Aesculap Orthopaedics
Columbus®

Knee system

Operating technique

B|BRAUN
SHARING EXPERTISE

Columbus® – Operating technique

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

The Columbus® knee system provides for two different alignment procedures:

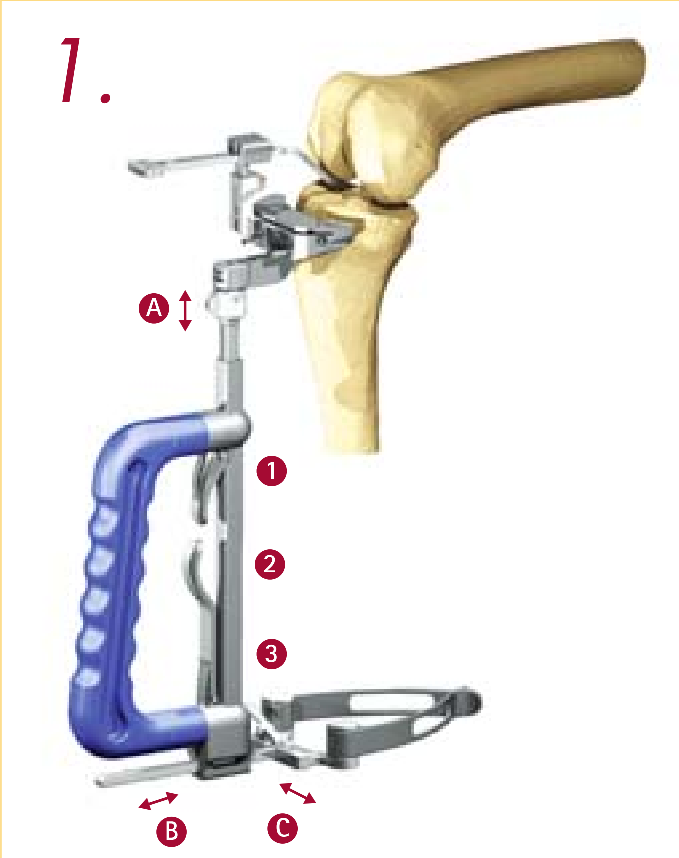
- Extramedullary alignment
- Intramedullary alignment

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 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. Intramedullary alignment

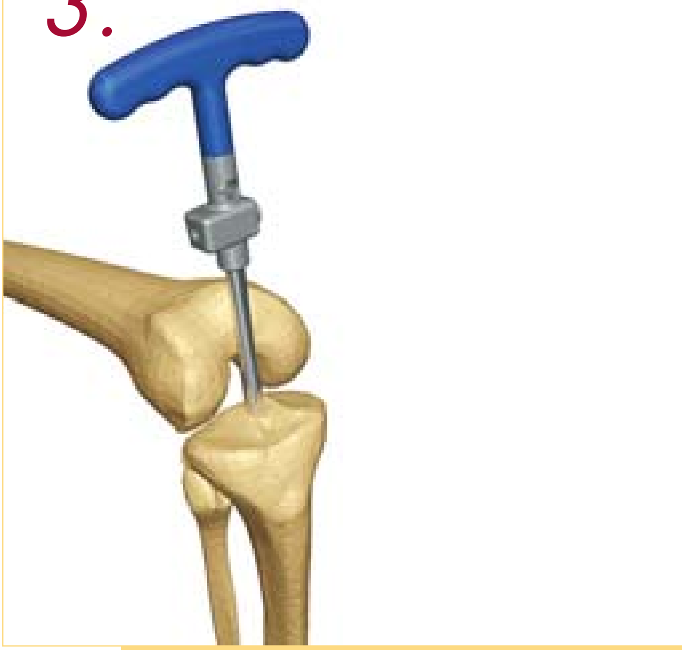
The entry point into the tibia medullary cavity is prepared using a broach in accordance with the preoperative planning. It generally lies behind the anterior cruciate ligament insertion.

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.

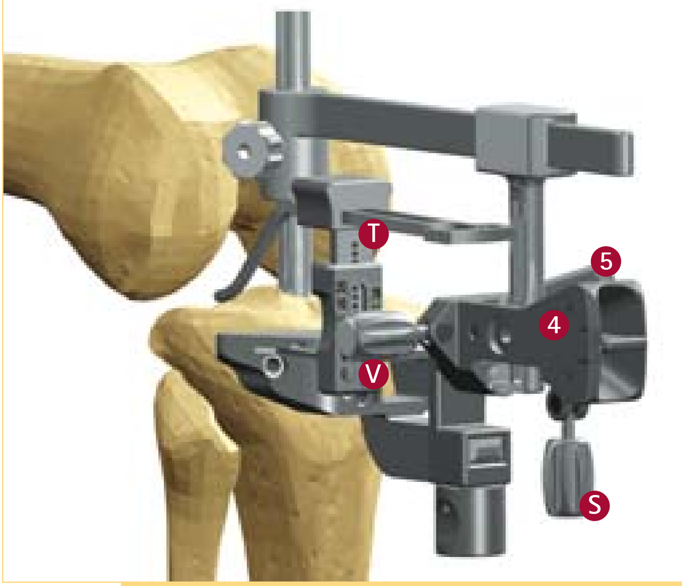
2 Alignment in the sagittal plane

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

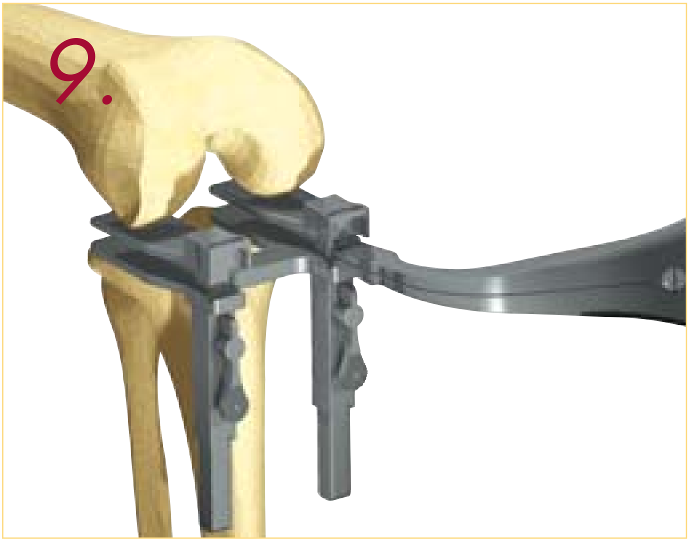
The size of the flexion and extension gaps medially and laterally is read on the distractor. The number read is the one on the movable shoe level with the end of the sleeve.

- 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 re-measured 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.



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

Measurements in [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

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.

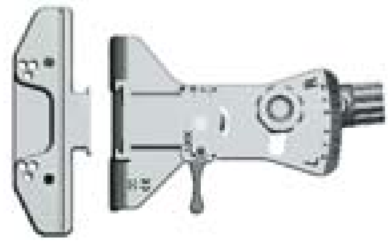
This system offers the possibility of varus /valgus adjustment in 1° intervals as required by the preoperative planning. The adjustment range extends to 11°.

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 sawblade 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 re-align 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.

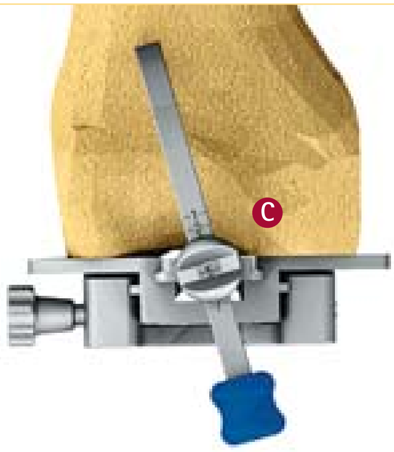
15.

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.



