



**Zimmer®
NexGen®
MIS™ Tibial
Component**



Innovative Solutions for Minimally Invasive Procedures

Innovative Design for MIS Procedures.

The *NexGen MIS* Tibial Component was designed specifically to address the challenges and demands of minimally invasive TKA. The new Zimmer design incorporates broad proximal fins that engage the tibia in the area of highest bone density for secure fixation, while its low profile makes it easier to insert into the minimally invasive arthrotomy. Its modular design with drop down extension capability expands physician options.



*Image courtesy of
Alfred J. Tria, MD*



*Image courtesy of
Jess Lonner, MD*

Minimally Invasive TKA

Length of the keel was designed to facilitate insertion through a smaller soft tissue window in which muscle and tendon cutting is minimized.



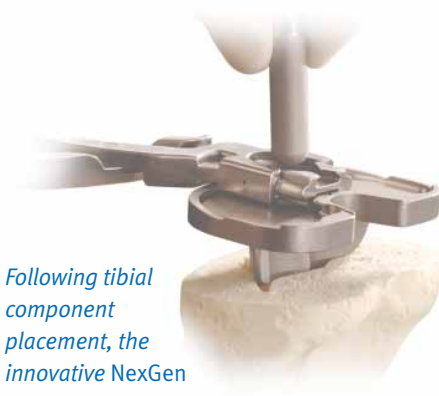
The Zimmer NexGen Solution

The *NexGen MIS* Tibial Component is an innovative solution for minimally invasive tibial implantation in both CR/CR-Flex and LPS/LPS-Flex applications. This implant builds on the clinical successes of the *NexGen* knee product line, using the same sound science and testing.



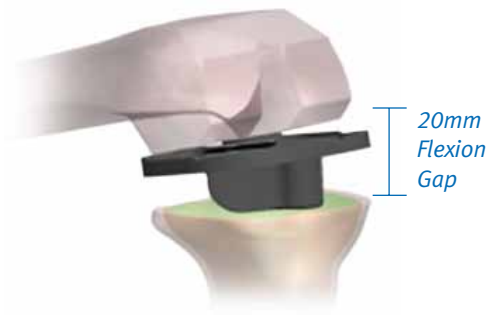
The 45mm and 75mm MIS Drop Down Stem Extensions provide surgeons the intraoperative flexibility of adding a stem to increase implant length if desired.

The length of the keel was designed specifically to facilitate insertion through a smaller soft tissue window. The implant incorporates a shorter, broader keel, which is designed to capitalize on the best proximal bone stock for secure fixation.



Following tibial component placement, the innovative NexGen MIS Drop Down Stem Extension can be inserted through the plate.

The *NexGen MIS* Tibial Component is the first of its kind. An implant that facilitates minimally invasive procedures while allowing the option of adding length to the keel after the tibial component is inserted into the knee. Design features of the *NexGen MIS* Tibial Component make insertion into a quadriceps sparing arthrotomy easier.



20mm Flexion Gap

Key Design Features.

This product is an important addition to the clinically successful *NexGen* knee system as it is the first component to be designed for minimally invasive procedures. It can be used with *NexGen* CR/CR-Flex and *NexGen* LPS/LPS-Flex articular surfaces.

Low-Profile

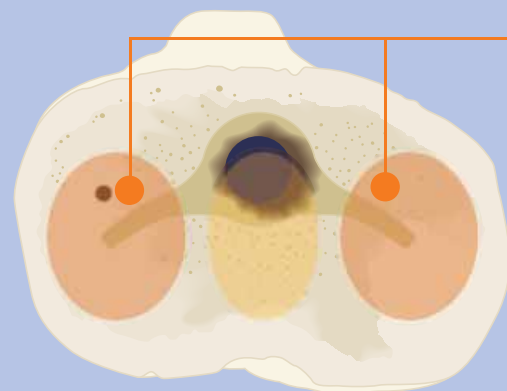
- Designed to be compatible with minimally invasive TKA procedures.
- Keel length less than 20mm to facilitate insertion through a minimally invasive arthrotomy.
- Provides the freedom to cut the proximal tibia at the desired angle while reducing the potential of cortical impingement in the medullary canal.

Optional Extensions

- Offered in two sizes: 45mm and 75mm for increased patient specificity.
- Modular *MIS* Drop Down Stem Extension allows for *in-vivo* assembly facilitating minimally invasive surgery.
- Provides a better fit in irregular or deformed tibial medullary canals.

Broad Proximal Fins

- Located in the region with the highest bone density.
- Designed to provide secure implant fixation.
- Provides resistance to bending moments.
- Provides resistance to rotation and lift-off.



