MADISON EVO

TOTAL KNEE PROSTHESIS

APPENDIX

SURGICAL TECHNIQUE

LIGAMENT BALANCING

serf

KNEE

INDICATIONS

LIGAMENT BALANCING

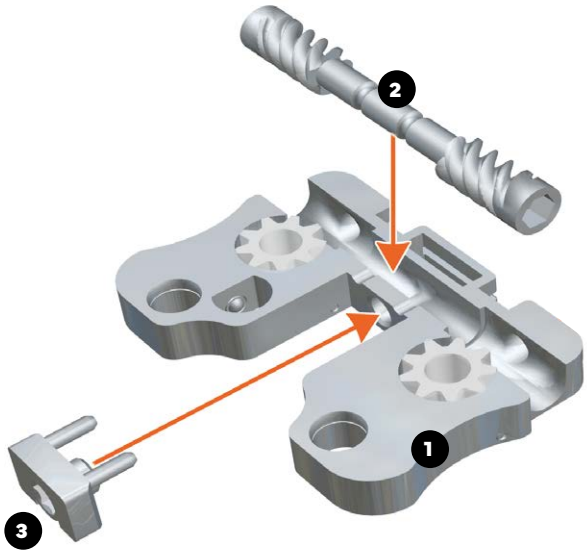
MADISON surgical technique appendix

The **MADISON** prosthesis is designed to suit any knee and every surgeon.
Any bony landmark can be used to position it, but ligament balancing can also be prioritised.
A special innovative ancillary device was designed for this purpose.
It helps balance the flexed knee by transferring the pre-defined space while extended (using the spacer component in the original **MADISON** instrument).
It can also determine the femoral rotation, which is defined as the dislocated patella as well as the shortened patella to offset artificial constraints associated with the extender device's dislocation.
To make up for the difficult estimate of a lapse, the ancillary device is based on controlling spaces so surgeons can calibrate it as they wish.

Instrument Assembly

Insert the threaded pin (2) (parts: 540424 or 540454) into its housing.

Screw the fixing screw (3) into the base (1)(parts: 540420 or 540453) to lock the pin (2).



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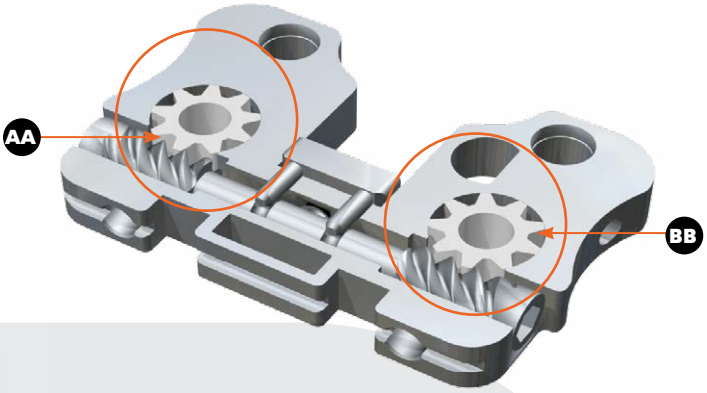
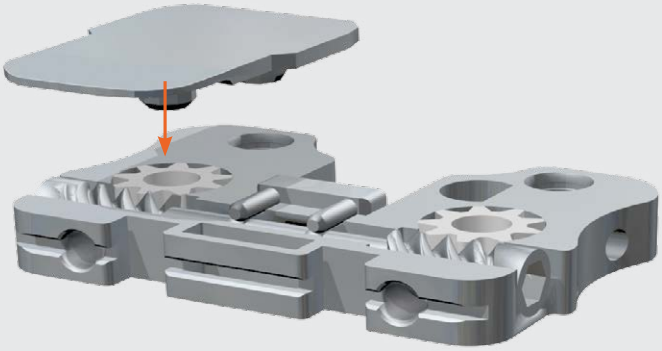
LIGAMENT BALANCING

