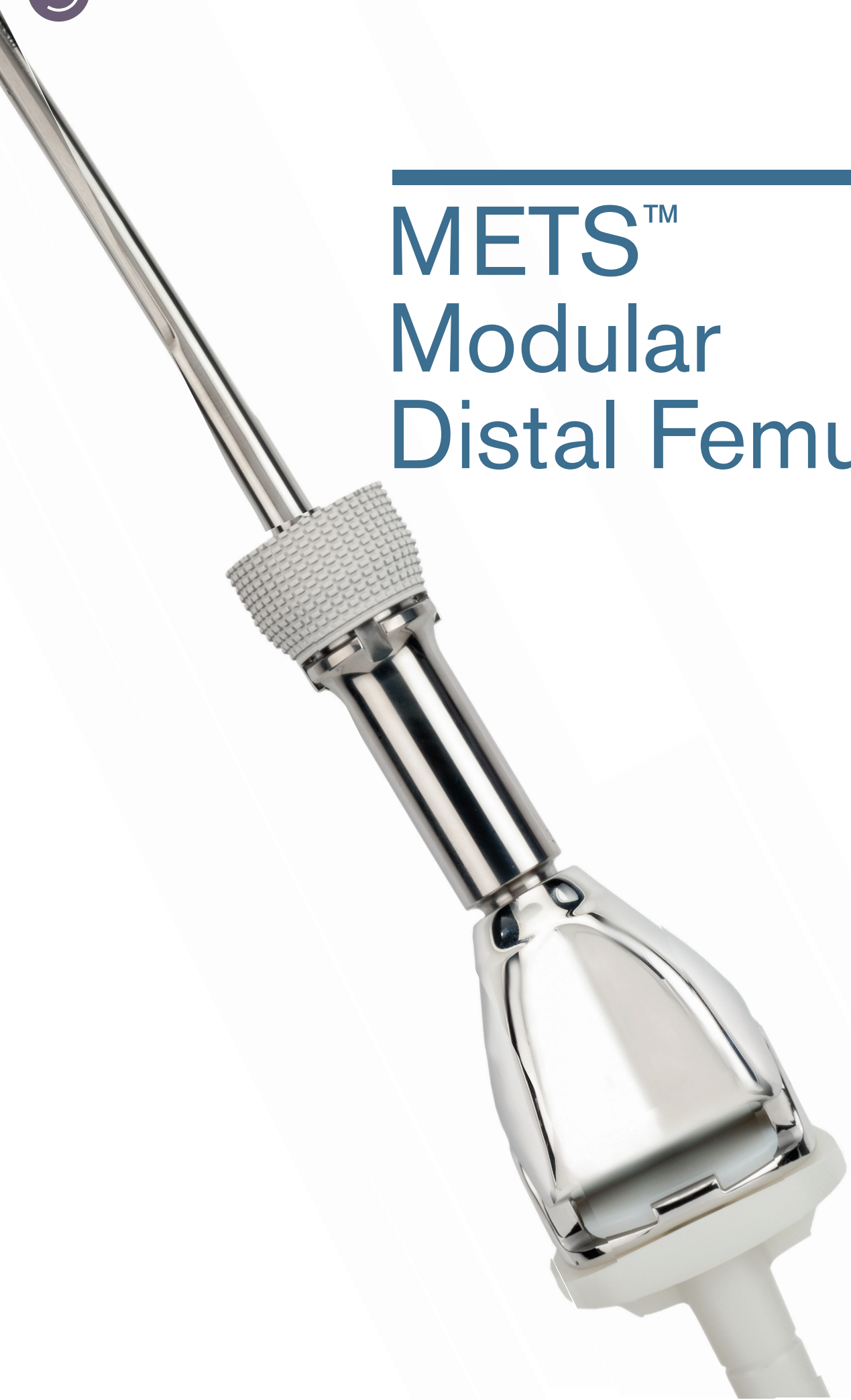
Stanmore Implants

METS™ Modular Distal Femur



Contents

This publication sets forth detailed recommended procedures for using the depicted devices and instruments. It offers guidance that you should heed, but, as with any such technical guide, each surgeon must consider the particular needs of each patient and make appropriate adjustments when and as required.

1.1 Product overview

The METS Modular Distal Femur replacement system is designed as a modular system that can be used to replace diseased or deficient bone in the distal femur. The system consists of a SMILES Knee, a range of shafts in 15mm increments to suit differing lengths of resections, a range of hydroxyapatite coated and uncoated collars of different diameters to match the size of the resected bone and a range of cemented stems to fit the intramedullary canal. Individual components of the femoral shaft are connected using interlocking taper junctions allowing quick and easy assembly.

The SMILES knee has three tibial options in two sizes; rotating hinge polyethylene tibia suitable for routine cases, rotating hinge metal casing tibia with short and long stems suitable for extra-articular resection or difficult revisions and a fixed hinge tibia with short and long stems suitable for knees with marked rotational instability or gross deformity. The choice of which tibial component to use is a clinical decision.

1.2 Indications

— Limb salvage procedures where radical resection and replacement of the bone is required
— Tumour resections
— Revision of previously failed total joint arthroplasty

1.3 Absolute contra-indications

— Existing infection and sepsis

1.4 Relative contra-indications

— Inadequate or incomplete soft tissue coverage
— Uncooperative or unwilling patient or patient unable to follow instructions— Foreign body sensitivity. Where materials sensitivity occurs, seek advice with respect to testing
— Obesity
— Vascular disorders, neuromuscular disorders or muscular dystrophy
— Compromised patella

1.5 Capabilities and restrictions of use

— Before using the device, read the instructions for use leaflet provided with the device in the product packaging.
— The components are designed and manufactured to be assembled and used only in the manner specified. Any deviation from this may reduce the in-service life of the prosthesis.
— Mixing with unspecified components either from Stanmore Implants or from other manufacturers is not permitted since it may lead to mal-alignment, inadequate assembly, excessive wear and premature failure.
— A fully assembled METS Modular Distal Femur replacement must consist of one of the three optional tibial assemblies with bumper, a femoral knee component with bushes, an axle and a circlip, and either an integral shaft and stem, or a principal shaft with or without an extension shaft, a collar and a stem.
— Femoral and Tibial sizes cannot be mixed. A small femoral component must be used with a small tibial component and a standard femoral component must be used with a standard tibial component.
— Failure to use a collared device may result in excessive subsidence of the prosthesis. A plain collar is provided if hydroxyapatite coating is not required.
— Should the interlocking surfaces of any of the implant components become damaged, they must not be used.
— The implant components are for SINGLE USE only and they must not be re-used.
— Do not use if package is damaged.
— A set of instruments is provided to assist assembly of the prosthesis, which includes a set of trial components.
— The trial components cannot be used in combination with implant components.
— This implant is manufactured from titanium and CoCr alloys and therefore **under no circumstances should it be allowed to contact a stainless steel implantable device since this may induce galvanic corrosion.**

- The METS Modular Distal Femur and its components are for single use only

- The METS Modular Distal Femur and its components are for cemented use only

— When cementing components into the bone, it is recommended that a high viscosity bone cement is used.
— The METS Modular Distal Femur System has not been evaluated for safety and compatibility in the MR environment.
— The METS Modular Distal Femur System has not been tested for heating or migration in the MR environment.