MIS Tibial Component: Fin Surface Area*

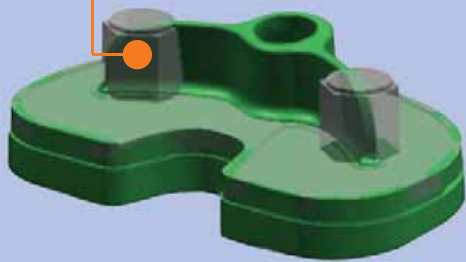
Tibial Plate Size	NexGen Stemmed Tibia [cm ²]	NexGen MIS Tibia [cm ²]	Comparison Surface Area
1	0.816	0.761	-6.72%
2	0.816	0.761	-6.72%
3	1.240	1.303	5.10%
4	1.245	1.303	4.66%
5	1.766	1.954	10.67%
6	1.766	1.954	10.67%
7	2.816	2.861	1.58%
8	2.816	2.861	1.58%
9	2.645	3.056	15.56%
10	2.645	3.056	15.56%
Average			5.20%

* Data on file at Zimmer



Bone Density

Wide fins engage the bone in the region of the proximal tibia with the highest density.¹



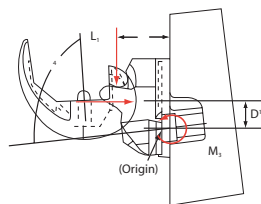
Fin Position

The fins are positioned to sit in the same bone location as the hex posts from the Trabecular Metal™ Monoblock components.

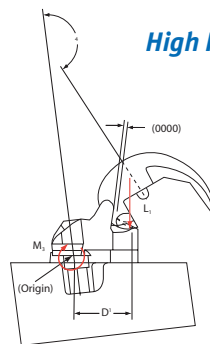
- Has a fin surface area that, on average, is greater than the standard design.
- Fin location adds strength to plate directly under load bearing area.

1. Hvid I, Hansen SL. Trabecular bone strength patterns at the proximal tibia epiphysis. *J Ortho Res.* 1985; 3 (4): 464-72.

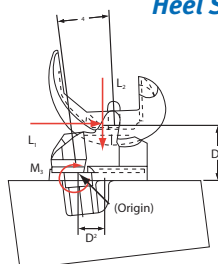
Kneeling



High Flexion



Heel Strike



Thorough Device Testing*

- The NexGen MIS Tibial Component compared favorably to clinically successful predicate devices in extensive fixation and fatigue/strength testing.
- Three rigorous fixation tests were performed demonstrating that fixation of the NexGen MIS Tibial Component is equivalent to the traditional NexGen Stemmed Tibial Plate.
- The NexGen MIS Tibial Component and MIS Drop Down Stem Extensions also passed cantilever load testing demonstrating adequate fatigue strength.
- Scanning Electron Microscopy (SEM) analysis of the fatigue tested MIS Drop Down Stem Extension samples showed no significant fretting in the modular junction.

* Data on file at Zimmer

Instrument Specifics.

Zimmer has developed a set of innovative instruments to facilitate minimally invasive surgery. These instruments include features such as offset handles to provide clearance from the patellar tendon, posterior hooks on the sizing plate which can be deployed to provide tangible feedback on position and hollow broaches to eliminate the need for drilling.



Minimally Invasive Sizing Plate

- Incorporates two angled anterior pin holes, which provide more and easier sizing plate fixation options. The anterior angled pin holes can fix the sizing plate to the tibia with the articular surface provisional in place after performing a “free-floating” trial reduction.



