

ANATOMIC[®]

Primary Total Knee System



4T Tibial Revision
Conventional
Instrumentation



AMPLITUDE[®]

OVERVIEW OF INSTRUMENTATION

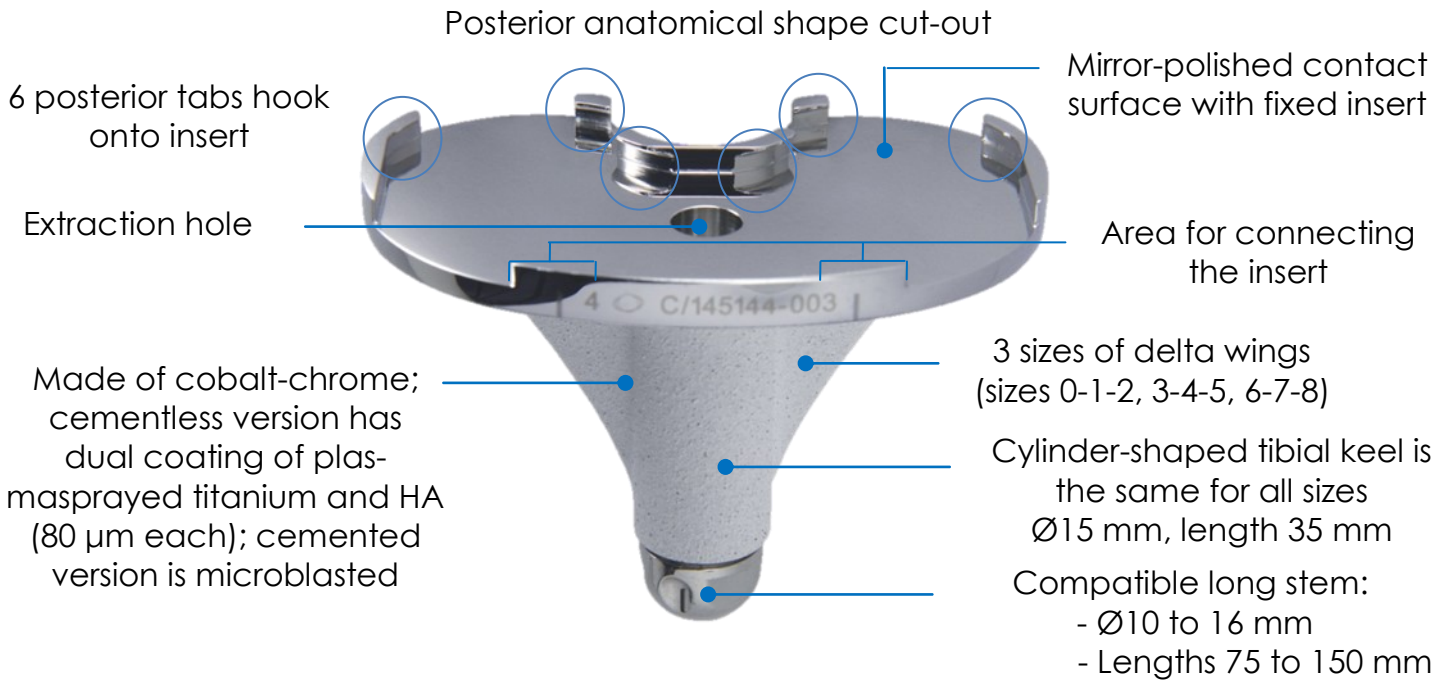
This surgical technique describes the use of the conventional instrumentation for primary TKA.

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.GB.013 and TO.G.GB.014 and on the tibial cut, the tibial preparation and the tibial trials in the ANATOMIC® TO.G.GB.027, TO.G.GB.028, TO.G.GB.016 et TO.G.GB.017.

