

## Surgical technique

Tibial Revision

Conventional Instrumentation



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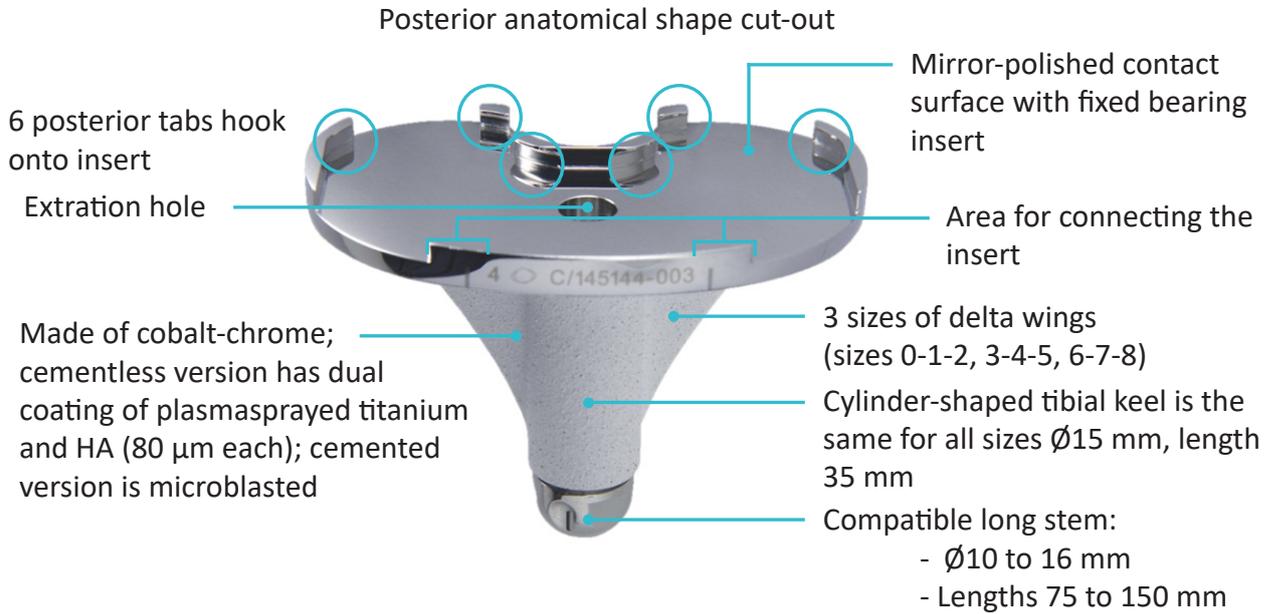
# Introduction

- This surgical technique describes the use of the conventional instrumentation for primary TKA.
- The steps below replace the sections on the tibial systems, the tibial cut, the tibial preparation and the tibial trials in the anatomic Surgical Technique documents TO.G.001 and TO.G.002.



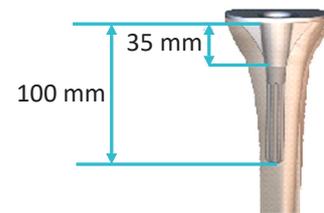
# Tibial components

## Tibial baseplate:



Possibility of using (e.g. in cases of uni revision, or TKA, or after osteotomy):

- **Tibial extension stems:**
  - Ø 10 to 16 mm
  - Length 75 to 150 mm
- **ANATOMIC Tibial augments:**
  - Thickness 5 mm
  - Thickness 10 mm
  - Thickness 15 mm



Exemple with 100 mm long extension stem

Lengths		Diameters			
75	10	12	14		
100	10	12	14	16	
150	10	12	14	16	

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# Pre-operative planning

Using X rays and templates, it is possible to determine:

- The tibial slope,
- The height of medial and lateral tibial resections,
- The assessment of the baseplate size,
- The choice of a tibial augment if required,
- The choice of an extension tibial stem, if required (diameters 10/12/14/16 mm, lengths 75/100/150 mm),
- The assessment of the insert thickness.

## NOTE

The provided templates have a 1:1 scale.  
Make sure the template scale matches the X-ray scale.

