



Surgical Technique

Total Knee Prosthesis

Noetos[®]



TORNIER
SURGICAL IMPLANTS



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Surgical technique

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NOTE:

Use the 3.5 mm x 50 mm headed pins to secure all cutting blocks/guides to bone.

Use the 3.5 mm x 80 mm guide pins to perform pin-guided bone cuts.

Surgical technique summary

HLS NOETOS® SURGICAL TECHNIQUE

The goal of total knee arthroplasty is not to rebuild the natural knee but to provide a new knee joint: the HLS NOETOS® KNEE REPLACEMENT which provides correct alignment and stability both in extension and flexion, and has specific kinematics.

However, to achieve this, it is important to respect the following sequential order of bone cuts:

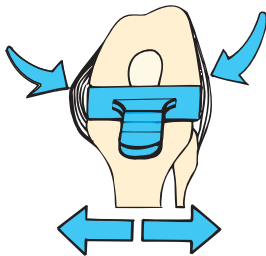
1. Tibial cut
2. Posterior femoral cut
3. Distal femoral cut
4. Anterior & Chamfer cuts

Flexion gap can be reproduced in extension thanks to the IM femoral guide.

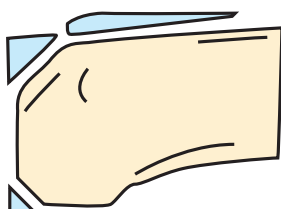
• Proximal tibial resection



• Ligament balancing in flexion

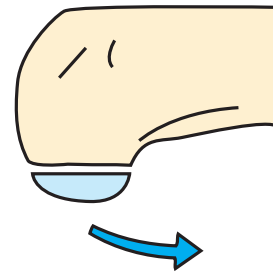


• Anterior & Chamfer cuts

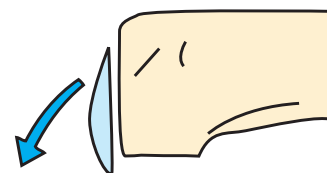


- Anterior femoral cut
- Posterior femoral Chamfer cut
- Anterior femoral Chamfer cut

• Posterior femoral cut



• Ligament balancing in extension & Distal femoral cut



- Distal femoral cut

• Patellar resection (optional)

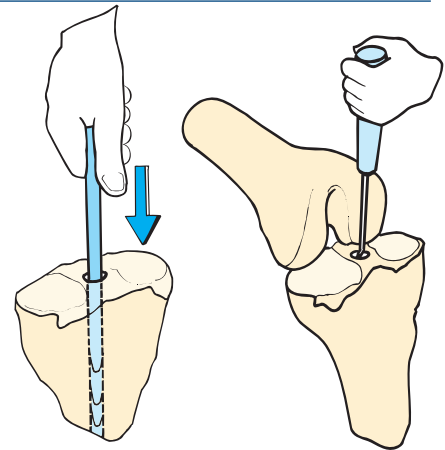
Surgical technique

TIBIAL PREPARATION

- **Medullary canal is entered at the ACL insertion site (fig. 1)**

Tibial plateau is exposed; ACL is resected; knee joint is dislocated anteriorly; both menisci are excised; osteophytes are removed.

Fig 1



- **Determine the tibial resection level (fig. 2)**
Insert the tibial cutting block over the intramedullary (IM) rod (fig. 3)

- The depth of the anticipated resection is evaluated on the convex side (healthy cartilage).

The resection level is established by the surgeon and may vary according to:

- type of deformity (valgus, varus)
- status of the reference cartilage.

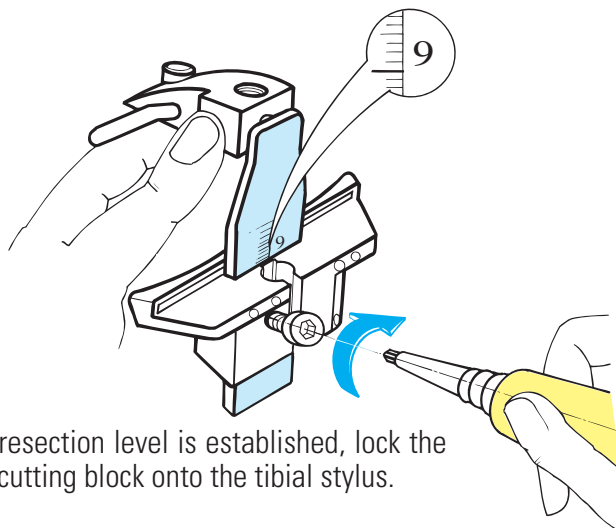


Fig 2

- Once resection level is established, lock the tibial cutting block onto the tibial stylus.

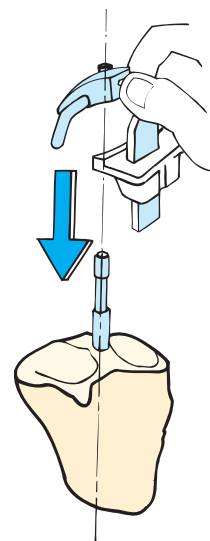


Fig 3

- Insertion of the tibial cutting block over the IM rod.

We recommend performing a 9 mm thick resection in patients with Medial Compartment Osteoarthritis and 6 mm in patients with Lateral Compartment Osteoarthritis.

Sometimes, other parameters have to be taken into account, such as rheumatoid arthritis, large tibial plateau, TKR following an osteotomy, etc.

• **Determine tibial rotation and insert a headed locking pin (fig. 4 & 5)**

$\varnothing 3,5 - L = 50 \text{ mm}$

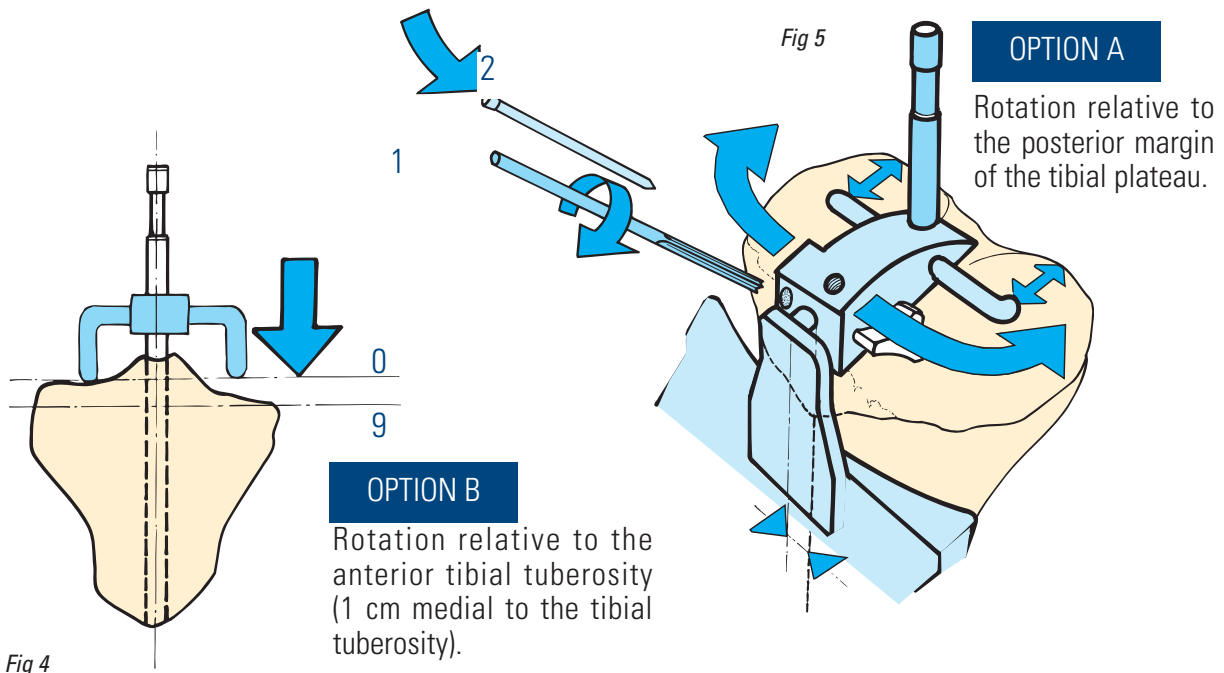


Fig 4

At least one of the stylus tips (opposite the bone loss) must be in contact with the joint surface to set the zero level. Be careful to maintain stylus tip contact when drilling the rotation locking pin hole (step #1, fig. 5).

• **Adjust the anterior-posterior position of the tibial cutting block (fig. 6)**

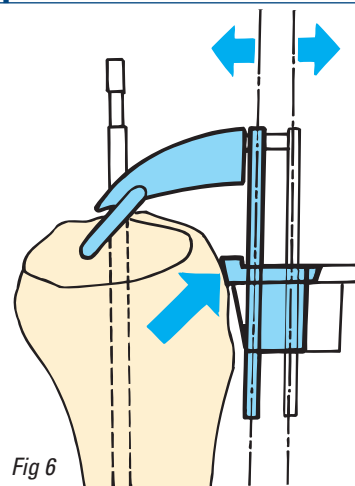
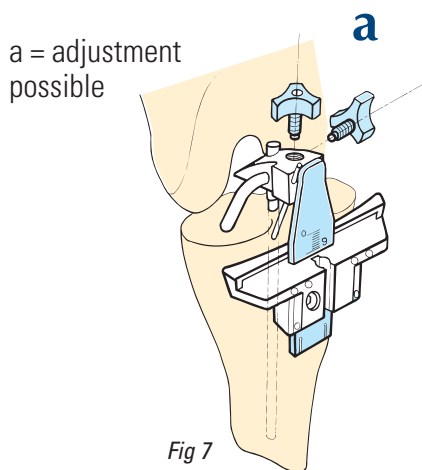
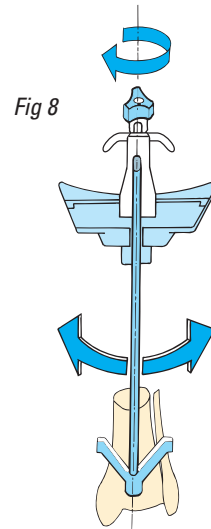


Fig 6

● **Orientation of the tibial cutting block in the frontal plane using the extramedullary (EM) alignment rod (fig. 7 & 8)**



b = 90° fixed position



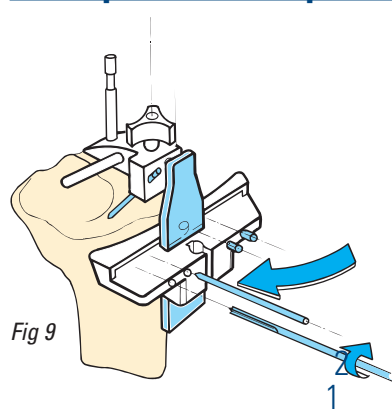
● The proximal knob (a) allows fine-tuning of the cutting block orientation using the EM alignment rod, and then locking (fig. 8), of the slope of the tibial cutting guide in the frontal plane. The lateral knob (b) allows locking of the cutting block at 90° to the medullary axis.

