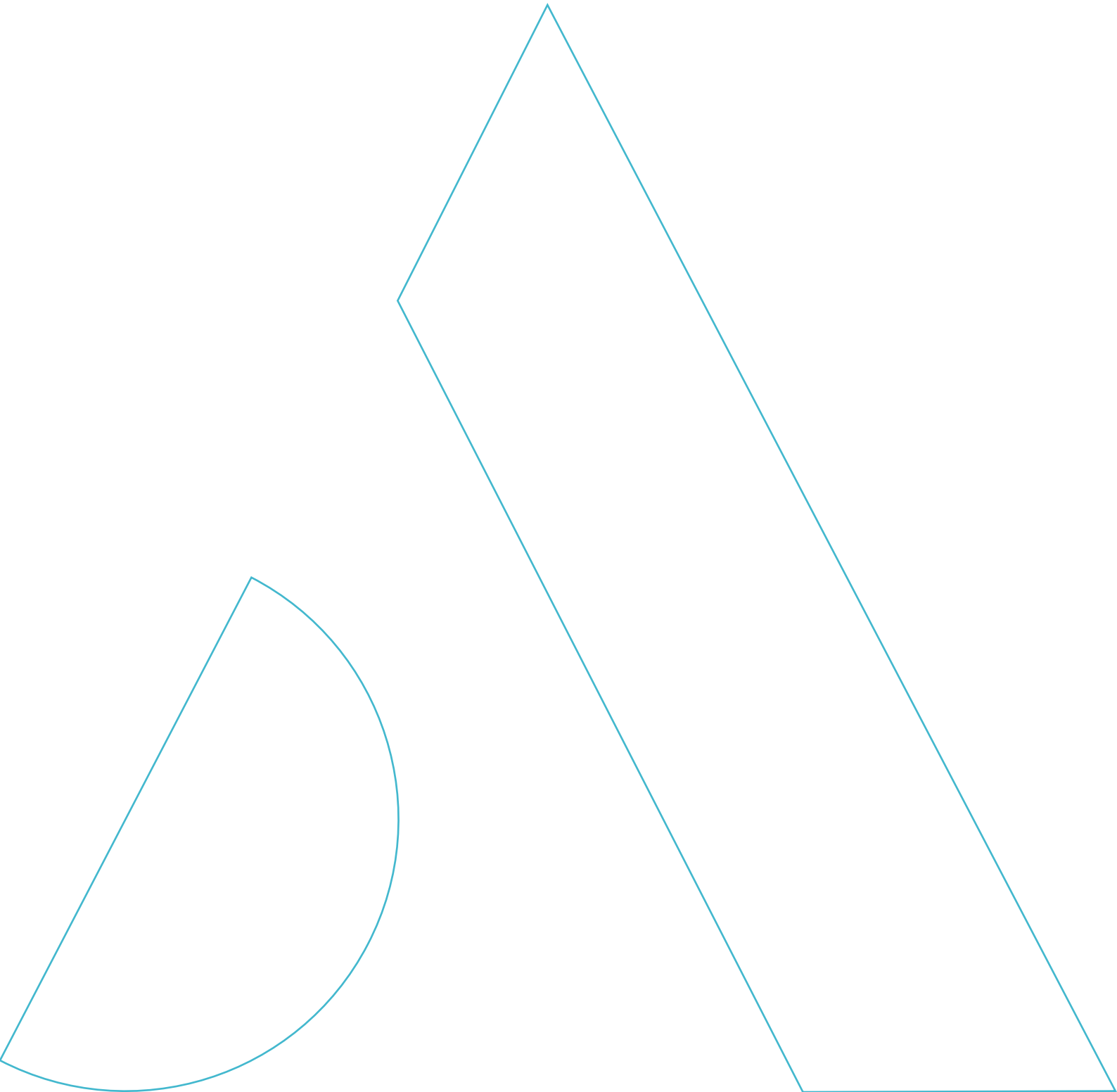
score
score as

amplitude

Surgical technique

Primary Total Knee System
Mobile bearing
Cemented or cementless

4T Tibial Instrumentation



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Introduction

- This surgical technique describes the use of the conventional instrumentation for SCORE, SCORE AS primary TKA implants.