ANATOMIC® 4T Tibial Revision

TIBIAL COMPONENTS

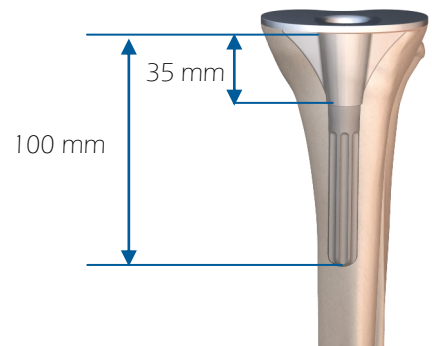
TIBIAL BASEPLATE:



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 half-blocks:
 - Thickness 5 mm
 - Thickness 10 mm
 - Thickness 15 mm



Example with 100 mm long extension stem

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

PLANIFICATION

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

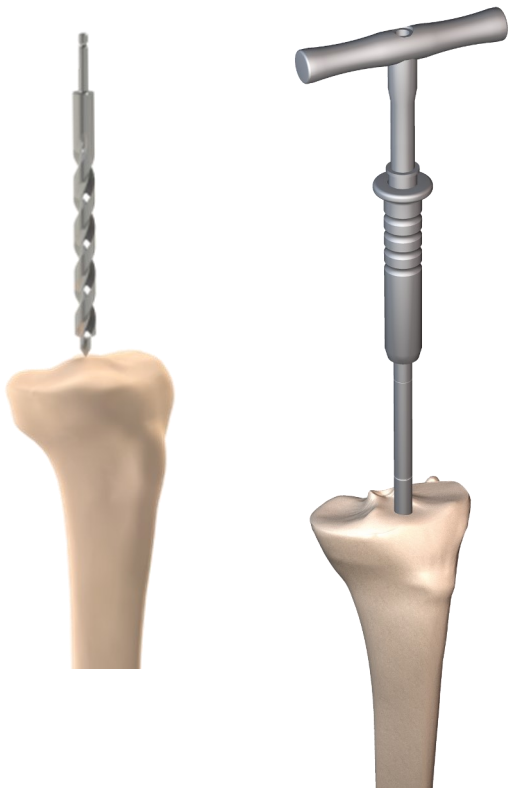
- The tibial slope,
- The height of medial and lateral tibial resections,
- The assessment of the baseplate size,
- The choice of a tibial half-wedge if required,
- The choice of an extension tibial stem, if required (diameters 10/12/14/16 mm, lengths 75/100/150 mm),
- The assessment of the insert thickness.

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

INTRAMEDULLARY TIBIAL SYSTEM



1. Landmarks:

- Make a hole in the intramedullary canal with the Intramedullary 10 mm 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 (10/12/14/16 mm) until contact is made with the bone cortex.

2. Assembly of the Intramedullary System:

- Insert the Tibial Bracket on the Aiming Rod with Bracket (the 'A' engraving on the rod must be on the anterior side). Screw on the Proximal AP Wheel.
- Assemble the Tibial Resection Guide Support with the Aiming Rod (the 'UP' engraving corresponds to the support's superior side).
- Assemble the 4T Tibial Resection Guide - Revision with the Support.



NOTA

The instrumentation set contains two rods. **Use the longest one** with the tibial bracket

NOTA

Slide the support from the bottom and press the green wheel to position the support in the graduated area



3. Resection height adjustment:

- Put the entire unit onto the Reamer or IM Rod left in the tibia.
- Set the resection height by using the stylus to palpate either the:
 - healthy side (10 mm cut relative to palpated point)
 - worn side (2 mm cut relative to palpated point/exit of saw blade)
- Determine if a tibial half-wedge is needed (Resection Gauge place in the half-slots labelled 5/10/15).