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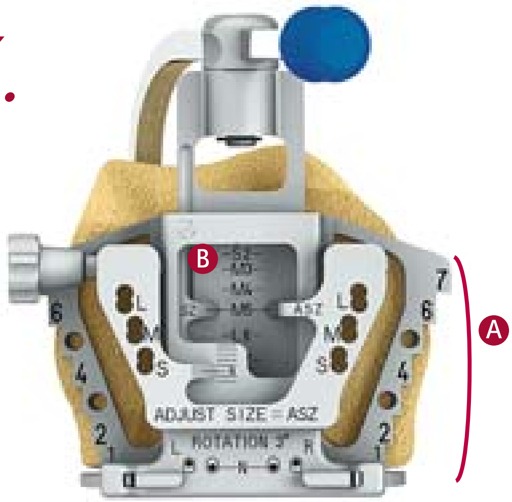


7. Adjusting the rotation of the femoral component

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.

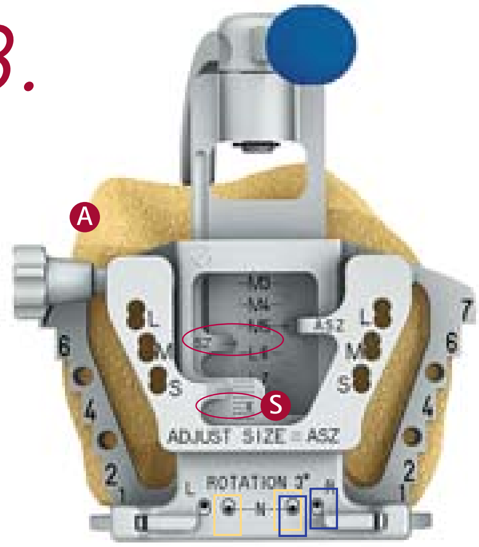
Examples:
no external rotation

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.

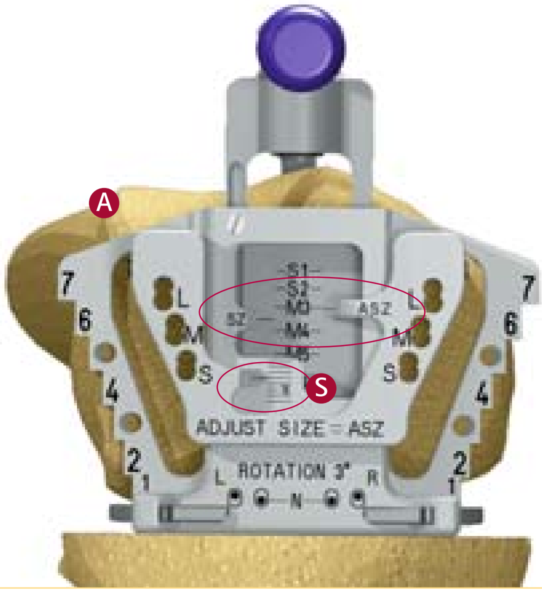


8. Selecting the femur size

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.



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

9. Completing the femoral resection

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 using the retracting forceps as a distance block

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.

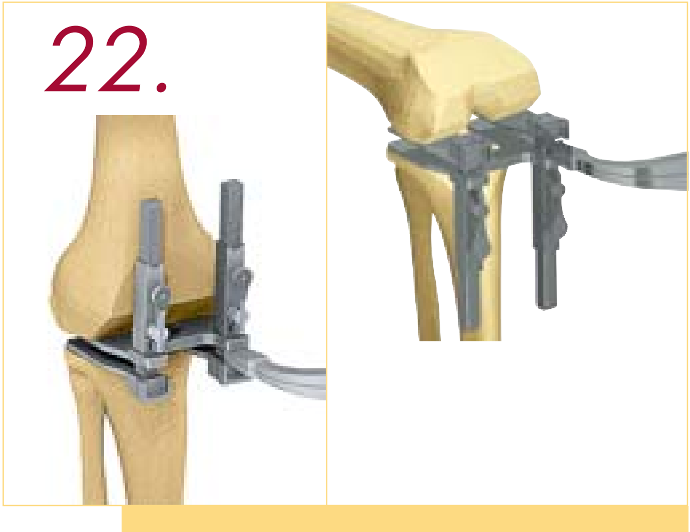
Retraction in extension for a distal femoral resection of 9 mm.

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 10-20 mm.



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	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	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.

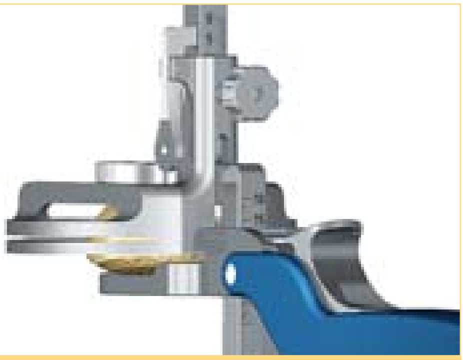
As an option, it is possible to make a mark on the ventral bone. The mark has to be in the position of the implant axis. This makes it easier to find the defined position later on.

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 25). 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.

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.

26.

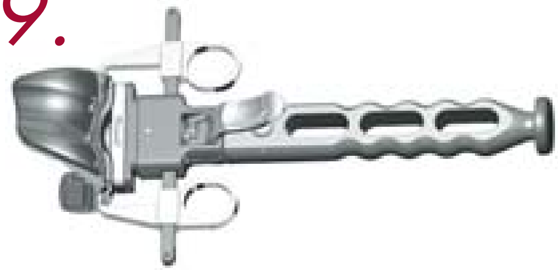
27.

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.

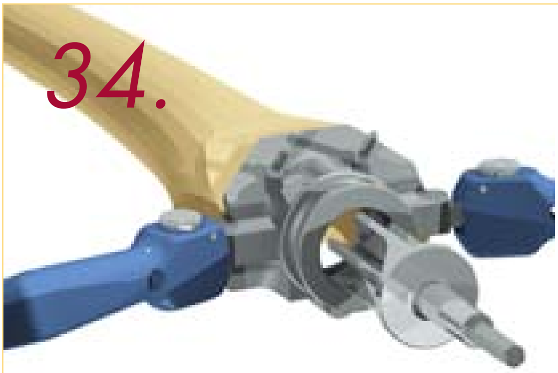
The drilling guide for the ø 14 mm drill is applied so that its peg fits into the lower central hole of the PS preparation guide.

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.

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

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.

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.

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.

41.

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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 therefore supplied for each of the five trial tibia plateaux. 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.

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
- Femoral component
- Gliding surface
- Patella

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.

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.

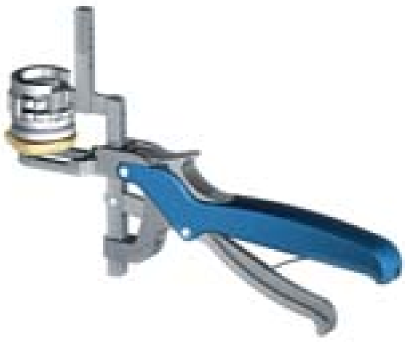
- Please note: all cement residue must be removed.

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.

45.

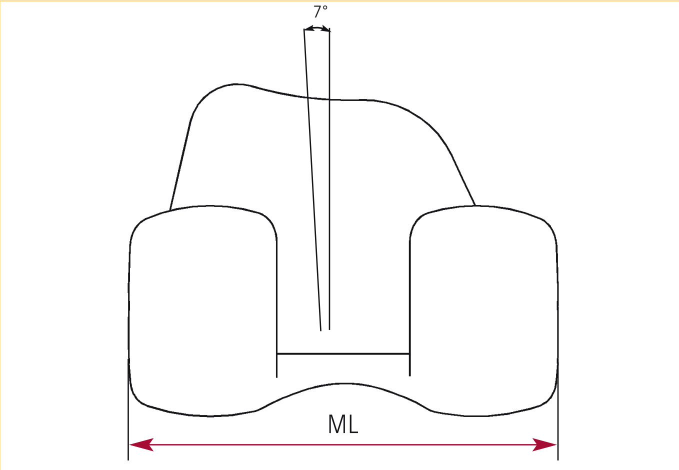
46.

