



Zimmer® Patient Specific Instruments

Surgical Technique for
Gender Solutions®
Natural-Knee® Flex System

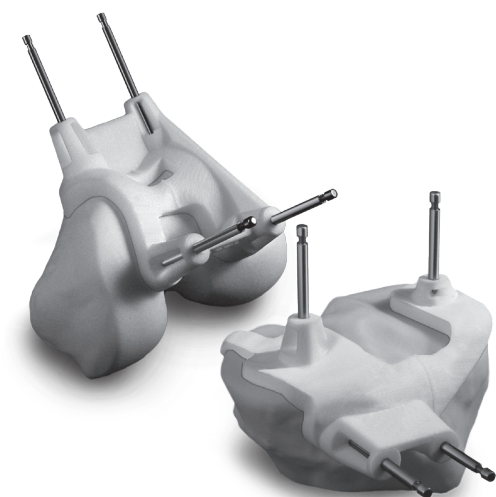



Table of Contents

| SECTION | | PAGE |
|---|---|------------|
| 1 | Gender Solutions Natural-Knee Flex Instr. | 1-5 |
|  | Femoral Technique | 1-2 |



| SECTION | | PAGE |
|---|---|------------|
| 2 | Gender Solutions Natural-Knee Flex Instr. | 1-5 |
|  | Tibial Technique | 3-5 |

Introduction

General Considerations

Zimmer PSI is not designed for use with the *Zimmer*® MIS *Quad-Sparing*™ Total Knee Procedure.

Zimmer PSI should be used in conjunction with a femur first technique.

Verify stability and fixation of all pins. When securing the conventional tibia cutting guides, avoid the use of spring pins as these may cause stress / unwanted shift on the tibia cutting guide.

Position Femoral Pin Guide

Position the Pin Guide on the distal femur (Fig. 1).

Do not remove osteophytes from the femur.

Pin Guide will be captured by the anterior ridge of the femur.

The epi-condylar axis and AP axis reference lines on the Pin Guide can be used to assess alignment.

Apply posterior pressure to the Pin Guide and verify secure fit.

Fig. 1



Drill and Pin the Anterior Pin Holes

Drill and pin the medial and lateral anterior pin holes of the Pin Guide using the Universal Disposable Drill (2001-00-000) (Fig. 2).

Fig. 2



Pre-drill Distal Peg Holes

Drill the medial and lateral distal peg holes of the Pin Guide with the *Gender Solutions Natural-Knee Flex System* 6mm Drill (00-5970-060-00) to the depth line that is etched on the drill (Fig. 3).

Note: Depending on femur size constraints, when drilling the distal lateral hole, the drill may interfere with the anterior lateral pin. If applicable, remove the anterior lateral pin prior to drilling the distal lateral hole. Following this, the anterior lateral pin can be replaced.

Fig. 3



Place Distal Cut Guide and Cut Femur

Remove the Pin Guide by sliding it off the pins, leaving the anterior pins in the bone.

Secure the *Natural-Knee Flex System Captured Femoral Distal Saw Guide* (00-5413-000-03).

Check alignment if desired, and make the cut (**Fig. 4**).

TECHNIQUE TIP

1.A

When performing the cut, excessive force (considering the pressure being applied to the guide) on the medial or lateral side of the cut guide could influence the amount of varus/valgus in the cut.

Fig. 4


Remove Distal Cut Guide and Secure Femoral Finishing Guide

Remove the anterior pins.

Locate the pre-drilled pin holes.

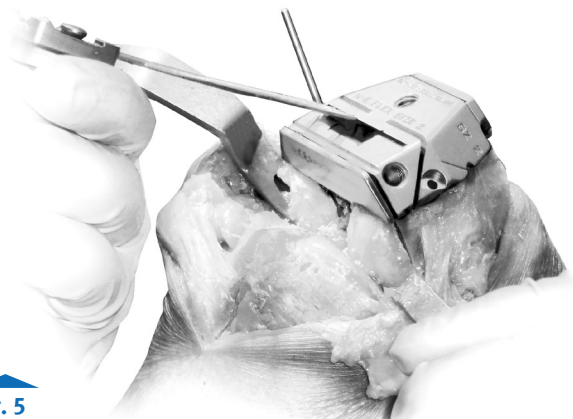
Place the *Natural-Knee Flex System MIS Femoral Finishing Guide* in drilled distal holes

Secure the *Natural-Knee Flex System MIS Femoral Finishing Guide* and make the cuts. (**Fig. 5**).

TECHNIQUE TIP

1.B

In the event the drilled distal holes are covered up following the distal cut, clean the area. Alternatively, prior to removing the anterior pins, place the Pin Guide back over the anterior pins and locate the distal holes through the distal holes in the Pin Guide.

Fig. 5


Follow Natural-Knee Flex System Femoral Surgical Technique

Following the finishing cuts, proceed with the surgery as suggested in the *Zimmer Gender Solutions Natural-Knee Flex System Surgical Technique*.

Position Tibial Pin Guide

Remove the meniscus.

Position the Pin Guide on the tibia (**Fig. 1**).

Do not remove osteophytes from the tibia. Remove any soft tissues that may prevent proper placement of the Pin Guide.