1.6 Components of the METS Modular Distal Femur implant

Shaft
45 to 150mm titanium shafts in 15mm increments. Also, a 120mm extension shaft to further increase the length capability giving a total range of 111mm to 349mm from prosthesis/bone interface to joint line.

For very short resections integral stem/shafts are available in two lengths 15 and 30mm, with two collar sizes 38 x 30mm and 44 x 36mm. Stem size: 150mm x Ø13 > Ø8mm. Available with hydroxyapatite coating.

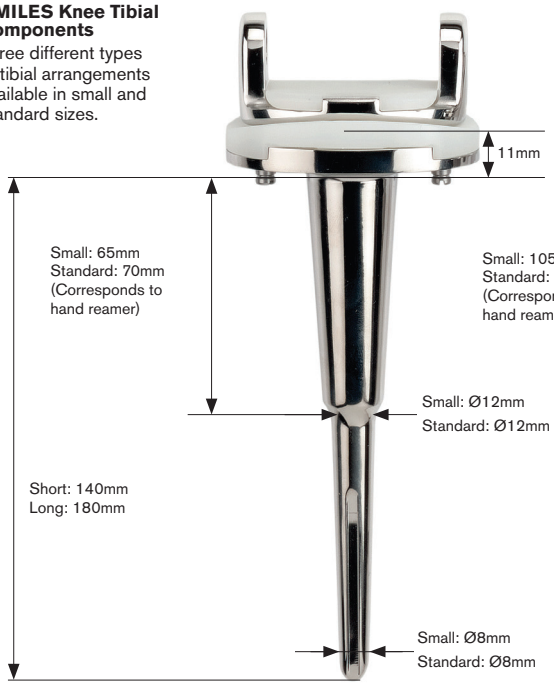
Cemented stem
Ø10 to Ø15mm curved titanium stems in 1mm increments. 150mm in length suitable for short to medium resection. Ø14 and Ø15mm straight titanium stems, 100mm in length, suitable for long resections.

Collar
Ø27, Ø30, Ø33, Ø36mm round and 27 x 30, 30 x 33, 33 x 36, 36 x 39mm oval titanium collars. With hydroxyapatite coated stipples or smooth uncoated.

Femoral knee component
Cobalt-chromium-molybdenum femoral knee component, anatomical (with 6° valgus angle) for left and right sides. Available in two sizes, small and standard.

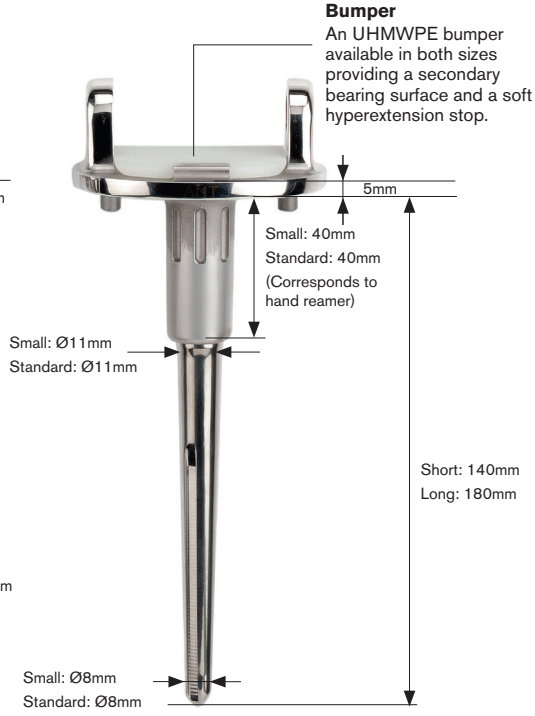
Bumper
An UHMWPE bumper available in both sizes providing a secondary bearing surface and a soft hyperextension stop.

SMILES Knee Tibial Components
Three different types of tibial arrangements available in small and standard sizes.



Rotating hinge metal cased tibia
A UHMWPE tibial bearing with a Co-Cr-Mo tibial component and titanium casing.

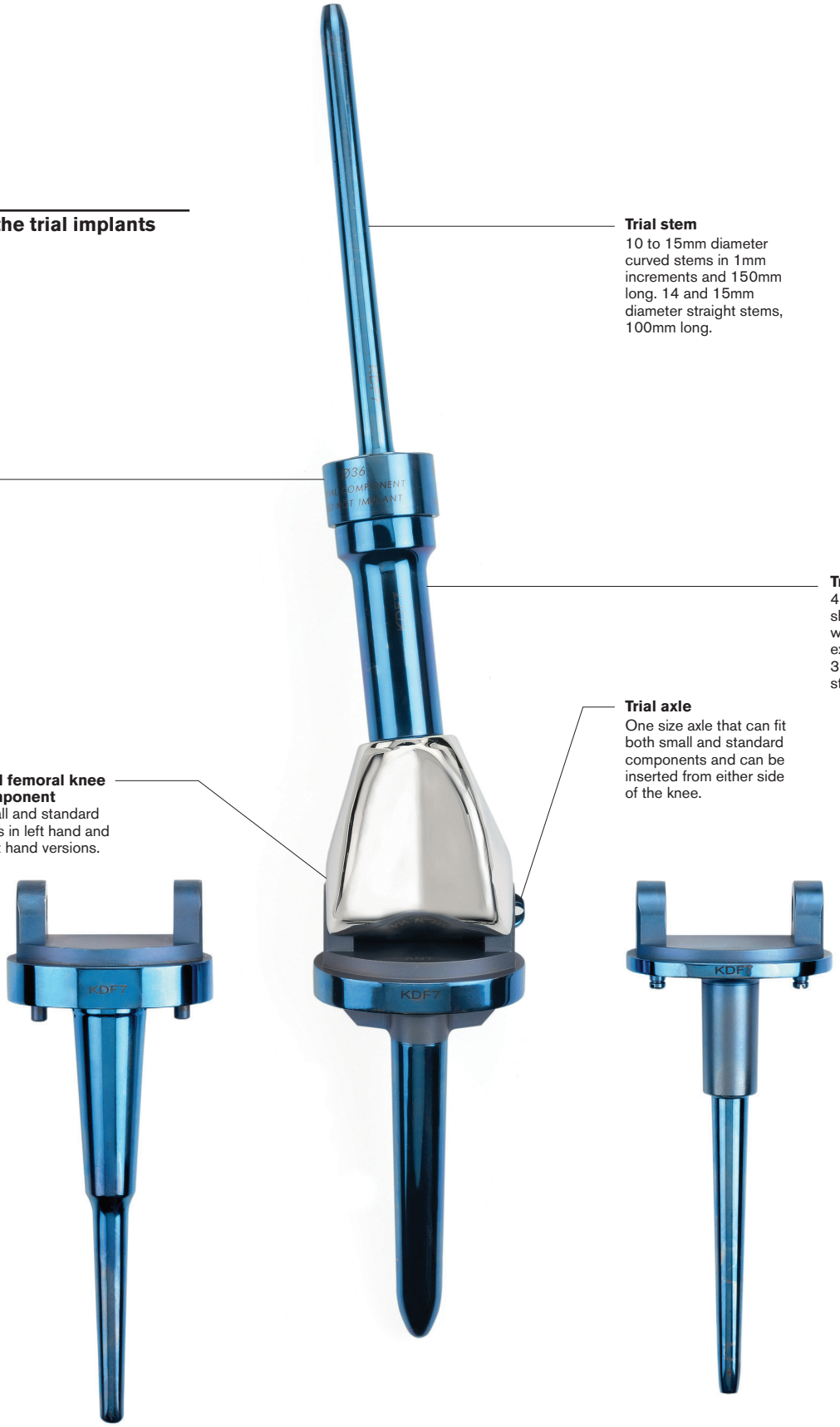
Rotating hinge polyethylene tibia
A Co-Cr-Mo tibial component with UHMWPE tibial bearing.