- The steps below replace the sections on tibial alignment and tibial resection in the SCORE SCORE AS Surgical Technique documents TO.G.008 and TO.G.009, where the other steps are described.

- The 4T tibial instrumentation allows the surgeon to use four different techniques:
  - Intramedullary system;
  - Combined intramedullary system;
  - Combined extramedullary system;
  - Extramedullary system.

Not all devices presented in this Surgical Technique may be registered in your country. Please contact your Amplitude Sales Representative for availability.

Overview of the implant

- The SCORE / SCORE Allergy Solution (AS) TKS are PCL-sacrificing and mobile bearing implant for primary knee arthroplasty.
- The stability is provided by sagittal and frontal congruency through the extension to the flexion.
- The SCORE and SCORE II TKS is available in cemented or cementless versions.
- The SCORE AS TKS is coated with Titanium Nitride (TiN) ceramic to minimise allergic reactions. It is only available in cemented version.

1 Pre-operative planning

Using X rays and templates, you can determine concerning bone:

On the tibia:

- The choice between intramedullary and extramedullary aiming.
- The entry point of the intramedullary rod (coronal and sagittal view).
- The adaptation of the tibial stem to the metaphysis (in case of previous tibial osteotomy).
- The osteophytes.
- The severity of the compartment wear.
- The choice of an extension tibial stem, if required.
- The assessment of the baseplate size and the insert thickness.

NOTE

The provided templates have a 1:1 scale. Make sure the template scale matches the X-ray scale.

REMINDER

This surgical technique describes how to use the instrumentation properly. The surgeon is fully responsible for choosing the surgical approach and technique.

2 Intra-medullary (IM) and IM combined guides

Locating the diaphyseal canal:

• Based on the pre- operative planning, determine the entry point for the intramedullary (IM) canal and open the tibial canal with the Intramedullary Drill Bit.

• Assemble the Intramedullary Rod - Length 400 mm on the T Wrench and insert it into the canal, the landmark must always be visible.

NOTE

If the Intramedullary Rod – Length 400mm cannot be inserted or if there is a pre-existing THA, use the Intramedullary Rod - Length 250mm.

3 Intra-medullary (IM) guide

Assemble of the Intra-medullary guide:

• Insert the 4T Wheel/Tibial Resection Guide Support into the 4T Aiming With Tibial Bracket. Push the Green wheel until the chosen height.

NOTE

The 'UP' engraving on the 4T Wheel/Tibial Resection Guide Support corresponds to the support's superior side.

NOTE

The 'A' engraving on the 4T Aiming with Tibial Bracket must be on the anterior side.

• Insert the 4T Tibial Bracket on the assembly and screw the 4T Proximal AP Wheel on the top of the rod.

• Insert the 4T Tibial Resection Guide 0° or 3° (right or Left according to the operated side) on the 4T Wheel/Tibial Resection Guide Support. The value of the posterior slope is marked on top of the guide.

NOTE

Two 4T Aiming are provided in the instrumentation. The one used with the Tibial Bracket is the longest.

NOTE

The 4T Tibial Resection Guide – Right or Left is available on 3° of posterior (recommended) but also on 0° and 6° of posterior slope.

3 Intra-medullary (IM) guide

Adjustment of the resection:

• Insert the assembly onto the Intramedullary Rod - Length 400 mm, adjust its rotation relative to the anterior tibial tuberosity and then impact the tabs.

• Insert the 4T Tibial Stylus 2/10 (or 2/8 or 0/10) on the Tibial Resection Guide (make sure the clip is fully engaged).

• Adjust the resection height by using the stylus to palpate either the :

- Healthy side (10 mm cut relative to the chosen point),
- Worn side (2 mm cut relative to the chosen point (exit level of the sawblade)).

