MUTARS®

implantcast

Total Femur M-O-M

surgical technique

Femorotibial M-O-M coupling

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surgical technique

Femorotibial M-O-M coupling

MUTARS® was developed in co-operation with
Prof. Dr. W. Winkelmann (former director)
and Prof. Dr. G. Gosheger (director), Clinic and
Polyclinic for General Orthopedics and Tumororthopedics
at the University Hospital of Münster, Germany.
MUTARS® has been in successful clinical use since 1992.

Table of Contents

Nota Bene: The described surgical technique is the suggested treatment for the uncomplicated procedure. In the final analysis the preferred treatment is that which addresses the needs of the individual patient.

CAUTION: Federal law (USA) restricts this device to sale on or by the order of a physician.

***E:** Silver coated, TiN coated and cpTi/HA double coated components are not available in the US.

The *Silver* coating
Early and late infections represent the most severe complications of tumour arthroplastic treatments. Although local and systemic antibiotic treatments are considered, the scientific literature reports of infection rates from 5 to 35 percent. Reasons for these high rates are, for example, the long surgery time, the large incisions and the immunosupression due to chemo therapy and radio therapy as well as the increasing resistance of the bacteria against antibiotic drugs.
The anti-infective effect of silver ions has been known for centuries i.e. the disinfection of potable water is based on this principle. This special property of silver is used for the silver coated components of MUTARS® to build an intelligent protection against bacteria. Until now only non-articulating surfaces and surfaces without direct bony contact are coated with silver.
In the catalogue information of this brochure you can find the supplement *S indicating which MUTARS® components are available in a silver coated version. The eight digit REF number receives an addition after the last digit (e.g. 5220-0020S).

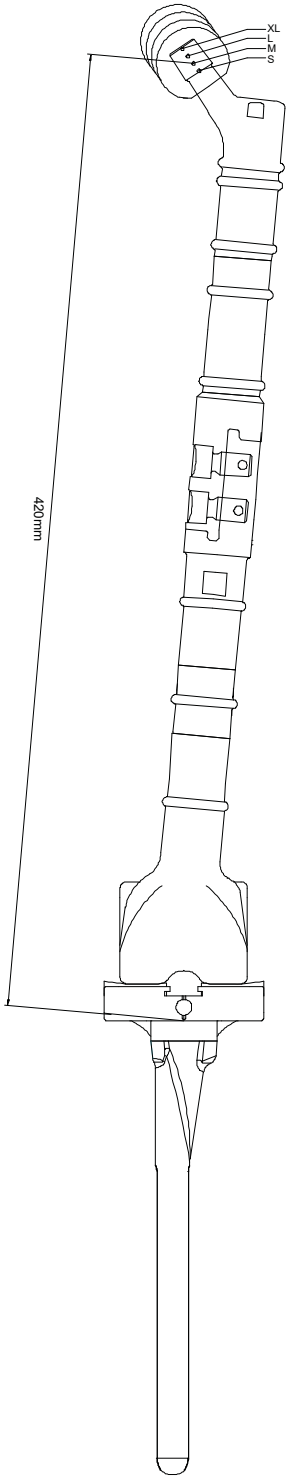
It is not permitted to flush the wound with antiseptics that contain Iodine or heavy metals (such as Betaisodona®)
Iodine and Silver form insoluble salt complexes not only with the silver ions that are released post-operatively but also with the silver layer of the implant that will be covered with an insoluble silver-iodine (AgI) film. This will destroy the anti-adhesive protective layer irreversibly. Iodine or heavy metal based antiseptics may not be used at any time. Alternatively solutions containing H_2O_2 – (like Lavasept®, Prontosan® or similar) can be used.
The silver coating can be destroyed in its function by two factors: large amounts of albumin from seroma or hematoma can bind larger amounts of silver (1 mol Albumin inactivates 3 moles Silver ions). This should be minimized by using an attachment tube. In the instance that an infection is known pre-operatively, antibiotics like Vancomycin can be mixed with the bone cement. The intramedullary stems are not silver coated and cemented components are preferred in case of a septic revision.