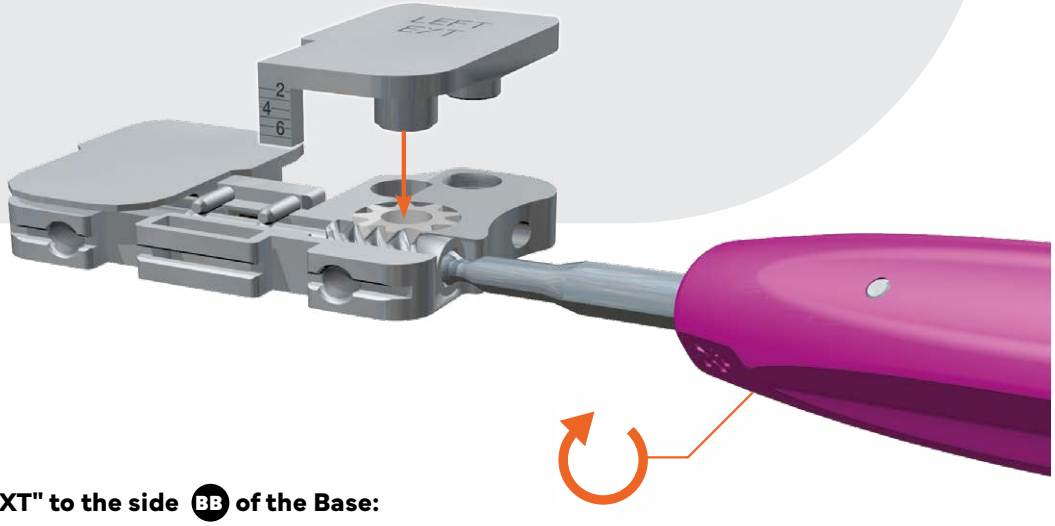


LEFT KNEE



Fixed plate

Clip the fixed Plate to the AA side of the Base.



LEFT-EXT Plate

Screw the Plate marked "LEFT-EXT" to the side BB of the Base:

- Place the unit on a flat surface;
- Position the Plate so the 2 studs are centred on the 2 openings in the Base. Hold the assembly firmly;
- Use the hex screwdriver to lower the plate until it touches the base (turning the screwdriver away from you).

Do not force it!

RIGHT KNEE

Fixed plate

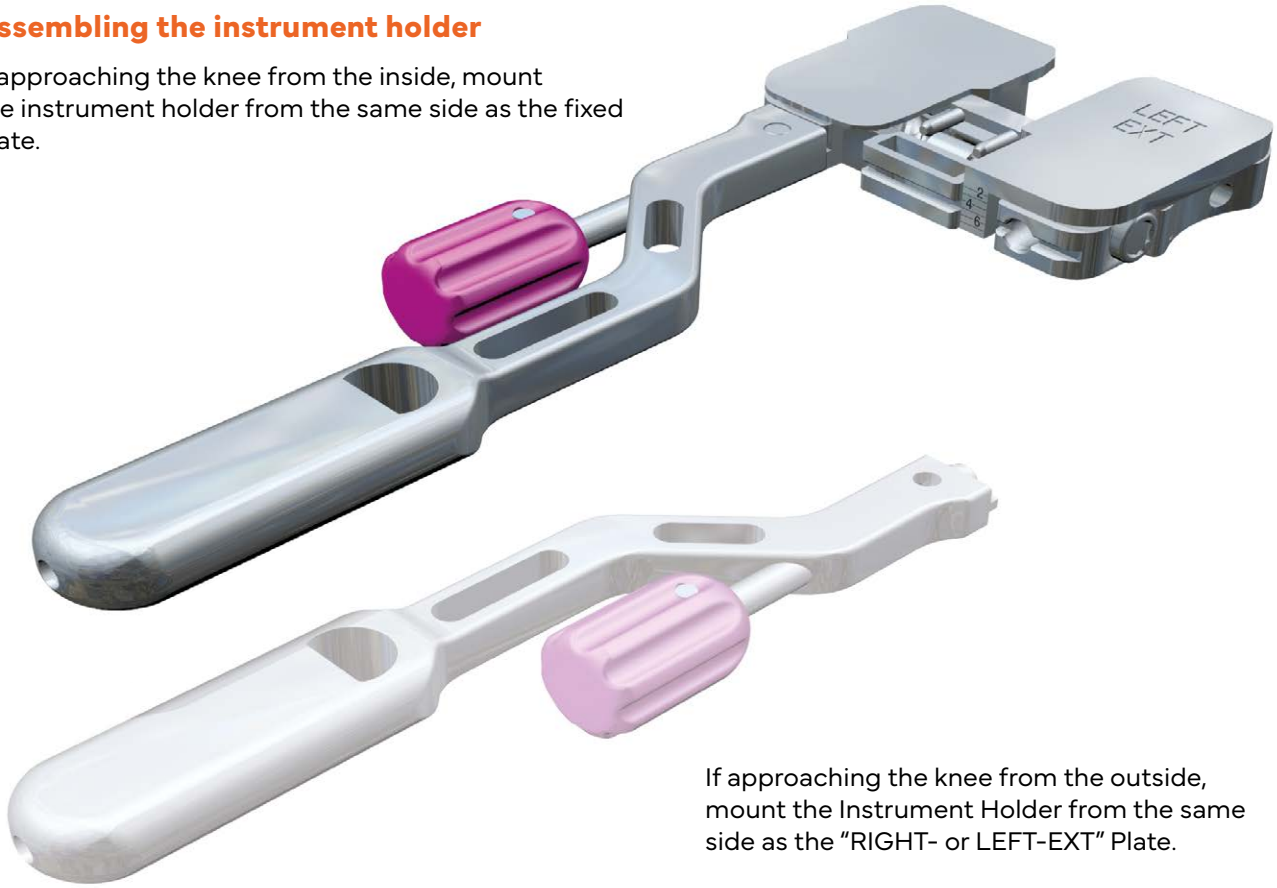
Clip the fixed Plate on the BB side of the Base.