Fixed hinge tibia
A Co-Cr-Mo tibial component.

Tibial plateau plates
Optional tibial plateau plates (not shown) are available in 5, 10, 15 and 20mm thickness for use with rotating hinge metal cased or fixed hinge tibial components.

2.1 Components of the trial implants



Trial stem
10 to 15mm diameter curved stems in 1mm increments and 150mm long. 14 and 15mm diameter straight stems, 100mm long.

Trial collars
27 to 36mm diameter round collars and 27 x 30, 30 x 33, 33 x 36, 36 x 39mm oval collars.

Trial shaft
45 to 150mm principal shafts in 15mm increments with a 120mm long extension shaft. 15 and 30mm long integral shaft/ stem components.

Trial axle
One size axle that can fit both small and standard components and can be inserted from either side of the knee.

Trial femoral knee component
Small and standard sizes in left hand and right hand versions.

Trial tibial mono-blocks
Represents each of the three tibial assemblies.

Rotating hinge metal cased tibia
Stem length 140 and 180mm in both standard and small sizes.

Rotating hinge polyethylene tibia
Stem length 114mm for standard and 105mm small size.

Fixed hinge tibia
Stem length 140 and 180mm in both standard and small sizes.

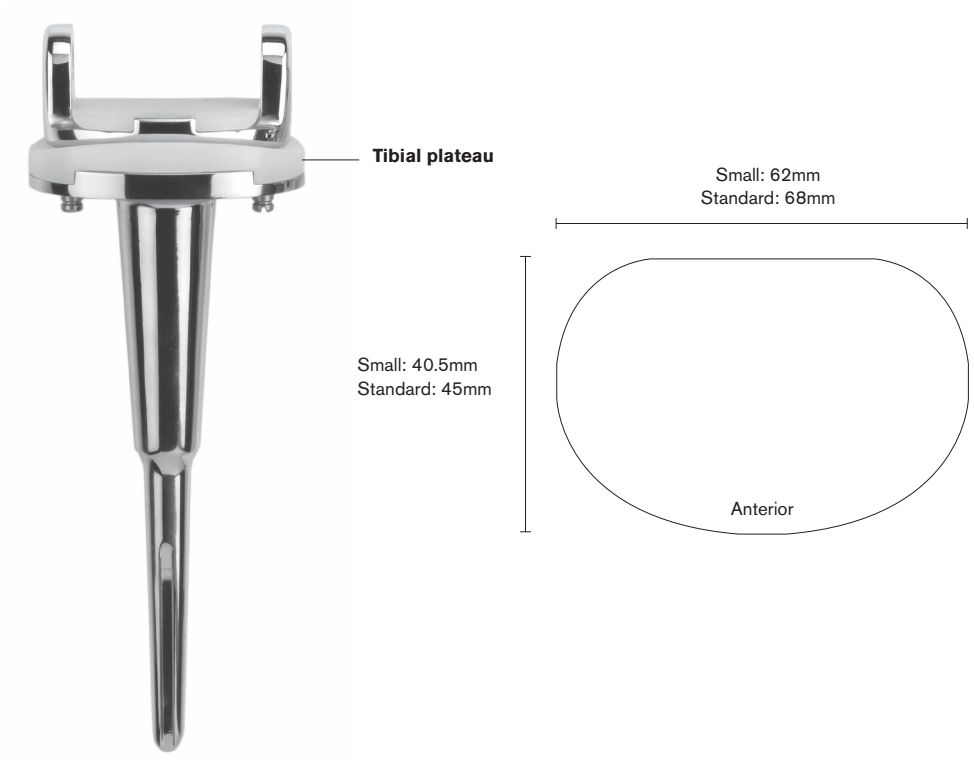
Trial tibial plateau plates
Plateau plates (not shown) in 5, 10, 15 and 20mm thickness for use with rotating hinge metal cased or fixed hinge tibial components in both sizes.

2.2 SMILES Knee dimensions

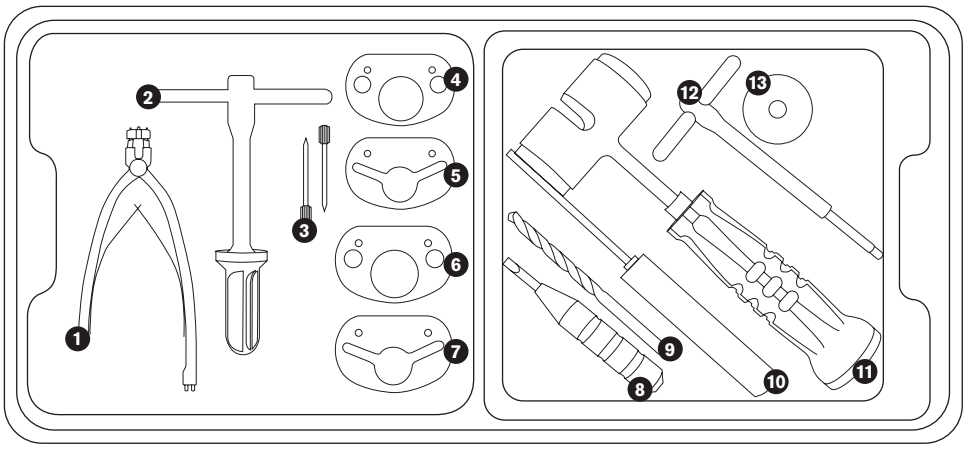
2.2.1 Femoral knee component

2.2.2 Tibial component

(Metal cased rotating hinge tibial component shown, but dimensions are the same for all three tibial options)

