

**Surgical technique**

# balanSys BICONDYLAR

Combination 4in1  
SMarT instruments

*Preservation in motion*



*Building on our heritage  
Moving technology forward  
Step by step with our clinical partners  
Towards a goal of preserving mobility*



## ***Preservation in motion***

*As a Swiss company, Mathys is committed to this guiding principle and pursues a product portfolio with the goal of further developing traditional philosophies with respect to materials or design in order to address existing clinical challenges. This is reflected in our imagery: traditional Swiss activities in conjunction with continuously evolving sporting equipment.*

# Table of contents

<b>Introduction</b>	<b>4</b>
<b>Indications and contraindications</b>	<b>5</b>
<b>Preoperative planning</b>	<b>6</b>
<b>Aim of the intervention and surgical approach</b>	<b>7</b>
<b>Patient preparation</b>	<b>7</b>
<b>Overview of the surgical technique</b>	<b>8</b>
<b>Surgical technique</b>	
<b>1. Tibial osteotomy</b>	<b>10</b>
<b>2. Femoral osteotomy</b>	<b>13</b>
2.1 Distal femoral osteotomy	13
2.2 Anterior and posterior femoral osteotomies with chamfer cuts	17
<b>3. Preparation and implantation</b>	<b>22</b>
3.1 balanSys CR, UC and RP	22
3.2 balanSys PS	27
<b>Appendix</b>	
1 – Intramedullary tibial osteotomy	33
2 – balanSys 3-Peg Patella	35
3 – Item number of the balanSys implants	38
4 – balanSys implant size and compatibility	50
5 – Item numbers of the balanSys instruments	51
6 – Item numbers of the balanSys measuring templates	80

## Remarks

Please make yourself familiar with the handling of the instruments, the product-related surgical technique and the warnings, the safety notes as well as the recommendations of the instruction leaflet before using an implant manufactured by Mathys Ltd Bettlach. Make use of the Mathys user training and proceed according to the recommended surgical technique.

# Introduction

The balanSys Bicondylar system is a modular joint replacement system for knees.

A balanSys Bicondylar system consists of a cemented or non-cemented femoral component, a cemented symmetrical tibial tray and a tibial inlay. A cemented patellar component is optional. For femoral and tibial metal components a TiNbN coated option is available. The tibial inlay range includes one mobile bearing configuration (Rotating Platform (RP) and three different fixed bearing configurations (Cruciate Retaining (CR), Ultra Congruent (UC) and Posterior Stabilized (PS)).

For tibial inlays two materials can be chosen: Standard UHMWPE or vitamys, the vitamin E stabilized PE, which possess a high wear resistance and is well protected against oxidation.<sup>1</sup>

Since 1997, the balanSys Bicondylar system has proven its clinical worth with good clinical results.<sup>2</sup>

With the balanSys knee system, Mathys Ltd Bettlach offers a wide range of components that correspond with the individual patient's anatomical conditions and functional requirements of the knee joint.

The balanSys implants, instruments and surgical techniques are designed to meet the surgeons' demands on prostheses with respect to kinematics, ligament balancing, stability and long-term survival.<sup>2</sup>

The high quality instruments and implants are made in Switzerland for continuously excellent clinical results. Quality made in Switzerland.

The balanSys knee system was launched with a primarily soft tissue balancing technique, featuring a dedicated tensor instrument. A few years later, Mathys Ltd Bettlach introduced a primarily bone orientated technique. Both techniques have been very successful in the marketplace. With this surgical technique Mathys Ltd Bettlach will bridge both techniques, offering a unique combination for your patient's benefit.

1 Data on file Mathys Ltd Bettlach.

2 Superior long-term survival for fixed bearing compared with mobile bearing in ligament-balanced total knee arthroplasty. Heesterbeek, P.J.C., van Houten, A.H., Klenk, J.S. et al. Knee Surg Sports Traumatol Arthrosc, online 07 April 2017.

# Indications and contraindications

## **Indications**

- Painful and/or disabling joint disease of the knee resulting from osteoarthritis, avascular necrosis, inflammatory arthritis or post-traumatic arthritis
- Revision of previous knee replacement

## **Contraindications**

- Local or general infection
- Any soft tissue, ligament, nervous or vascular insufficiency which may create an unacceptable risk of prosthesis instability, prosthesis fixation failure and/or complications in post-operative care
- Compromised bone stock due to bone loss or bone defects and/or insufficient bone substance, which cannot provide adequate support and/or fixation for the prosthesis
- Hypersensitivity to materials used
- Skeletal immaturity
- Genu recurvatum
- Insufficiency of the extensor mechanism
- Progressive neoplastic disease

**For further information, please refer to the instructions for use or ask your Mathys representative.**

# Preoperative planning

## **Preoperative planning aims**

- Identification and quantification of deformities and bone defects as well as the osteophytes
- Determination of the angle between the anatomical axis and the mechanical axis
- Preliminary size determination of the femoral and tibial prosthesis using planning templates

## **The preoperative planning includes**

- Anteroposterior (AP) and lateral X-rays of the knee joint and tangential X-rays of the patella
- Full leg series
- Total leg planning template
- X-ray template

# Aim of the intervention and surgical approach

- Intraoperative correction of axial deviations in the frontal plane of the leg along the mechanical axis, whereby the joint line should be at a right angle with this axis
- Reconstruction of the physiological axis ratios
- Prosthesis-related kinematics
  - physiological joint line
  - sufficient medial and lateral stability in extension and flexion
  - correctly centred and balanced patellofemoral joint
  - free movement: from maximal extension to maximal possible flexion

The choice of approach is dependent on the axial malposition (varus/valgus).

## Patient preparation

The surgery is carried out on patients under general or spinal anaesthesia, while an adequate muscle relaxation is being required.

Postoperative pain is reduced without the use of a tourniquet. If it is necessary to apply a tourniquet, it should be placed on the proximal thigh and inflated with the knee in hyperflexion. That will keep the maximal portion of the quadriceps below the level of the tourniquet.

Place the patient in supine position.

Flex the knee into a 90° position.

Use a supporting roll on the table and a lateral support to facilitate extension and flexion of the leg.

# Overview of the surgical technique

## 1. Tibial osteotomy

	<p>Application of the Tibial Reference System parallel to the anterior tibial cortex and alignment. Adjustment of the posterior slope. Determination of the joint line and fixation of the Tibial Reference System.</p> <p style="text-align: right;">&gt; Page 10</p>
	<p>Adjustment of the resection depth. Tibial osteotomy. Determination of the tibial plateau size.</p> <p><b>Remarks</b> Place retractors to protect ligaments during tibial resection.</p> <p style="text-align: right;">&gt; Page 11</p>

## 2. Femoral osteotomy

	<p>Opening of the intramedullary canal and insertion of the Intramedullary Rod. Fixation of the Distal Femoral Cutting Block. Distal Osteotomy.</p> <p style="text-align: right;">&gt; Page 13</p>
	<p>Insertion of the Tensor and application of 150–180 Newton in full extension. Adjustment of the desired Inlay thickness.</p> <p style="text-align: right;">&gt; Page 15</p>
	<p>The knee must be flexed in 90°. Insertion of the Tensor and application of 80–100 Newton. Drilling of two holes for the 4in1 Cutting Block.</p> <p style="text-align: right;">&gt; Page 17</p>
	<p>Insertion of the 4in1 Cutting Block. Control of the planned resection depth. Anterior and posterior femoral osteotomies with the chamfer cuts.</p> <p style="text-align: right;">&gt; Page 20</p>
	<p>Verification of flexion gap.</p> <p style="text-align: right;">&gt; Page 21</p>



### 3.1 Preparation and implantation: balanSys CR, UC and RP

				<p>Preparation of trochlea groove. Insertion of Tibial Template and Trial PE Inlay. Insertion of Trial Femur. Trial reduction of the knee joint.</p> <p>&gt; Page 22</p>
	I.	II.	III.	<p>I. Preparation of the femoral anchor pins II. Preparation of the tibial medullary space III. Preparation of the fin</p> <p>&gt; Page 24</p>
I.	II.	III.		<p>I. Insertion of balanSys Tibial Plateau II. Insertion of the balanSys Inlay III. Insertion of the balanSys Femur</p> <p>&gt; Page 25</p>

### 3.2 Preparation and implantation: balanSys PS

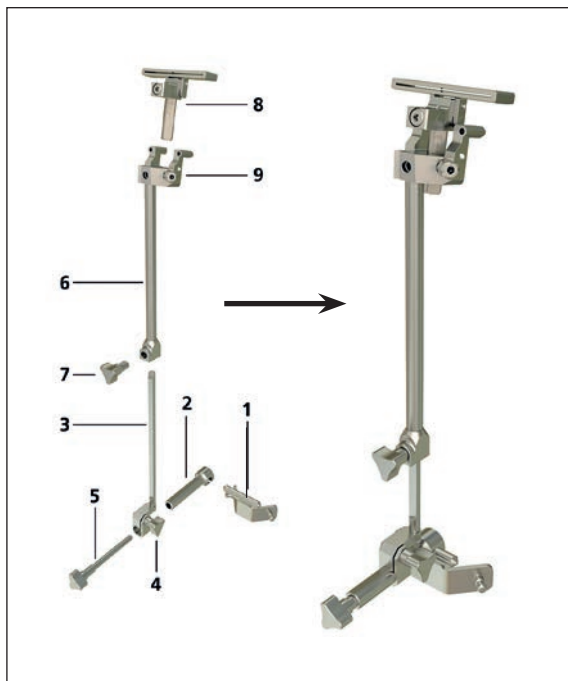
				<p>Preparation of femoral box. Insertion of the Trial Femur. Insertion of the Tibial Template and PE Trial Insert. Trial reduction of the knee joint.</p> <p>&gt; Page 27</p>
	I.	II.		<p>I. Preparation of the tibial medullary space II. Preparation of the fin</p> <p>&gt; Page 30</p>
I.	II.	III.		<p>I. Insertion of the balanSys PS Tibial Plateau II. Insertion of the balanSys PS Femur III. Insertion of the balanSys PS Inlay</p> <p>&gt; Page 31</p>

#### Remarks

1.27 mm sawblades are compatible with balanSys instruments. For sawblades distributed by Mathys refer to the brochure 336.030.032 «Sterile Sawblades».

# Surgical technique

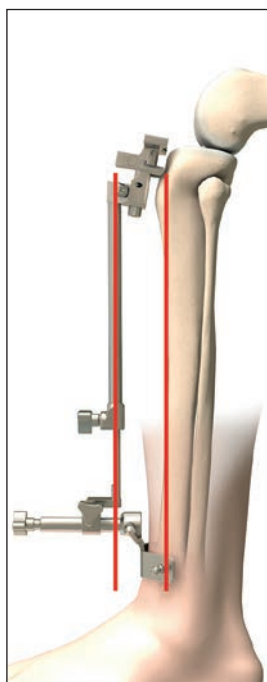
## 1. Tibial osteotomy



**Fig. 1**

### **Assembly of the Extramedullary Tibial Alignment Reference System (Fig. 1)**

Move the Ankle Holder (1) onto the Distal Connector (2). Move the Distal Target Device (3) onto the Distal Connector (2) and fix the Ankle Holder with the Tibial Locking Bolt (5). Leave the Connecting Screw (4) slightly open. Join the Distal Target Device (3) with the Proximal Target Device (6) and affix it with the Connecting Screw (7). Insert the Tibial Cutting Guide (8) onto the Proximal Targeting Device (6). Set the Tibial Cutting Guide to zero and tighten the screw (9) with the Hexagonal Screwdriver.



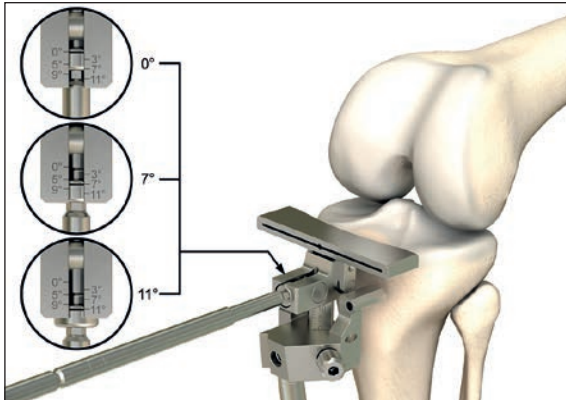
**Fig. 2** Application of the Tibial Reference System



**Fig. 3** Alignment of the Tibial Reference System

### **Positioning of the extramedullary Tibial Alignment Reference System**

The Tibial Reference System is placed parallel to the anterior tibial cortex (Fig. 2). Align the Tibial Reference System distally with the second metatarsophalangeal bone and fix it with the Silicone Band (Fig. 3). For correct rotation alignment, the centre of the Tibial Cutting Guide must be aligned to the transition of the medial to the middle third of the tibial tuberosity. Alternatively, the Tibial Cutting Guide can be aligned parallel to the line between the posterior edges of the medial and lateral tibial plateau.



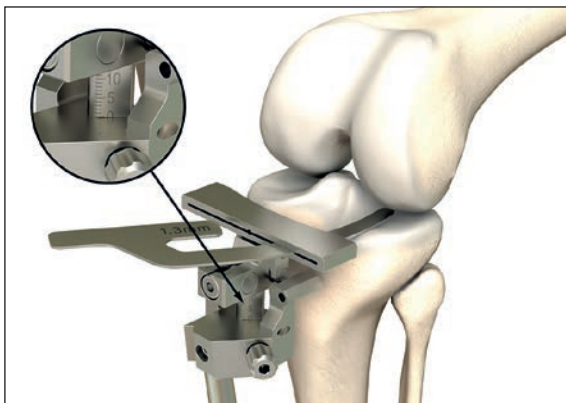
**Fig. 4** Adjustment of the dorsal slope

### Setting of the posterior slope

Use the Hexagonal Screwdriver to set the posterior slope, according to the anatomy (tactile plate parallel to the best preserved tibial joint surface) (Fig. 4).

### Remarks

*The authors recommend a posterior slope of 7° for a cruciate retaining implant and up to 5° for a PCL substituting implant.*

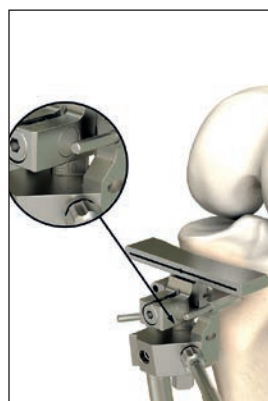


**Fig. 5** Setting the original joint line

Determine the original joint line at the level of the best preserved tibial joint surface with the Reference Plate or the Tibial Stylus (Fig. 5).



**Fig. 6** Fixation of the Tibial Reference System



**Fig. 7** Adjustment of the resection depth

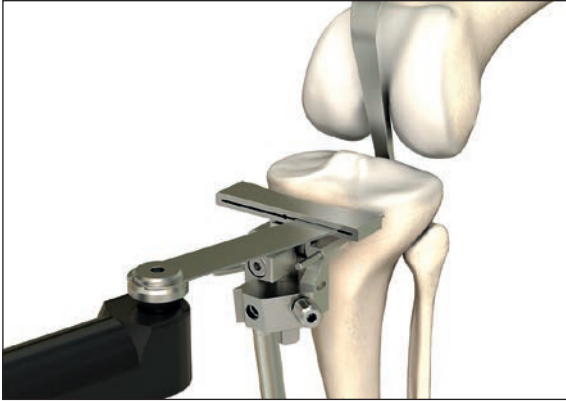
### Fixation of the Tibial Reference System

Affix the Tibial Reference System proximally with at least two Pins in the specified holes (oblique and straight) (Fig. 6). The holes are pre-drilled with the 3.2 mm drill.

### Tibial osteotomy

Move the Tibial Cutting Guide 6–8 mm distally with the help of the Hexagonal Screwdriver (Fig. 7).

Check the adjusted osteotomy level with the Reference Plate.

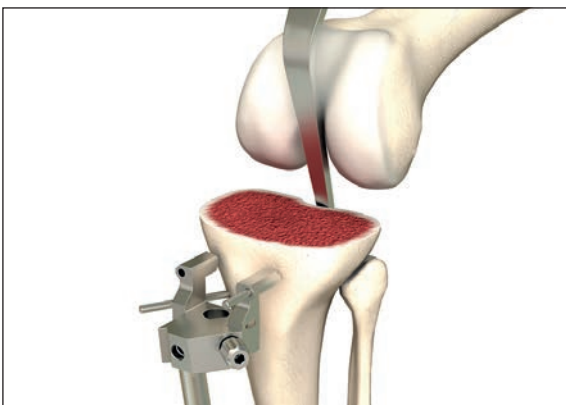


**Fig. 8** Execution of the tibial osteotomy

Execution of the tibial osteotomy (Fig. 8) and removal of the posterior meniscus remnant.

**Remarks**

*Place retractors to protect ligaments during tibial resection.*

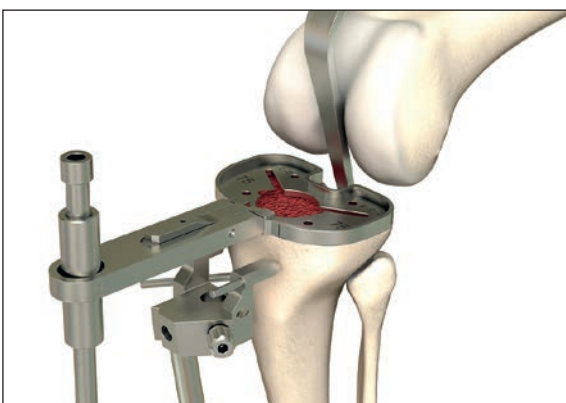


**Fig. 9**

Remove the Tibial Cutting Guide (Fig. 9).

**Remarks**

*If the Tibial Reference System is removed, a Pin should be left in place for future reference in case an additional tibial osteotomy is required.*



**Fig. 10** Determining the tibial prosthesis size

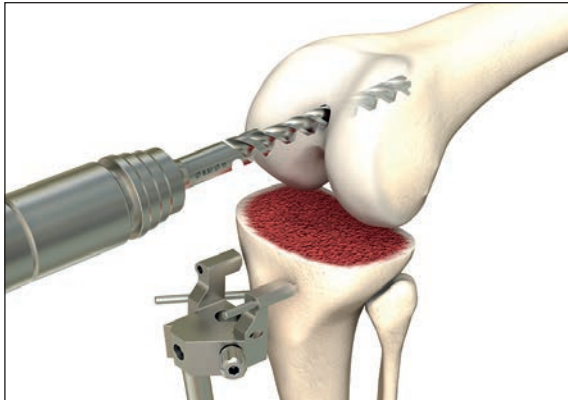
**Determining the size of the tibial implant**

Determine the tibial prosthesis size with the Tibial Template, taking the rotational alignment into account (Fig. 10). The aim is to provide maximum coverage of the osteotomy surface. Use the Setting Rod to check the axis and the slope of the cutting plane.

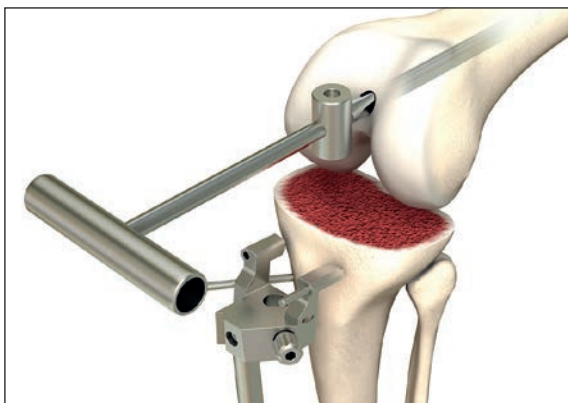
In addition to the extramedullary aligned tibial osteotomy, intramedullary alignment is also possible (see appendix 1).

# The surgical technique

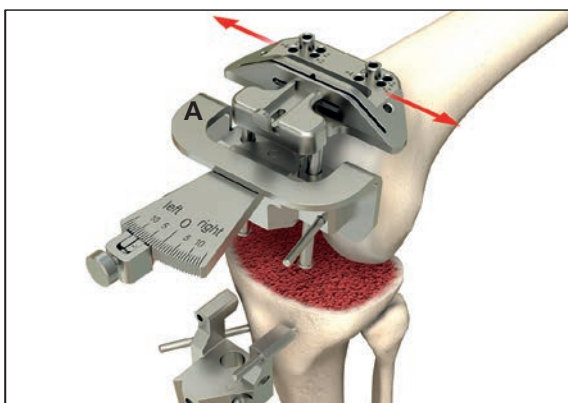
## 2. Femoral osteotomy



**Fig. 11** Opening of the medullary canal

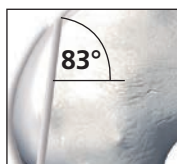


**Fig. 12** Insertion of the Intramedullary Rod



**Fig. 13**

**Fig. 13a**



### 2.1 Distal femoral osteotomy

#### Intramedullary alignment of the femoral osteotomy

Open the medullary canal (Fig. 11) with the 8.5 mm drill and insert the Intramedullary Rod (lengths: 190, 240 and 290 mm) with the aid of the T-Handle (Fig. 12). Any existing osteophytes must be removed first.

#### Positioning of the Angle Guide and fixation of the Distal Cutting Block

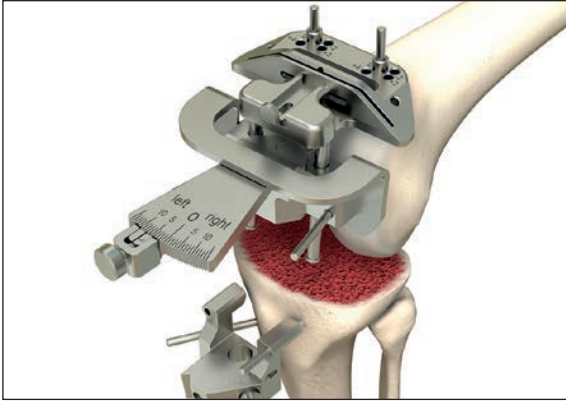
Adjust the preoperatively determined angle between the mechanical and anatomical femoral axis with the aid of the Angle Guide. Assemble the Angle Guide with the Adapter for the Angle Guide (A) and the Distal Cutting Block. Fit the Angle Guide onto the cam of the Intramedullary Rod.