NOTA

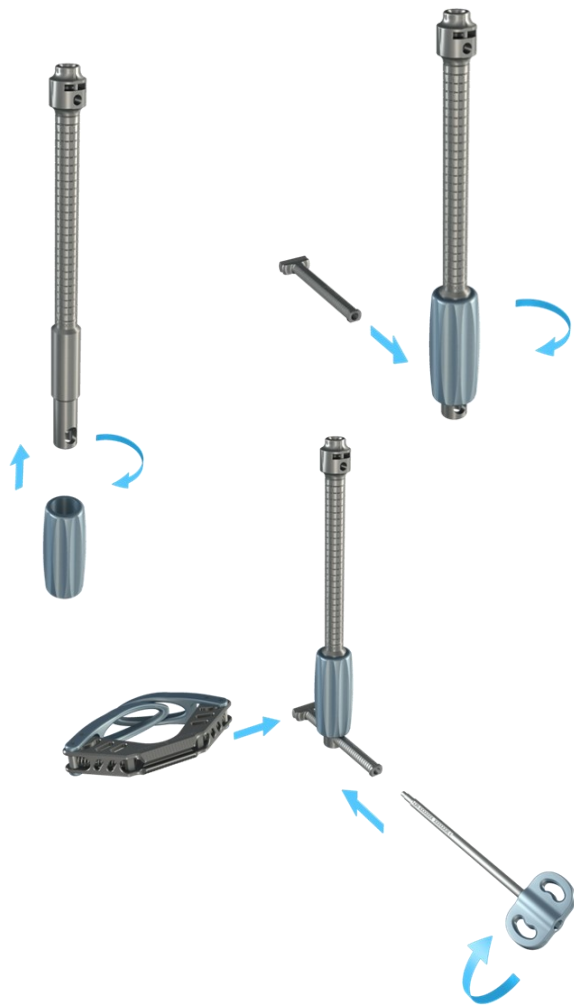
For other resection heights, the adjustment can be made:

- quickly by pressing on the green wheel on the guide support (release)
- gradually by turning the green wheel (the aiming rod has marking every 2 mm)

NOTA

The stylus can be clipped on the lateral side of the resection guide to palpate the medial plateau (or the reverse) by passing the stylus over the bracket

COMBINED INTRAMEDULLARY TIBIAL SYSTEM



1. Landmarks:

- See page 6

2. Assembly of the Combined Intramedullary System:

- Screw the Distal AP Wheel on the EM Aiming Column.
- Insert the rod for the Malleolar Clamp into the EM Aiming Column. Lock it in place with the Distal AP Wheel.
- Assemble the Malleolar Clamp on the rod for Malleolar Clamp. Lock it in place with

- Place the tibial bracket on the aiming rod with bracket (the 'A' engraving on the rod must be on the anterior side). Screw on the proximal AP wheel.

- Assemble the Tibial Resection Guide Support with the Aiming Rod (the 'UP' engraving corresponds to the support's superior side).

- Assemble the 4T Tibial Resection Guide - Revision with the Support.

- Place all components on the EM Aiming Column. Lock them in place with the Wheel for EM Aiming Column.



NOTA

The instrumentation set contains two rods. **Use the longest one** with the tibial bracket

NOTA

Slide the support from the bottom and press the green wheel to position the support in the graduated area



3. Resection height adjustment:

- Place the Malleolar Clamp around the ankle (the clamp has a self-opening feature that makes it easier to set up. Position the bracket on the intercondylar eminence.
- Adjust the rotational and then sagittal alignment by setting the rod parallel to the anterior tibial axis. Impact the tabs.
- Set the resection height by using the stylus to palpate either the:
 - healthy side (10 mm cut relative to palpated point)
 - worn side (2 mm cut relative to palpated point/exit of saw blade)
- Determine if a tibial half-wedge is needed (Resection Gauge place in the half-slots labelled 5/10/15).

NOTA

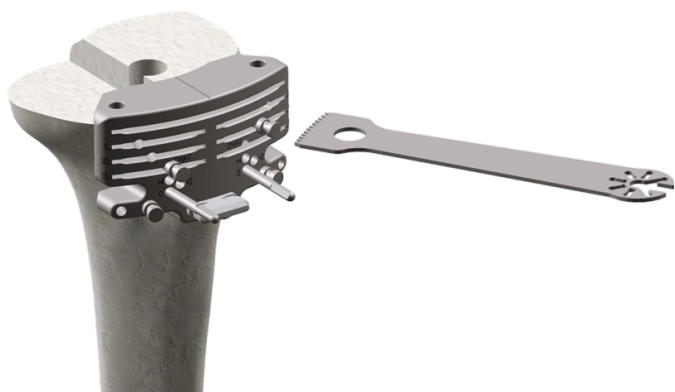
For other resection heights, the adjustment can be made:

- quickly by pressing on the green wheel on the guide support (release)
- gradually by turning the green wheel (the aiming rod has marking every 2 mm)

NOTA

The stylus can be clipped on the lateral side of the resection guide to palpate the medial plateau (or the reverse) by passing the stylus over the bracket