● The IM alignment rod helps stabilize the tibial stylus. Furthermore, it dictates a neutral tibial slope (cut at 90° in the sagittal plane).

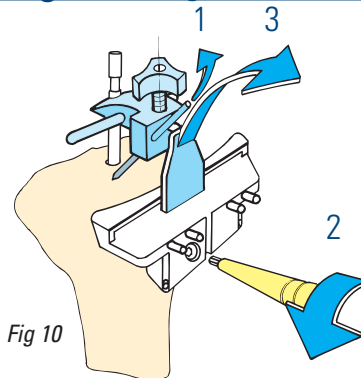
It is also possible to adjust the resection in the frontal plane (varus/valgus) using the EM alignment rod (option B).

The EM alignment rod allows establishment of varus/valgus alignment, whatever the morphology of the tibia (i.e. malunion, obstructed medullary canal, prior osteotomy...). The distal clamp of the EM rod must be slightly translated (10 mm) medial to the ankle bony landmarks, so as to be aligned with the axis of the first intermetatarsal space.

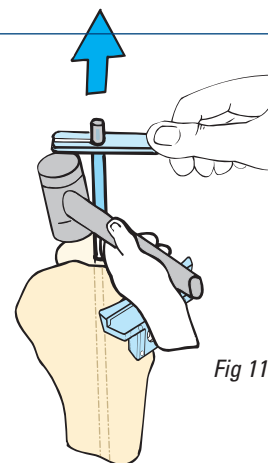
● **Insert guide pins (3.5 mm x 80 mm) (fig. 9) and remove all the instrument components except the cutting block (fig. 10 & 11)**



1 Drill holes
2 Insert guide pins.



1 Loosen the proximal knob and remove the headed locking pin.
2 Loosen the cutting block locking screw to disengage the cutting block from the stylus



Remove the IM alignment rod using the slotted hammer.

• **Proximal tibial cut at 90° (fig. 12) and tibial sizing (fig. 13)**

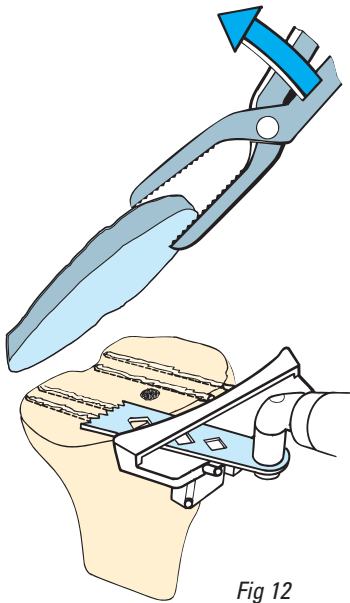


Fig 12

a. Tibial tray: FIXED or ROTATING design
 Check flatness of the resected surface (bony prominence is often present at the Gerdy tubercle) and then select the appropriate tray size using the tray trial.

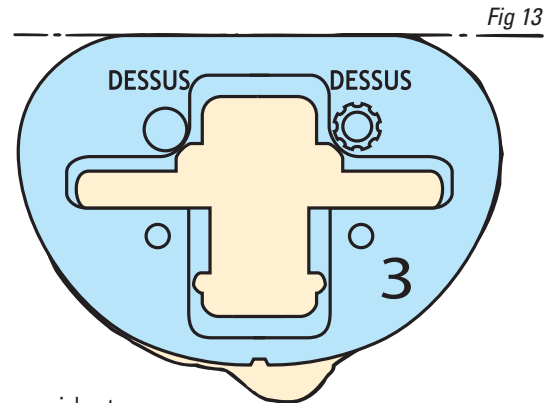


Fig 13

1 Firmly tighten the locking screw of the tibial cutting guide to prevent the guide from moving as a result of the vibrations caused by the saw.

2 Once resection is completed, remove the guide pins.

The selected tray trial must ensure optimal coverage of the resected surface with no overhang. Between two sizes, always select the smaller one.

FEMORAL PREPARATION

• **Remove all osteophytes (fig. 14)**

• **Locate anatomic position of the entry point to the medullary canal (fig. 15)**

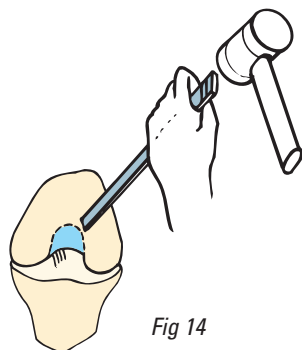


Fig 14

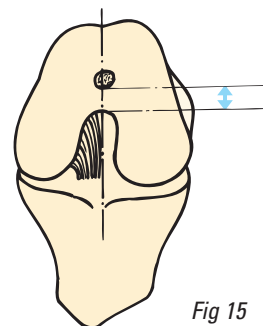


Fig 15

Remove any osteophytes from the margins of the intercondylar notch and the inner aspect of the femoral condyles. Expose the anterior cortex of the femur by lifting or resecting the synovial membrane.

The entry point to the medullary canal is located:

- in the axial alignment of the femoral shaft (A/P and M/L). Check the direction of the femoral canal on preoperative x-rays,
- usually, proximal to the femoral attachment of the posterior cruciate ligament (PCL).

The entry point should be large enough to allow proper orientation of the hand or power reamer.

• Drill the medullary canal (fig. 16)

The medullary canal is drilled using a hand reamer (or a power reamer).

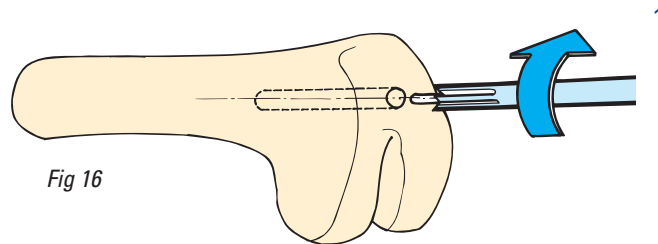


Fig 16

• Set the adjustable IM femoral guide to the appropriate valgus angle (fig. 17)

Do not use excessive force when correcting the femoral shaft angle and do not change this angle once the intramedullary rod is in place within the medullary canal.

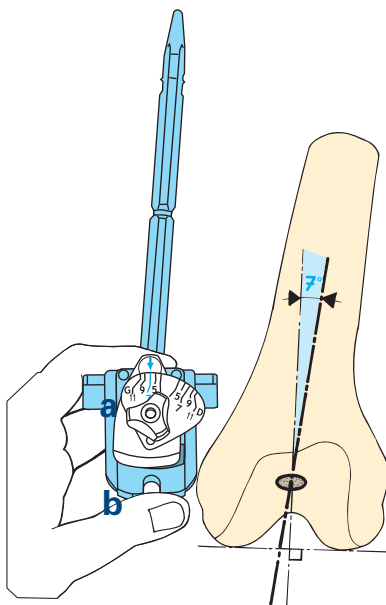
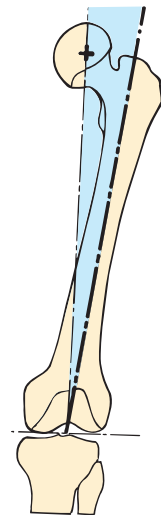


Fig 17

Correction of the valgus angle is determined by the measurements from preoperative x-rays.

The angles available are to be adjusted according to height, weight, and morphology of the patient:



Setting the adjustable IM femoral guide

- IM femoral guide settings can be adjusted in 2° increments.

Five angle options are available: 3, 5, 7, 9, 11 degrees, depending on:

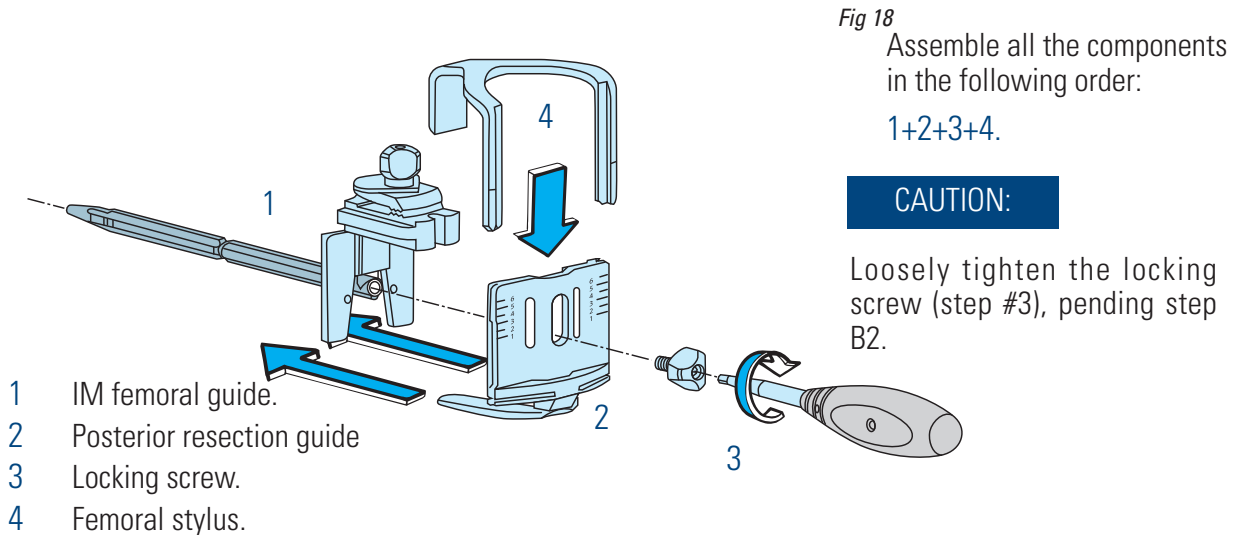
- measurement of the a angle (formed by the anatomic axis and mechanical axis)
- height, weight and anatomic features of the patient.

Practically, a 7° valgus angle is appropriate in a patient with Medial Compartment Osteoarthritis and 5° for a Lateral Compartment Osteoarthritis. However, this may vary if there are bone deformities.

POSTERIOR FEMORAL CUT

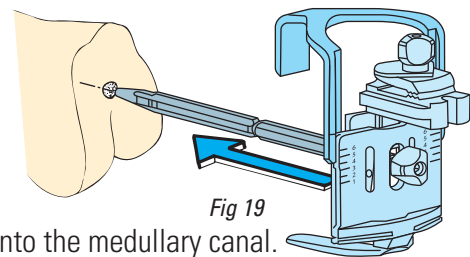
• Assembly and positioning of the posterior resection guide (fig. 18 & 19)

Insert the femoral stylus into the upper part of the posterior resection guide. The stylus should not be brought fully down to allow insertion of the IM rod into the medullary canal.