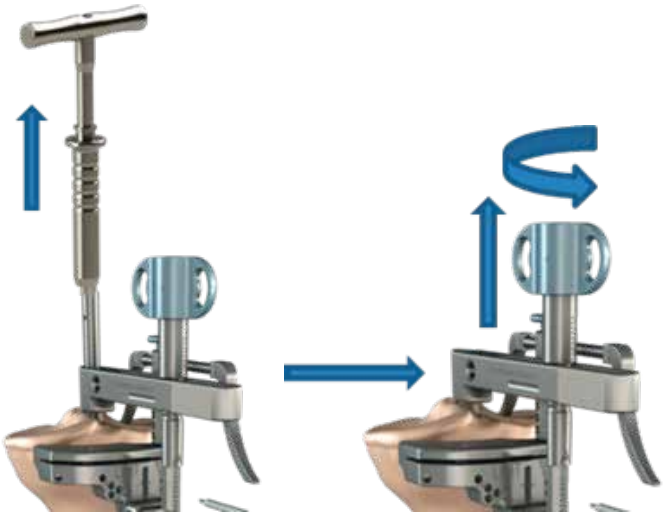
NOTE

For a different cutting height, the adjustment can be:

- A fast adjustment can be done by pushing the green wheel on the guide support (disengaging).
- A fine adjustment can be done by screwing the green wheel (the guide is graduated every 2mm).

• Check the height of the bone cut with the Resection Gauge inserted into the slot.

• Insert 2 Headless Pins Lg 80mm in the 0 mm holes with the Pin driver AO – Magnetic or the Pin Driver Zimmer Hall.



NOTE

It is possible to insert the Tibial Stylus on the lateral hole of the Tibial Resection Guide to palpate the medial plateau (and the opposite) by overpassing the Tibial bracket.

• Remove the Tibial Stylus.
• Unscrew and remove the AP Proximal wheel.
• Assemble the T Wrench on the IM Rod and remove the IM Rod.
• Position the “T” part of the slaphammer in the Tibial Bracket and remove it.
• Remove the all Tibial Jig by pressing the two blue buttons of the 4T Wheel/ Tibial Resection Guide Support.

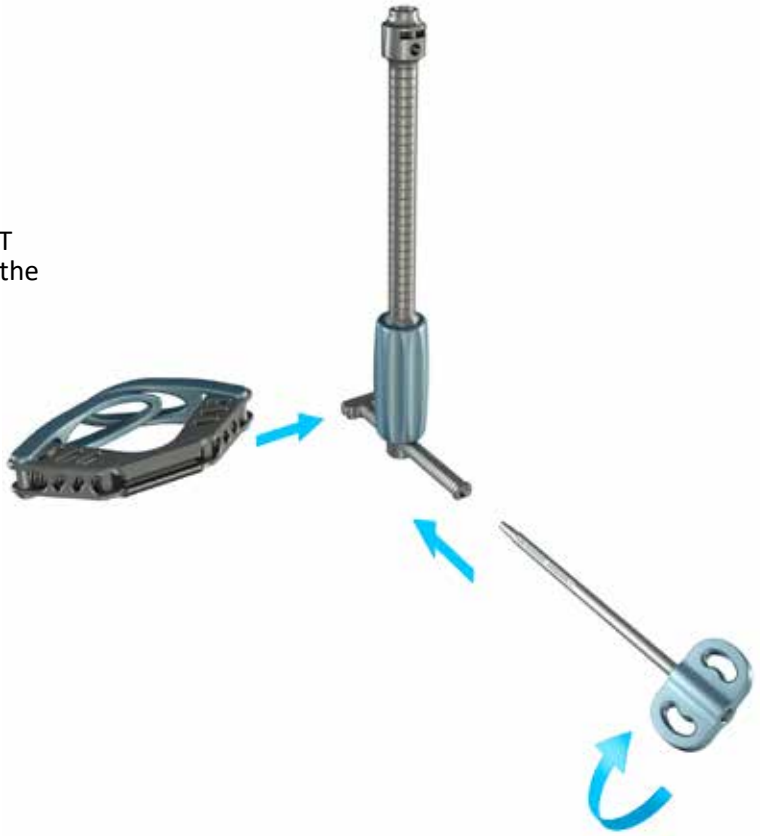
4 Combined Intra-medullary guide

Assemble of the Extra-medullary Guide:

• Screw the 4T Distal AP Wheel on the 4T EM Jig.

• Insert the 4T Rod for Bimalleolar Clamp into the 4T EM Jig and lock it with the 4T Distal AP Wheel.

- Assemble the 4T Malleolar Clamp on the 4T Rod for Bimalleolar Clamp and lock it with the 4T ML Wheel for Malleolar Clamp.



4 Combined Intra-medullary guide

Combined intra-medullary guide:

• Assemble the Intra-medullary jig as described in the paragraph “Tibial Intramedullary guide” and insert it in the assembly previously described. Screw the 4T Wheel for EM Jig.