The Angle Guide must abut distally to at least one condyle (Fig. 13).

#### Remarks

*Due to the fact that the initial distal cut will be performed with an angle of 83° in respect to the intramedullary rod, it is important to align the Angle Guide parallel to the epicondylar axis (Fig. 13a).*



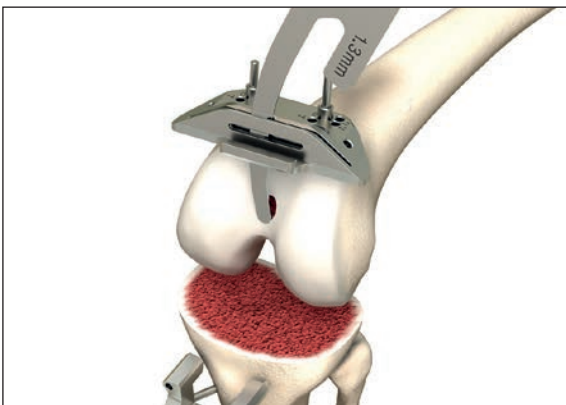


**Fig. 14** Positioning of 2 Pins

Fixation of the Angle Guide with one or two Pins (Fig. 13). Based on the anatomical conditions, the Distal Cutting Block can be shifted mediolaterally (Fig. 13). The Distal Cutting Block must rest against the anterior cortex.

Pre-drilling of the 2 holes for the Distal Cutting Block. Take the zero marking into account in this process. Insertion of 2 Pins into the pre-drilled holes (Fig. 14).

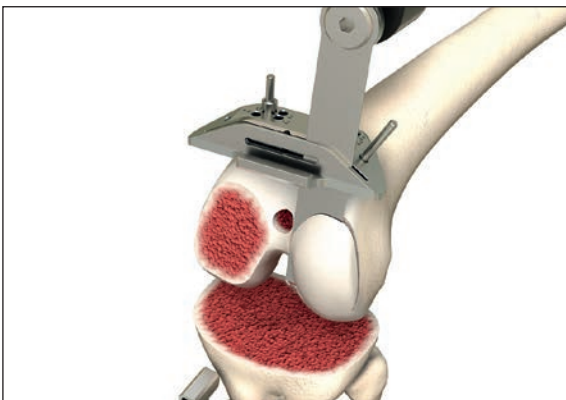
Removal of the Angle Guide and the Intramedullary Rod.



**Fig. 15** Checking of the planned distal resection plane

Check the planned distal resection plane with the Reference Plate. If necessary, shift the cutting block by  $\pm 2$  mm if the resection plane is not optimal.

The Cutting Block can be additionally fixed with oblique Pins.

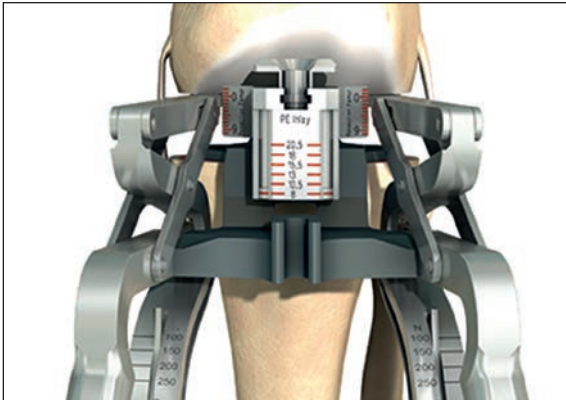


**Fig. 16** Execution of the distal femoral osteotomy

Execution of the distal femoral osteotomy (Fig. 16).

#### **Remarks**

*It is recommended by the authors to execute the distal femoral osteotomy in maximal flexion in order not to touch the tibial surface with the sawblade.*

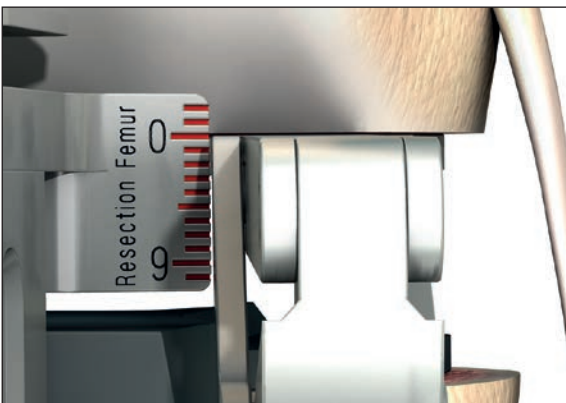


**Fig. 17**

Insert the Tensor and apply **150–180 Newton** in full extension (Fig. 17). The distal femoral osteotomy must be parallel to the tibial osteotomy. Perform ligament releases if necessary and check again with Tensor.

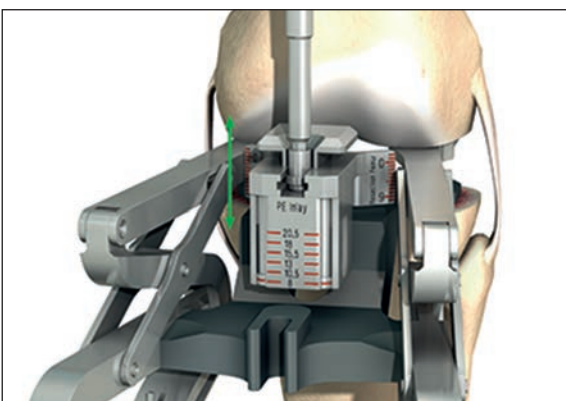
**Remarks**

*The extension gap should be equal, both medially and laterally.*



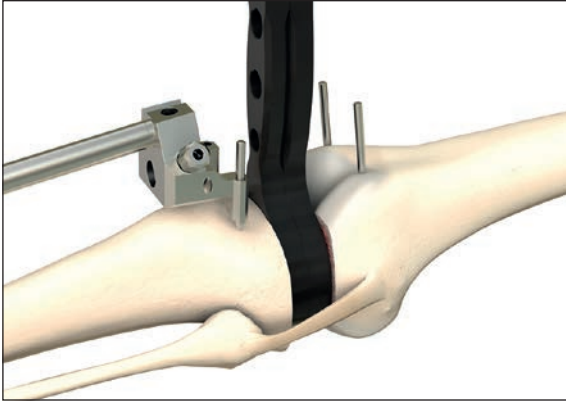
**Fig. 18**

The scale of the resection level should be 0 mm when the knee is well balanced in extension (Fig. 18).



**Fig. 19** Adjusting the Inlay

- If the resection level is reading  $<0$  mm adjust the Inlay thickness with the set screw (Fig. 19)
- If the resection level is reading  $>0$  mm then a corresponding amount of bone should be re-cut from the proximal tibia



**Fig. 20** Inspection of the extension gap

#### **Optional step to check the extension gap**

Verification of the extension gap by inserting the Spacer Block with the appropriate Spacer Block Insert (Fig. 20).



**Fig. 21**

Check the mechanical axis (Fig. 21), medial and lateral stability as well as extension ability. If conditions are too tight, a re-osteotomy can be performed at the distal femur or on the tibia.

Removal of the Spacer Block and the Pins.



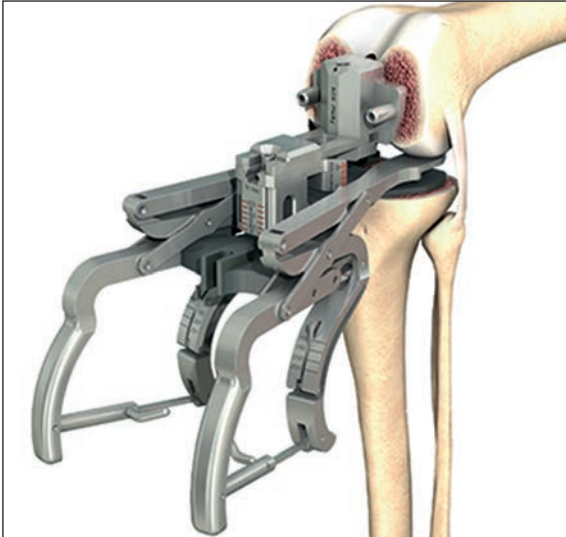


Fig. 22

## 2.2 Anterior and posterior femoral osteotomies with the chamfer cuts

Insert the Spacer with the preassembled Drill Guide into the Tensor.

### **Remarks**

*Maintain the identical PE thickness on the scale as used for verifying the distal osteotomy with the Spacer Block and/or Tensor earlier.*

Place the Drill Guide for the 4in1 Cutting Block on the distal femoral resection. Flex the knee to 90° and insert the calibrated Tensor into the joint (Fig. 22).

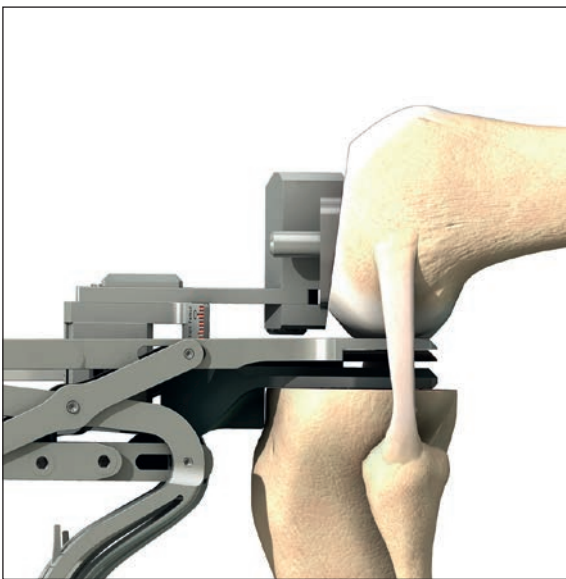
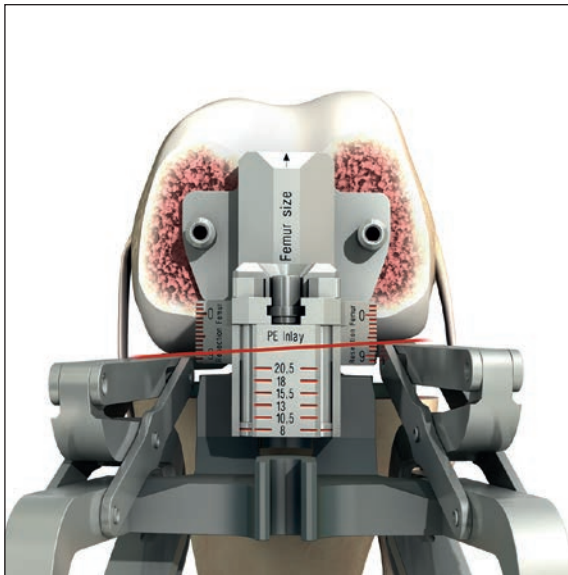


Fig. 23

Modify the flexion until the Drill Guide lies flat against the surface of the distal femoral osteotomy (Fig. 23).

Use **80–100 Newton** to symmetrically stretch the joint cavity.



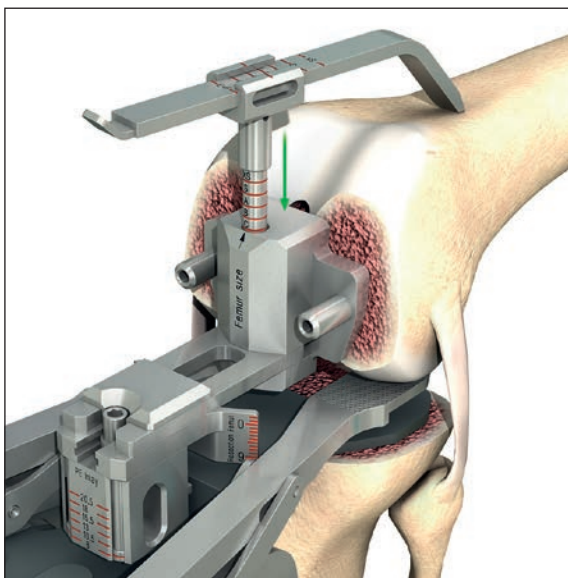
**Fig. 24**

The external rotation of the femoral component should be 2–5°.

Use the difference between the medial and lateral condyles to measure the external rotation. The difference in millimetres corresponds to the rotation in degrees (red line in Fig. 24). As a rule, resect <9mm laterally, and >9mm medially.

**Please note:**

- In case of larger deviations (e.g. in a dysplastic lateral femoral condyle), confirm the rotation with the trans-epicondylar axis
- If the external rotation is <2°, release the lateral ligamentous structures, and remove the dorsal osteophytes and femorolateral adhesions.
- If the external rotation is >5°, release the medial ligament structures and remove the femoral medial osteophytes and adhesions from dorsal.



**Fig. 25**

Insert the Femoral Stylus to determine the size of the femoral prosthesis (Fig. 25).

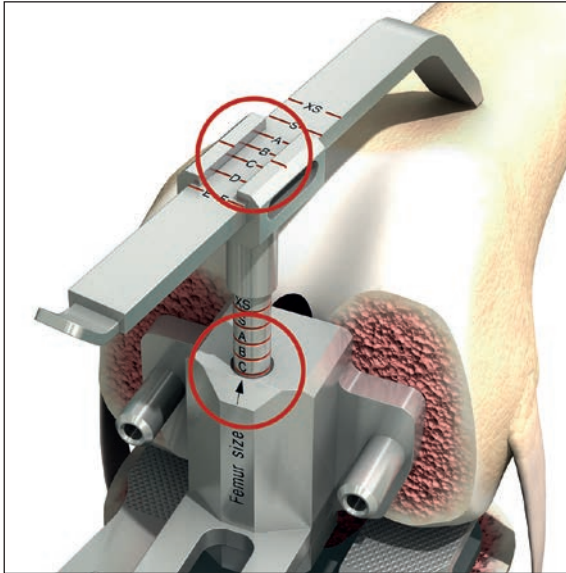


Fig. 26

The femur size is determined with the aid of the Femoral Stylus, which is placed on the elevation of the femoral metaphysis (Fig. 26).

The size of the femur is determined by the distal scale and the anterior femoral stylus:

1. Read the marking of the distal scale
2. Adjust the size of the anterior Femoral Stylus to the size of the distal scale
3. Both must match

#### Remarks

*The size of the femur must correspond to the predetermined size of the tibia (Appendix 4).*

The sizing rings will give you an estimated femur size (Fig. 26). We recommend choosing the larger femur size.

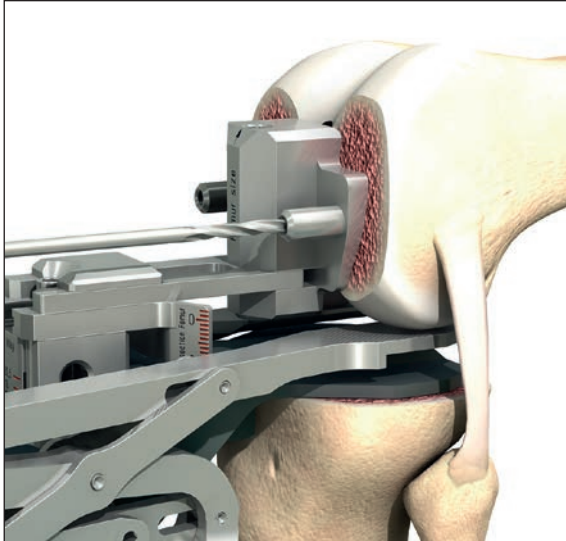
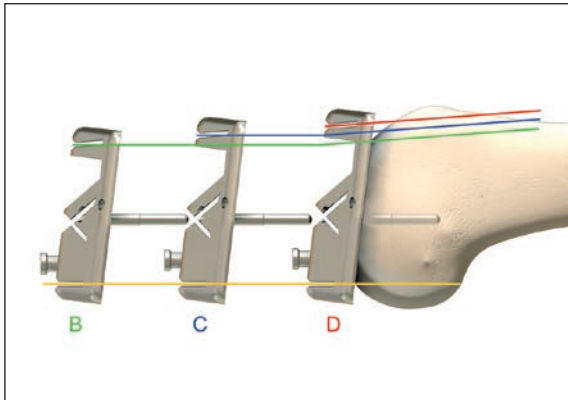


Fig. 27

Verify the spreading force – it should still be **80 to 100 Newton** – and drill the two holes for the 4in1 Cutting Block (Fig. 27).

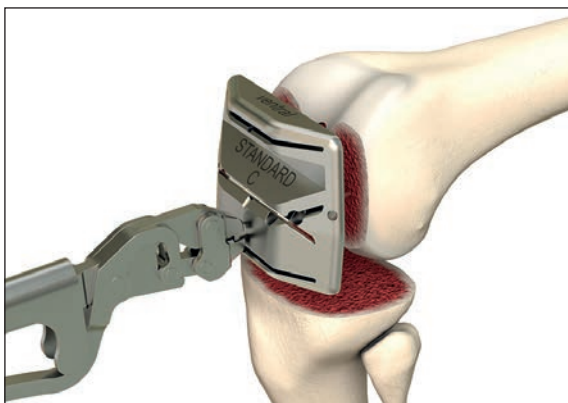
Remove all the instruments.



**Fig. 28** Adjusting of the femoral size by changing the Cutting Block

#### Remarks

The *balanSys* Femur components **differ 3mm in AP dimension** from one size to the other. The distance between the posterior cut and the pin fixation is exactly the same throughout the entire range of Cutting Blocks, thus leaving the flexion gap constant between sizes (Fig. 28).



**Fig. 29** Insertion of the 4in1 Cutting Block

#### Execution of the anterior and posterior femoral osteotomies with the chamfer cuts

Place the selected 4in1 Cutting Block in the two pre-drilled holes with the aid of the Pliers until it abuts flat on the distal osteotomy surface (Fig. 29).



**Fig. 30**

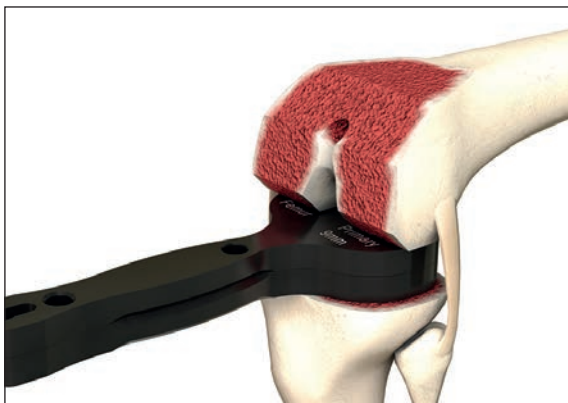
Check the planned resection plane with the Reference Plate (Fig. 30). Mediolateral fixation of the 4in1 Cutting Block with two Pins for stabilization.

#### Remarks

The 4in1 Cutting Block can be shifted 1.5mm anterior and 1.5mm posterior. Pre-drill the corresponding holes through the 4in1 Cutting Block. Remove the 4in1 Cutting Block with the aid of the Pliers and place it in the new pre-drilled holes until it abuts flat on the distal osteotomy surface.



**Fig. 31** Execution of the osteotomies



**Fig. 32**

Execution of the osteotomies (Fig. 31) in the following order:

1. Anterior osteotomy
2. Posterior osteotomy
3. Chamfer cuts

#### **Remarks**

*The posterior osteotomies should be performed with the knee at 90° flexion, as this avoids touching the tibial surface with the saw blade and it moves the posterior soft tissues away from the posterior condyles.*

Removal of the 4in1 Cutting Block with the aid of the Pliers.

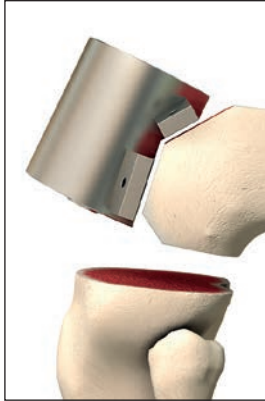
Removal of all marginal bones and osteophytes, particularly in the region of the posterior condyles.

#### **Inspection of the flexion gap**

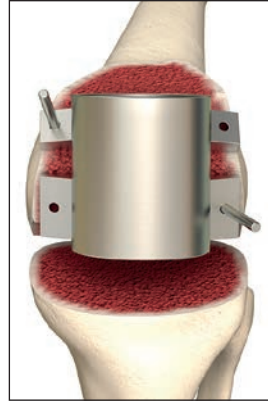
- Insertion of the Spacer Block into the flexion gap with the Spacer Block Insert, previously defined in extension (Fig. 32).
- Evaluation of ligament stability, both medial and lateral.

# The surgical technique

## 3. Preparation and implantation



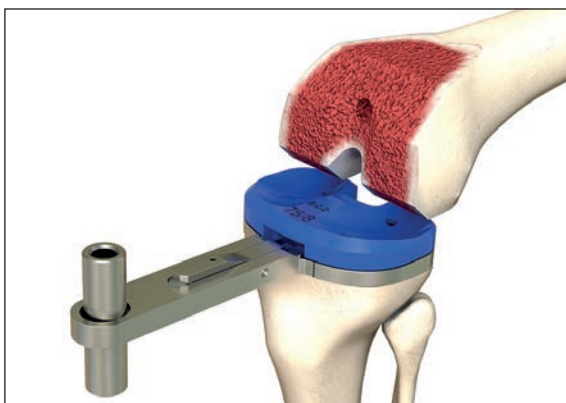
**Fig. 33** Positioning of the Trochlea Bushing



**Fig. 34** Fixation of the Trochlea Bushing



**Fig. 35**



**Fig. 36** Insertion of the Tibial Trial Prosthesis

### 3.1 balanSys CR, UC and RP

#### Femoral preparation

The Trochlea Bushing is placed onto the femur (Fig. 33) and affixed with at least two Pins diagonally (Fig. 34).

