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Before using this product, read the following information thoroughly.

Introduction

The Optimotion™ Blue-R Tibial Revision Total Knee Arthroplasty (TKA) System is the addition of revision tibial components to the existing Optimotion Blue and Blue Plus Knee Systems. The system is designed for patients suffering from disabling joint disease of the knee resulting from a multitude of factors including previous unsuccessful total knee replacement, primary osteoarthritis, posttraumatic osteoarthritis, autoimmune mediated arthritis (rheumatoid), and avascular necrosis. Optimotion Blue-R is a contemporary, fixed bearing, TKA system designed for cemented fixation. The system includes **Tibial Trays** with an adjustable **Stem Offset Assembly, Stems,** and **Tibial Augment** implant components. The implants are sized to fit a wide range of the skeletally mature patient population and are all made from titanium alloy. As a line extension to the Optimotion Blue and Blue Plus Knee Systems, the system is compatible with all Optimotion Blue and Blue Plus Tibial Insert, Femoral, and Patellar components.

This surgical technique guide contains information for tibial preparation only using Blue-R Tibial Components. Please refer to the appropriate surgical technique guide for all other Optimotion implant components used:

Surgical Technique Guide Document	Implant Component Type
101-SRG01 Blue Total Knee System Surgical Technique Guide	CR Femoral Component, Cemented Patella, CR Tibial Insert, HCCR Tibial Insert
102-SRG01 Porous Metal-Backed Patella Surgical Technique Guide	Cementless Patella
103-SRG01 Blue Plus Surgical Technique Guide	PS Femoral Component, PS Tibial Inserts

Features

Stem Adjustability: The Optimotion Blue-R Revision Knee System allows for 360-degree rotation of the tibial stem and up to 6mm of offset in any direction. The rotating and translating action of the stem adapter allows for the offset to be set at a precise position for individual patient needs.

Self-Locating Stem: The stem is placed in the tibial canal at its unlocked position, allowing for free rotation and translation to determine proper positioning. Once a desired position is achieved, the components are locked into place in vivo, eliminating the need for stem trialing instruments. Tibial tray and augment trialing are available.

Modularity of the Implants: The Tibial Tray is compatible with any Optimotion Blue or Blue Plus Tibial Insert, including Cruciate Retaining (CR), Highly Congruent CR (HCCR), Low Post (LP), Low Post Plus (LP+), and High Post (HP) Posterior Stabilizing (PS) inserts. Figure 1 displays the modularity and interchangeability of all implant families. The Revision Tibial Trays are 2mm thicker than the Optimotion Blue primary Tibial Trays. Therefore, the Revision Tibial Tray/Tibial Insert combination will be 2mm thicker than in the primary system.

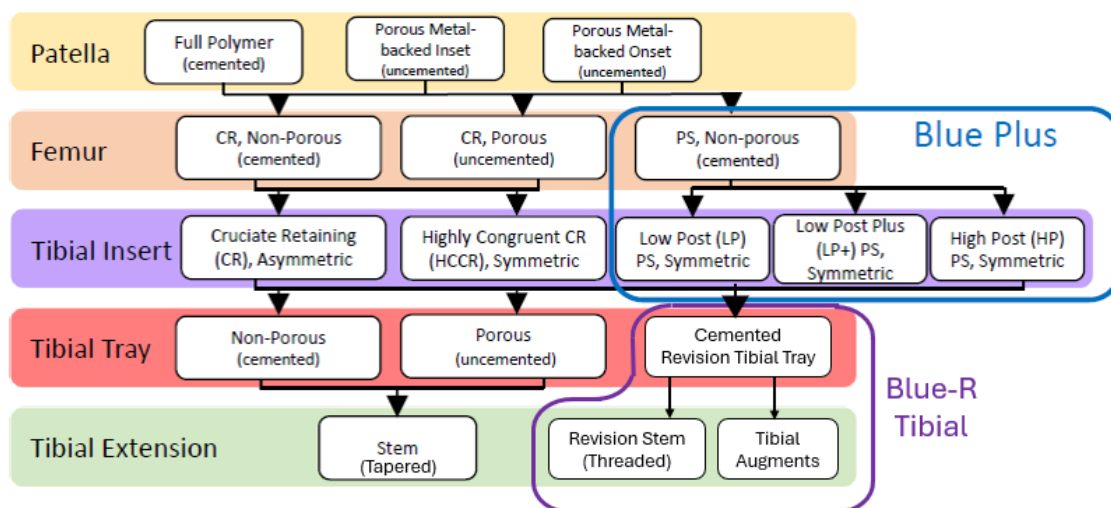


Figure 1. Optimotion™ Blue Total Knee System Options including Blue Plus and Blue-R Tibial Components