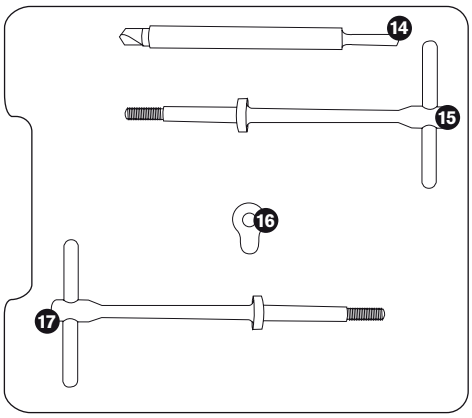


2.3 Special instruments



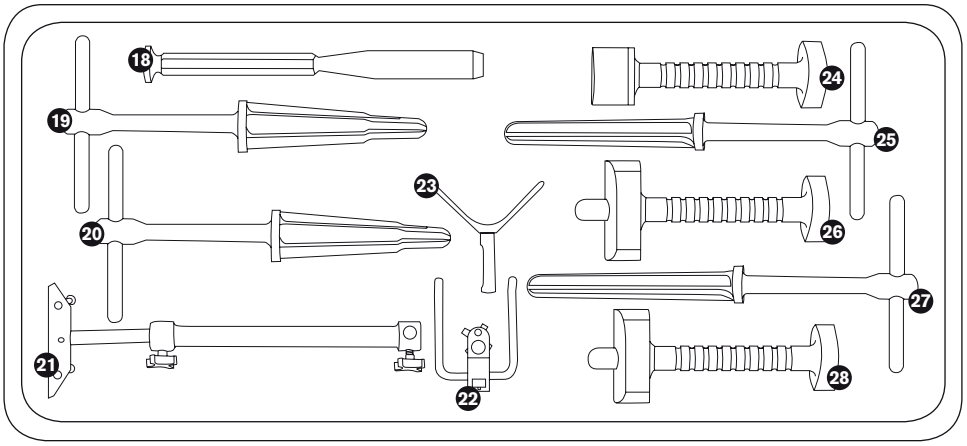
Layer 1

1 Circlip pliers
2 Tibial reamer: Fixed hinge
3 Pins (x4)
4 Small Positioning Plate: Holes, to size small metal cased and fixed hinge tibial components
5 Small Positioning Plate: Slots, to size small polyethylene tibial components
6 Standard Positioning Plate: Holes, to size standard metal cased and fixed hinge tibial components
7 Standard Positioning Plate: Slots, to size standard polyethylene tibial components
8 Distraction Tool
9 6mm Drill
10 Trial Stem Extractor
11 Hammer (with soft ends)
12 4mm Allen Key
13 Collar Impactor



Layer 2

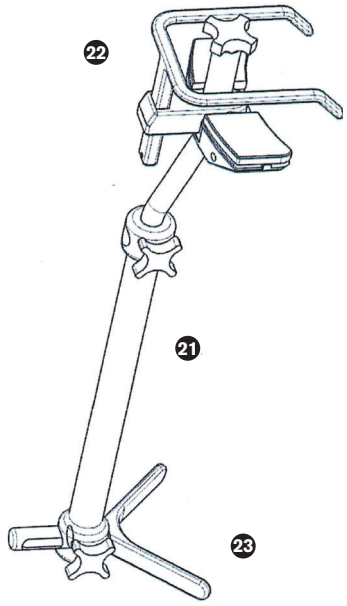
14 AR (Anti-Rotation) Lug drill
15 Bush compressor, Small
16 Compressor nut
17 Bush compressor, Standard



Layer 3

18 Osteotome
19 Rotating Hinge Metal-Cased Reamer: Standard
20 Rotating Hinge Metal-Cased Reamer: Small
21 Tibial Cutting Guide: Rod
22 Tibial Cutting Guide: Prongs
23 Tibial Cutting Guide: Rest
24 General impactor
25 Rotating Hinge Polyethylene Reamer: Small
26 Tibial bearing impactor, Standard
27 Rotating Hinge Polyethylene Reamer: Standard
28 Tibial bearing impactor, Small

In addition to these tools, it is anticipated that the operating theatre should make available a bone saw (blade thickness: max 1.48mm), a set of reamers from Ø8 to Ø17mm and an appropriate cement application device.



Assembled Tibial Cutting Guide

A

3.1 Pre-operative planning

It is important to assess the radiographs before the operation to establish approximate size of the components required (for sizing, refer to section 1.6 for tibial components and section 3.5.2 for femoral components). This will help reduce the number of trial components used during surgery. The following points should be considered during assessment:

— The size of the knee (small or standard) determined by size of tibial component. Sizes are not interchangeable ie Small femur with Small tibia; Standard femur with Standard tibia.
— Choice of tibial component (rotating hinge polyethylene, rotating hinge metal cased, or fixed hinge).
— Length of tibial component (short or long. This only applies to rotating hinge metal cased and fixed hinge tibial components).
— Principal shaft length, and additional option of extension shaft.
— Collar type (with hydroxyapatite coating or plain).
— Stem length and diameter.

3.2 Recommendations for component selection

— **Stem**

In order to optimise the implant fixation and strength, it is recommended that, where possible, a 150mm stem is used and the largest stem diameter is chosen whilst still maintaining a minimum of 1mm cement mantle.

— **Shaft**

The prosthetic construct should only have one principal shaft with an extension shaft if required. More than one principal shaft must not be used.

— **Tibial components**

Rotating hinge polyethylene tibial components can be used in most primaries and some revision cases. Rotating hinge metal cased tibial components are potentially more suited for revision cases or where tibial plateau plates are required to maintain/restore the joint line. Fixed hinged tibial components can be considered where there is marked rotational instability of the joint.

3.3 General points to consider when using trial components

— Except the collars, trial shafts and stems are assembled with a “push and click” mechanism, where the rotational orientation is controlled by an anti-rotation lug.
— The collar, which is unidirectional, is simply slid over the shaft and is held in position by insertion of a stem. The oval collars are designed to provide 3mm medial/lateral or anterior/posterior ovality over the round collars.
— There is only one size axle for the trial components, which can be used for both small and standard size knees and it can be inserted from either side. It should be noted that a circlip is not required for the trial components.
— The trial components are designed to give a representation of the volume of the actual implant component, and therefore, during trial reduction, they should provide an indication of the degree of soft tissue coverage and the function of the device.
— The trial tibial components represent only the size and shape of the actual tibial construct and therefore do not rotate.

A — During removal of the trial implant, if the stem should become lodged in the canal and left behind, use the trial stem extractor to remove it.