RIGHT-EXT Plate

Screw the "RIGHT-EXT" Plate onto the side AA of the Base.

Assembling the instrument holder

If approaching the knee from the inside, mount the instrument holder from the same side as the fixed Plate.



If approaching the knee from the outside, mount the Instrument Holder from the same side as the "RIGHT- or LEFT-EXT" Plate.

1 CHECKING THE STABILITY OF THE BENDED KNEE AND ADJUSTING THE FEMORAL ROTATION

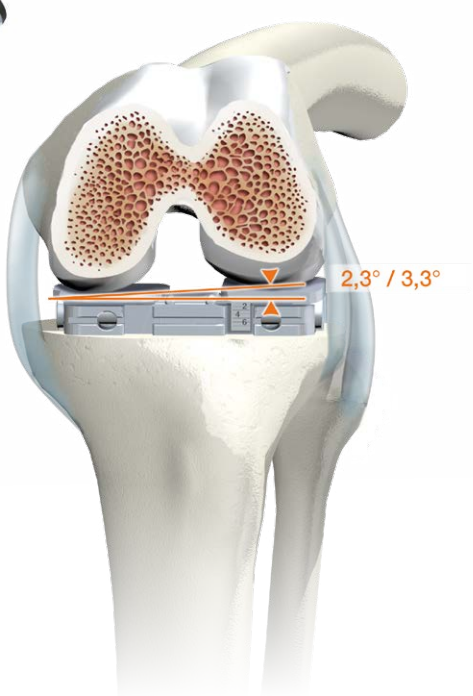
The space while extended should be checked beforehand with the standard **MADISON** instrument Spacer. This will indicate the thickness of the insert: 10/12/14 mm.