Using the posterior skids of the resection guide, preference is given to flexion gap assessment.

In contrast, using the anterior cortex as a reference point would have privileged the patellofemoral relationship.



Rotation of the posterior cut

- The femoral component can be positioned:
 - parallel to the posterior femoral condyles. In this case, the posterior skids of the resection guide must be flush with the surface of the posterior condyles.
 - in 0 to 8° external rotation (in 2° increments). An optional instrument is to be used.
 - NEVER in internal rotation.Only bony landmarks should be used. Rotation is not dictated by tensioning of the collateral ligaments.
- Rotation determination is a matter of personal philosophy:
 - parallel to the posterior femoral condyles
 - as a rule, 3 degrees of external rotation
 - parallel to the intercondylar line
 - perpendicular to the Whiteside line
 - asymmetry of the distal femoral cut reproduced in flexion: parallelepiped theory.

Resection level

- Proper fit of the prosthetic component is determined by the resection level: the resection of the posterior condyles.

In a genu valgum, it is generally recommended to remove a smaller amount of bone from the lateral femoral condyle than from the medial condyle (the parallelepiped theory may be used to determine the appropriate resection level).

Other surgeons will rather use the intercondylar line.

• Posterior cut (fig. 20)

When the tip (a) of the femoral stylus contacts the anterior cortex of the femur, the exact femoral component size can be read off from the lateral scale of the resection guide.

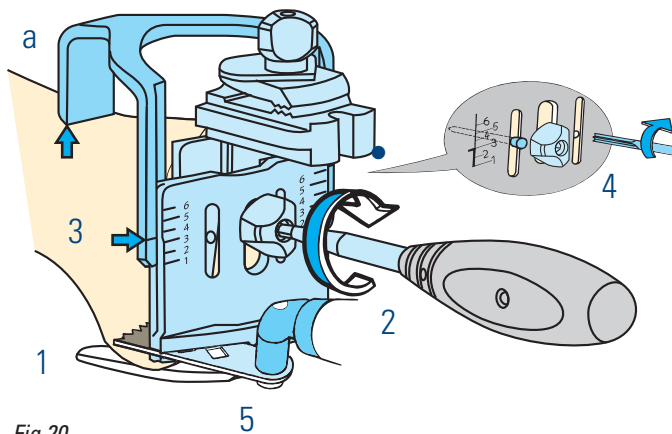


Fig 20

Remove the posterior resection guide, leaving the IM femoral guide in place.

1 Check that the two posterior skirts of the resection guide are flush with the surface of the posterior condyles.

2 Tighten screw.

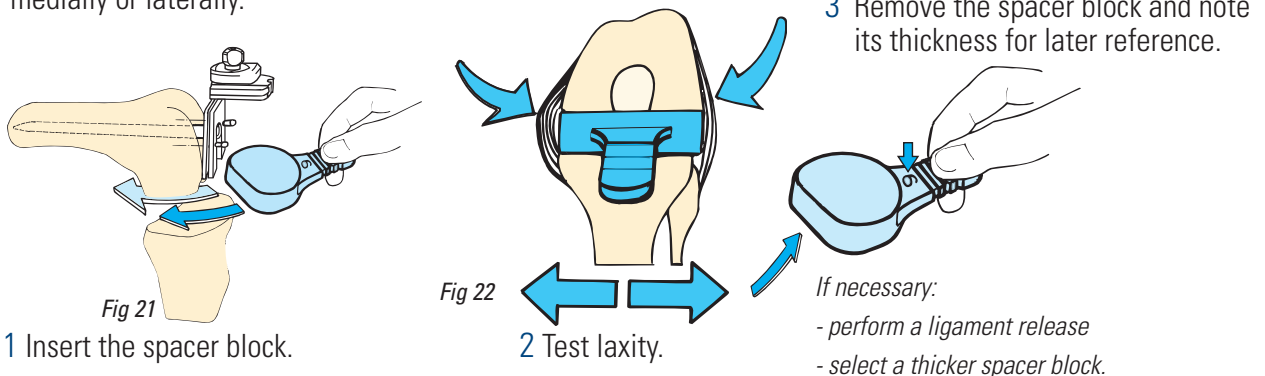
3 Read the A/P dimension of the femoral component from the lateral scale of the resection guide.

4 Insert headed pins.

5 Resect the posterior femoral condyles.

LIGAMENT BALANCING IN FLEXION

Insert the spacer block into the flexion gap created by the posterior cut. One must have a flexion gap that is rectangular in configuration and accommodates the spacer block without excessive laxity medially or laterally.



1 Insert the spacer block.

2 Test laxity.

3 Remove the spacer block and note its thickness for later reference.

If necessary:
- perform a ligament release
- select a thicker spacer block.

A dislocated patella will make it more difficult to properly evaluate the soft tissue balance.

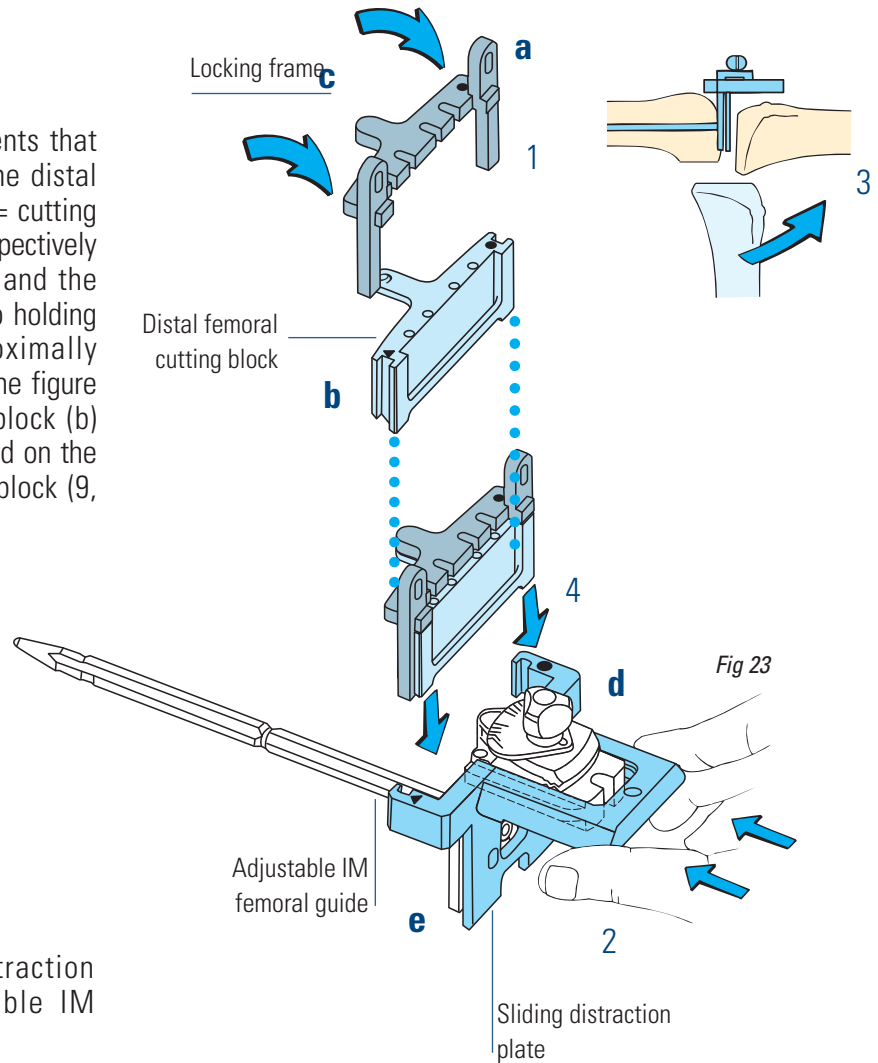
If the knee is too tight on the concave side, ligament release has been insufficient.

A slight residual laxity (not exceeding 1-2 mm) on the concave side when the knee joint is stressed, is acceptable. However it is, necessary to check the ligament balance in extension.

LIGAMENT BALANCING IN EXTENSION & DISTAL FEMORAL CUT

• Assembling the distractor (fig. 23)

1 Assemble the two components that are necessary to perform the distal cut, (a) = locking frame, (b) = cutting block. Be careful to mate respectively the triangular markings (s) and the circular markings (l). The two holding tabs must be directed proximally towards the femoral head. The figure mentioned on the cutting block (b) corresponds to that mentioned on the previously selected spacer block (9, 11, 13 mm).

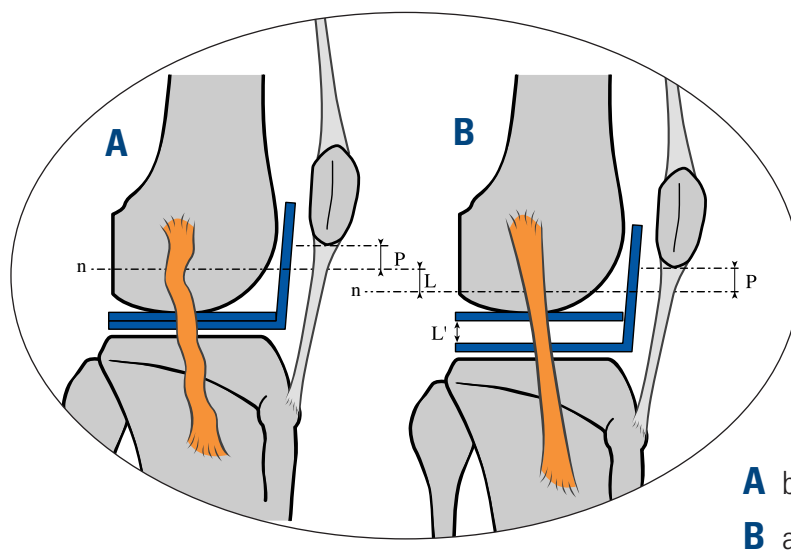


2 Assemble the sliding distraction plate (d) to the adjustable IM femoral guide (e).

3 Place the tibia in extension.

4 Insert the cutting block/frame (a+b) assembly into the rails of the sliding distraction plate.

FUNCTION OF THE DISTRACTOR



- The sliding distraction plate rests on the resected tibia.

The plate of the IM femoral guide rests on the less affected distal condyle or on both femoral condyles (according to the initial valgus angle and desired valgus angle). Distraction results in separation of the two plates. The distal cutting block is connected to the sliding distraction plate (which rests on the proximal tibia).

Therefore, when distraction is applied, the distal cutting block moves distally. The size of the distal cutting block is selected, based on the size of the "blue spacer" that was previously used in flexion.