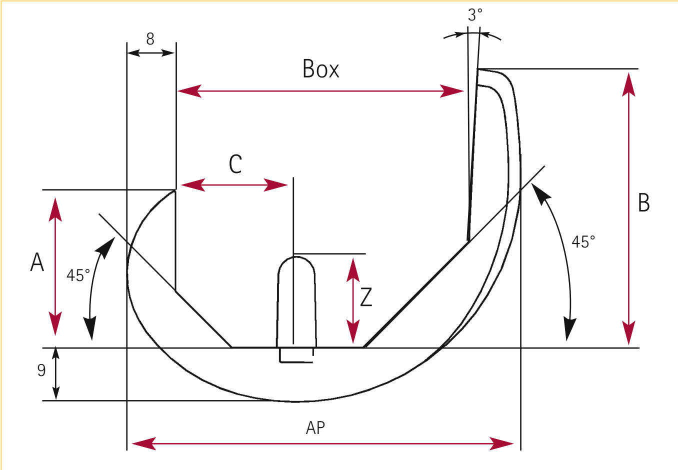
47.



18. Columbus® implant sizes

The table gives an overview of the most important dimensions of the Columbus® femoral implants



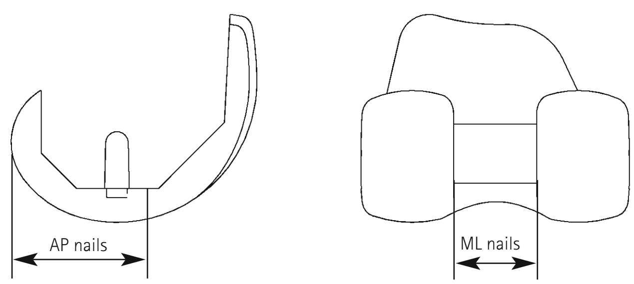


Measurements in [mm]

Size	ML	AP	Box	A	B	C	Peg Z
F1	56	50	34	18.5	34	14	13.5
F2	59	53	37	20	36.5	14.5	15
F3	62.5	56.5	40	21.5	39.5	16	15
F4	66.5	60.5	43.5	23	42.5	17.5	15
F5	71	65	47.5	26	46	20	15
F6	76	70	52	28	49.5	21.5	15
F7	82	75.5	57	30	53.5	23	15

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

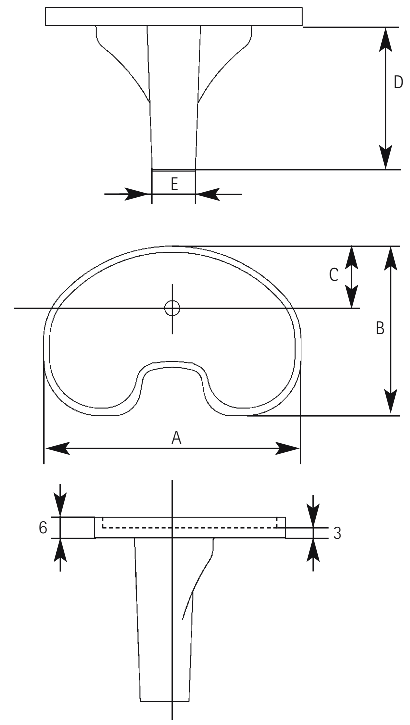
	AP nails CR	AP nails PS	ML nails
F1	22.5	31	18
F2	24	32.5	19
F3	26	34	20.5
F4	28	36	21
F5	30	38	22
F6	32.5	40.5	23
F7	35	42.5	25



Overview of the most important dimensions for Columbus® tibial implants

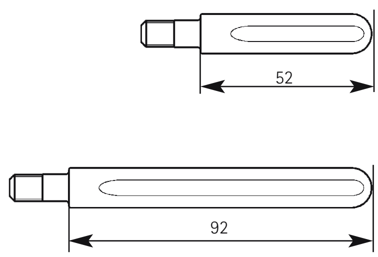
Measurements in [mm]

	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]

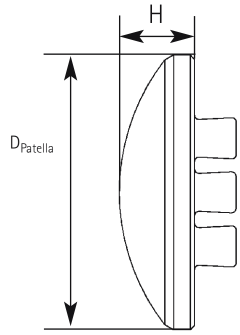
	T1/T1+	T2/T2+	T3/T3+	T4/T4+	T5
D	28	33	38	43	48
D+S stem (Small)	80	85	90	95	100
D+L stem (Large)	120	125	130	135	140