3.4 Recommendations for assembly of implant

It is recommended that the following points be considered during assembly of an implant:

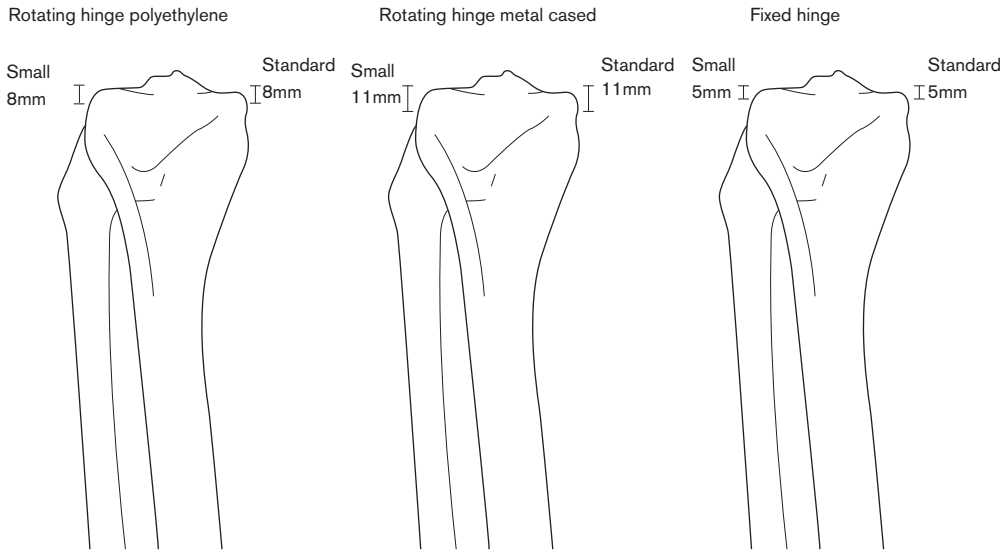
— Always fully assemble an implant before exposing it to the body's environment; failure to do so may result in contamination of the interlocking mechanism, which can impair the performance of the implant.
— Impact each junction as described in sections 3.6.2, 3.7.2 and 3.8.2 in order to provide optimum strength to the joint. This is important since each interface may experience large bending forces that may result in excessive wear and fretting if not correctly assembled.
— Care must also be exercised when assembling components with hydroxyapatite coating, as it is brittle and can easily be damaged.
— As the tibial canal preparation will vary according to the type of tibial component selected, it is advised that the correct trial tibial component is chosen, i.e. rotating hinge polyethylene, rotating hinge metal cased, or fixed hinge before any preparation of the tibia is undertaken.

3.5 Bone preparation

It should be noted that there is no prescribed order as to which bone (the femur or the tibia) is prepared first. Before femoral preparation, the size of the SMILES knee must be chosen as appropriate for the patient's knee.

3.5.1 Tibial Resection level

Note: These dimensions are for guidance only. More bone may need to be resected if necessary.
*These resection levels assume no previous resections.

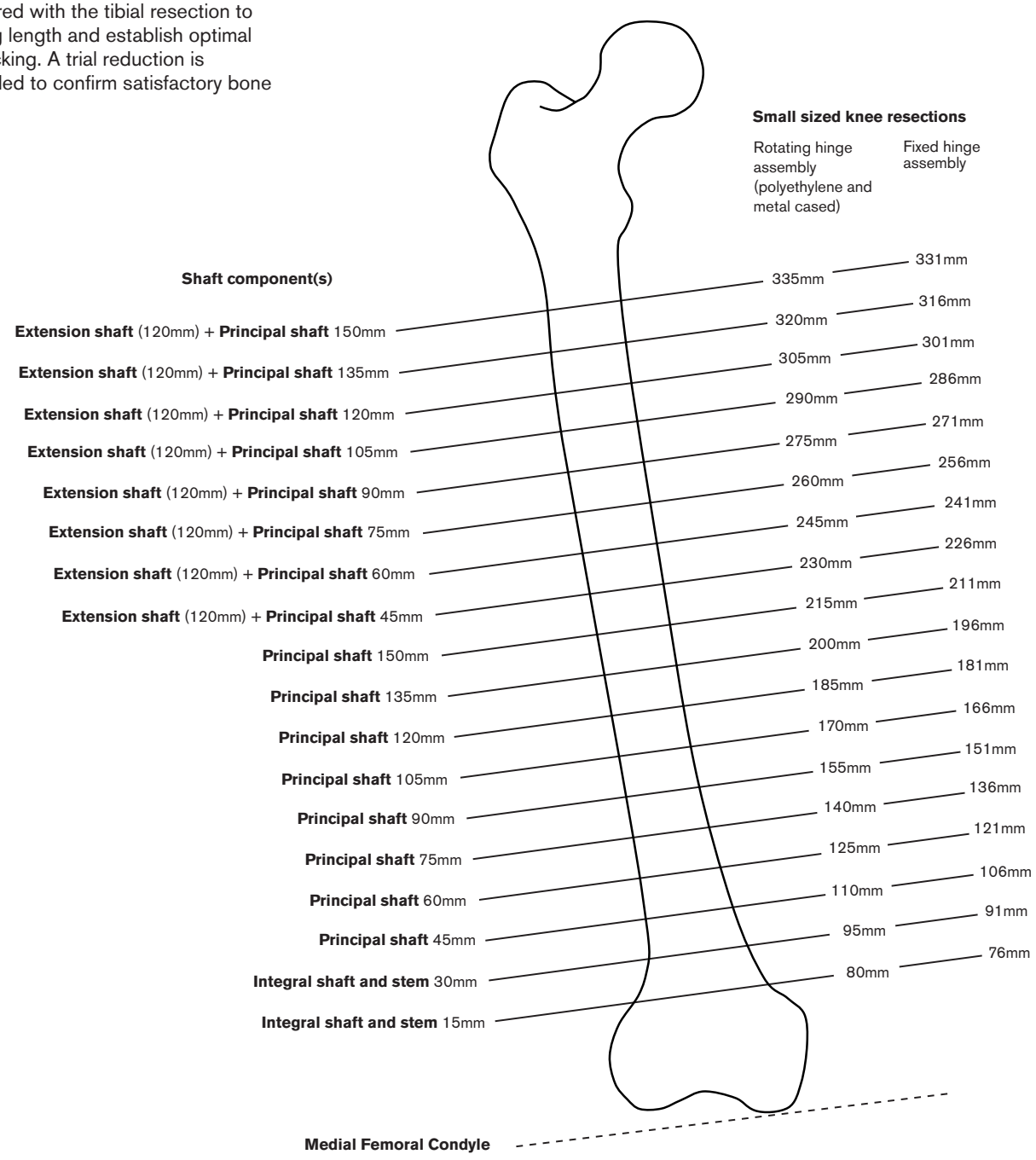


3.5.2 Femoral resection levels

SMILES Knee size: Small

It should be noted that collar lengths are included in the resection values.