System Compatibility

The Revision Tibial Trays are offered in eight sizes, corresponding with the eight sizes of primary Tibial Trays in the Optimotion Blue Total Knee System. The system is indicated for use with Optimotion Tibial Inserts, Femoral Components, and Patella Components. The system is designed so all eight sizes of Femoral Components are interchangeable with a one size higher or one size lower Tibial Tray and Tibial Insert combination.

		Femoral Size							
		1	2	3	4	5	6	7	8
Insert Size	1	●	●						
	2	●	●	●					
	3		●	●	●				
	4			●	●	●			
	5				●	●	●		
	6					●	●	●	
	7						●	●	●
	8							●	●

Figure 2. Optimotion™ Femoral and Insert Size Compatibility

Limb Positioning

With the patient lying in the supine position, ensure that the hip and knee can move freely and approximately 110° of knee flexion is able to be achieved.

Component Removal

Remove the Tibial Component to be revised. Use small osteotomes, saws, and/or high-speed burring instruments for component removal. Take care to preserve as much bone as possible and avoid fracture of the residual bone.

Tibial Resection and Bone Preparation

TIBIAL CANAL PREPARATION

After removing the revised tibial components, establish the tibial intramedullary canal using the Universal **Stem Reamers**. Ream to the desired depth. The yellow bands on the reamer correspond to the Tibial Revision stem lengths.

Progressively ream, increasing diameter until cortical chatter is achieved.

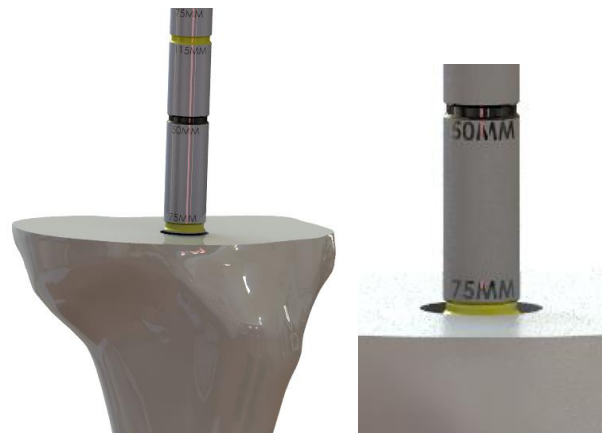


Figure 3

TIBIAL SIZING

Determine appropriate tibial size using the **Tibial Templates**. The medial to lateral length as well as the anterior to posterior length of the **Tibial Template** should match as closely as possible to the medial to lateral length and the anterior to posterior length of the remaining tibial bone. When appropriate sizing is determined, remove the **Tibial Template**.



Figure 4

TIBIAL CLEAN UP / AUGMENT CUT

Insert the **IM Rod** into the tibial canal.
Assemble the **IM Guide** onto the rod.

The **Tibial Resection Guide** and **Universal Tibial Stylus** are used to guide the augment bone cut. Assemble the **Tibial Resection Guide** onto the **IM Guide**. Attach the **Universal Tibial Stylus** to the other end of the **Tibial Resection Guide**.



Figure 5



Figure 6

Rest the tip of the stylus onto the tibial surface, and set the stylus depth, depending on the desired clean-up cut depth and augment thickness. Augments of equal thickness must be used on both sides of the Tibial Tray.