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

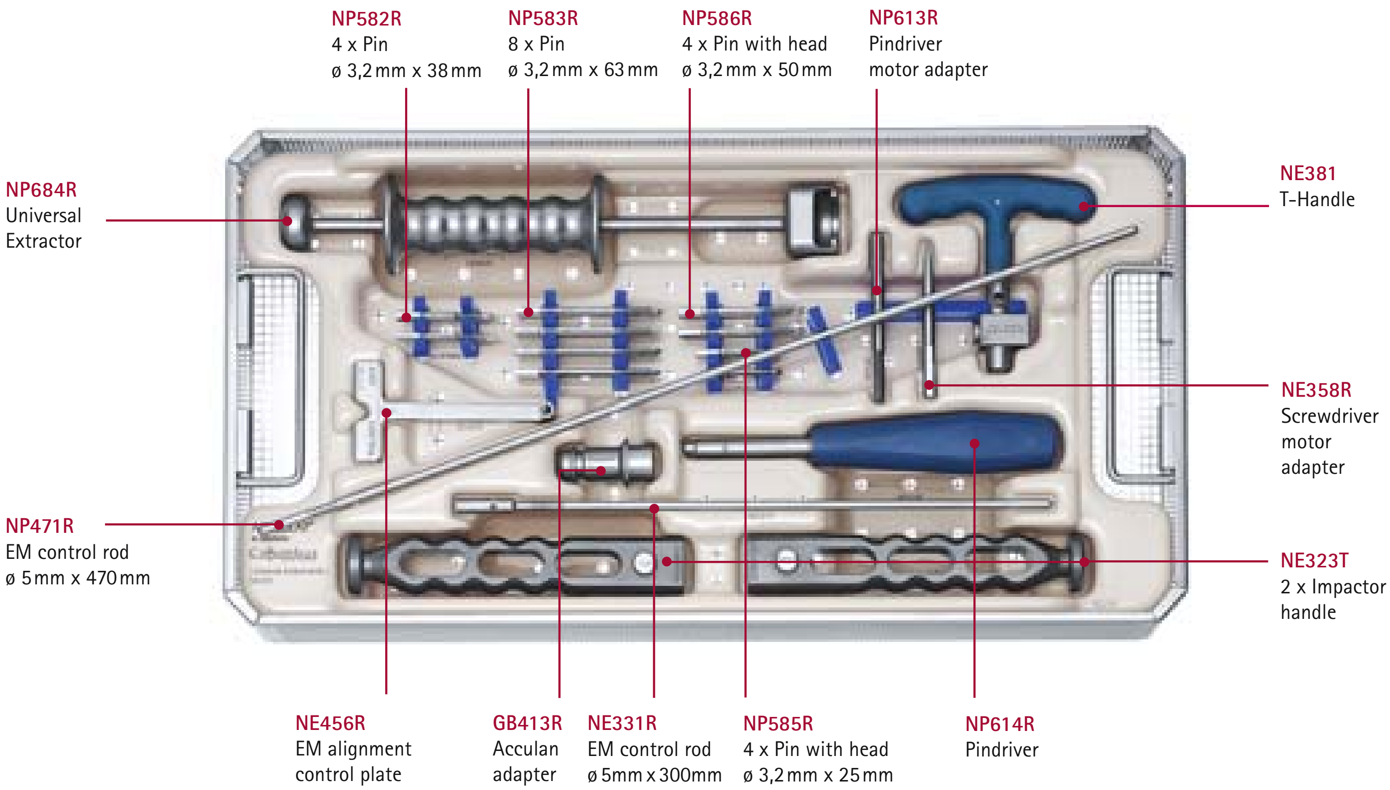


19. Columbus® Instrumentation

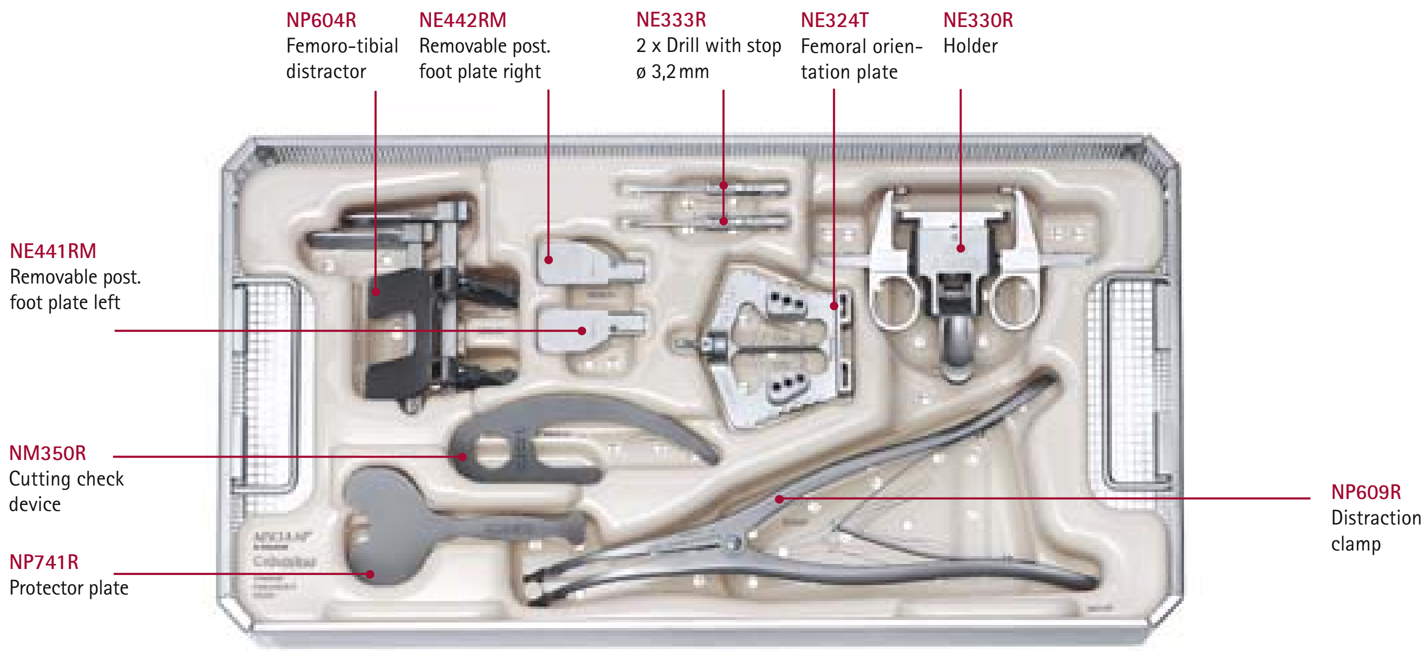
Columbus® Complete Set NE300

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

NE201 Columbus® Universal Instruments I



NE202 Columbus® Universal Instruments II



NE203 Columbus® Tibial Preparation Instruments

Tibia winght chisels

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

Trial Keels

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

NE348R
Drill ø 14 mm for ext. stems

NE338R
Drill ø 12 mm for ext. stems

Tibia trial / prep. plateaus

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

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

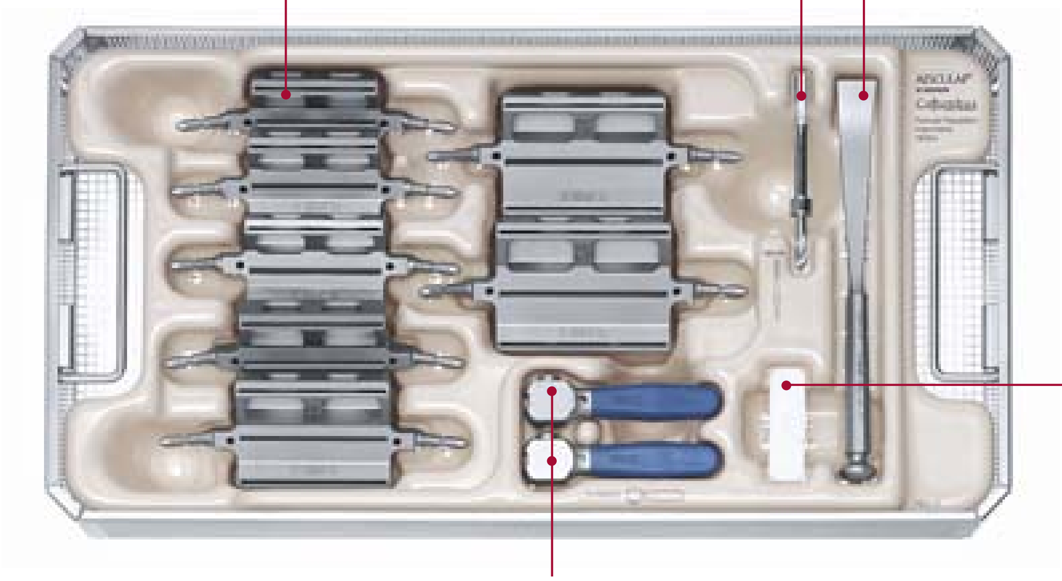
T1/T1+: NE251RM
T2/T2+: NE252RM
T3/T3+: NE253RM
T4/T4+: NE254RM
T5: NE255RM

NE204 Columbus® Femoral Preparation Instruments

4-in-1 cutting guides
F1: NQ021R
F2: NQ022R
F3: NQ023R
F4: NQ024R
F5: NQ025R
F6: NQ026R
F7: NQ027R

NE334R
Drill with stop ø 6 mm

FL556R
Chisel 20 mm x 203 mm



NE336
Modular insert for femur holder

NQ010
2 x Modular handle

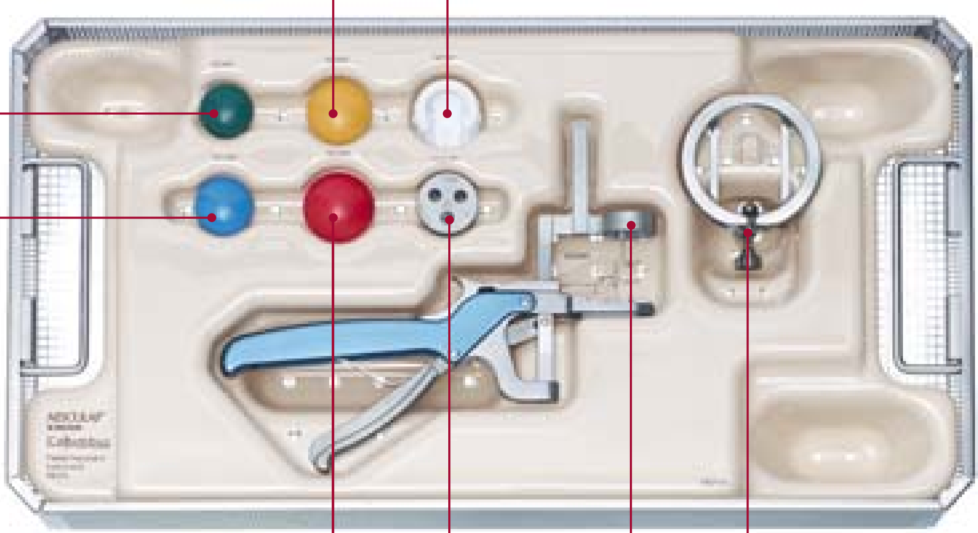
NE205 Columbus® Patella Preparation Instruments

