



Zimmer®
Segmental System
Trabecular Metal™
Proximal
Tibial Component
Surgical Technique



Introduction

The Zimmer® Segmental System is designed to address significant bone loss resulting from oncology, trauma, and/or the salvage of previously failed arthroplasty.

Proximal Tibial Replacement Options

The system includes a *Trabecular Metal™* Proximal Tibial Component that enables tissue attachment to the implant via sutures and/or arms included in the optional Tissue Attachment Kit (Fig. 1).

The *Trabecular Metal* Proximal Tibial Component may be implanted with the *NexGen®* Rotating Hinge Knee Distal Femoral Component or the Segmental Distal Femoral Component (Fig. 2). Refer to the *NexGen* RH Knee Surgical Technique (97-5880-002-00) and Segmental Distal Femoral Surgical Technique (97-5850-004-00) before performing a *Trabecular Metal* Proximal Tibial Component implantation. (The RH Knee Surgical Technique has been updated with specific instruments regarding the Segmental *Trabecular Metal* Proximal Tibia. Please review **revision 4 or higher** before performing a proximal tibial replacement.)

System Compatibility

The Segmental *Trabecular Metal* Proximal Tibial Component may be implanted with the Segmental Distal Femoral Component, Segmental Stems, Segmental Stem Collars, and Segmental Segments as well as the *NexGen* RH Knee Tibial/Femoral Components, *VerSys®* Hip System 12/14 Heads and the Legacy 12/14 Heads (Fig. 3).

The Segmental Proximal Femoral Components and Intercalary Segments may be used with both Fluted Stems (cemented) and Variable Stiffness Stems (press-fit) in many stem lengths and diameters. Variable Stiffness Stems are not indicated for use in the knee with the Segmental Proximal Tibial Components in the United States. All Stems are compatible with both *Trabecular Metal* Collars and *Tivanium®* Ti-6Al-4V Alloy Collars.



Fig. 1

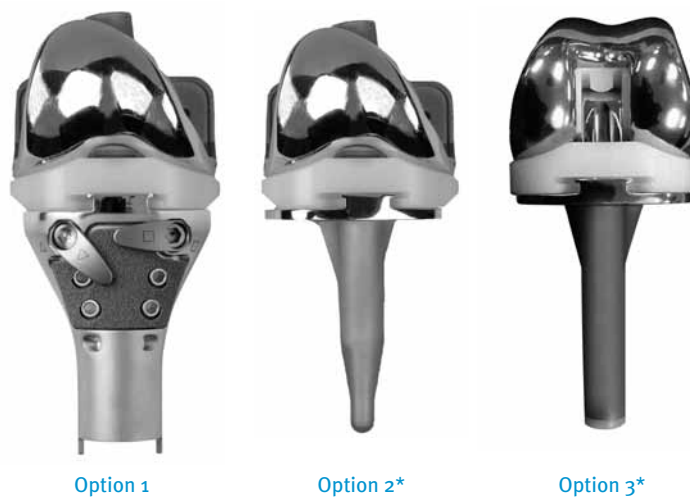


Fig. 2

Proximal Tibial Replacement Options:

Option 1: Segmental *Trabecular Metal* Proximal Tibial Component

Option 2: *NexGen* RH Knee Non-Modular Proximal Tibial Component*

Option 3: *NexGen* RH Knee Modular Proximal Tibial Component*

* Refer to *NexGen* RH Knee Surgical Technique (97-5880-002-00 **revision 4 or higher**)

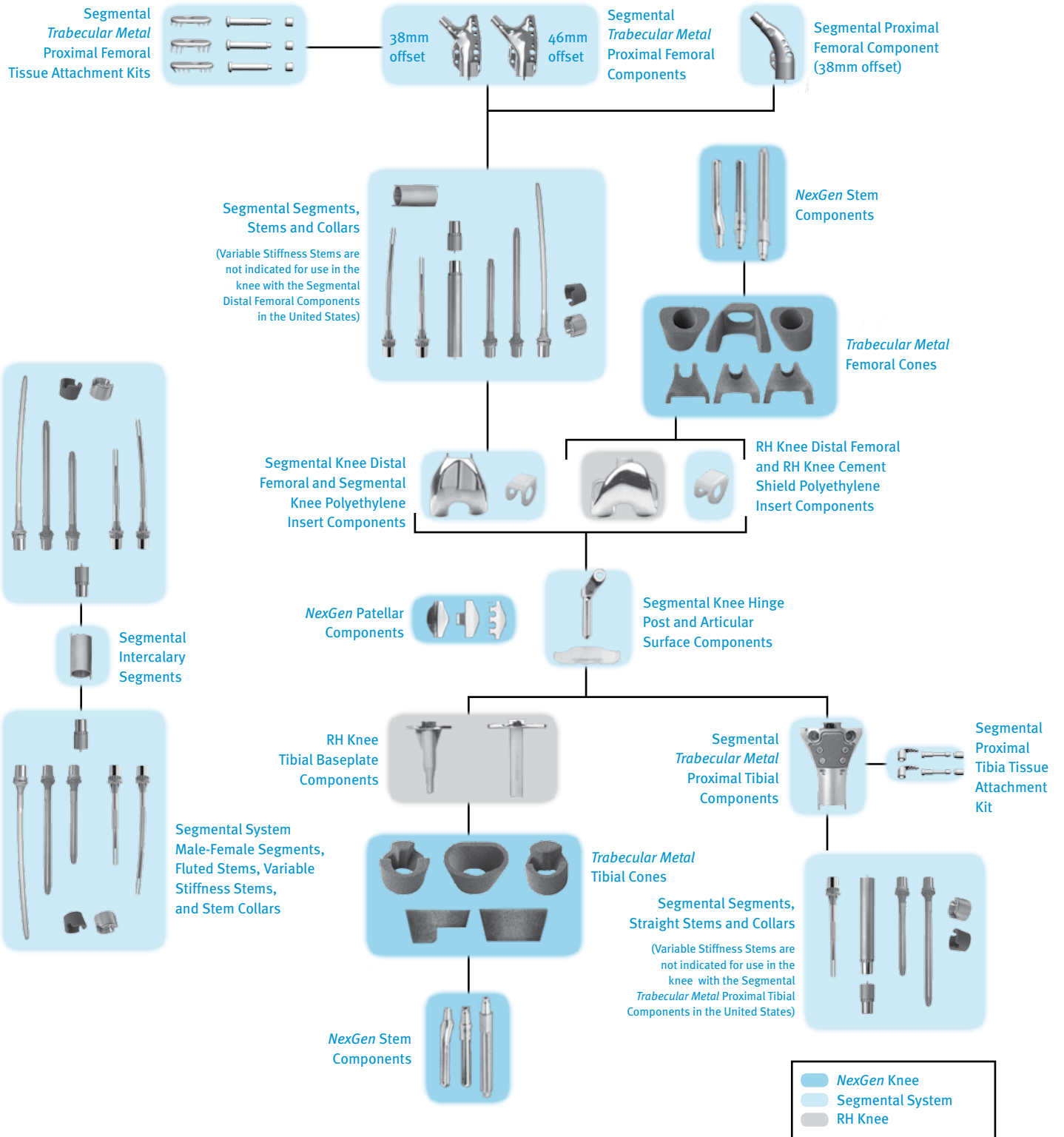




Fig. 3


Table of Contents

SECTION		PAGE
1	Step 1: Tibial Preparation	1
	Step 1: Tibial Preparation	1
	1.1 Resect Proximal Tibia	1
	1.2 Ream Canal	3
	1.3 Plane Tibia	4
	1.4 Counterbore Proximal Canal (Variable Stiffness Stems Only)	5




SECTION		PAGE
2	Step 2: Initial Femoral/Patellar Preparation	6
	Step 2: Initial Femoral/Patellar Preparation	6




SECTION		PAGE
3	Step 3: Trial Reduction	7
	Step 3: Trial Reduction	7
	3.1 Prepare Stem Provisional	7
	3.2 Prepare Proximal Tibial Provisional	9
	3.3 Prepare Distal Femoral Provisional	9
	3.4 Establish Flexion/Extension Gap & Stability	9
	3.5 Re-establish the Joint Line	9




SECTION		PAGE
4	Step 4: Tissue Attachment Assessment	10
	Step 4: Tissue Attachment Assessment	10
	4.1 Assess Tissue Attachment	10
	4.2 Perform Trialing	10




SECTION		PAGE
5	Step 5: Final Distal Femoral Preparation & Trialing (NexGen RH Knee Femoral only)	11
	Step 5: Final Distal Femoral Preparation & Trialing	11
	5.1 Finish Femoral Preparation	11
	5.2 Assemble & Insert Femoral Provisional Components	11
	5.3 Insert Hinge Post Extension Provisional	11
	5.4 Evaluate Patellar Tracking	11




SECTION		PAGE
6	Step 6: Provisional Disassembly	12
	Step 6: Provisional Disassembly	12




SECTION		PAGE
7	Step 7: Gastrocnemius Transfer Preparation	13
	Step 7: Gastrocnemius Transfer Preparation	13




SECTION		PAGE
8	Step 8: Final Assembly & Implantation	14
	Step 8: Final Assembly & Implantation	14
	8.1 Assemble Tibial Construct	14
	Back-Table Assembly	15
	Male-Female Segment Assembly	15
	Stem Assembly	16
	Stem Collar Attachment	16
	Tibial Component Implantation with Fluted Stem	17
	Tibial Component Implantation with Variable Stiffness Stem	18
	In Vivo Assembly	19
	Male-Female Segment Assembly (Optional)	19
	Tibial Assembly	20
	Intraoperative Disassembly	20
	8.2 Assemble Distal Femoral Construct	20
	8.3 Implant Distal Femoral Construct & Articular Surface	21



SECTION		PAGE
9	Step 9: Tissue Attachment	22
	Step 9: Tissue Attachment	22
	9.1 Attach Tissue	22



SECTION		PAGE
10	Step 10: Final Gastrocnemius Transfer & Closure	24
	Step 10: Final Gastrocnemius Transfer & Closure	24



APPENDIX		PAGE
A	Appendix A: Component Disassembly	25



APPENDIX		PAGE
B	Appendix B: NexGen RH Knee & Segmental Articular Surface/Hinge Kit Compatibilities	28

Step 1: Tibial Preparation

1.1 Resect Proximal Tibia

- Extend the leg in a reproducible position.
- Assess bone and soft-tissue quality, and determine the appropriate resection level (**Table 1 & Fig. 4**).