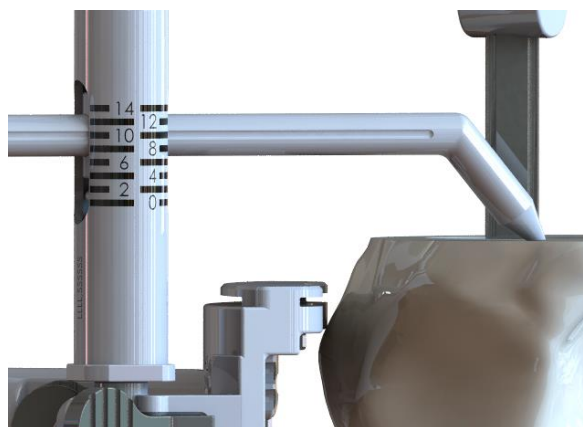


Figure 7

Pin the **Tibial Resection Guide** into place using **3.2mm Fluted Pins**. Remove the **IM Guide** and **IM Rod** and resect using a 1.33mm oscillating bone saw.



Figure 8

GAP DETERMINATION

Measure the joint space to determine proper Tibial Insert and Tibial Augment thicknesses using a Gap Gage.

Note- The Optimotion Revision Tibial Tray is 2mm thicker than the Optimotion Blue Primary Tibial Tray; therefore an Optimotion “9mm” insert used with a Revision Tibial Tray occupies 11mm of thickness. Utilize the actual gap measurements from Tables 1 and Table 2.

Table 1. Insert and Augment Determination

Gap with femoral implant present	Gap without femoral implant present	Tibial Insert and Augment Configuration
11	20	9mm insert
12	21	10mm insert
13	22	11mm insert
14	23	12mm insert
15	24	13mm insert
16	25	9mm insert + 5mm augment
17	26	10mm insert + 5mm augment
18	27	11mm insert + 5mm augment
19	28	12mm insert + 5mm augment
20	29	13mm insert + 5mm augment
21	30	9mm insert + 10mm augment
22	31	10mm insert + 10mm augment
23	32	11mm insert + 10mm augment
24	33	12mm insert + 10mm augment
25	34	13mm insert + 10mm augment
26	35	14mm insert + 10mm augment
27	36	15mm insert + 10mm augment
28	37	16mm insert + 10mm augment
29	38	17mm insert + 10mm augment
30	39	18mm insert + 10mm augment
31	40	19mm insert + 10mm augment

Table 2. Gap Gage Indicators

Label	Actual Gap
9	18mm
11	20mm
13	22mm
15	24mm
17	26mm
19	28mm
21	30mm
23	32mm
25	34mm
27	36mm
29	38mm
31	40mm

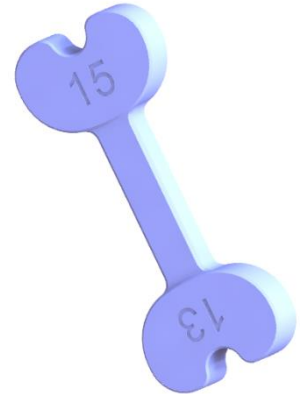


Figure 9

TIBIAL REAMING

Replace the appropriately sized **Tibial Template** onto the resected tibial surface and pin into place.

Ream space for the **Stem Offset** components using the **Tibial Revision Reamer** and the **Reamer Bushing**.

Set the **Reamer Bushing** to the proper augment thickness. Bottom out the reamer. If no augments are used, bottom out the reamer onto the **Tibial Template** without the bushing.

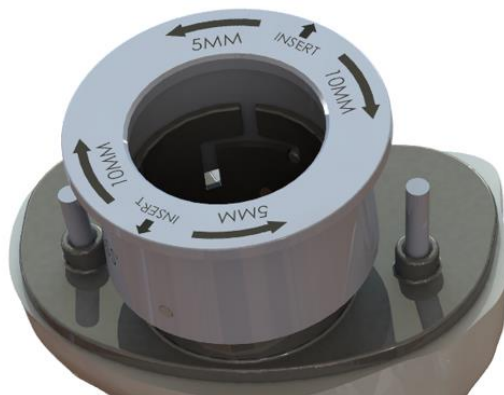


Figure 11



Figure 10

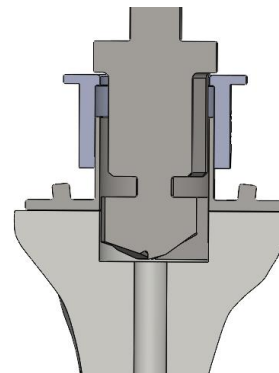


Figure 12

TRIALING

The **Stem** and **Tibial Stem Offset Assembly** do not require trialing due to the self-locating ability; however, the **Tibial Tray** and **Tibial Augments** may be trialed to assess implant fit and range of motion (when used with the applicable **Tibial Insert Trial**).