NQ483
Trial patella, 3 pegs P3
ø 33 mm x 9 mm

NE347
Patella impactor

NQ481
Trial patella
3 pegs P1
ø 27 mm x 7 mm

NQ482
Trial patella
3 pegs P2
ø 30 mm x 8 mm



NQ484
Trial patella
3 pegs P4
ø 36 mm x 10 mm

NQ478R
3-pegs drilling guide

NE346R
Modular preparation clamp

NE206 Columbus® Femoral Trial Instruments

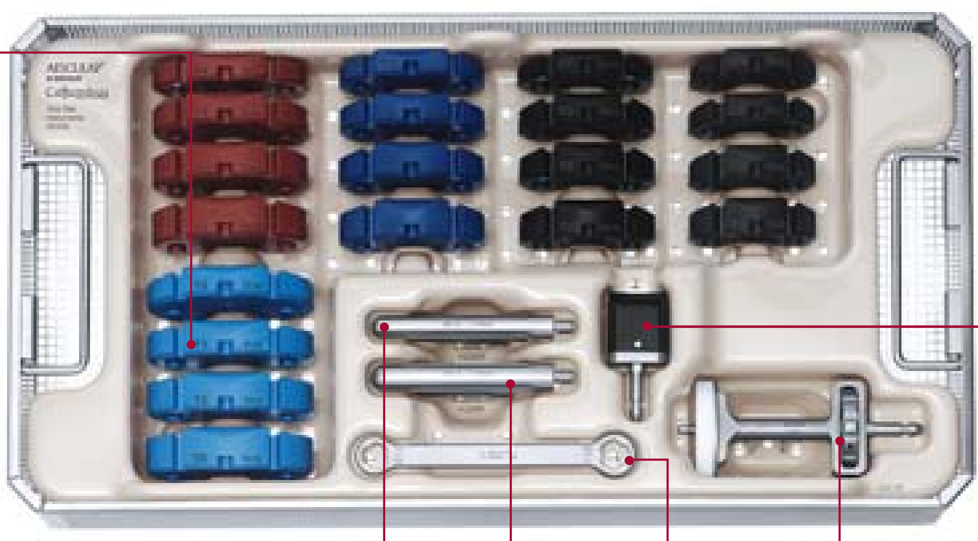
NE285
Femoral impactor

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

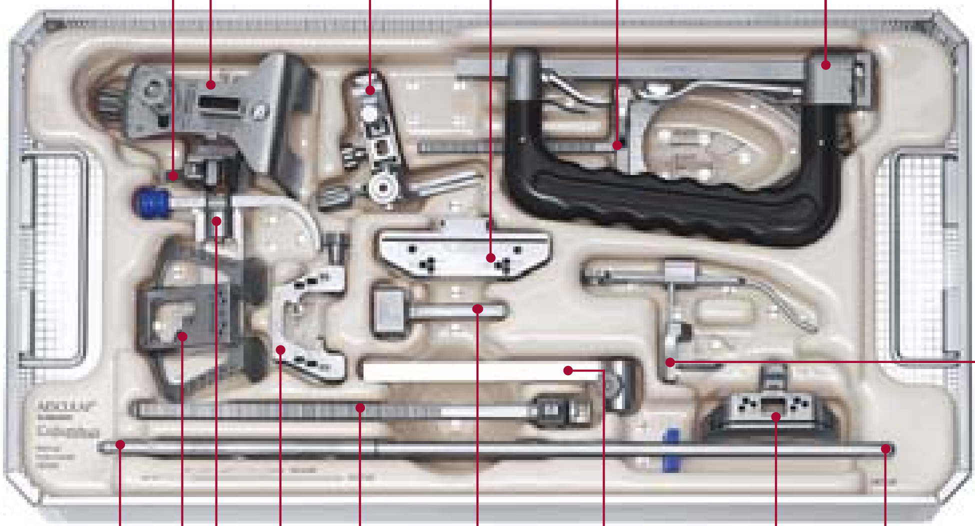
Trial extension stems ø 12 mm
short: NQ262K
long: NQ263K

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

NE356R
Stem tightening key

NE329R
Tibia holder/ impactor

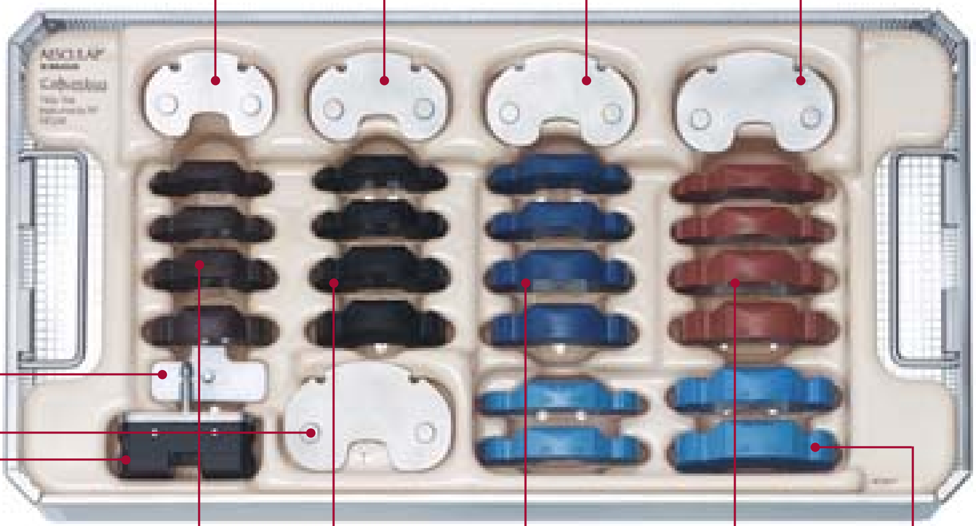
NE209 Columbus® Manual Instruments



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

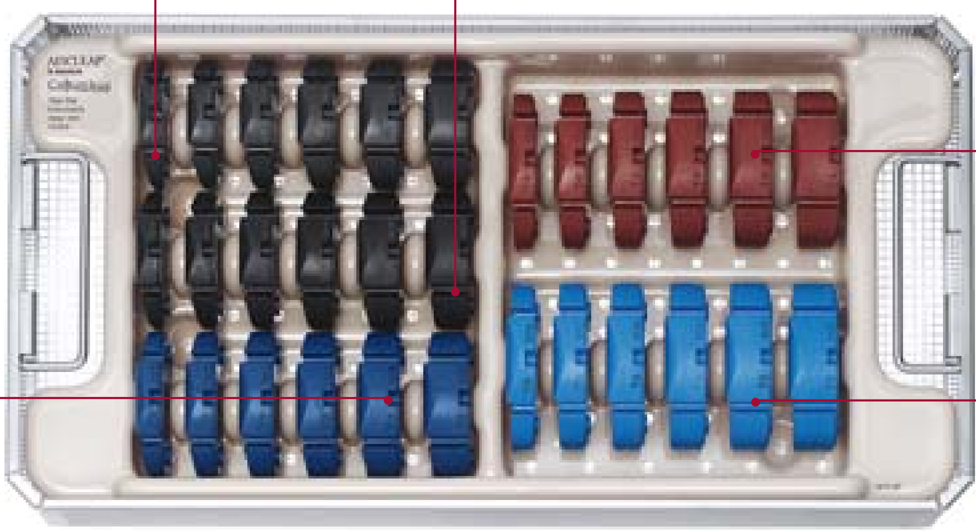
T1/10: NQ310	T2/10: NQ320	T3/10: NQ330	T4/10: NQ340	T5/10: NQ350
T1/12: NQ311	T2/12: NQ321	T3/12: NQ331	T4/12: NQ341	T5/12: NQ351
T1/14: NQ312	T2/14: NQ322	T3/14: NQ332	T4/14: NQ342	T5/14: NQ352
T1/16: NQ313	T2/16: NQ323	T3/16: NQ333	T4/16: NQ343	T5/16: NQ353

