Aesculap® Columbus®

Knee system

Operating technique and Order Information

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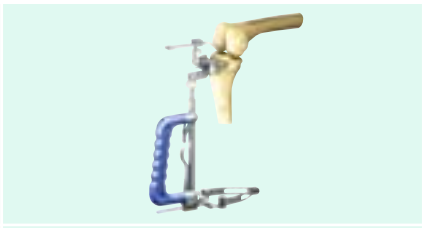
Overview manual OR Technique

1	Preparing the tibia Extramedullary		
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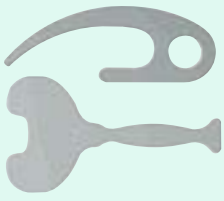
5	Femoral resection 		
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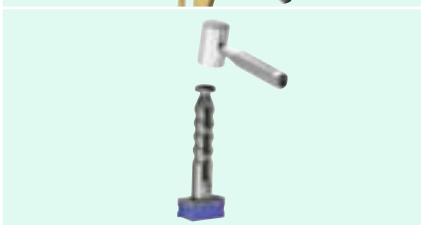

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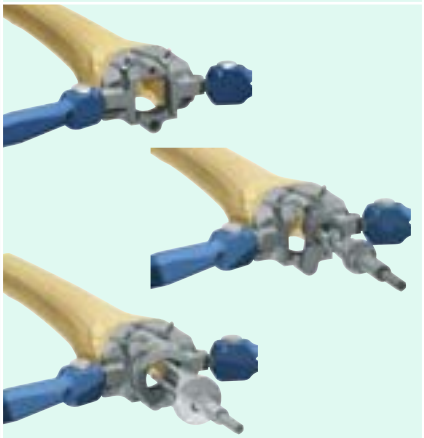

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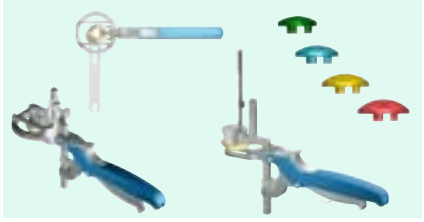
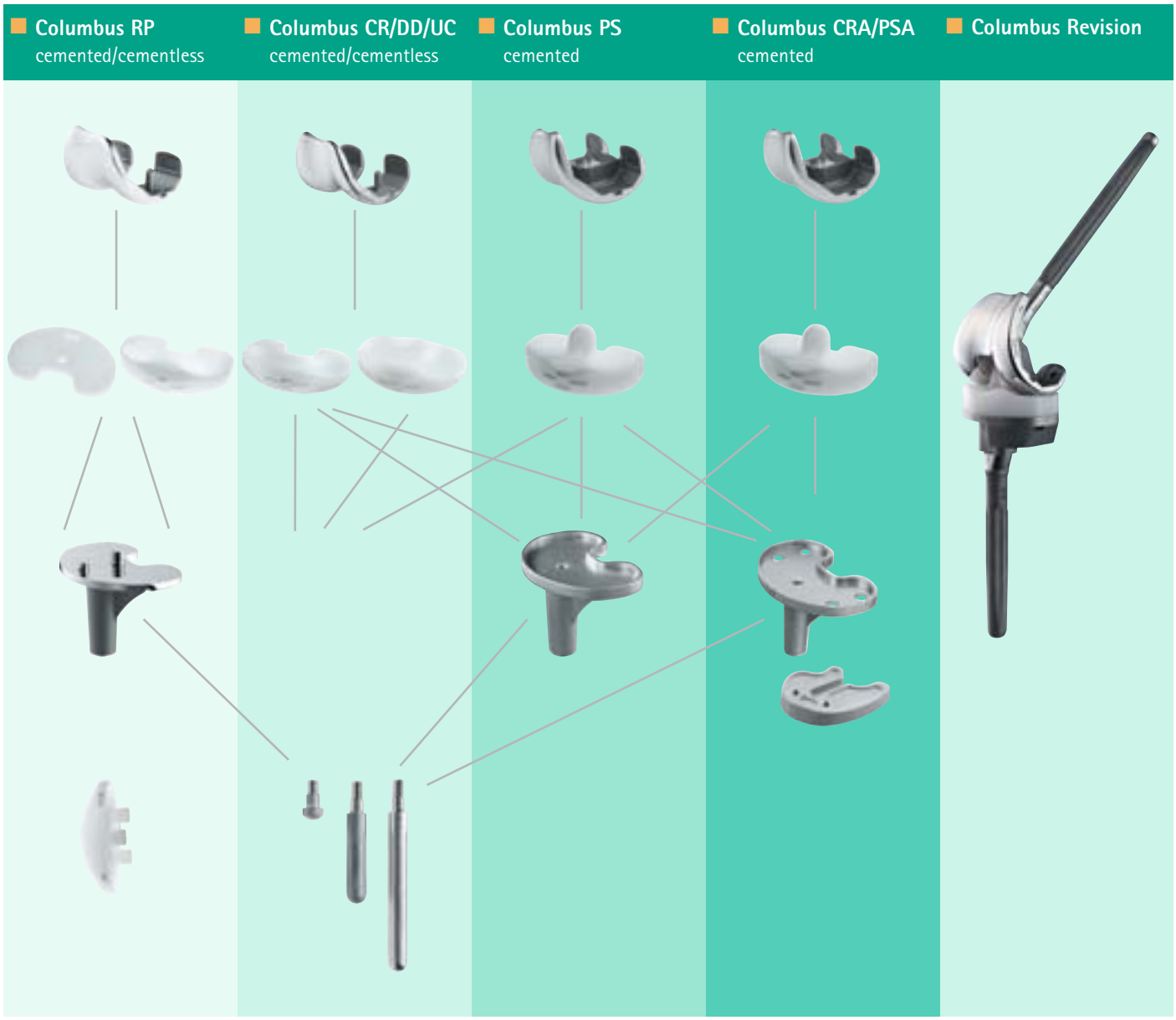


Compatibility of the Columbus Implant designs



Preoperative planning

The Columbus knee system provides X-ray templates which help the surgeon to define the following parameters:

- Angle between the anatomical and the mechanical femoral axis
- Resection height of the intact tibia joint surface
- Entry points for the intramedullary alignment rods
- Size of the implants
- Position of the osteophytes

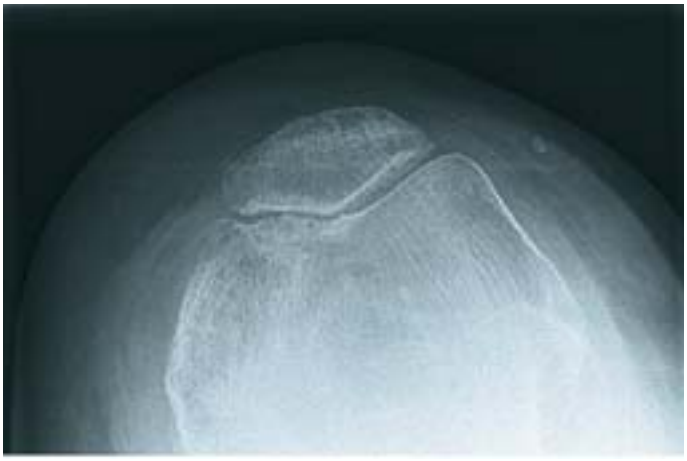
The following X-rays are required to conduct the X-ray analysis:

- Knee joint in a.p.-projection: knee in extension, centred over the distal patella.
- Knee joint in lateral projection: knee in 30° flexion, centred over the distal patella.
- Whole leg X-ray in supported monopodal stance.
- Patella-tangential X-ray: knee in 30° flexion, caudocranial radiation, centred over distal patella.

The Columbus X-ray templates must be used.

The angle between the mechanical and anatomical femoral axis is measured using the whole leg template. The joint centre, joint line and mechanical femoral axis are visible on the X-ray template and are brought into alignment with the X-ray image. The dotted line which mostly closely corresponds to the anatomical axis gives the correct angle. To define the position of the tibia resection, the whole leg template is brought into alignment with the X-ray. The resection height is given by the scale from 10 - 22 mm. The depiction of the intramedullary femur alignment rod on the whole leg template makes it possible to check the position and entry point of the rod by comparing it with the X-ray image. If pronounced bone deformities are present, it is not always possible to use the alignment rod. A complete set of X-ray templates is provided for preoperative definition of the appropriate implant sizes. Localisation of osteophytes allows their easy removal, increasing joint mobility.

The result of the preoperative planning should be documented in the patient's records.



1. Preparing the tibia – extramed. alignment

The Columbus knee system provides for two different alignment procedures:

- Extramedullary alignment
- Intramedullary alignment

The extramedullary alignment instrument is assembled at the operating table and brought into position parallel to the tibial axis.

Rotational alignment is carried out with the extension of the malleolar clamp. This orientates itself to the second metatarsal bone.

The alignment instrument offers the possibility of adjusting the tibial cutting block in all planes:

- Height adjustment (A)
- Alignment in the sagittal plane (B)
- Varus/valgus alignment (C)

1.

① Height adjustment

The resection height is defined in the preoperative planning. The goal is to remove any defect on the tibia joint surface as completely as possible in order to create a bed for the tibial plateau on intact bone. The probe (T) is set to the defined height and introduced into the cutting slot. The height of the extramedullary alignment instrument is then decreased by pulling the lever (1) until the probe comes into contact with a point corresponding to the joint line.

- Please note: the polyethylene inlay already has a 3° posterior slope.

② Alignment in the sagittal plane

Alignment in the sagittal plane (parallel to the mechanical axis) is achieved by pulling the lever (2). The distance between the lines on the malleolar clamp corresponds to a posterior slope of 1° with a tibial length of 40 cm.

③ Varus/valgus alignment

Pressing the lever (3) pushes the slide in the malleolar clamp in a mediolateral direction. The distance between each line on the scale corresponds to a 1° alteration with a tibial length of 40 cm.

2.

2. Preparing the tibia – intramed. alignment

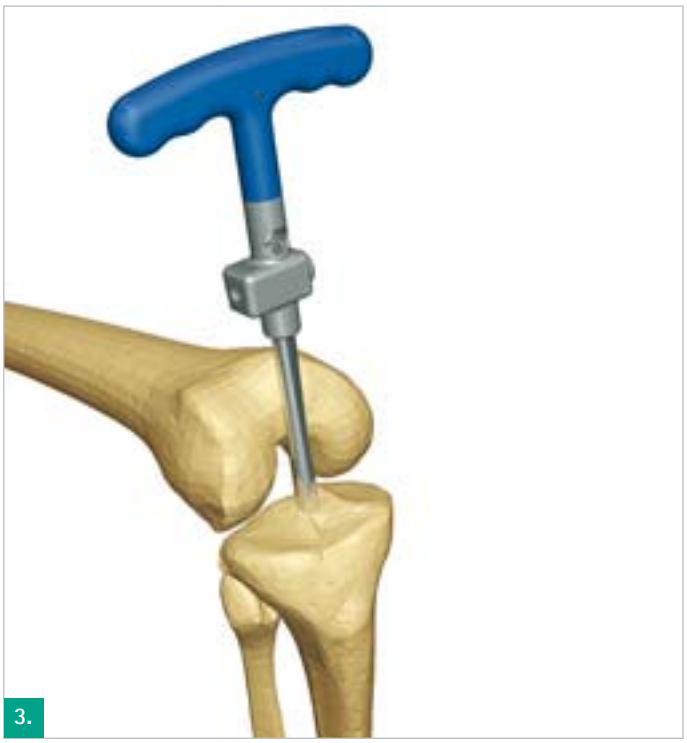
The entry point into the tibia medullary cavity is prepared using a broach in accordance with the preoperative planning. It generally lies behind the anterior cruciate ligament insertion.

The medullary cavity is opened up with the ø 9 mm drill.

The ø 8 mm intramedullary tibia rod with its special design to minimise the risk of embolism is carefully introduced into the medullary cavity up to the indicator marking using the T-handle.

The intramedullary alignment instrument is assembled and fixed onto the intramedullary tibia rod.

Just as with the extramedullary system, this alignment system version also offers the possibility of adjusting the tibia cutting block in all planes.



3.

① **Height adjustment**

The resection height is defined in the preoperative planning. The probe (T) is set to the defined height and introduced into the cutting slot.

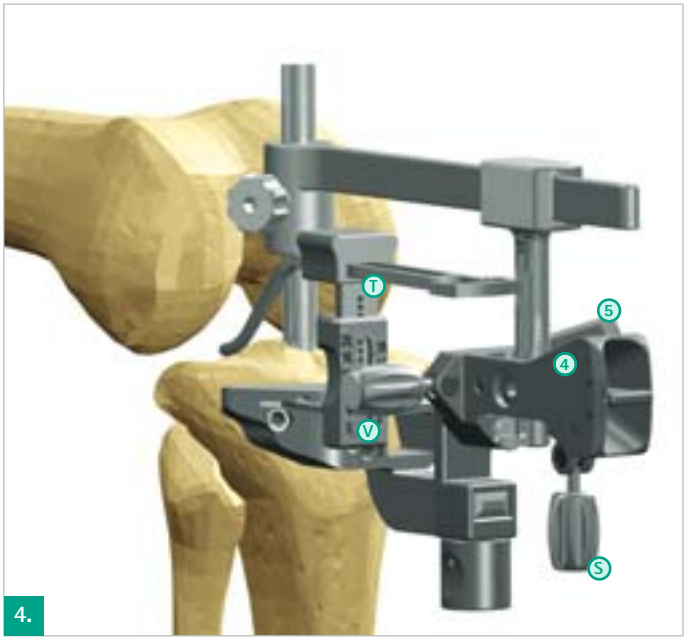
The intramedullary alignment instrument is lowered on the intramedullary tibia rod until the probe comes into contact with the point of the original joint line.