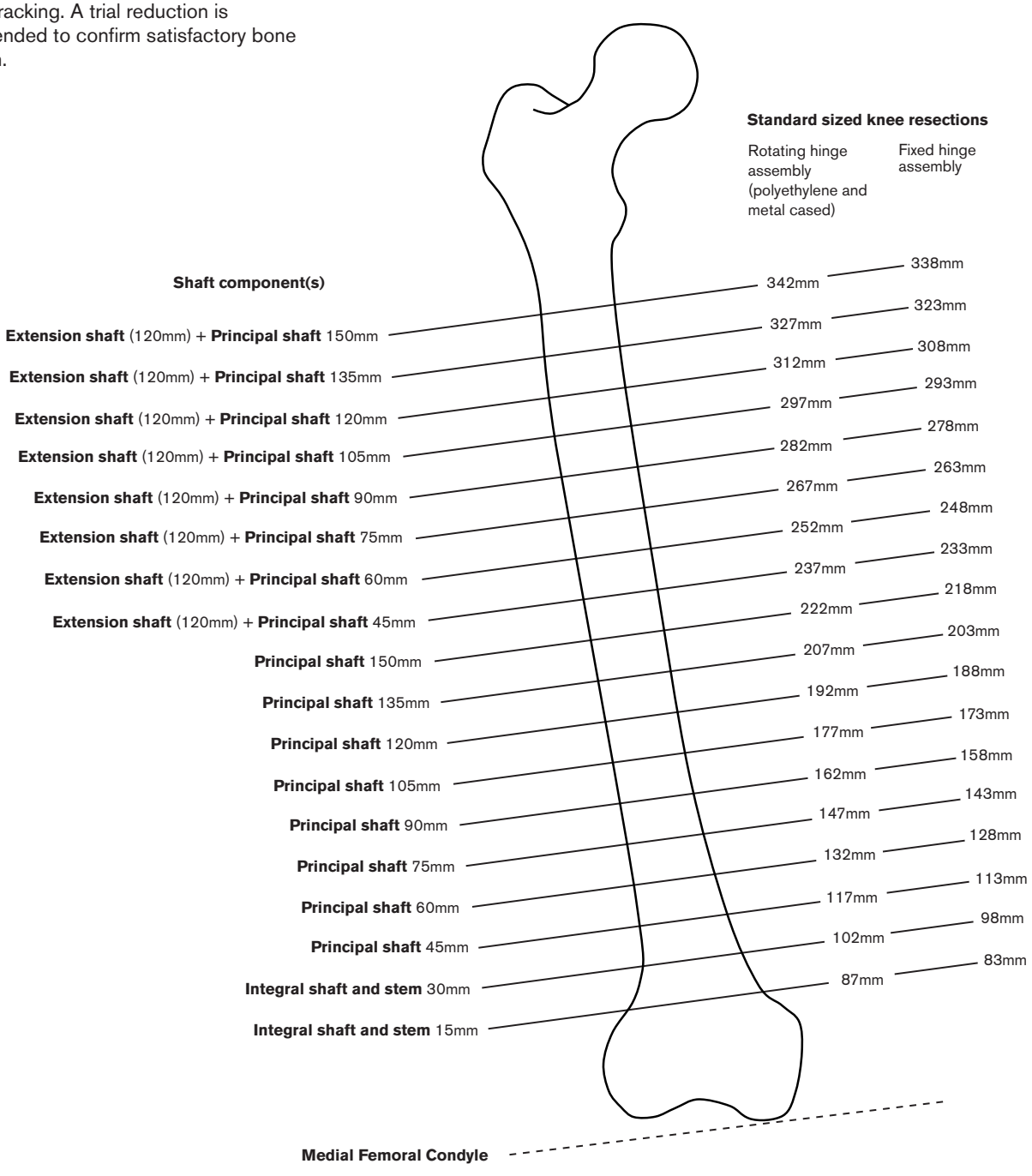
The length of the femoral resection must be considered with the tibial resection to recreate leg length and establish optimal patellar tracking. A trial reduction is recommended to confirm satisfactory bone resection.



SMILES Knee size: Standard

It should be noted that collar lengths are included in the resection values.

The length of the femoral resection must be considered with the tibial resection to recreate leg length and establish optimal patellar tracking. A trial reduction is recommended to confirm satisfactory bone resection.



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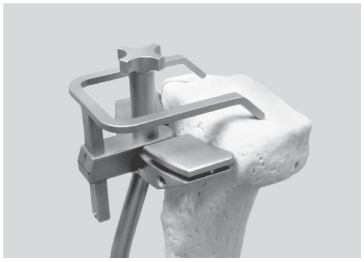
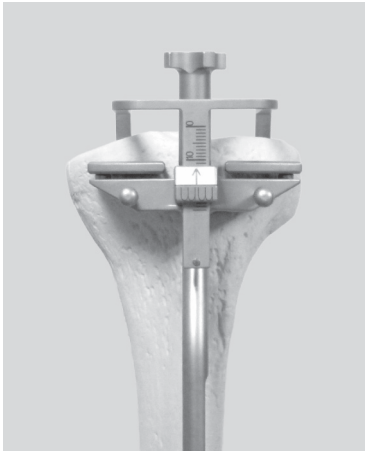




B

C

Plate with slots
for rotating hinge polyethylene tibia

D

Plate with holes
for rotating hinge metal cased and fixed hinge tibial components.

3.5.3 Tibial Preparation

Assuming no previous resections, it is recommended that 8mm is resected for rotating hinge polyethylene tibial components, 11mm resection for rotating hinge metal cased tibias and 5mm resection for fixed hinge tibial components (as shown in section 3.5.1).

A Resect the top of the tibia using the tibial cutting guide provided. Adjust the prongs of the tibial guide so that they sit into the condyles of the tibia. Adjust ankle rest to align cutting guide to be parallel with tibia and secure adjustments using locking screws. Adjust the reference cutting face to match the depth for the type of tibial component to be used. Secure the reference cutting face using bone pins and remove prong assembly. Trim the tibial plateau in line with the plane of the reference cutting face.

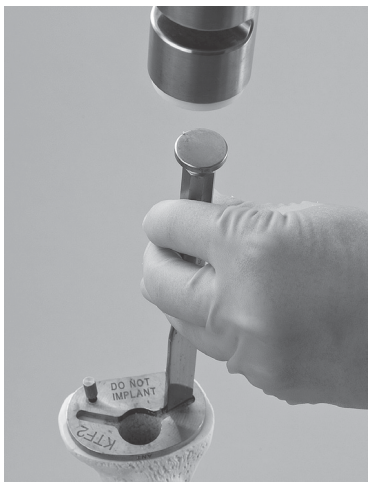
B Based on the type and size of tibial configuration to be used, place a tibial positioning plate onto the cut surface of the tibia ensuring the straight edge of the plate is on the posterior side. Rotate plate to achieve the desired orientation.

C For a rotating hinge polyethylene tibial component, use the plate with slots.

D For rotating hinge metal cased and fixed hinge tibias, use the plate with holes.

E

F



G

E Ream the tibial canal through the central hole using the appropriate reamer (specific for the type of tibial component chosen).

— For the rotating hinge metal cased and the fixed hinge tibial components, in addition to the proximal reamer and if required, ream the distal canal to a depth of 140mm for short stems and 180mm for the long stems using a reamer.

F For rotating hinge polyethylene tibial component, use the osteotome to cut the slots to a depth of 8 to 10mm.

G For rotating hinge metal cased and fixed hinge tibial components, use the AR lug drill until the depth stop to prepare the 10mm deep holes for the anti-rotational lugs.

The tibia is now prepared.

3.5.4 Femoral preparation

— Prepare the femur according to the resection levels indicated in section 3.5.2.

— Ream the femoral canal using an appropriate sized flexible reamer to the required depth and diameter to accommodate the femoral stem, leaving a minimum of 1mm for the cement mantle.