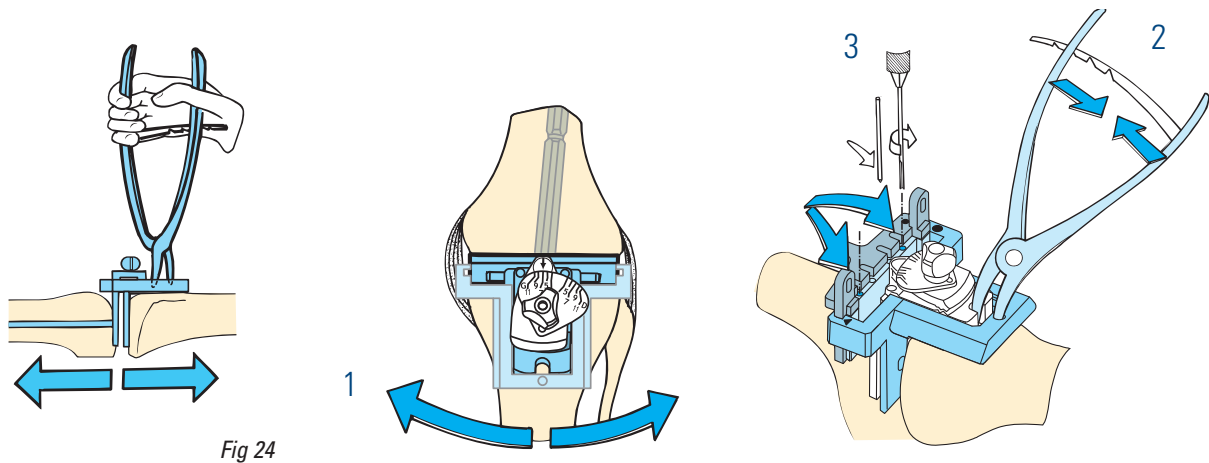
The #9 "blue spacer" (19 mm) that was used in flexion matches the 9 mm distal cutting block.

The #11 "blue spacer" (21 mm) that was used in flexion matches the 11 mm distal cutting block.

(Only a persistent flexion contracture that failed to be completely resolved by ligament release can justify the use of a larger distal cutting block (larger than the "blue spacer" used in flexion).

• Ligament balancing in full extension (fig. 24)

"No flexion contracture, no recurvatum".



- Ligament balancing in extension can be controlled with the distractor.

Place the knee in extension.

"No laxity in extension".

- 1 Test laxity in extension.
- 2 Distraction may be applied if the knee is loose both medially and laterally, to achieve proper tensioning of the collateral ligaments.
Check for absence of laxity in extension.
- 3 Drill holes for the two lateral pins. The medial two pin holes will be drilled only after the knee has been flexed again to avoid damage to the popliteal vessels.

- The distractor acts as a "control tower". It allows precise assessment of the tibiofemoral alignment and control of soft-tissue balancing in extension.

If there is laxity on the convex side only, place the knee in flexion again and further release the concave side.

In case of severe medial and lateral laxity, use the distraction forceps to move the distal femoral cut level distally.

This will avoid the use of a very thick polyethylene tibial insert (which may result in impingement of the PE insert upon the patella in flexion).

Do not insert the distal cutting block before ligament balance has been checked in extension, particularly if distraction has been applied.

• Removal of distractor components (fig. 25, 26 & 27)

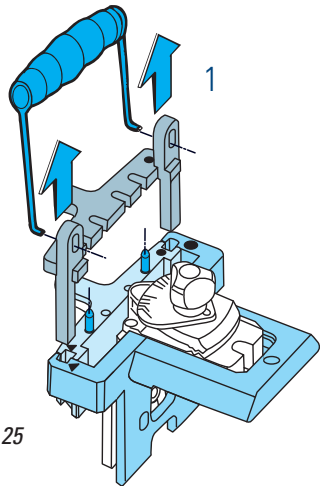


Fig 25

1 Locking frame.

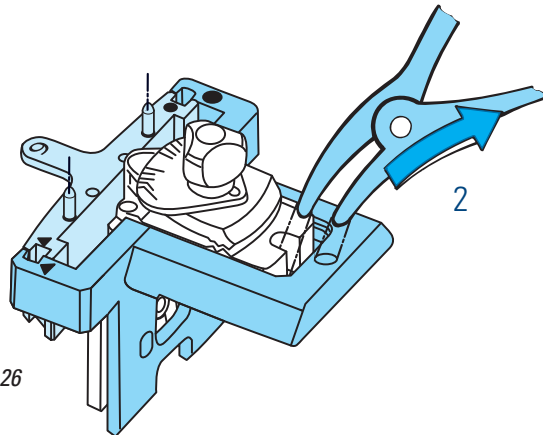


Fig 26

2 Distraction forceps.

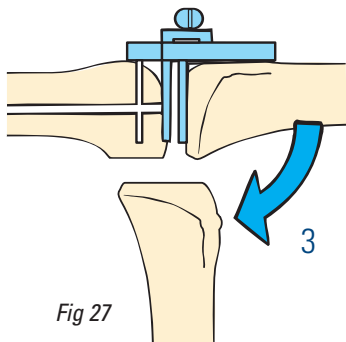
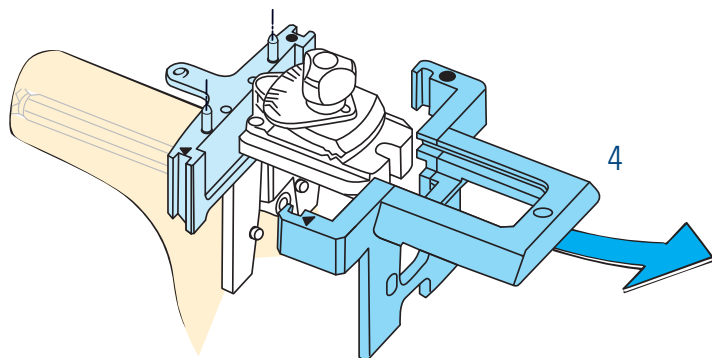


Fig 27

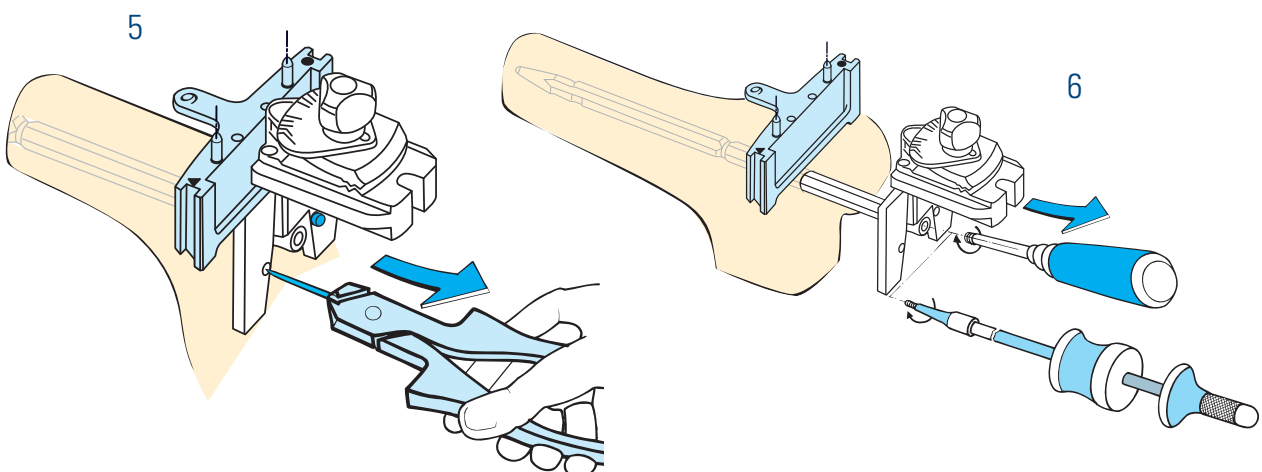
3 Place the knee in flexion.



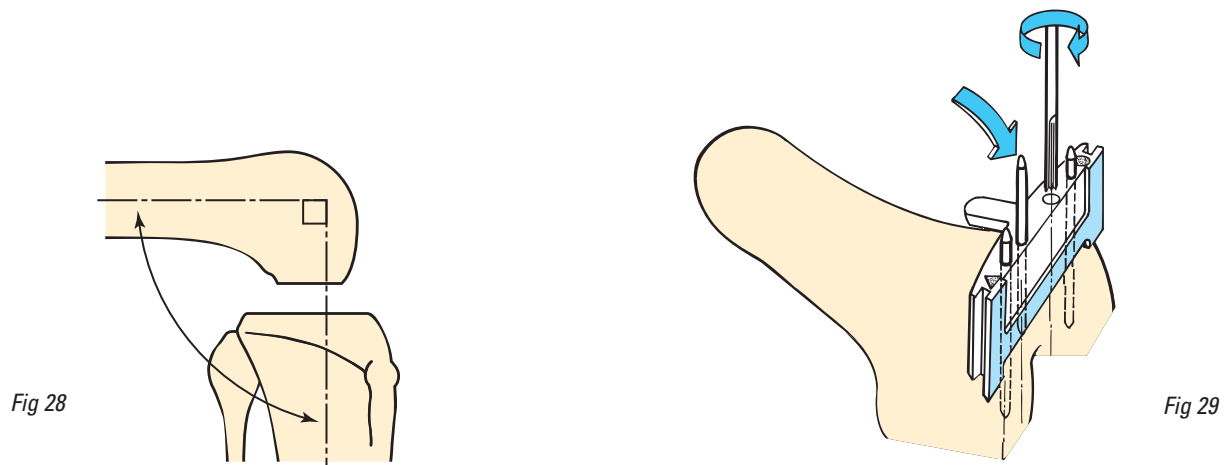
4 Remove the sliding distraction plate.