② **Alignment in the sagittal plane**

The value of the tibia slope can be read on the scale (4). Alignment in the sagittal plane (parallel to the mechanical axis) is achieved by turning the adjustment screw (S).

③ **Varus/valgus alignment**

Varus/valgus alignment is achieved by turning the adjustment screw (V). The alignment chosen can be read on the scale (5).



4.

3. Resection of the tibia plateau

The cutting block is fixed to the bone with 4 threaded pins as follows. Two headless threaded pins are inserted into the holes marked "0". Two other threaded pins with heads are then inserted into the convergent holes to secure the cutting block against movement during resection.

After the extramedullary or intramedullary alignment instruments have been removed, the resection is performed using a 1.27 mm thick sawblade. This step must be carried out very carefully, since the posterior cruciate ligament must not be damaged. The resection is normally at a slope of 0°.

5.

Checking the tibia resection height (optional)

The height of the resection can be checked by inserting a trial tibia plateau with a trial gliding surface. This makes it possible to establish whether the flexion gap is of equal size and wide enough medially and laterally.

- Please note: If the gaps are asymmetric, ligament release on the narrower side should be considered. This should not be undertaken if the asymmetry is caused by a bone defect of the dorsal femoral condyle.

6.

Checking the mechanical tibial axis (optional)

With a trial tibia plateau in place, the axis can be checked as follows. The handle must be attached to the trial tibia plateau.

The measuring rod with the socket for the second measuring rod can be inserted into the handle, and the second rod subsequently placed into the socket.

The axis is checked by comparing the position of the measuring rod to the midpoint of the ankle joint (using the C bow).

7.

4. Measuring the extension and flexion gap

After resection of the tibia plateau it is advisable to check the ligamentary tension. To do this the osteophytes on the tibia head and the femoral condyles must be completely removed. This measurement makes it possible to calculate the resection height on the distal femur (the height to aim at is 9 mm resection on the intact condyle).

- Measure flexion gap (FG)
- Measure extension gap (EG)
- Calculate distal resection height = 9 mm – EG + FG

The size of the flexion and extension gaps medially and laterally is read on the distractor. The number read is the one on the movable shoe level with the end of the sleeve.


8.

- Please note: If there is mediolateral asymmetry (more than 3 mm), ligament release should be performed on the narrower side (medial for varus malposition, lateral for valgus).

Following the ligament release the flexion and extension gaps should be remeasured and the release procedure repeated if necessary. A mediolateral difference of 2 mm is acceptable.

Example: mediolateral asymmetry

Medial measurement 6 mm and lateral measurement 12 mm: medial release until medial measurement is 9 – 10 mm and lateral measurement is 12 mm.


9.

Planning the resection of the distal femur

The distal femur prosthesis is 9 mm thick for all sizes. Thus the calculation for the distal resection height is: 9 mm – EG + FG.

If a difference in size exists between the flexion and extension gaps (≠0) there are several possibilities for resolving this. The extension gap can be adjusted to the flexion gap by max. ±2 mm by altering the distal femur resection height. Alternatively, the flexion gap can be adapted to the extension gap by choosing a smaller or larger femoral implant (this is a better method, since it preserves the important joint line). Further possibilities exist in building up the defective distal femoral condyle (e.g. with bone).

Example: asymmetrical flexion and extension gaps

FG 6 mm symmetrical and EG 12 mm symmetrical: select a smaller femoral component, taking account of the box size.

From F5 to F4: FG 6 mm + 4 mm (box) = FG 10 mm/EG 12 mm

Example: calculating distal resection height

Distal resection height: 9 mm – EG 12 mm + FG 10 mm = 7 mm

Size	AP	Box	Difference-	Difference+
F1	50	34	0	3
F2	53	37	3	3
F3	56.5	40	3	3.5
F4	60.5	43.5	3.5	4
F5	65	47.5	4	4.5
F6	70	52	4.5	5
F7	75.5	57	5	0

Measurements in [mm]

5. Resection of the distal femur

The entry point in the femoral medullary cavity is prepared using a broach in accordance with the preoperative planning.

The medullary canal is opened up with a ø 9 mm drill. The ø 8 mm intramedullary femur rod with its special design to minimise the risk of embolism is carefully introduced into the medullary cavity using the T-handle.

The holding system for the femoral cutting block is pushed onto the intramedullary tibial rod.

This system offers the possibility of varus/valgus adjustment in 1° intervals as required by the preoperative planning. The adjustment range extends to 11°.

The defined distal resection height is set by adjusting the cutting block holder. Resections from 3 mm to 17 mm are possible. The normal distal resection height should be 9 mm (= thickness of the distal femur implant). A deviation from this can occur as a result of step 4.

The femoral cutting block is placed into the receiving socket on the holding system.

10.

11.

12.

Checking the mechanical leg axis (optional)

The axis can be checked by placing the measuring rod holder into the slit on the femoral cutting block. The measuring rod with the socket for the second measuring rod can then be inserted into the holder and the second measuring rod fixed into the socket.

The axis is checked by comparing the position of the measuring rod to the midpoint of the femoral head (using the C bow).

The cutting block is fixed onto the bone using threaded pins. Two headless threaded pins are inserted into the holes marked "0".

Two other threaded pins with heads are then inserted into the convergent holes to stop the cutting block slipping up the femur.

The holding system and the intramedullary femur rod are removed, leaving only the cutting block fixed to the bone.

13.

Resection of the distal femur is performed using a 1.27 mm thick saw-blade through the cutting slit. To avoid damaging the tibia plateau, the tibia protection plate is used. If necessary, the cutting block can be switched to the "-2" and "-4" holes to repeat the resection. The headless pins are left in place until the flexion and extension gaps have been measured, making it possible to repeat the resection if necessary without having to realign the cutting block. They should not be subjected to mechanical strain.

Obligatory: using the distractor it is possible to establish whether an adequate joint gap has been achieved in extension (see "Measuring the extension and flexion gap using the retracting forceps as a distance block" page 14).

14.

6. Determining the size of the femoral implant

The instrument for determining the implant size is placed on the distal resection surface and brought into contact with the posterior condyles. It is then aligned mediolaterally with the aim of achieving the greatest possible congruence with the distal femoral resection surface.

The gradations on the side of the instrument numbered 1 – 7 (A) indicate the respective femur size and permit a good mediolateral match.

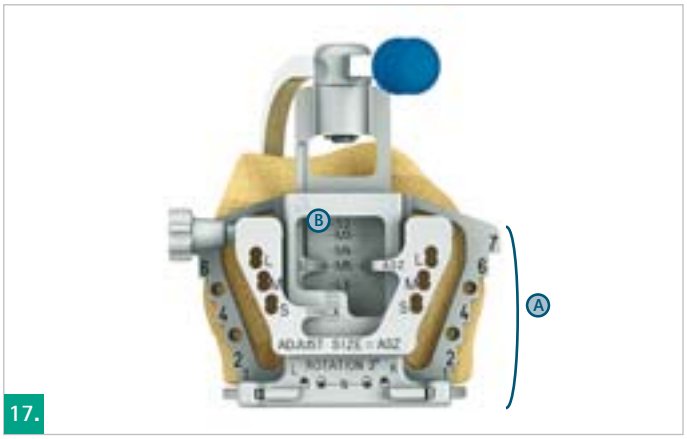
15.

The size of the femoral prosthesis can be read on the distal side from the SZ (Size) indicator (B). The movable probe is used to establish the point on the anterior lateral cortex at which the femoral surface implant should end. The size is also indicated on the top of the probe (C).

The L, M and S (Large, Medium and Small) holes are the guide holes for drilling the holes for the two holding pegs on the APC cutting blocks. The cutting blocks also carry the respective L, M or S indicator, as given below:

Range	Cutting block size
L	6, 7
M	3, 4, 5
S	1, 2

16.



17.

7. Adjusting the rotation of the femoral component

If the plates are correctly lying on the dorsal condyles, positioning the probe on the ventral femoral cortex gives the size of the femoral component (SZ). If this is a full size, the indicator (S) must be at the "N (Neutral)" position. If the SZ indicator shows an in-between size, the size to be selected must be adjusted with the positioning screw (A). "Adjust Size (ASZ)" is adjusted using a separate mechanism, which is fixed using the side screw (A).

The resection on the anterior cortex is adjusted by moving the position of the drilling holes. This movement can be read in millimetres on the lower scale (S).

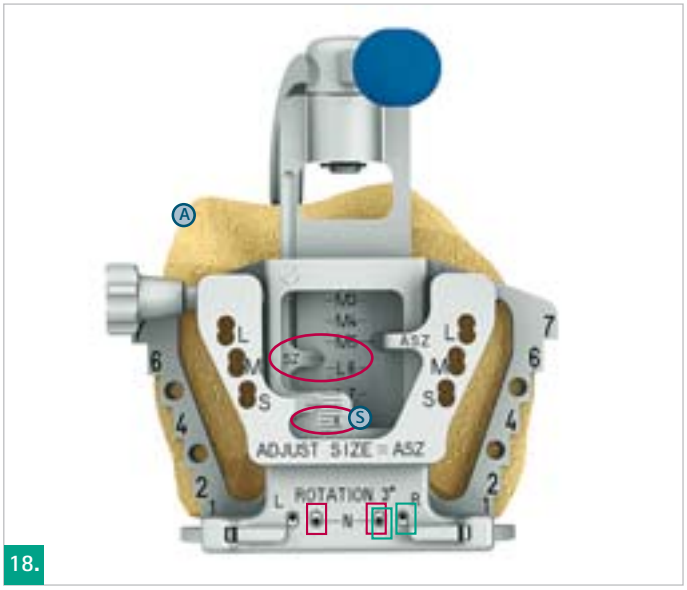
- Please note: always tighten the screw (A) firmly after adjustment, if necessary with a hexagonal socket screwdriver.

Examples: no external rotation

Indicator is on full size 5. Implantation: drill in the two lower ☐☐ M holes. With this setting, 8 mm of bone will be resected on the posterior side.

with 3° external rotation

Depending on whether the right or left leg is being operated, one hole will be drilled in the lower ☐ hole and the second hole on the opposite side will be drilled in the upper ☐ hole under "Rotation 3°" on the size instrument, as illustrated. The example shown is for a right leg.

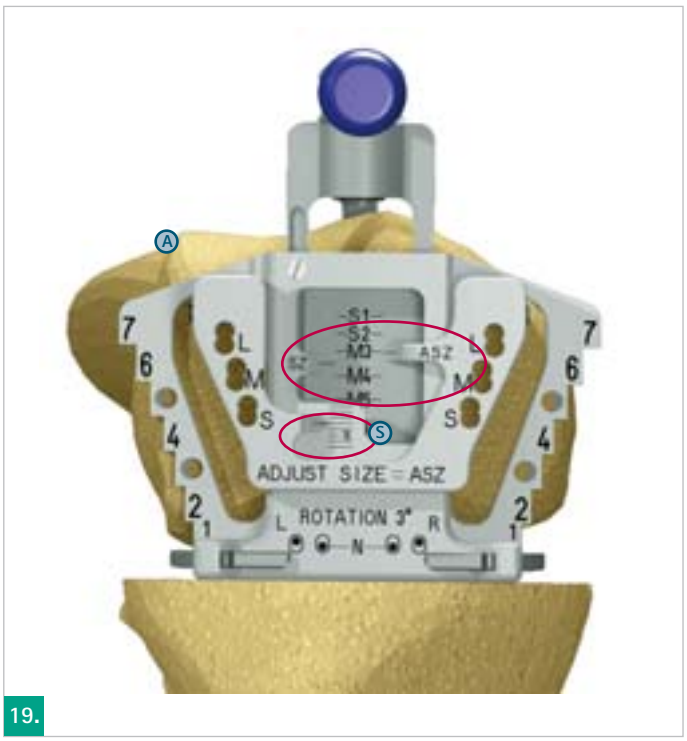


18.

8. Selecting the femur size

Points for consideration in selecting the size of the femoral component are:

- Avoiding the implant undercutting or protruding from the femoral cortex ventrally: undercutting carries a risk of fracture and protrusion can increase retropatellar pressure.
- Matching the flexion gap to the extension gap: the drilling holes define the position of the APC cutting block. Subsequently changing the size of the APC cutting block makes it possible to alter the flexion gap (see table on page 8). In the choice of component, asymmetries between FG and EG arising from step 4 must be taken into account, bearing the drilling hole classification (L, M or S). If the size change means changing into another size range, the holes must be drilled again in this range. In case of a change to a smaller femur size, the already existing holes can not be used. Also not in the same group. The instrument for determining the size has to be attached once again on the distal cut surface. Contact between the two dorsal shoes and the cut of dorsal bone is requested. The ventral probe has to be in contact with the cut ventral surface. Using the separate mechanism "Adjust Size (ASZ)", the device is moved ventral to the next smaller size. The mechanism is fixed in this position by screw (A). The new holes have to be drilled in the correct group.