The **Tibial Augment Trials** have features to snap onto the **Tibial Tray Trial**. Attach the appropriately sized **Augment Trials** onto the **Tray Trial**.

Place the full trial assembly into the tibial canal and orient the **Tibial Tray Trial** to the desired positioning.

Pin the **Tibial Tray Trial** into place using **3.2mm Fluted Pins**. Trial the appropriate size and type of **Tibial Insert** per the associated Surgical Technique Guide.

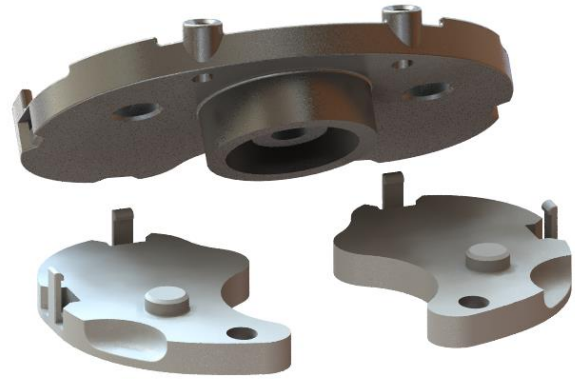


Figure 13

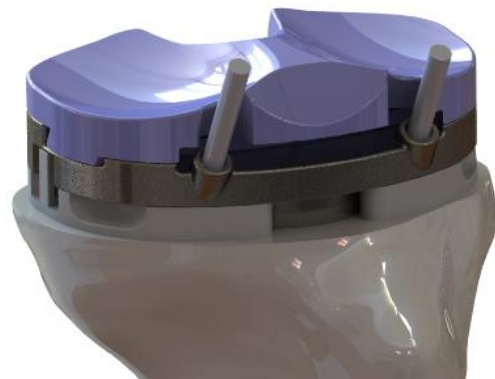


Figure 14

IMPLANT COMPONENT PREPARATION

The **Tibial Tray** comes pre-assembled to the **Tibial Stem Offset Assembly** in its unlocked position. The **Stem Adapter** should be able to freely rotate 360° and slide along the offset path. Components are held together by a **Setup Screw** which will be removed after implant positioning.

Assemble the desired size of **Revision Stem** onto the **Stem Adapter** by threading the stem into the stem adapter. Hand tighten first, then place the **Counter Wrench** on the flats of the **Stem Adapter** and place the **Torque Wrench** on the flats of the **Stem**. Pull the **Counter Wrench** and **Torque Wrench** together until the **Torque Wrench** indicates 120 in-lbs.

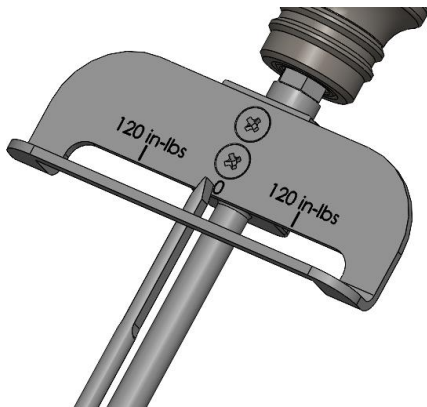


Figure 17

Assemble the **Tibial Augments** onto the **Tibial Tray** by tightening the **Augment Screw** using the **T20 Screwdriver** with the **Torque T Handle**. Tighten until the handle slips and an audible click is heard, indicating that 50in-lb of torque has been applied.

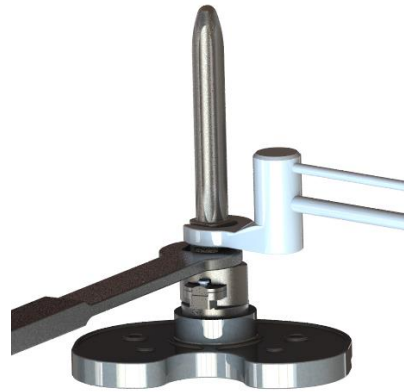


Figure 15



Figure 16



Figure 18

IMPLANT POSITIONING

Place the **Protective Shim** onto the bone facing surface of the implant assembly to protect the cement pockets from debris during implant positioning.