#### Remarks

*The authors recommend placing the Trochlea Bushing slightly lateral for optimized patella tracking.*

The trochlea is chamfered by pushing the Trochlear Reamer to the stop (Fig. 35).

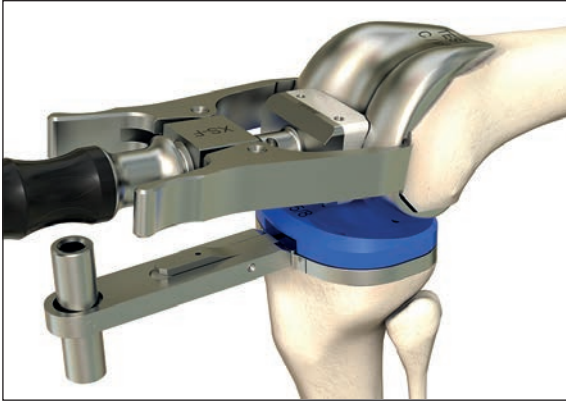
Remove all instruments.

Insertion of the determined Tibial Template and PE Trial Inlay (Fig. 36).

#### Remarks

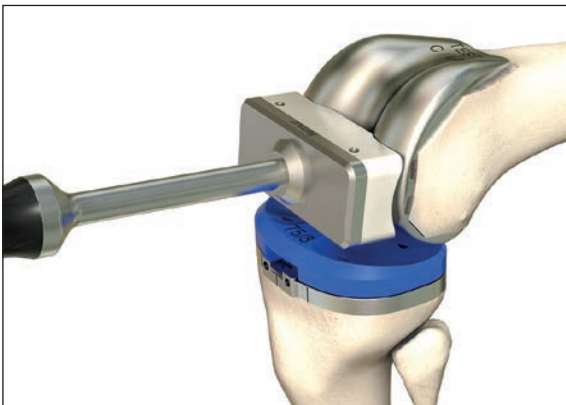
*It must be ensured that the chosen template provides the desired tibial coverage and takes the chosen femur size into account.*



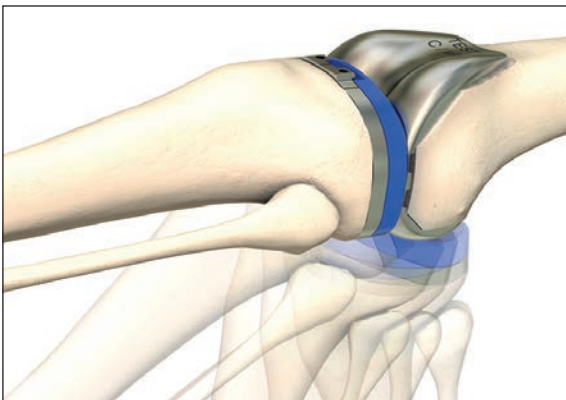


**Fig. 37** Insertion of the Trial Femur

Insertion of the Trial Femur (Fig. 37) with the aid of the Femoral Holder and fixation with the Femoral Impactor (Fig. 38).



**Fig. 38** Placement with the Femoral Impactor



**Fig. 39** Full movement test of the knee joint

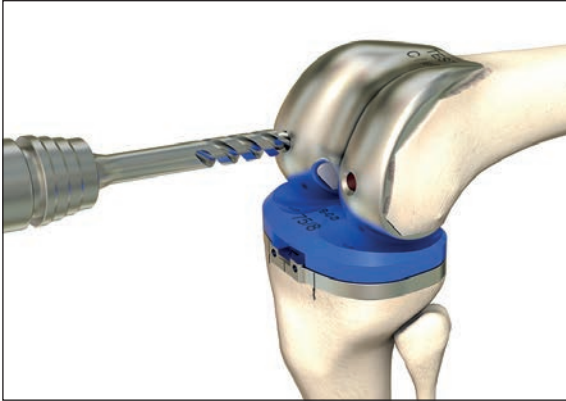
Repositioning of the extension apparatus.

#### **Remarks**

*If the patella is replaced, it is recommended by the authors to perform the patellar osteotomy and to position the patellar trial component **before** the knee is tested.*

With all the provisional components in place, the knee is tested with respect to maximal range of motion, stability, kinematics and mobility (Fig. 39).

Anterior marking of the position of the Tibial Template with the electro-surgical knife on the tibia.



**Fig. 40** Drilling for the femoral anchor pins

Drilling of the two holes for the femoral anchor pins (Fig. 40).

Removal of the Trial Femur and PE Trial Inlay.



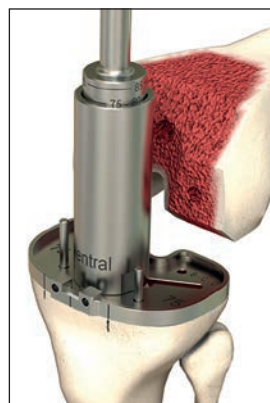
**Fig. 41** Fixation of the Tibial Template

### **Tibial preparation**

Fixation of the Tibial Template with two Pins (Fig. 41) matching the marking on the tibial head.



**Fig. 42a**



**Fig. 42b**

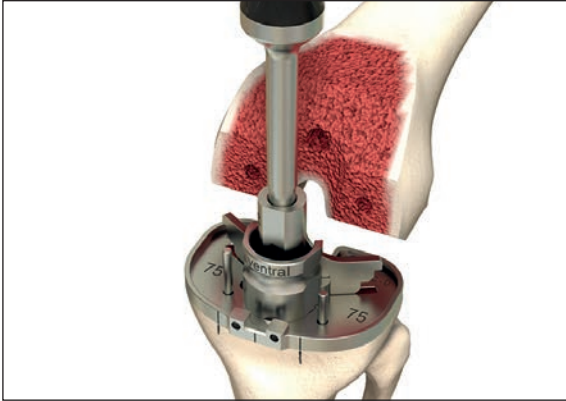
The Tibial Reamer must be connected to a power drill.

Position the Reamer guide onto the Tibial Template. The three pegs need to be positioned in the openings of the Tibial Template. Note the marking **«ventral»**. Lock the Reamer Guide to the Tibial Template by turning the Reamer slightly clockwise until stop. In this position, the reamer Guide-Tibial Template assembly is locked (Fig. 42a). Drill out the tibial medullary space (Fig. 42b).

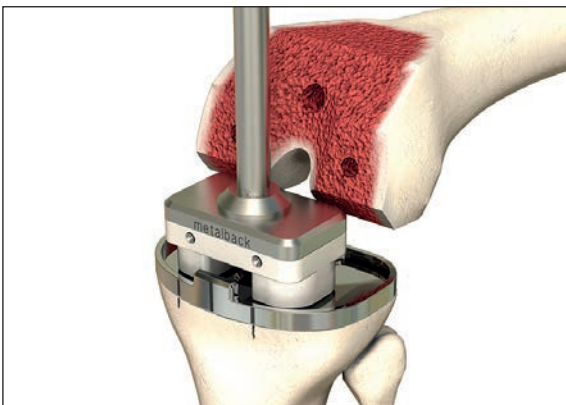
The depth must correspond to the appropriate length of the anchorage stem of the predetermined balanSys PS Tibial Plateau. Size markings are etched onto the Reamer.

Removal of the Reamer Guide.

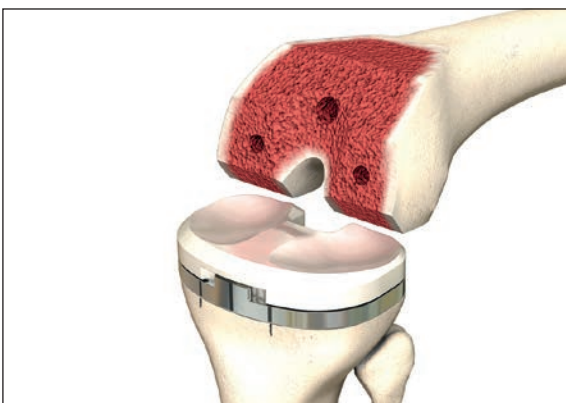




**Fig. 43** Impaction of the Anchoring Bolt



**Fig. 44**



**Fig. 45**

Assembling of the Fin Chisel with the Handle.

Position the Chisel Centring Guide onto the Tibial Template. The three pegs need to be positioned in the openings of the Tibial Template. Note the marking **«ventral»**. Lock the Chisel Centring Guide to the Tibial Template by turning it slightly clockwise until stop. In this position, the Chisel Centring Guide-Tibial Template assembly is locked. Impact the Fin Chisel assembly with care to prevent fracture on the tibia (Fig. 43).

During introduction of the Fin Chisel care has to be taken to protect the lateral collateral ligament and the popliteal tendon when using a surgical technique with a medial approach.

Impacting until the instrument bottoms out on the Tibial Template. The depths of the fins are defined by the size of the Tibial Template.

Removal of all remaining instruments.

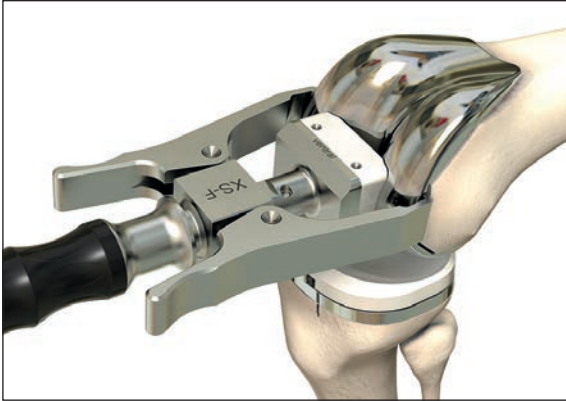
Thorough cleaning of the osteotomy surfaces is required (e.g. with a pulse lavage).

### Final implantation

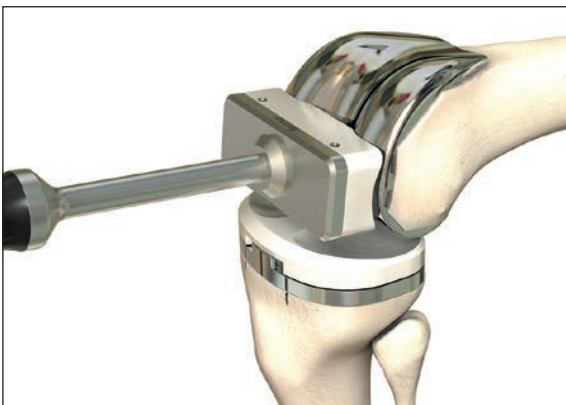
The cement should be in the early dough phase when applied. Follow the instructions for the specific bone cement.

For secure fixation of the Tibial Plateau in the bone, it is necessary that the tibial backside be fully cemented in the dough phase of the cement. The stem and fins may be cemented or not.

Failure to fully cement and pressurize the Tibial Plateau may lead to early loosening of the prosthesis. Furthermore, cementing in advanced stages of polymerization can lead to early loosening of the prosthesis.



**Fig. 46**



**Fig. 47**



**Fig. 48**

### **Remarks**

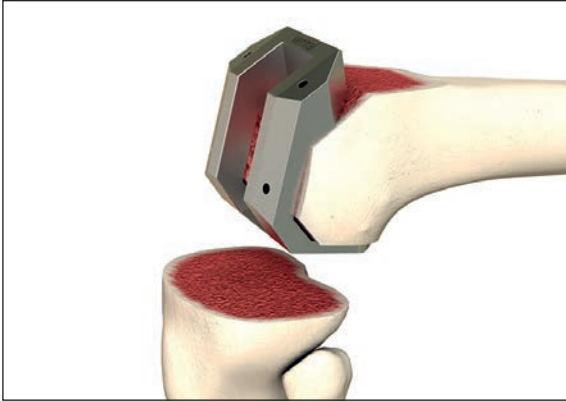
*Careful application of cement should be considered to avoid excess cement on the posterior parts of the femur and femoral component. Cement that extrudes posteriorly is difficult to remove.*

Insertion of the balanSys Tibial Plateau with the aid of the Tibial Impactor (Fig. 44).

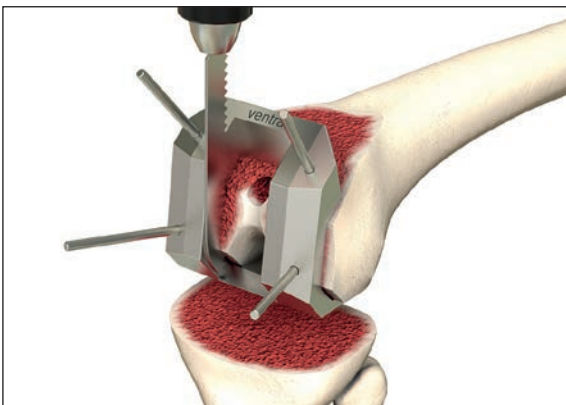
Insertion of the balanSys PE Inlay (Fig. 45).

Insertion of the balanSys Femur (cemented or uncemented) with the aid of the Femoral Holder (Fig. 46) and final impactation with the Femoral Impactor (Fig. 47).

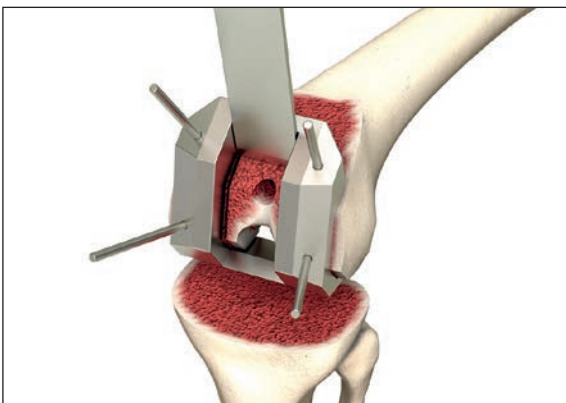
The leg should be in extension during hardening of the bone cement (Fig. 48).



**Fig. 49** Positioning of the Femur Box Cutting Guide



**Fig. 50**



**Fig. 50a**

### 3.2 balanSys PS

#### Femoral preparation

The appropriate size of the Femur Box Cutting Guide is placed onto the femur. It must rest flush onto the resected surfaces of the posterior and distal femur (Fig. 49).

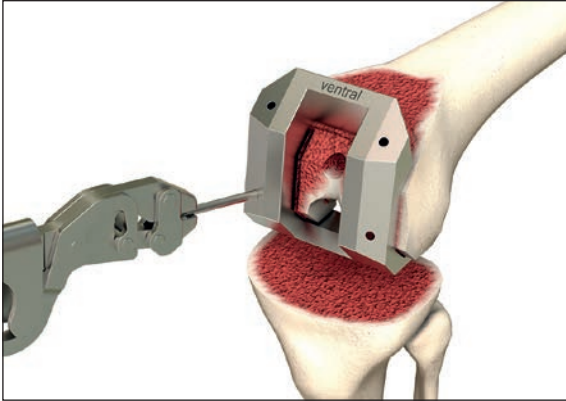
#### Remarks

*The authors recommend placing the Femur Box Cutting Guide slightly lateral for optimized patella tracking.*

The guide will contact the resected bone surfaces and must be secured to the femur with four Pins diagonally. The most posterior Pins have to be introduced first.

A reciprocating saw should be used and guided along the walls of the open box to cut the medial and lateral sides and the base of the intercondylar notch (Fig. 50).

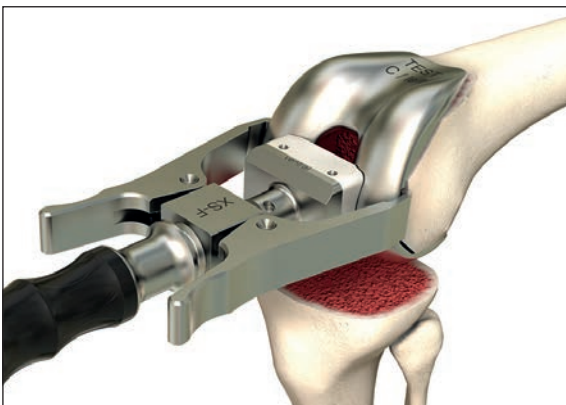
The base of the intercondylar notch can optionally be cut out with the balanSys chisel (Fig. 50a).



**Fig. 51** Removal of Pins with Pliers

After the cuts, the Femur Box Cutting Guide and the Pins are removed (Fig. 51) in the following order:

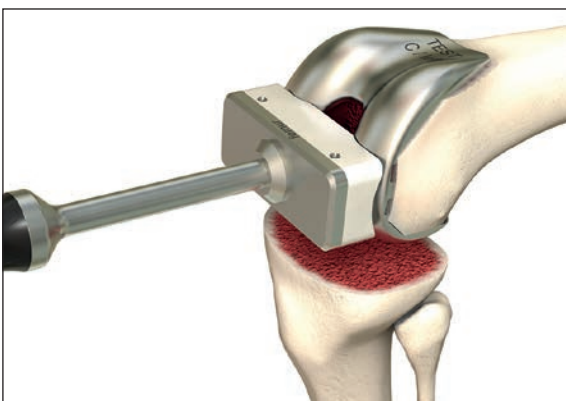
1. Pins
2. Cutting guide
3. Resected bone block



**Fig. 52** Insertion of the trial femur

#### **Determination of final implant position**

Insertion of the Trial Femur with the Femoral Holder (Fig. 52).

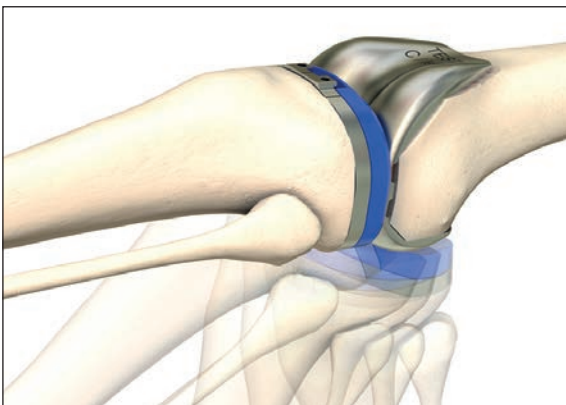


**Fig. 53** Fixation with the Femoral Impactor

Final fixation must be performed with the Femoral Impactor (Fig. 53).



**Fig. 54** Insertion of the Tibial Template and PE Trial Inlay



**Fig. 55** Full movement test of the knee joint

Once the femur is impacted, the tibia has to be subluxed anteriorly with Hohmann retractors in order to position the Tibial Template and the PS PE Trial Inlay (Fig. 54).

Insertion of the Tibial Template and the PS PE Trial Inlay in the predetermined dimension and positioning onto the resected tibia.

#### **Remarks**

*It must be ensured that the chosen template provides the desired tibial coverage and takes the chosen femur size into account.*

Repositioning of the extension apparatus.

#### **Remarks**

*If the patella is replaced, it is recommended by the authors to perform the patellar osteotomy and to position the patellar trial component before the knee is tested.*

With all the provisional PS components in place, the knee is tested with respect to maximal range of motion, stability, kinematics and mobility (Fig. 55).

The tibial component tends to seat itself in the position where it best articulates with the femur. Any desired adjustments should be made before the final position is marked.

After final placement has been determined, a cautery is used to mark the location of the laser etch lines on the anterior periphery of the Tibial Template.

Removal of the PE Trial Inlay and the Trial Femur.

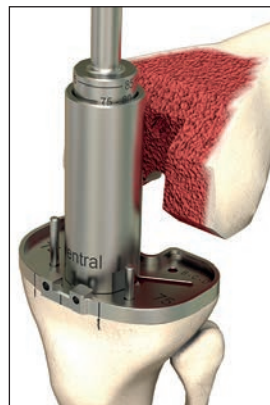




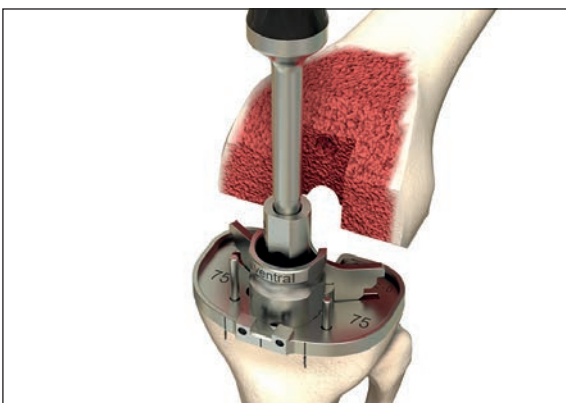
**Fig. 56** Fixation with Pins



**Fig. 57** Position of the Reamer Guide



**Fig. 58** Drill out of the tibial medullary space



**Fig. 59** Preparation of the fin

### Tibial preparation

Re-positioning of the Tibial Template according to the marking of the cautery and fixation with two anterior Pins (Fig. 56).

The Tibial Reamer must be connected to a power drill.

Position the Reamer guide onto the Tibial Template. The three pegs need to be positioned in the openings of the Tibial Template. Note the marking **«ventral»**. Lock the Reamer Guide to the Tibial Template by turning the Reamer slightly clockwise until stop. In this position, the Reamer Guide-Tibial Template assembly is locked (Fig. 57). Drill out the tibial medullary space (Fig. 58).

The depth must correspond to the appropriate length of the anchorage stem of the predetermined balanSys PS Tibial Plateau. Size markings are etched onto the Reamer.

Removal of the Reamer Guide.

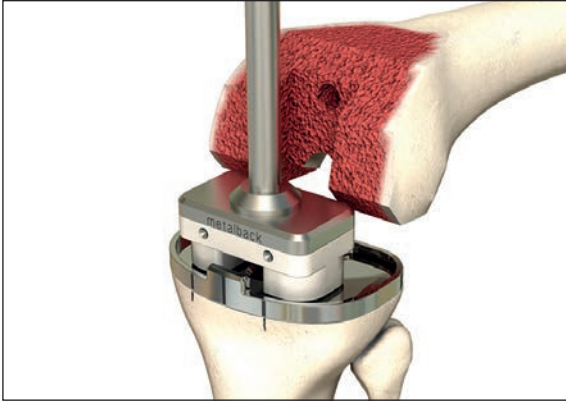
Assembling of the Fin Chisel with the Handle.