## REMINDER

This surgical technique describes how to use the instrumentation properly. The surgeon is fully responsible for choosing the surgical approach and technique

# 1 Intramedullary tibial system



## Locating the medullary canal:

- Make a hole in the intramedullary canal with the Intramedullary drill bit.
- Gradually ream the intramedullary canal using Reamers mounted on the T wrench.
- The graduated Reamers are used to estimate the most appropriate extension stem length.
- Use progressively larger Reamers (Ø10/12/14/16 mm) until contact is made with the bone cortex.
- If you are using a stem with cement, the chosen diameter of the stem must be one size smaller than the diameter of the last reamer used to reach a contact with the bone cortex.  
If you are using a stem without cement, the chosen diameter of the stem must be equivalent to the diameter of the last reamer used to reach a contact with the bone cortex.

## Tibial instrumentation positioning:

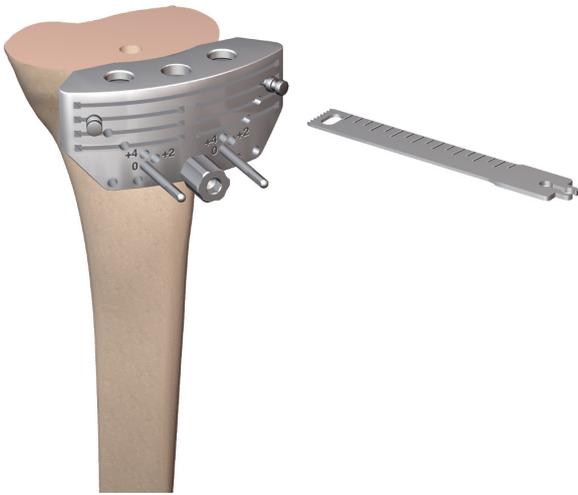
- Slide the Revision Tibial Resection Guide on the Tibial slide bar. Lock it by screwing the Wheel for resection guide.
- Connect the assembly onto the Tibial bracket.
- Put the entire unit onto the Reamer or Intramedullary rod left in the tibia.
- Set the resection height with the Tibial stylus as follows:
  - On the healthy side: Tibial stylus positioned at 10 mm (10 mm cut relative to this reference).
  - On the worn side: Tibial stylus positioned at 0 mm (exit level of saw blade).
  - For other resection heights, use the 2 mm markings on the Tibial slide bar.
- Determine if a tibial augment is needed (Resection gauge place in the half-slots labelled 5/10/15).

### NOTE

**If combined aiming is preferred, assemble the Malleolar clamp with the Extramedullary alignment guide and attach it around the ankle. Set the rotation of the Extramedullary alignment guide and its position in the sagittal plane before locking it into place with the H5 Screwdriver**



## 2 Tibial cut



### NOTE

Headed pins length 70 mm have to be positioned closed to the main resection slot. In case of a resection for an augment, choose the holes just below.

### NOTE

Use a medium saw blade **AMPLITUDE** to make the tibial cuts and those of the tibial half-blocks (slots at 5/10/15 mm) if needed.

- Use a motorised handpiece and the Universal quick release adaptor for pin or Pin Driver AO to drive 2 Headless pins length 80 mm into the 0 landmarks on the Revision Tibial Resection Guide.
- Loosen the screw on the Tibial bracket with the H5 Screwdriver.
- Use the Slap hammer to remove the intramedullary (and extramedullary) alignment rod.
- Set the Revision Tibial Resection Guide against the bone.
- Stabilize the Revision Tibial Resection Guide with 3 Headed pins length 70 mm; the pin holes can be predrilled with the Long Drill bit  $\varnothing 3.2$  length 145 mm.
- Perform the tibial cut(s) medial and lateral.
- Remove the Headed pins length 70 mm with the Pin extractor.
- Slide the Revision Tibial Resection Guide off the Headless pins length 80 mm, but make sure the Headless pins length 80 mm stay in place in case recutting is required; if so, the +2 and +4 marks will be used.
- Make the cut, then assess the gaps and ligament tension with the knee flexed and extended.