Place the implant assembly onto the tibia, with the stem inserted into the prepped tibial canal. The stem should be able to freely rotate and translate.



Figure 20

Move the **Tibial Tray** to the desired positioning on the resected tibial surface. The **Tibial Tray Holder**, assembled onto the **Tibial Template Handle** may be used to handle and manipulate the position of the implant on the tibial surface.

Once the desired position is achieved, remove the **Setup Screw** using the **T20 Screwdriver** and lock the position of the stem by following the steps below:



Figure 19

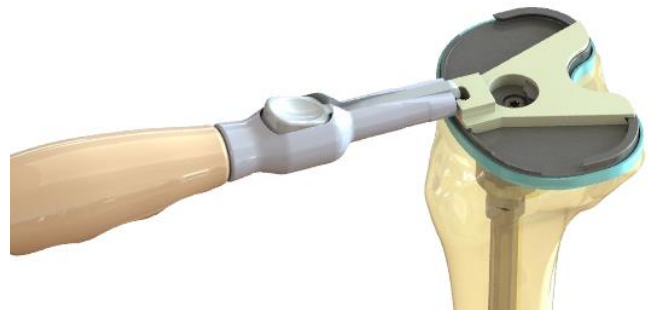


Figure 21



Figure 22

1. Lock Rotation

With the **Nut Driver** assembled onto the **Torque T Handle**, screw the **Nut Driver** into the threaded hole on the **Tibial Tray** to engage the taper connection between the **Rotary Plate** and the **Tibial Tray**. Continue tightening until the handle slips and an audible click is heard.



Figure 23

2. Lock Translation

Once the taper is locked, remove the **Nut Driver**. Insert and hand tighten the **Locking Screw** using the **T20 Screwdriver**. Translational movement of the stem will be locked when the screw is fully bottomed out.



Locking Screw

Remove the locked implant assembly from the tibia.

REMOVE THE PROTECTIVE SHIM FROM THE IMPLANT ASSEMBLY. DO NOT IMPLANT THE PLASTIC SHIM.

After implants are removed, the stem should be rigidly locked in its offset position. Apply bone cement to the bone-facing surfaces of the implant components. Cement the assembly into place.



Figure 24

TIBIAL INSERT IMPLANTATION

Insert the **Tibial Insert** per the Surgical Technique Guide for the insert type chosen. Refer to the table on the *Introduction* section for the appropriate Surgical Technique document.



Figure 25

TIBIAL STEM REMOVAL

In the event that the **Stem** is left in the tibial canal, the **Stem Slap Hammer Adapter** can be used for component removal. Thread the adapter to the **Slap Hammer** and to the threads of the proximal end of the stem. Swiftly slide the handle of the **Slap Hammer** upwards to forcefully extract the stem from the canal.



Figure 26A



Figure 26B

Implant Product List

TIBIAL TRAYS WITH OFFSET ASSEMBLY

Catalog Number	Catalog Description
1047-B-1201	Revision Tibial Tray with Stem Offset, Non-Porous Ti, Size 1
1047-B-1202	Revision Tibial Tray with Stem Offset, Non-Porous Ti, Size 2
1047-B-1203	Revision Tibial Tray with Stem Offset, Non-Porous Ti, Size 3
1047-B-1204	Revision Tibial Tray with Stem Offset, Non-Porous Ti, Size 4
1047-B-1205	Revision Tibial Tray with Stem Offset, Non-Porous Ti, Size 5
1047-B-1206	Revision Tibial Tray with Stem Offset, Non-Porous Ti, Size 6
1047-B-1207	Revision Tibial Tray with Stem Offset, Non-Porous Ti, Size 7
1047-B-1208	Revision Tibial Tray with Stem Offset, Non-Porous Ti, Size 8