Position the Chisel Centring Guide onto the Tibial Template. The three pegs need to be positioned in the openings of the Tibial Template. Note the marking **«ventral»**. Lock the Chisel Centring Guide to the Tibial Template by turning it slightly clockwise until stop. In this position, the Chisel Centring Guide-Tibial Template assembly is locked. Impact the fin Chisel assembly with care to prevent fracture on the tibia (Fig. 59).

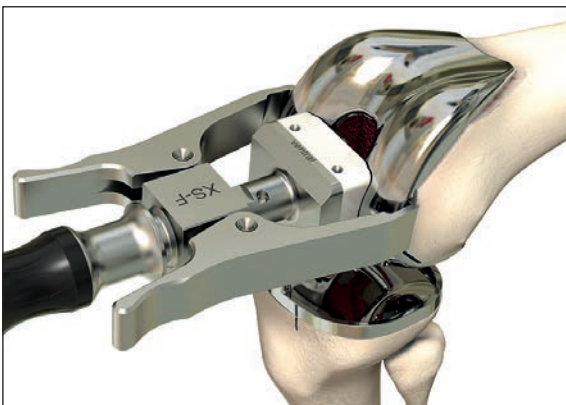
During introduction of the Fin Chisel care has to be taken to protect the lateral collateral ligament and the popliteal tendon when using a surgical technique with a medial approach.

Impacting until the instrument bottoms out on the Tibial Template. The depths of the fins are defined by the size of the Tibial Template.

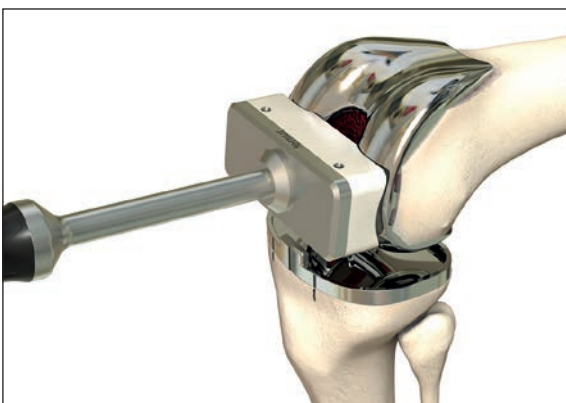
Removal of all remaining instruments.



**Fig. 60** Insert tibial component and impact it



**Fig. 61** Insertion of the femur



**Fig. 62** Final impaction with the Femoral Impactor

### Final implantation

After the implants have been chosen, one last check is recommended to ensure that the femoral, tibial, and PE inlay components match.

The cement should be in the early dough phase when applied. Follow the instructions for the specific bone cement.

For secure fixation of the Tibial Plateau in the bone, it is necessary that the tibial backside be fully cemented in the dough phase of the cement. The stem and fins may be cemented or not.

Failure to fully cement and pressurize the Tibial Plateau may lead to early loosening of the prosthesis. Furthermore, cementing in advanced stages of polymerization can lead to early loosening of the prosthesis.

### Remarks

*Careful application of cement should be considered to avoid excess cement on the posterior parts of the femur and femoral component. Cement that extrudes posteriorly is difficult to remove.*

For the final implantation, the knee should be in flexion.

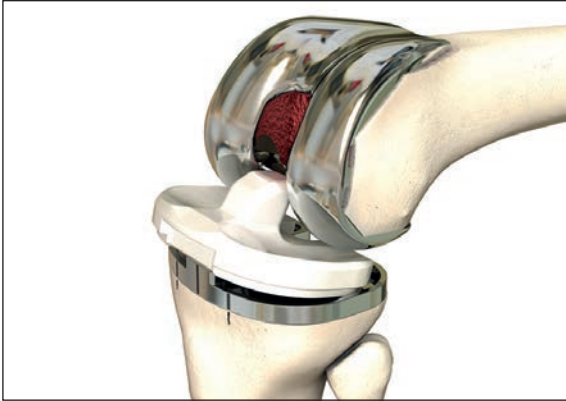
Insert the balanSys PS Tibial Plateau and impact it with the aid of the Tibial Impactor (Fig. 60).

The balanSys PS Femur component is placed onto the femur with the aid of the Femoral Holder (Fig. 61). The femoral condyles of the balanSys PS Femur must be protected in order to prevent any scratching.

Final impaction with the Femoral Impactor (Fig. 62).

### Remarks

*Removal of excess cement. It is strongly recommended to give extra care to remove cement along the proximal portion of the femoral component and the femoral box. The surface of the tibial plateau must be cleaned.*



**Fig. 63**

Insertion of the balanSys PS Inlay (Fig. 63).



**Fig. 64**

The leg should be in extension during hardening of the bone cement (Fig. 64).

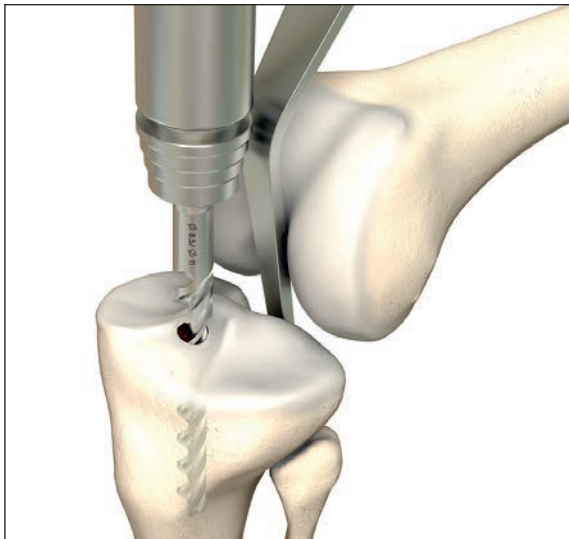
**Remarks**

*After insertion of the PE Inlay and hardening of the bone cement, extra care should be given to remove any remaining cement inside the femoral box.*



# Appendix

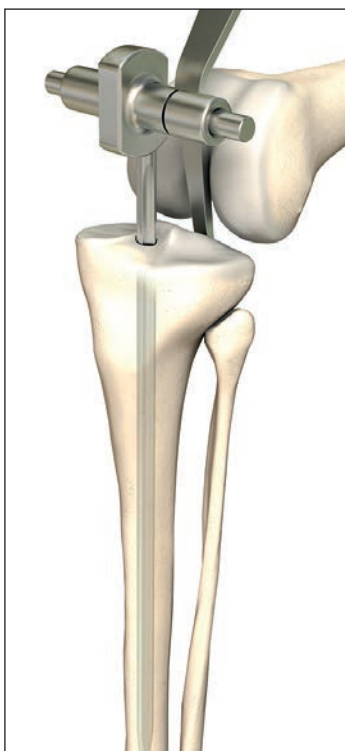
## 1 – Intramedullary tibial osteotomy



**Fig. 65** Opening of the medullary canal

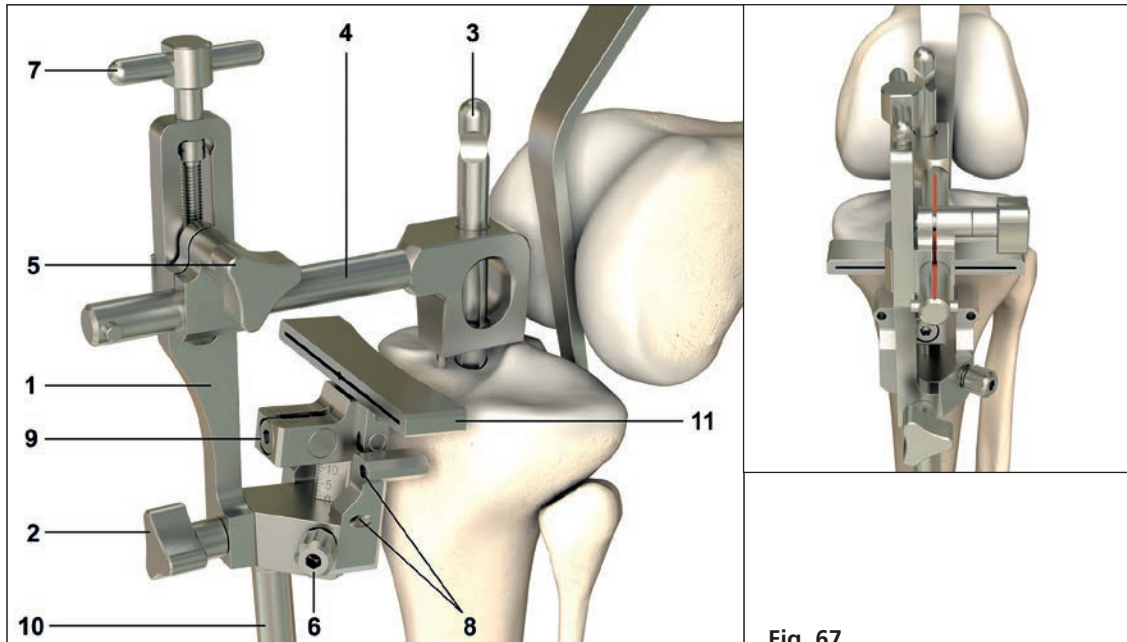
The tibial osteotomy can also be performed using intramedullary alignment.

The medullary canal is opened in the longitudinal axis at the eminentia with a 8.5 mm Drill (Fig. 65).



**Fig. 66**

Slow insertion of the Trs. Intramedullary Rod (Fig. 66).



**Fig. 67**

Positioning of the intramedullary aligned Tibial Reference System (Fig. 67)

- Connect the intramedullary Tibial Reference System (1) with the Trs. Aiming Device Proximal (10)
- Fix it with the screw (2)
- Slide pre-mounted equipment onto the Trs. Intramedullary Rod (3)
- Distal alignment of the Tibial Reference System to the second metatarsophalangeal bone and proximally to the transition of the medial to the middle third of the tibial tuberosity
- Impaction on the bracket (4)
- Adjustment of the varus-valgus angle with the aid of the adjusting screw (5)
- First set the Tibial Cutting Guide (11) to zero and fix it with the screw (6). Determine the slope. Use the Hexagonal Screwdriver to set the posterior slope in accordance with the anatomy, as required from 0°–11° (9)
- Determine the original joint line at the height of the best preserved tibial joint surface with the Reference Plate or Tibial Stylus
- The adjustment of the joint line is made with the aid of the T-screw (7)
- Fix the reference system proximally with at least two Pins in the specified holes (oblique and straight) (8)
- The holes are pre-drilled with the 3.2 mm drill.
- Adjust the tibial Cutting Guide 6–8 mm distally with the aid of the Hexagonal Screwdriver (6).
- Check the planned tibial osteotomy with the aid of the Reference Plate
- Removal screw of the intramedullary retainer (2) and the intramedullary aligned tibial resection instrument (1, 3, 4)

#### **Remarks**

*Our authors recommend a posterior slope of 7° for a cruciate retaining implant and up to 5° for a PCL substituting implant.*

For continuation see section «Tibial osteotomy», (Fig. 8).

# Appendix

## 2 – balanSys 3-Peg Patella

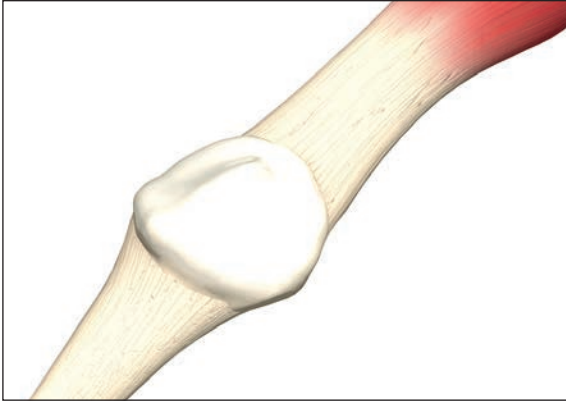


Fig. 68



Fig. 69

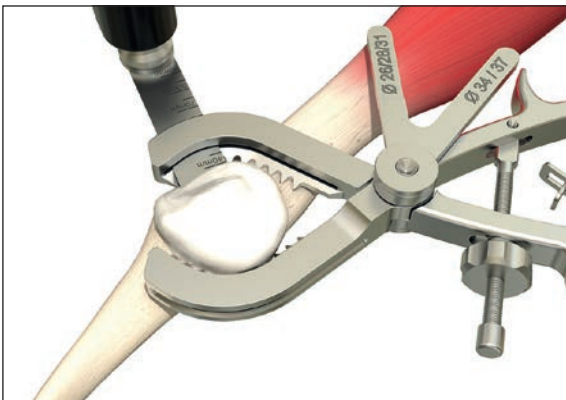


Fig. 70

Remove any marginal osteophytes.

Determine the size of the patella on the basis of the anatomical situation.

Dia	3-Peg FLAT	3-Peg
26	8 mm	–
28	8 mm	10.2 mm
31	8 mm	11.4 mm
34	9 mm	12.3 mm
37	9 mm	13.0 mm

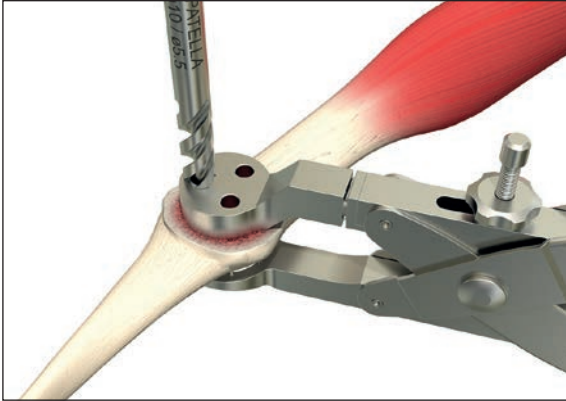
Evert the patella and grip centrally with the Patella Forceps.

Adjust the resection height with the height topper to the selected patellar size setting.

### Remarks

Ensure that you are using the Patella Resection Pliers Flat for the 3-Peg Patella FLAT (marked with sizes **26**–**37**) and the Patella Resection Pliers Standard for the 3-Peg Patella (marked with sizes **28**–**37**), respectively.

Perform the patellar osteotomy through the saw guide on lateral side of the Patella Forceps.



**Fig. 71**

Place the Drill Guide in order to determine the final positioning of the patella implant with regard to the predetermined gliding path of the femoral shield.

Drill the three patella peg holes with the 5.5 mm Drill Bit.



**Fig. 72**

Retro patellar surface prepared for implantation.

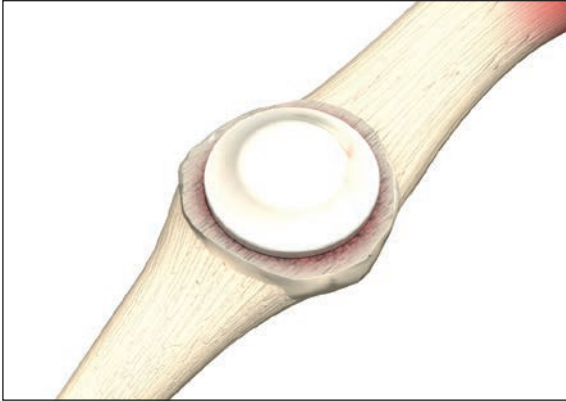


**Fig. 73**

Insert the Trial Patella of predetermined size (FLAT or standard).

Chamfer the medial and lateral edges of the rear surface of the patella.

Check the gliding movement in the femoro-patellar joint with respect to centering.

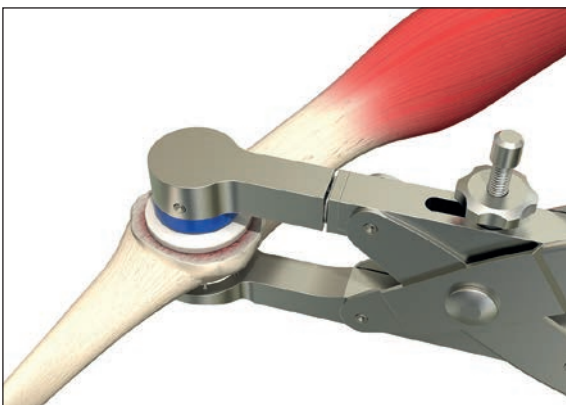


**Fig. 74**

Thoroughly clean the osteotomy surface.

Insertion of balanSys 3-Peg Patella cemented using the cement clamp.

Remove any marginal cement rests.



**Fig. 75**

After hardening of the cement remove the Cement Clamp.

After closing the joint capsule, make a final functional test and check the centred running of the patella.

# Appendix

## 3 – Item numbers of the balanSys implants

### balanSys Femur Components for CR/UC/RP

#### balanSys Femur, cemented



Item no.	Mediolat.	Size
72.15.3401	56 mm	XS left
72.15.3701	58 mm	S left
72.15.4001	60 mm	A left
72.15.4301	64 mm	B left
72.15.4601	68 mm	C left
72.15.4901	72 mm	D left
72.15.5201	76 mm	E left
72.15.5501	80 mm	F left
72.15.3402	56 mm	XS right
72.15.3702	58 mm	S right
72.15.4002	60 mm	A right
72.15.4302	64 mm	B right
72.15.4602	68 mm	C right
72.15.4902	72 mm	D right
72.15.5202	76 mm	E right
72.15.5502	80 mm	F right

**Material:** CoCrMo

#### balanSys Femur, uncemented



Item no.	Mediolat.	Size
73.15.3401TPS	56 mm	XS left
73.15.3701TPS	58 mm	S left
73.15.4001TPS	60 mm	A left
73.15.4301TPS	64 mm	B left
73.15.4601TPS	68 mm	C left
73.15.4901TPS	72 mm	D left
73.15.5201TPS	76 mm	E left
73.15.5501TPS	80 mm	F left
73.15.3402TPS	56 mm	XS right
73.15.3702TPS	58 mm	S right
73.15.4002TPS	60 mm	A right
73.15.4302TPS	64 mm	B right
73.15.4602TPS	68 mm	C right
73.15.4902TPS	72 mm	D right
73.15.5202TPS	76 mm	E right
73.15.5502TPS	80 mm	F right

**Material:** CoCrMo, TiCP coated

## balanSys Fixed Bearing Components

### balanSys CR PE Inlay



Item no.	Mediolat.	Size
74.30.5908	59 mm	8.0 mm
74.30.5910	59 mm	10.5 mm
74.30.5913	59 mm	13.0 mm
74.30.5915	59 mm	15.5 mm
74.30.6208	62 mm	8.0 mm
74.30.6210	62 mm	10.5 mm
74.30.6213	62 mm	13.0 mm
74.30.6215	62 mm	15.5 mm
74.30.6408	64 mm	8.0 mm
74.30.6410	64 mm	10.5 mm
74.30.6413	64 mm	13.0 mm
74.30.6415	64 mm	15.5 mm
74.30.6708	67 mm	8.0 mm
74.30.6710	67 mm	10.5 mm
74.30.6713	67 mm	13.0 mm
74.30.6715	67 mm	15.5 mm

**Material:** UHMWPE

Item no.	Mediolat.	Size
74.30.7008	70 mm	8.0 mm
74.30.7010	70 mm	10.5 mm
74.30.7013	70 mm	13.0 mm
74.30.7015	70 mm	15.5 mm
74.30.7508	75 mm	8.0 mm
74.30.7510	75 mm	10.5 mm
74.30.7513	75 mm	13.0 mm
74.30.7515	75 mm	15.5 mm
72.34.0170	80 mm	8.0 mm
72.34.0171	80 mm	10.5 mm
72.34.0172	80 mm	13.0 mm
72.34.0173	80 mm	15.5 mm
72.34.0174	85 mm	8.0 mm
72.34.0175	85 mm	10.5 mm
72.34.0176	85 mm	13.0 mm
72.34.0177	85 mm	15.5 mm



**vitamys®**

#### balanSys CR vitamys Inlay

Item no.	Mediolat.	Size
72.34.1000	59 mm	8.0 mm
72.34.1001	59 mm	9.0 mm
72.34.1002	59 mm	10.5 mm
72.34.1003	59 mm	11.5 mm
72.34.1004	59 mm	13.0 mm
72.34.1005	59 mm	15.5 mm
72.34.1010	62 mm	8.0 mm
72.34.1011	62 mm	9.0 mm
72.34.1012	62 mm	10.5 mm
72.34.1013	62 mm	11.5 mm
72.34.1014	62 mm	13.0 mm
72.34.1015	62 mm	15.5 mm
72.34.1020	64 mm	8.0 mm
72.34.1021	64 mm	9.0 mm
72.34.1022	64 mm	10.5 mm
72.34.1023	64 mm	11.5 mm
72.34.1024	64 mm	13.0 mm
72.34.1025	64 mm	15.5 mm
72.34.1030	67 mm	8.0 mm
72.34.1031	67 mm	9.0 mm
72.34.1032	67 mm	10.5 mm
72.34.1033	67 mm	11.5 mm
72.34.1034	67 mm	13.0 mm
72.34.1035	67 mm	15.5 mm

**Material:** VEPE

Item no.	Mediolat.	Size
72.34.1040	70 mm	8.0 mm
72.34.1041	70 mm	9.0 mm
72.34.1042	70 mm	10.5 mm
72.34.1043	70 mm	11.5 mm
72.34.1044	70 mm	13.0 mm
72.34.1045	70 mm	15.5 mm
72.34.1050	75 mm	8.0 mm
72.34.1051	75 mm	9.0 mm
72.34.1052	75 mm	10.5 mm
72.34.1053	75 mm	11.5 mm
72.34.1054	75 mm	13.0 mm
72.34.1055	75 mm	15.5 mm
72.34.1060	80 mm	8.0 mm
72.34.1061	80 mm	9.0 mm
72.34.1062	80 mm	10.5 mm
72.34.1063	80 mm	11.5 mm
72.34.1064	80 mm	13.0 mm
72.34.1065	80 mm	15.5 mm
72.34.1070	85 mm	8.0 mm
72.34.1071	85 mm	9.0 mm
72.34.1072	85 mm	10.5 mm
72.34.1073	85 mm	11.5 mm
72.34.1074	85 mm	13.0 mm
72.34.1075	85 mm	15.5 mm