TECHNIQUE TIP

1.A

Resecting the tibia first will facilitate visualization of the distal femur.

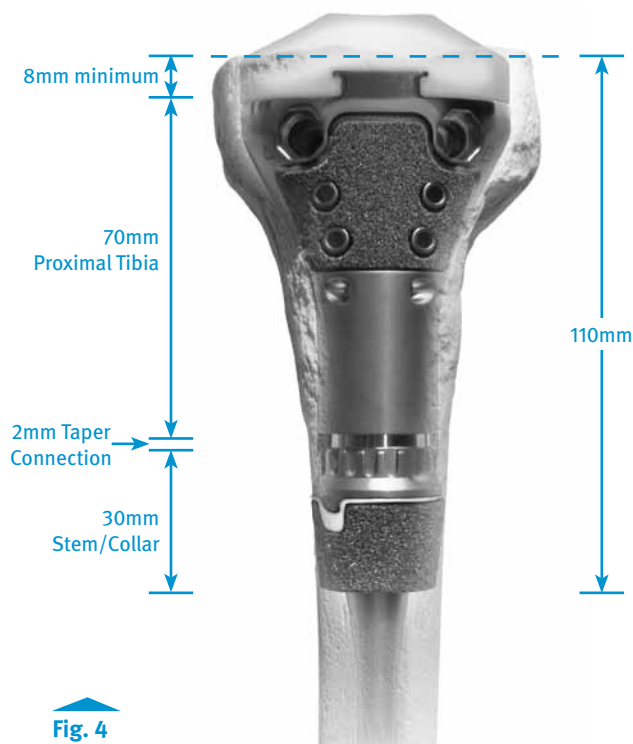


Fig. 4

Proximal Tibia	Stem/Collar	Segments	Total Length*
Size 1, 2, or 3 70mm for Implant + 8mm minimum for Articular Surface	30mm	None	110mm
		30mm	142mm
		35mm	147mm
		40mm	152mm
		45mm	157mm
		50mm**	162mm
		55mm**	167mm
		60mm	172mm
		35+30mm	179mm
		40+30mm	184mm
		40+35mm	189mm
		80mm	192mm
		40+45mm	199mm
		60+30mm	204mm
		60+35mm	209mm
		100mm	212mm
		60+45mm	219mm
		80+30mm	224mm
		80+35mm	229mm
		120mm	232mm
		80+45mm	239mm
		100+30mm	244mm
		100+35mm	249mm
		140mm	252mm
		100+45mm	259mm
		120+30mm	264mm
		120+35mm	269mm
160mm	272mm		
120+45mm	279mm		
140+30mm	284mm		
140+35mm	289mm		
180mm	292mm		
140+45mm	299mm		

Table. 1

Proximal Tibia Resection with Stems, Collars, and Segments

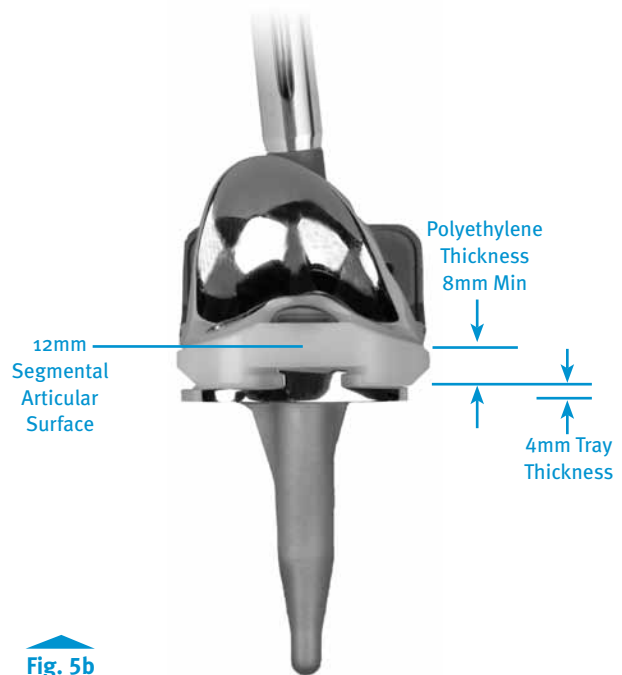
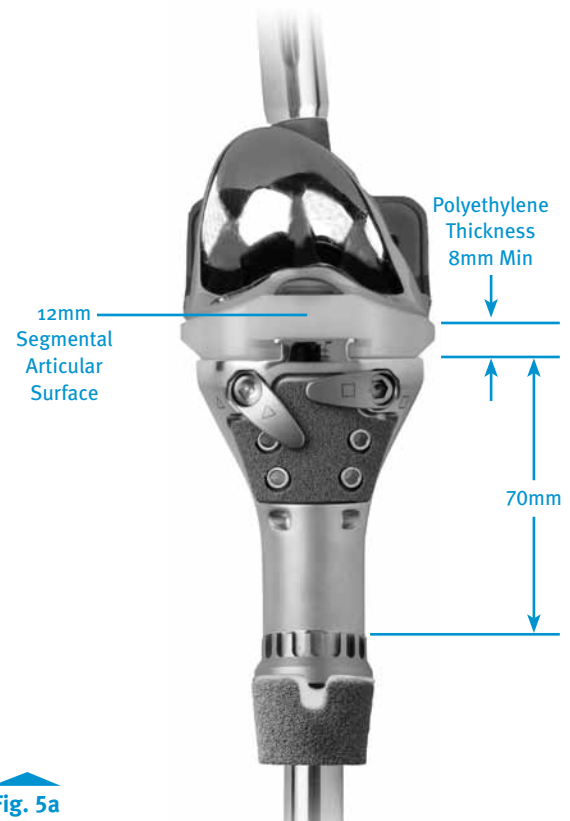
*Each large taper connection adds 2mm to the total length

**Available Soon

- Measure from the articular surface of the proximal tibia, and make a horizontal line to mark the proposed resection level based on preoperative planning and the implant configuration.
- Make a vertical mark below the resection level to reference tibial rotational alignment.
- Resect the bone at the selected level.

Notes:

- While the distal femur is being prepared, ensure that the remaining intact tissues and gastrocnemius transfer tissues are in a stable position on the operating table.
- The overall length and rotational alignment of the resected tibia should be carefully recorded and incorporated into the selection of segment length and stem rotation.
- The Segment Articular Surface is labeled as the articular surface thickness plus 4mm (the thickness of a RH Knee Tibial Baseplate). For example, a 12mm Segmental Articular Surface is 8mm thick at the bearing space, accounting for a 4mm thick tibial tray (Fig. 5a & 5b).



Refer to *NexGen RH Knee Surgical Technique* (97-5880-002-00 revision 4 or higher.)

1.2 Ream Canal

- Select the desired Stem type and length (Table 2).
- Ream the proximal tibial canal until the reamer contacts cortical bone in the isthmus.

Reaming Considerations

Straight Stems

- Start with straight reamers from the VerSys Hip System.

Bowed Stems*

- Flexible reamers are recommended (*Pressure Sentinel*® Intramedullary Reaming System Expanded Hip Set or *ZMR*® Hip System Flexible Reamer Set).

Variable Stiffness Straight Stems

- For optimal fit, the Segmental 3/4mm Reamers may be used.
- Flexible reamers may be used to allow for point contact in the canal.
- If insertion is difficult, consider reaming an additional time with the final 0.5mm or 3/4mm reamer diameter used.

Variable Stiffness Bowed Stems*

- It may be necessary to ream to a diameter equal to or slightly greater than the diameter of the Stem to accommodate any difference between the bow of the Stem and the anatomy of the patient.

Notes:

- The diameter indicated for a Stem represents the actual outer diameter (including the height of the splines for Variable Stiffness Stems).
- Fluted Stems require a different reamed diameter than Variable Stiffness Stems to account for the cement mantle; therefore, determine reamer diameter from Table 3.
- Variable Stiffness Stems are not indicated for use in the knee in the United States.

		Stem Diameter (mm)									
		9	10	11	12	13	14	15	16	17	18
Stem IM Length	Stem Type	130mm Straight (Fluted & Variable Stiffness)									
		190mm Straight (Fluted)									
		190mm Bowed (Variable Stiffness)*									
							250mm Bowed (Fluted)*				

Table 2

Stem Types and Lengths

* Bowed Stems are not commonly used in the Tibia, but are available as part of the Segmental System.

Stem Size (mm)	Min. Ream Diameter for Fluted Stems (mm)	Min. Ream Diameter for VS Stems (mm)
9	11	8.5
10	12	9.5
11	13	10.5
12	14	11.5
13	15	12.5
14	16	13.5
15	17	14.5
16	18	15.5
17	19	16.5
18	20	17.5
19	21	18.5

Table 3

Minimum Reamer Diameters

Instruments



VerSys Hip Reamer
(See ZSS Profiler)
KT-5853-013-00
00-7899-073-00



Pressure Sentinel IM Reamer
(See ZSS Profiler)
00-2228-000-03



ZMR Hip System Flexible Reamer
(See ZSS Profiler)
00-9975-000-11



Segmental 3/4mm Reamer
(See ZSS Profiler)
KT-5853-014-00

1.3 Plane Tibia

- Thread the Segmental Planer Pilot (130mm long) for the stem diameter selected onto the Femoral/Tibial Planer (Fig. 6).

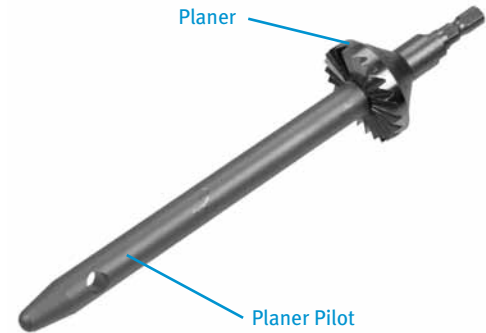


Fig. 6

TECHNIQUE TIP

1.B

To facilitate insertion in a curved medullary canal, use a Planer Pilot 1mm-2mm smaller than the stem diameter chosen (Table 4).

TECHNIQUE TIP

1.C

If the canal is bowed, use the shorter Planer Pilots from the Segmental Variable Stiffness Stem Instrument Kit (KT-5853-008-00).