19.

9. Completing the femoral resection

Example:
From Step 4: FG 10 mm; EG 12 mm
Height of distal femur resection = 7 mm
From Step 7: femur size 5, S indicator: N
Set drilling holes at "M" and apply APC cutting block size 4.
Result: symmetry between FG and EG

The dorsal resection is performed first, using the appropriate APC cutting block. The flexion and extension gaps are subsequently checked for adequate height (see "Measuring the extension and flexion gap using the retracting forceps as a distance block" page 14). If the results are satisfactory, the anterior pins can be removed. The three remaining resections are then carried out using the APC cutting block.

Obligatory: the four remaining resections (anterior and posterior resection and anterior and posterior resection of the slanting surfaces) are performed in one set-up using the APC cutting block which corresponds to the selected femur size.

The two pegs on the cutting block are guided into the predrilled holes so that the "ANT" marking for the anterior resection on the APC cutting block is visible. Then the cutting block is fixed onto the distal resection surface with two converging threaded pins with heads. Care must be taken to ensure that the cutting block is lying flat on the distal resection surface. Two handles can be attached for additional stabilisation by hand.


20.

The position and depth of the resections can be checked using the resection depth gauge.

It is advisable to use the tibia protection plate to avoid damaging the tibia plateau.

The four femoral resections are performed using a 1.27 mm thick sawblade through the cutting slits.


21.

Measuring the extension and flexion gap

This measurement allows the height of the polyethylene inlay to be established, which also indicates whether a corrective resection of the tibia is necessary.

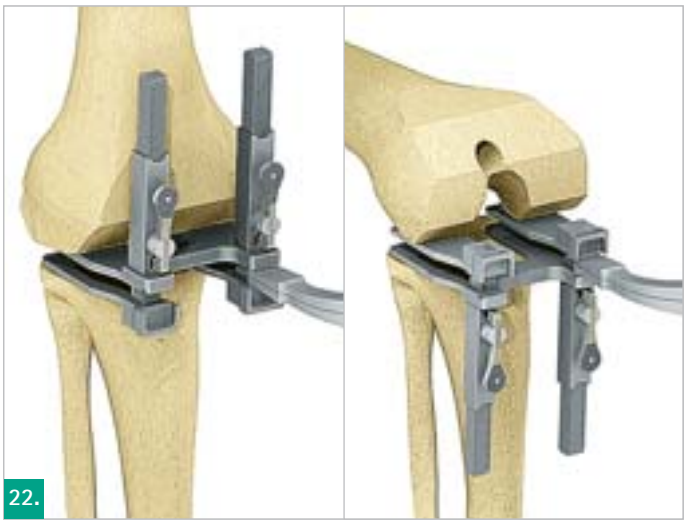
- Please note: the thickness of the retracting forceps with closed plates is 6 mm.

Retraction in extension for a distal femoral resection of 9 mm.

Example:

Tibial resection 10 mm + 9 mm femoral resection = 19 mm retraction
PE height extension gap (EG): EG – 9 mm

- Please note: the polyethylene heights are as follows: CR/RP 10 - 16 mm, PS, DD, UC 10 - 20 mm.


22.

Extension gap	PE height	10 mm	12 mm	14 mm	16 mm	18 mm	20 mm
Retraction	CR/RP:	10 + 9 = 19 mm	12 + 9 = 21 mm	14 + 9 = 23 mm	16 + 9 = 25 mm		
Retraction	DD/UC/PS:	10 + 9 = 19 mm	12 + 9 = 21 mm	14 + 9 = 23 mm	16 + 9 = 25 mm	18 + 9 = 27 mm	20 + 9 = 29 mm

Retraction in flexion for a dorsal femoral resection of 8 mm (femoral cutting block setting "N" neutral).

Example:

Tibial resection 10 mm + 8 mm dorsal femoral resection = 18 mm retraction

PE height flexion gap (FG): FG – 8 mm

- Please note: the polyethylene heights are as follows: CR/RP 10 - 16 mm, PS 10 - 20 mm.

Flexion gap	PE height	10 mm	12 mm	14 mm	16 mm	18 mm	20 mm
Retraction	CR/RP:	10 + 8 = 18 mm	12 + 8 = 20 mm	14 + 8 = 22 mm	16 + 8 = 24 mm		
Retraction	DD/UC/PS:	10 + 8 = 18 mm	12 + 8 = 20 mm	14 + 8 = 22 mm	16 + 8 = 24 mm	18 + 8 = 26 mm	20 + 8 = 28 mm

Possibilities for solving FG/EG asymmetries

Symmetrical EG<19 mm and FG<18 mm: corrective resection of the tibia.

FG > EG ➔ distal corrective resection of the femur (proximalises the joint line).

EG > FG ➔ build up the distal femoral condyles or select a smaller femoral prosthesis and a higher plateau.

10. Determining the size of the tibial component

The trial plateau is selected which best matches the resection surface. Five full sizes and four plus sizes, which are 3/4 mm longer in AP, are available for this purpose. The trial gliding surface is placed on the trial plateau, which is connected to the handle. The trial gliding surface must be selected to match the joint gap measured in extension and flexion.

Trial gliding surfaces for the rotating platform:

before the RP trial gliding surfaces are used, the RP adaptor plate must first be placed on the trial tibial plateau.

23.

Rotational alignment of the tibial component

Rotational alignment of the tibial plateau is carried out according to the ventral marking. This should point to the transition between the central and medial thirds of the patellar tendon insertion.

Alternatively, a connecting line between the insertion of the posterior cruciate ligament and the middle of the patellar tendon insertion can be used for orientation.

Rotational alignment can also be achieved functionally using the femoral component after moving the loose tibial plateau from extension into flexion. An internal rotation position should be avoided in all circumstances.

As an option, it is possible to make a mark on the ventral bone. The mark has to be in the position of the implant axis. This makes it easier to find the defined position later on.

24.

11. Preparing the patella

The thickness of the patella is measured using the patella forceps. This thickness should not be exceeded after implantation of the patella rear surface (see table on page 37). The aim should be to achieve a reduction in patella thickness following implantation.


25.

The forceps is set to the chosen resection height.
The resection is performed through the cutting slot.


26.

The saw attachment is removed. The triple drilling sleeve is attached and the peg holes are drilled with the ø 6 mm trip drill. The size of the patella is established with the trial patella implants.


27.


28.

12. Trial reposition

The trial femoral prosthesis is inserted with the femur implant holder and aligned mediolaterally. Then the trial tibia plateau, carrying the trial gliding surface and with the handle attached, is fixed onto the tibial resection surface in the optimum position covering the cortex.

29.

Following this procedure it is advisable to test the entire joint function with the patella in its anatomical position or with a trial patella implant.

30.

Alignment should be checked in flexion and extension by again inserting the extramedullary measuring rods into the handle attached to the tibial plateau. The position of the measuring rod is checked in relation to the midpoint of the femoral head and the ankle joint (using the C bow).

The peg holes for the femoral implant are drilled with the ø 6 mm trip drill. They determine the final position of the femoral implant. Therefore it is strongly recommended that these holes are only drilled after the joint function test has been carried out.

31.

13. Posterior stabilised PS version

To perform the femoral resections for the PS version, the trial femoral implant and the trial gilding surface must be removed. The trial tibia plateau can remain on the bone.

The appropriately sized PS preparation guide is selected (the size of the femoral component) and inserted with its two pegs in the peg holes for the femoral component. It should then be pressed firmly onto the bone using the two removable handles. The guide is fixed to the bone with two threaded pins with heads.

32.

The drilling guide for the ø 14 mm drill is applied so that its peg fits into the lower central hole of the PS preparation guide.

It is moved in both a lateral and a medial direction in order to drill two holes.

33.

Then the cutting guide for the ø 22.5 mm cutter is attached and the bone is milled with the cutter up to its limit stop.

34.

35.

The chisel is connected to the handle. The two slots in the PS preparation guide serve to guide the chisel, which is knocked in up to its limit stop, with its cutting edge on the outside.


36.

To check the intercondylar preparation, the appropriately sized PS trial femoral box template is selected and placed into position with the holder.


37.

Correct positioning is confirmed through the equal height of the trial template and the distal resection as well as contact between the two pegs and the dorsal slanting resection.


38.

14. Final preparation of the tibia stem

The trial tibia plateau is fixed into the desired position with short threaded pins with heads and additionally stabilised with the handle. The cylindrical drilling sleeve, of which there is one for the ø 12 mm and one for the ø 14 mm stem, should be placed on the trial tibia plateau.

The drilling sleeve is fixed into position with a holding clamp.
Sizes T1 to T3+ tibia plateaus are implanted with a ø 12 mm stem as standard and sizes T4 to T5 with a ø 14 mm stem.

The hole for the tibia plateau stem is drilled with the appropriate drill:

- ø 12 mm or ø 14 mm trip drill if the tibia plateau with the closing screw is being used.
- ø 12 mm or ø 14 mm drill with two laser markings for short or long extension stems.

39.

To prepare for the wing stem, the guide for the wing chisel is placed into position on the trial tibia plateau. The wing chisel corresponding to the tibia plateau (T1/T1+, T2/T2+, T3/T3+, T4/T4+, T5) is selected and knocked in up to the limit stop.

40.

15. Implanting the trial tibial prosthesis

The appropriate trial tibia wing stem, connected to an extension stem if used, is screwed onto the inserter and implanted.

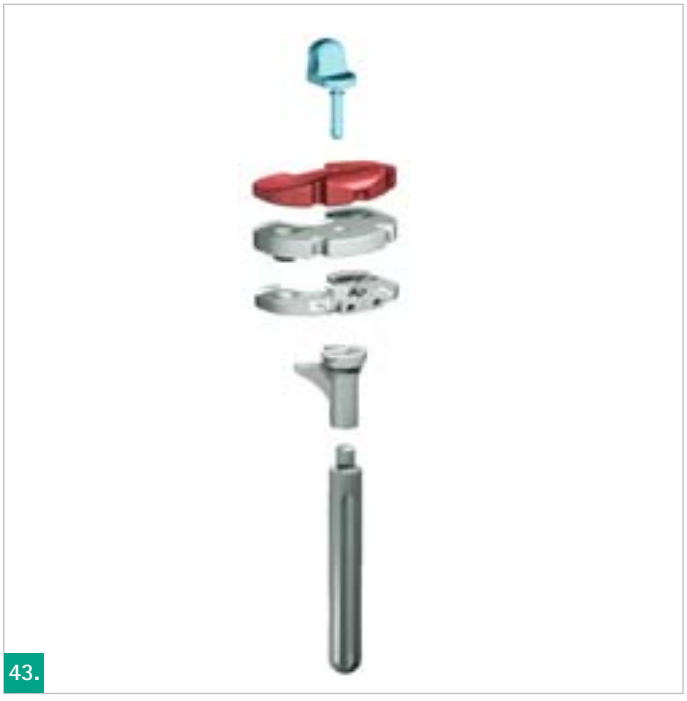
In order to do this, the screw pins in the trial tibia plateau must be removed and the plateau held with the handle attached.

41.

Once the pins have been inserted to fix the trial tibia plateau in position, the holder for the PS femoral box trial template can be used to insert the trial tibia wing stem.

Then the corresponding trial tibia gliding surface is fixed into the trial plateau – together with the PS peg for the PS version.

42.



43.

16. Trial PS prostheses

For the PS version the appropriate trial femoral prosthesis is connected to the PS femoral box and implanted.

The trial tibia gliding surface is connected to the PS peg using the holder for the PS trial femoral box template.

The PE gliding surfaces are available in sizes ranging from 10 mm to 16 mm in 2 mm increments – for the PS version the range is from 10 mm – 20 mm. A 4 mm test plateau is PS, UC, DD therefore supplied for each of the five trial tibia plateau. The 18 mm size is achieved using the 4 mm test plateau + 14 mm trial gliding surface, the 20 mm size using the 4 mm test plateau + 16 mm trial gliding.

The knee kinematics and anterior-posterior stability are checked with the help of the trial prostheses.

The following sequence is recommended for trial prosthesis explantation at > 90° flexion:

- PS peg
- Trial gliding surface
- Trial femoral prosthesis
- Trial tibia wing stem with/without extension stem
- Trial tibia plateau

44.

COMPATIBILITY FEMUR PS/PE PS

Sizes	F1	F2	F3	F4	F5	F6	F7	F8
T0								
T1								
T2								
T3								
T4								
T5								

Mimum wear and highest stability, best kinematics

Increased wear but still stable, good kinematics and therefore safe

Increased wear and less implant stability and therefore not recommended

COMPATIBILITY FEMUR CR/PE UC

Sizes	F1	F2	F3	F4	F5	F6	F7	F8
T0								
T1								
T2								
T3								
T4								
T5								

17. Definitive implantation

The Columbus femoral and tibial implants can be implanted with or without cement as desired. The surgeon makes this decision according to the bone quality of the patient.

Because of the congruence between the resection surfaces and the implants, only a small amount of cement should be used. This is particularly important in the posterior regions to prevent cement getting into the periarticular gap.