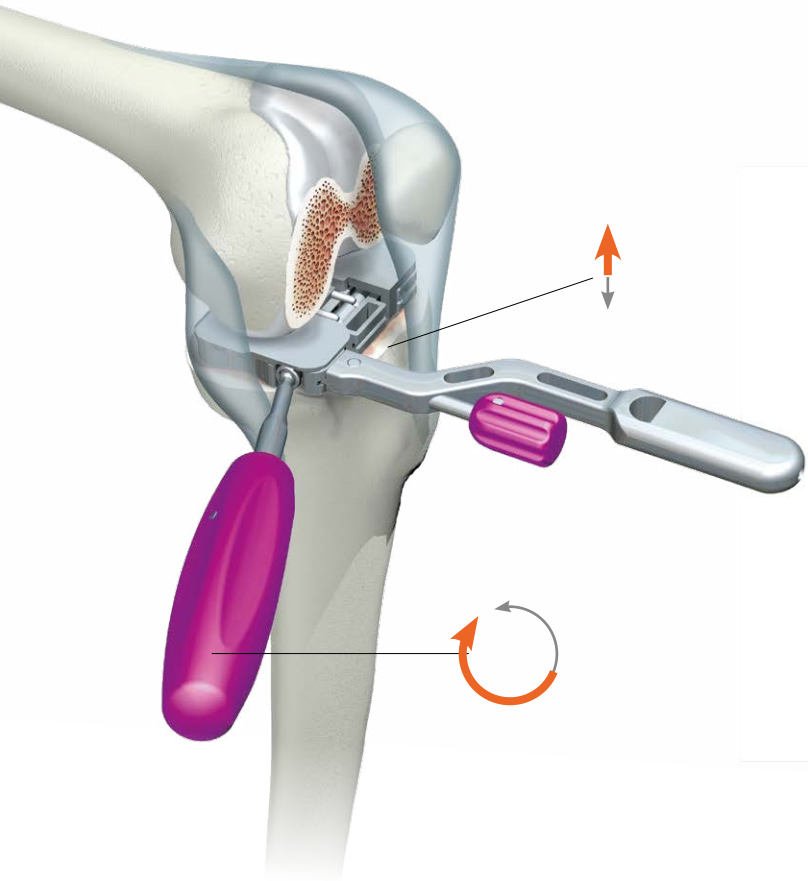
The thickness of the Base (1) and its plates represent a 10-mm insert.

If the 12 mm insert is larger than the flex-insert plate, 12 in the Base.

If the 14 mm insert is larger than the flex-insert plate, 14 in the Base.

The moving Plate (Left-ext or Right-ext) is 2 mm thicker than the fixed Plate. So from the outset, we deduce a femoral rotation of 2.3°-3.3° which is a function of the mediolateral dimension of the femoral condyles.





The balancing of the spaces is checked while flexed with the patella dislocated.

It can be double-checked on the patella in place.

A correction may need to be done due to the decrease in external femorotibial pressure associated with the reduction of the extensor apparatus.

The mechanism is powered by an adjustable hex screwdriver inserted into the hexagonal recess of the axis (on either side of the base). One turn of the screwdriver will raise the condyle by approximately 0.8 mm.

Direction of adjustment:

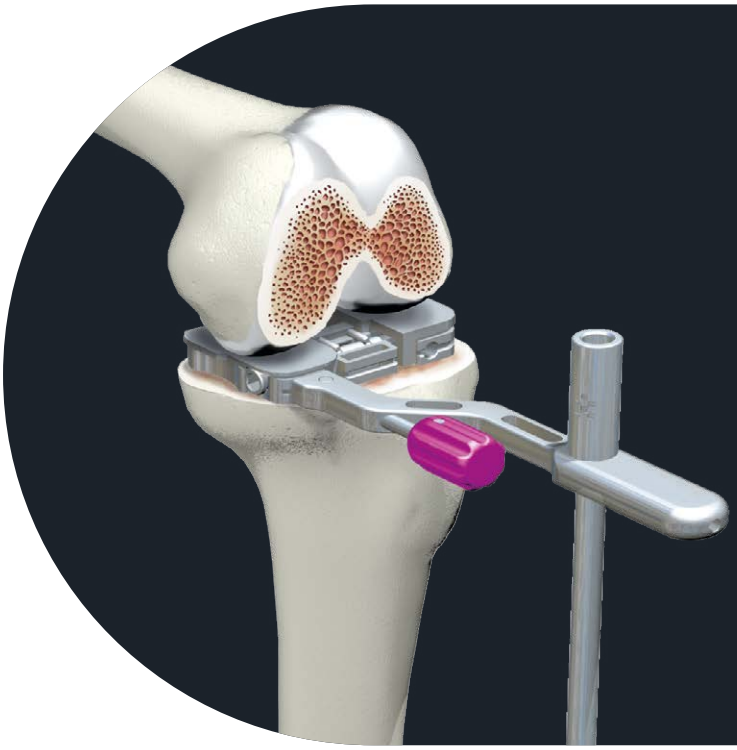
Turning the screwdriver towards you
Raises the Plate.
Turning the screwdriver away from towards you
Lower the Plate.