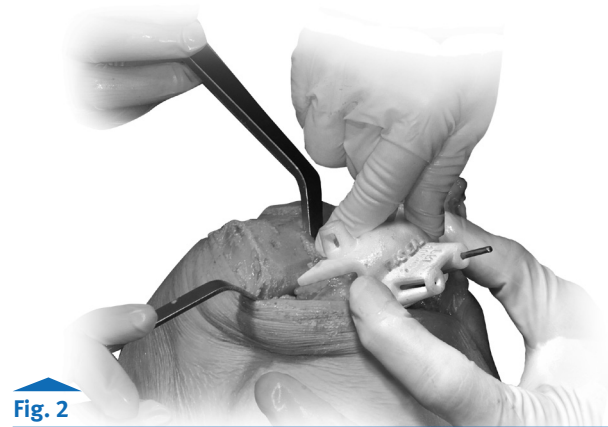
Ensure the posterior medial hook goes over the posterior ridge of the tibia.

The mechanical axis and proximal resection reference lines on the Pin Guide can be used to assess alignment.



Drill and Pin Anterior Lateral Pin Hole

Drill and pin the lateral hole of the Pin Guide. (**Fig. 2**).



Drill Anterior Medial Hole

Drill the medial hole of Pin Guide (do not place pin) (**Fig. 3**).



Establish Tibia Rotation (Drill Proximal Holes)

Tibia rotation may be established through the Pin Guide per surgeon discretion.

Drill the proximal medial and lateral holes of the Pin guide (do not place pins) (Fig. 4).

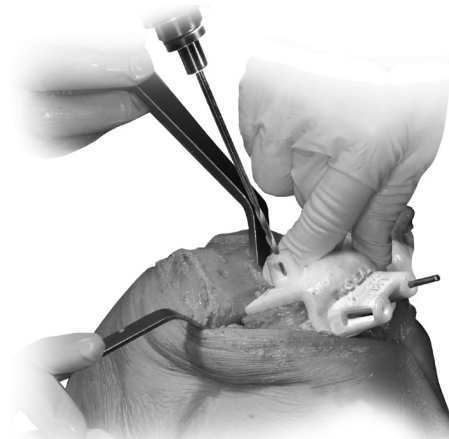


Fig. 4

Remove Tibial Pin Guide

Remove the Pin Guide by lifting the medial hook off the posterior ridge and sliding off the anterior lateral pin (Fig. 5). Do not pry the Pin Guide from the tibia as this could shift the pins. (It may be necessary to remove the previously placed pin from the anterior lateral hole.)

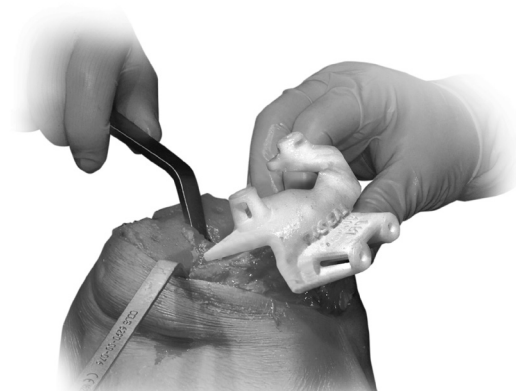


Fig. 5

Place Pins in Anterior Holes

Ensure both pins are placed in the drilled anterior holes (Fig. 6).

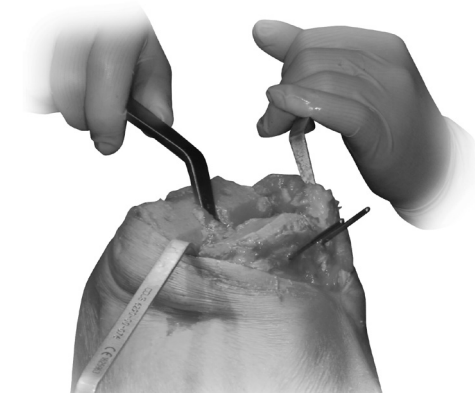


Fig. 6

Secure Cut Guide and Cut Tibia

Secure the *Natural-Knee Flex* System Captured Tibia Proximal Saw Guide (00-5413-015-03), and make cut (Fig. 7).

Note: If you wish to check alignment, insert the Alignment Adapter into the Tibial Cut Guide, insert the Alignment Rod and check alignment.

| | |
|-------------------|----------------|
| Alignment Adapter | 00-5413-024-00 |
| Alignment Rod | 00-5413-080-00 |



Cut Guide will need to be placed on the outside medial and inside lateral "9" holes.

Fig. 7

TECHNIQUE TIP

2.A

When fixating the Cut Guide, excessive force from screws can alter the planned location and could influence the amount of varus/valgus in the cut.

TECHNIQUE TIP

2.B

When performing the cuts, excessive force (considering the pressure from leaning on the guide) on the medial or lateral side of the cut guide could influence the amount of varus/valgus in the cut.

Position Proximal Tibial Drill Guide

Position the proximal tibial drill guide to align with the drilled proximal holes (Fig. 8).

TECHNIQUE TIP

2.C

In the event the drilled proximal holes are covered up following the proximal cut, clean the area. Alternatively, prior to removing the anterior pins, place the Pin Guide back over the anterior pins and locate the proximal holes through the tibial Pin Guide.

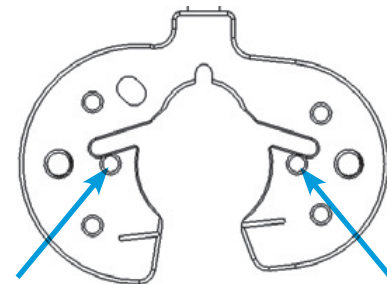


Fig. 8

Follow Natural-Knee Flex System Tibial Surgical Technique

Following the positioning of the proximal tibial drill guide, proceed with the surgery as suggested in the *Zimmer Gender Solutions Natural-Knee Flex* System Surgical Technique.



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