### balanSys UC PE Inlay

Item no.	Mediolat.	Size
77.30.5908	59mm	8.0mm
77.30.5910	59mm	10.5mm
77.30.5913	59mm	13.0mm
77.30.5915	59mm	15.5mm
77.30.5918	59mm	18.0mm
77.30.5920	59mm	20.5mm
77.30.6208	62mm	8.0mm
77.30.6210	62mm	10.5mm
77.30.6213	62mm	13.0mm
77.30.6215	62mm	15.5mm
77.30.6218	62mm	18.0mm
77.30.6220	62mm	20.5mm
77.30.6408	64mm	8.0mm
77.30.6410	64mm	10.5mm
77.30.6413	64mm	13.0mm
77.30.6415	64mm	15.5mm
77.30.6418	64mm	18.0mm
77.30.6420	64mm	20.5mm
77.30.6708	67mm	8.0mm
77.30.6710	67mm	10.5mm
77.30.6713	67mm	13.0mm
77.30.6715	67mm	15.5mm
77.30.6718	67mm	18.0mm
77.30.6720	67mm	20.5mm

**Material:** UHMWPE

Item no.	Mediolat.	Size
77.30.7008	70mm	8.0mm
77.30.7010	70mm	10.5mm
77.30.7013	70mm	13.0mm
77.30.7015	70mm	15.5mm
77.30.7018	70mm	18.0mm
77.30.7020	70mm	20.5mm
77.30.7508	75mm	8.0mm
77.30.7510	75mm	10.5mm
77.30.7513	75mm	13.0mm
77.30.7515	75mm	15.5mm
77.30.7518	75mm	18.0mm
77.30.7520	75mm	20.5mm
72.34.0182	80mm	8.0mm
72.34.0183	80mm	10.5mm
72.34.0184	80mm	13.0mm
72.34.0185	80mm	15.5mm
72.34.0186	80mm	18.0mm
72.34.0187	80mm	20.5mm
72.34.0188	85mm	8.0mm
72.34.0189	85mm	10.5mm
72.34.0190	85mm	13.0mm
72.34.0191	85mm	15.5mm
72.34.0192	85mm	18.0mm
72.34.0193	85mm	20.5mm



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#### balanSys UC vitamys Inlay

Item no.	Mediolat.	Size
72.34.1100	59mm	8.0mm
72.34.1101	59mm	9.0mm
72.34.1102	59mm	10.5mm
72.34.1103	59mm	11.5mm
72.34.1104	59mm	13.0mm
72.34.1105	59mm	15.5mm
72.34.1106	59mm	18.0mm
72.34.1107	59mm	20.5mm*
72.34.1110	62mm	8.0mm
72.34.1111	62mm	9.0mm
72.34.1112	62mm	10.5mm
72.34.1113	62mm	11.5mm
72.34.1114	62mm	13.0mm
72.34.1115	62mm	15.5mm
72.34.1116	62mm	18.0mm
72.34.1117	62mm	20.5mm*
72.34.1120	64mm	8.0mm
72.34.1121	64mm	9.0mm
72.34.1122	64mm	10.5mm
72.34.1123	64mm	11.5mm
72.34.1124	64mm	13.0mm
72.34.1125	64mm	15.5mm
72.34.1126	64mm	18.0mm
72.34.1127	64mm	20.5mm*
72.34.1130	67mm	8.0mm
72.34.1131	67mm	9.0mm
72.34.1132	67mm	10.5mm
72.34.1133	67mm	11.5mm
72.34.1134	67mm	13.0mm
72.34.1135	67mm	15.5mm
72.34.1136	67mm	18.0mm
72.34.1137	67mm	20.5mm*

**Material:** VEPE

\* on request

Item no.	Mediolat.	Size
72.34.1140	70mm	8.0mm
72.34.1141	70mm	9.0mm
72.34.1142	70mm	10.5mm
72.34.1143	70mm	11.5mm
72.34.1144	70mm	13.0mm
72.34.1145	70mm	15.5mm
72.34.1146	70mm	18.0mm
72.34.1147	70mm	20.5mm*
72.34.1150	75mm	8.0mm
72.34.1151	75mm	9.0mm
72.34.1152	75mm	10.5mm
72.34.1153	75mm	11.5mm
72.34.1154	75mm	13.0mm
72.34.1155	75mm	15.5mm
72.34.1156	75mm	18.0mm
72.34.1157	75mm	20.5mm*
72.34.1160	80mm	8.0mm
72.34.1161	80mm	9.0mm
72.34.1162	80mm	10.5mm
72.34.1163	80mm	11.5mm
72.34.1164	80mm	13.0mm
72.34.1165	80mm	15.5mm
72.34.1166	80mm	18.0mm
72.34.1167	80mm	20.5mm*
72.34.1170	85mm	8.0mm
72.34.1171	85mm	9.0mm
72.34.1172	85mm	10.5mm
72.34.1173	85mm	11.5mm
72.34.1174	85mm	13.0mm
72.34.1175	85mm	15.5mm
72.34.1176	85mm	18.0mm
72.34.1177	85mm	20.5mm*



### balanSys PS Tibial Plateau, cemented

Item no.	Mediolateral
79.15.0400	59 mm
79.15.0401	62 mm
79.15.0056	64 mm
79.15.0402	67 mm
79.15.0057	70 mm
79.15.0058	75 mm
79.15.0059	80 mm
79.15.0060	85 mm

**Material:** CoCrMo

### balanSys Mobile Bearing RP Components

#### balanSys RP PE Inlay



Item no.	Femur	Size
72.34.0200	XS	8.0 mm
72.34.0201	XS	10.5 mm
72.34.0202	XS	13.0 mm
72.34.0203	XS	15.5 mm
72.34.0206	S	8.0 mm
72.34.0207	S	10.5 mm
72.34.0208	S	13.0 mm
72.34.0209	S	15.5 mm
78.30.6208	A	8.0 mm
78.30.6210	A	10.5 mm
78.30.6213	A	13.0 mm
78.30.6215	A	15.5 mm
78.30.6608	B	8.0 mm
78.30.6610	B	10.5 mm
78.30.6613	B	13.0 mm
78.30.6615	B	15.5 mm

**Material:** UHMWPE, FeCrNiMoMn  
(Contrast balls, optional)

Item no.	Femur	Size
78.30.7008	C	8.0 mm
78.30.7010	C	10.5 mm
78.30.7013	C	13.0 mm
78.30.7015	C	15.5 mm
78.30.7408	D	8.0 mm
78.30.7410	D	10.5 mm
78.30.7413	D	13.0 mm
78.30.7415	D	15.5 mm
78.30.7808	E	8.0 mm
78.30.7810	E	10.5 mm
78.30.7813	E	13.0 mm
78.30.7815	E	15.5 mm
72.34.0242	F	8.0 mm
72.34.0243	F	10.5 mm
72.34.0244	F	13.0 mm
72.34.0245	F	15.5 mm



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#### balanSys RP vitamys Inlay

Item no.	Femur	Size
72.34.1200	XS	8.0 mm
72.34.1201	XS	9.0 mm
72.34.1202	XS	10.5 mm
72.34.1203	XS	11.5 mm
72.34.1204	XS	13.0 mm
72.34.1205	XS	15.5 mm
72.34.1210	S	8.0 mm
72.34.1211	S	9.0 mm
72.34.1212	S	10.5 mm
72.34.1213	S	11.5 mm
72.34.1214	S	13.0 mm
72.34.1215	S	15.5 mm
72.34.1220	A	8.0 mm
72.34.1221	A	9.0 mm
72.34.1222	A	10.5 mm
72.34.1223	A	11.5 mm
72.34.1224	A	13.0 mm
72.34.1225	A	15.5 mm
72.34.1230	B	8.0 mm
72.34.1231	B	9.0 mm
72.34.1232	B	10.5 mm
72.34.1233	B	11.5 mm
72.34.1234	B	13.0 mm
72.34.1235	B	15.5 mm

**Material:** VEPE

Item no.	Femur	Size
72.34.1240	C	8.0 mm
72.34.1241	C	9.0 mm
72.34.1242	C	10.5 mm
72.34.1243	C	11.5 mm
72.34.1244	C	13.0 mm
72.34.1245	C	15.5 mm
72.34.1250	D	8.0 mm
72.34.1251	D	9.0 mm
72.34.1252	D	10.5 mm
72.34.1253	D	11.5 mm
72.34.1254	D	13.0 mm
72.34.1255	D	15.5 mm
72.34.1260	E	8.0 mm
72.34.1261	E	9.0 mm
72.34.1262	E	10.5 mm
72.34.1263	E	11.5 mm
72.34.1264	E	13.0 mm
72.34.1265	E	15.5 mm
72.34.1270	F	8.0 mm
72.34.1271	F	9.0 mm
72.34.1272	F	10.5 mm
72.34.1273	F	11.5 mm
72.34.1274	F	13.0 mm
72.34.1275	F	15.5 mm



#### balanSys RP Tibial Plateau, cemented

Item no.	Mediolateral
72.34.0059	59 mm
72.34.0060	62 mm
72.34.0061	64 mm
72.34.0062	67 mm
72.34.0063	70 mm
72.34.0064	75 mm
72.34.0065	80 mm
72.34.0066	85 mm

**Material:** CoCrMo



## balanSys PS Components

### balanSys PS Femur, cemented

Item no.	Mediolat.	Size
79.15.0999	56mm	XS right
79.15.1000	58mm	S right
79.15.0001	60mm	A right
79.15.0002	64mm	B right
79.15.0003	68mm	C right
79.15.0004	72mm	D right
79.15.0005	76mm	E right
79.15.1006	80mm	F right
79.15.1009	56mm	XS left
79.15.1010	58mm	S left
79.15.0011	60mm	A left
79.15.0012	64mm	B left
79.15.0013	68mm	C left
79.15.0014	72mm	D left
79.15.0015	76mm	E left
79.15.1016	80mm	F left

**Material:** CoCrMo



### balanSys PS PE Inlay

Item no.	Mediolat.	Size
79.30.9986	59 mm	8.0 mm
79.30.9987	59 mm	10.5 mm
79.30.9988	59 mm	13.0 mm
79.30.9989	59 mm	15.5 mm
79.30.9990	59 mm	18.0 mm
79.30.9991	59 mm	20.5 mm
79.30.9992	59 mm	23.0 mm
79.30.9993	62 mm	8.0 mm
79.30.9994	62 mm	10.5 mm
79.30.9995	62 mm	13.0 mm
79.30.9996	62 mm	15.5 mm
79.30.9997	62 mm	18.0 mm
79.30.9998	62 mm	20.5 mm
79.30.9999	62 mm	23.0 mm
79.30.0200	64 mm	8.0 mm
79.30.0201	64 mm	10.5 mm
79.30.0202	64 mm	13.0 mm
79.30.0203	64 mm	15.5 mm
79.30.0204	64 mm	18.0 mm
79.30.0205	64 mm	20.5 mm
79.30.0206	64 mm	23.0 mm
79.30.0210	67 mm	8.0 mm
79.30.0211	67 mm	10.5 mm
79.30.0212	67 mm	13.0 mm
79.30.0213	67 mm	15.5 mm
79.30.0214	67 mm	18.0 mm
79.30.0215	67 mm	20.5 mm
79.30.0216	67 mm	23.0 mm

**Material:** UHMWPE

Item no.	Mediolat.	Size
79.30.0010	70 mm	8.0 mm
79.30.0011	70 mm	10.5 mm
79.30.0012	70 mm	13.0 mm
79.30.0013	70 mm	15.5 mm
79.30.0014	70 mm	18.0 mm
79.30.0015	70 mm	20.5 mm
79.30.0016	70 mm	23.0 mm
79.30.0020	75 mm	8.0 mm
79.30.0021	75 mm	10.5 mm
79.30.0022	75 mm	13.0 mm
79.30.0023	75 mm	15.5 mm
79.30.0024	75 mm	18.0 mm
79.30.0025	75 mm	20.5 mm
79.30.0026	75 mm	23.0 mm
72.34.0255	80 mm	8.0 mm
72.34.0256	80 mm	10.5 mm
72.34.0257	80 mm	13.0 mm
72.34.0258	80 mm	15.5 mm
72.34.0259	80 mm	18.0 mm
72.34.0260	80 mm	20.5 mm
72.34.0261	80 mm	23.0 mm
72.34.0262	85 mm	8.0 mm
72.34.0263	85 mm	10.5 mm
72.34.0264	85 mm	13.0 mm
72.34.0265	85 mm	15.5 mm
72.34.0266	85 mm	18.0 mm
72.34.0267	85 mm	20.5 mm
72.34.0268	85 mm	23.0 mm





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### balanSys PS vitamys Inlay

Item no.	Mediolat.	Size
72.34.1300	59mm	8.0mm
72.34.1301	59mm	9.0mm
72.34.1302	59mm	10.5mm
72.34.1303	59mm	11.5mm
72.34.1304	59mm	13.0mm
72.34.1305	59mm	15.5mm
72.34.1306	59mm	18.0mm
72.34.1307	59mm	20.5mm*
72.34.1310	62mm	8.0mm
72.34.1311	62mm	9.0mm
72.34.1312	62mm	10.5mm
72.34.1313	62mm	11.5mm
72.34.1314	62mm	13.0mm
72.34.1315	62mm	15.5mm
72.34.1316	62mm	18.0mm
72.34.1317	62mm	20.5mm*
72.34.1320	64mm	8.0mm
72.34.1321	64mm	9.0mm
72.34.1322	64mm	10.5mm
72.34.1323	64mm	11.5mm
72.34.1324	64mm	13.0mm
72.34.1325	64mm	15.5mm
72.34.1326	64mm	18.0mm
72.34.1327	64mm	20.5mm*
72.34.1330	67mm	8.0mm
72.34.1331	67mm	9.0mm
72.34.1332	67mm	10.5mm
72.34.1333	67mm	11.5mm
72.34.1334	67mm	13.0mm
72.34.1335	67mm	15.5mm
72.34.1336	67mm	18.0mm
72.34.1337	67mm	20.5mm*

**Material:** VEPE

\* on request

Item no.	Mediolat.	Size
72.34.1340	70mm	8.0mm
72.34.1341	70mm	9.0mm
72.34.1342	70mm	10.5mm
72.34.1343	70mm	11.5mm
72.34.1344	70mm	13.0mm
72.34.1345	70mm	15.5mm
72.34.1346	70mm	18.0mm
72.34.1347	70mm	20.5mm*
72.34.1350	75mm	8.0mm
72.34.1351	75mm	9.0mm
72.34.1352	75mm	10.5mm
72.34.1353	75mm	11.5mm
72.34.1354	75mm	13.0mm
72.34.1355	75mm	15.5mm
72.34.1356	75mm	18.0mm
72.34.1357	75mm	20.5mm*
72.34.1360	80mm	8.0mm
72.34.1361	80mm	9.0mm
72.34.1362	80mm	10.5mm
72.34.1363	80mm	11.5mm
72.34.1364	80mm	13.0mm
72.34.1365	80mm	15.5mm
72.34.1366	80mm	18.0mm
72.34.1367	80mm	20.5mm*
72.34.1370	85mm	8.0mm
72.34.1371	85mm	9.0mm
72.34.1372	85mm	10.5mm
72.34.1373	85mm	11.5mm
72.34.1374	85mm	13.0mm
72.34.1375	85mm	15.5mm
72.34.1376	85mm	18.0mm
72.34.1377	85mm	20.5mm*



## balanSys TiNbN Components

### balanSys Femur TiNbN, cemented

Item no.	Mediolat.	Size
72.23.3401	56 mm	XS left
72.23.3701	58 mm	S left
72.23.4001	60 mm	A left
72.23.4301	64 mm	B left
72.23.4601	68 mm	C left
72.23.4901	72 mm	D left
72.23.5201	76 mm	E left
72.23.5501	80 mm	F left

Item no.	Mediolat.	Size
72.23.3402	56 mm	XS right
72.23.3702	58 mm	S right
72.23.4002	60 mm	A right
72.23.4302	64 mm	B right
72.23.4602	68 mm	C right
72.23.4902	72 mm	D right
72.23.5202	76 mm	E right
72.23.5502	80 mm	F right

**Material:** CoCrMo, TiNbN coating



### balanSys PS Tibial Plateau TiNbN Fix, cemented

Item no.	Mediolateral
79.23.0400	59 mm
79.23.0401	62 mm
79.23.0056	64 mm
79.23.0402	67 mm

Item no.	Mediolateral
79.23.0057	70 mm
79.23.0058	75 mm
79.23.0059	80 mm
79.23.0060	85 mm

**Material:** CoCrMo, TiNbN coating



### balanSys PS Femur TiNbN, cemented

Item no.	Mediolat.	Size
79.23.1009	56 mm	XS left
79.23.1010	58 mm	S left
79.23.0011	60 mm	A left
79.23.0012	64 mm	B left
79.23.0013	68 mm	C left
79.23.0014	72 mm	D left
79.23.0015	76 mm	E left
79.23.1016	80 mm	F left

Item no.	Mediolat.	Size
79.23.0999	56 mm	XS right
79.23.1000	58 mm	S right
79.23.0001	60 mm	A right
79.23.0002	64 mm	B right
79.23.0003	68 mm	C right
79.23.0004	72 mm	D right
79.23.0005	76 mm	E right
79.23.1006	80 mm	F right

**Material:** CoCrMo, TiNbN coating



### balanSys 3-Peg Patella FLAT Components

Item no.	Diameter Ø
72.34.0049	26mm
72.34.0050	28mm
72.34.0051	31 mm
72.34.0052	34mm
72.34.0053	37 mm

**Material:** UHMWPE,  
FeCrNiMoMn (Contrast balls)



### balanSys 3-Peg Patella Components



Item no.	Diameter Ø
72.30.0128	28mm
72.30.0131	31 mm
72.30.0134	34mm
72.30.0137	37 mm

**Material:** UHMWPE,  
FeCrNiMoMn (Contrast balls)



# Appendix

## 4 – balanSys implant size and compatibility

### balanSys Fixed Bearing CR and UC

		Femur 							
 Tibia/Inlay		XS	S	A	B	C	D	E	F
	59/40	✓	✓						
	62/42	✓	✓	✓					
	64/45		✓	✓	✓				
	67/46			✓	✓				
	70/48			✓	✓	✓			
	75/51				✓	✓	✓		
	80/53					✓	✓	✓	✓
	85/55						✓	✓	✓

### balanSys PS

		<div>Femur</div>							
<div>Tibia/Inlay</div>		XS	S	A	B	C	D	E	F
	59/40	✓	✓						
	62/42	✓	✓	✓					
	64/45		✓	✓	✓				
	67/46			✓	✓				
	70/48			✓	✓	✓			
	75/51				✓	✓	✓		
	80/53					✓	✓	✓	✓
	85/55						✓	✓	✓

### balanSys Mobile Bearing RP

		Femur/Inlay							
Tibia		XS	S	A	B	C	D	E	F
	59/40	✓	✓						
	62/42	✓	✓	✓					
	64/45		✓	✓	✓				
	67/46			✓	✓				
	70/48			✓	✓	✓			
	75/51				✓	✓	✓		
	80/53					✓	✓	✓	✓
	85/55						✓	✓	✓

# Appendix

## 5 – Item numbers of the balanSys instruments

### **Basic instruments**

balanSys Basic Set 71.34.9000A	52
balanSys Basic Trial Set Essential 71.34.9005A	57

### **Surgical technique**

balanSys Combination 4in1 71.34.9040A	61
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### **Trial instruments**

balanSys Trial Set CR/UC	63
balanSys Trial Set PS	68
balanSys Trial Set RP	74

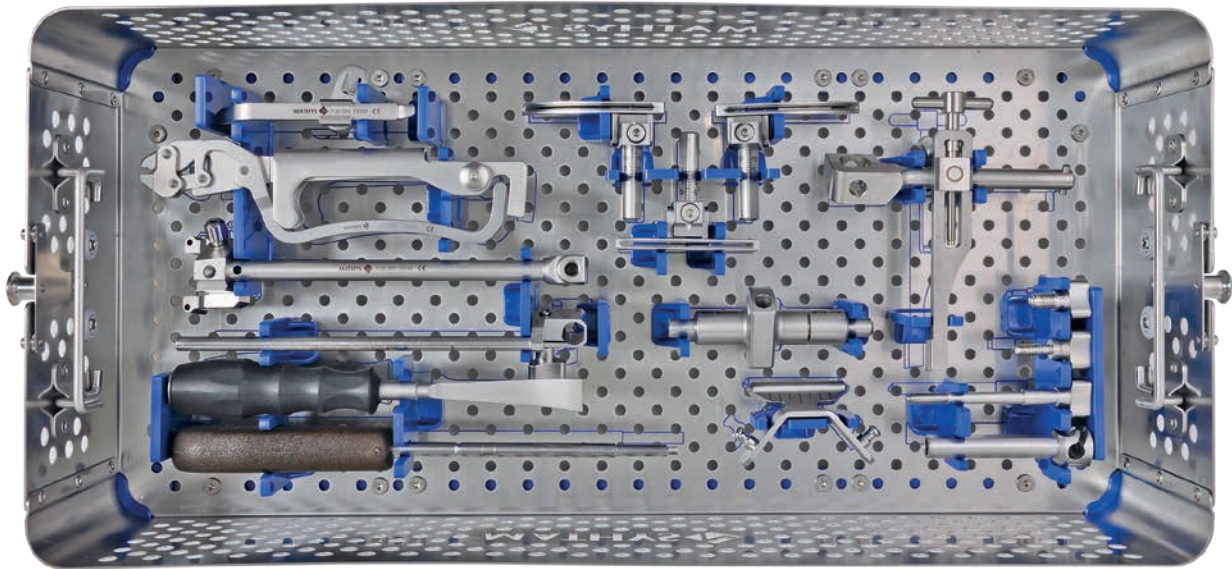
### **Patella instruments**

balanSys 3-Peg Patella FLAT 71.34.0080A	78
balanSys 3-Peg Patella STANDARD 71.34.0081A	78