The TiN coating for allergy prophylaxis
As the metallic components of total knee replacements, the articulating metallic parts of the MUTARS® system are made of casted CoCrMo alloy. In the late 70's and 80's of the last century, some of the Cobalt Chromium implants had a small Nickel content to add strength to the implant. Nickel is the primary cause for metal sensitivity, although some patients have shown to be hypersensitive to other metals such as Cobalt and Chromium. The use of titanium components can't solve this problem, because the wear of the articulating polyethylene inlays will increase and so the survival time of the prosthesis is reduced. Since the end of the 1990's TiN (Titanium Nitride coating) has been successfully applied to protect the body against metal ions that could cause allergic reactions.
The metal ion release of TiN coated or TiNbN coated implants is reduced down to 10%.[1]
In order to prevent allergic reactions, certain parts of the prosthesis may be supplied with a ceramic coating (TiN). Since almost all components of the tumor system consist of titanium alloy, this only concerns those components, which are made of a cast CoCr alloy (CoCrMo). The REF-numbers of the TiN coated implants have the suffix N after the last digit (e.g. 5720-0005N).

***S**: For anti-infective treatment, silver coated implants are available.
***N**: For anti-allergic treatment, TiN coated implants are available.
***E:** Silver coated, TiN coated and cpTi/HA double coated components are not available in the US.

[1] Metal Ion Release from Non-Coated and Ceramic Coated Femoral Knee Components: Boil test 240h in NaCl-solution nach FMZ PhysWerk VA 97350, University Würzburg (D) (On File)

System Overview



ic-head
short, medium, long, extra long

proximal femur 70 mm (50 mm)

extension piece 100 mm (40, 60, 80 mm)

reducer 20 mm (30 mm)

connecting part 100 mm

distal femur for locking mechanism
110 mm (90 mm)

locking mechanism

PE-inlay

tibial plateau m-o-m
cemented / cementless
xsmall, small, standard, large
ø11-17mm cemented

stem for tibial plateau
length: 120, 160 + 200mm
ø12-18mm zementfrei
ø11-15mm cemented

tibial spacer
25, 35, 50 mm (bicondylar)
5,10,15,20 mm (unicondylar)

Note: Please notice that the amount of implants and instruments send with an individual shipment may differ from the information in the catalogue information of this brochure. Please make sure, during the

preoperatively planning, that all necessary implants and instruments are available for the surgery

MUTARS® Total Femur

total femur replacement
assembling options

reconstruction	Prox. Femur	extension piece	reducer	extension piece	connecting part	Dist. Femur	bar screw
280 mm	50	80	20		-	110	105+45
290 mm	50	80	30		-	110	105+45
300 mm	50	-	20		100	110	25+25+45
310 mm	50	-	30		100	110	25+25+45
320 mm	70	-	20		100	110	45+25+45
330 mm	70	-	30		100	110	45+25+45
340 mm	50	40	20		100	110	65+25+45
350 mm	50	40	30		100	110	65+25+45
360 mm	70	40	20		100	110	85+25+45
370 mm	70	40	30		100	110	85+25+45
380 mm	70	60	20		100	110	105+25+45
390 mm	70	60	30		100	110	105+25+45
400 mm	70	80	20		100	110	125+25+45
410 mm	70	80	30		100	110	125+25+45
420 mm	70	100	20		100	110	145+25+45
430 mm	70	100	30		100	110	145+25+45
440 mm	70	40+80	20		100	110	165+25+45
450 mm	70	40+80	30		100	110	165+25+45
460 mm	70	40+100	20		100	110	185+25+45
470 mm	70	40+100	30		100	110	185+25+45
480 mm	70	60+100	20		100	110	205+25+45
490 mm	70	60+100	30		100	110	205+25+45
500 mm	70	80+100	20		100	110	225+25+45
510 mm	70	80+100	30		100	110	225+25+45
520 mm	70	60+100	20	40	100	110	205+65+45
530 mm	70	60+100	30	40	100	110	205+65+45
540 mm	70	80+100	20	40	100	110	225+65+45
550 mm	70	80+100	30	40	100	110	225+65+45
560 mm	70	80+100	20	60	100	110	225+85+45
570 mm	70	80+100	30	60	100	110	225+85+45