Stem Size	Planer Pilot Diameter (Fluted)	Planer Pilot Diameter (Variable Stiffness)
9mm	9mm	8mm
10mm	10mm	9mm
11mm	11mm	10mm
12mm	12mm	11mm
13mm	13mm	12mm
14mm	14mm	13mm
15mm	15mm	14mm
16mm	16mm	15mm
17mm	17mm	16mm
18mm	18mm	17mm
19mm	19mm	18mm

Table. 4

Recommended Planer Pilot Diameters

- Attach the assembly to a drill/driver with a Zimmer adapter.
- Plane the proximal tibia until the bone is smooth and flat.
- Remove the Planer Pilot from the planer by inserting the pin on the Segmental Collar Provisional Sizer through the cross-hole and, while securing the noncutting end of the planer, turning the shank counterclockwise (Fig. 7).

Note: If the anatomy requires the use of a shorter Planer Pilot, use the 75mm Segmental Planer Pilots.



Fig. 7

Instruments



Segmental Planer Pilot
(See ZSS Profiler)
00-5851-070-XX



Segmental Planer
5100-00-052



Segmental Collar Provisional Sizer
00-5853-056-10

1.4 Counterbore Proximal Canal (Variable Stiffness Stems Only)

Counterboring the proximal portion of the canal is required because the full diameter of a Variable Stiffness Stem proximal to the splines is 0.25 to 0.5mm greater than the reamed diameter of the canal.

- Thread the Counterbore Reamer Tip into the Counterbore Reamer Stop Plate (**Fig. 8**).
- Insert the assembly into a drill/driver.

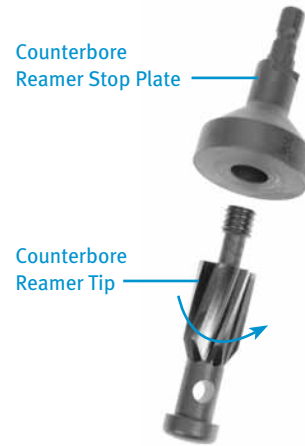


Fig. 8

- Insert the pin on the Segmental Collar Provisional Sizer through the cross-hole of the reamer tip and turn the Collar tightly to secure it to the stop plate (**Fig. 9**).

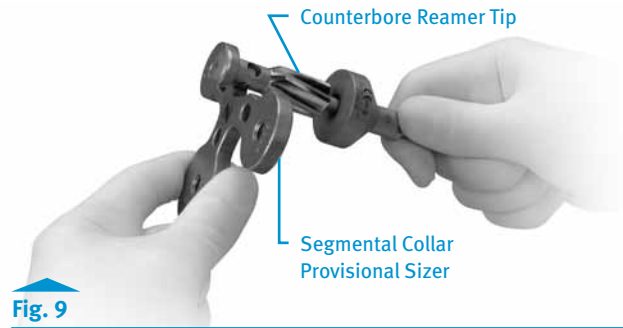


Fig. 9

- Insert the assembly into the reamed canal and counterbore the proximal canal (**Fig. 10**).

Note: The Counterbore Reamer Stop Plate will serve as a stop when the appropriate depth is achieved.

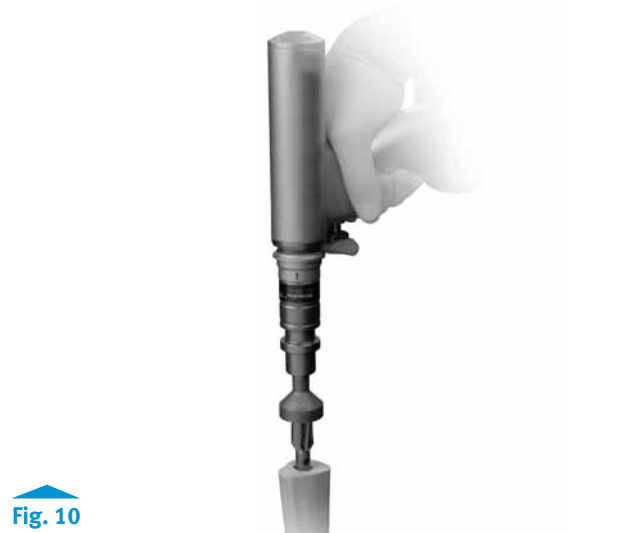


Fig. 10

Instruments



Counterbore
Reamer Tip
(See ZSS Profiler)
00-5851-073-XX



Counterbore
Reamer Stop Plate
00-5851-073-01



Segmental Collar
Provisional Sizer
00-5853-056-10

Step 2: Initial Femoral/Patellar Preparation

Using the NexGen RH Knee Femoral Component

Refer to the *NexGen* RH Knee Surgical Technique (97-5880-002-00 revision 4 or higher) for preparation of the distal femur and patella.

Using the Zimmer Segmental System Distal Femoral Component

Refer to the Segmental Distal Femoral Surgical Technique (97-5850-004-00) for preparation of the distal femur and patella.

Caution: When using the Segmental Proximal Tibial Component, the Segmental One-Piece Hinge Post must be used (Fig. 11). The *NexGen* RH Knee Modular Hinge Post and Hinge Post Extension are not indicated for use with the *Zimmer* Segmental System Proximal Tibia or Segmental Distal Femur.



Fig. 11

Step 3: Trial Reduction

3.1 Prepare Stem Provisional

- Use the Segmental Collar Provisional Sizer to select the Collar size that provides the best coverage of the bone surface (Fig 12).

- Confirm that the Stem and Collar sizes are compatible (Table 5).

Note: The collar sizer may be threaded onto the Planer Pilot to facilitate Collar selection.



Fig. 12

Stem Diameter	Smooth Collar (Item #) (Dimension A)	Trabecular Metal Collar (Item #) (Dimension A)
9-16mm	30mm for 9-16mm Stems (00-5852-042-09)	25mm for 9-16mm Stems (00-5852-040-25)
		30mm for 9-16mm Stems (00-5852-040-30)
		35mm for 9-16mm Stems (00-5852-040-35)
17-19mm	30mm for 17-19mm Stems (00-5851-042-17)	30mm for 17-19mm Stems (00-5852-041-30)
		35mm for 17-19mm Stems (00-5852-041-35)

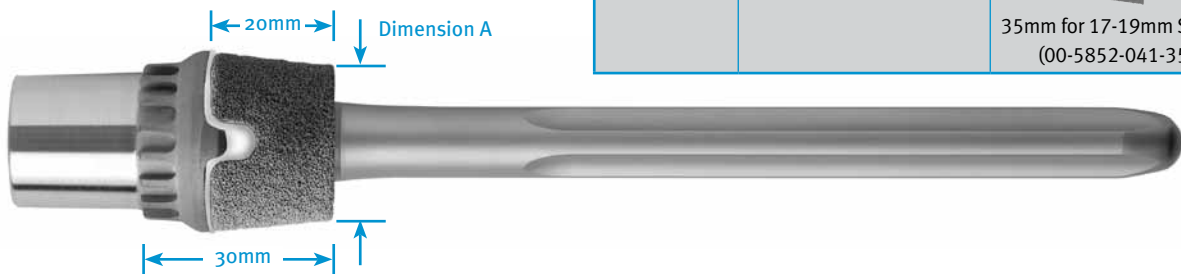


Table. 5

Stem Collar Compatibility Chart

Instruments



Segmental Collar Provisional Sizer
00-5853-056-10



Segmental Planer Pilot
(See ZSS Profiler)
00-5851-070-XX

- Select the appropriate Segmental Stem Provisional ([Table 6](#)).
- Thread the Segmental Collar Provisional onto the Segmental Stem Provisional ([Fig. 13](#)).
- Insert the assembly into the tibial canal.

TECHNIQUE TIP

3.A

- If the provisional assembly does not easily fit into a bowed canal, it may be necessary to perform additional reaming or to use the next smaller size Stem Provisional ([Table 6](#)).
- For Variable Stiffness Stems, if the provisional size that matches the Stem size fits in the canal, there will likely not be enough press fit. Consider preparing for a larger stem diameter, or consider cementing a Fluted Stem.

Notes:

- If using a Smooth Collar, only the 30mm diameter collar is available.
- The diameters of the Segmental Stem Provisionals represent the actual diameters of the Stems, e.g., a 14mm Stem provisional has a nominal 14mm outer diameter.
- The same set of provisionals is used for both the 130mm Segmental Fluted Straight Stem and the 130mm Variable Stiffness Straight Stem. Refer to [Table 6](#) for provisional diameter recommendations per Stem type.
- Antversion pockets allow for adjustment in 20 degree increments.

Stem Size	Provisional Stem Diameter (Fluted)	Provisional Stem Diameter (Variable Stiffness)
9mm	9mm	8mm
10mm	10mm	9mm
11mm	11mm	10mm
12mm	12mm	11mm
13mm	13mm	12mm
14mm	14mm	13mm
15mm	15mm	14mm
16mm	16mm	15mm
17mm	17mm	16mm
18mm	18mm	17mm
19mm	19mm	18mm

Table 6

Recommended Stem Provisional Diameters

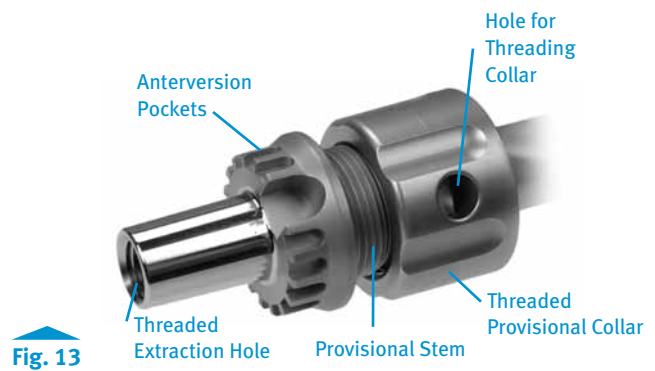


Fig. 13

Instruments

Segmental Stem
Provisional Bowed
(See ZSS Profiler)Segmental Stem
Provisional Straight
(See ZSS Profiler)Collar Provisional
(See ZSS Profiler)
00-5853-056-XX

3.2 Prepare Proximal Tibial Provisionals

- Attach the Segmental Proximal Tibial Provisional (Table 7) and any Segment Provisionals to the Stem Provisional construct, ensuring that the rotational alignment marks are properly positioned and all tabs are engaged in the corresponding pockets.
- If desired, lightly impact the provisional components.
- Insert a temporary suture in the distal mediolateral hole of the Proximal Tibial Provisional to secure the extensor mechanism.

Using the NexGen RH Knee Femoral Component

Refer to the *NexGen* RH Knee Surgical Technique (97-5880-002-00 **revision 4 or higher**) for assembling the femoral provisional, balancing the knee and re-establishing the joint line (Table 7).