**Before each surgery, instruments should be checked for damage or deformation.  
Use only undamaged instruments. Do not use trial components with marks or scratches.**

**balanSys Basic Set 71.34.9000A**

No Picture / 71.34.0545 **balanSys Basic Set Lid**



71.34.0546 **balanSys Basic Set Tray**





Item no.		Qty
71.02.3096	balanSys tibial stylus	1

Item no.		Qty
71.02.3006	balanSys pliers	1

Item no.		Qty
71.02.3032	balanSys Trs. aiming device proximal	1

Item no.		Qty
71.02.3034	balanSys Trs. aiming device distal	1

Item no.		Qty
71.34.0686	balanSys osteophyte chisel, curved	1

Item no.		Qty
314.270	Screwdriver, hex., 3.5	1

Item no.		Qty
71.02.4018	balanSys tibial cutting guide 1.3	1

Item no.		Qty
71.02.3083	balanSys Trs. tibial cut. guide ri. LIS	1

Item no.		Qty
71.02.3084	balanSys Trs. tibial cut. guide lft LIS	1

Item no.		Qty
71.02.3043	balanSys Trs. handle f/intramedullary rod	1

Item no.		Qty
71.02.3035	balanSys Trs. ankle holder	1



Item no.	Qty
77.02.0041	1

balanSys Trs. Connecting Screw

Item no.	Qty
77.02.0019	1

balanSys Trs. Screw

Item no.	Qty
77.02.0043	1

balanSys Trs. Locking Bolt

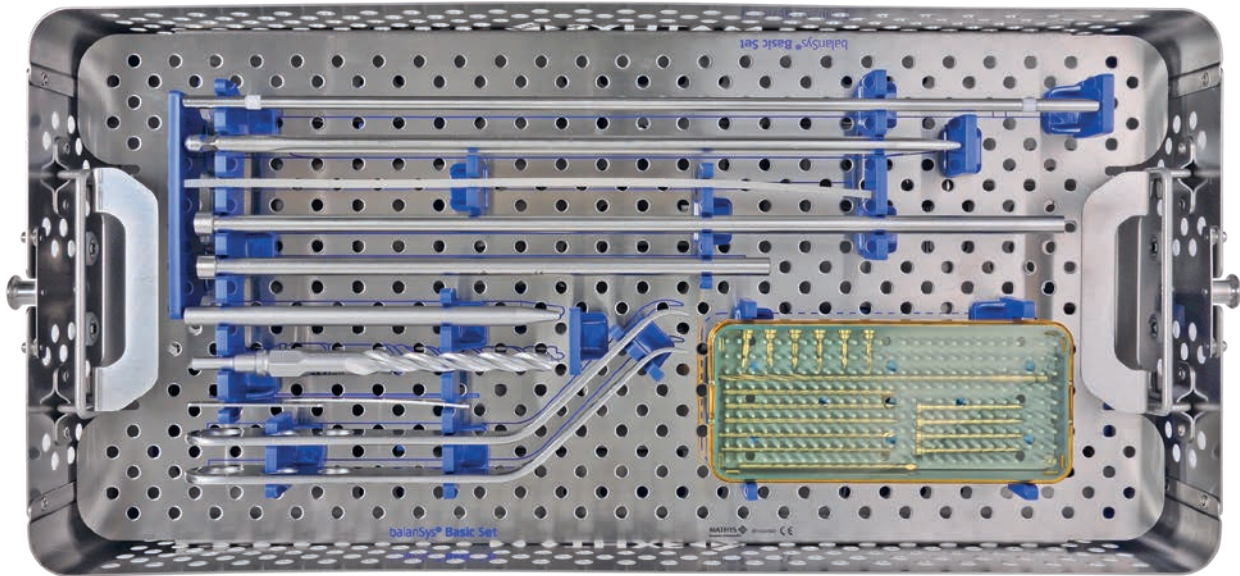
Item no.	Qty
71.02.3036	1

balanSys Trs. Distal Connector

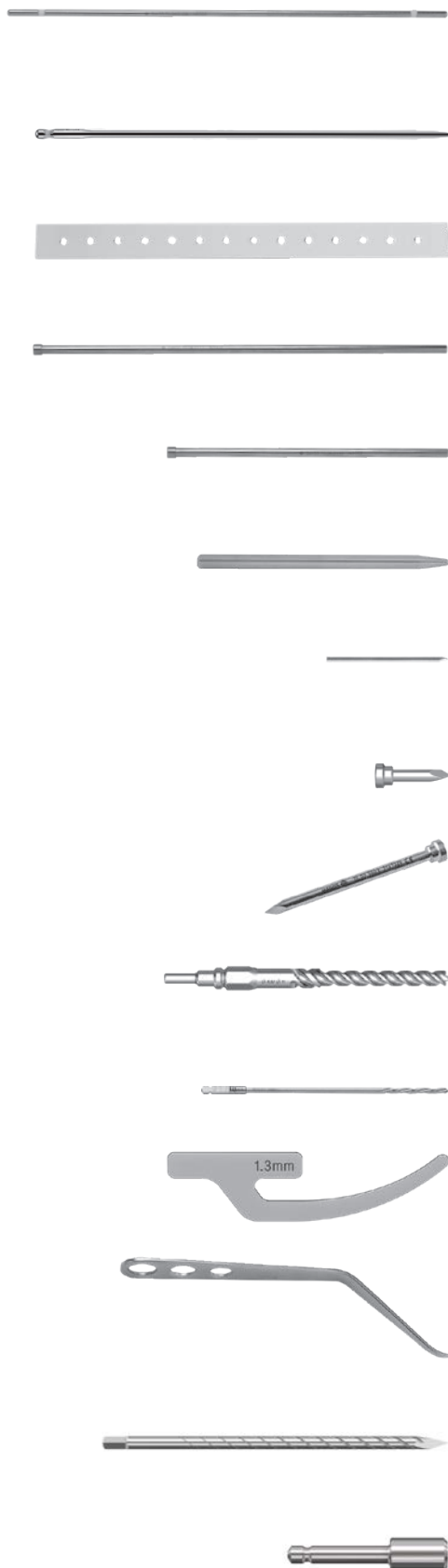
Item no.	Qty
71.02.3041	1

balanSys Trs. Intramedullary Shackle

**balanSys Basic Set 71.34.9000A**



71.34.0547 **balanSys Basic Set Tray Insert**



Item no.	Qty
70.04.0109	balanSys alignment rod centre piece

Item no.	Qty
71.02.3042	balanSys Trs. intramedullary rod

Item no.	Qty
71.02.1005	balanSys Trs. rubber band 3x25x300

Item no.	Qty
70.04.0111	balanSys alignment rod long

Item no.	Qty
70.04.0110	balanSys alignment rod short

Item no.	Qty
71.02.3014	balanSys impaction/extraction rod

Item no.	Qty
71.02.3054	balanSys pin 3.2/80

Item no.	Qty
71.34.0108	balanSys Pin with Head 3.2/20

Item no.	Qty
71.02.3003	Pin with head, Ø3.2/6.5x52

Item no.	Qty
71.34.0100	balanSys drill bit 8.5/11 mm

Item no.	Qty
315.310	AO Drill bit 3.2

Item no.	Qty
71.34.0107	balanSys feeler plate 1.3

Item no.	Qty
71.02.3005	balanSys bone retractor

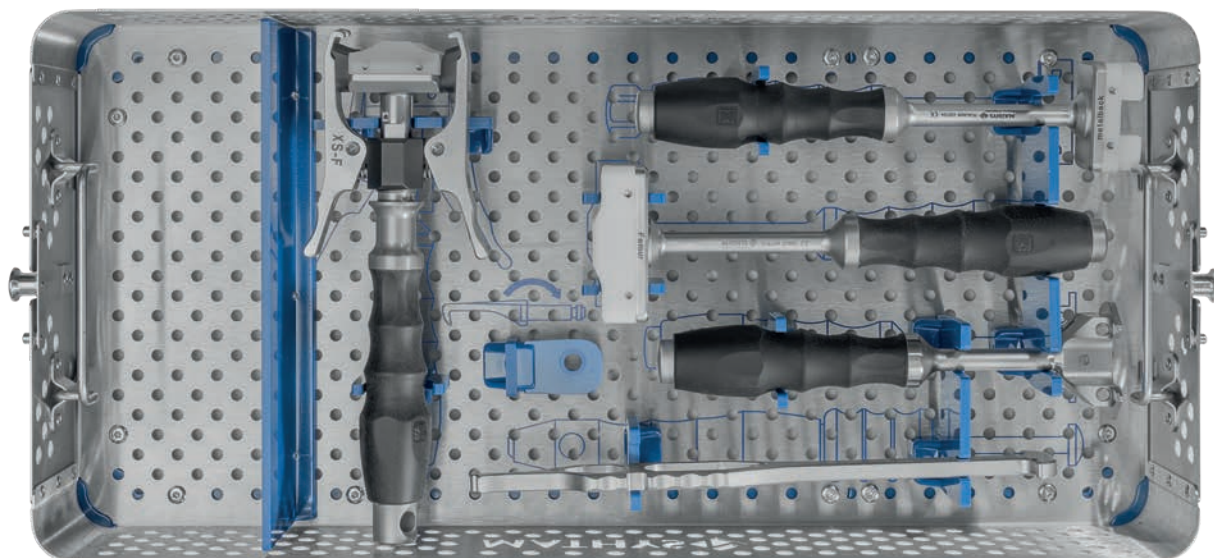
#### Optional

Item no.	Qty
71.34.0647	Drill Pin 3.2 mm x 89 mm

Item no.	Qty
71.34.0787	Quick Coupling Square 2.25 (Adapter for Drill Pin)

**balanSys Basic Trial Set Essential 71.34.9005A**

No Picture / 71.34.0203 **balanSys Trial Set Essential No. 1 Lid**



71.34.0204 **balanSys Trial Set Essential No. 1 Tray**



Item no.		Qty
71.34.0744	balanSys Femur Holder XS-F	1

Item no.		Qty
71.34.0698	balanSys tibial impactor	1

Item no.		Qty
71.34.0699	balanSys femoral impactor	1

Item no.		Qty
71.34.0240	balanSys positioner for tibial plateau	1

Item no.		Qty
71.34.0788	balanSys Femur Extractor	1

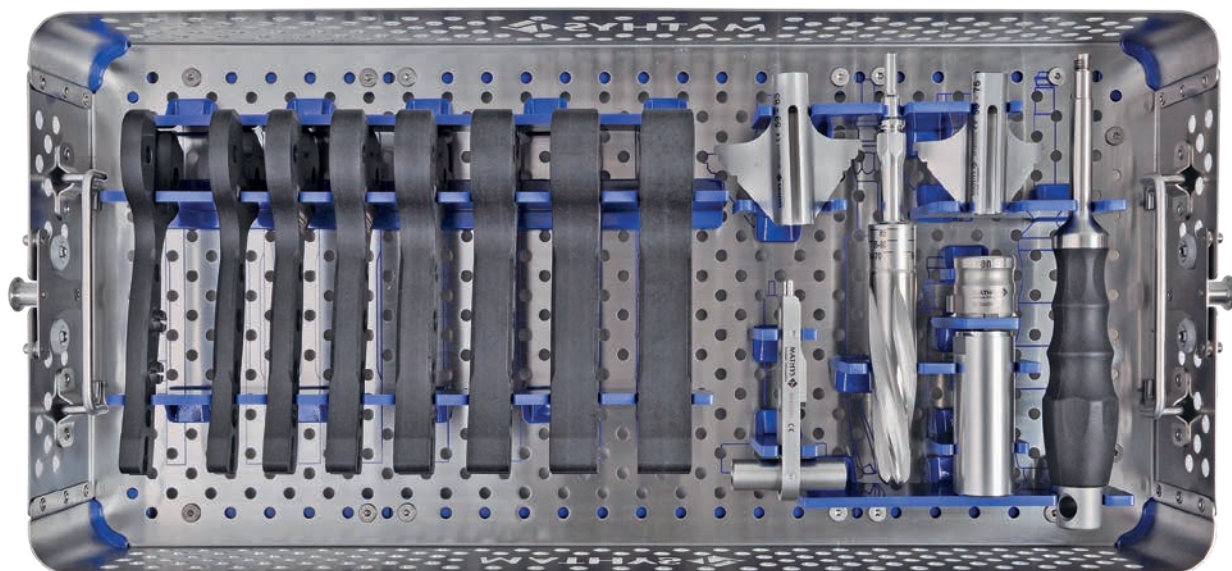
#### Optional instruments

Item no.		Qty
71.34.0745	balanSys Femur Holder XS-D	1



**balanSys Trial Set Essential 71.34.9005A**

No Picture / 71.34.0205 **balanSys Trial Set Essential No. 2 Lid**



71.34.0206 **balanSys Trial Set Essential No. 2 Tray**



Item no.	Description	Qty
79.02.0651	balanSys Spacer block femur 9	1

Item no.	Description	Qty
79.02.0640	balanSys Spacer block tibia 8	1
71.34.0947	balanSys Spacer block tibia 9 *	1
79.02.0641	balanSys Spacer block tibia 10.5	1
71.34.0948	balanSys Spacer block tibia 11.5 *	1
79.02.0642	balanSys Spacer block tibia 13	1
79.02.0643	balanSys Spacer block tibia 15.5	1
79.02.0644	balanSys Spacer block tibia 18	1
79.02.0645	balanSys Spacer block tibia 20.5	1
79.02.0646	balanSys Spacer block tibia 23	1

\* balanSys PE Inlays 9 mm and 11.5 mm are available in vitamys only.



Item no.	Description	Qty
71.34.0198	balanSys Fin Chisel 59–85	1
71.34.0199	balanSys Fin Chisel 59–75	1



Item no.	Description	Qty
71.34.0197	balanSys Chisel Centering Guide	1



Item no.	Description	Qty
71.34.0196	balanSys holder tibial template	1



Item no.	Description	Qty
71.34.0200	balanSys Reamer	1

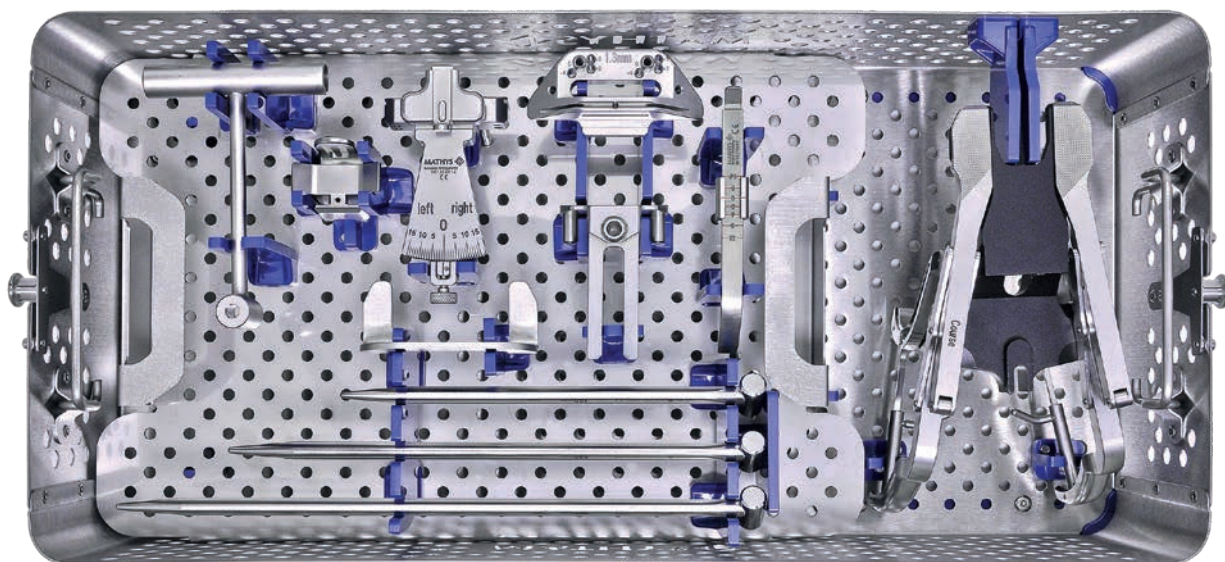


Item no.	Description	Qty
71.34.0201	balanSys Reamer Guide	1

Item no.	Description	Qty
71.34.0700	balanSys handle for tib. cutting chisel	1

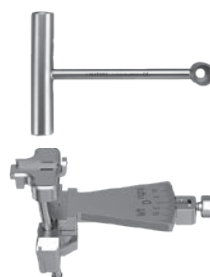
**balanSys Combination 4in1 71.34.9040A**

No Picture / 71.34.0185 **balanSys combination 4in1 Lid**



71.34.0187 **balanSys Combination 4in1 Tray Insert**

71.34.0186 **balanSys Combination 4in1 Tray**



Item no.		Qty
71.02.2104	balanSys intramedullary rod 190	1
71.02.2105	balanSys intramedullary rod 240	1
71.02.2106	balanSys intramedullary rod 290	1

Item no.		Qty
71.02.2110	balanSys handle f/intramedullary rod	1

Item no.		Qty
71.34.0115	balanSys Angle guide	1

Item no.		Qty
71.34.0116	adapter for angle guide	1

Item no.		Qty
71.34.0143	balanSys Femoral feeler 8G	1

Item no.		Qty
71.34.0168	balanSys Spacer 8G	1

Item no.		Qty
71.34.0606	balanSys Drill Guide 4in1 CuttBlock 8G	1

Item no.		Qty
71.02.3018	balanSys ligament tensor	1

Item no.		Qty
71.34.0121	balanSys Distal Cutting Guide STANDARD	1

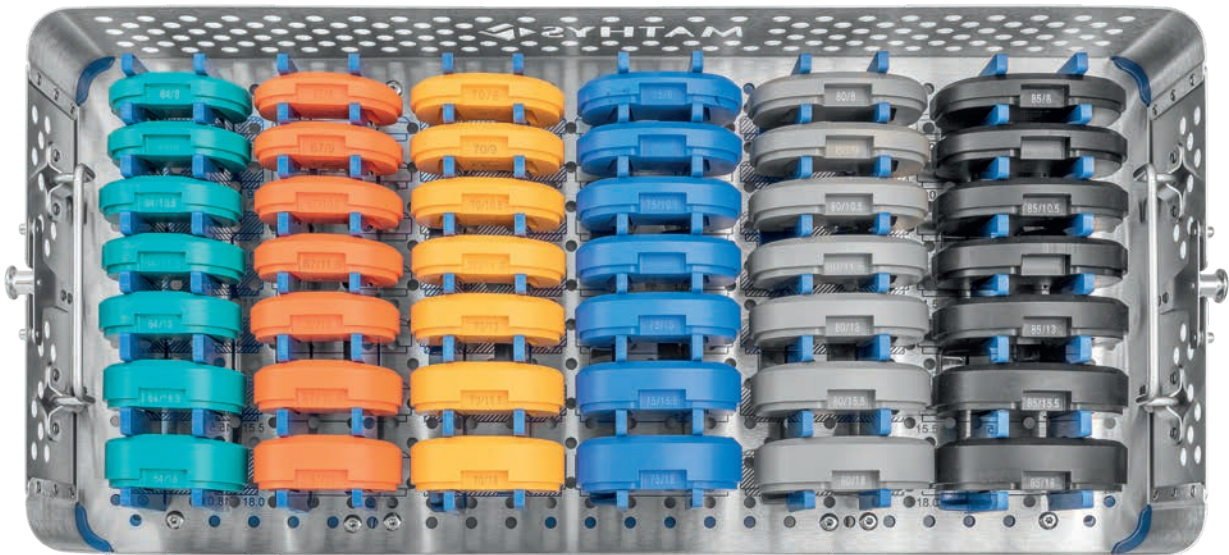
### Optional instruments

NOT part of the standard configuration and must be ordered separately:

Item no.		Qty
71.34.0128	balanSys Distal Cutting Guide MINI	1

**balanSys Trial Set CR/UC No. 1**

No Picture / 71.34.0241 **balanSys Trial Set CR/UC No. 1 Lid**







Item no.	Description	Qty
71.34.0357	balanSys PE Trial Inlay 59/8	1
71.34.0949	balanSys PE Trial Inlay 59/9*	1
71.34.0358	balanSys PE Trial Inlay 59/10.5	1
71.34.0950	balanSys PE Trial Inlay 59/11.5*	1
71.34.0359	balanSys PE Trial Inlay 59/13	1
71.34.0360	balanSys PE Trial Inlay 59/15.5	1
71.34.0361	balanSys PE Trial Inlay 59/18	1
71.34.0362	balanSys PE Trial Inlay 59/20.5	1
71.34.0210	balanSys PE Trial Inlay 62/8	1
71.34.0951	balanSys PE Trial Inlay 62/9*	1
71.34.0211	balanSys PE Trial Inlay 62/10.5	1
71.34.0952	balanSys PE Trial Inlay 62/11.5*	1
71.34.0212	balanSys PE Trial Inlay 62/13	1
71.34.0213	balanSys PE Trial Inlay 62/15.5	1
71.34.0214	balanSys PE Trial Inlay 62/18	1
71.34.0215	balanSys PE Trial Inlay 62/20.5	1
71.34.0216	balanSys PE Trial Inlay 64/8	1
71.34.0953	balanSys PE Trial Inlay 64/9*	1
71.34.0217	balanSys PE Trial Inlay 64/10.5	1
71.34.0954	balanSys PE Trial Inlay 64/11.5*	1
71.34.0218	balanSys PE Trial Inlay 64/13	1
71.34.0219	balanSys PE Trial Inlay 64/15.5	1
71.34.0220	balanSys PE Trial Inlay 64/18	1
71.34.0221	balanSys PE Trial Inlay 64/20.5	1
71.34.0222	balanSys PE Trial Inlay 67/8	1
71.34.0955	balanSys PE Trial Inlay 67/9*	1
71.34.0223	balanSys PE Trial Inlay 67/10.5	1
71.34.0956	balanSys PE Trial Inlay 67/11.5*	1
71.34.0224	balanSys PE Trial Inlay 67/13	1
71.34.0225	balanSys PE Trial Inlay 67/15.5	1
71.34.0226	balanSys PE Trial Inlay 67/18	1
71.34.0227	balanSys PE Trial Inlay 67/20.5	1
71.34.0477	balanSys PE Trial Inlay 70/8	1
71.34.0957	balanSys PE Trial Inlay 70/9*	1
71.34.0478	balanSys PE Trial Inlay 70/10.5	1
71.34.0958	balanSys PE Trial Inlay 70/11.5*	1
71.34.0479	balanSys PE Trial Inlay 70/13	1
71.34.0480	balanSys PE Trial Inlay 70/15.5	1
71.34.0481	balanSys PE Trial Inlay 70/18	1
71.34.0482	balanSys PE Trial Inlay 70/20.5	1

\* balanSys PE Inlays 9mm and 11.5mm are available in vitamys only.