TIBIAL CUT



IMPORTANT

When using the CAS system or the i.M.A.G.E.® PSi system, the Tibial Cutting Guide has to be positioned on the 2 holes identified 0NAV

NOTA

Headless Pins have to be positioned closed to the main resection slot. In case of a resection for a half-wedges, choose the holes just below for the Headless Pins

NOTA

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

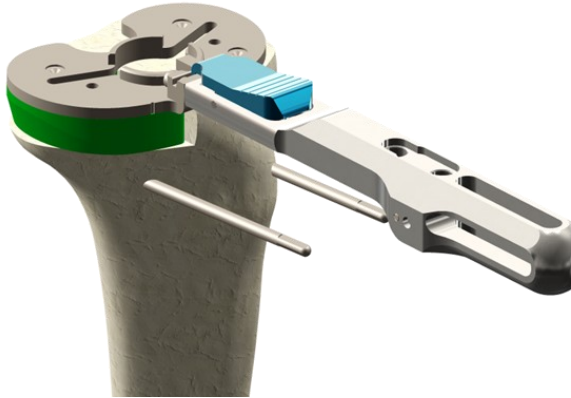
- Use a motorised handpiece and the Universal or AO Quick-Release Adaptor for pin to drive 2 Headless Pins into the 0 landmarks on the Revision Tibial Resection Guide.
- Loosen the Proximal AP Wheel.
- Place the 'T' end of the Slap Hammer into the opening on the tibial bracket and then remove the entire assembly.
- Remove the Tibial Stylus.
- Remove the intramedullary or extramedullary assembly by pressing on the two blue buttons on the wheel/tibial resection guide support.
- Place the resection guide flush with the anterior tibial cortex.
- Stabiliser le guide de coupe à l'aide de 3 clous à têtes convergents.
- Use three converging headed pins to stabilise the resection guide.
- Make the tibial cut.
- Remove the headed pins using the pin extractor.
- Slide the resection guide off the pins, but leave the pins in place in case recutting is required (the +2 and +4 holes will be used at that time).
- Make the cut, then assess the gaps and ligament tension with the knee flexed and extended.

TIBIAL PREPARATION

1. Positioning of Trial Baseplate:

IMPORTANT

Remove the two pins that were left in the tibia (after the tibial cut is completed) 10/15 mm) if needed



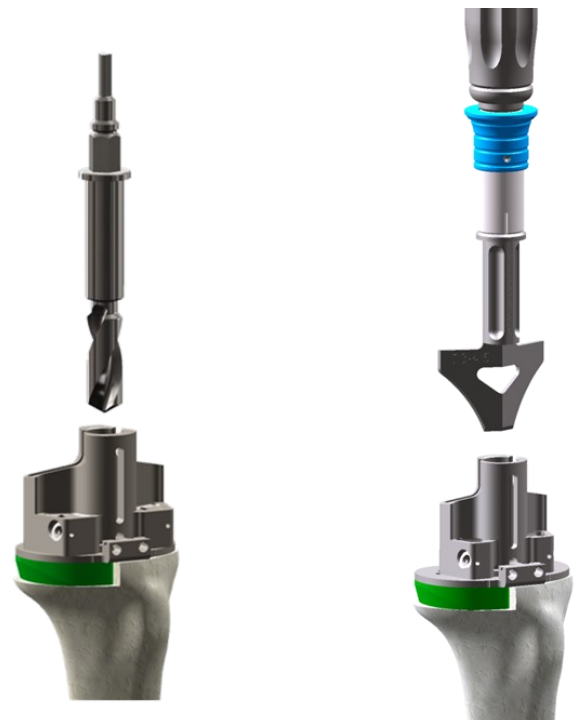
NOTA

A Tibial Straight Bushing can be used: see page 13

- Reposition the Reamer selected during the tibial resection onto the T Wrench.
- Select the Trial Baseplate that provides the best bone coverage (if needed, a Trial Tibial Half-Wedge of the same size of the Baseplate can be use). Check the alignment of the reamer that must be centered in the hole for the keel preparation.
- Secure the unit with 2 Headed Pins; the appropriate pin length (30, 50 or 70 mm) depends on the thickness of any Tibial Half-Wedge that is used.
- Remove the Reamer.