STEMS AND STEM OFFSET COMPONENTS

Catalog Number	Catalog Description
1047-S-1005	Revision Stem ø10mm x 75mm
1047-S-1015	Revision Stem ø10mm x 115mm
1047-S-1050	Revision Stem ø10mm x 150mm
1047-S-1205	Revision Stem ø12mm x 75mm
1047-S-1215	Revision Stem ø12mm x 115mm
1047-S-1250	Revision Stem ø12mm x 150mm
1047-S-1405	Revision Stem ø14mm x 75mm
1047-S-1415	Revision Stem ø14mm x 115mm
1047-S-1450	Revision Stem ø14mm x 150mm
1047-S-1605	Revision Stem ø16mm x 75mm
1047-S-1615	Revision Stem ø16mm x 115mm
1047-S-1650	Revision Stem ø16mm x 150mm
1047-S-1805	Revision Stem ø18mm x 75mm
1047-S-1815	Revision Stem ø18mm x 115mm
1047-S-1850	Revision Stem ø18mm x 150mm
1047-S-2005	Revision Stem ø20mm x 75mm
1047-S-2015	Revision Stem ø20mm x 115mm
1047-S-2050	Revision Stem ø20mm x 150mm
1047-S-2205	Revision Stem ø22mm x 75mm
1047-S-2215	Revision Stem ø22mm x 115mm
1047-S-2250	Revision Stem ø22mm x 150mm

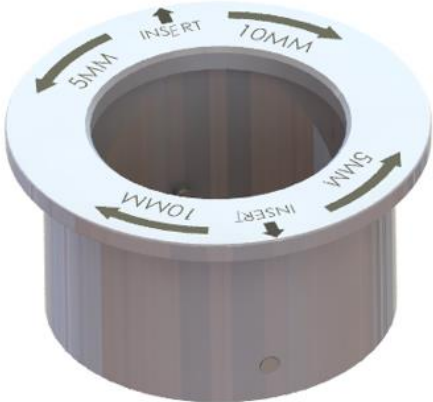
TIBIAL AUGMENTS

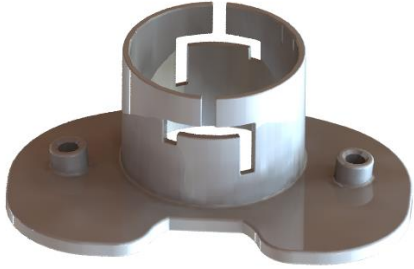
Catalog Number	Catalog Description
1047-A-0000	Augment Screw
1047-A-1100	Tibial Augment 5MM, Non-Porous Ti, Size 1, LL/RM
1047-A-1101	Tibial Augment 5MM, Non-Porous Ti, Size 1, LM/RL
1047-A-1200	Tibial Augment 5MM, Non-Porous Ti, Size 2, LL/RM
1047-A-1201	Tibial Augment 5MM, Non-Porous Ti, Size 2, LM/RL
1047-A-1300	Tibial Augment 5MM, Non-Porous Ti, Size 3, LL/RM
1047-A-1301	Tibial Augment 5MM, Non-Porous Ti, Size 3, LM/RL
1047-A-1400	Tibial Augment 5MM, Non-Porous Ti, Size 4, LL/RM
1047-A-1401	Tibial Augment 5MM, Non-Porous Ti, Size 4, LM/RL
1047-A-1500	Tibial Augment 5MM, Non-Porous Ti, Size 5, LL/RM
1047-A-1501	Tibial Augment 5MM, Non-Porous Ti, Size 5, LM/RL
1047-A-1600	Tibial Augment 5MM, Non-Porous Ti, Size 6, LL/RM
1047-A-1601	Tibial Augment 5MM, Non-Porous Ti, Size 6, LM/RL
1047-A-1700	Tibial Augment 5MM, Non-Porous Ti, Size 7, LL/RM
1047-A-1701	Tibial Augment 5MM, Non-Porous Ti, Size 7, LM/RL
1047-A-1800	Tibial Augment 5MM, Non-Porous Ti, Size 8, LL/RM
1047-A-1801	Tibial Augment 5MM, Non-Porous Ti, Size 8, LM/RL
1047-A-1110	Tibial Augment 10MM, Non-Porous Ti, Size 1, LL/RM
1047-A-1111	Tibial Augment 10MM, Non-Porous Ti, Size 1, LM/RL
1047-A-1210	Tibial Augment 10MM, Non-Porous Ti, Size 2, LL/RM
1047-A-1211	Tibial Augment 10MM, Non-Porous Ti, Size 2, LM/RL
1047-A-1310	Tibial Augment 10MM, Non-Porous Ti, Size 3, LL/RM
1047-A-1311	Tibial Augment 10MM, Non-Porous Ti, Size 3, LM/RL
1047-A-1410	Tibial Augment 10MM, Non-Porous Ti, Size 4, LL/RM
1047-A-1411	Tibial Augment 10MM, Non-Porous Ti, Size 4, LM/RL
1047-A-1510	Tibial Augment 10MM, Non-Porous Ti, Size 5, LL/RM
1047-A-1511	Tibial Augment 10MM, Non-Porous Ti, Size 5, LM/RL
1047-A-1610	Tibial Augment 10MM, Non-Porous Ti, Size 6, LL/RM
1047-A-1611	Tibial Augment 10MM, Non-Porous Ti, Size 6, LM/RL
1047-A-1710	Tibial Augment 10MM, Non-Porous Ti, Size 7, LL/RM
1047-A-1711	Tibial Augment 10MM, Non-Porous Ti, Size 7, LM/RL
1047-A-1810	Tibial Augment 10MM, Non-Porous Ti, Size 8, LL/RM
1047-A-1811	Tibial Augment 10MM, Non-Porous Ti, Size 8, LM/RL