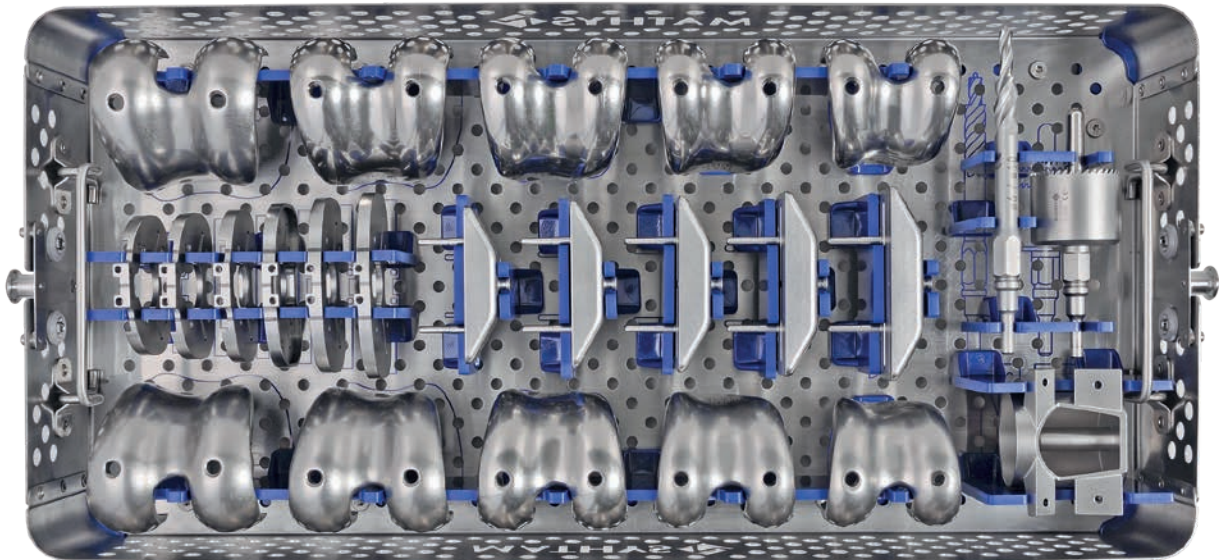


Item no.	Description	Qty
71.34.0483	balanSys PE Trial Inlay 75/8	1
71.34.0959	balanSys PE Trial Inlay 75/9*	1
71.34.0484	balanSys PE Trial Inlay 75/10.5	1
71.34.0960	balanSys PE Trial Inlay 75/11.5*	1
71.34.0485	balanSys PE Trial Inlay 75/13	1
71.34.0486	balanSys PE Trial Inlay 75/15.5	1
71.34.0487	balanSys PE Trial Inlay 75/18	1
71.34.0488	balanSys PE Trial Inlay 75/20.5	1
71.34.0228	balanSys PE Trial Inlay 80/8	1
71.34.0961	balanSys PE Trial Inlay 80/9*	1
71.34.0229	balanSys PE Trial Inlay 80/10.5	1
71.34.0962	balanSys PE Trial Inlay 80/11.5*	1
71.34.0230	balanSys PE Trial Inlay 80/13	1
71.34.0231	balanSys PE Trial Inlay 80/15.5	1
71.34.0232	balanSys PE Trial Inlay 80/18	1
71.34.0233	balanSys PE Trial Inlay 80/20.5	1
71.34.0234	balanSys PE Trial Inlay 85/8	1
71.34.0963	balanSys PE Trial Inlay 85/9*	1
71.34.0235	balanSys PE Trial Inlay 85/10.5	1
71.34.0964	balanSys PE Trial Inlay 85/11.5*	1
71.34.0236	balanSys PE Trial Inlay 85/13	1
71.34.0237	balanSys PE Trial Inlay 85/15.5	1
71.34.0238	balanSys PE Trial Inlay 85/18	1
71.34.0239	balanSys PE Trial Inlay 85/20.5	1

\* balanSys PE Inlays 9mm and 11.5mm are available in vitamys only.

## balanSys Trial Set CR/UC No. 2

No Picture / 71.34.0243 **balanSys Trial Set CR/UC No. 2 Lid**



71.34.0244 **balanSys Trial Set CR/UC No. 2 Tray**



Item no.	Description	Qty
71.34.0355	balanSys trial femur XS left	1
71.34.0356	balanSys trial femur XS right	1
71.34.0504	balanSys trial femur S left	1
71.34.0505	balanSys trial femur S right	1
71.02.4001	balanSys trial femur A left	1
71.02.4002	balanSys trial femur A right	1
71.02.4301	balanSys trial femur B left	1
71.02.4302	balanSys trial femur B right	1
71.02.4601	balanSys trial femur C left	1
71.02.4602	balanSys trial femur C right	1
71.02.4901	balanSys trial femur D left	1
71.02.4902	balanSys trial femur D right	1
71.02.5201	balanSys trial femur E left	1
71.02.5202	balanSys trial femur E right	1
71.34.0371	balanSys trial femur F left	1
71.34.0372	balanSys trial femur F right	1



Item no.	Description	Qty
71.34.0353V	balanSys 4in1 Cutting Block STANDARD XS	1
71.34.0122V	balanSys 4in1 Cutting Block STANDARD S	1
71.34.0123V	balanSys 4in1 Cutting Block STANDARD A	1
71.34.0124V	balanSys 4in1 Cutting Block STANDARD B	1
71.34.0125V	balanSys 4in1 Cutting Block STANDARD C	1
71.34.0126V	balanSys 4in1 Cutting Block STANDARD D	1
71.34.0127V	balanSys 4in1 Cutting Block STANDARD E	1
71.34.0370V	balanSys 4in1 Cutting Block STANDARD F	1



Item no.	Description	Qty
71.34.0535	balanSys CR/PS Tibial Template 59	1
71.34.0536	balanSys CR/PS Tibial Template 62	1
71.34.0537	balanSys CR/PS Tibial Template 64	1
71.34.0538	balanSys CR/PS Tibial Template 67	1
71.34.0539	balanSys CR/PS Tibial Template 70	1
71.34.0540	balanSys CR/PS Tibial Template 75	1
71.34.0541	balanSys CR/PS Tibial Template 80	1
71.34.0542	balanSys CR/PS Tibial Template 85	1



Item no.	Qty
71.02.3023    balanSys trochlea reamer	1



Item no.	Qty
71.02.3024    balanSys trochlea bushing	1



Item no.	Qty
71.34.0023    balanSys Drill Bit with stop 6	1

### Optional instruments

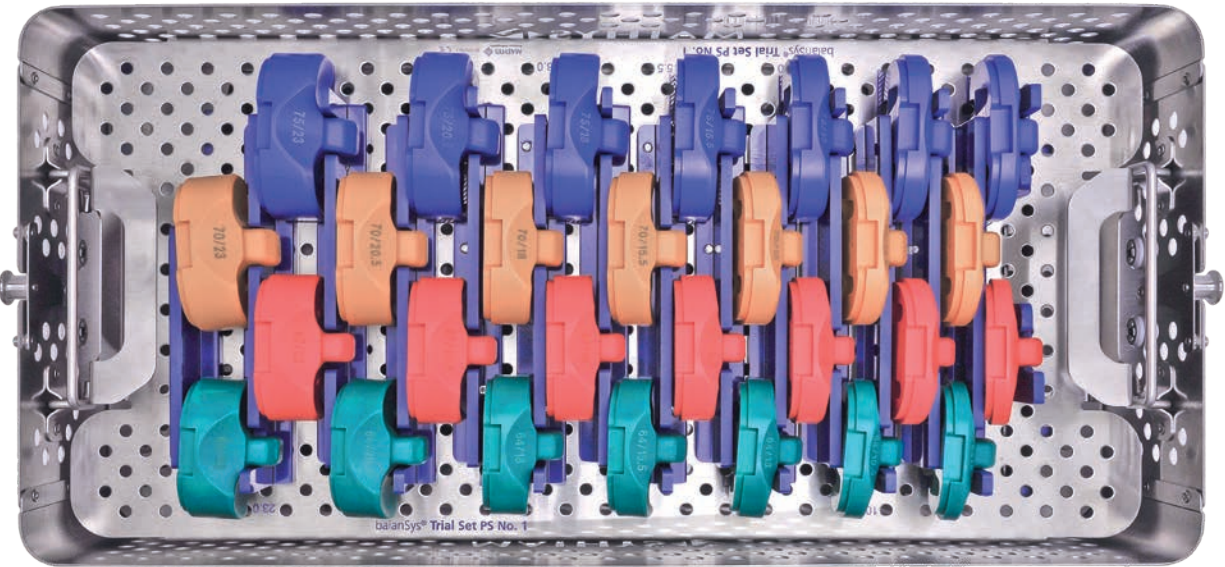
NOT part of the standard configuration and must be ordered separately:



Item no.	Description	Qty
71.34.0363	balanSys 4in1 Cutting Block MINI XS	1
71.34.0129	balanSys 4in1 Cutting Block MINI S	1
71.34.0130	balanSys 4in1 Cutting Block MINI A	1
71.34.0131	balanSys 4in1 Cutting Block MINI B	1
71.34.0132	balanSys 4in1 Cutting Block MINI C	1
71.34.0133	balanSys 4in1 Cutting Block MINI D	1
71.34.0134	balanSys 4in1 Cutting Block MINI E	1
71.34.0373	balanSys 4in1 Cutting Block MINI F	1

**balanSys Trial Set PS**

No Picture / 71.34.0286 **balanSys trial set PS no. 1 Lid**



71.34.0288 **balanSys Trial Set PS No. 1 Tray Insert**

**balanSys Trial Set PS**

Choose your size configuration

Set-no.	Femur	Tibia
71.34.9070A	A/B/C/D/E	64/67/70/75/80/85
71.34.0790A	XS/S/F	59/62



Item no.	Description	Qty
71.34.0384	balanSys PS PE Trial Inlay 59/8	1
71.34.0965	balanSys PS PE Trial Inlay 59/9*	1
71.34.0385	balanSys PS PE Trial Inlay 59/10.5	1
71.34.0966	balanSys PS PE Trial Inlay 59/11.5*	1
71.34.0386	balanSys PS PE Trial Inlay 59/13	1
71.34.0387	balanSys PS PE Trial Inlay 59/15.5	1
71.34.0388	balanSys PS PE Trial Inlay 59/18	1
71.34.0389	balanSys PS PE Trial Inlay 59/20.5	1
71.34.0503	balanSys PS PE Trial Inlay 59/23	1
71.34.0249	balanSys PS PE Trial Inlay 62/8	1
71.34.0967	balanSys PS PE Trial Inlay 62/9*	1
71.34.0250	balanSys PS PE Trial Inlay 62/10.5	1
71.34.0968	balanSys PS PE Trial Inlay 62/11.5*	1
71.34.0251	balanSys PS PE Trial Inlay 62/13	1
71.34.0252	balanSys PS PE Trial Inlay 62/15.5	1
71.34.0253	balanSys PS PE Trial Inlay 62/18	1
71.34.0254	balanSys PS PE Trial Inlay 62/20.5	1
71.34.0255	balanSys PS PE Trial Inlay 62/23	1
71.34.0256	balanSys PS PE Trial Inlay 64/8	1
71.34.0969	balanSys PS PE Trial Inlay 64/9*	1
71.34.0257	balanSys PS PE Trial Inlay 64/10.5	1
71.34.0970	balanSys PS PE Trial Inlay 64/11.5*	1
71.34.0258	balanSys PS PE Trial Inlay 64/13	1
71.34.0259	balanSys PS PE Trial Inlay 64/15.5	1
71.34.0260	balanSys PS PE Trial Inlay 64/18	1
71.34.0261	balanSys PS PE Trial Inlay 64/20.5	1
71.34.0262	balanSys PS PE Trial Inlay 64/23	1
71.34.0263	balanSys PS PE Trial Inlay 67/8	1
71.34.0971	balanSys PS PE Trial Inlay 67/9*	1
71.34.0264	balanSys PS PE Trial Inlay 67/10.5	1
71.34.0972	balanSys PS PE Trial Inlay 67/11.5*	1
71.34.0265	balanSys PS PE Trial Inlay 67/13	1
71.34.0266	balanSys PS PE Trial Inlay 67/15.5	1
71.34.0267	balanSys PS PE Trial Inlay 67/18	1
71.34.0268	balanSys PS PE Trial Inlay 67/20.5	1
71.34.0269	balanSys PS PE Trial Inlay 67/23	1

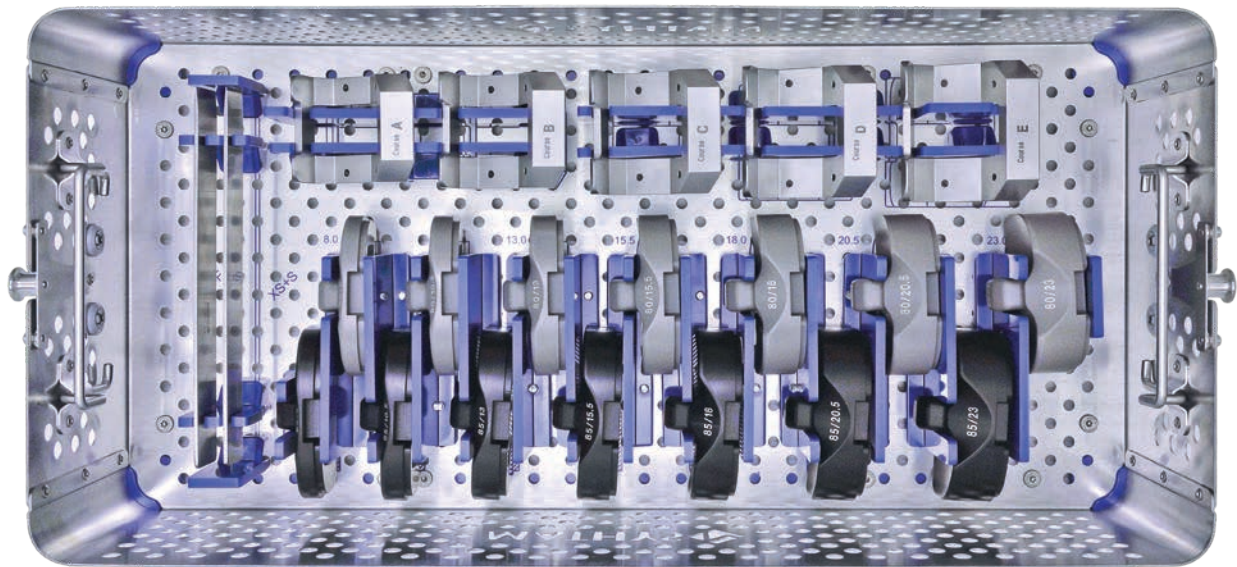
\* balanSys PS PE Inlays 9mm and 11.5mm are available in vitamys only.

Item no.	Description	Qty
71.34.0489	balanSys PS PE Trial Inlay 70/8	1
71.34.0973	balanSys PS PE Trial Inlay 70/9*	1
71.34.0490	balanSys PS PE Trial Inlay 70/10.5	1
71.34.0974	balanSys PS PE Trial Inlay 70/11.5*	1
71.34.0491	balanSys PS PE Trial Inlay 70/13	1
71.34.0492	balanSys PS PE Trial Inlay 70/15.5	1
71.34.0493	balanSys PS PE Trial Inlay 70/18	1
71.34.0494	balanSys PS PE Trial Inlay 70/20.5	1
71.34.0495	balanSys PS PE Trial Inlay 70/23	1
71.34.0496	balanSys PS PE Trial Inlay 75/8	1
71.34.0975	balanSys PS PE Trial Inlay 75/9*	1
71.34.0497	balanSys PS PE Trial Inlay 75/10.5	1
71.34.0976	balanSys PS PE Trial Inlay 75/11.5*	1
71.34.0498	balanSys PS PE Trial Inlay 75/13	1
71.34.0499	balanSys PS PE Trial Inlay 75/15.5	1
71.34.0500	balanSys PS PE Trial Inlay 75/18	1
71.34.0501	balanSys PS PE Trial Inlay 75/20.5	1
71.34.0502	balanSys PS PE Trial Inlay 75/23	1
71.34.0270	balanSys PS PE Trial Inlay 80/8	1
71.34.0977	balanSys PS PE Trial Inlay 80/9*	1
71.34.0271	balanSys PS PE Trial Inlay 80/10.5	1
71.34.0978	balanSys PS PE Trial Inlay 80/11.5*	1
71.34.0272	balanSys PS PE Trial Inlay 80/13	1
71.34.0273	balanSys PS PE Trial Inlay 80/15.5	1
71.34.0274	balanSys PS PE Trial Inlay 80/18	1
71.34.0275	balanSys PS PE Trial Inlay 80/20.5	1
71.34.0276	balanSys PS PE Trial Inlay 80/23	1
71.34.0277	balanSys PS PE Trial Inlay 85/8	1
71.34.0979	balanSys PS PE Trial Inlay 85/9*	1
71.34.0278	balanSys PS PE Trial Inlay 85/10.5	1
71.34.0980	balanSys PS PE Trial Inlay 85/11.5*	1
71.34.0279	balanSys PS PE Trial Inlay 85/13	1
71.34.0280	balanSys PS PE Trial Inlay 85/15.5	1
71.34.0281	balanSys PS PE Trial Inlay 85/18	1
71.34.0282	balanSys PS PE Trial Inlay 85/20.5	1
71.34.0283	balanSys PS PE Trial Inlay 85/23	1

\* balanSys PS PE Inlays 9mm and 11.5mm are available in vitamys only.



balanSys Trial Set PS



71.34.0287 balanSys Trial Set PS No. 1 Tray



Item no.		Qty
71.34.0690	balanSys Chisel 22 mm XS/S	1

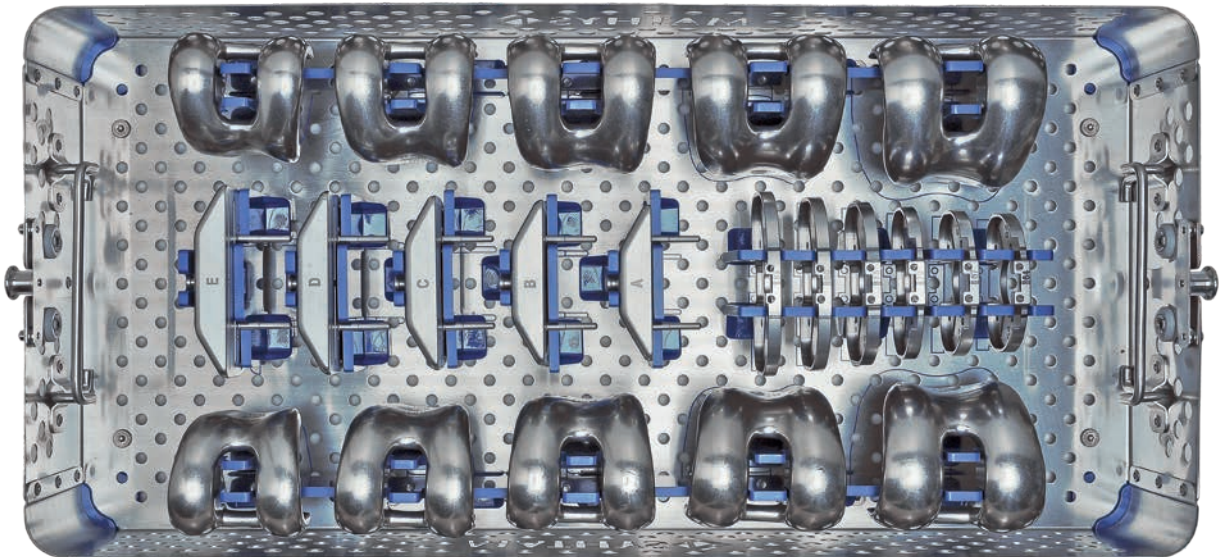
Item no.		Qty
71.34.0691	balanSys Chisel 25 mm A–F	1

Item no.	Description	Qty
71.34.0390	balanSys PS femur box cutting guide XS	1
71.34.0284	balanSys PS femur box cutting guide S	1
79.02.0265	balanSys PS femur box cutting guide A	1
79.02.0266	balanSys PS femur box cutting guide B	1
79.02.0267	balanSys PS femur box cutting guide C	1
79.02.0268	balanSys PS femur box cutting guide D	1
79.02.0269	balanSys PS femur box cutting guide E	1
71.34.0401	balanSys PS femur box cutting guide F	1