2. Tibial preparation:

- Place the Guide for Tibial Fin Punch onto the Trial Baseplate and verify that the sizes are compatible.
- With the power tool, drive the Reamer for Tibial Keel into the guide until it stops.
- Prepare the fins by pushing the appropriately sized Tibial Fin Punch (assembled with the Universal Handle) until it stops.



TRIALS AND PLACEMENT OF IMPLANTS

1. Trials:



- Screw the Trial Extension Stem into the Delta Wing - Tibial Trial (with the size corresponding to the Baseplate)
- Impact the assembly (Delta Wing + Trial Extension Stem) across the Trial Baseplate until the stop.
- Screw the Tightening Screw - Delta Wing with the H5 Screwdriver.
- Check that the assembly corresponds to the resections and size.

2. Mise en place des implants définitifs :

- Screw the Extension Stem to the Baseplate using the Wrench for Tibial Stem.
- Carefully lavage the implantation site to clean it out.
- Prepare the bone cement and apply it to the tibial cut surface or under the Tibial Baseplate.
- If using a Tibial Half-Block, apply a thin layer of cement between the Half-Block and Tibial Baseplate.
- Impact the final components into the tibia using the Baseplate Impactor and make sure the Half-Block is perfectly positioned relative to the Tibial Baseplate and tibial cut.
- 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.
- Ream the canal according to the desired length.
- Remove the Guide for Tibial Fin Punch, the Tibial Straight Bushing and the Tibial Trial Baseplate.
- Read on the Reamer the final length of the stem.

INSTRUMENTATION

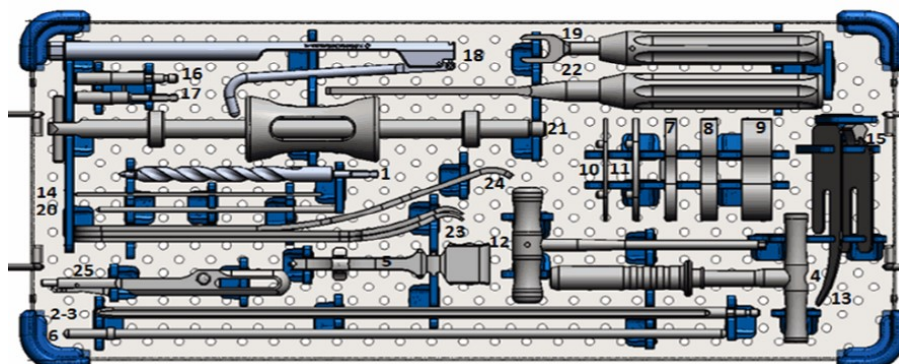
The following trays are required for an ANATOMIC® 4T tibial revision:

- ANATOMIC® Common Set
- ANATOMIC® Tibial Resection - 4T Set
- ANATOMIC® Tibial Trials Set
- ANATOMIC® Tibial Revision Set