5 Remove the headed pins from the adjustable IM femoral guide.

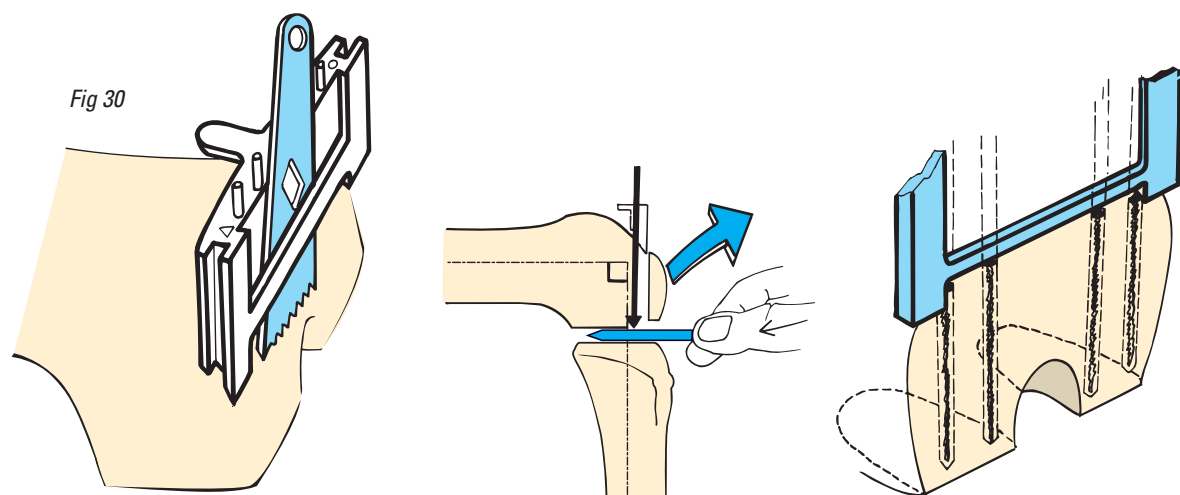
6 Remove the adjustable IM femoral guide using the handle of the chamfer resection guide or the slap hammer and its adaptor.



- **Median pin hole drilling in flexion (fig. 28 & 29)**



- **Distal femoral cut (fig. 30)**

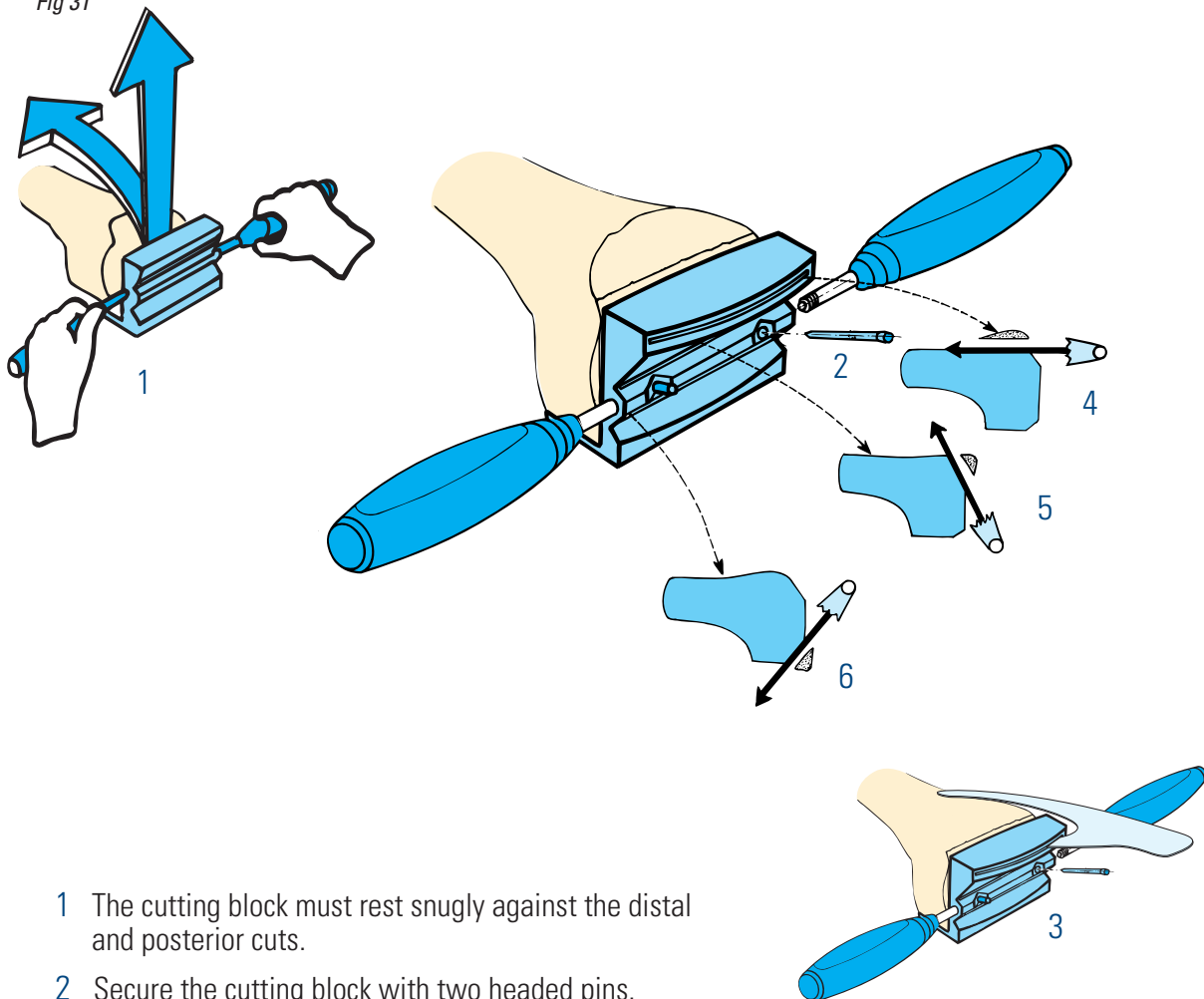


- Carefully protect the tibia by placing an osteotome on the cut surface. Once resection is completed, remove the guide pins.

Fig. 30: Pin-guided bone cuts are highly accurate and reproducible.

ANTERIOR & CHAMFER CUTS

Fig 31



- 1 The cutting block must rest snugly against the distal and posterior cuts.
- 2 Secure the cutting block with two headed pins.
- 3 Check the anterior femoral cut with the visualization wing.
- 4 } Accurate anterior and chamfer cuts
- 5 } can be achieved through the cutting block.
- 6 }

- Check A-P size with the visualization wing. The visualization wing must rest flush on the anterior femoral cut.

In case of hesitation between two sizes, the smaller one should be selected. However, in no case should the saw blade pass under the metaphyseal cortex. Great caution should be used when externally rotating the femoral component (never forget to also palpate the lateral side).

FEMORAL NOTCH RESECTION

- 1 Insert the trial femoral component.
- 2 Connect the detachable handle to the notch resection guide and position the guide on the anterior part of the femoral trial.
- 3 Insert guide pins into the holes of the guide.
- 4 Perform the pin-guided notch resection with an osteotome. The guide pins ensure accurate resection.
- 5 Remove the guide pins.
- 6 Remove the notch resection guide.
- 7 **CAUTION:**

Do not forget to resect the small chamfer of the intercondylar notch with a small osteotome.

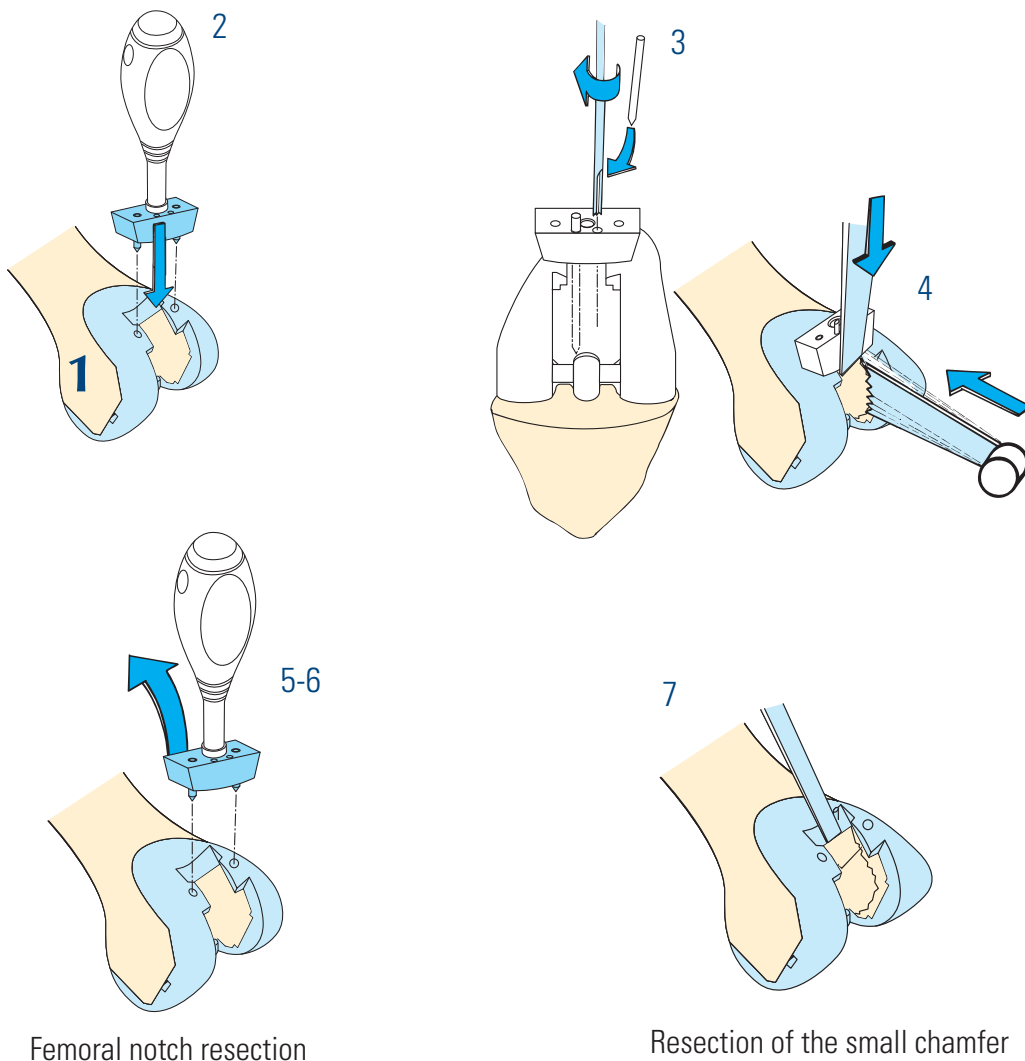


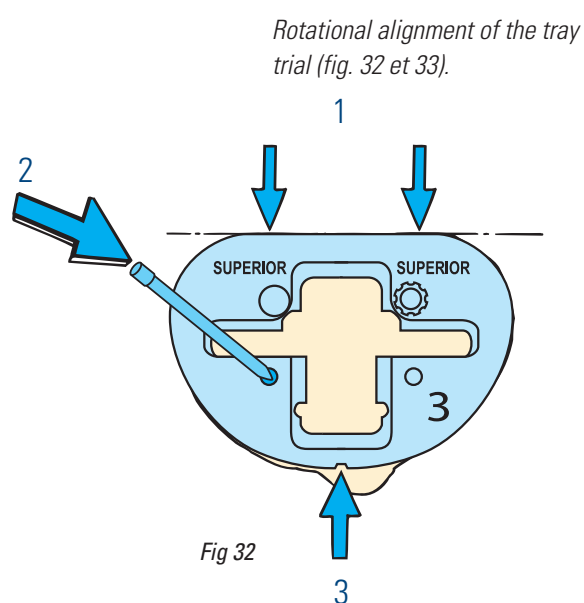
Fig 35

- Guide pins limit the depth of the resection. Once step 4 is completed, the entire length of the guide pins should be clearly visible.