### 3 Tibial preparation

#### Positioning of the Trial Baseplate:



**NOTE**

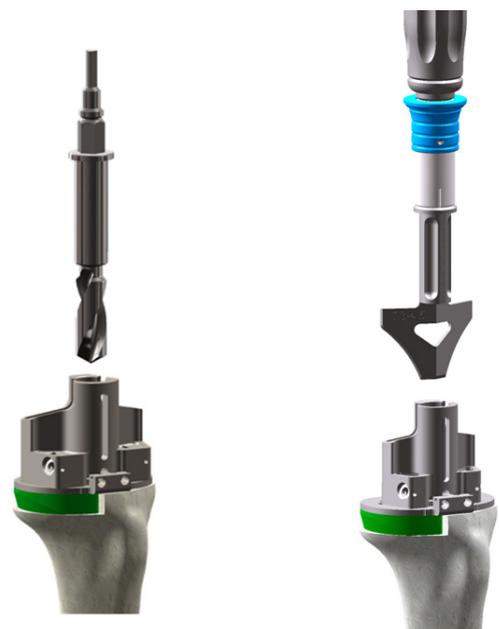
Remove the two Headless pins length 80 mm that were left in the tibia (after the tibial cut is completed)

**NOTE**  
A Tibial Straight Bushing can be used: see page 11

- Insert the last reamer used in the tibia.
- Select the ANATOMIC Trial baseplate posterior stabilized that provides the best bone coverage (if needed, a ANATOMIC Trial Tibial Augment of the same size of the ANATOMIC Trial baseplate posterior stabilized can be used). Check the alignment of the Reamer that must be centered in the hole for the keel preparation.
- Secure the unit with 2 Headed pin length 30, 50 or 70 mm (according to the presence or not of a tibial augment and its thickness)
- Remove the Reamer.

#### Tibial preparation:

- Place the Guide for tibial fin punch onto the ANATOMIC Trial baseplate posterior stabilized and verify that the sizes are compatible.
- With the power tool, drive the Reamer for tibial keel into the Guide for tibial fin punch until it stops.
- Prepare the fins by pushing the appropriately sized Tibial fin punch (assembled with the Universal handle) until it stops.



## 4 Trials and placement of implants



### Trials:

- ▶ Screw the Trial extension stem (length and diameter correspond to final reamer used) into the Delta Wing - Tibial Trial (with the size corresponding to the ANATOMIC Trial baseplate posterior stabilized)
- ▶ Impact the assembly across the ANATOMIC Trial baseplate posterior stabilized until the stop.
- ▶ Screw the Tightening Screw - Delta Wing with the H5 Screwdriver in order to make simulations in the configuration of the final implant.

### Placement of final implants:

- ▶ Screw the extension stem to the baseplate using the Tibial stem wrench.
- ▶ Carefully wash and dry the implantation site to clean it out.
- ▶ For the cemented baseplate:
  - Prepare the bone cement and apply it to the tibial cut surface or under the Tibial Baseplate.
  - If using a tibial augment, apply a thin layer of cement between the augment and tibial baseplate.
- ▶ For the cemented and cementless baseplate, impact the final components into the tibia and make sure the augment is perfectly positioned relative to the cemented tibial baseplate and the tibial cut if needed.
- ▶ For the cemented baseplate, remove any excess cement.



# Option: Tibial straight bushing

## Following the Preparation of the wings:



- ▶ Assemble the Tibial Straight Bushing onto the Reamer (the last reamer that was used to prepare the canal).
- ▶ Insert both instruments into the Guide for tibial fin punch until the Tibial Straight Bushing is fully engaged in the Guide for tibial fin punch.
- ▶ Ream the canal according to the desired length.
- ▶ Remove the Guide for tibial fin punch, the Tibial Straight Bushing and the ANATOMIC Trial baseplate posterior stabilized.
- ▶ Read on the Reamer the final length of the stem.





# Instrumentation

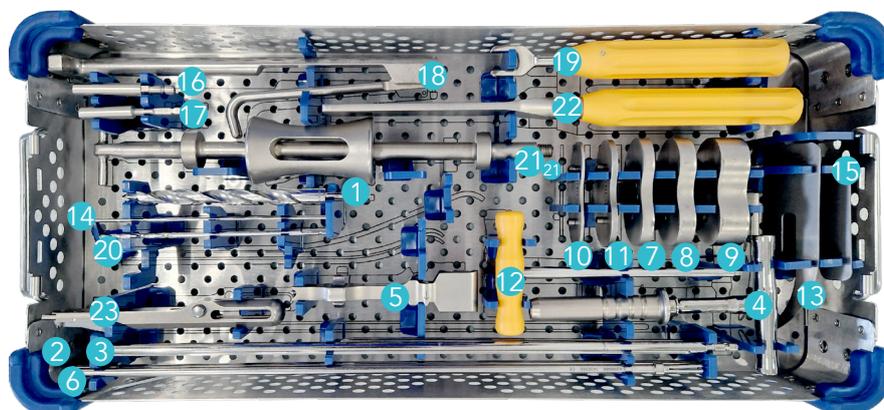
▶ The following trays are required for an anatomic tibial revision:

- ANATOMIC Common Set
- ANATOMIC Tibial Resection Set
- ANATOMIC Tibial Trials Set
- ANATOMIC Tibial Revision Set

# Instrumentation

## ANATOMIC PS PS POSTERIOR STABILIZED COMMON SET

2-02999124



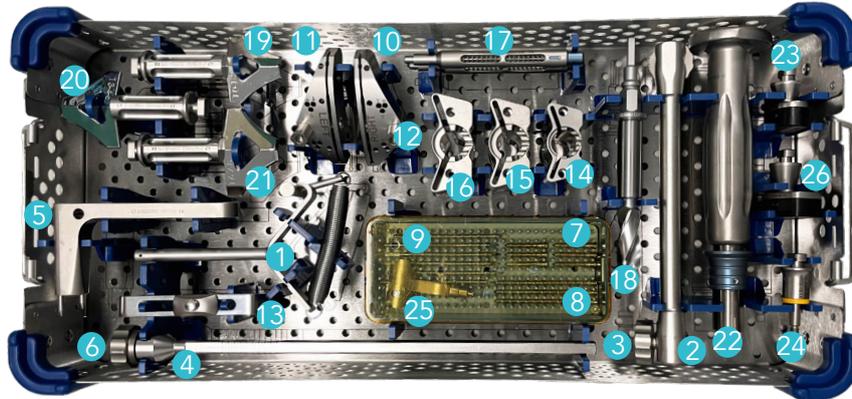
Item	Name	Product No.	Qty
1	Intramedullary drill bit	2-0200100	1
2	Intramedullary rod length 250 mm	2-0200200	1
3	Intramedullary rod length 400 mm	2-0200300	1
4	T wrench	2-0200400	1
5	Universal handle	2-0216400	1
6	Extramedullary alignment rod	2-0200600	2
7	Spacer thickness 7 mm	2-0200707	1
8	Spacer thickness 10 mm	2-0200710	1
9	Spacer thickness 18 mm	2-0200718	1
10	Spacer thickness 2 mm for spacer	2-0207002	1
11	Spacer thickness 4 mm for spacer	2-0207004	1
12	H5 Screwdriver	2-0200800	1
13	Resection gauge	2-0204500	1
14	Alignment Pin Ø 2 Length 150 mm	2-0103000	2
15	Alignment gauge	2-0206300	1
16	Universal quick release adaptor for pin	2-0201100	1
17	Pin Driver AO	2-0201200	1
18	Pin extractor	2-0201500	1
19	Tibial stem wrench	2-0205500	1
20	Long Drill bit Ø3.2 length 145 mm	2-0102400	1
21	Slap hammer	2-0206900	1
22	Flat rasp	2-0206800	1
23	Tibial baseplate handle	2-0223500	1

Products availability may vary depending on countries. Please check availability with your local representative.

# Instrumentation

## ANATOMIC: PS POSTERIOR STABILIZED TIBIAL RESECTION SET

2-0299979



Item	Name	Product No.	Qty
1	Malleolar clamp	2-0201600	1
2	Extramedullary alignment guide	2-0201700	1
3	Wheel for extramedullary Alignment column	2-0201800	2
4	Tibial slide bar	2-0201900	1
5	Tibial bracket	2-0202000	1
6	Wheel for tibial bracket	2-0202100	1
7	Headed pin length 30 mm	2-0201301	6
8	Headed pin length 70 mm	2-0201302	3
9	Headless pin length 80 mm	2-0201400	6
10	Tibial resection guide RIGHT	2-0202200	1
11	Tibial resection guide LEFT	2-0202300	1
12	Wheel for resection guide	2-0203800	2
13	Tibial stylus	2-0202400	1
14	Guide for tibial fin punch Size 0-1-2	2-0230801	1
15	Guide for tibial fin punch Size 3-4-5	2-0230802	1
16	Guide for tibial fin punch Size 6-7-8	2-0230803	1
17	Removable hand holds	2-0226500	2
18	Reamer for tibial keel	2-0231600	1
19	Tibial fin punch size 0-1-2	2-0230901	1
20	Tibial fin punch size 3-4-5	2-0230902	1
21	Tibial fin punch size 6-7-8	2-0230903	1
22	Universal handle	2-0232100	1
23	Tibial impactor	2-0231900	1
24	Tibial baseplate extractor	2-0231800	1
25	Reference body support for tibial baseplate handle*	2-0223600	1
26	Baseplate impactor	2-0233400	1

\* Not use in this surgical technique. Please refer to appropriate CAS 5 in 1 Surgical Technique for its description.