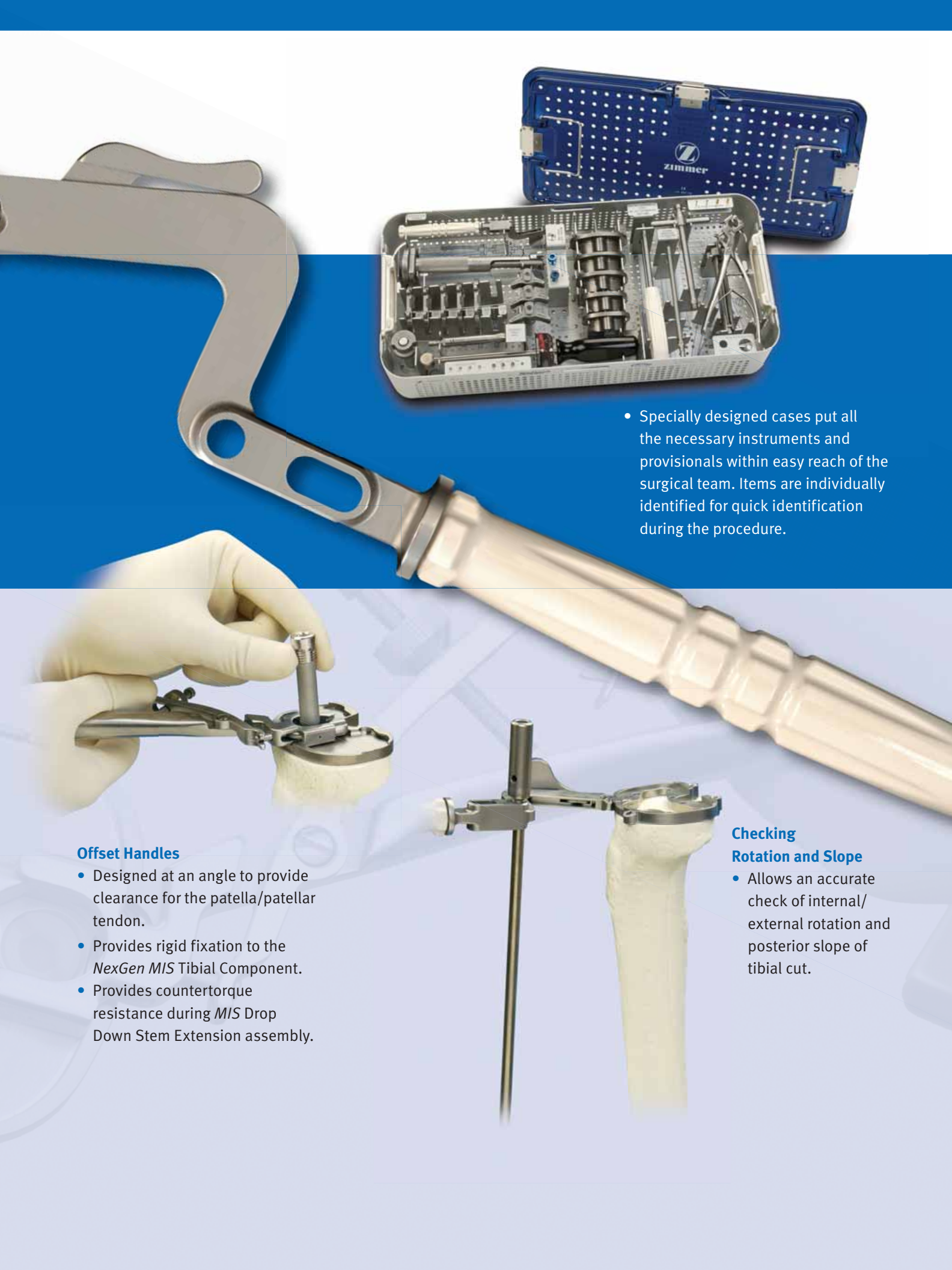
Posterior Deployable Hooks

- Posterior deployable hooks can be extended to drop below the inferior surface of the sizing plate. When the plate passes over the posterior tibia, the hook will catch, providing feedback relative to position. This feature is especially important in a quadriceps muscle-sparing procedure where visibility of the posterior tibia is limited.



Hollow Broach

- “Cores” the bone so that no drilling is needed.



- Specially designed cases put all the necessary instruments and provisionals within easy reach of the surgical team. Items are individually identified for quick identification during the procedure.

Offset Handles

- Designed at an angle to provide clearance for the patella/patellar tendon.
- Provides rigid fixation to the *NexGen MIS* Tibial Component.
- Provides countertorque resistance during *MIS* Drop Down Stem Extension assembly.

Checking Rotation and Slope

- Allows an accurate check of internal/external rotation and posterior slope of tibial cut.

Building on Success

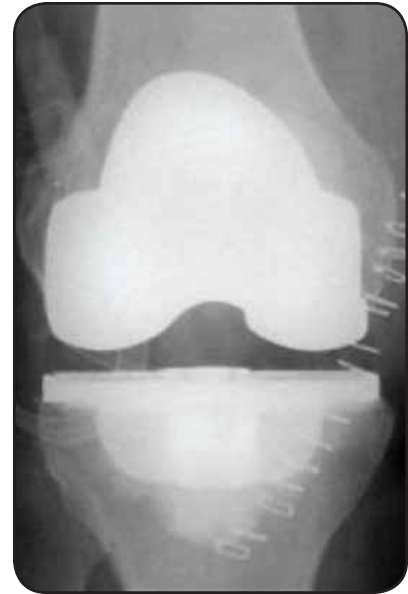
Zimmer is the market leader for minimally invasive technologies for Total Joint Replacement. Continuing with the heritage begun by the *NexGen 4-Pegged Tibial Plate*, Zimmer now offers the most comprehensive and innovative line of minimally invasive surgery friendly tibial plates. It is our vision and goal to put confidence in the hands of surgeons who use both CR and PS implants, in an effort to facilitate minimally invasive procedures.



NexGen 4-Pegged Tibial Plate
Image courtesy of Kim Bertin, M.D.



*NexGen MIS Tibial Component with
45mm MIS Drop Down Extension*
Image courtesy of Robert Karpman, M.D.



NexGen MIS Tibial Component
Image courtesy of Jess Lonner, M.D.

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



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