• Open the 4T Malleolar Clamp and position it on the ankle (the self-holding in open position of the clamp makes it easier to be placed), close the Clamp and insert the assembly onto the Intramedullary Rod - Length 400 mm,

• Adjust its rotation relative to the anterior tibial tuberosity and then in the sagittal plane by aligning the rod parallel to the anterior tibial axis. Impact the tabs.

• Insert the 4T Tibial Stylus 2/10 (or 2/8 or 0/10) on the Tibial Resection Guide (make sure the clip is fully engaged).

• Adjust the resection height by using the stylus to palpate either the :

- Healthy side (10 mm cut relative to the chosen point),
- Worn side (2 mm cut relative to the chosen point (exit level of the sawblade)).

NOTE

For a different cutting height, the adjustment can be :
- A fast adjustment can be done by pushing the green wheel on the guide support (disengaging).
- A fine adjustment can be done by screwing the green wheel (the guide is graduated every 2mm).

- Check the height of the bone cut with the Resection Gauge inserted into the slot.
- Insert 2 Headless Pins Lg 80mm in the 0 mm holes.

NOTE

It is possible to insert the Tibial Stylus on the lateral hole of the Tibial Resection Guide to palpate the medial plateau (and the opposite) by over-passing the Tibial bracket.

NOTE

All wheels can be tightened with the H5 Screw driver.

5 Combined Extra-medullary guide

Assemble of the combined extra-medullary guide:

- For the combined extra-medullary jig, all the steps are identical to the combined intra-medullary guide, except that the 4T Tibial Bracket is directly impacted on the tibial eminence.
- Adjust its rotation relative to the anterior tibial tuberosity and then in the sagittal plane by aligning the rod parallel to the anterior tibial axis. Impact the tabs.
- Insert the 4T Tibial Stylus 2/10 (or 2/8 or 0/10) on the Tibial Resection Guide (make sure the clip is fully engaged).
- Adjust the resection height by using the stylus to palpate either the :
  - Healthy side (10 mm cut relative to the chosen point),
  - Worn side (2 mm cut relative to the chosen point (exit level of the sawblade)).

NOTE

For a different cutting height, the adjustment can be :
- A fast adjustment can be done by pushing the green wheel on the guide support (disengaging).
- A fine adjustment can be done by screwing the green wheel (the guide is graduated every 2mm).

- Check the height of the bone cut with the Resection Gauge inserted into the slot.
- Insert 2 Headless Pins Lg 80mm in the 0 mm.

NOTE

It is possible to insert the Tibial Stylus on the lateral hole of the Tibial Resection Guide to palpate the medial plateau (and the opposite) by over-passing the Tibial bracket.

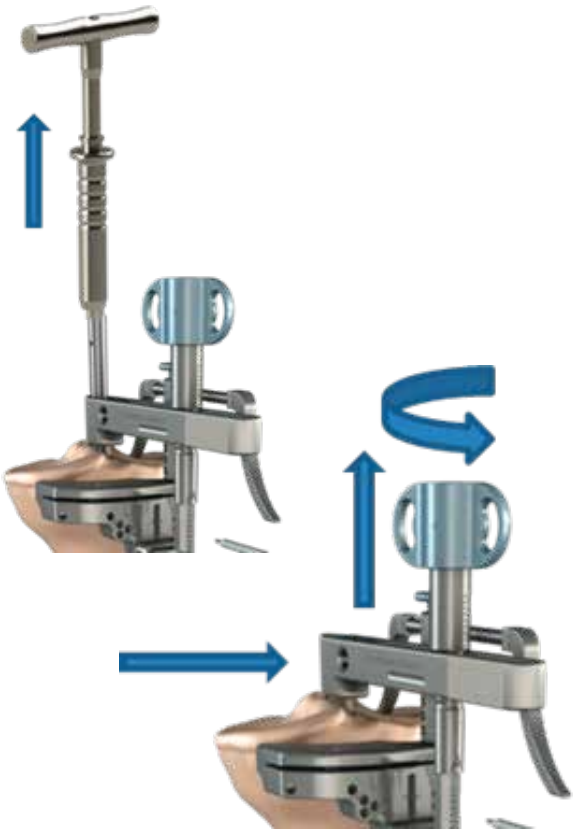
NOTE

All wheels can be tightened with the H5 Screw driver.