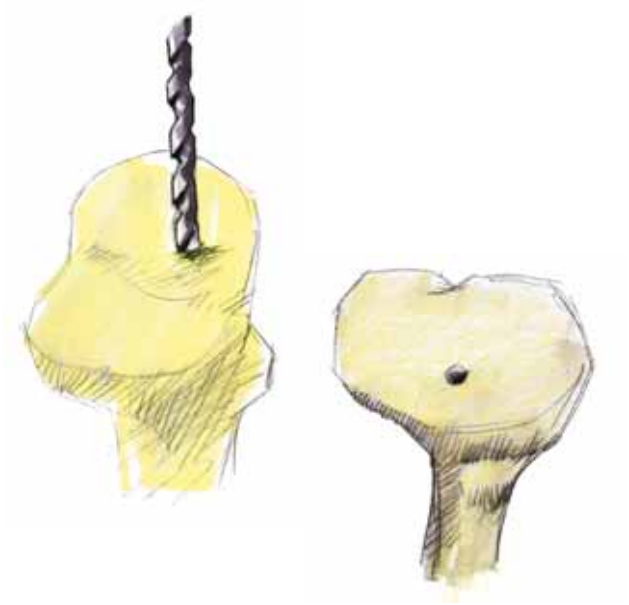


figure 1a and 1b

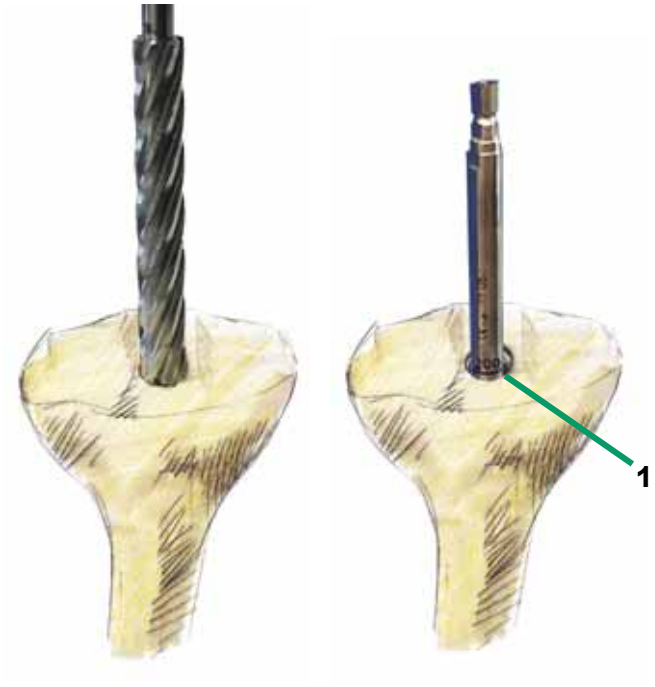


figure 2a and 2b

Tumor resection

Resect the tumour and measure the length of the explant.

Remove the menisci.

Tibial bone preparation

Open the tibial medullary cavity with the universal drill ∅ 6 mm (fig. 1a and 1b). The drilling should be orientated to open the center of the medullary cavity (eminentia intercondylaris: ventral 1/3, dorsal 2/3).

Enlarge the opening of the medullary cavity with rigid drills (fig. 2a and 2b).

To choose the correct reamer size for the use of a **cementless tibial stem** consult table 1, for the use of a **cemented tibial stem** consult table 2.