The following implantation sequence is recommended:

- Tibia plateau with trial gliding surface
- Femurkomponente
- Gleitfläche
- Patella

45.

The tibia plateau is connected to the impactor and brought precisely into the predefined position using the handle.

A trial gliding surface should be placed in position to avoid contact between the femoral implant and the surface of the tibia plateau during impaction of the femoral implant.

- Please note: when implanting the RP version, ligamentary tension can no longer be checked with the trial RP gliding surface fitted. This is because the height of this gliding surface is less than the height of the PE inlay because the RP adaptor plate is missing.

46.

The inserter with the handle fitted onto it is attached to the femoral implant. The femoral implant is brought into alignment and implanted using the holder. The femoral impactor is used to knock the implant into place.

- Please note: all cement residue must be removed.

47.

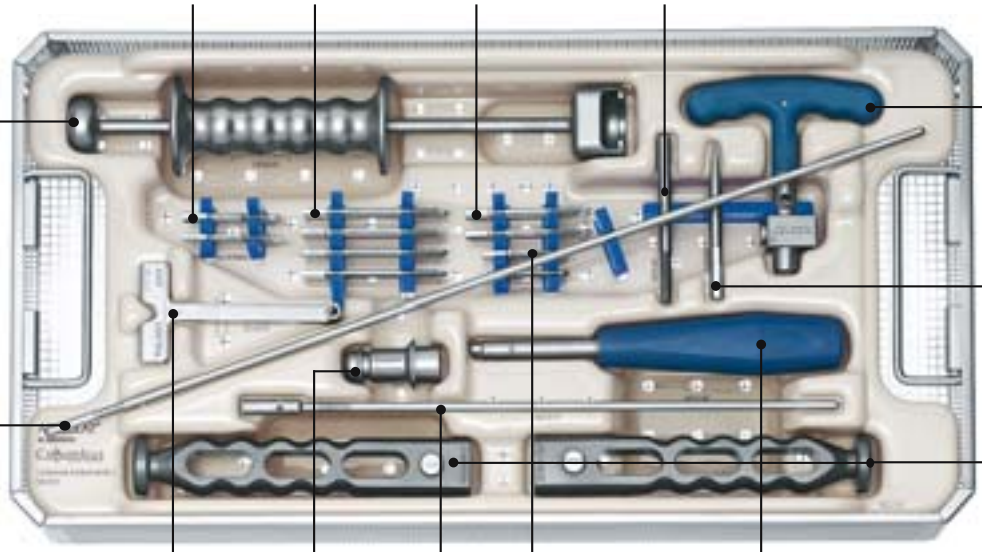
The patella is implanted using the patella preparation forceps and the concave plastic cap, which allows good transmission of forces during the cement hardening process.

Instrumentation

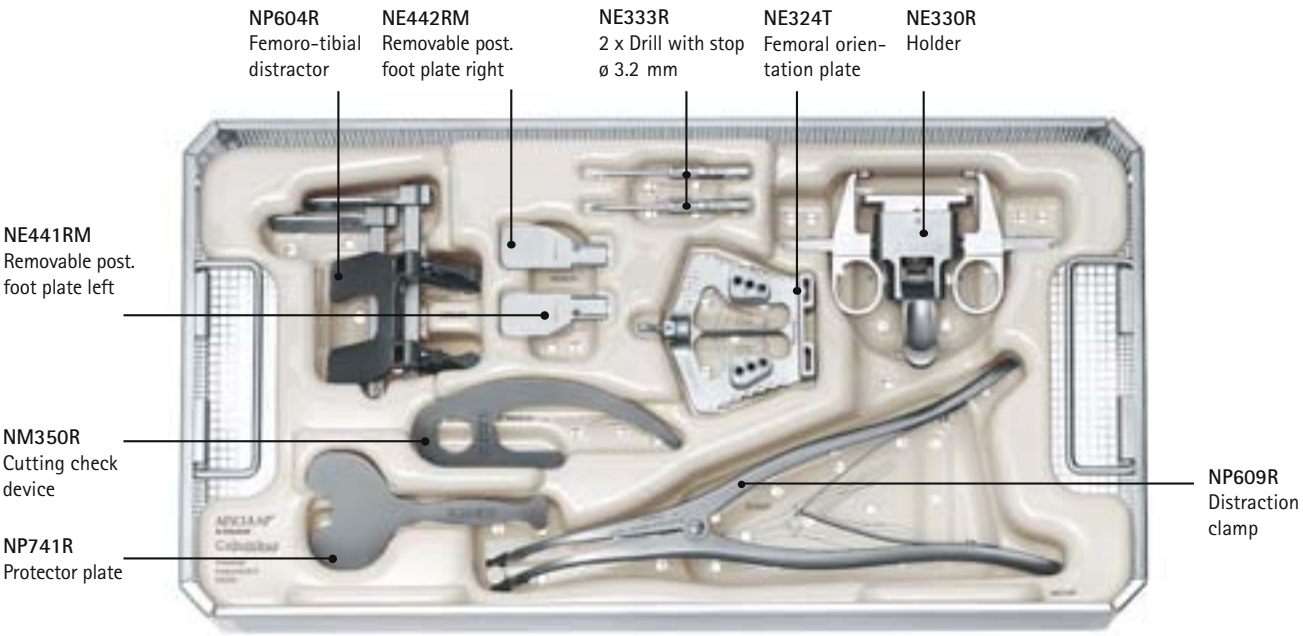
The NE300 Columbus Knee System offers the surgeon the following modern instrumentation:

Columbus Complete Set NE300

NE201 Columbus Universal Instruments I



NE202 Columbus Universal Instruments II



NE203 Columbus Tibial Preparation Instruments

Tibia winght chisels for CR/DD/UC

T1/T1+: NE361R
T2/T2+: NE362R
T3/T3+: NE363R
T4/T4+: NE364R
T5: NE365R

Trial Keels for PS

T1/T1+: NE371T
T2/T2+: NE372T
T3/T3+: NE373T
T4/T4+: NE374T
T5: NE375T

Tibia trial/prep. plateaus

T1: NQ171R
T1+: NQ172R
T2: NQ173R
T2+: NQ174R
T3: NQ175R
T3+: NQ176R
T4: NQ177R
T4+: NQ178R
T5: NQ179R

NE348R
Drill ø 14 mm for ext. stems

NE338R
Drill ø 12 mm for ext. stems

NE349R
Drill with stop ø 14 mm

NE339R
Drill with stop ø 12 mm

NQ068R
Tibia prep. plateau holder

NE359R
Chisel guide

NE357R
Locking key tibial drilling guide

Tibia drilling guides ø 12 mm

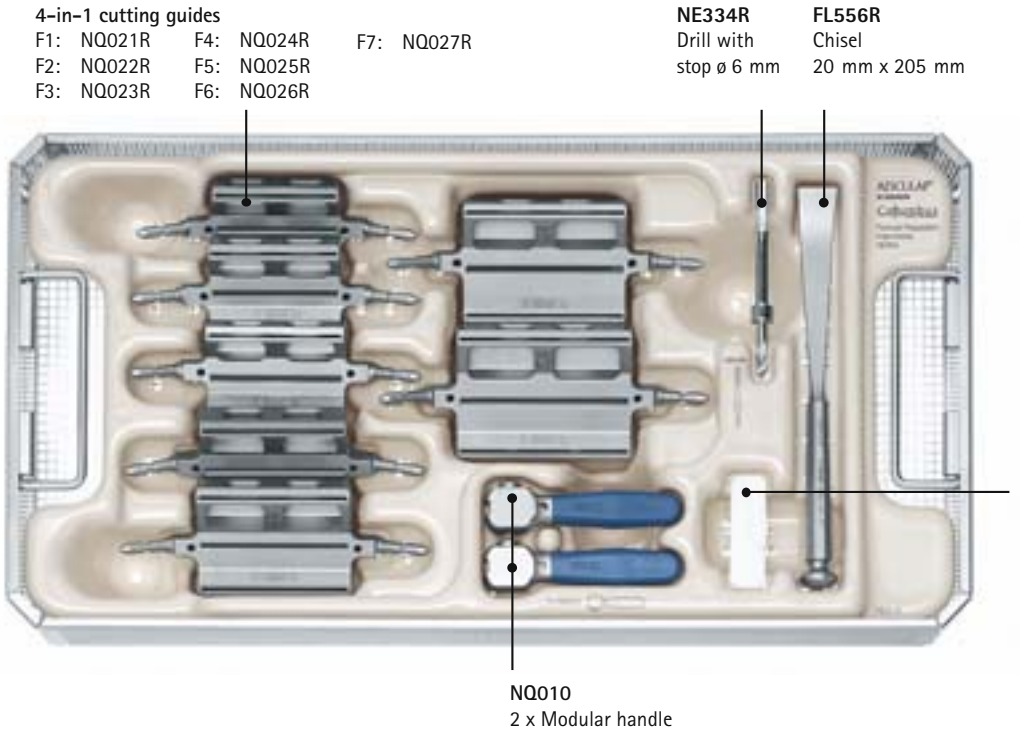
T1/T1+: NE241RM
T2/T2+: NE242RM
T3/T3+: NE243RM
T4/T4+: NE244RM
T5: NE245RM

Tibia drilling guides ø 14 mm

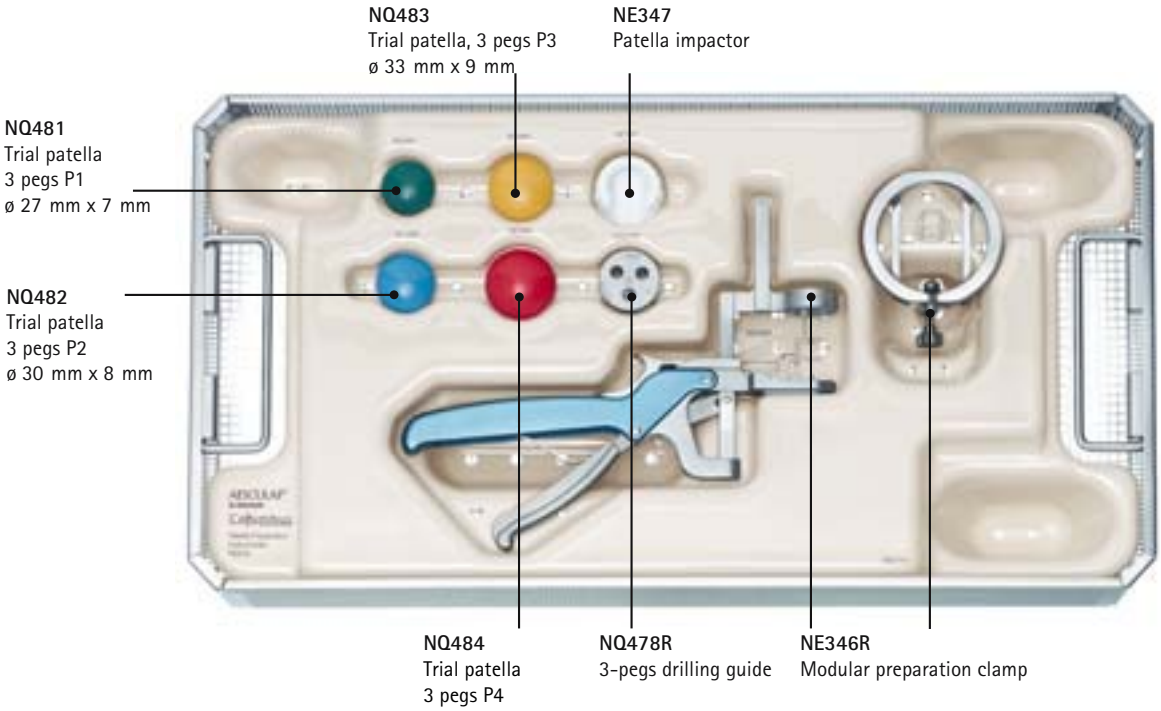
T1/T1+: NE251RM
T2/T2+: NE252RM
T3/T3+: NE253RM
T4/T4+: NE254RM
T5: NE255RM

Columbus Complete Set NE300

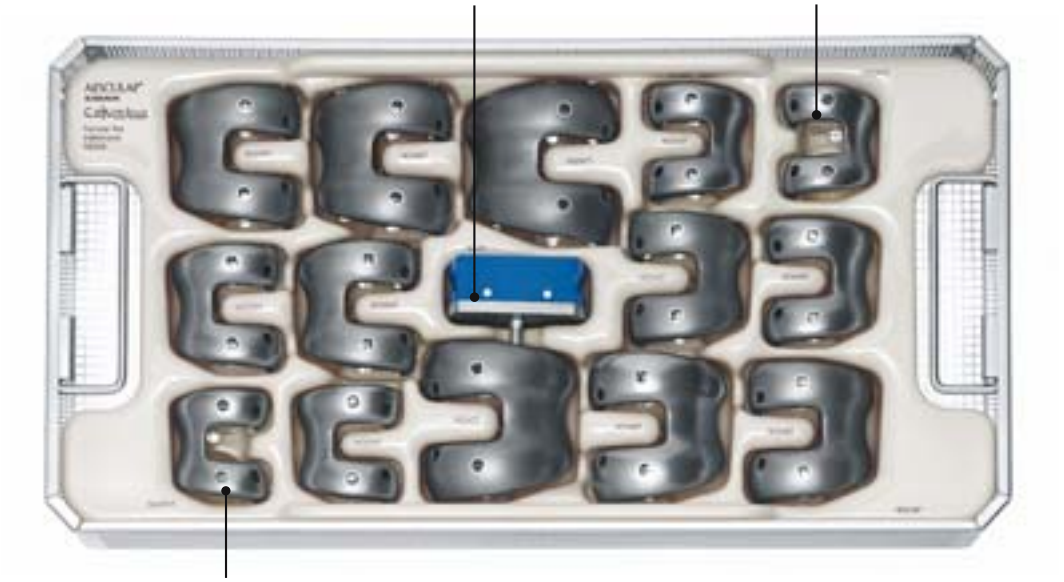
NE204 Columbus Femoral Preparation Instruments