INSTRUMENTATION

ANATOMIC®: COMMON SET

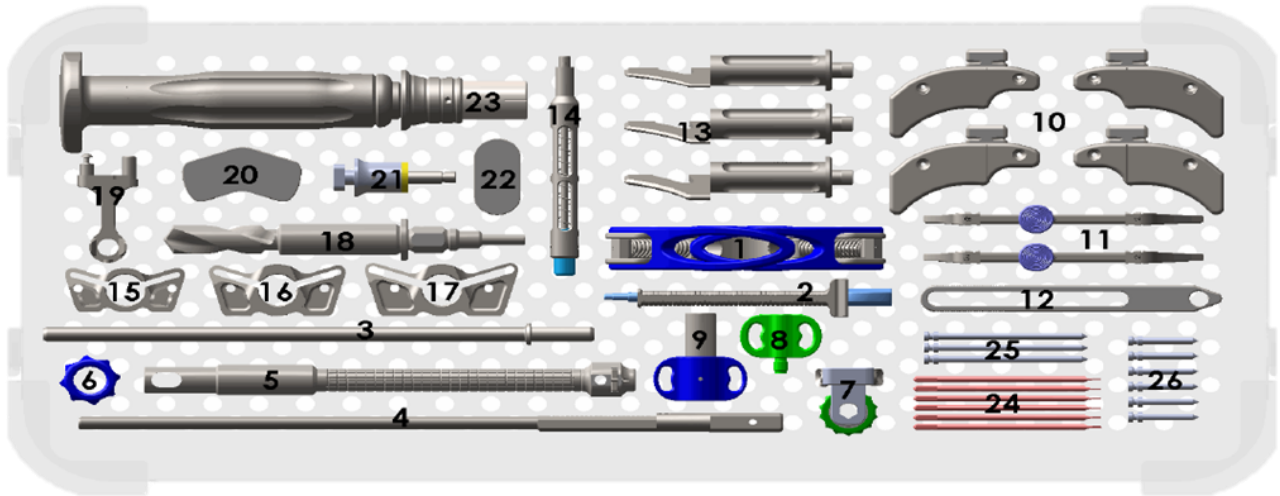
2-0299980



Item	Name	Product No.	Qty
1	Intramedullary 10 mm Drill Bit	2-0200100	1
2	Intra-medullary Rod length 250 mm	2-0200200	1
3	Intra-medullary 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	Ø2 Headless Pin	2-0103000	2
15	Alignment Gauge	2-0206300	1
16	Universal Quick Release Adaptor for pin	2-0201100	1
17	AO Quick Release Adaptor for pin	2-0201200	1
18	Pin Extractor	2-0201500	1
19	Wrench for Tibial Stem	2-0205500	1
20	Drill Bit D3.2 length 145 mm	2-0102400	1
21	Slap Hammer	2-0206900	1
22	Flat Rasp	2-0206800	1
23	Hohmann Retractor 240 mm 18 mm	2-0207100	2
24	Hohmann Retractor 265 mm 24 mm	2-0207200	1
25	Tibial Baseplate Handle	2-0223500	1

INSTRUMENTATION

ANATOMIC®: SET TIBIAL RESECTION - 4T 2-0299978



Item	Name	Product No.	Qty
1	4T Malleolar Clamp	2-0237500	1
2	4T Rod for Malleolar Clamp	2-0237300	1
2	4T ML Wheel for Malleolar Clamp	2-0237400	1
3	4T Aiming Without Tibial Bracket	2-0239000	1
4	4T Aiming With Tibial Bracket	2-0236900	1
5	4T EM Aiming Column	2-0237100	1
6	4T Distal AP Wheel	2-0237200	1
7	4T Wheel/Tibial Resection Guide Support	2-0236700	1
8	4T Wheel for EM Aiming Column	2-0237000	1
9	4T Proximal AP Wheel	2-0236800	1
10	4T Tibial Resection Guide Left- 0°	2-0236400	1
10	4T Tibial Resection Guide Right - 0°	2-0236401	1
10	4T Tibial Resection Guide Left - 3°	2-0237600	1
10	4T Tibial Resection Guide Right - 3°	2-0237700	1
11	4T Tibial Stylus - 2/8	2-0236501	1
11	4T Tibial Stylus - 2/10	2-0236502	1
12	4T Tibial Bracket	2-0236600	1