5 Combined Intra and Extra-medullary.

Removal of the tibial guide:

- Remove the Tibial Stylus.
- Unscrew and remove the 4T AP Proximal Wheel.
- For the Combined intra-medullary Guide, assemble the T Wrench on the IM Rod and remove the IM Rod.
- Position the “T” part of the slaphammer in the Tibial Bracket and remove it.
- Remove the all Tibial Jig by pressing the two blue buttons of the 4T Wheel/Tibial Resection Guide Support.

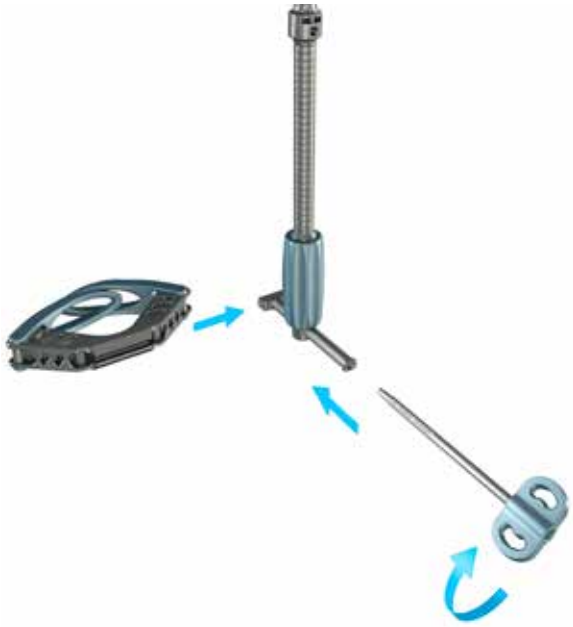


6 Extra-medullary guide

Assemble of the Extra-medullary Guide :

• Screw the 4T Distal AP Wheel on the 4T EM Jig.

• Insert the 4T Rod for Bimalleolar Clamp into the 4T EM Jig and lock it with the 4T Distal AP Wheel.



• Assemble the 4T Malleolar Clamp on the 4T Rod for Bimalleolar Clamp and lock it with the 4T ML Wheel for Malleolar Clamp.

• Insert the 4T Tibial Resection Guide 0° or 3° (right or Left according to the operated side) on the 4T Wheel/Tibial Resection Guide Support.

• Insert the 4T Wheel/Tibial Resection Guide Support into the 4T Aiming without tibial bracket. Push the Green wheel until the chosen height.

NOTE

The 'UP' engraving on the 4T Wheel/Tibial Resection Guide Support corresponds to the support's superior side.

NOTE

The 'A' engraving on the 4T Aiming with Tibial Bracket must be on the anterior side.

• Assemble the whole assembly on the 4T EM Jig and screw the 4T Wheel for EM Jig.

NOTE

Two 4T Aiming are provided in the instrumentation. The one used with the Tibial Bracket is the shortest.

6 Extra-medullary guide

Extra-medullary guide:

- Open the 4T Malleolar Clamp and position it on the ankle (the self-holding in open position of the clamp makes it easier to be placed), close the Clamp.
- Adjust its rotation relative to the anterior tibial tuberosity and then in the sagittal plane by aligning the rod parallel to the anterior tibial axis.
- Insert the 4T Tibial Stylus 2/10 (or 2/8) on the Tibial Resection Guide (make sure the clip is fully engaged).
- Adjust the resection height by using the stylus to palpate either the :
  - Healthy side (10 mm cut relative to the chosen point),
  - Worn side (2 mm cut relative to the chosen point (exit level of the sawblade)).

NOTE

For a different cutting height, the adjustment can be :
- A fast adjustment can be done by pushing the green wheel on the guide support (disengaging).
- A fine adjustment can be done by screwing the green wheel (the guide is graduated every 2mm).

- Check the height of the bone cut with the Resection Gauge inserted into the slot.
- Insert 2 Headless Pins Lg 80mm in the 0 mm holes.
- Remove the Tibial Stylus.
- Remove the all Tibial Jig by pressing the two blue buttons of the 4T Wheel/Tibial Resection Guide Support.