NE205 Columbus Patella Preparation Instruments



NE206 Columbus Femoral Trial Instruments

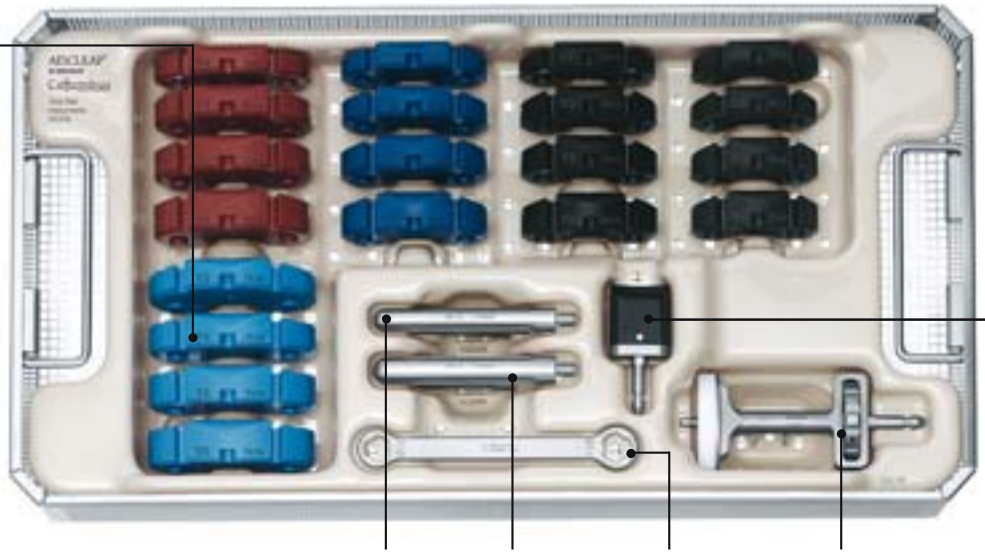


NE285
Femoral impactor

Trial femoral components
F1R: NQ041T
F2R: NQ042T
F3R: NQ043T
F4R: NQ044T
F5R: NQ045T
F6R: NQ046T
F7R: NQ047T

Trial femoral components
F1L: NQ031T
F2L: NQ032T
F3L: NQ033T
F4L: NQ034T
F5L: NQ035T
F6L: NQ036T
F7L: NQ037T

NE208 Columbus Tibial Trial Instruments CR/PS



Trial gliding surfaces
T1/10: NQ510
T1/12: NQ511
T1/14: NQ512
T1/16: NQ513
T2/10: NQ520
T2/12: NQ521
T2/14: NQ522
T2/16: NQ523
T3/10: NQ530
T3/12: NQ531
T3/14: NQ532
T3/16: NQ533
T4/10: NQ540
T4/12: NQ541
T4/14: NQ542
T4/16: NQ543
T5/10: NQ550
T5/12: NQ551
T5/14: NQ552
T5/16: NQ553

NE379R
Gliding surface impactor

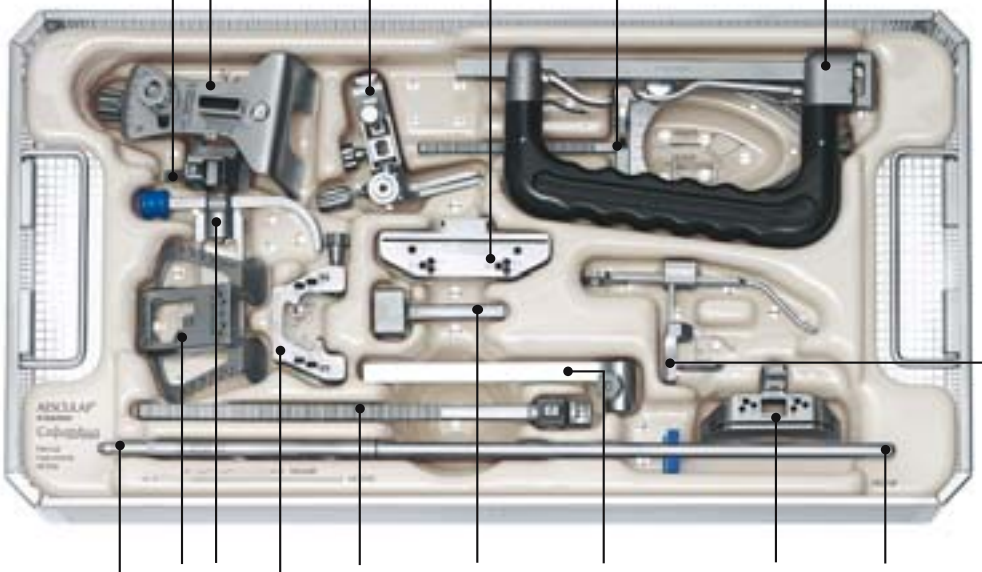
Trial extension stems ø 12 mm
short: NQ262K
long: NQ263K

Trial extension stems ø 14 mm
short: NQ265K
long: NQ266K

NE356R
Stem tightening key

NE329R
Tibia holder/ impactor

NE209 Columbus Manual Instruments



NE326R
Distal alignment system

NE322R
IM tibial alignment system

NE327R
Distal cutting guide

NE421R
Bimalleolar clamp

NE420R
EM alignment system handle

NE424R
Tibial stylus

NE443R
Drill ø 9 mm

NE325RM
Femoral measuring device

NE422R
EM tibial rod

NE321R
IM alignment system support

NE320R
IM rod connector

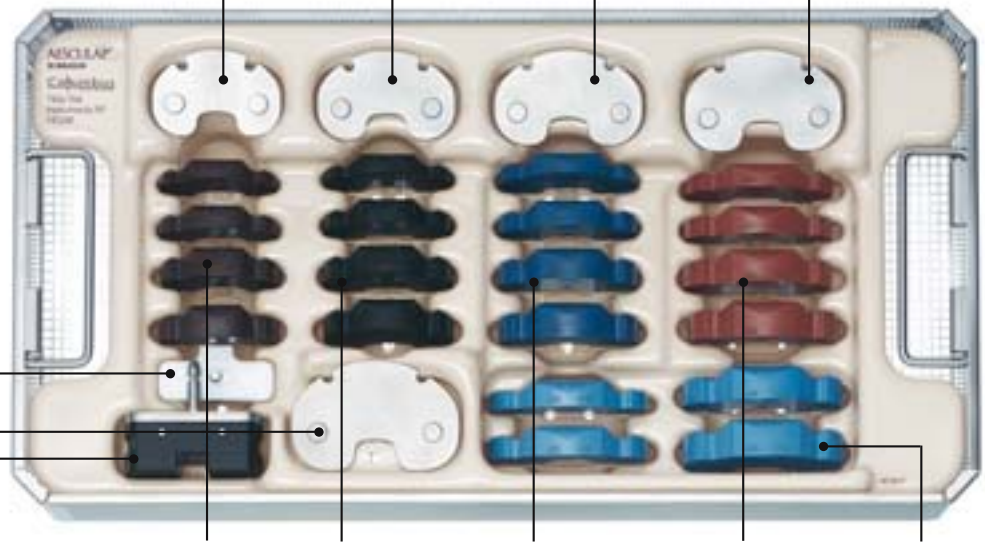
NE423R
Tibial stylus

NE376R
IM rod ø 8 mm

Columbus Supplementary Sets

NE296 Columbus Tibial Trial Instruments RP

Modular insert tibia RP gliding surfaces
T1: NQ091R T2: NQ092R T3: NQ093R T4: NQ094R



NE337
Modular
insert for tibia
RP holder

T5: NQ095R

NE284
Tibia
plateau
impactor

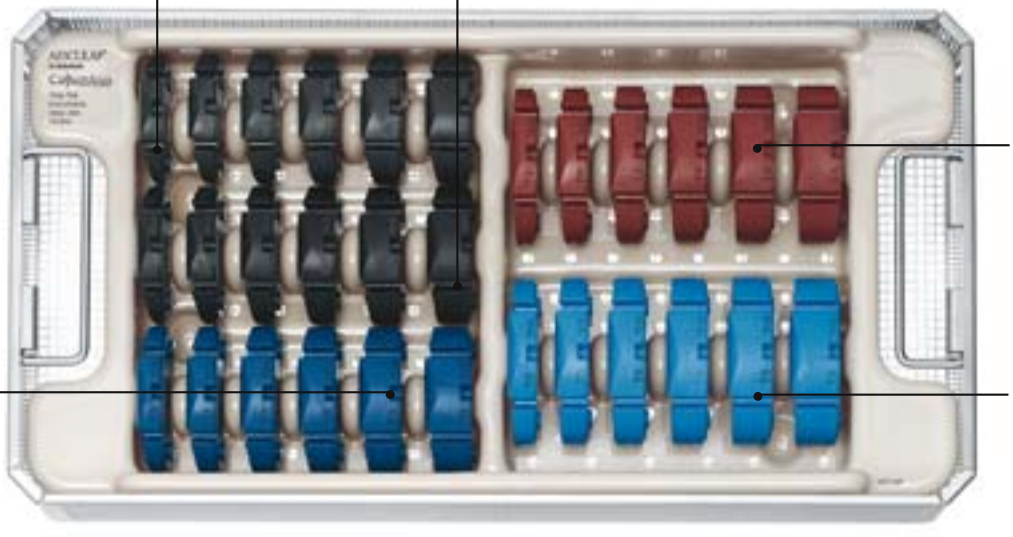
Trial gliding surface RP

T1/10: NQ310	T2/10: NQ320	T3/10: NQ330	T4/10: NQ340	T5/10: NQ350
T1/12: NQ311	T2/12: NQ321	T3/12: NQ331	T4/12: NQ341	T5/12: NQ351
T1/14: NQ312	T2/14: NQ322	T3/14: NQ332	T4/14: NQ342	T5/14: NQ352
T1/16: NQ313	T2/16: NQ323	T3/16: NQ333	T4/16: NQ343	T5/16: NQ353

NE309 Columbus Tibial Trial Instruments Deep Dish

Trial DD gliding surfaces

T1/10: NQ210	T1/16: NQ213	T2/10: NQ220	T2/16: NQ223	
T1/12: NQ211	T1/18: NQ214	T2/12: NQ221	T2/18: NQ224	
T1/14: NQ212	T1/20: NQ215	T2/14: NQ222	T2/20: NQ225	