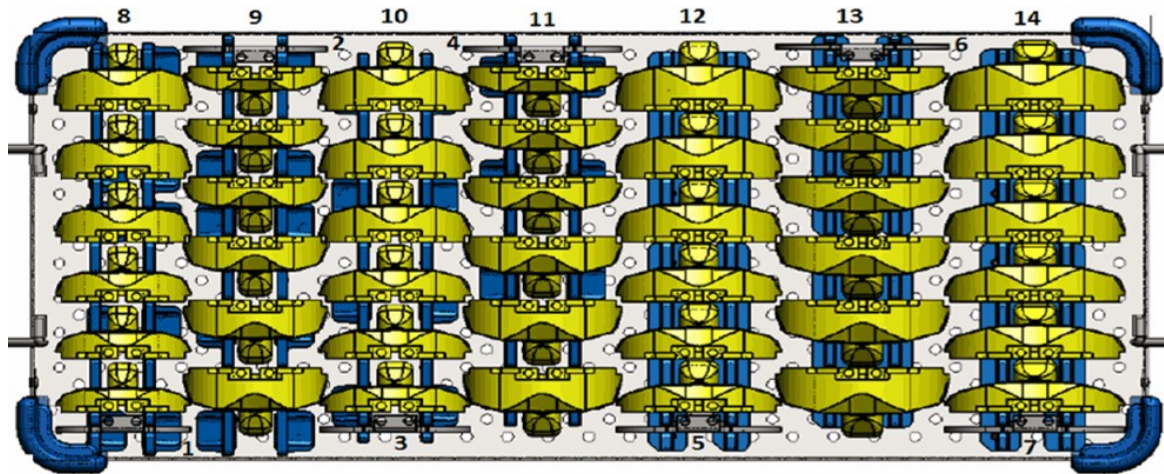
INSTRUMENTATION

Item	Name	Product No.	Qty
13	Tibial fin punch - Size 0/1/2	2-0230901	1
13	Tibial fin punch - Size 3/4/5	2-0230902	1
13	Tibial fin punch - Size 6/7/8	2-0230903	1
14	Removable handle	2-0226500	2
15	Guide for tibial fin punch - Size 0/1/2	2-0230801	1
16	Guide for tibial fin punch - Size 3/4/5	2-0230802	1
17	Guide for tibial fin punch - Size 6/7/8	2-0230803	1
18	Reamer for tibial keel	2-0231600	1
19	Jig support for baseplate handle	2-0223600	1
20	Baseplate impactor	2-0233400	1
21	Tibial baseplate extractor	2-0231800	1
22	Tibial impactor	2-0231900	1
23	Universal handle	2-0232100	1
24	Headless pin length 80 mm	2-0201400	6
25	Headed pin length 70 mm	2-0201302	3
26	Headed pin length 30 mm	2-0201301	6
27	Pin driver - Zimmer Hall	2-0246300	1
27	Pin driver – AO	2-0246200	1

INSTRUMENTATION

ANATOMIC®: TIBIAL TRIALS SET

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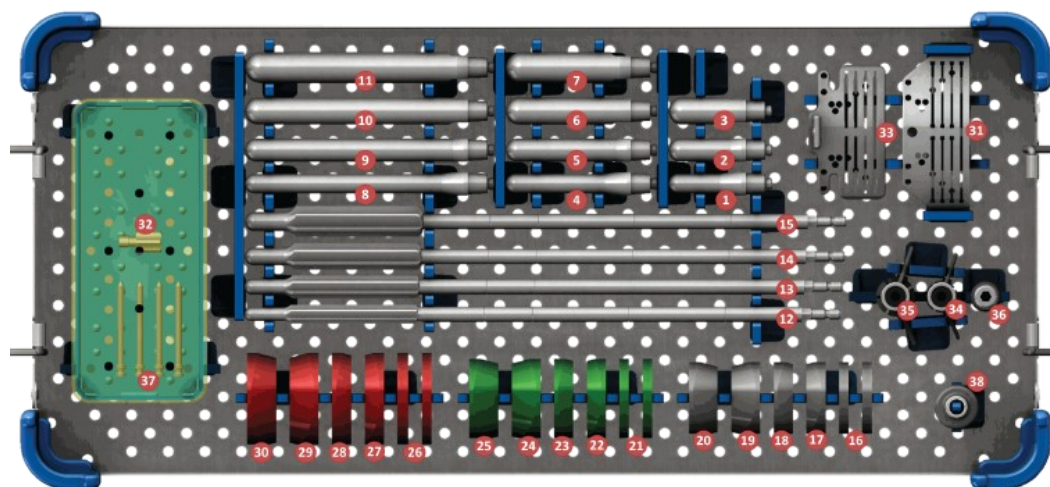