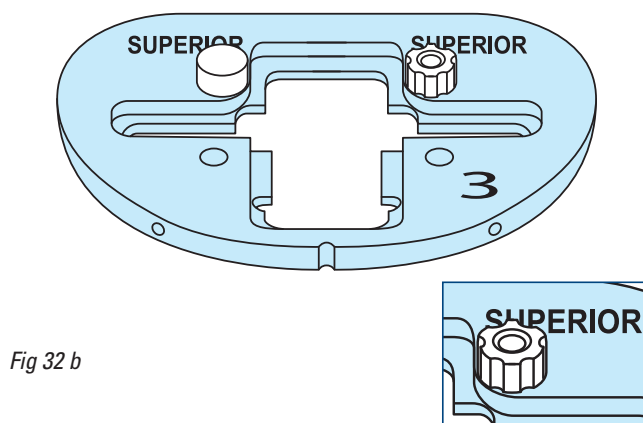
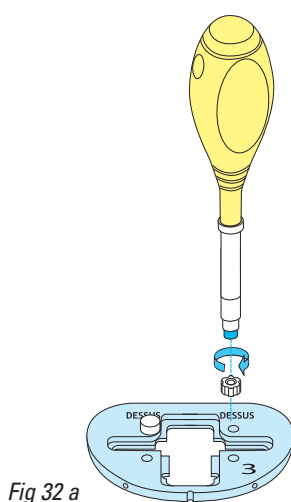
TIBIAL ROTATION DETERMINATION

- **Rotational alignment of the tray trial, based on anatomic landmarks (posterior margin of the tibial plateau and anterior tibial tuberosity) (fig. 32)**

- 1 Check that the fixation peg is in place.
- 2 Several anatomic landmarks are available: posterior margin of the tibial plateau, medial border of the anterior tibial tuberosity.
- 2 Check that the tray trial maximises coverage of the resected tibial surface, without anterior or medial/lateral overhang. A slightly undersized tray is preferable to an oversized tray.
- 3 Pre-drill pin holes for the headed pins.
- 4 Insert headed pins.
- 5 Insert the trial tibial insert.
- 6 Insert the femoral trial.



- We usually determine the rotational alignment with the tray trial in a FIXED position. Alternatively, it can be determined with the tray trial rotating freely on the proximal tibia (in this case, do not insert the fixation peg (fig. 32 b); insert the trial tibial stem instead) (fig. 32 a & b, & 34 c)



TRIAL REDUCTION

• FIXED Design

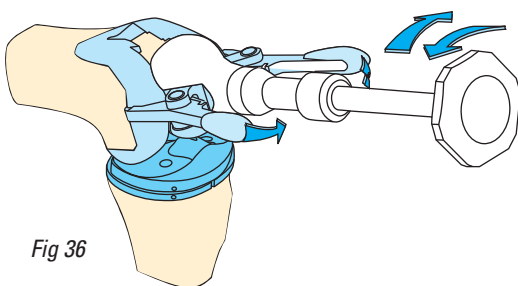
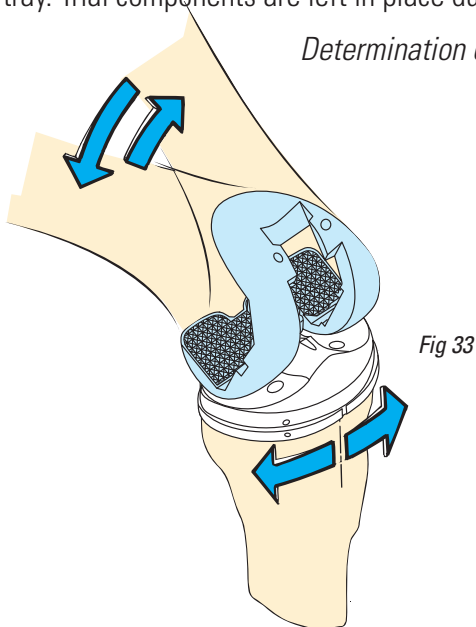
Although it is preferable to have the femoral component articulating with same-size tibial component, the next smaller femoral component may be used.

• ROTATING Design

The size of the polyethylene

Tibial insert must match the femoral component size 1:1. The Chrome Cobalt tibial tray however can be one size up or one size down. Size N tibial insert can be associated with size N-1, N, or N+1 (even N+2) tibial tray. Trial components are left in place during preparation of the patella.

Determination of tibial rotational alignment (fig. 33).

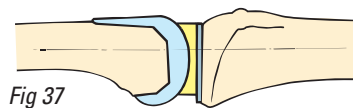


To avoid flexion of the femoral trial during insertion, place the femoral component positioner on t

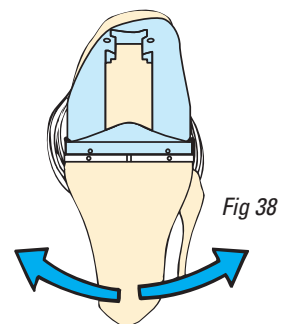
CHECK

- 3 Correct medial-lateral positioning of the components.
- 4 Correct rotational alignment of the tray trial.
- 5 Normal tracking of the natural patella.

CHECK



- 1 Absence of flexion contracture, recurvatum and coronal laxity.



- 2 Absence of laxity or tibiofemoral subluxation in flexion (medial-lateral or anterior-posterior).

KEEL PREPARATION

CAUTION:

A special punch and a tray trial are available for size 1 and size 2 tibial components.

- 1 Tibial keel punching.
- 2 Finishing.
- 3 Remove cancellous bone (preserve the block of cancellous bone for subsequent sealing of the femoral IM hole).
- 4 Insert the trial tibial stem.
- 5 Disconnect handle (handle is used both for the keel punch and the trial stem).

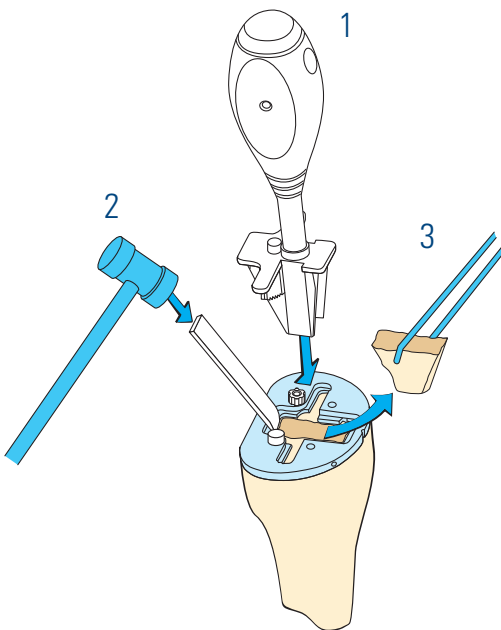


Fig 34 a

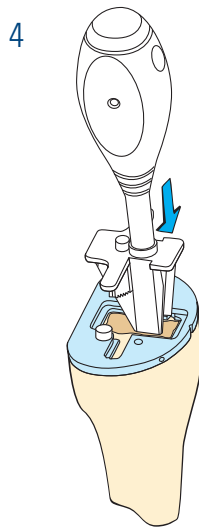


Fig 34 b

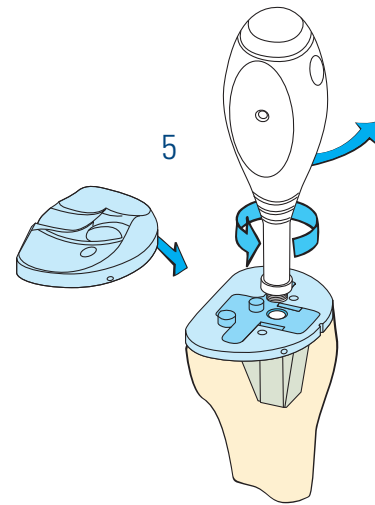
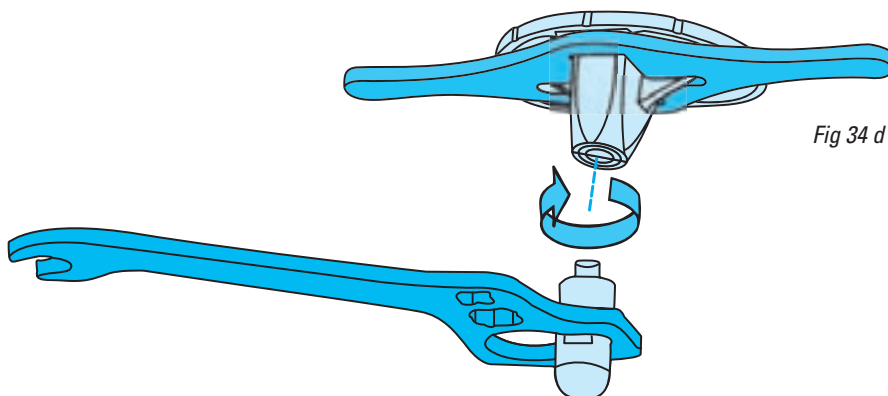


Fig 34 c

• Stem extension option

The one-piece tray trial is designed for use with trial stem extensions.



PATELLAR RESECTION

The HLS NOETOS femoral component has been designed to offer the option of resurfacing or not resurfacing the patella. Based on the experience of some members of the HLS Group, patella nonresurfacing appears to be a sound option that can even be advocated.

Whatever the severity of the patellofemoral joint damage, as long as stability of the patella is maintained throughout the range of flexion during trial reduction, it can be left unresurfaced (without any additional procedure).

If there is a gap between the medial facet of the patella and the femoral component in flexion, it is necessary to perform a retinacular release or resection of osteophytes on the lateral patellar edge.

Should this fail to eliminate the gap, or if the patella is too low and its inferior pole impinges upon the anterior border of the tibial insert at 90° of flexion, patella resurfacing is advisable (this means reducing patella thickness to restore stability).

This step is optional.

- Insertion of a patellar component consists in three main steps:

- 1 Identify patella margins, clear osteophytes, expose quadriceps and patellar tendons.
- 2 Measure the thickness of the patella (using calipers).
- 3 Determine resection level:
 - restoration of the initial thickness of the patella by inserting one of the following patellar components (small (6.5 mm), medium (7.5 mm), large (8.5 mm),
 - resection that leaves a remnant of 12 to 15 mm thickness.

In any event, the total thickness of the resurfaced patella should be equal to or smaller than the initial thickness of the patella. This residual thickness corresponds to the setting on the patellar resection guide.

- 4 Resection plane.