T4/10: NQ240
T4/12: NQ241
T4/14: NQ242
T4/16: NQ243
T4/18: NQ244
T4/20: NQ245

T3/10: NQ230
T3/12: NQ231
T3/14: NQ232
T3/16: NQ233
T3/18: NQ234
T3/20: NQ235

T5/10: NQ250
T5/12: NQ251
T5/14: NQ252
T5/16: NQ253
T5/18: NQ254
T5/20: NQ255

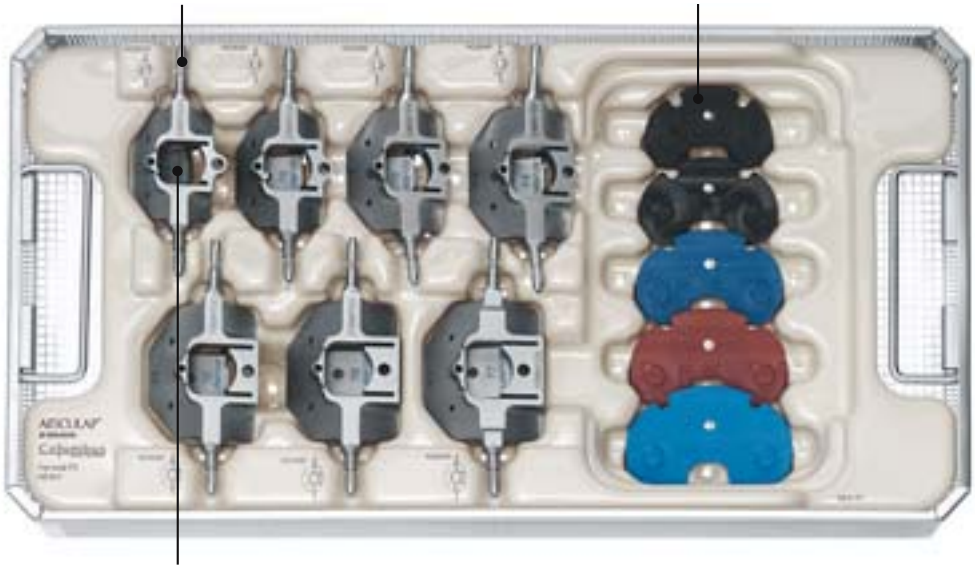
NE307 Columbus Femoral PS Instruments

Femoral box preparation guides

F1: NQ051R
F2: NQ052R
F3: NQ053R
F4: NQ054R
F5: NQ055R
F6: NQ056R
F7: NQ057R

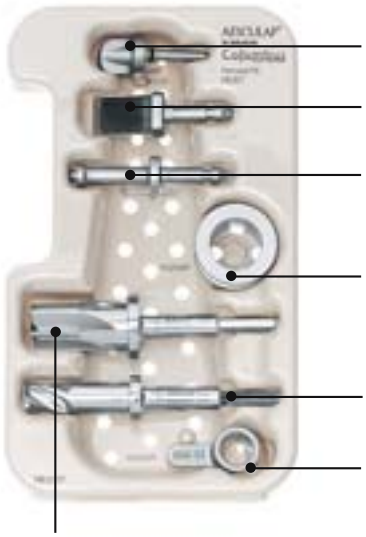
Tibial trial plates

T1: NQ519
T2: NQ529
T3: NQ539
T4: NQ549
T5: NQ559



PS removable trial femoral gauges

F1: NQ161T
F2: NQ162T
F3: NQ163T
F4: NQ164T
F5: NQ165T
F6: NQ166T
F7: NQ167T



NQ499R
PS Removable
Trial tibial peg

NQ063R
Removable blade
chisel

NQ160R
PS femoral gauge
holder extractor

NQ062R
Target device for
femoral box
preparation
ø 22.5 mm

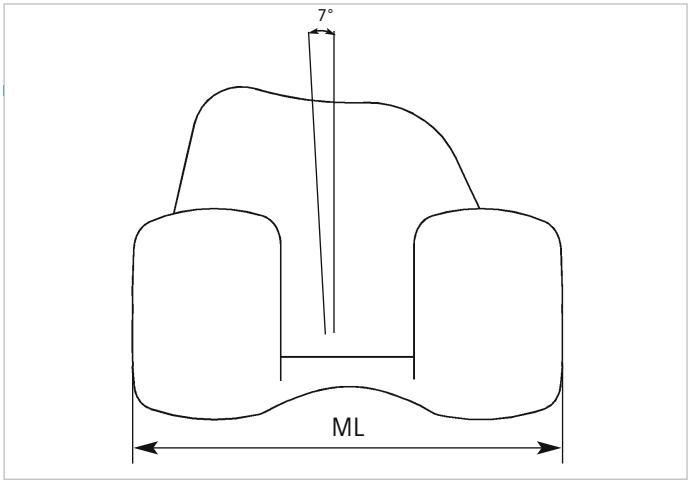
NQ059R
Reamer
ø 14 mm

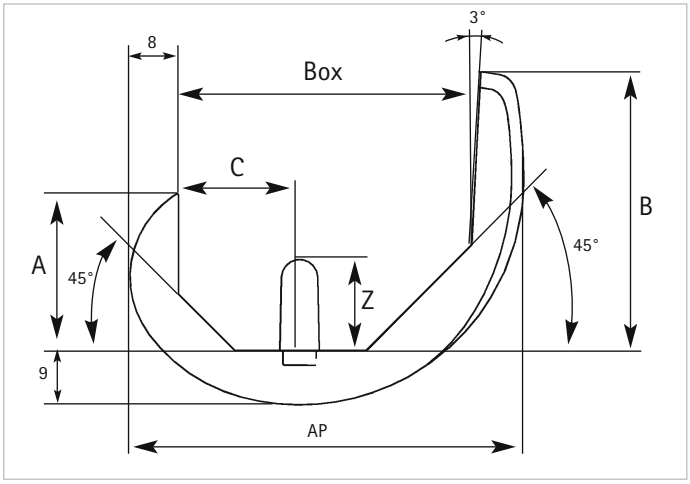
NQ060R
Target device for
femoral box
preparation
ø 14 mm

NQ061R
Reamer
ø 22.5 mm

Implant sizes

Important dimensions of the Columbus implants



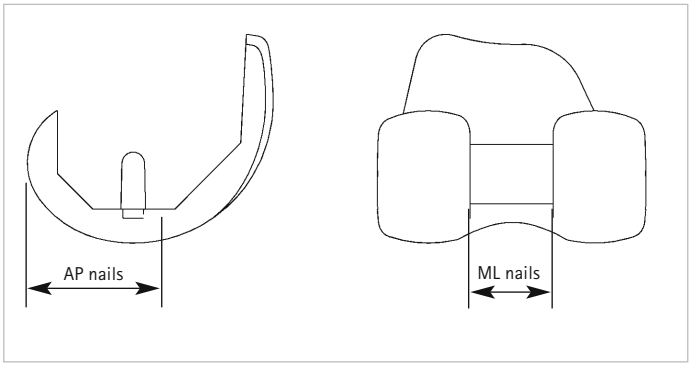


Measurements in [mm]

Size	ML	AP	Box	A	B	C	Peg Z
F1	56	50	34	18.5	34	14	12
F2N	56	53	37	20	36	14.5	13.5
F2	59	53	37	20	36.5	14.5	13.5
F3N	59	56.5	40	21.5	39	16	15
F3	62.5	56.5	40	21.5	39.5	16	15
F4N	62.5	60.5	43.5	23	42	17.5	15
F4	66.5	60.5	43.5	23	42.5	17.5	15
F5N	66.5	65	47.5	26	45.5	20	15
F5	71	65	47.5	26	46	20	15
F6N	71	70	52	28	49	21.5	15
F6	76	70	52	28	49.5	21.5	15
F7	82	75.5	57	30	53.5	23	15
F8	82	80.5	62	32	58	26	15

Overview – Table of Columbus femoral implants for combined use with intramedullary nails if required

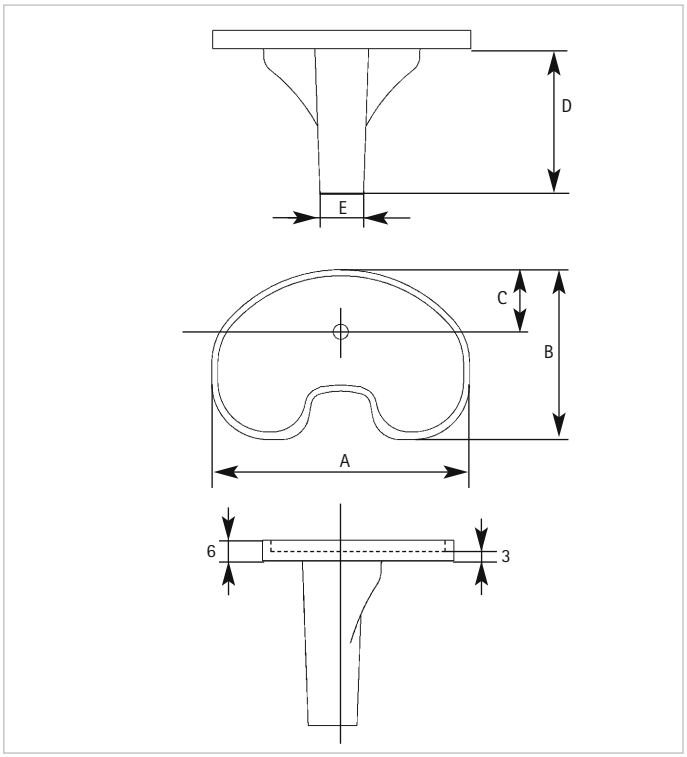
	AP nails CR	AP nails PS	ML nails
F1	22.5	31	18
F2/F2N	24	32.5	19
F3/F3N	26	34	20.5
F4/F4N	28	36	21
F5/F5N	30	38	22
F6/F6N	32.5	40.5	23
F7	35	42.5	25
F8	39	47	25



Overview of the most important dimensions for Columbus tibial implants

Measurements in [mm]

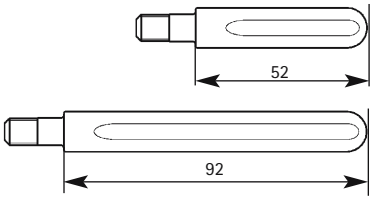
	T1/T1+	T2/T2+	T3/T3+	T4/T4+	T5
A	65	70	75	80	85
B	43/46	45/49	48/52	51/55	56
C	15/16	16/17.5	17.5/19	19/20.5	20.5
D	28	33	38	43	48
E	12.3	12.3	12.3	14.3	14.3



Overview of extension stem lengths [mm]

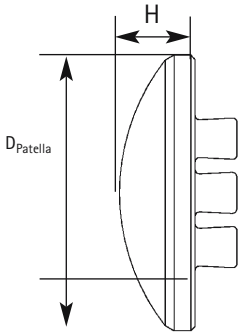
	T1/T1+	T2/T2+	T3/T3+	T4/T4+	T5
D	28	33	38	43	48
D+S stem (Small)	80	85	90	95	100
D+L stem (Large)	120	125	130	135	140

The overall length of the tibia plateau with the respective extension stem is given by the dimension D in the upper table and the stem length Small (52 mm) or Long (92 mm).



Overview of patella sizes

	$D_{Patella}$ x H
Patella P1	ø 27 mm x 7 mm
Patella P2	ø 30 mm x 8 mm
Patella P3	ø 33 mm x 9 mm
Patella P4	ø 36 mm x 10 mm



Columbus ordering information

AS-Version

Femoral Component CR/RP Cruciate Retaining/cemented		
Standard	AS	
NN001K	NN001Z	Columbus CR/RP Femur F1L
NN800K	NN800Z	Columbus CR/RP Femur F2N L
NN002K	NN002Z	Columbus CR/RP Femur F2L
NN801K	NN801Z	Columbus CR/RP Femur F3N L
NN003K	NN003Z	Columbus CR/RP Femur F3L
NN899K	NN899Z	Columbus CR/RP Femur F4N L
NN004K	NN004Z	Columbus CR/RP Femur F4L
NN900K	NN900Z	Columbus CR/RP Femur F5N L
NN005K	NN005Z	Columbus CR/RP Femur F5L
NN901K	NN901Z	Columbus CR/RP Femur F6N L
NN006K	NN006Z	Columbus CR/RP Femur F6L
NN007K	NN007Z	Columbus CR/RP Femur F7L
NN008K	NN008Z	Columbus CR/RP Femur F8L
NN011K	NN011Z	Columbus CR/RP Femur F1R
NN810K	NN810Z	Columbus CR/RP Femur F2N R
NN012K	NN012Z	Columbus CR/RP Femur F2R
NN811K	NN811Z	Columbus CR/RP Femur F3N R
NN013K	NN013Z	Columbus CR/RP Femur F3R

NN909K	NN909Z	Columbus CR/RP Femur F4N R
NN014K	NN014Z	Columbus CR/RP Femur F4R
NN910K	NN910Z	Columbus CR/RP Femur F5N R
NN015K	NN015Z	Columbus CR/RP Femur F5R
NN911K	NN911Z	Columbus CR/RP Femur F6N R
NN016K	NN016Z	Columbus CR/RP Femur F6R
NN017K	NN017Z	Columbus CR/RP Femur F7R
NN018K	NN018Z	Columbus CR/RP Femur F8R

Femoral Component CR/RP Cruciate Retaining/cementless		
NN021K		Columbus CR/RP Femur F1L
NN820K		Columbus CR/RP Femur F2N L
NN022K		Columbus CR/RP Femur F2L
NN821K		Columbus CR/RP Femur F3N L
NN023K		Columbus CR/RP Femur F3L
NN919K		Columbus CR/RP Femur F4N L
NN024K		Columbus CR/RP Femur F4L
NN920K		Columbus CR/RP Femur F5N L
NN025K		Columbus CR/RP Femur F5L
NN921K		Columbus CR/RP Femur F6N L
NN026K		Columbus CR/RP Femur F6L
NN027K		Columbus CR/RP Femur F7L
NN028K		Columbus CR/RP Femur F8L
NN031K		Columbus CR/RP Femur F1R
NN830K		Columbus CR/RP Femur F2N R
NN032K		Columbus CR/RP Femur F2R
NN831K		Columbus CR/RP Femur F3N R
NN033K		Columbus CR/RP Femur F3R
NN929K		Columbus CR/RP Femur F4N R

NN034K		Columbus CR/RP Femur F4R
NN930K		Columbus CR/RP Femur F5N R
NN035K		Columbus CR/RP Femur F5R
NN931K		Columbus CR/RP Femur F6N R
NN036K		Columbus CR/RP Femur F6R
NN037K		Columbus CR/RP Femur F7R
NN038K		Columbus CR/RP Femur F8R