3.3 Prepare Distal Femoral Provisional

3.4 Establish Flexion/Extension Gap & Stability

3.5 Re-establish Joint Line

Caution:

- When using the Segmental Proximal Tibial Component, the Segmental One-Piece Hinge Post must be used. The *NexGen* RH Knee Modular Hinge Post and Hinge Post Extension are not indicated for use with the *Zimmer* Segmental System Proximal Tibia or Segmental Distal Femur.
- The Hinge Post Provisional used for trial reduction is available only in the shortest length, which may be shorter than the final Hinge Post being implanted. Thus, more distraction may be necessary to assemble the final implant.

– OR –

Using the Zimmer Segmental System Distal Femoral Component

Refer to the Segmental Distal Femoral Surgical Technique (97-5850-004-00) for assembling the femoral provisional, balancing the knee and re-establishing the joint line (Table 8).

3.3 Prepare Distal Femoral Provisional

3.4 Establish Flexion/Extension Gap & Stability

3.5 Re-establish Joint Line

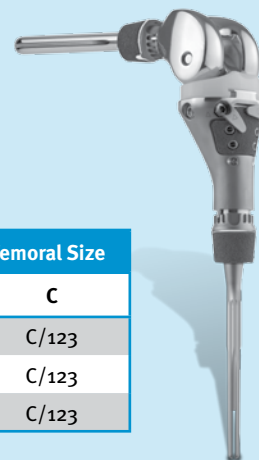
Note: After selecting the final articular surface thickness, verify the tibial rotation and update mark, if necessary.



		NexGen RH Knee Femoral Size				
		B	C	D	E	F
Segmental Proximal Tibial Size	1	B/123	C/123	D/123		
	2	B/123	C/123	D/123	E/23	
	3	B/123	C/123	D/123	E/23	F/3

Table. 7

Segmental Proximal Tibial / RH Knee Compatibility Chart. Interchangeability Chart - Segmental Knee System (using RH Knee Femoral and Segmental Proximal Tibial Components)



		Segmental Distal Femoral Size	
		B	C
Segmental Proximal Tibial Size	1	B/123	C/123
	2	B/123	C/123
	3	B/123	C/123

Table. 8

Compatibility between Segmental Distal Femoral and Segmental Proximal Tibial components. Interchangeability Chart - Segmental Knee System (using Segmental Distal Femoral and Segmental Proximal Tibial Components)

Instruments



Proximal Tibial Provisional
00-5851-001-10
00-5851-002-10
00-5851-003-10



Segmental Stem Provisional Bowed
(See ZSS Profiler)



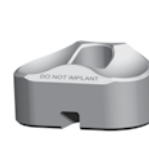
Segmental Stem Provisional Straight
(See ZSS Profiler)



Collar Provisional
(See ZSS Profiler)
00-5853-056-XX



Segment Provisional
(See ZSS Profiler)
KT-5853-004-00



RH Knee Articular Surface Provisional
(See ZSS Profiler)

Step 4: Tissue Attachment Assessment

4.1 Assess Tissue Attachment

- Insert the Tibial Tissue Depth Tool into the octagonal hole of the Proximal Tibial Provisional.
- Place the tissue next to the gauge on the top surface of the provisional and gently compress the tissue.

TECHNIQUE TIP

4.A

For the Depth Tool to indicate the correct amount of tissue available, the thickness of the tissue must be less thick than the bottom of the etch line (groove on the Depth Tool).

- If the tissue is greater than 4mm in thickness, make adjustments to decrease the thickness or do not use the Segmental Tissue Attachment Arms.
- If the tissue thickness is 4mm or less, insert the Tibial Arm Provisionals (Figs. 14 & 15) on either side of the patellar ligament and into the octagonal holes of the Proximal Tibial Provisional, ensuring that the etchings on the Tibial Arm Provisionals match those on the Proximal Tibial Provisional.
- Check to ensure that soft tissue will adequately cover the Attachment Arm Provisionals, as well as the areas of *Trabecular Metal* Material, to prevent metal from contacting skin tissue.

Notes:

- The Tissue Attachment Arms can be used to attach tissue that is up to 4mm thick or less, in any of the configurations shown in Figure 15.
- Tissue thicker than the etch mark/groove indicating 4mm on the Depth Gauge will prevent proper engagement of the attachment arms/bolt thread.

4.2 Perform Trialing

- Place the joint through a range of motion, and perform any necessary soft tissue releases.
- If necessary, increase the thickness of the Articular Surface Provisional until the desired joint stability and range of motion is achieved.
- Verify the rotation of the Proximal Tibial Provisional. If the desired position is different than the initial mark made on the tibia, make a new mark.


Fig. 14

Fig. 15

Instruments



Tibial Tissue
Depth Tool
00-5851-000-15



Proximal Tibial
Provisional
00-5851-001-10
00-5851-002-10
00-5851-003-10



Tibial Arm
Provisionals
00-5851-001-11_12



Segmental Stem
Provisional Bowed
(See ZSS Profiler)



Segmental Stem
Provisional Straight
(See ZSS Profiler)



Collar Provisional
(See ZSS Profiler)
00-5853-056-XX



Segment
Provisional
(See ZSS Profiler)
KT-5853-004-00

Step 5: Final Distal Femoral Preparation & Trialing (NexGen RH Knee Femoral Only)

Refer to the *NexGen* RH Knee Surgical Technique (97-5880-002-00 **revision 4 or higher**) for final femoral preparation and trialing.

5.1 Finish Femoral Preparation

5.2 Assemble & Insert Femoral Provisional Components

5.3 Insert Hinge Post Extension Provisional

5.4 Evaluate Patellar Tracking

Cautions:

- The **Segmental One-Piece Hinge Post** must be used with the **Segmental Trabecular Metal Proximal Tibial Component (Fig. 16)**. The *NexGen* RH Knee Modular Hinge Post and Hinge Post Extension are not indicated for use with the *Zimmer* Segmental System Tibia or the Segmental Distal Femur.
- The Hinge Post Provisional used for trial reduction is available only in the shortest length, which may be shorter than the final Hinge Post being implanted. Thus, more distraction may be necessary to assemble the final implant.

Notes:

- Use the RH Knee Segmental Hinge Post Provisional (not the Segmental Distal Femoral Hinge Post Provisional – gold color on its superior end). The Segmental Distal Femoral Hinge Post Provisional (gold) will not provide an accurate assessment of hyperextension during trial reduction.
- To secure the Segmental/RH Knee Segmental Hinge Post Provisional to the *NexGen* RH Knee Femoral Provisional/Cutting Guide, cross-pin with the Segmental RH Knee Hinge Pin Provisional
- Do not use the Segmental/RH Knee Hinge Pin Aligner as there may not be a trephine hole in the medial side of the bone to place the Hinge Pin Aligner through when trialing (common in oncology cases).
- The Hinge Pin Aligner may be used to trial the Hinge Post Provisional if revising a *NexGen* RH Knee to add the Segmental Tibia, requiring the *NexGen* RH Knee Trephine Guide Instruments to drill a hole for the implant hinge pin.



Fig. 16

Step 6: Provisional Disassembly

- Place the *NexGen* Femoral Slaphammer Extractor into the extraction slots on the Distal Femoral Provisional to remove the component and/or hinge post assembly.
- Use the Segmental Taper Separator to disengage the Proximal Tibial Provisional and the Male-Female Segment Provisional (See Appendix A).
- Thread the Provisional Slaphammer Adapter (two grooves) (Fig. 17) onto the Slaphammer and thread it into the Stem Provisional.
- Impact the Slaphammer to remove the Stem Provisional.



Fig. 17

Notes:

- To protect the taper integrity of the provisional components, use only the Segmental Taper Separator with the turning handle to disassemble the provisional construct.
- The Femoral Stem Extractor can also be used to remove the entire provisional construct (Fig. 18).



Fig. 18

Instruments



Provisional
Slaphammer
Adapter
00-5851-097-12



Slaphammer
00-6551-006-00



Proximal Tibial
Provisional
00-5851-001-10
00-5851-002-10
00-5851-003-10



Segmental Stem
Provisional Bowed
(See ZSS Profiler)



Segmental Stem
Provisional Straight
(See ZSS Profiler)



Collar Provisional
(See ZSS Profiler)
00-5853-056-XX



Segment
Provisional
(See ZSS Profiler)
KT-5853-004-00



Femoral Stem
Extractor
00-6601-002-00

Step 7: Gastrocnemius Transfer Preparation

- Assess the need for a gastrocnemius transfer (**Fig. 19**).
 - Determine whether adequate proximal tibial fascia exists to reattach to the patellar ligament.
 - If the fascia is insufficient, consider a gastrocnemius transfer.
- Assess the feasibility of a gastrocnemius transfer.
 - Determine if there is an adequate length of patellar ligament to allow reattachment to the gastrocnemius transfer or implant to achieve function. A minimum of 3cm is optimal.
 - Determine if there will be adequate attachment of the gastrocnemius muscle to the tibial implant and adjacent soft tissues.
- Identify the medial gastrocnemius muscle belly and its midline interphase with the lateral gastrocnemius muscle.
- Dissect the distal muscle tendon complex at its medial border and deep surface.
- Carefully transect the tendon complex distally where the musculotendonous portion attaches to the proximal Achilles tendon.

Notes:

- The gastrocnemius transfer is strongly recommended in addition to the patellar ligament.
- The patellar ligament must be attached via suture and/or Tissue Attachment Arms in a manner that will allow soft tissue healing to the patients remaining tibial tuberosity and the associated fascial envelope of the proximal tibia, and medial and lateral (antitibial) fascia or periosteum.
- The lateral gastrocnemius muscle could be used similarly.