Item	Name	Product No.	Qty
1	Trial Baseplate Posterior Stabilized Size 1	2-0231001	1
2	Trial Baseplate Posterior Stabilized Size 2	2-0231002	1
3	Trial Baseplate Posterior Stabilized Size 3	2-0231003	1
4	Trial Baseplate Posterior Stabilized Size 4	2-0231004	1
5	Trial Baseplate Posterior Stabilized Size 5	2-0231005	1
6	Trial Baseplate Posterior Stabilized Size 6	2-0231006	1
7	Trial Baseplate Posterior Stabilized Size 7	2-0231007	1
8	Trial Insert PS Size 1 Thickness 10, 12, 14, 16 & 20mm	2-0230610 to 2-0230615	1
9	Trial Insert PS Size 2 Thickness 10, 12, 14, 16 & 20mm	2-0230620 to 2-0230625	1
10	Trial Insert PS Size 3 Thickness 10, 12, 14, 16 & 20mm	2-0230630 to 2-0230635	1
11	Trial Insert PS Size 4 Thickness 10, 12, 14, 16 & 20mm	2-0230640 to 2-0230645	1
12	Trial Insert PS Size 5 Thickness 10, 12, 14, 16 & 20mm	2-0230650 to 2-0230655	1
13	Trial Insert PS Size 6 Thickness 10, 12, 14, 16 & 20mm	2-0230660 to 2-0230665	1
14	Trial Insert PS Size 7 Thickness 10, 12, 14, 16 & 20mm	2-0230670 to 2-0230675	1

INSTRUMENTATION

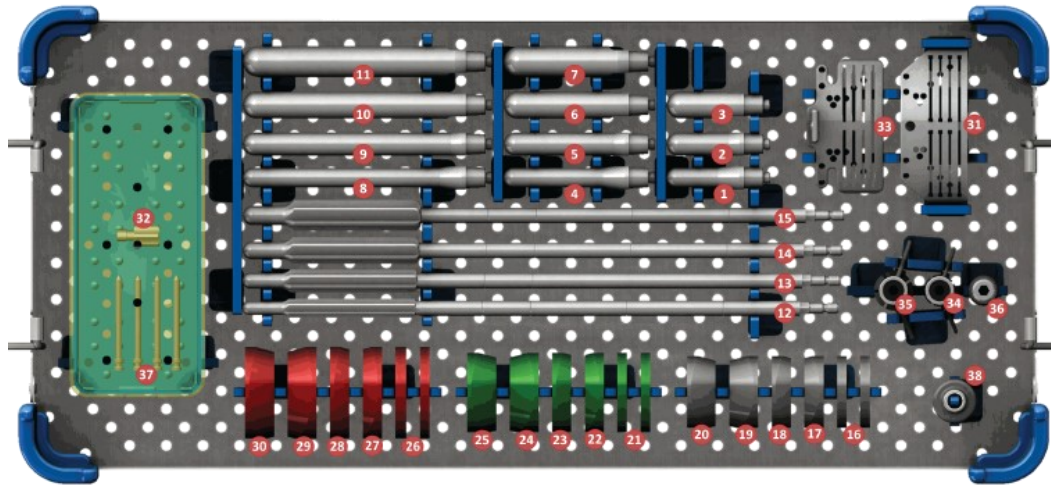
ANATOMIC®: TIBIAL REVISION SET

2-029990



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

INSTRUMENTATION



Item	Name	Product No.	Qty
21	ANATOMIC Trial Tibial Half-Block - Size 3/4/5 Thickness 5 mm	2-0255813	2
22	ANATOMIC Trial Tibial Half-Block - Size 3/4/5 Thickness 10mm RM/LL	2-0255823	1
23	ANATOMIC Trial Tibial Half-Block - Size 3/4/5 Thickness 15 mm RM/LL	2-0255843	1
24	ANATOMIC Trial Tibial Half-Block - Size 3/4/5 Thickness 10 mm RL/LM	2-0255833	1
25	ANATOMIC Trial Tibial Half-Block - Size 3/4/5 Thickness 15 mm RL/LM	2-0255853	1
26	ANATOMIC Trial Tibial Half-Block - Size 6/7/8 Thickness 5 mm	2-0255816	2
27	ANATOMIC Trial Tibial Half-Block - Size 6/7/8 Thickness 10mm RM/LL	2-0255826	1
28	ANATOMIC Trial Tibial Half-Block - Size 6/7/8 Thickness 15 mm RM/LL	2-0255846	1
29	ANATOMIC Trial Tibial Half-Block - Size 6/7/8 Thickness 10 mm RL/LM	2-0255836	1
30	ANATOMIC Trial Tibial Half-Block - 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

NOTES



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