Femoral Component PS Posterior Stabilised cemented		
NN161K	NN161Z	Columbus PS Femur F1L
NN840K		Columbus PS Femur F2N L
NN162K	NN162Z	Columbus PS Femur F2L
NN841K		Columbus PS Femur F3N L
NN163K	NN163Z	Columbus PS Femur F3L
NN939K		Columbus PS Femur F4N L
NN164K	NN164Z	Columbus PS Femur F4L
NN940K		Columbus PS Femur F5N L
NN165K	NN165Z	Columbus PS Femur F5L
NN941K		Columbus PS Femur F6N L
NN166K	NN166Z	Columbus PS Femur F6L
NN167K	NN167Z	Columbus PS Femur F7L
NN168K		Columbus PS Femur F8L
NN171K	NN171Z	Columbus PS Femur F1R
NN850K		Columbus PS Femur F2N R
NN172K	NN172Z	Columbus PS Femur F2R
NN851K		Columbus PS emur F3N R
NN173K	NN173Z	Columbus PS Femur F3R
NN949K		Columbus PS Femur F4N R
NN174K	NN174Z	Columbus PS Femur F4R
NN950K		Columbus PS Femur F5N R
NN175K	NN175Z	Columbus PS Femur F5R
NN951K		Columbus PS Femur F6N R
NN176K	NN176Z	Columbus PS Femur F6R
NN177K	NN177Z	Columbus PS Femur F7R
NN178K		Columbus PS Femur F8R

AS PS Fixation screw for meniscal component		
	NN497Z	Height 10/12
	NN498Z	Height 14/16
	NN499Z	Height 18/20

Columbus Order information

Tibia plateau CR/PS Cruciate Retaining/ Posterior Stabilised modular, cemented		
NN070K	NN070Z	Columbus CR/PS Tibia Plateau T0
NN058K	NN058Z	Columbus CR/PS Tibia Plateau T0+
NN071K	NN071Z	Columbus CR/PS Tibia Plateau T1
NN072K	NN072Z	Columbus CR/PS Tibia Plateau T1+
NN073K	NN073Z	Columbus CR/PS Tibia Plateau T2
NN074K	NN074Z	Columbus CR/PS Tibia Plateau T2+
NN075K	NN075Z	Columbus CR/PS Tibia Plateau T3
NN076K	NN076Z	Columbus CR/PS Tibia Plateau T3+
NN077K	NN077Z	Columbus CR/PS Tibia Plateau T4
NN078K	NN078Z	Columbus CR/PS Tibia Plateau T4+
NN079K	NN079Z	Columbus CR/PS Tibia Plateau T5

Tibia plateau CR/PS Cruciate Retaining/ Posterior Stabilised modular, cementless		
NN080K		Columbus CR/PS Tibia Plateau T0
NN059K		Columbus CR/PS Tibia Plateau T0+
NN081K		Columbus CR/PS Tibia Plateau T1
NN082K		Columbus CR/PS Tibia Plateau T1+
NN083K		Columbus CR/PS Tibia Plateau T2
NN084K		Columbus CR/PS Tibia Plateau T2+
NN085K		Columbus CR/PS Tibia Plateau T3
NN086K		Columbus CR/PS Tibia Plateau T3+
NN087K		Columbus CR/PS Tibia Plateau T4
NN088K		Columbus CR/PS Tibia Plateau T4+
NN089K		Columbus CR/PS Tibia Plateau T5

Tibia plateau RP Rotating Platform Cruciate Retaining modular, cemented		
NN271K	NN271Z	Columbus RP Tibia Plateau T1
NN272K	NN272Z	Columbus RP Tibia Plateau T1+
NN273K	NN273Z	Columbus RP Tibia Plateau T2
NN274K	NN274Z	Columbus RP Tibia Plateau T2+
NN275K	NN275Z	Columbus RP Tibia Plateau T3
NN276K	NN276Z	Columbus RP Tibia Plateau T3+
NN277K	NN277Z	Columbus RP Tibia Plateau T4
NN278K	NN278Z	Columbus RP Tibia Plateau T4+
NN279K	NN279Z	Columbus RP Tibia Plateau T5

Tibia plateau RP Rotating Platform modular, cementless		
NN281K		Columbus RP Tibia Plateau T1
NN282K		Columbus RP Tibia Plateau T1+
NN283K		Columbus RP Tibia Plateau T2
NN284K		Columbus RP Tibia Plateau T2+
NN285K		Columbus RP Tibia Plateau T3
NN286K		Columbus RP Tibia Plateau T3+
NN287K		Columbus RP Tibia Plateau T4
NN288K		Columbus RP Tibia Plateau T4+
NN289K		Columbus RP Tibia Plateau T5

Tibia plateau CRA/PSA CR Augmentation/ PS Augmentation modular cemented		
NN470K	NN470Z	Columbus CRA/PSA Tibia Plateau T0
NN469K	NN469Z	Columbus CRA/PSA Tibia Plateau T0+
NN471K	NN471Z	Columbus CRA/PSA Tibia Plateau T1
NN472K	NN472Z	Columbus CRA/PSA Tibia Plateau T1+
NN473K	NN473Z	Columbus CRA/PSA Tibia Plateau T2
NN474K	NN474Z	Columbus CRA/PSA Tibia Plateau T2+
NN475K	NN475Z	Columbus CRA/PSA Tibia Plateau T3
NN476K	NN476Z	Columbus CRA/PSA Tibia Plateau T3+
NN477K	NN477Z	Columbus CRA/PSA Tibia Plateau T4
NN478K	NN478Z	Columbus CRA/PSA Tibia Plateau T4+
NN479K	NN479Z	Columbus CRA/PSA Tibia Plateau T5

Columbus Order information

Tibial hemi-spacer with screws		
NN560K	NN560Z	Columbus Tibial Hemispacer T0/0+ 4 mm RM/LL
NN561K	NN561Z	Columbus Tibial Hemispacer T0/0+ 8 mm RM/LL
NN563K	NN563Z	Columbus Tibial Hemispacer T1/1+ 4 mm RM/LL
NN564K	NN564Z	Columbus Tibial Hemispacer T1/1+ 8 mm RM/LL
NN566K	NN566Z	Columbus Tibial Hemispacer T2/2+ 4 mm RM/LL
NN567K	NN567Z	Columbus Tibial Hemispacer T2/2+ 8 mm RM/LL
NN569K	NN569Z	Columbus Tibial Hemispacer T3/3+ 4 mm RM/LL
NN570K	NN570Z	Columbus Tibial Hemispacer T3/3+ 8 mm RM/LL
NN572K	NN572Z	Columbus Tibial Hemispacer T4/4+ 4 mm RM/LL
NN573K	NN573Z	Columbus Tibial Hemispacer T4/4+ 8 mm RM/LL
NN575K	NN575Z	Columbus Tibial Hemispacer T5 4 mm RM/LL
NN576K	NN576Z	Columbus Tibial Hemispacer T5 8 mm RM/LL
NN580K	NN580Z	Columbus Tibial Hemispacer T0/0+ 4 mm RL/LM
NN581K	NN581Z	Columbus Tibial Hemispacer T0/0+ 8 mm RL/LM
NN583K	NN583Z	Columbus Tibial Hemispacer T1/1+ 4 mm RL/LM
NN584K	NN584Z	Columbus Tibial Hemispacer T1/1+ 8 mm RL/LM
NN586K	NN586Z	Columbus Tibial Hemispacer T2/2+ 4 mm RL/LM
NN587K	NN587Z	Columbus Tibial Hemispacer T2/2+ 8 mm RL/LM
NN589K	NN589Z	Columbus Tibial Hemispacer T3/3+ 4 mm RL/LM
NN590K	NN590Z	Columbus Tibial Hemispacer T3/3+ 8 mm RL/LM
NN592K	NN592Z	Columbus Tibial Hemispacer T4/4+ 4 mm RL/LM
NN593K	NN593Z	Columbus Tibial Hemispacer T4/4+ 8 mm RL/LM
NN595K	NN595Z	Columbus Tibial Hemispacer T5 4 mm RL/LM
NN596K	NN596Z	Columbus Tibial Hemispacer T5 8 mm RL/LM

Tibia plateau MIOS CR/PS Cruciate retaining/ Posterior stabilised, cemented		
NN390K		Columbus CR/PS MIOS Tibia Plateau T0
NN367K		Columbus CR/PS MIOS Tibia Plateau T0+
NN391K		Columbus CR/PS MIOS Tibia Plateau T1
NN392K		Columbus CR/PS MIOS Tibia Plateau T1+
NN393K		Columbus CR/PS MIOS Tibia Plateau T2
NN394K		Columbus CR/PS MIOS Tibia Plateau T2+
NN395K		Columbus CR/PS MIOS Tibia Plateau T3
NN396K		Columbus CR/PS MIOS Tibia Plateau T3+
NN397K		Columbus CR/PS MIOS Tibia Plateau T4
NN398K		Columbus CR/PS MIOS Tibia Plateau T4+
NN399K		Columbus CR/PS MIOS Tibia Plateau T5

PE gliding surface CR Cruciate Retaining Deep Dish	
NN200	Columbus CR Deep Dish gliding surface T0/0+ 10 mm
NN201	Columbus CR Deep Dish gliding surface T0/0+ 12 mm
NN202	Columbus CR Deep Dish gliding surface T0/0+ 14 mm
NN203	Columbus CR Deep Dish gliding surface T0/0+ 16 mm
NN204	Columbus CR Deep Dish gliding surface T0/0+ 18 mm
NN205	Columbus CR Deep Dish gliding surface T0/0+ 20 mm
NN210	Columbus CR Deep Dish gliding surface T1/1+ 10 mm
NN211	Columbus CR Deep Dish gliding surface T1/1+ 12 mm
NN212	Columbus CR Deep Dish gliding surface T1/1+ 14 mm
NN213	Columbus CR Deep Dish gliding surface T1/1+ 16 mm
NN214	Columbus CR Deep Dish gliding surface T1/1+ 18 mm
NN215	Columbus CR Deep Dish gliding surface T1/1+ 20 mm
NN220	Columbus CR Deep Dish gliding surface T2/2+ 10 mm
NN221	Columbus CR Deep Dish gliding surface T2/2+ 12 mm
NN222	Columbus CR Deep Dish gliding surface T2/2+ 14 mm
NN223	Columbus CR Deep Dish gliding surface T2/2+ 16 mm
NN224	Columbus CR Deep Dish gliding surface T2/2+ 18 mm
NN225	Columbus CR Deep Dish gliding surface T2/2+ 20 mm
NN230	Columbus CR Deep Dish gliding surface T3/3+ 10 mm
NN231	Columbus CR Deep Dish gliding surface T3/3+ 12 mm
NN232	Columbus CR Deep Dish gliding surface T3/3+ 14 mm
NN233	Columbus CR Deep Dish gliding surface T3/3+ 16 mm
NN234	Columbus CR Deep Dish gliding surface T3/3+ 18 mm
NN235	Columbus CR Deep Dish gliding surface T3/3+ 20 mm

NN240	Columbus CR Deep Dish gliding surface T4/4+ 10 mm
NN241	Columbus CR Deep Dish gliding surface T4/4+ 12 mm
NN242	Columbus CR Deep Dish gliding surface T4/4+ 14 mm
NN243	Columbus CR Deep Dish gliding surface T4/4+ 16 mm
NN244	Columbus CR Deep Dish gliding surface T4/4+ 18 mm
NN245	Columbus CR Deep Dish gliding surface T4/4+ 20 mm
NN250	Columbus CR Deep Dish gliding surface T5 10 mm
NN251	Columbus CR Deep Dish gliding surface T5 12 mm
NN252	Columbus CR Deep Dish gliding surface T5 14 mm
NN253	Columbus CR Deep Dish gliding surface T5 16 mm
NN254	Columbus CR Deep Dish gliding surface T5 18 mm
NN255	Columbus CR Deep Dish gliding surface T5 20 mm

Columbus Order Information

PE gliding surface cruciate sacrificing UC Ultra Congruent	
NN400	Columbus UC gliding surface T0/0+ 10 mm
NN401	Columbus UC gliding surface T0/0+ 12 mm
NN402	Columbus UC gliding surface T0/0+ 14 mm
NN403	Columbus UC gliding surface T0/0+ 16 mm
NN404	Columbus UC gliding surface T0/0+ 18 mm
NN405	Columbus UC gliding surface T0/0+ 20 mm
NN410	Columbus UC gliding surface T1/1+ 10 mm
NN411	Columbus UC gliding surface T1/1+ 12 mm
NN412	Columbus UC gliding surface T1/1+ 14 mm
NN413	Columbus UC gliding surface T1/1+ 16 mm
NN414	Columbus UC gliding surface T1/1+ 18 mm
NN415	Columbus UC gliding surface T1/1+ 20 mm
NN420	Columbus UC gliding surface T2/2+ 10 mm
NN421	Columbus UC gliding surface T2/2+ 12 mm
NN422	Columbus UC gliding surface T2/2+ 14 mm
NN423	Columbus UC gliding surface T2/2+ 16 mm
NN424	Columbus UC gliding surface T2/2+ 18 mm
NN425	Columbus UC gliding surface T2/2+ 20 mm
NN430	Columbus UC gliding surface T3/3+ 10 mm
NN431	Columbus UC gliding surface T3/3+ 12 mm
NN432	Columbus UC gliding surface T3/3+ 14 mm
NN433	Columbus UC gliding surface T3/3+ 16 mm
NN434	Columbus UC gliding surface T3/3+ 18 mm
NN435	Columbus UC gliding surface T3/3+ 20 mm