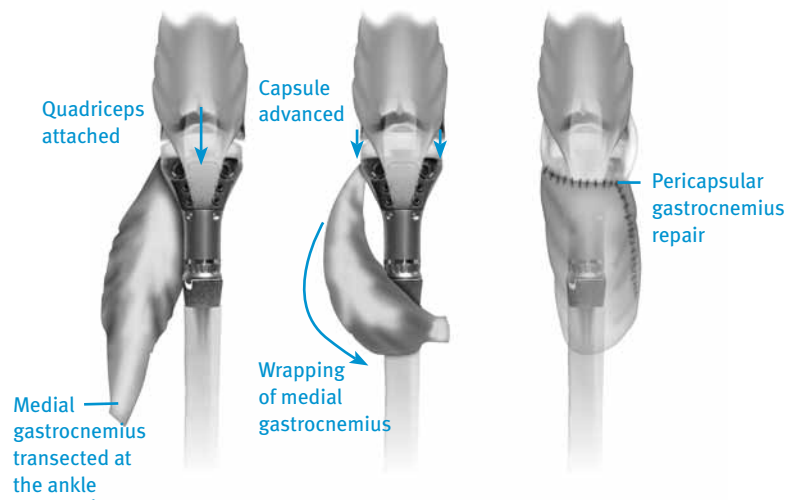


Fig. 19

Step 8: Final Assembly & Implantation

It is important to implant the tibial construct before the distal femoral construct to provide a platform for the articular surface and subsequent pressure for the Distal Femoral Component while the cement is curing.

8.1 Assemble Tibial Construct

There are two options for assembling and inserting the final implants.

Back Table Assembly

The final construct can be completely assembled on the back table and inserted as a single unit. This is the recommended method.

In Vivo Assembly

The Stem and Collar can be assembled and inserted first, and then the Segment and Proximal Tibial Component can be assembled and impacted onto the implanted Stem (common when using Variable Stiffness Stems).








TECHNIQUE TIP

8.A

If cementing a patellar component, consider using two batches of bone cement. Use the first batch to cement the Collar to the Stem and to cement the patellar implant onto the bone. After the cement has set, use a second batch to cement the Fluted Stem when implanting the tibial construct.

Notes:

- All Segmental Stems must be used with Collars, and all Collars must be cemented to the Stems.
- If implanting the complete construct as a single unit, all components of the construct must be assembled and impacted together before cementing the Collar to the Stem. This prevents the impaction force from being placed directly onto the cemented Collar.
- Avoid notching, scratching, or directly striking implants during assembly.
- A space will exist between the components when the tapers are fully seated.
- Before opening the implant packages, verify that the Collar is compatible with the Stem size on the label (Table 9).

Stem Diameter	Smooth Collar (Item #) (Dimension A)	Trabecular Metal Collar (Item #) (Dimension A)
9-16mm	 30mm for 9-16mm Stems (00-5852-042-09)	 25mm for 9-16mm Stems (00-5852-040-25)
		 30mm for 9-16mm Stems (00-5852-040-30)
		 35mm for 9-16mm Stems (00-5852-040-35)
17-19mm	 30mm for 17-19mm Stems (00-5851-042-17)	 30mm for 17-19mm Stems (00-5852-041-30)
		 35mm for 17-19mm Stems (00-5852-041-35)

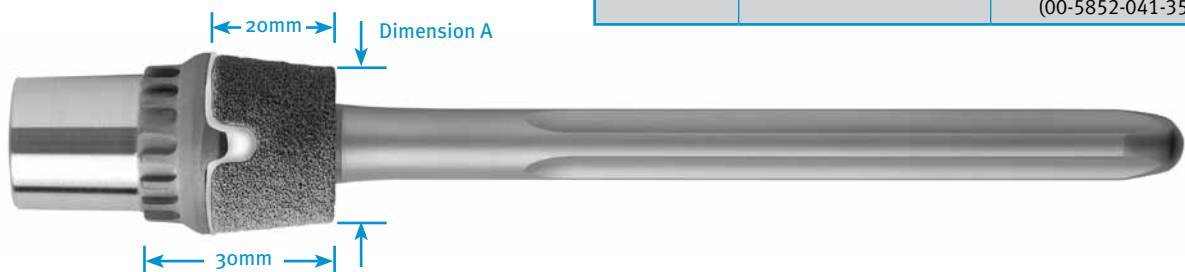


Table 9

Stem Collar Compatibility Chart

Back-Table Assembly

- Rest the tibial plateau of the Segmental *Trabecular Metal* Proximal Tibial Component on the Segmental Tibial Impactor Base on the back table (Fig. 20).
- Thoroughly clean and dry the tapers of all components.

Male-Female Segment Assembly

- Insert the Male-Female Segment into the tibial implant with the anteversion tabs aligned.
- Attach the Universal Impactor Handle to the Segment Impactor.
- Apply the impactor assembly to the segment and impact it with a two-pound mallet.

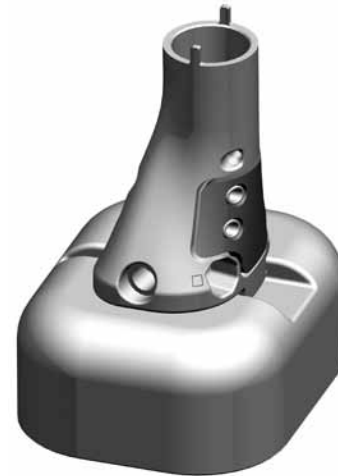


Fig. 20

TECHNIQUE TIP**8.B**

Position the anteversion tabs in either the direct A/P or M/L orientation to facilitate access for the Segmental Taper Separator should future disassembly be required (Fig. 21).

Warning: Impacting the taper more than once may loosen the taper connection.

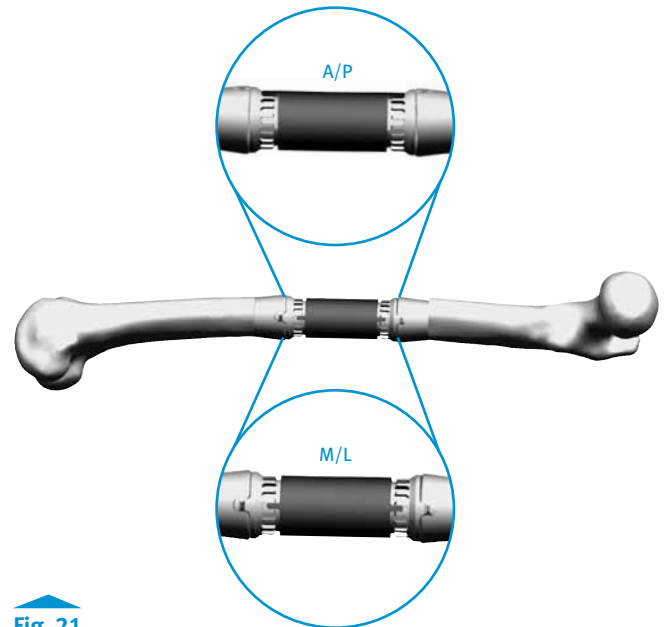


Fig. 21

Instruments

Tibial Impactor
Base
00-5851-000-14



Universal
Impactor Handle
6216-01-125



Segmental Implant/
Provisional Female
Taper Impactor
(Segment Impactor)
00-5851-074-02



Mallet
00-0155-002-00



Segmental Taper
Separator
00-5851-020-00

Stem Assembly

- Thoroughly clean and dry the tapers before assembling the remaining components
- Insert the Stem into the tibial implant or Segment with the anteversion tabs aligned.
- For a Fluted Stem, protect the end of the Stem with gauze, and use a two-pound Mallet to solidly impact the Stem.
- For a Variable Stiffness Stem, slide the Variable Stiffness Stem Impaction Sleeve over the Stem until the notches on the sleeve capture the collar alignment tabs on the Stem base (Fig. 22).
- Solidly strike the impaction head of the sleeve with a two-pound Mallet.

Warning:

- Impacting the Variable Stiffness Stem Impaction Sleeve more than once may loosen the taper connection.
- Do not strike the tip of the Variable Stiffness Stem with any instrument, as this may damage the prongs created by the slots.

Stem Collar Attachment

- Apply cement in the doughy state to the base/taper end of the Stem.
- With the pockets toward the knee joint, slide the Collar over the Stem.
- Clean off excess cement while advancing the Collar to the shank area where cement was applied.
- Ensure that the Collar is fully engaged into the tabs on the Stem (Fig. 23).
- Allow the cement to fully harden before inserting the construct into the canal.

Note: Be careful to prevent cement from contacting the taper, the anteversion adjustment pockets, and the external surfaces of *Trabecular Metal* Material specifically where the Collar will contact the cortical bone.



Fig. 22

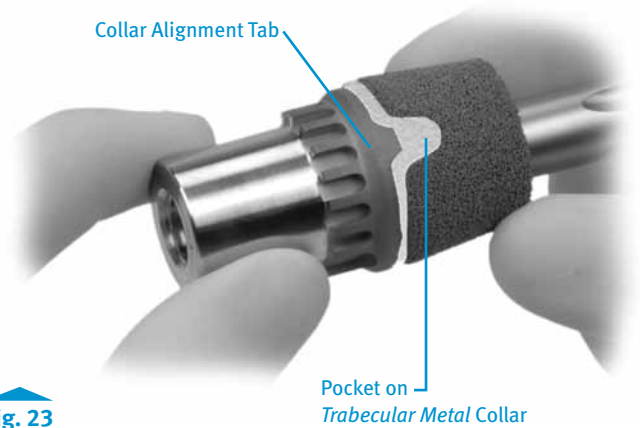


Fig. 23

Instruments



Variable Stiffness
Stem Impaction
Sleeve
00-5853-074-05



Mallet
00-0155-002-00



Tibial Impactor
Base
00-5851-000-14

Tibial Component Implantation with Fluted Stem

- Inject cement into the medullary canal.
- Apply cement to the shank of the Stem and, if using a Smooth Collar, to the base of the Collar.
- Insert the implant into the canal and use the Tibial Impactor and a Mallet to tap it until fully seated, cleaning off excess cement as the implant advances.

Notes:

- If desired, use a plastic cement restrictor for manual cement pressurization. A *Bigliani/Flatow*[®] Pressurizer Sponge may be used to prevent cement from extruding out of the tibial canal and onto the face of the *Trabecular Metal* Collar that contacts the planed surface of the tibial cortex (Fig. 24). If using this technique, slide the sponge onto the Stem until it contacts the base of the Collar.
- Be careful to keep cement off of the external surfaces of the *Trabecular Metal* Collar, the entire surface of the tapers, and the crevices of the anteversion adjustment pockets.
- As the Stem advances into the canal, use the vertical mark on the bone to assess the rotational alignment.
- If using the *Bigliani/Flatow* Pressurizer Sponge, remove the sponge just before the Collar sits flush with the prepared cortex and before the cement cures. Do not implant the sponge.
- Be careful not to leave any foam material in the wound or on the *Trabecular Metal* Material.

