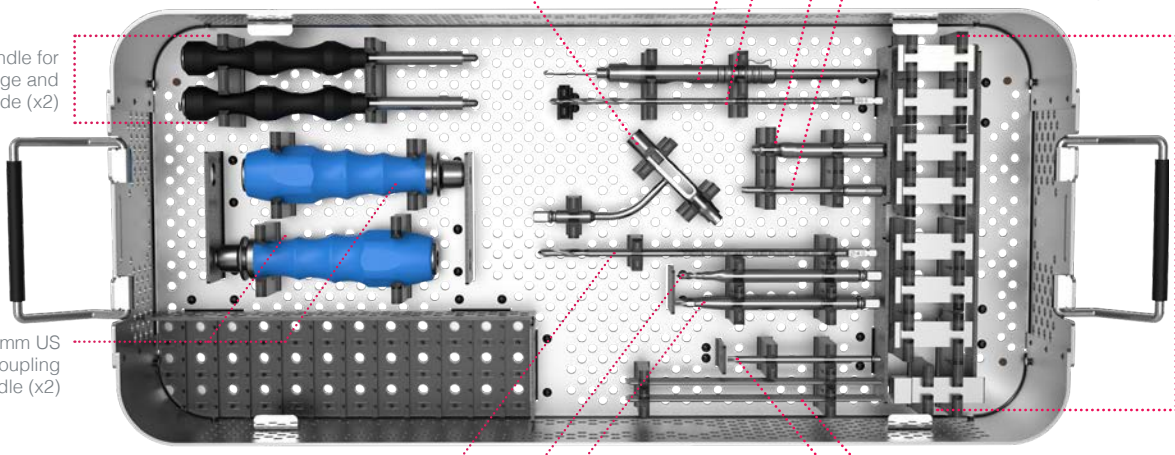
ANC990 Meary pliers

ANC1063 Ø4 mm mini invasive threaded guide (x2)

ANC1065 Ø4.0 mm quick coupling drill bit - L225 mm (x2)

Chisel Pauwels
ANC621 (10*240 mm)
ANC622 (25*240 mm)
ANC628 (15*240 mm)
ANC629 (20*240 mm)

Spacer for HTO with ACL replacement
ANC601 (Ø10 mm)
ANC649 (Ø8 mm)



ANC210 Length gauge for Ø4.5 mm screws

ANC1075 Ø3.5 mm quick coupling drill bit - L195 mm (x2)

ANC998 Ø4.0 mm threaded guide gauge (x3)

ANC1009 Reductor of drill guide for Ø2.2 mm pin (x2)

ANC1064 Ø3.5 mm non threaded bent guide gauge

ANC024 Handle for metallic wedge and cutting guide (x2)

Metallic wedge for knee osteotomy
ANC019 (6 mm)
ANC020 (8 mm)
ANC021 (10 mm)
ANC022 (12 mm)
ANC023 (14 mm)
ANC025 (16 mm)
ANC860 (18 mm)

ANC352 Ø6 mm US quick coupling handle (x2)

ANC211 Ø4.0 mm quick coupling drill bit (x3)

ANC120-US Ø4.2 mm countersink with US quick couling system

ANC975 T20 screwdriver with US quick coupling system (x2)

33.0222.200 Pin Ø2.2 L200 mm (x6)

ANC980 T20 screwdriver with AO quick coupling system

NEWCLIP TECHNICS

INNOVATION MEANS MOTION

Non-contractual pictures.

Manufacturer : Newclip Technics – Brochure EN – PSI ACTIVMOTION S – ED1 –02/2024 - Medical device EC: class IIa and IIb – CE1639 SGS BE
Read labelling and instructions before the use of Newclip Technics medical devices. These products must be handled and/or implanted by trained and qualified staff who have read the instructions before use.

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