A

3.6 Short resections ≤ 91mm (small) and ≤ 98mm (standard)

A For very short resections, integral stem/shaft constructs are available in two shaft lengths 15mm and 30mm with two shaft sizes 38 x 30mm and 44 x 36mm and a stem length of 150mm tapering 13>8mm. Available with hydroxyapatite coating.

3.6.1 Trial assembly and insertion

— Select the required size and type of trial tibial mono-block and insert into the tibial canal. This picture shows the implant not the trial.
— Select corresponding size femoral knee component and integral shaft/stem construct to replace the resected length of the femur and assemble them as described in section 3.3. The assembly sequence should be femoral knee component onto the shaft/stem construct. Insert the femoral assembly into the femur.
— The trial components should now be in place.
— Join the trial femoral assembly to the trial tibial monoblock by fully inserting the trial axle, and perform trial reduction. Exchange trial components as required.
— If the joint is too tight or too loose between shaft increments, it may be necessary to resect extra bone from the femur and repeat the trial.
— Once satisfied, remove all trial components and select corresponding implant components.
— During removal of the trial implant, if the stem should become lodged within the canal and left behind, the trial stem extractor should be used to remove it as shown on page 8.

A

3.6.2 Implant assembly and insertion

— A Hold the integral shaft/stem construct with the spigot pointing upwards; insert it into the femoral component ensuring that the alignment lug is properly engaged. With multiple sharp blows using the soft hammer provided, impact the flat of the femoral component as shown. This should lock the taper securely in place.
— The femoral component is now assembled and ready for insertion.
— Insert the femoral component and cement securely into place ensuring desired rotational alignment.

A

3.7 Resections > 91mm (small) and > 98mm (standard)

A

3.7.1 Trial assembly and insertion

— Select the required size and type of trial tibial mono-block and insert into the tibial canal. This picture shows the implant, not the trial.
— Select corresponding size femoral knee component, shaft, collar and stem to replace the resected length of the femur and assemble them as described in section 3.3. The assembly sequence should be femoral knee component onto the shaft followed by collar and then stem respectively. Insert the femoral assembly into the femur.
— The trial components should now be in place.
— Join the trial femoral assembly to the trial tibial monoblock by fully inserting the trial axle, and perform trial reduction. Exchange trial components as required until satisfactory assembly is produced.
— If the joint is too tight or too loose between shaft increments, it may be necessary to resect extra bone from the femur and repeat the trial.
— Once satisfied, remove all trial components and select corresponding implant components.
— During removal of the trial implant, if the stem should become lodged within the canal and left behind, the trial stem extractor should be used to remove it as shown on page 8.

A

B

C

3.7.2 Implant assembly and insertion

A — Hold the principal shaft with the spigot pointing upwards with two hands, and insert it into the femoral component ensuring that the alignment lug is properly engaged. With multiple sharp blows using the soft hammer provided, impact the flat of the femoral component as shown. This should lock the taper securely in place.

B — Then, place the selected collar onto the proximal end of the shaft ensuring once again the alignment lugs are correctly aligned. If an oval collar is chosen, check the ovality is correctly orientated. Holding the collar impactor over the collar, impact with multiple hammer blows as shown taking care not to damage the bore or hydroxyapatite coating.

C — Finally, insert the appropriate sized stem, ensuring the alignment lug is correctly located and impact with multiple sharp blows on the end of the stem.

— The femoral component is now assembled and ready for insertion.

— Insert the femoral component and cement securely into place ensuring desired rotational alignment.

A

3.8 Extensive Resections > 211mm (small) and > 218mm (standard)

A For extensive resections, a 120mm extension shaft is available to further increase the length capability. Extension shafts can only be used in conjunction with a principle shaft.

3.8.1 Trial assembly and insertion

- Select the required size and type of trial tibial mono-block and insert into the tibial canal. This picture shows the implant, not trial.
- Select corresponding size femoral knee component, extension shaft and principal shaft, collar and stem to replace the resected length of the femur and assemble them as described in section 3.3. The assembly sequence should be femoral knee component onto the extension shaft, then the principal shaft followed by the collar and then stem respectively. Insert the femoral assembly into the femur and reduce the joint.
- The trial components should now be in place.
- Join the trial femoral assembly to the trial tibial monoblock by fully inserting the trial axle, and perform trial reduction. Exchange trial components as required.
- If the joint is too tight or too loose between shaft increments, it may be necessary to resect extra bone from the femur and repeat the trial.
- Once satisfied, remove all trial components and select corresponding implant components.
- During removal of the trial implant, if the stem should become lodged within the canal and left behind, the trial stem extractor should be used to remove it as shown on page 8.

A

B

C

3.8.2 Implant assembly and insertion

— A Hold the extension shaft with the spigot pointing upwards with two hands, and insert it into the femoral knee component ensuring that the alignment lug is properly engaged. Apply multiple sharp blows using the soft hammer provided and impact the flat of the femoral component as shown. This should lock the taper securely in place.

— B Insert the principal shaft into the extension shaft ensuring that the alignment lug is properly engaged. Apply multiple sharp blows to the flat of the femoral knee component using the soft hammer provided.

— C Place the selected collar onto the proximal end of the principal shaft ensuring once again the alignment lugs are correctly aligned. If an oval collar is chosen, check the ovality is correctly orientated. Holding the collar impactor over the collar, impact with multiple sharp hammer blows as shown taking care not to damage the bore or hydroxyapatite coating.

— Finally, insert the appropriate sized stem, ensuring the alignment lug is correctly located and impact with multiple sharp blows on the end of the stem (not shown).

— The femoral component is now assembled and ready for insertion.

— Insert the femoral component and cement securely into place ensuring desired rotational alignment.

A

3.9 Tibial Implant insertion

— For the rotating hinge option, remove the outer tibial component from the specific tibial assembly chosen.

— Cement the appropriate tibial component into the tibial canal, i.e. for rotating hinge polyethylene assembly, cement the long plastic tibial component; for the rotating hinged metal cased tibial arrangement, cement the outer metal tibial casing.

— Once cemented securely in place, reposition the tibial bearing components into the cemented tibia.

— For the fixed hinge tibial arrangement, simply cement the component into the canal and impact using the general impactor.

A — Impact using the appropriate size of Tibial Bearing impactor.

A

3.9.1 Tibial plateau plates

— Optional tibial plateau plates are available in 5, 10, 15 and 20mm thicknesses for use with the rotating hinge metal cased or fixed hinge tibial components.

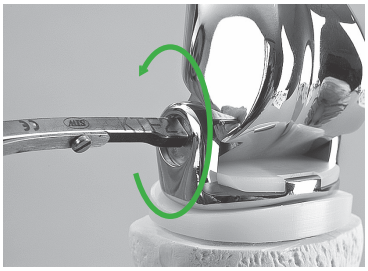
— A Using a small amount of bone cement, secure the plateau plate onto the tibial component by sliding it over the tibial stem until the anti-rotation lugs on the tibial component are located within the holes in the tibial plateau plate.

— The tibial component can then be inserted as described in section 3.9.