Resection should be performed parallel to the anterior cortex and should provide an equal residual thickness (to achieve this, more bone is generally removed medially than laterally).

- 5 Check thickness of the residual bone, and check with calipers that all measurements (proximally, distally, medially, laterally) are equivalent.

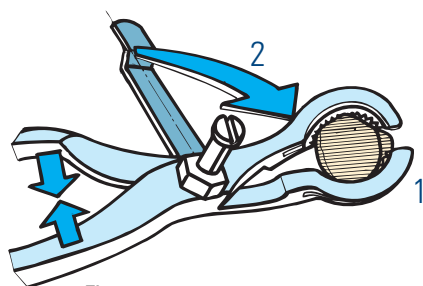


Fig 42

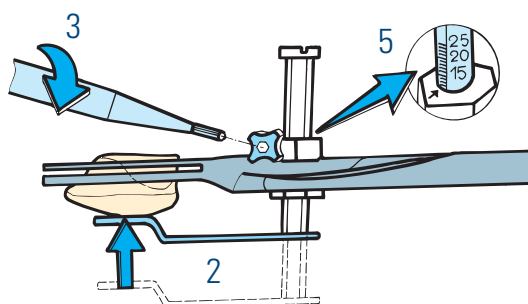


Fig 43

PATELLAR RESECTION (optional)

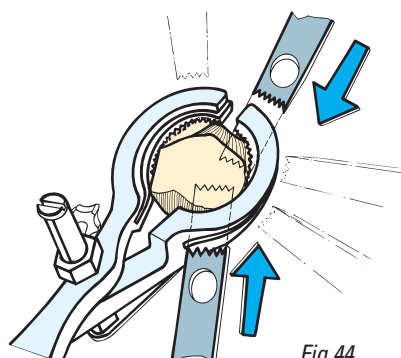


Fig 44

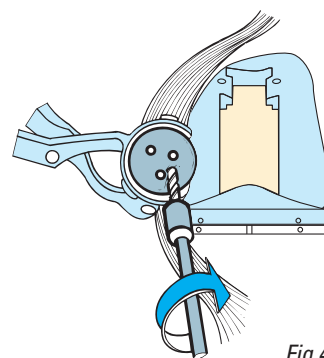


Fig 45

- Engaging the saw blade into the opposite slot of the resection guide ensures a flat cut.
- Drill peg holes using a stop drill.

6 Preparation for fixation pegs

- Use the patellar clamp to drill peg holes (2 medially, 1 laterally; holes should not be aligned transversally to avoid patellar fracture),
- Trim any lateral osteophyte and position the patellar clamp, centered over the resected surface. When in doubt, place the patellar clamp in an inferior, medial position (bear in mind that the patella has been everted).

- 7 Insert the trial patellar component and assess patellar tracking in flexion-extension. The tourniquet may result in misinterpretation of this test. It is critically important to avoid malpositioning (in rotation) of the femoral and tibial components.

CEMENTING TECHNIQUE

Copiously irrigate the bony surfaces and dry them prior to using cement.

• ROTATING Design

Insertion of the tibial bearing: make sure that PE insert size matches the size of the femoral component.

• Femur

Cementing of the femoral and tibial components may be performed in one stage or two stages. Apply cement to the inner surface of the femoral component. Apply only a small amount of cement to the posterior aspect of the component to avoid cement extrusion which would compromise the action of the third condyle.

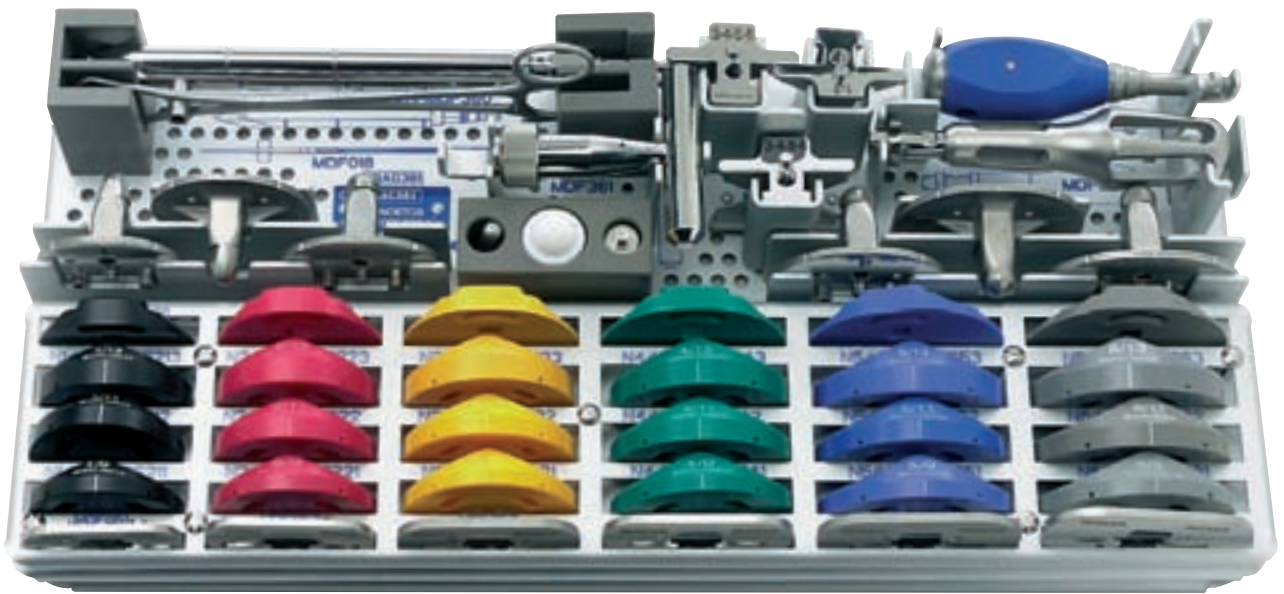
The femoral component positioner allows insertion of the component in forced flexion. Use the femoral impactor to fully seat the component. Then, remove all extruded cement.

• Patella (optional)

The patellar clamp is designed to fully seat and stabilize the implant as the cement polymerizes. Clear all excess bone cement.

Ordering information

HLS NOETOS®



HLS NOETOS® INSTRUMENTS

Instrument Set #1

One-piece metal tray trial

#	Cat. No.
1	MDF271
2	MDF272
3	MDF273
4	MDF274
5	MDF275
6	MDF276



Trial plug

small Cat. No. MDF280
standard Cat. No. MDF281



Trial tibial stem, 10 x 30 mm

Cat. No. MDF310



Trial tibial stem, 14 x 30 mm

Cat. No. MDF314



Tibial tray trial

#	Cat. No.
1	MDF051
2	MDF052
3	MDF053
4	MDF054
5	MDF055
6	MDF2056



Fixation peg

Cat. No. MDF030



Trial tibial insert (PE)

#	mm9	mm11	mm13
1	MDF211	MDF 212	MDF213
2	MDF221	MDF222	MDF223
3	MDF231	MDF232	MDF233
4	MDF241	MDF242	MDF243
5	MDF251	MDF252	MDF253
6	MDF261	MDF262	MDF263



Storage case

Metal case - H 140 mm	Cat. No. NBR005
Basket - H 100 mm	Cat. No. NPR004
Tray	Cat. No. YKAG381

Tibial keel punch for sizes:

1-2 Cat. No. MDF028
3-4-5-6 Cat. No. MDF029



Impaction handle for tibial peg

Cat. No. MDE028



16 Tibial Trial Stem

Small Cat. No. MDF350
Standard Cat. No. MDF351



Tibial stem reamer

Ø10 Cat. No. MDF359
Ø14 Cat. No. MDF360



T-handle for tibial stem reamer

Cat. No. MDF361



Tibial tray impactor end

#	Cat. No.
1	MDF011
2	MDF012
3	MDF013
4	MDF014
5	MDF015
6	MDF016



Impactor

Cat. No. MDF021



Impactor cap

Cat. No. MDF017



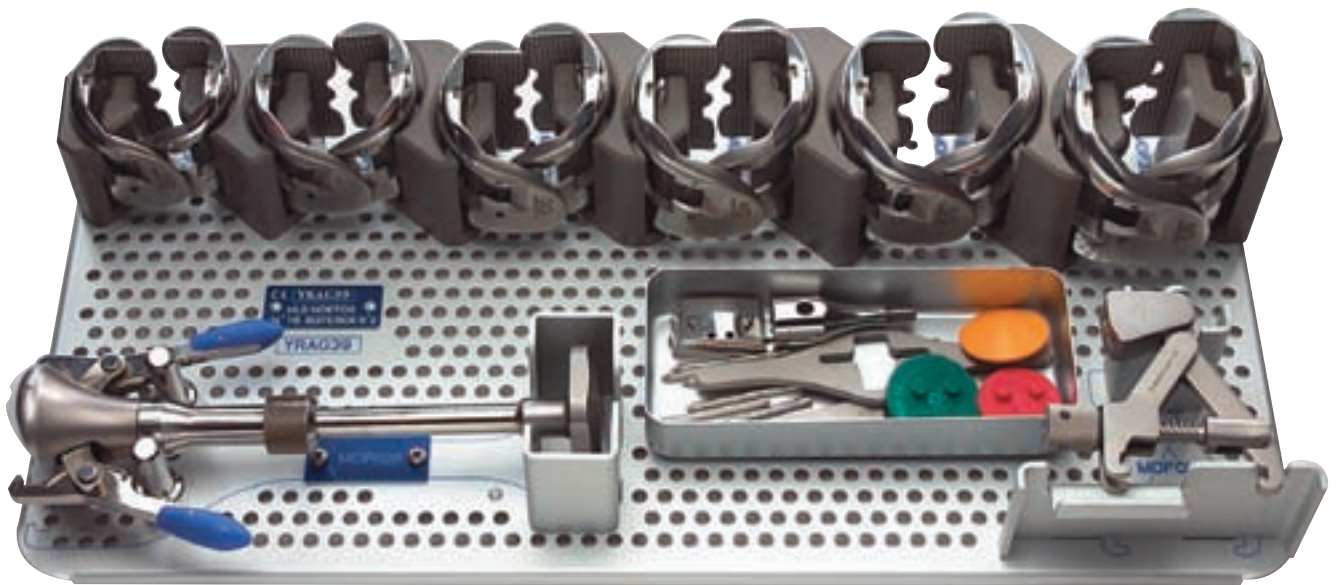
Tray trial holding forceps

Cat. No. MDF018



HLS NOETOS® INSTRUMENTS

Instrument Set #2



Trial femoral component

Right Cat. No.	Left	Cat. No.	
1	MDF321	1	MDF331
2	MDF322	2	MDF332
3	MDF323	3	MDF333
4	MDF324	4	MDF334
5	MDF325	5	MDF335
6	MDF326	6	MDF336