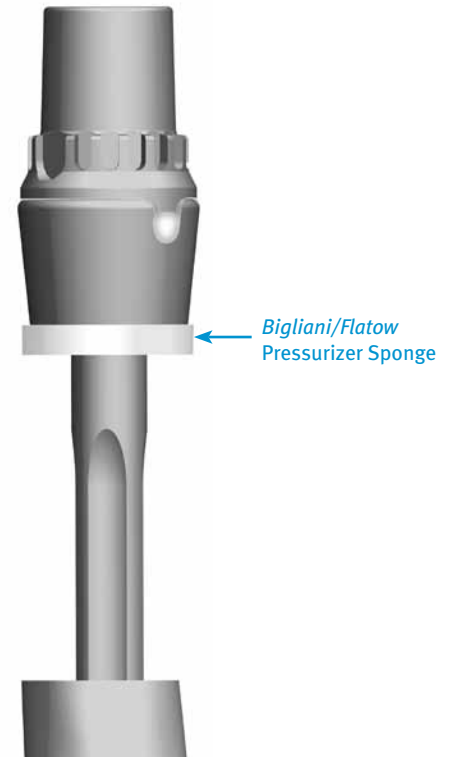


Fig. 24

Instruments

Tibial Impactor
00-5851-00-12
00-5851-00-13



Mallet
00-0155-002-00



Bigliani/Flatow
Pressurizer Sponge
00-4301-035-01

Tibial Component Implantation with Variable Stiffness Stem

- If using a Smooth Collar, apply cement to the base of the Collar.
- Insert the tibial construct into the canal.
- Attach the Universal Impactor Handle to the appropriate size Tibial Impactor.
- Use the impactor assembly and a Mallet to tap the construct until fully seated while observing the vertical mark on the bone to assess the rotational alignment (Fig. 25).

TECHNIQUE TIP

8.C

If the Stem fits too tightly in the bone, remove the Stem and pass the last Reamer used through the canal several more times. This can increase the hole diameter slightly, which will permit the Stem to be more easily impacted into the bone. The Segmental 3/4mm Reamers can also be used for optimal fit for the 130mm Straight VS Stems.

Notes:

- Variable Stiffness Stems are not indicated for use in the knee in the United States.
- There is one Segmental Tibial Impactor for the size 1 and 2 Trabecular Metal Tibial Components, and one impactor for size 3 components.

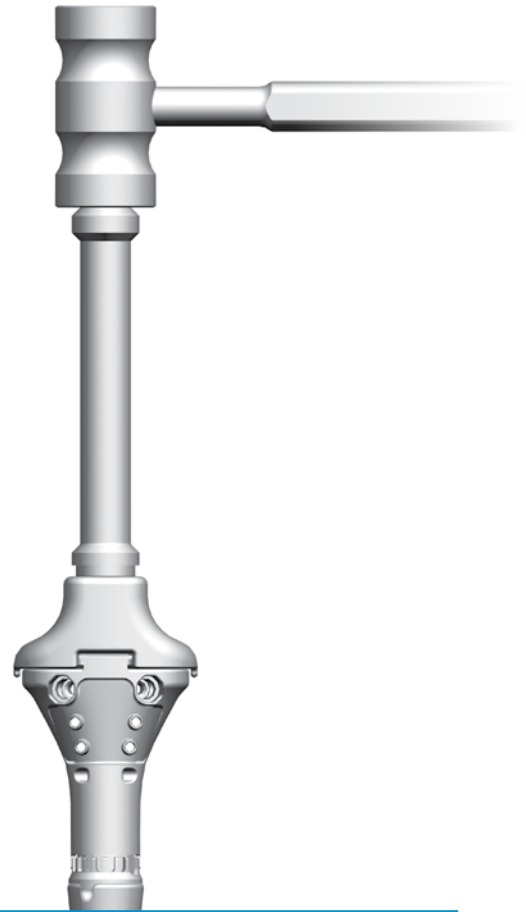


Fig. 25

Instruments



Universal
Impactor Handle
6216-01-125



Tibial Impactor
00-5851-00-12
00-5851-00-13



Mallet
00-0155-002-00

In Vivo Assembly

- Attach the Collar as detailed in the previous section, “Stem Collar Attachment,” and allow the cement to fully harden before inserting the construct into the canal.
- Insert the stem/collar assembly into the tibial canal.
- Attach the Universal Impactor Handle to the Stem Impactor.
- Apply the impactor assembly to the stem construct and tap the handle with a Mallet until fully seated, using the vertical mark on the bone to assess the rotational alignment.

TECHNIQUE TIP**8.D**

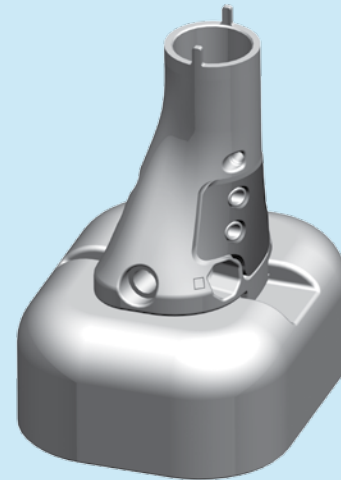
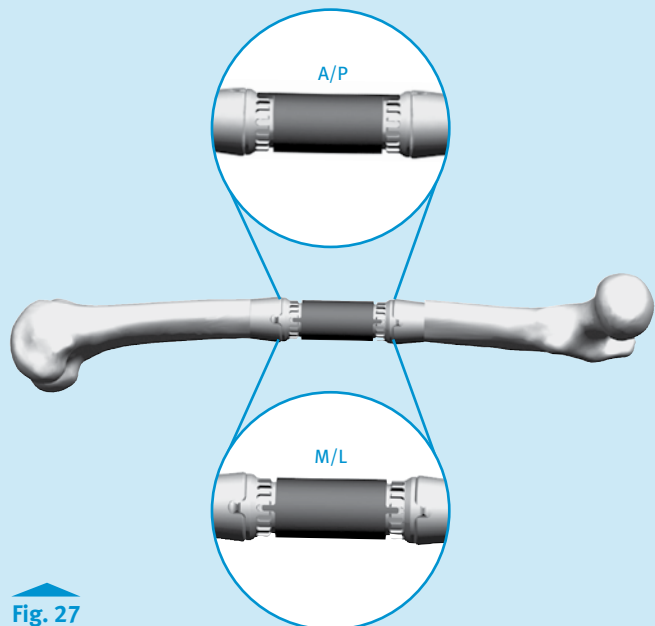
If the Stem fits too tightly in the bone, consider removing the Stem and passing the last Reamer used through the canal several more times. This can increase the hole diameter slightly, which will permit the Stem to be more easily impacted into the bone. The Segmental 3/4mm Reamers can also be used for optimal fit.

Male-Female Segment Assembly (Optional)

- Rest the tibial plateau of the Segmental Trabecular Metal Proximal Tibial Component on the Segmental Impactor Base on the back table (Fig. 26).
- Thoroughly clean and dry the tapers of all components.
- Insert the Male-Female Segment into the tibial implant with the anteversion tabs aligned.
- Attach the Universal Impactor Handle to the Segment Impactor.
- Apply the impactor assembly to the segment and impact it with a two-pound Mallet.

TECHNIQUE TIP**8.E**

Position the anteversion tabs in either the direct A/P or M/L orientation to facilitate access for the Segmental Taper Separator should future disassembly be required (Fig. 27).

**Fig. 26****Fig. 27****Instruments**

Universal
Impactor Handle
6216-01-125



Segmental Implant/
Provisional Male
Taper Impactor
(Stem Impactor)
00-5851-080-00



Tibial Impactor
Base
00-5851-000-14



Mallet
00-0155-002-00



Segmental Implant/
Provisional Female
Taper Impactor
(Segment Impactor)
00-5851-074-02

Tibial Assembly

- Place the tibial assembly onto the Stem taper in the canal.
- Attach the Universal Impactor Handle to the appropriate size Tibial Impactor.
- Use the impactor assembly and a Mallet to impact the components at the appropriate rotation per the vertical mark below the resection.

Warning: Impacting a taper more than once may loosen the taper connection.

Intraoperative Disassembly

If disassembly is necessary during surgery, the Segmental Taper Separator can be used to separate the junctions between Segments, Stem, and Tibial/Femoral Implants without damaging the tapers. See Appendix A for complete instructions (Fig. 28).

8.2 Assemble Distal Femoral Construct**Using the NexGen RH Knee Femoral Component**

Refer to the *NexGen* Rotating Hinge Knee Surgical Technique (97-5880-002-00 revision 4 or higher) for assembling & implanting the femoral construct.

Using the Zimmer Segmental System Distal Femoral Component

Refer to the Segmental Distal Femoral Surgical Technique (97-5850-004-00) for assembling & implanting the femoral construct.

Warning: Do not use the Segmental Polyethylene Insert with the *NexGen* RH Knee Femoral Component. Only use the items indicated in the appropriate size Segmental Articular Surface and *NexGen* RH Knee Cement Shield Hinge Service Kit (Appendix B) (Fig. 29).

Caution: When using the Segmental *Trabecular Metal* Proximal Tibial Component with a Segmental Distal Femoral, you must use the Segmental One-Piece hinge post. The Segmental Proximal Tibial Component is not indicated for use with the *NexGen* RH Knee Modular Hinge Post and Hinge Post Extension.



Fig. 28



Fig. 29

Instruments

Universal
Impactor Handle
6216-01-125



Tibial Impactor
00-5851-00-12
00-5851-00-13



Mallet
00-0155-002-00

8.3 Implant Distal Femoral Construct & Articular Surface

- Make a final check to ensure that the Femoral, Tibial, and Articular Surface Components match (Tables 10 & 11).

Using the NexGen RH Knee Femoral Component

Refer to the *NexGen* RH Knee Surgical Technique (97-5880-002-00 **revision 4 or higher**) for femoral construct & Articular Surface implantation.

Caution: If there is concern regarding insufficient tissue distraction, assemble the components via the **In Vivo Assembly technique (trephine hole required)**, in the *NexGen* RH Knee Surgical Technique (97-5880-002-00 **revision 4 or higher**) Appendix F.

Using the Segmental Distal Femoral Component

Refer to the Segmental Distal Femoral Surgical Technique (97-5850-004-00) for Distal Femoral and Articular Surface implantation.