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

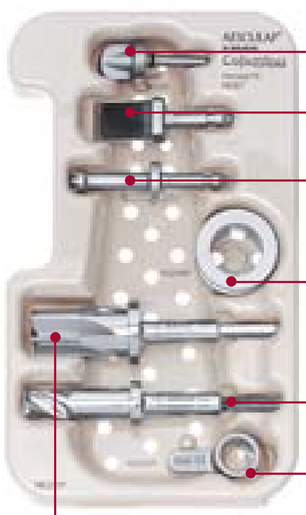
T5/10: NQ250
T5/12: NQ251
T5/14: NQ252
T5/16: NQ253
T5/18: NQ254
T5/20: NQ255

NE307 Columbus® Femoral PS Instruments

Femoral box preparation guides
F1: NQ051R F5: NQ055R
F2: NQ052R F6: NQ056R
F3: NQ053R F7: NQ057R
F4: NQ054R

Tibial trial plates
T1: NQ519 T4: NQ549
T2: NQ529 T5: NQ559
T3: NQ539

PS removable trial femoral gauges
F1: NQ161T F3: NQ163T F5: NQ165T F7: NQ167T
F2: NQ162T F4: NQ164T F6: NQ166T



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

20. Columbus® ordering information

Femoral Component CR/RP cemented	
NN001K	Columbus® CR/RP Femur F1L
NN002K	Columbus® CR/RP Femur F2L
NN003K	Columbus® CR/RP Femur F3L
NN004K	Columbus® CR/RP Femur F4L
NN005K	Columbus® CR/RP Femur F5L
NN006K	Columbus® CR/RP Femur F6L
NN007K	Columbus® CR/RP Femur F7L
NN011K	Columbus® CR/RP Femur F1R
NN012K	Columbus® CR/RP Femur F2R
NN013K	Columbus® CR/RP Femur F3R
NN014K	Columbus® CR/RP Femur F4R
NN015K	Columbus® CR/RP Femur F5R
NN016K	Columbus® CR/RP Femur F6R
NN017K	Columbus® CR/RP Femur F7R

Femoral Component CR/RP cementless	
NN021K	Columbus® CR/RP Femur F1L
NN022K	Columbus® CR/RP Femur F2L
NN023K	Columbus® CR/RP Femur F3L
NN024K	Columbus® CR/RP Femur F4L
NN025K	Columbus® CR/RP Femur F5L
NN026K	Columbus® CR/RP Femur F6L
NN027K	Columbus® CR/RP Femur F7L
NN031K	Columbus® CR/RP Femur F1R
NN032K	Columbus® CR/RP Femur F2R
NN033K	Columbus® CR/RP Femur F3R
NN034K	Columbus® CR/RP Femur F4R
NN035K	Columbus® CR/RP Femur F5R
NN036K	Columbus® CR/RP Femur F6R
NN037K	Columbus® CR/RP Femur F7R

Femoral Component PS cemented	
NN161K	Columbus® PS Femur F1L
NN162K	Columbus® PS Femur F2L
NN163K	Columbus® PS Femur F3L
NN164K	Columbus® PS Femur F4L
NN165K	Columbus® PS Femur F5L
NN166K	Columbus® PS Femur F6L
NN167K	Columbus® PS Femur F7L
NN171K	Columbus® PS Femur F1R
NN172K	Columbus® PS Femur F2R
NN173K	Columbus® PS Femur F3R
NN174K	Columbus® PS Femur F4R
NN175K	Columbus® PS Femur F5R
NN176K	Columbus® PS Femur F6R
NN177K	Columbus® PS Femur F7R

Tibia plateau CR/PS modular, cemented

NN071K	Columbus® CR/PS Tibia Plateau T1
NN072K	Columbus® CR/PS Tibia Plateau T1+
NN073K	Columbus® CR/PS Tibia Plateau T2
NN074K	Columbus® CR/PS Tibia Plateau T2+
NN075K	Columbus® CR/PS Tibia Plateau T3
NN076K	Columbus® CR/PS Tibia Plateau T3+
NN077K	Columbus® CR/PS Tibia Plateau T4
NN078K	Columbus® CR/PS Tibia Plateau T4+
NN079K	Columbus® CR/PS Tibia Plateau T5

Tibia plateau CR/PS modular, cementless

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 modular, cemented

NN271K	Columbus® RP Tibia Plateau T1
NN272K	Columbus® RP Tibia Plateau T1+
NN273K	Columbus® RP Tibia Plateau T2
NN274K	Columbus® RP Tibia Plateau T2+
NN275K	Columbus® RP Tibia Plateau T3
NN276K	Columbus® RP Tibia Plateau T3+
NN277K	Columbus® RP Tibia Plateau T4
NN278K	Columbus® RP Tibia Plateau T4+
NN279K	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	
NN471K	Columbus® CRA/PSA Tibia Plateau T1
NN472K	Columbus® CRA/PSA Tibia Plateau T1+
NN473K	Columbus® CRA/PSA Tibia Plateau T2
NN474K	Columbus® CRA/PSA Tibia Plateau T2+
NN475K	Columbus® CRA/PSA Tibia Plateau T3
NN476K	Columbus® CRA/PSA Tibia Plateau T3+
NN477K	Columbus® CRA/PSA Tibia Plateau T4
NN478K	Columbus® CRA/PSA Tibia Plateau T4+
NN479K	Columbus® CRA/PSA Tibia Plateau T5

Tibial hemi-spacer with screws	
NN563K	Columbus® Tibial hemi-spacer T1 4mm RM/LL
NN564K	Columbus® Tibial hemi-spacer T1 8mm RM/LL
NN566K	Columbus® Tibial hemi-spacer T2 4mm RM/LL
NN567K	Columbus® Tibial hemi-spacer T2 8mm RM/LL
NN569K	Columbus® Tibial hemi-spacer T3 4mm RM/LL
NN570K	Columbus® Tibial hemi-spacer T3 8mm RM/LL
NN572K	Columbus® Tibial hemi-spacer T4 4mm RM/LL
NN573K	Columbus® Tibial hemi-spacer T4 8mm RM/LL
NN575K	Columbus® Tibial hemi-spacer T5 4mm RM/LL
NN576K	Columbus® Tibial hemi-spacer T5 8mm RM/LL
NN583K	Columbus® Tibial hemi-spacer T1 4mm RL/LM
NN584K	Columbus® Tibial hemi-spacer T1 8mm RL/LM
NN586K	Columbus® Tibial hemi-spacer T2 4mm RL/LM
NN587K	Columbus® Tibial hemi-spacer T2 8mm RL/LM
NN589K	Columbus® Tibial hemi-spacer T3 4mm RL/LM
NN590K	Columbus® Tibial hemi-spacer T3 8mm RL/LM
NN592K	Columbus® Tibial hemi-spacer T4 4mm RL/LM
NN593K	Columbus® Tibial hemi-spacer T4 8mm RL/LM
NN595K	Columbus® Tibial hemi-spacer T5 4mm RL/LM
NN596K	Columbus® Tibial hemi-spacer T5 8mm RL/LM