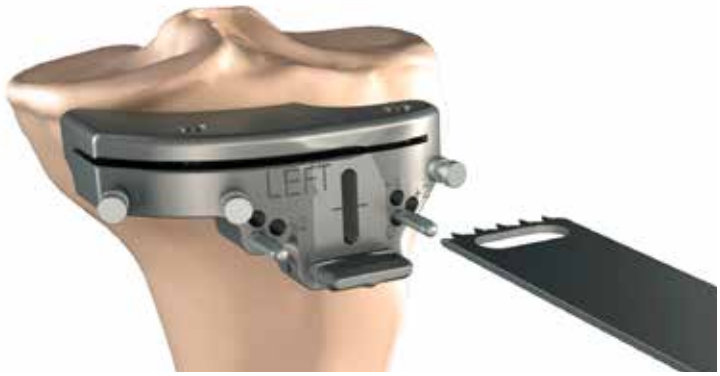
7 Tibial resection

Tibial cutting guide stabilisation:

• Push the Tibial Guide rest against the bone.

• Check the thickness of the resection with the Resection Gauge. If necessary, the Tibial Resection Guide can be shifted by +2 or +4 mm to increase the thickness of the resection.

• Secure the Tibial Resection Guide with almost 1 Headed Pin length 70mm.



NOTE

If the bone cortical is fragile or sclerotic, the holes can be prepared with the Long Drill bit Ø3.2 length 145 mm before to impact the Headed pins.

• For all tibial approaches, perform the tibial resection using a Medium or Large AMPLITUDE sawblade.

• Remove the Headed pins with the pin extractor for the Headed pins.

• Slide carefully the Tibial Cutting Guide on the headless pins, without removing them. They can be used later to increase the thickness of the resection (the + 2 and + 4 markers will then be used).

Instrumentation

Resection Tibial Set 4T 2-0299983

Item	Name	Product No.	Qty
1	4T Malleolar Clamp	2-0237500	1
2	4T Rod for bimalleolar Clamp	2-0237300	1
2	4T ML Wheel for Malleolar Clamp	2-0237400	1
3	4T Aiming Without Tibial Bracket	2-0239000	1
4	4T Aiming With Tibial Bracket	2-0236900	1
5	4T EM Jig	2-0237100	1
6	4T Distal AP Wheel	2-0237200	1
7	4T Wheel/Tibial Resection Guide Support	2-0236700	1
8	4T Wheel for EM Jig	2-0237000	1
9	4T Proximal AP Wheel	2-0236800	1
10	4T Tibial Resection Guide Left- 0°	2-0236400	1
10	4T Tibial Resection Guide Right - 0°	2-0236401	1
10	4T Tibial Resection Guide Left - 3°	2-0237600	1
10	4T Tibial Resection Guide Right - 3°	2-0237700	1
11	4T Tibial Stylus - 2/10	2-0236502	1
12	4T Tibial Bracket	2-0236600	1
13	Punch for Tibial Extension Stem - Size 1/2	2-0202812	1
13	Punch for Tibial Extension Stem - Size 3/4/5	2-0202835	1
13	Punch for Tibial Extension Stem - Size 6/7	2-0202867	1
13	Standard Trial Stem	2-0208900	3

Instrumentation

Resection Tibial Set 4T 2-0299983

Item	Name	Product No.	Qty
14	Punch Guide for Tibial Baseplate Size 1/2	2-0202612	1
14	Punch Guide for Tibial Baseplate Size 3/4/5	2-0202635	1
14	Punch Guide for Tibial Baseplate Size 6/7	2-0202667	1
15	Removable Handle for Punch Guide	2-0206200	2
16	Reamer for Tibial Extension Stem	2-0202700	1
17	Headless Pin length 80 mm	2-0201400	3
18	Headed Pin length 30 mm	2-0201301	3
19	Headed Pin length 70 mm	2-0201302	3
20	Pin Driver - Zimmer / Hall	2-0246300	1
20	Pin Driver AO - Magnetic	2-0246200	1
Instruments in option:			
	4T Tibial Stylus - 0/10	2-0236500	1
	4T tibial resection guide left – 6°	2-0237800	1
	4T right tibial resection guide – 6°	2-0237900	1
	4T Tibial Stylus - 2/8	2-0236501	1

NOTES

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Reference : TO.G.010/EN/B