		NexGen RH Knee Femoral Size				
		B	C	D	E	F
Segmental Proximal Tibial Size	1	B/123	C/123	D/123		
	2	B/123	C/123	D/123	E/23	
	3	B/123	C/123	D/123	E/23	F/3

Table. 10

Segmental Proximal Tibial / RH Knee Compatibility Chart. Interchangeability Chart - Segmental Knee System (using RH Knee Femoral and Segmental Proximal Tibial Components)



		Segmental Distal Femoral Size	
		B	C
Segmental Proximal Tibial Size	1	B/123	C/123
	2	B/123	C/123
	3	B/123	C/123

Table. 11

Compatibility between Segmental Distal Femoral and Segmental Proximal Tibial components. Interchangeability Chart - Segmental Knee System (using Segmental Distal Femoral and Segmental Proximal Tibial Components)

Step 9: Tissue Attachment

9.1 Attach Tissue

- Insert the Tibial Tissue Depth Tool into the octagonal hole on the Segmental Proximal Tibial Component.
- Place the tissue next to the gauge on the top surface of the implant and gently compress the tissue.

TECHNIQUE TIP

8.F

For the Depth Tool to indicate the correct amount of tissue available, the thickness of the tissue must be less thick than the bottom of the etch line/groove on the Depth Tool.

- Check to ensure that the tissue is no thicker than the etch mark on the gauge. The Segmental Proximal Tibial component can be used with suture attachment only, regardless of tissue thickness.
- Use the distal suture hole to extend the patellar ligament distally until taut.
- If needed, use the Tibial Soft Tissue Awl to create holes through the tissue into the octagonal holes on the tibial component (Fig. 30).
- Using the appropriate right or left Tissue Attachment Arm, and the Tibial Tissue Arm Forceps, insert the octagonal peg of the arm through the hole in the tissue and into the octagonal hole on the tibial component.
- Insert the Tissue Attachment Arms on either side of the patellar ligament and into the octagonal holes of the Segmental Proximal Tibial Component in one of the three pictured configurations (Fig. 31).

Caution: Ensure the Tissue Attachment Arm symbol & the symbol on the Segmental Proximal Tibial Component match. The Tissue Attachment Arms have teeth that are in opposing directions to properly secure the tissue (Fig 32).

Note: The etch mark on the Tibial Tissue Depth Tool indicates the maximum thickness (4mm) to allow for proper engagement of the Tissue Attachment Arms/Bolt Thread.

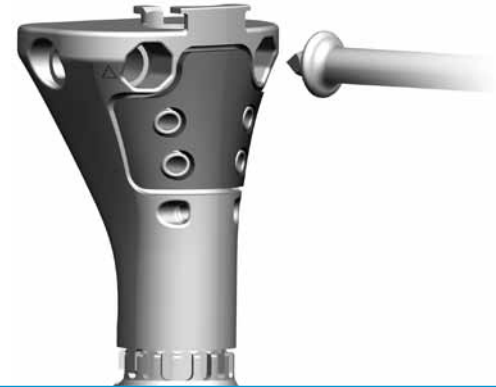

Fig. 30

Fig. 31

Fig. 32

Instruments



Tibial Tissue
Depth Tool
00-5851-000-15



Tibial Soft
Tissue Awl
00-5851-000-33



Tibial Tissue
Arm Forceps
00-5851-000-20

- Insert the Tibial Attachment Arm Bolt into the hole within the arm and tighten it using the 4.5mm Hex Head Screwdriver (Fig. 33) until the tissue is held tightly enough for joint stability when combined with the gastrocnemius transfer or other surrounding tissues.
- Place the joint through a range of motion, and perform any necessary soft tissue adjustments.

Caution: Be careful not to overtighten the sutures and/or Tissue Attachment Arms against the tibial component as overtightening may compromise circulation and may lead to tissue necrosis. After the tourniquet is released, check the soft tissues to be sure they return to their normal color. If not, the sutures may need to be replaced with looser knots tied around the tibia, or the Tissue Attachment Arms may need to be loosened.

- Avoid placing the suture in direct contact with the *Trabecular Metal* Material pad as it may weaken the suture.
- Adjust the Tissue Attachment Arms, if necessary, and insert Tissue Attachment Arm Set Screws medially and laterally (Fig. 34), torquing them with the blue-handled Torque Wrench (130 in-lb) (Fig. 35).

Notes:

- In addition to using the Tissue Attachment Arms, it is recommended that soft tissue structures be sutured to pull the tissue against the *Trabecular Metal* Material pad for ingrowth.
- Tissue Attachment Arm Bolts are used to adjust the compression of the Tissue Attachment Arms over the tissue. Once the desired compression is achieved, the Bolts must be secured with Tissue Attachment Arm Set Screws and torqued to 130 in-lb.



Fig. 33

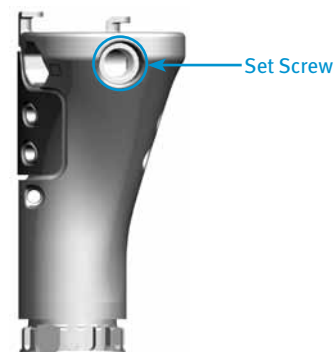


Fig. 34



Fig. 35

Instruments



4.5mm Hex Head
Screwdriver
00-5851-000-36



Screw Driver
(4.5mm)
00-5881-026-00



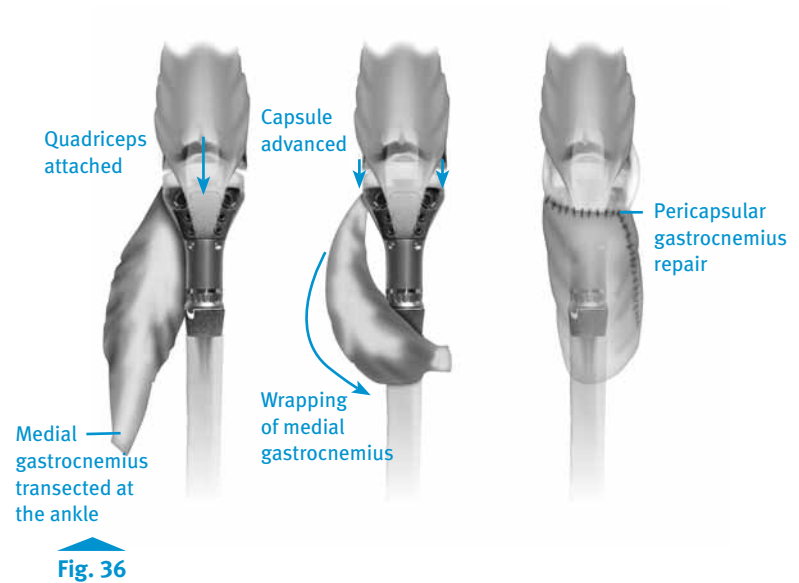
Torque Wrench
00-5881-027-00

Step 10: Final Gastrocnemius Transfer & Closure

- Reattach the tendon of the gastrocnemius transfer and the patellar ligament using nonabsorbable sutures and/or Tissue Attachment Arms via one of the following procedures:
 - Attach the gastrocnemius transfer to the proximal tibial component first. Then attach the patellar ligament to the superfascial tendonous gastrocnemius transfer.
 - OR —
 - Attach the patellar ligament to the tibial component with sutures and/or Tissue Attachment Arms first. Then cover the implant with the gastrocnemius transfer and suture the gastrocnemius tissue to the patellar ligament and/or surrounding tissue (Fig. 36).
- Perform a final range of motion.
- Perform the final soft tissue repair.
- Thoroughly clean the surgical site of bone chips, bone cement, and any other debris.
- Perform final closure.

Notes:

- Be careful to preserve the innervation and blood supply of the proximal third of the gastrocnemius muscle.
- Avoid placing suture in direct contact with the *Trabecular Metal* Material pad as it may weaken the suture.



Appendix A: Component Disassembly

Using the Segmental Taper Separator

The Segmental Taper Separator is designed to enable separation of the junctions between provisionals, Segments, Stem, and Tibial Implants without damaging the tapers.

- Ensure that the inside wedging portion of the separator is fully retracted and centered within its housing.
- Insert the tabs of the separator into the anteversion pockets with the flat of the separator toward the anatomical joint as etched on the instrument (**Fig. 37**).
- Slowly turn the handle clockwise until the tapers disengage, taking care not to pinch fingers against the rotating impactor cap.
- If necessary, lightly tap the impactor cap on the instrument to facilitate taper disassembly.



Fig. 37

TECHNIQUE TIP

A.1

*If additional force is needed to disengage the taper, use two Segmental Taper Separators, one on each side (**Fig. 38**).*

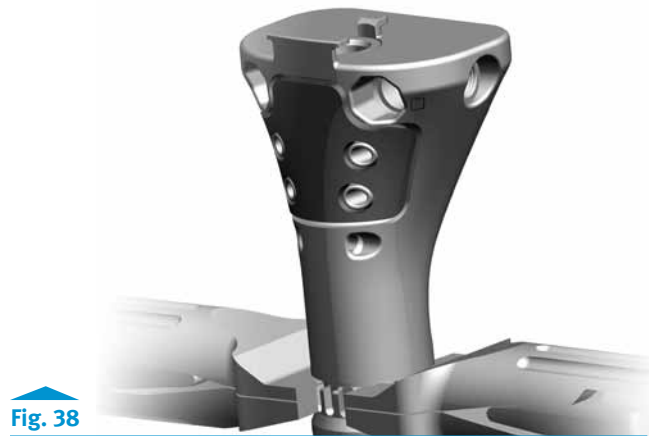


Fig. 38

Instruments



Segmental Taper
Separator
00-5851-020-00

Using the Femoral Stem Extractor

- The Femoral Stem Extractor can also be used if removal of the entire femoral or tibial construct is necessary (Fig. 39).

Note: Do not reuse an implant after extraction as the threads may be damaged.

- The Femoral Stem Extractor can be used in the tissue attachment bolt hole or set screw hole (Fig. 39).

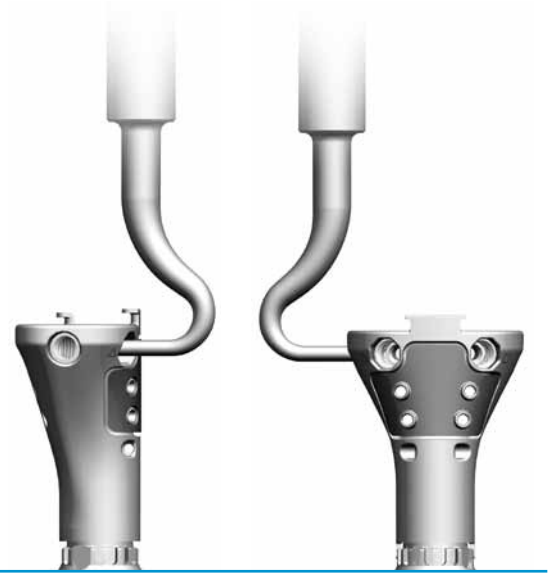


Fig. 39

Servicing the Segmental Tibial Tissue Attachment Arms

- Use the Screw Driver (4.5mm) and the Torque Wrench (blue-handle) to remove the Set Screws from the medial and lateral sides of the device (Fig. 40).