PE gliding surface CR Cruciate Retaining

NN110	Columbus® CR gliding surface T1/T1+ 10
NN111	Columbus® CR gliding surface T1/T1+ 12
NN112	Columbus® CR gliding surface T1/T1+ 14
NN113	Columbus® CR gliding surface T1/T1+ 16
NN120	Columbus® CR gliding surface T2/T2+ 10
NN121	Columbus® CR gliding surface T2/T2+ 12
NN122	Columbus® CR gliding surface T2/T2+ 14
NN123	Columbus® CR gliding surface T2/T2+ 16
NN130	Columbus® CR gliding surface T3/T3+ 10
NN131	Columbus® CR gliding surface T3/T3+ 12
NN132	Columbus® CR gliding surface T3/T3+ 14
NN133	Columbus® CR gliding surface T3/T3+ 16
NN140	Columbus® CR gliding surface T4/T4+ 10
NN141	Columbus® CR gliding surface T4/T4+ 12
NN142	Columbus® CR gliding surface T4/T4+ 14
NN143	Columbus® CR gliding surface T4/T4+ 16
NN150	Columbus® CR gliding surface T5 10
NN151	Columbus® CR gliding surface T5 12
NN152	Columbus® CR gliding surface T5 14
NN153	Columbus® CR gliding surface T5 16

PE gliding surface CR Deep Dish

NN210	Columbus® CR Deep Dish gliding surface T1/T1+ 10	NN240	Columbus® CR Deep Dish gliding surface T4/T4+ 10
NN211	Columbus® CR Deep Dish gliding surface T1/T1+ 12	NN241	Columbus® CR Deep Dish gliding surface T4/T4+ 12
NN212	Columbus® CR Deep Dish gliding surface T1/T1+ 14	NN242	Columbus® CR Deep Dish gliding surface T4/T4+ 14
NN213	Columbus® CR Deep Dish gliding surface T1/T1+ 16	NN243	Columbus® CR Deep Dish gliding surface T4/T4+ 16
NN214	Columbus® CR Deep Dish gliding surface T1/T1+ 18	NN244	Columbus® CR Deep Dish gliding surface T4/T4+ 18
NN215	Columbus® CR Deep Dish gliding surface T1/T1+ 20	NN245	Columbus® CR Deep Dish gliding surface T4/T4+ 20
NN220	Columbus® CR Deep Dish gliding surface T2/T2+ 10	NN250	Columbus® CR Deep Dish gliding surface T5 10
NN221	Columbus® CR Deep Dish gliding surface T2/T2+ 12	NN251	Columbus® CR Deep Dish gliding surface T5 12
NN222	Columbus® CR Deep Dish gliding surface T2/T2+ 14	NN252	Columbus® CR Deep Dish gliding surface T5 14
NN223	Columbus® CR Deep Dish gliding surface T2/T2+ 16	NN253	Columbus® CR Deep Dish gliding surface T5 16
NN224	Columbus® CR Deep Dish gliding surface T2/T2+ 18	NN254	Columbus® CR Deep Dish gliding surface T5 18
NN225	Columbus® CR Deep Dish gliding surface T2/T2+ 20	NN255	Columbus® CR Deep Dish gliding surface T5 20
NN230	Columbus® CR Deep Dish gliding surface T3/T3+ 10		
NN231	Columbus® CR Deep Dish gliding surface T3/T3+ 12		
NN232	Columbus® CR Deep Dish gliding surface T3/T3+ 14		
NN233	Columbus® CR Deep Dish gliding surface T3/T3+ 16		
NN234	Columbus® CR Deep Dish gliding surface T3/T3+ 18		
NN235	Columbus® CR Deep Dish gliding surface T3/T3+ 20		

PE gliding surface UC Ultra Congruent	
NN410	Columbus® UC gliding surface T1/T1+ 10
NN411	Columbus® UC gliding surface T1/T1+ 12
NN412	Columbus® UC gliding surface T1/T1+ 14
NN413	Columbus® UC gliding surface T1/T1+ 16
NN414	Columbus® UC gliding surface T1/T1+ 18
NN415	Columbus® UC gliding surface T1/T1+ 20
NN420	Columbus® UC gliding surface T2/T2+ 10
NN421	Columbus® UC gliding surface T2/T2+ 12
NN422	Columbus® UC gliding surface T2/T2+ 14
NN423	Columbus® UC gliding surface T2/T2+ 16
NN424	Columbus® UC gliding surface T2/T2+ 18
NN425	Columbus® UC gliding surface T2/T2+ 20
NN430	Columbus® UC gliding surface T3/T3+ 10
NN431	Columbus® UC gliding surface T3/T3+ 12
NN432	Columbus® UC gliding surface T3/T3+ 14
NN433	Columbus® UC gliding surface T3/T3+ 16
NN434	Columbus® UC gliding surface T3/T3+ 18
NN435	Columbus® UC gliding surface T3/T3+ 20
NN440	Columbus® UC gliding surface T4/T4+ 10
NN441	Columbus® UC gliding surface T4/T4+ 12
NN442	Columbus® UC gliding surface T4/T4+ 14
NN443	Columbus® UC gliding surface T4/T4+ 16
NN444	Columbus® UC gliding surface T4/T4+ 18
NN445	Columbus® UC gliding surface T4/T4+ 20
NN450	Columbus® UC gliding surface T5 10
NN451	Columbus® UC gliding surface T5 12
NN452	Columbus® UC gliding surface T5 14
NN453	Columbus® UC gliding surface T5 16
NN454	Columbus® UC gliding surface T5 18
NN455	Columbus® UC gliding surface T5 20

PE gliding surface RP Rotating Platform	
NN310	Columbus® RP gliding surface T1/T1+ 10
NN311	Columbus® RP gliding surface T1/T1+ 12
NN312	Columbus® RP gliding surface T1/T1+ 14
NN313	Columbus® RP gliding surface T1/T1+ 16
NN320	Columbus® RP gliding surface T2/T2+ 10
NN321	Columbus® RP gliding surface T2/T2+ 12
NN322	Columbus® RP gliding surface T2/T2+ 14
NN323	Columbus® RP gliding surface T2/T2+ 16
NN330	Columbus® RP gliding surface T3/T3+ 10
NN331	Columbus® RP gliding surface T3/T3+ 12
NN332	Columbus® RP gliding surface T3/T3+ 14
NN333	Columbus® RP gliding surface T3/T3+ 16
NN340	Columbus® RP gliding surface T4/T4+ 10
NN341	Columbus® RP gliding surface T4/T4+ 12
NN342	Columbus® RP gliding surface T4/T4+ 14
NN343	Columbus® RP gliding surface T4/T4+ 16
NN350	Columbus® RP gliding surface T5 10
NN351	Columbus® RP gliding surface T5 12
NN352	Columbus® RP gliding surface T5 14
NN353	Columbus® RP gliding surface T5 16

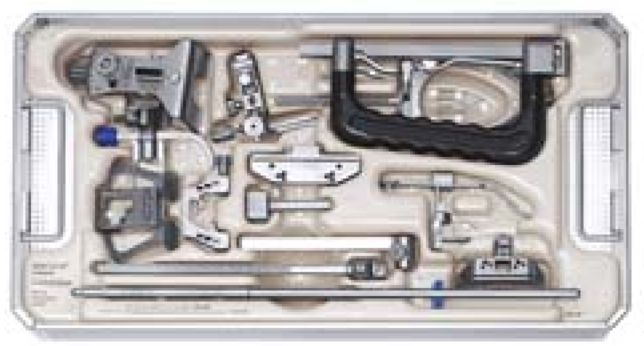
PE gliding surface PS Posterior Stabilised incl. fixation screw	
NN510	COLUMBUS PS gliding surface T1/T1+ 10
NN511	COLUMBUS PS gliding surface T1/T1+ 12
NN512	COLUMBUS PS gliding surface T1/T1+ 14
NN513	COLUMBUS PS gliding surface T1/T1+ 16
NN514	COLUMBUS PS gliding surface T1/T1+ 18
NN515	COLUMBUS PS gliding surface T1/T1+ 20
NN520	COLUMBUS PS gliding surface T2/T2+ 10
NN521	COLUMBUS PS gliding surface T2/T2+ 12
NN522	COLUMBUS PS gliding surface T2/T2+ 14
NN523	COLUMBUS PS gliding surface T2/T2+ 16
NN524	COLUMBUS PS gliding surface T2/T2+ 18
NN525	COLUMBUS PS gliding surface T2/T2+ 20
NN530	COLUMBUS PS gliding surface T3/T3+ 10
NN531	COLUMBUS PS gliding surface T3/T3+ 12
NN532	COLUMBUS PS gliding surface T3/T3+ 14
NN533	COLUMBUS PS gliding surface T3/T3+ 16
NN534	COLUMBUS PS gliding surface T3/T3+ 18
NN535	COLUMBUS PS gliding surface T3/T3+ 20
NN540	COLUMBUS PS gliding surface T4/T4+ 10
NN541	COLUMBUS PS gliding surface T4/T4+ 12
NN542	COLUMBUS PS gliding surface T4/T4+ 14
NN543	COLUMBUS PS gliding surface T4/T4+ 16
NN544	COLUMBUS PS gliding surface T4/T4+ 18
NN545	COLUMBUS PS gliding surface T4/T4+ 20
NN550	COLUMBUS PS gliding surface T5 10
NN551	COLUMBUS PS gliding surface T5 12
NN552	COLUMBUS PS gliding surface T5 14
NN553	COLUMBUS PS gliding surface T5 16
NN554	COLUMBUS PS gliding surface T5 18
NN555	COLUMBUS PS gliding surface T5 20