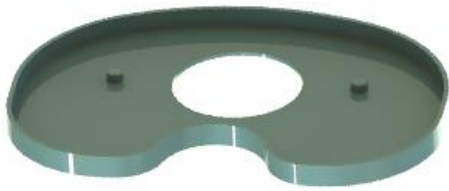
Instrumentation

Catalog Number	Catalog Description	Representative Illustration
1047-2-0001	TIBIAL IM GUIDE	
1047-2-0002	TIBIAL REVISION REAMER	
1047-2-0004	LOCKING SCREW TORQUE WRENCH HANDLE	

1047-2-0005	LOCKING SCREW NUT DRIVER	
1047-2-0006	STEM TORQUE WRENCH	
1047-2-0007	STEM COUNTER WRENCH	

1047-2-0009	T20 SCREWDRIVER	
1047-2-0011	THREADED STEM SLAP HAMMER ADAPTER	
1047-2-0012	TIBIAL REVISION REAMER BUSHING	
1047-2-1100	TIBIAL AUGMENT TRIAL 5MM, SZ 1 LL/RM	
1047-2-1101	TIBIAL AUGMENT TRIAL 5MM, SZ 1 LM/RL	
1047-2-1200	TIBIAL AUGMENT TRIAL 5MM, SZ 2 LL/RM	
1047-2-1201	TIBIAL AUGMENT TRIAL 5MM, SZ 2 LM/RL	
1047-2-1300	TIBIAL AUGMENT TRIAL 5MM, SZ 3 LL/RM	
1047-2-1301	TIBIAL AUGMENT TRIAL 5MM, SZ 3 LM/RL	
1047-2-1400	TIBIAL AUGMENT TRIAL 5MM, SZ 4 LL/RM	
1047-2-1401	TIBIAL AUGMENT TRIAL 5MM, SZ 4 LM/RL	
1047-2-1500	TIBIAL AUGMENT TRIAL 5MM, SZ 5 LL/RM	
1047-2-1501	TIBIAL AUGMENT TRIAL 5MM, SZ 5 LM/RL	
1047-2-1600	TIBIAL AUGMENT TRIAL 5MM, SZ 6, LL/RM	
1047-2-1601	TIBIAL AUGMENT TRIAL 5MM, SZ 6, LM/RL	