The value of the offset of the condyle levels (mm) can be read by looking at the alignment of the laser lines (example below: 5 mm).

Important:

Do not exceed the maximum allowed adjustment value: 7 mm.

Anything above this value could cause the moving plate to disassemble.



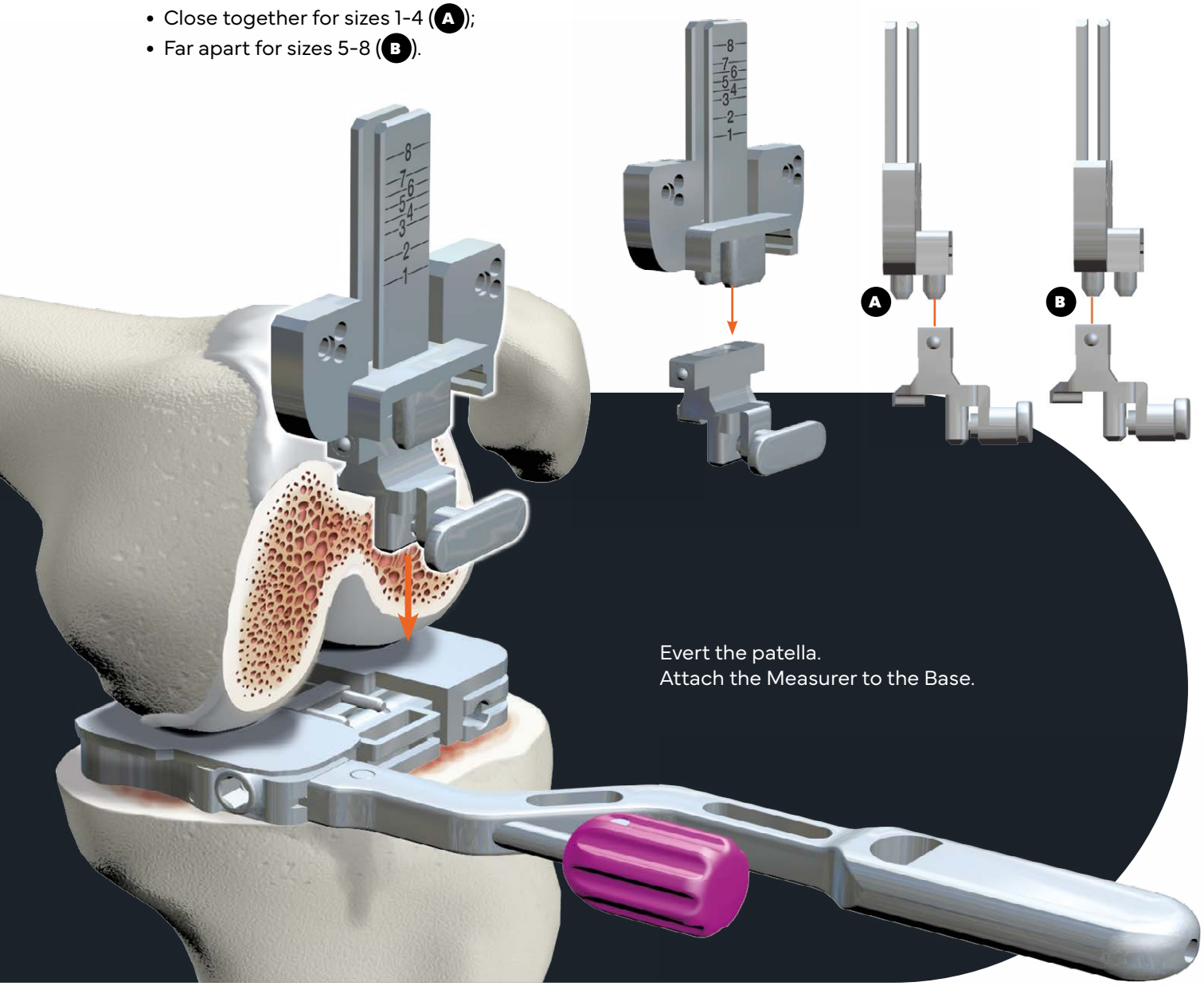
Note:

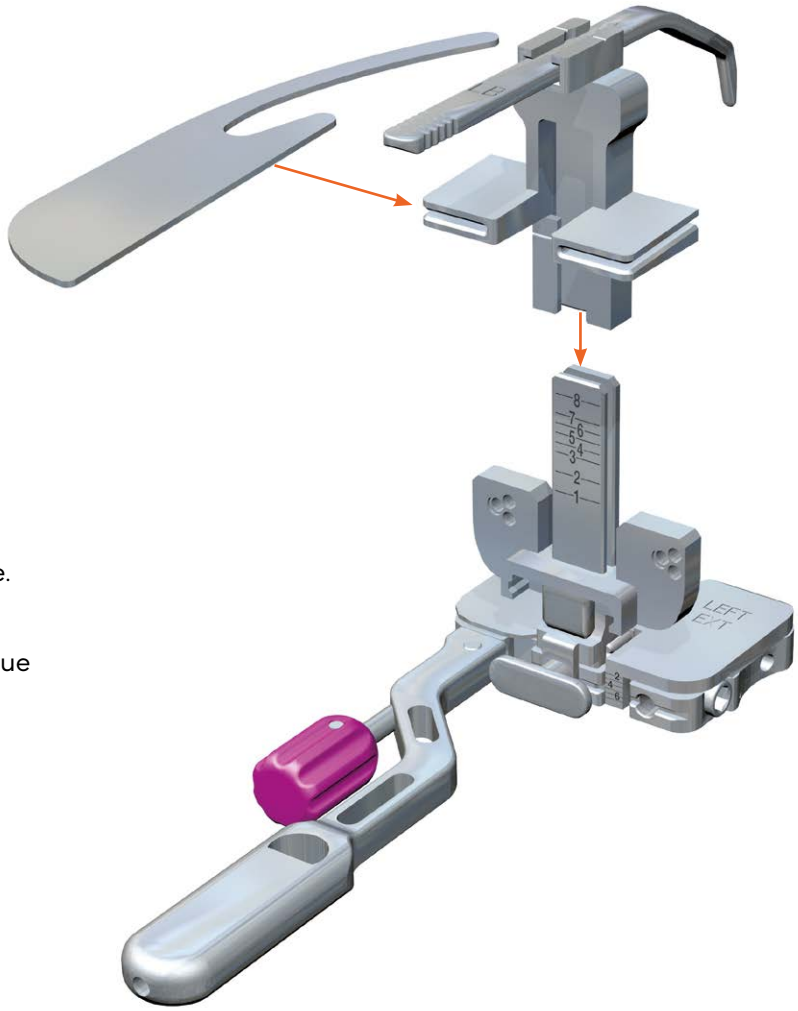
To check the alignment of the flexed knee, you can clip the the Aligment Rod sleeve onto the Instrument Holder and insert the the Aligment Rod.

2 DETERMINING THE SIZE OF THE FEMORAL IMPLANT

Assembling the Measurer with its base.
2 positions/distal cut:

- Close together for sizes 1-4 (A);
- Far apart for sizes 5-8 (B).