**balanSys Trial Set PS**

No Picture / 71.34.0289 **balanSys Trial Set PS No. 2 Lid**



71.34.0290 **balanSys Trial Set PS No. 2 Tray**



Item no.	Description	Qty
71.34.0383	balanSys PS trial femur XS right	1
71.34.0382	balanSys PS trial femur XS left	1
71.34.0248	balanSys PS trial femur S right	1
71.34.0247	balanSys PS trial femur S left	1
79.02.0040	balanSys PS trial femur A right	1
79.02.0041	balanSys PS trial femur A left	1
79.02.0042	balanSys PS trial femur B right	1
79.02.0043	balanSys PS trial femur B left	1
79.02.0044	balanSys PS trial femur C right	1
79.02.0045	balanSys PS trial femur C left	1
79.02.0046	balanSys PS trial femur D right	1
79.02.0047	balanSys PS trial femur D left	1
79.02.0048	balanSys PS trial femur E right	1
79.02.0049	balanSys PS trial femur E left	1
71.34.0400	balanSys PS trial femur F right	1
71.34.0399	balanSys PS trial femur F left	1



Item no.	Description	Qty
71.34.0353V	balanSys 4in1 Cutting Block STANDARD XS	1
71.34.0122V	balanSys 4in1 Cutting Block STANDARD S	1
71.34.0123V	balanSys 4in1 Cutting Block STANDARD A	1
71.34.0124V	balanSys 4in1 Cutting Block STANDARD B	1
71.34.0125V	balanSys 4in1 Cutting Block STANDARD C	1
71.34.0126V	balanSys 4in1 Cutting Block STANDARD D	1
71.34.0127V	balanSys 4in1 Cutting Block STANDARD E	1
71.34.0370V	balanSys 4in1 Cutting Block STANDARD F	1



Item no.	Description	Qty
71.34.0535	balanSys CR/PS Tibial Template 59	1
71.34.0536	balanSys CR/PS Tibial Template 62	1
71.34.0537	balanSys CR/PS Tibial Template 64	1
71.34.0538	balanSys CR/PS Tibial Template 67	1
71.34.0539	balanSys CR/PS Tibial Template 70	1
71.34.0540	balanSys CR/PS Tibial Template 75	1
71.34.0541	balanSys CR/PS Tibial Template 80	1
71.34.0542	balanSys CR/PS Tibial Template 85	1

### Optional instruments

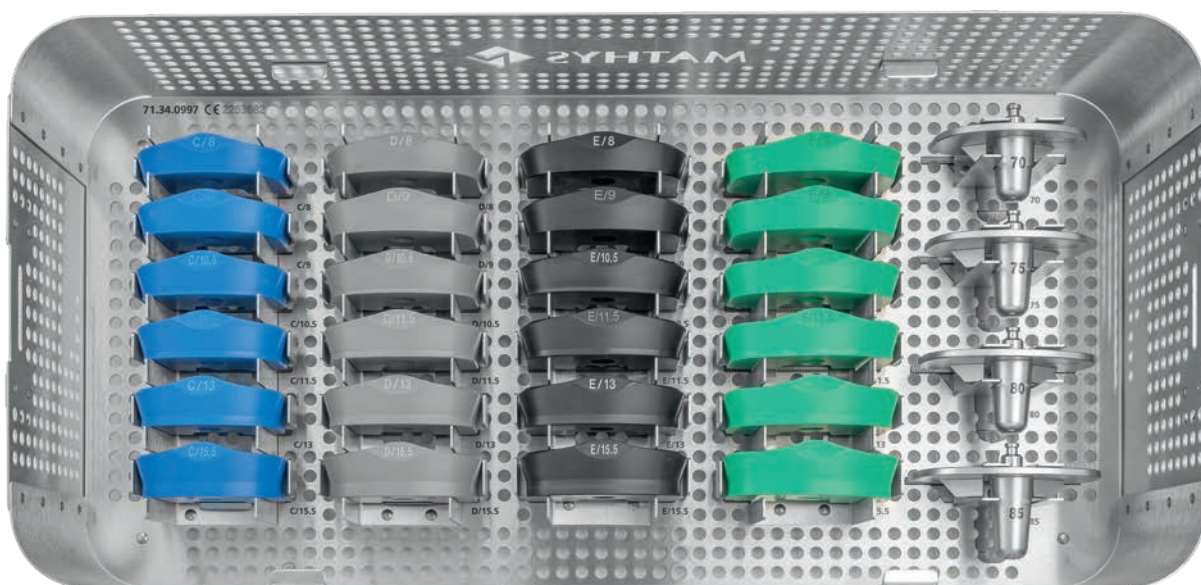
NOT part of the standard configuration and must be ordered separately:



Item no.	Description	Qty
71.34.0363	balanSys 4in1 Cutting Block MINI XS	1
71.34.0129	balanSys 4in1 Cutting Block MINI S	1
71.34.0130	balanSys 4in1 Cutting Block MINI A	1
71.34.0131	balanSys 4in1 Cutting Block MINI B	1
71.34.0132	balanSys 4in1 Cutting Block MINI C	1
71.34.0133	balanSys 4in1 Cutting Block MINI D	1
71.34.0134	balanSys 4in1 Cutting Block MINI E	1
71.34.0373	balanSys 4in1 Cutting Block MINI F	1

**balanSys Trial Set RP Set 71.34.9060A (optional)**

No Picture/71.34.1056 **leggera Set Lid**



71.34.0997 **balanSys Trial Set 6-RP Tray**



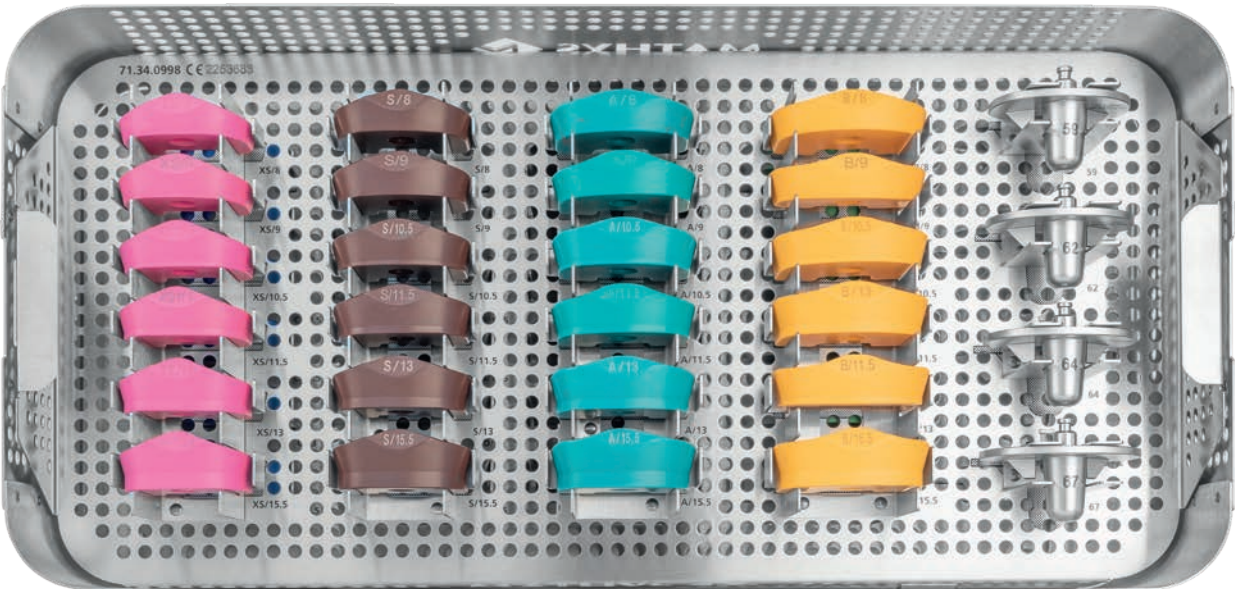
Item no.	Description	Qty
71.34.0297	balanSys RP Trial Tibial Plateau 70	1
71.34.0298	balanSys RP Trial Tibial Plateau 75	1
71.34.0299	balanSys RP Trial Tibial Plateau 80	1
71.34.0300	balanSys RP Trial Tibial Plateau 85	1

Item no.	Description	Qty
71.34.0574	balanSys RP PE Trial Inlay C/8	1
71.34.0989	balanSys RP PE Trial Inlay C/9*	1
71.34.0575	balanSys RP PE Trial Inlay C/10.5	1
71.34.0990	balanSys RP PE Trial Inlay C/11.5*	1
71.34.0576	balanSys RP PE Trial Inlay C/13	1
71.34.0577	balanSys RP PE Trial Inlay C/15.5	1
71.34.0580	balanSys RP PE Trial Inlay D/8	1
71.34.0991	balanSys RP PE Trial Inlay D/9*	1
71.34.0581	balanSys RP PE Trial Inlay D/10.5	1
71.34.0992	balanSys RP PE Trial Inlay D/11.5*	1
71.34.0582	balanSys RP PE Trial Inlay D/13	1
71.34.0583	balanSys RP PE Trial Inlay D/15.5	1
71.34.0586	balanSys RP PE Trial Inlay E/8	1
71.34.0993	balanSys RP PE Trial Inlay E/9*	1
71.34.0587	balanSys RP PE Trial Inlay E/10.5	1
71.34.0994	balanSys RP PE Trial Inlay E/11.5*	1
71.34.0588	balanSys RP PE Trial Inlay E/13	1
71.34.0589	balanSys RP PE Trial Inlay E/15.5	1
71.34.0429	balanSys RP PE Trial Inlay F/8	1
71.34.0995	balanSys RP PE Trial Inlay F/9*	1
71.34.0430	balanSys RP PE Trial Inlay F/10.5	1
71.34.0996	balanSys RP PE Trial Inlay F/11.5*	1
71.34.0431	balanSys RP PE Trial Inlay F/13	1
71.34.0432	balanSys RP PE Trial Inlay F/15.5	1

\* balanSys RP PE Inlays 9 mm and 11.5 mm are available in vitamys only.



**balanSys Trial Set RP Set 71.34.9060A (optional)**



71.34.0998 **balanSys Trial Set 6-RP Insert**



Item no.	Description	Qty
71.34.0418	balanSys RP Trial Tibial Plateau 59	1
71.34.0294	balanSys RP Trial Tibial Plateau 62	1
71.34.0295	balanSys RP Trial Tibial Plateau 64	1
71.34.0296	balanSys RP Trial Tibial Plateau 67	1

Item no.	Description	Qty
71.34.0413	balanSys RP PE Trial Inlay XS/8	1
71.34.0981	balanSys RP PE Trial Inlay XS/9*	1
71.34.0414	balanSys RP PE Trial Inlay XS/10.5	1
71.34.0982	balanSys RP PE Trial Inlay XS/11.5*	1
71.34.0415	balanSys RP PE Trial Inlay XS/13	1
71.34.0416	balanSys RP PE Trial Inlay XS/15.5	1
71.34.0301	balanSys RP PE Trial Inlay S/8	1
71.34.0983	balanSys RP PE Trial Inlay S/9*	1
71.34.0302	balanSys RP PE Trial Inlay S/10.5	1
71.34.0984	balanSys RP PE Trial Inlay S/11.5*	1
71.34.0303	balanSys RP PE Trial Inlay S/13	1
71.34.0304	balanSys RP PE Trial Inlay S/15.5	1
71.34.0562	balanSys RP PE Trial Inlay A/8	1
71.34.0985	balanSys RP PE Trial Inlay A/9*	1
71.34.0563	balanSys RP PE Trial Inlay A/10.5	1
71.34.0986	balanSys RP PE Trial Inlay A/11.5*	1
71.34.0564	balanSys RP PE Trial Inlay A/13	1
71.34.0565	balanSys RP PE Trial Inlay A/15.5	1
71.34.0568	balanSys RP PE Trial Inlay B/8	1
71.34.0987	balanSys RP PE Trial Inlay B/9*	1
71.34.0569	balanSys RP PE Trial Inlay B/10.5	1
71.34.0988	balanSys RP PE Trial Inlay B/11.5*	1
71.34.0570	balanSys RP PE Trial Inlay B/13	1
71.34.0571	balanSys RP PE Trial Inlay B/15.5	1

\* balanSys RP PE Inlays 9mm and 11.5mm are available in vitamys only.

**balanSys 3-Peg Patella FLAT**  
**71.34.0080A**

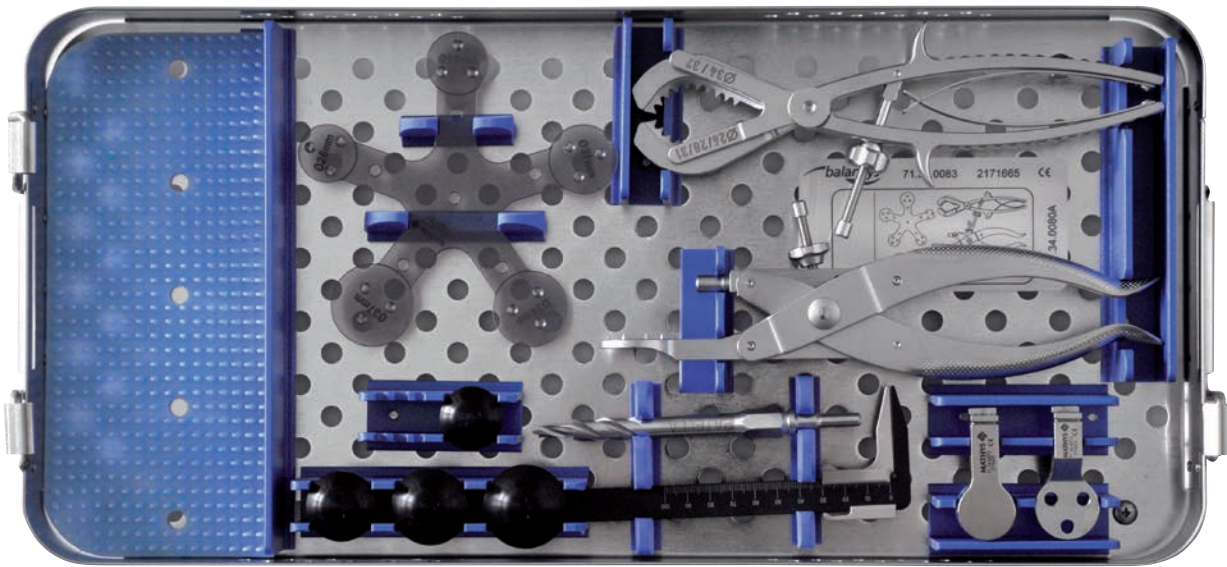
No Picture / 71.34.0082

**balanSys Lid 3-Peg Patella FLAT**

**balanSys 3-Peg Patella STANDARD**  
**71.34.0081A**

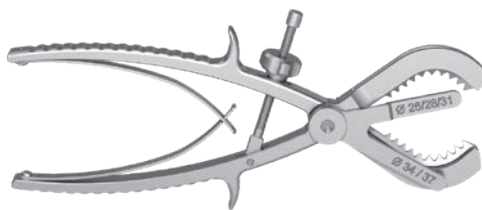
No Picture/71.34.0084

**balanSys Lid 3-Peg Patella STANDARD**



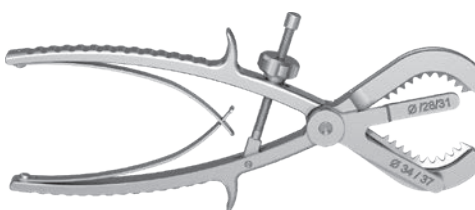
71.34.0083 **balanSys Tray f/ patella 3 pegs FLAT**

71.34.0085 **balanSys Tray f/ patella 3 pegs STANDARD**



**Item no.**

71.34.0071 balanSys Patella Resection Pliers Flat



**Item no.**

71.34.0070 balanSys Patella Resection Pliers Raised



**Item no.**

**Description**

71.34.0708	balanSys Trial Patella 3 Pegs Flat 26
71.34.0075	balanSys Trial Patella 3 Pegs Flat 28
71.34.0076	balanSys Trial Patella 3 Pegs Flat 31
71.34.0077	balanSys Trial Patella 3 Pegs Flat 34
71.34.0078	balanSys Trial Patella 3 Pegs Flat 37

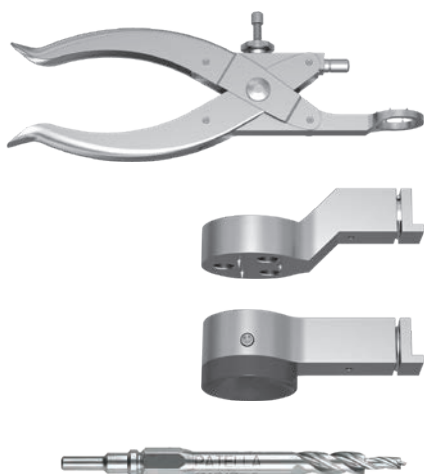


**Item no.**

**Description**

71.02.3063	balanSys trial patella 3-peg 28
71.02.3064	balanSys trial patella 3-peg 31
71.02.3065	balanSys trial patella 3-peg 34
71.02.3066	balanSys trial patella 3-peg 37





Item no.		Qty
71.02.2201	balanSys Patella Universal Pliers	1

Item no.		Qty
71.34.0074	balanSys Patella Drill Guide to Pliers	1

Item no.		Qty
71.34.0073	balanSys Patella Cementing Aid to Pliers	1

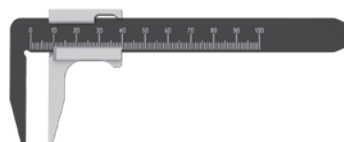
Item no.		Qty
71.02.3061	Drill Bit 5.5	1



#### Optional instruments

NOT part of the standard configuration and must be ordered separately:

Item no.		Qty
71.34.0079	balanSys Patella Sizing Guide	1



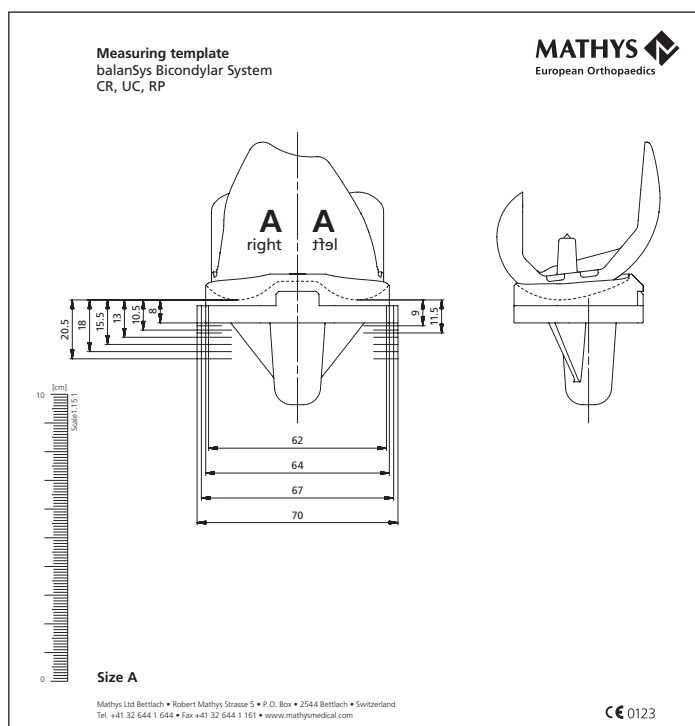
Item no.		Qty
71.02.3002	balanSys Patella Calliper	1

# Appendix

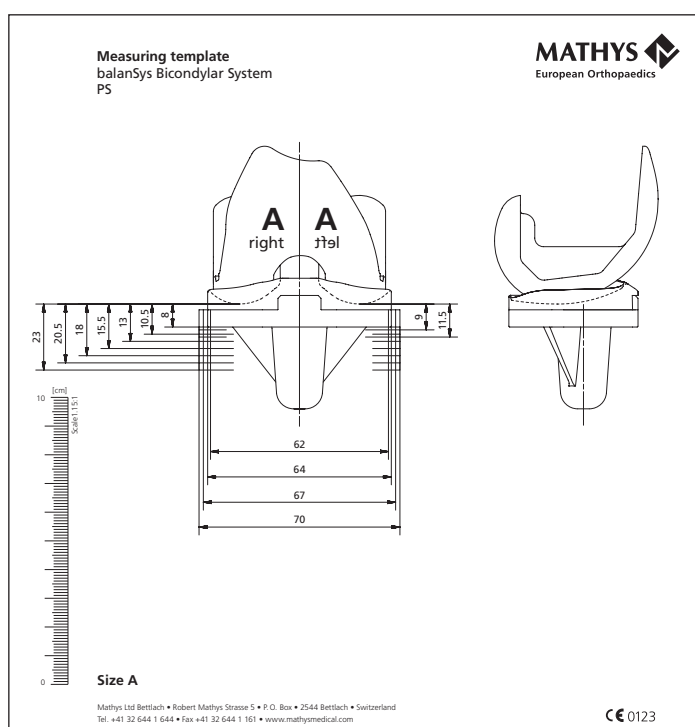
## 6 – Item numbers of balanSys measuring templates

### balanSys BICON Knee System 330.030.034

Suitable for CR, UC and RP



### balanSys PS Knee System 330.030.035



# Symbols



Manufacturer



Correct



Incorrect



Caution

**CR** Cruciate Retaining

**UC** Ultra Congruent

**PS** Posterior Stabilized

**RP** Rotating Platform

**ACL** Anterior Cruciate Ligament

**PCL** Posterior Cruciate Ligament

**MCL** Medial Collateral Ligament

**LCL** Lateral Collateral Ligament

**TRS** Tibia Reference System

**IFU** Instruction For Use

## Notes

[illegible]



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