Femoral component positioner

Cat. No. MDF362



Tibial tray extractor

Cat. No. MDF010



Instruments included in the small case

3.5 mm Headed pin 50 mm CE0050

Cat. No. MDE011



Dome patella trial

Small Cat. No. MDF341

Medium Cat. No. MDF342

Large Cat. No. MDF343



Wrench for tibial stem

Cat. No. MDF352



Wedge key for tibial tray

Cat. No. MDF353



Femoral notch resection guide

Cat. No. MDF354



Storage case

Metal case - H 140 mm

Cat. No. NBR005

Basket - H 100 mm

Cat. No. NPR004

Tray

Cat. No. YKAG39



HLS NOETOS® INSTRUMENTS

Instrument Set #3

Tibial intramedullary rod

Cat. No. MDS401

Slotted hammer

Cat. No. MDE004

Tibial stylus

Cat. No. MDE005

Tibial EM alignment rod

Cat. No. MDE006

Locking screw for tibial cutting block

Cat. No. MDE074

Tibial EM alignment rod

Cat. No. MDE007

Universal screwdriver (yellow), 3.5 mm on flat

Cat. No. MDE008

Pin driver

Cat. No. MDE070

T-handle IM rod

Cat. No. MDE015

Visualization wing

Cat. No. MDE073

Instruments included in the small case

3.5 mm Guide pin, 80 mm

Cat. No. MDE009

3.5 mm Headed pin, 50 mm

Cat. No. MDE011

3.5 mm Flat tip trephine

Cat. No. MDE012

10 mm Rod for T-handle

Cat. No. MDE029

7 mm Patellar drillm

Cat. No. MDE048

Slap hammer adaptor (for IM femoral guide)

Cat. No. MDE072

Oscillating saw blade (1.2 mm thick)

Saw blade, for Aesculap connector

Cat. No. MDE013

Saw blade, for Zimmer connector

Cat. No. MDF057

Saw blade, for Stryker connector

Cat. No. MDE058

Saw blade, for AOM connector

Cat. No. MDE059

Saw blade, for 3M connector

Cat. No. MDE060

Saw blade, for Stryker B connector

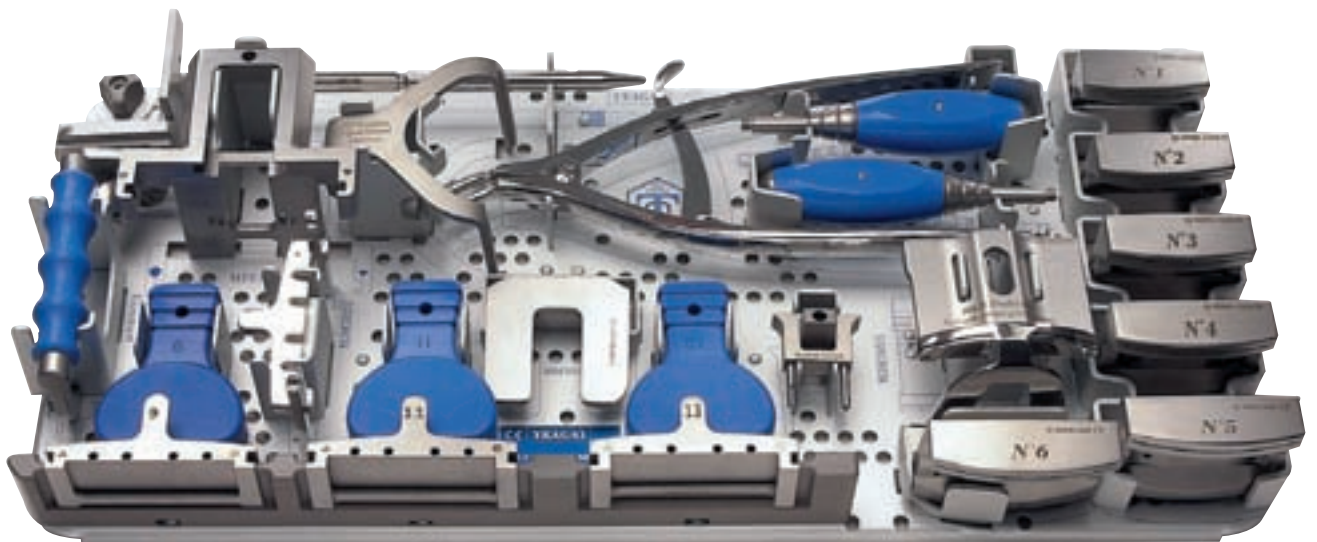
Cat. No. MDE071

Rangement

Container Ht 140mm Cat. No. NBR004

Panier Ht 100 mm Cat. No. NPR003

Plateau de rangement Cat. No. YKAG40



HLS NOETOS® INSTRUMENTS

Instrument Set #4

Adjustable IM femoral guide

Cat. No. MDE084



Posterior resection guide

Cat. No. MDE085



Femoral stylus

Cat. No. MDE019



Locking screw for posterior resection guide

Cat. No. MDE020



Sliding distraction plate

Cat. No. MDE086



Distal femoral cutting block

9 mm Cat. No. MDE066
 11 mm Cat. No. MDE067
 13 mm Cat. No. MDE068



Locking frame for distal femoral cutting block

Cat. No. MDE022



Frame extractor

Cat. No. MDE023



Distraction forceps

Cat. No. MDE024



Handle for chamfer resection guide

Cat. No. MDE025



2 mm Recutting block

Cat. No. MDE055



Anterior/chamfer cutting block



Size 1	Size 2	Size 3	Size 4	Size 5	Size 6
MDE031	MDE032	MDE033	MDE034	MDE035	MDE036

Spacer block

9 mm Cat. No. MDE061
 11 mm Cat. No. MDE062
 13 mm Cat. No. MDE063

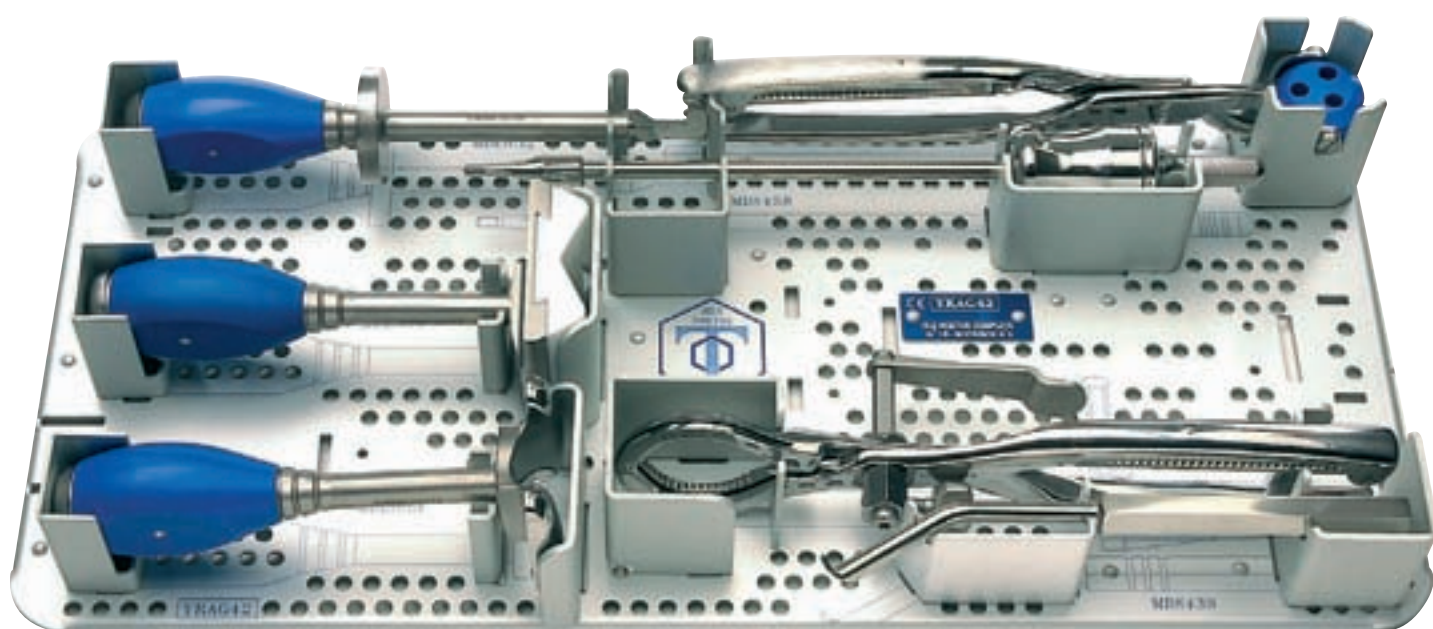


Storage case

Metal case - H 140 mm	Cat. No. NBR004
Basket - H 100 mm	Cat. No. NPR003
Tray	Cat. No. YKAG41

HLS NOETOS® INSTRUMENTS

Instrument Set #5



Patellar resection guide

Cat. No. MDE077



Patellar clamp

Cat. No. MDE080



Peg extractor/slap hammer

Cat. No. MDS458



Tibial insert removal tool

Cat. No. MDS439



Hook

Cat. No. MDE052



Femoral impactor

Cat. No. MDE054



Tibial impactor

Cat. No. MDE053



Storage case

Metal case - H 140 mm

Cat. No. NBR005

Basket - H 100 mm

Cat. No. NPR004

Tray

Cat. No. YKAG42

IMPLANTS HLS NOETOS®

Femoral component

#	Right	Left
1	GDF691	GDF701
2	GDF692	GDF702
3	GDF693	GDF703
4	GDF694	GDF704
5	GDF695	GDF705
6	GDF696	GDF706



Patellar component

Size	
Small	GDF021
Medium	GDF022
Large	GDF023



Metal tibial tray

#	Fixed	Rotating
1	GDF031	GDF011
2	GDF032	GDF012
3	GDF033	GDF013
4	GDF034	GDF014
5	GDF035	GDF015
6	GDF036	GDF016



Tibial stem

Diameter	Length	
10	30	GDF531
14	30	GDF533



PE tibial insert

#	9mm		11mm		13mm	
	Fixed	Rotating	Fixed	Rotating	Fixed	Rotating
1	GDF411	GDF711	GDF421	GDF721	GDF431	GDF731
2	GDF412	GDF712	GDF422	GDF722	GDF432	GDF732
3	GDF413	GDF713	GDF423	GDF723	GDF433	GDF733
4	GDF414	GDF714	GDF424	GDF724	GDF434	GDF734
5	GDF415	GDF715	GDF425	GDF725	GDF435	GDF735
6	GDF416	GDF716	GDF426	GDF726	GDF436	GDF736



The Noetos® knee system is only available in the FIXED version in the USA. For further information, please contact our US subsidiary.