1047-2-1700	TIBIAL AUGMENT TRIAL 5MM, SZ 7, LL/RM	
1047-2-1701	TIBIAL AUGMENT TRIAL 5MM, SZ 7 LM/RL	
1047-2-1800	TIBIAL AUGMENT TRIAL 5MM, SZ 8 LL/RM	
1047-2-1801	TIBIAL AUGMENT TRIAL 5MM, SZ 8 LM/RL	
1047-2-1110	TIBIAL AUGMENT TRIAL 10MM, SZ 1 LL/RM	
1047-2-1111	TIBIAL AUGMENT TRIAL 10MM, SZ 1 LM/RL	
1047-2-1210	TIBIAL AUGMENT TRIAL 10MM, SZ 2 LL/RM	
1047-2-1211	TIBIAL AUGMENT TRIAL 10MM, SZ 2 LM/RL	
1047-2-1310	TIBIAL AUGMENT TRIAL 10MM, SZ 3 LL/RM	
1047-2-1311	TIBIAL AUGMENT TRIAL 10MM, SZ 3 LM/RL	
1047-2-1410	TIBIAL AUGMENT TRIAL 10MM, SZ 4 LL/RM	
1047-2-1411	TIBIAL AUGMENT TRIAL 10MM, SZ 4 LM/RL	
1047-2-1510	TIBIAL AUGMENT TRIAL 10MM, SZ 5 LL/RM	
1047-2-1511	TIBIAL AUGMENT TRIAL 10MM, SZ 5 LM/RL	
1047-2-1610	TIBIAL AUGMENT TRIAL 10MM, SZ 6 LL/RM	
1047-2-1611	TIBIAL AUGMENT TRIAL 10MM, SZ 6 LM/RL	
1047-2-1710	TIBIAL AUGMENT TRIAL 10MM, SZ 7 LL/RM	
1047-2-1711	TIBIAL AUGMENT TRIAL 10MM, SZ 7 LM/RL	
1047-2-1810	TIBIAL AUGMENT TRIAL 10MM, SZ 8 LL/RM	
1047-2-1811	TIBIAL AUGMENT TRIAL 10MM, SZ 8 LM/RL	
1047-2-2001	TIBIAL REVISION TEMPLATE SIZE 1	
1047-2-2002	TIBIAL REVISION TEMPLATE SIZE 2	
1047-2-2003	TIBIAL REVISION TEMPLATE SIZE 3	
1047-2-2004	TIBIAL REVISION TEMPLATE SIZE 4	
1047-2-2005	TIBIAL REVISION TEMPLATE SIZE 5	
1047-2-2006	TIBIAL REVISION TEMPLATE SIZE 6	
1047-2-2007	TIBIAL REVISION TEMPLATE SIZE 7	
1047-2-2008	TIBIAL REVISION TEMPLATE SIZE 8	
1047-2-3001	TIBIAL REVISION TRAY TRIAL SIZE 1	
1047-2-3002	TIBIAL REVISION TRAY TRIAL SIZE 2	
1047-2-3003	TIBIAL REVISION TRAY TRIAL SIZE 3	
1047-2-3004	TIBIAL REVISION TRAY TRIAL SIZE 4	
1047-2-3005	TIBIAL REVISION TRAY TRIAL SIZE 5	
1047-2-3006	TIBIAL REVISION TRAY TRIAL SIZE 6	
1047-2-3007	TIBIAL REVISION TRAY TRIAL SIZE 7	
1047-2-3008	TIBIAL REVISION TRAY TRIAL SIZE 8	

1047-2-4001	TIBIAL TRAY HOLDER SIZE 1	
1047-2-4002	TIBIAL TRAY HOLDER SIZE 2	
1047-2-4003	TIBIAL TRAY HOLDER SIZE 3	
1047-2-4004	TIBIAL TRAY HOLDER SIZE 4	
1047-2-4005	TIBIAL TRAY HOLDER SIZE 5	
1047-2-4006	TIBIAL TRAY HOLDER SIZE 6	
1047-2-4007	TIBIAL TRAY HOLDER SIZE 7	
1047-2-4008	TIBIAL TRAY HOLDER SIZE 8	
1047-2-5001	PROTECTIVE SHIM SIZE 1	
1047-2-5002	PROTECTIVE SHIM SIZE 2	
1047-2-5003	PROTECTIVE SHIM SIZE 3	
1047-2-5004	PROTECTIVE SHIM SIZE 4	
1047-2-5005	PROTECTIVE SHIM SIZE 5	
1047-2-5006	PROTECTIVE SHIM SIZE 6	
1047-2-5007	PROTECTIVE SHIM SIZE 7	
1047-2-5008	PROTECTIVE SHIM SIZE 8	

This surgical technique references instruments from the Optimotion Blue Total Knee System, please see the Optimotion Blue Total Knee System Surgical Technique Guide 101-SRG01 for full instrument list.