— **It should be noted that only one tibial plateau plate can be used, multiple plates cannot be stacked onto one another.**

A

B



C

3.10 Insertion of the axle and circlip

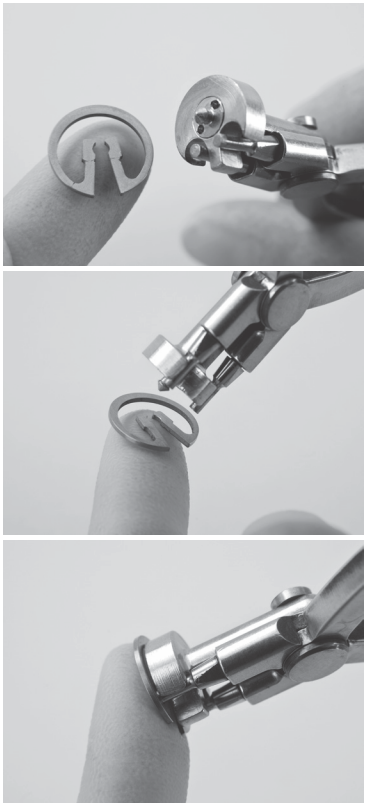
3.10.1 Insertion of the axle

A Align the femoral and tibial components and insert the axle into position as shown. It should be noted that the axle can be inserted from either side of the knee joint.

B Using the pronged end of the circlip pliers handle, push the axle in place. If required, rotate the axle to engage the axle head into the offset recess in the tibial component.

C Check to ensure the axle head is correctly sitting inside the recess and that it is not trapped within the circlip groove. The axle is secured by inserting the circlip as described in section 3.10.2.

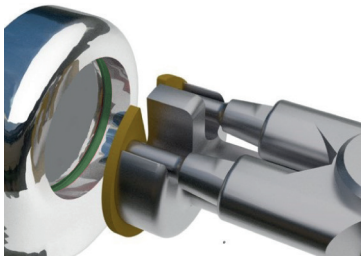
A



B – Correct

C – Incorrect

D



E

3.10.2 Insertion of circlip with circlip pliers

A The circlip and the pliers are designed to clip together for ease of use. The best way to place the circlip onto the pliers is by holding the circlip on your finger tip and then pushing the pliers into it ensuring the central pin locates in the centre of the circlip and the two moving jaws are either side of the central strips of the circlip as shown.

B A correctly inserted circlip is shown on the left with the jaws of the circlip pliers in the correct position.

C This picture on the left shows an incorrectly inserted circlip. This would not function and the circlip needs reinserting. (Requires rotating 180°)

D Squeeze handle of circlip pliers to close the circlip, and push circlip into groove (shown in green)

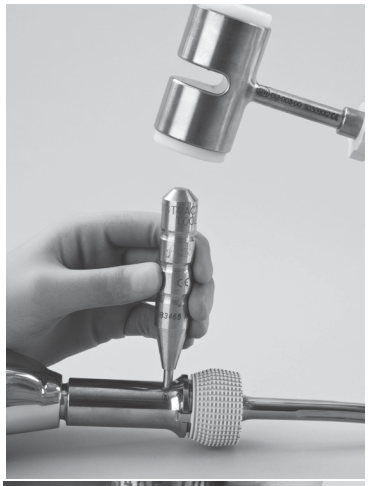
— Release handle of circlip pliers to open the circlip within the groove and pull circlip pliers to unclip from the circlip

E Ensure that the circlip is seated inside the groove in the tibial component and then using a pointed implement rotate it to ensure it turns inside the groove.

— Rotation of the circlip ensures the circlip is fully engaged in the groove.

— Separately packaged components are available if required. See section 4.0

A



3.11 Disassembly

A During revision surgery, it may be necessary to disassemble the implant. This is achieved by inserting the distraction tool into the anterior hole of the shaft and impacting with a hammer. The distraction tool has a flat, which should locate on the end of the inner spigot. **Parts are for SINGLE USE only and cannot be reused.**

Stems				
Curved, 150mm	10 > 8.5mm			msstm/10x150
	11 > 9.5mm			msstm/11x150
	12 > 10.5mm			msstm/12x150
	13 > 11.5mm			msstm/13x150
	14 > 12.5mm			msstm/14x150
	15 > 13.5mm			msstm/15x150
Straight, 100mm	14 > 13.2mm			msstm/14x100
	15 > 14.2mm			msstm/15x100
Collars, round	Ø27			mscol/R27S
Smooth	Ø30			mscol/R30S
Uncoated	Ø33			mscol/R33S
	Ø36			mscol/R36S
Collars, round	Ø27			mscol/R27C
Stippled	Ø30			mscol/R30C
HA coated	Ø33			mscol/R33C
	Ø36			mscol/R36C
Collars, oval	Ø27x30			mscol/O27x30S
Smooth	Ø30x33			mscol/O30x33S
Uncoated	Ø33x36			mscol/O33x36S
	Ø36x39			mscol/O36x39S
Collars, oval	Ø27x30			mscol/O27x30C
Smooth	Ø30x33			mscol/O30x33C
HA coated	Ø33x36			mscol/O33x36C
	Ø36x39			mscol/O36x39C
Principal shafts	45mm			msfshft/45
	60mm			msfshft/60
	75mm			msfshft/75
	90mm			msfshft/90
	105mm			msfshft/105
	120mm			msfshft/120
	135mm			msfshft/135
	150mm			msfshft/150
Extension shaft	120mm			msfext/120
Integral shafts & stems	**Shaft**	**Stem**		
Oval Stippled	L = 15 D = 30x38	150x13 > 8mm		msiss/O15x30x38C
HA coated	L = 30 D = 30x38	150x13 > 8mm		msiss/O30x30x38C
	L = 15 D = 36x44	150x13 > 8mm		msiss/O15x36x44C
	L = 30 D = 36x44	150x13 > 8mm		msiss/O30x36x44C
Femoral knees	Small	Left		mkfe/LSm
	Small	Right		mkfe/RSm
	Standard	Left		mkfe/LStd
	Standard	Right		mkfe/RStd
Tibial: rotating hinges	Small			mkrhp/Sm
Polyethylene	Standard			mkrhp/Std
Tibial: rotating hinges	Small	Short Stem		mkrhm/SmSt
Metal Casing	Standard	Short Stem		mkrhm/StdSt
	Small	Long Stem		mkrhm/SmLg
	Standard	Long Stem		mkrhm/StdLg
Tibial: fixed hinges	Small	Short Stem		mkfh/SmSt
	Standard	Short Stem		mkfh/StdSt
	Small	Long Stem		mkfh/SmLg
	Standard	Long Stem		mkfh/StdLg
Tibial: plateau plates	Sml 5mm			mktp/Sm5
Small	Sml 10mm			mktp/Sm10
	Sml 15mm			mktp/Sm15
	Sml 20mm			mktp/Sm20
Standard	Std 5mm			mktp/Std5
	Std 10mm			mktp/Std10
	Std 15mm			mktp/Std15
	Std 20mm			mktp/Std20

Other components available in small and standard sizes	Axle, Circlip, Bumper pad, Bushes and Tibial Bearing also available in Small and Standard sizes packaged separately

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