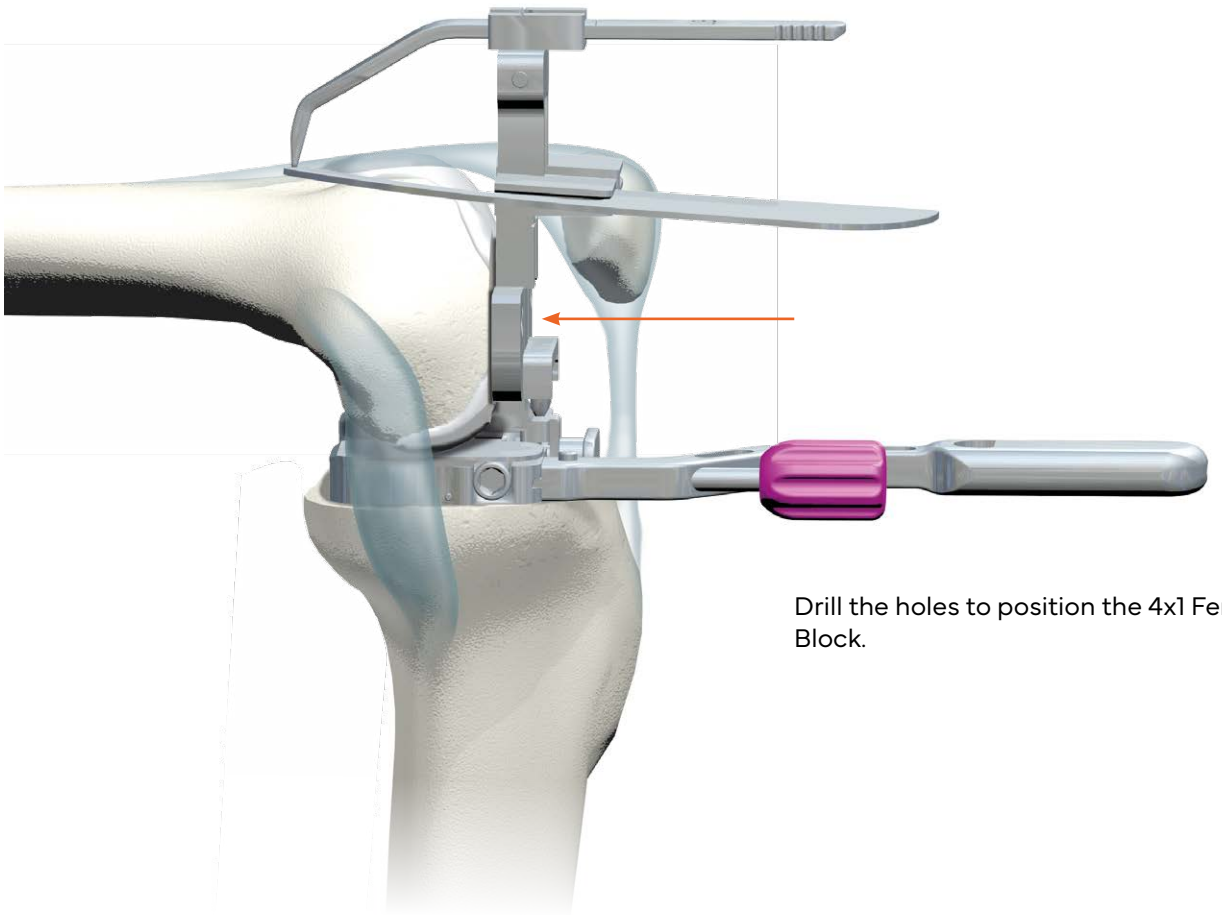


Slide the Stylus Support.

The size can be set using the stylus or the jauge.

The Stylus Holder is detachable.

Be sure to match the Stylus setting with the value read on the Measurer.



Drill the holes to position the 4x1 Femoral Cutting Block.