# Instrumentation

## ANATOMIC PS POSTERIOR STABILIZED COMMON SET

2-02999124



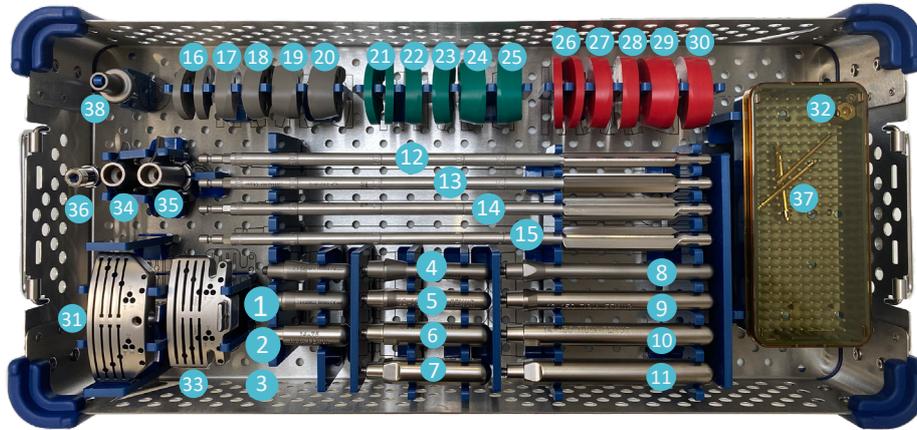
Item	Name	Product No.	Qty
1	ANATOMIC Trial baseplate posterior stabilized Size 1	2-0231001	1
2	ANATOMIC Trial baseplate posterior stabilized Size 2	2-0231002	1
3	ANATOMIC Trial baseplate posterior stabilized Size 3	2-0231003	1
4	ANATOMIC Trial baseplate posterior stabilized Size 4	2-0231004	1
5	ANATOMIC Trial baseplate posterior stabilized Size 5	2-0231005	1
6	ANATOMIC Trial baseplate posterior stabilized Size 6	2-0231006	1
7	ANATOMIC Trial baseplate posterior stabilized Size 7	2-0231007	1
8	ANATOMIC Trial fixed bearing insert, PS - Size 1, Height 10, 12, 14, 16, 18 to 20 mm	2-0230610 to 2-0230615	1
9	ANATOMIC Trial fixed bearing insert, PS - Size 2, Height 11, 12, 14, 16, 18 to 20 mm	2-0230620 to 2-0230625	1
10	ANATOMIC Trial fixed bearing insert, PS - Size 3, Height 10, 12, 14, 16, 18 to 20 mm	2-0230630 to 2-0230635	1
11	ANATOMIC Trial fixed bearing insert, PS - Size 4, Height 10, 12, 14, 16, 18 to 20 mm	2-0230640 to 2-0230645	1
12	ANATOMIC Trial fixed bearing insert, PS - Size 5, Height 10, 12, 14, 16, 18 to 20 mm	2-0230650 to 2-0230655	1
13	ANATOMIC Trial fixed bearing insert, PS - Size 6, Height 10, 12, 14, 16, 18 to 20 mm	2-0230660 to 2-0230665	1
14	ANATOMIC Trial fixed bearing insert, PS - Size 7, Height 10, 12, 14, 16, 18 to 20 mm	2-0230670 to 2-0230675	1