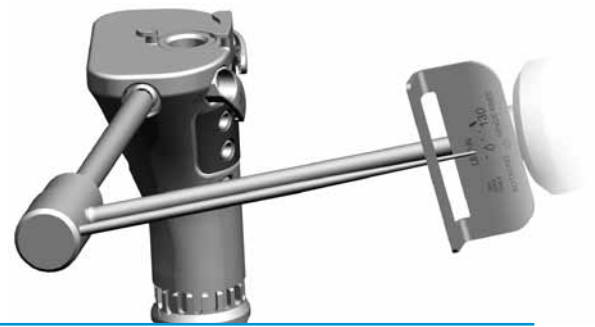


Fig. 40

- Use the 4.5mm Hex Head Screwdriver to remove both Bolts from the anterior aspect of the device (Fig. 41).
- Use the MIS Threaded Handle in conjunction with the Tibial Arm Remover to remove the arms.

Notes:

- If necessary, use a slaphammer to facilitate removal of the Tissue Attachment Arms.
- Alternatively, the Segmental Tibial Tissue Arm Forceps can be used to remove the Tissue Attachment Arms.

Fig. 41



Instruments



Femoral Stem
Extractor
00-6601-002-00



Screw Driver
(4.5mm)
00-5881-026-00



4.5mm Hex Head
Screwdriver
00-5851-000-36



Torque Wrench
00-5881-027-00



Tibial Arm
Remover
00-5851-000-25



MIS Threaded
Handle
00-5983-002-01



Slaphammer
00-6551-006-00



Tibial Tissue
Arm Forceps
00-5851-000-20

Removing an Implanted Hinge Pin & Components

- Drill a hole through the side of the femoral condyle (see *NexGen RH Knee Trepine Guide Instrument Technique* in the *NexGen RH Knee Surgical Technique* 97-5880-002-00, Appendix F).
- Use the Hinge Pin Polyethylene Plug Removal Tool to remove the Hinge Pin Plug.
- Remove the Hinge Pin using the Screw Driver (4.5mm) and RH Knee Removal Wrench (black-handle) or Deflection Beam Torque Wrench (blue-handle) (Fig. 42).

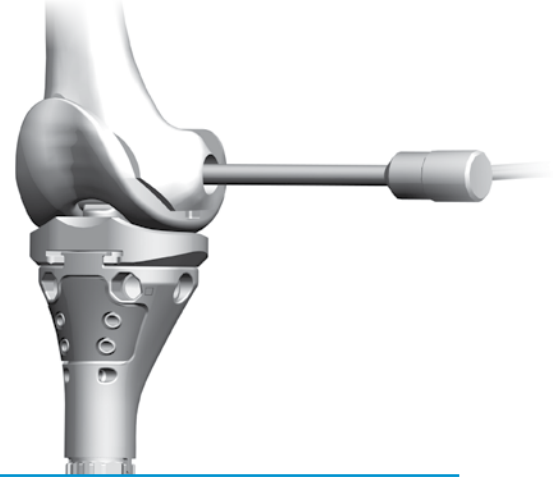


Fig. 42

- Remove the remaining internal hinge components (Fig. 43).
- Remove the Tibial Articular Surface.

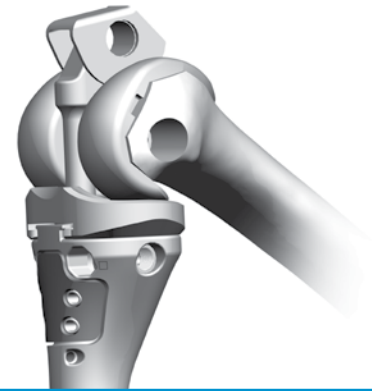


Fig. 43

- Use the Tibial Bushing Removal Tool to remove the tibial bushing from the tibial plate stem (Fig. 44).

Notes:

- This procedure assumes that there is a well-fixed distal femoral component and a well-fixed Segmental Trabecular Metal Proximal Tibial Component.
- Be careful to avoid scratching the surface of the Segmental Trabecular Metal Proximal Tibial Component.

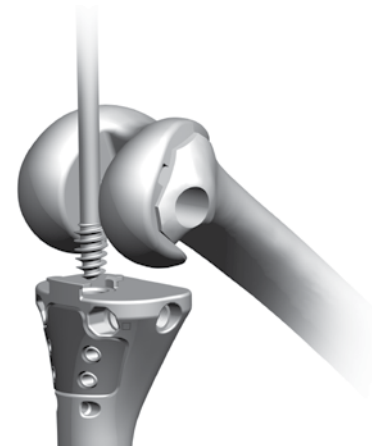


Fig. 44

Instruments



Hinge Pin
Polyethylene Plug
Removal Tool
00-5881-053-00



Screw Driver
(4.5mm)
00-5881-026-00



Torque Wrench
00-5881-027-00




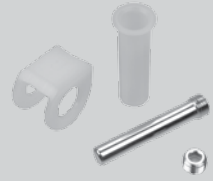



RH Knee Removal
Wrench
00-5987-035-00

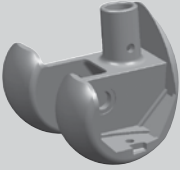




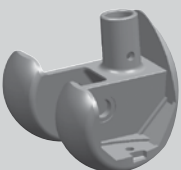

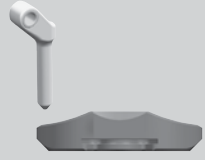


Tibial Bushing
Removal Tool
00-5881-055-00

Appendix B: NexGen RH Knee & Segmental Articular Surface/Hinge Kit Compatibilities

	Item Description	Picture/Item Number	Use On/With	Do Not Use With/Why
1	Segmental Articular Surface <ul style="list-style-type: none"> Segmental One-piece Hinge Post Segmental Articular Surface Piece 	 00-5850-020_060-12_26	Segmental Distal Femoral (00-5850-012_013-01/02) Segmental <i>Trabecular Metal</i> Proximal Tibial (00-5850-001_003-10) NexGen RH Knee Distal Femoral (00-5880-012_016-01/02) NexGen RH Knee Tibial Plate (00-5880-001_006-00/02) Segmental Articular Surface can be used with the NexGen RH Knee Hinge Post Extension (from Item 2 below) EXCEPT with the <i>Trabecular Metal</i> Proximal Tibial (see page 29 for the Servicing Kit Compatibility Chart)	Segmental One-piece Hinge Post with NexGen RH Knee Articular Surface Piece <ul style="list-style-type: none"> Mating components are not compatible RH Knee Modular Hinge Post Extension + Segmental Articular Surface + Segmental <i>Trabecular Metal</i> Proximal Tibial <ul style="list-style-type: none"> Only Segmental One-piece Hinge Post is indicated with the Segmental <i>Trabecular Metal</i> Proximal Tibial
2	NexGen RH Knee Articular Surfaces <ul style="list-style-type: none"> NexGen RH Knee Hinge Post Extension NexGen RH Knee Articular Surface Piece 	 00-5880-020_060-12_26	NexGen RH Knee Distal Femoral NexGen RH Knee Tibial Plate	Segmental Distal Femoral Segmental <i>Trabecular Metal</i> Proximal Tibial Segmental One-piece Hinge Post <ul style="list-style-type: none"> Mating components are not compatible
3	NexGen RH Knee Cement Shield Hinge Service Kit <ul style="list-style-type: none"> Poly Insert with Shield Shoulder Bolt Hinge Pin Hinge Pin Plug Tibial Bushing 	 00-5850-075-12_16	NexGen RH Knee Distal Femoral with Segmental Articular Surface & Segmental One-Piece Hinge Post (Item 1 above)	NexGen RH Knee Distal Femoral with NexGen RH Knee Hinge Post Extension <ul style="list-style-type: none"> Mating components are not compatible
4	Segmental Hinge Service Kit <ul style="list-style-type: none"> Segmental Poly Insert Segmental Hinge Pin Segmental Hinge Pin Set Screw Tibial Bushing 	 00-5850-070-12_13	Segmental Distal Femoral Segmental Articular Surface with Segmental One-piece Hinge Post (Item 1 above)	NexGen RH Knee Distal Femoral <ul style="list-style-type: none"> Mating components are not compatible
5	NexGen RH Knee Hinge Service Kit <ul style="list-style-type: none"> Poly Box Insert Hinge Post Shoulder Bolt Hinge Pin Hinge Pin Plug Tibial Bushing 	 00-5880-090-12_16	NexGen RH Knee Distal Femoral NexGen RH Knee Articular Surface and RH Knee Hinge Post Extension (Item 2 above)	Segmental Distal Femoral NexGen RH Knee Distal Femoral with Segmental One-piece Hinge Post <ul style="list-style-type: none"> Mating components are not compatible

Servicing Kit Compatibility Chart

RH Knee	Hinge Servicing Kit Used	Compatible Articular Surfaces and Hinge Components	
 <p>Base Component System</p>	 <p>NexGen RH Knee Hinge Servicing Kit</p>	 <p>NexGen RH Knee Articular Surface (with the Hinge Post Extension)</p>	 <p>DISCARD</p>
			<p>OR</p>  <p>Segmental Articular Surface with the Segmental One-Piece Hinge Post</p>
 <p>Base Component System</p>	 <p>NexGen RH Knee Cement Shield Servicing Kit</p>	 <p>Segmental Articular Surface with the Segmental One-Piece Hinge Post</p>	



Disclaimer

This documentation is intended exclusively for physicians and is not intended for laypersons. Information on the products and procedures contained in this document is of a general nature and does not represent and does not constitute medical advice or recommendations. Because this information does not purport to constitute any diagnostic or therapeutic statement with regard to any individual medical case, each patient must be examined and advised individually, and this document does not replace the need for such examination and/or advice in whole or in part. Please refer to the package inserts for important product information, including, but not limited to, contraindications, warnings, precautions, and adverse effects.

Contact your Zimmer representative or visit us at www.zimmer.com