INSTRUMENTATION

MADISON

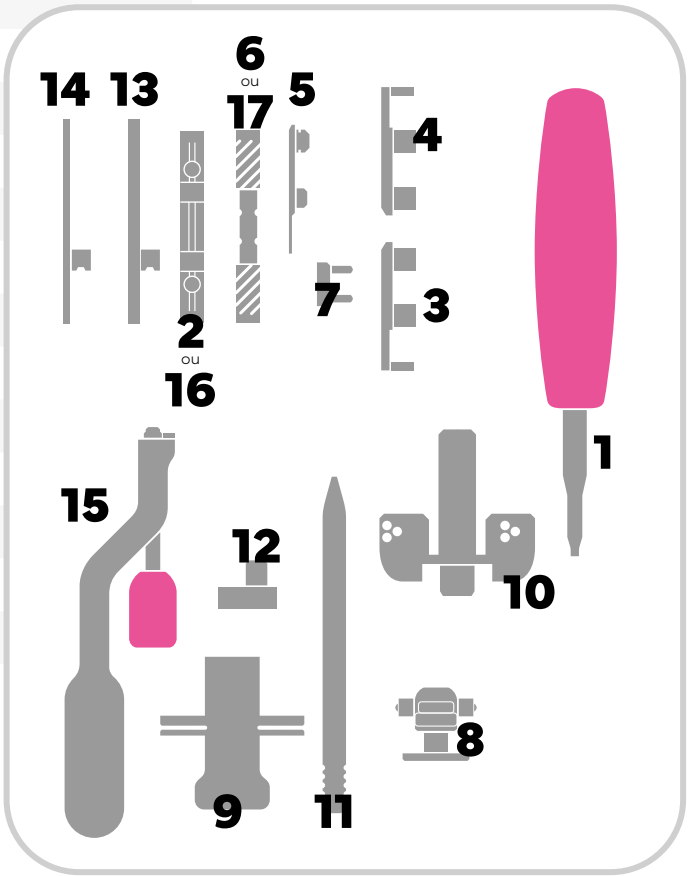
FEMORAL ROTATION (DEGREE)

This table translates the moving plate's displacement in the femoral rotation based on the femur size.

PLATE HEIGHT	FEMUR SIZE							
	1	2	3	4	5	6	7	8
2 mm	3,3°	3,1°	2,9°	2,7°	2,6°	2,5°	2,4°	2,3°
3 mm	4,9°	4,6°	4,3°	4°	3,8°	3,7°	3,6°	3,4°
4 mm	6,6°	6,1°	5,7°	5,4°	5,1°	5°	4,8°	4,5°
5 mm	8,2°	7,7°	7,2°	6,8°	6,4°	6,2°	6°	5,7°
6 mm	9,9°	9,2°	8,6°	8,1°	7,7°	7,4°	7,2°	6,8°
7 mm	11,5°	10,8°	10,1°	9,5°	9°	8,7°	8,4°	8°

NOTE: The table is engraved inside the cover of the Madison 7 tray.

No	QTY	DESCRIPTION
1	1	540419 - Madison BL Screwdriver
2	1	540420 - Madison BL Base
3	1	540421 - Madison BL Plate Ext L
4	1	540422 - Madison BL Plate Ext R
5	1	540423 - Madison BL Fixed Plate
6	1	540424 - Madison BL Threaded Pin
7	1	540425 - Madison BL Locking Screw
8	1	540426 - Madison BL Measurer Base
9	1	540427 - Madison BL Stylus Support 1
10	1	540428 - Madison BL Measurer
11	1	540429 - Madison BL Femoral Stylus
12	1	540430 - Madison BL Stylus Support 2
13	1	540431 - Madison BL 12 mm Flex Spacer
14	1	540432 - Madison BL 14 mm Flex Spacer
15	1	540433 - Madison BL Handle
16	1	540453 - Madison BL Base V2
17	1	540454 - Madison BL Threaded Pin V2



Notes:

- Lubricate the mechanism before each use.
- Part 540420 is linked to part 540424.
- Part 540453 is linked to part 540454.

NOTES

All the medical devices mentioned in this document are CE marked according to Directive 93/42/EEC and its amendments, unless specifically identified as "not CE marked".
The medical devices mentioned in this document are Class III, IIb, IIa, and I devices.
Class III, IIb, and IIa medical devices are marked CE 0459 by GMED.
Before using any product, please read the instructions for use and the surgical technique. Refer to the labels and instruction leaflets for the complete list of indications, contraindications, risks, warnings, precautions and instructions for use.
Reimbursement status in France: the implants are included on the List of Reimbursable Products and Services (Liste des Produits et Prestations Remboursables, LPPR) cited in article L165-1 of the Social Security Code and are thus eligible for reimbursement by the health insurance scheme.

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