Columbus® Obturator screws		
NN261K	closing screw D 12	For plateau 1–3+
NN264K	closing screw D 14	For plateau 4-5

Columbus® Extension stems		
NN262K	stem D 12 S	For plateau 1–3+
NN263K	stem D 12 L	For plateau 1–3+
NN265K	stem D 14 S	For plateau 4-5
NN266K	stem D 14 L	For plateau 4-5

Columbus® Patella triple peg		
NN481	Patella triple peg P1	Ø 27 mm x 7 mm
NN482	Patella triple peg P2	Ø 30 mm x 8 mm
NN483	Patella triple peg P3	Ø 33 mm x 9 mm
NN484	Patella triple 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

Complete navigation set NP610

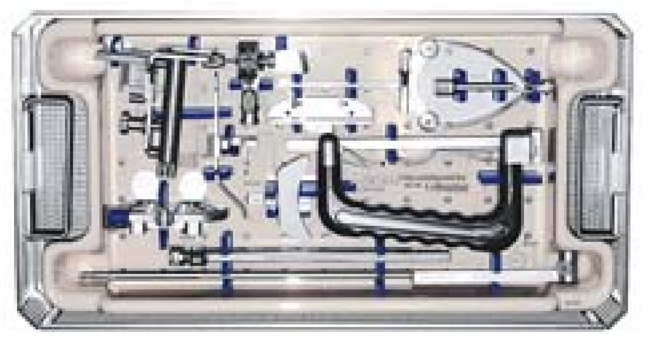
Individual set nos.	
NP600	Navigation instruments
NP602	Knee instruments for TKA 4.0

Complete Navigation Set NP611 (Passive technology)

Individual set nos.	
NP168	Navigation instruments
NP602	Knee instruments for TKA 4.0

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!



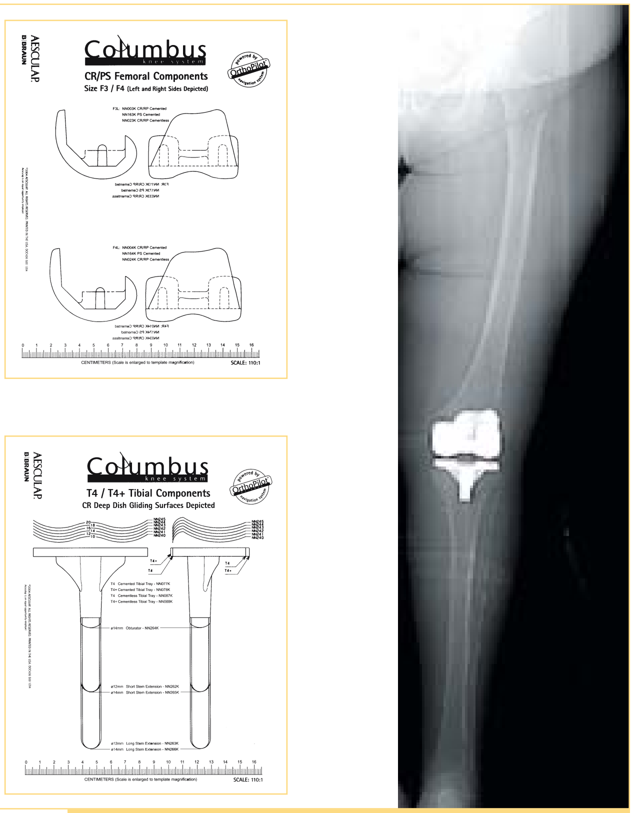
Columbus® complete set NE310

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

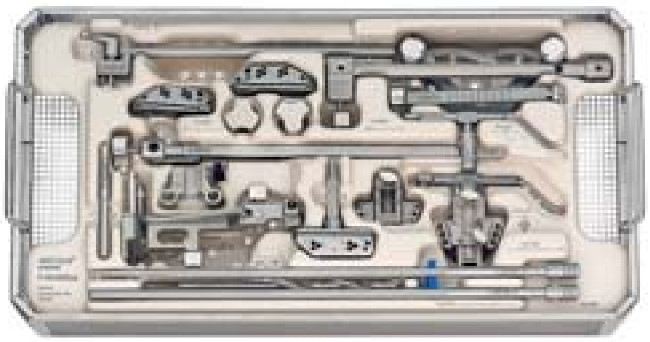
Complete navigation set NP610

Individual set nos.	
NP600	Navigation Instruments
NP602	Knee Instruments for TKA 4.0

X-ray templates	
NQ290	Scale 1,10:1
NQ291	Scale 1,15:1
NQ289	Axis planing



The complete set NQ400 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® StreamLined complete set NQ400

Central Sets for Columbus® StreamLined System	
NQ401	Columbus® StreamLined Universal Instruments
NQ402	Columbus® StreamLined Tibial Instruments
NQ403	Columbus® StreamLined Femoral Instruments
NQ404	Columbus® StreamLined Tibial Trial Instruments

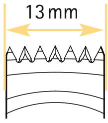
Complementation Sets for Columbus® StreamLined System	
NQ406	Columbus® StreamLined Manual Instruments
NQ407	Columbus® StreamLined Manual IM Alignment
NQ408	Columbus® StreamLined Tibial Preparation T0 & T0+
NQ409	Columbus® StreamLined Tibial Extensions
NQ410	Columbus® StreamLined Tibial Trials UC
NQ411	Columbus® StreamLined Femur Preparation F1 & F2
NQ412	Columbus® StreamLined Femur Preparation F7
NQ413	Columbus® StreamLined Femur Preparation PS
NQ414	Columbus® StreamLined Soft Tissue Management
NE205	Columbus® StreamLined Patella
NE296	Columbus® StreamLined Trial Tibial Instruments RP

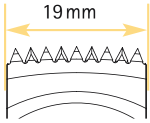
Complete Navigation Set NP611

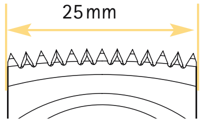
Individual set nos.	
NP168	Navigation instruments
NP602	Knee instruments for TKA 4.0

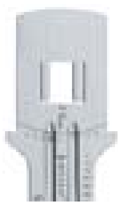
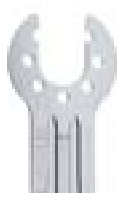
Overview of sawblades

- Thickness: 1.27 mm
  Length: 90 mm







Coupling / Width	Aesculap	Aesculap Acculan 3 Ti	Stryker System 4+5 System 2000	Conmed/ Linvatec/Hall PowerPro Versipower plus	Synthes
					
13 mm	GE206R	GC236R	GE222R	GE220R	GE224R
19 mm	GE208R	GC238R			
25 mm	GE213R	GC246R	GE223R	GE221R	GE225R

AESCULAP®

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