# Instrumentation

## ANATOMIC : TIBIAL REVISION SET

2-029990

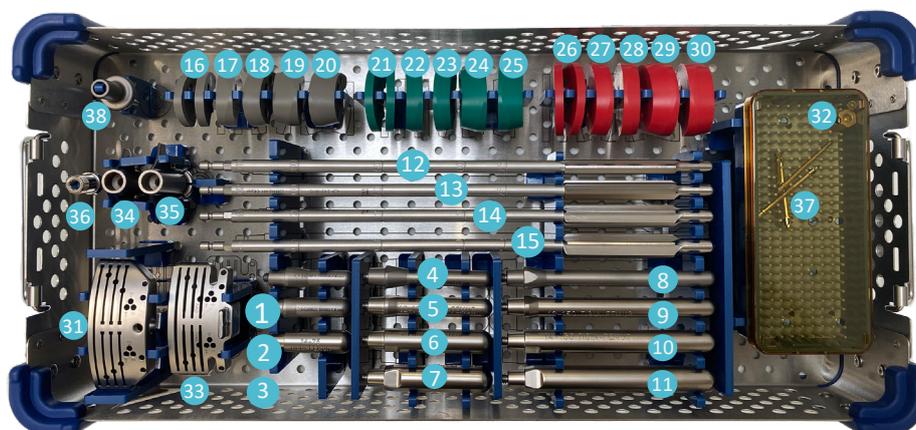


Item	Name	Product No.	Qty
1	Trial extension stem Ø 10 length 75 mm	2-0209021	1
2	Trial extension stem Ø 12 length 75 mm	2-0209022	1
3	Trial extension stem Ø 14 length 75 mm	2-0209023	1
4	Trial extension stem Ø 10 length 100 mm	2-0209013	1
5	Trial extension stem Ø12 length 100 mm	2-0209001	1
6	Trial extension stem Ø 14 length 100 mm	2-0209004	1
7	Trial extension stem Ø 16 length 100 mm	2-0209007	1
8	Trial extension stem Ø 10 length 150 mm	2-0209014	1
9	Trial extension stem Ø 12 length 150 mm	2-0209002	1
10	Trial extension stem Ø 14 length 150 mm	2-0209005	1
11	Trial extension stem Ø 16 length 150 mm	2-0209008	1
12	Reamer Ø10	2-0210510	1
13	Reamer Ø12	2-0210512	1
14	Reamer Ø14	2-0210514	1
15	Reamer Ø16	2-0210516	1
16	ANATOMIC Trial Tibial Augment Size 0/1/2 Thickness 5 mm	2-0255810	2
17	ANATOMIC Trial Tibial Augment Size 0/1/2 Thickness 10 mm RM/LL	2-0255820	1
18	ANATOMIC Trial Tibial Augment Size 0/1/2 Thickness 15 mm RL/LM	2-0255840	1
19	ANATOMIC Trial Tibial Augment Size 0/1/2 Thickness 10 mm RM/LL	2-0255833	1
20	ANATOMIC Trial Tibial Augment Size 0/1/2 Thickness 15 mm RL/LM	2-0255850	1

# Instrumentation

## ANATOMIC : TIBIAL REVISION SET

2-0299990



Item	Name	Product No.	Qty
21	ANATOMIC Trial Tibial Augment Size 3/4/5 Thickness 5 mm	2-0255813	2
22	ANATOMIC Trial Tibial Augment Size Taille 3/4/5 Thickness 10 mm RM/LL	2-0255823	1
23	ANATOMIC Trial Tibial Augment Size 3/4/5 Thickness 15 mm RM/LL	2-0255843	1
24	ANATOMIC Trial Tibial Augment Size 3/4/5 Thickness 10 mm RL/LM	2-0255833	1
25	ANATOMIC Trial Tibial Augment Size 0/1/2 Thickness 15 mm RL/LM	2-0255853	1
26	ANATOMIC Trial Tibial Augment Size 6/7/8 Thickness 5 mm	2-0255816	2
27	ANATOMIC Trial Tibial Augment Size 6/7/8 Thickness 10 mm RM/LL	2-0255826	1
28	ANATOMIC Trial Tibial Augment Size 6/7/8 Thickness 15 mm RM/LL	2-0255846	1
29	ANATOMIC Trial Tibial Augment Size 6/7/8 Thickness 10 mm RL/LM	2-0255836	1
30	ANATOMIC Trial Tibial Augment Size 6/7/8 Thickness 15 mm RL/LM	2-0255856	1
31	Revision Tibial Resection Guide	2-0210600	1
32	Wheel for resection guide	2-0203800	1
33	4T Tibial Resection Guide - Revision	2-0253300	1
34	Delta Wing - Tibial Trial S. 0/1/2	2-0253401	1
35	Delta Wing - Tibial Trial S. 3/4/5/6/7/8	2-0253402	1
36	Tightening Screw - Delta Wing	2-0253400	1
37	Headed pin length 50 mm	2-0201303	4
38	Tibial Straight Bushing	2-0255900	1







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