NN440	Columbus UC gliding surface T4/4+ 10 mm
NN441	Columbus UC gliding surface T4/4+ 12 mm
NN442	Columbus UC gliding surface T4/4+ 14 mm
NN443	Columbus UC gliding surface T4/4+ 16 mm
NN444	Columbus UC gliding surface T4/4+ 18 mm
NN445	Columbus UC gliding surface T4/4+ 20 mm
NN450	Columbus UC gliding surface T5 10 mm
NN451	Columbus UC gliding surface T5 12 mm
NN452	Columbus UC gliding surface T5 14 mm
NN453	Columbus UC gliding surface T5 16 mm
NN454	Columbus UC gliding surface T5 18 mm
NN455	Columbus UC gliding surface T5 20 mm

PE gliding surface cruciate retaining RP Rotating Platform	
NN310	Columbus RP gliding surface T1/1+ 10 mm
NN311	Columbus RP gliding surface T1/1+ 12 mm
NN312	Columbus RP gliding surface T1/1+ 14 mm
NN313	Columbus RP gliding surface T1/1+ 16 mm
NN320	Columbus RP gliding surface T2/2+ 10 mm
NN321	Columbus RP gliding surface T2/2+ 12 mm
NN322	Columbus RP gliding surface T2/2+ 14 mm
NN323	Columbus RP gliding surface T2/2+ 16 mm
NN330	Columbus RP gliding surface T3/3+ 10 mm
NN331	Columbus RP gliding surface T3/3+ 12 mm
NN332	Columbus RP gliding surface T3/3+ 14 mm
NN333	Columbus RP gliding surface T3/3+ 16 mm
NN340	Columbus RP gliding surface T4/4+ 10 mm
NN341	Columbus RP gliding surface T4/4+ 12 mm
NN342	Columbus RP gliding surface T4/4+ 14 mm
NN343	Columbus RP gliding surface T4/4+ 16 mm

NN350	Columbus RP gliding surface T5 10 mm
NN351	Columbus RP gliding surface T5 12 mm
NN352	Columbus RP gliding surface T5 14 mm
NN353	Columbus RP gliding surface T5 16 mm

Columbus Order Information

PE gliding surface PS Posterior Stabilised incl. fixation screw	
NN500	Columbus PS gliding surface T0/0+ 10 mm
NN501	Columbus PS gliding surface T0/0+ 12 mm
NN502	Columbus PS gliding surface T0/0+ 14 mm
NN503	Columbus PS gliding surface T0/0+ 16 mm
NN504	Columbus PS gliding surface T0/0+ 18 mm
NN505	Columbus PS gliding surface T0/0+ 20 mm
NN510	Columbus PS gliding surface T1/1+ 10 mm
NN511	Columbus PS gliding surface T1/1+ 12 mm
NN512	Columbus PS gliding surface T1/1+ 14 mm
NN513	Columbus PS gliding surface T1/1+ 16 mm
NN514	Columbus PS gliding surface T1/1+ 18 mm
NN515	Columbus PS gliding surface T1/1+ 20 mm
NN520	Columbus PS gliding surface T2/2+ 10 mm
NN521	Columbus PS gliding surface T2/2+ 12 mm
NN522	Columbus PS gliding surface T2/2+ 14 mm
NN523	Columbus PS gliding surface T2/2+ 16 mm
NN524	Columbus PS gliding surface T2/2+ 18 mm
NN525	Columbus PS gliding surface T2/2+ 20 mm
NN530	Columbus PS gliding surface T3/3+ 10 mm
NN531	Columbus PS gliding surface T3/3+ 12 mm
NN532	Columbus PS gliding surface T3/3+ 14 mm
NN533	Columbus PS gliding surface T3/3+ 16 mm
NN534	Columbus PS gliding surface T3/3+ 18 mm
NN535	Columbus PS gliding surface T3/3+ 20 mm

NN540	Columbus PS gliding surface T4/4+ 10 mm
NN541	Columbus PS gliding surface T4/4+ 12 mm
NN542	Columbus PS gliding surface T4/4+ 14 mm
NN543	Columbus PS gliding surface T4/4+ 16 mm
NN544	Columbus PS gliding surface T4/4+ 18 mm
NN545	Columbus PS gliding surface T4/4+ 20 mm
NN550	Columbus PS gliding surface T5 10 mm
NN551	Columbus PS gliding surface T5 12 mm
NN552	Columbus PS gliding surface T5 14 mm
NN553	Columbus PS gliding surface T5 16 mm
NN554	Columbus PS gliding surface T5 18 mm
NN555	Columbus PS gliding surface T5 20 mm

Columbus Obturator screws		
NN261K	NN261Z	Obturator screw ø 12 mm für Plateau T1-T3+
NN264K	NN264Z	Obturator screw ø 14 mm für Plateau T4-T5

Columbus Extension stems		
NN262K	NN262Z	Extension stem ø 12 mm short
NN265K	NN265Z	Extension stem ø 14 mm short
NN263K	NN263Z	Extension stem ø 12 mm long
NN266K	NN266Z	Extension stem ø 14 mm long

Columbus Patella 3-Peg		
NN481	Patella 3-Peg	P1 ø 27 mm x 7 mm
NN482	Patella 3-Peg	P2 ø 30 mm x 8 mm
NN483	Patella 3-Peg	P3 ø 33 mm x 9 mm
NN484	Patella 3-Peg	P4 ø 36 mm x 10 mm

The complete set NE300 includes the basic instrumentation and the CR version. Supplementary sets are required for the RP and PS versions and for navigation as indicated below.

Columbus complete set NE300	
Individual set nos.	
NE201	Columbus Universal Instrumentation 1
NE202	Columbus Universal Instrumentation 2
NE203	Columbus Tibia Preparation Instruments
NE204	Columbus Femur Preparation Instruments
NE205	Columbus Patella Preparation Instruments
NE206	Columbus Trial Femoral Prostheses
NE208	Columbus Trial Tibial Instruments CR/PS
NE209	Columbus Manual Instruments
Supplementary sets:	
NE296	Columbus Trial Tibial Instruments RP
NE307	Columbus Femoral Instruments PS
NE309	Columbus Trial Tibial Instruments Deep Dish

Implant materials:

ISODUR® C	Cobalt-chrome alloy (CoCr29Mo/ISO 5832-4)
ISODUR® F	Forged Cobalt-chrome alloy (CoCr29Mo/ISO 5832-12)
Plasmapore µ-CaP	Pure-titanium coating with 20 µm Dicalciumphosphate-Dihydrate ($CaHPO_4 \times 2H_2O$) are registered trademarks of Aesculap AG, 78532 Tuttlingen, Germany
UHMWPE	Ultra High Molecular Weight Polyethylene (ISO 5834-2)

Columbus Order Information

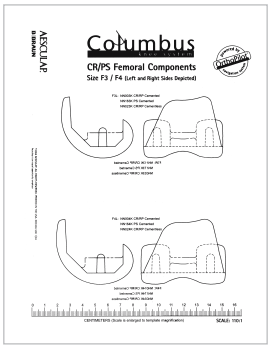
The complete set NE310 includes all the instrumentation for the CR and RP versions. Set NP610 is required additionally for navigation.

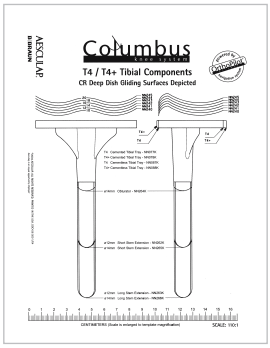
Please note: incompatible with PS-Version!

Columbus complete set NE310	
Individual set nos.	
NE301	Columbus Universal Instrumentation 1
NE302	Columbus Universal Instrumentation 2
NE303	Columbus Tibia Instruments
NE304	Columbus Femur Instruments
NE305	Columbus Patella Instruments
NE306	Columbus Trial Femoral Prostheses
NE308	Columbus Trial Tibial Prostheses
NE298	Columbus Manual Instruments

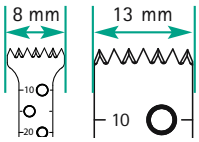
Navigation Supplement	
FS208	Software TKA 4.3 Columbus
NP610	NP600 Navigation Instruments TKA, active
NP610	NP602 Knee Instrument TKA
NP611	NP168 Navigation Instruments TKA, passive
NP611	NP602 Knee Instrument TKA

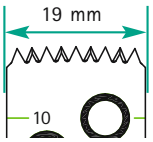
X-ray templates	
NQ192	Scale 1.10:1
NQ193	Scale 1.15:1
NQ289	Axis planing

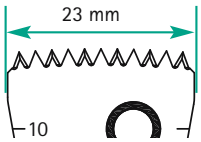




■ Thickness:
1.27 mm







Coupling / Width	Aesculap Length 90 mm	Aesculap Acculan 3 Ti Length 90 mm	Aesculap Acculan 3 Ti Length 100 mm
			
13 mm	GE266SU	GE236SU	
19 mm	GE271SU	GE241SU	GE249SU
23 mm	GE276SU	GE246SU	

Columbus Order Information

Columbus Implant Matrix – Tibial Parts

Tibia cemented


CR/PS


CRA/PSA


RP

Types:	T1	T1+	T2	T2+	T3	T3+	T4	T4+	T5
CR/PS	NN071K	NN072K	NN073K	NN074K	NN075K	NN076K	NN077K	NN078K	NN079K
CRA/PSA	NN471K	NN472K	NN473K	NN474K	NN475K	NN476K	NN477K	NN478K	NN479K
RP	NN271K	NN272K	NN273K	NN274K	NN275K	NN276K	NN277K	NN278K	NN279K

Tibia cementless


CR/PS


RP

Types:	T1	T1+	T2	T2+	T3	T3+	T4	T4+	T5
CR/PS	NN081K	NN082K	NN083K	NN084K	NN085K	NN086K	NN087K	NN088K	NN089K
RP	NN281K	NN282K	NN283K	NN284K	NN285K	NN286K	NN287K	NN288K	NN289K

CRA/PSA tibia hemispacers with screws

4 mm					
Types:	T1	T2	T3	T4	T5
RM/LL	NN563K	NN566K	NN569K	NN572K	NN575K
RL/LM	NN583K	NN586K	NN589K	NN592K	NN595K

8 mm					
Types:	T1	T2	T3	T4	T5
RM/LL	NN564K	NN567K	NN570K	NN573K	NN576K
RL/LM	NN584K	NN587K	NN590K	NN593K	NN596K

Obturator

ø 12 mm	ø 14 mm
NN261K	NN264K

Tibia Extension Stems

short	long	short	long
ø 12 mm		ø 14 mm	
NN262K	NN263K	NN265K	NN266K

Gliding Surfaces


CR


DD


UC


RP


PS

	T1/T1+						T2/T2+						T3/T3+					
Types:	10	12	14	16	18	20	10	12	14	16	18	20	10	12	14	16	18	20
CR	NN110	NN111	NN112	NN113			NN120	NN121	NN122	NN123			NN130	NN131	NN132	NN133		
DD	NN210	NN211	NN212	NN213	NN214	NN215	NN220	NN221	NN222	NN223	NN224	NN225	NN230	NN231	NN232	NN233	NN234	NN235
UC fix.	NN410	NN411	NN412	NN413	NN414	NN415	NN420	NN421	NN422	NN423	NN424	NN425	NN430	NN431	NN432	NN433	NN434	NN435
RP	NN310	NN311	NN312	NN313			NN320	NN321	NN322	NN323			NN330	NN331	NN332	NN333		
PS	NN510	NN511	NN512	NN513	NN514	NN515	NN520	NN521	NN522	NN523	NN524	NN525	NN530	NN531	NN532	NN533	NN534	NN535

Gliding Surfaces


CR


DD


UC


RP


PS

	T4/T4+						T5					
	10	12	14	16	18	20	10	12	14	16	18	20
CR	NN140	NN141	NN142	NN143			NN150	NN151	NN152	NN153		
DD	NN240	NN241	NN242	NN243	NN244	NN245	NN250	NN251	NN252	NN253	NN254	NN255
UC fix.	NN440	NN441	NN442	NN443	NN444	NN445	NN450	NN451	NN452	NN453	NN454	NN455
RP		NN340	NN341	NN342	NN343			NN350	NN351	NN352	NN353	
PS	NN540	NN541	NN542	NN543	NN544	NN545	NN550	NN551	NN552	NN553	NN554	NN555

Columbus Implant Matrix - Femoral Parts

Femur CR cemented

Types:	F1	F2	F3	F4	F5	F6	F7
Left	NN001K	NN002K	NN003K	NN004K	NN005K	NN006K	NN007K
Right	NN011K	NN012K	NN013K	NN014K	NN015K	NN016K	NN017K

Femur PS cemented

Types:	F1	F2	F3	F4	F5	F6	F7
Left	NN161K	NN162K	NN163K	NN164K	NN165K	NN166K	NN167K
Right	NN171K	NN172K	NN173K	NN174K	NN175K	NN176K	NN177K

Femur CR cementless

Types:	F1	F2	F3	F4	F5	F6	F7
Left	NN021K	NN022K	NN023K	NN024K	NN025K	NN026K	NN027K
Right	NN031K	NN032K	NN033K	NN034K	NN035K	NN036K	NN037K

Patella-3-Peg

Types:	P1	P2	P3	P4
F1-F8	NN481	NN482	NN483	NN484

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Brochure No. 025402 1110/1/5