Table 1: cementless implantation
Tibial stem 12 mm ➔ drill 11 mm
Tibial stem 14 mm ➔ drill 13 mm
Tibial stem 16 mm ➔ drill 15 mm
Tibial stem 18 mm ➔ drill 17 mm

Table 2: cemented implantation
Tibial stem 11 mm ➔ drill 13 mm
Tibial stem 13 mm ➔ drill 15 mm
Tibial stem 15 mm ➔ drill 17 mm
Tibial stem 17 mm ➔ drill 17 mm

To ascertain adequate depth is met, the drills have depth marks (120 mm for 120 mm stems, 160 mm for 160 mm stems and 200 mm for 200 mm stems) corresponding with the tibial stem length (fig. 2a and 2b). The last drill used is left in the tibial canal.

The tibia resection block 0° is attached to the intramedullary tibial alignment guide and the cutting block is placed over the tibial drill left in the intramedullary canal (fig. 3a).

Adjust the rotational alignment and lock the alignment guide by impacting the two spikes into the tibial surface and lock all quick connectors (fig. 3b).

figure 3a and 3b

Slide the tibial stylus into the upper slot of the resection block to adjust the resection height. Make sure that the marking SLOTTED[1] is directed to the bone, when a slotted cut is planned (fig. 4).
If a nonslotted cut should be performed the NONSLOTTED marking on the stylus should point to the bone.

For the primary bone cut, make sure that the stylus is adjusted to the 15 mm mark[2] and 15mm of bone will be removed from the tibia (fig. 4).
In revision cases normally a minimum bone cut is recommended and the stylus should be adjusted to the 2mm height. When the correct resection height is determined, please lock the quick connector at the resection block.

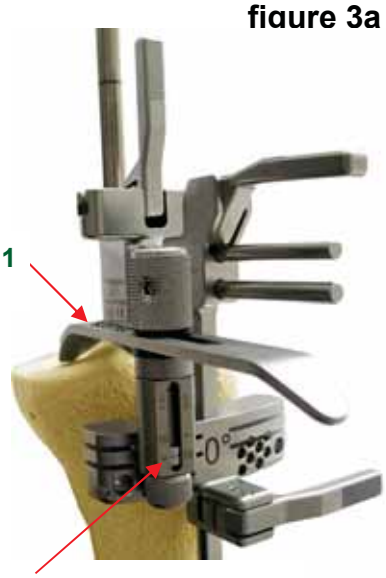


figure 4

Please insert the fixation pins in the marked level to fix the block to the bone. Remove the tibial resection stylus. If necessary please use the 3,2mm drill to predrill the holes (fig. 5).

figure 5

figure 6a

Double check the resection angle and height by using the resection check (fig. 6a).

figure 6b

Use the ACS® saw blade to resect the bone. Prevent damaging of the intramedullary drill. If necessary please remove the drill before resectioning. For additional stability a pin can inserted in the oblique hole (fig. 6b).

Please check the quality of the cut. Make sure that the cut is totally flat and remove the resection block.

figure 7

The resected tibia is checked and the reamer guide with the tibial centering guide is slide over the tibial reamer in place (fig. 7). The mark MEDIAL should be placed correctly to the medial side.

The right mediolateral alignment should be established and the tibial reamer guide is fixed with two pins (fig. 8a). The tibia reamer guide and the intramedullary tibial reamer are now removed.

figure 8a **figure 8b**

Use of tibial spacer

The joint line can be restored using tibial spacers or bone grafts. If necessary, additional bone should be resected to accommodate the trial tibial spacer. The trial tibial spacer is clicked under the tibial reamer guide. (fig. 8b). The height of the spacer should correspond with the one fixed at the preoperative assessment.

Combine the tibial reamer and the T-handle and ream carefully until the reamer is stopped by the chimney of the reamer (fig. 9a and 9b). It is strongly recommended **not** to use power tools for the reaming.

figure 9a **figure 9b**

figure 10a **figure 10b**

The tibial fin punch is used to continue the tibial preparation. The punch should be punched down until it is stopped by the tibial reamer guide (fig. 10a and 10b).

figure 11a **figure 11b**

In case of sclerotic bone the tibial drill can be used. A drill sleeve is placed inside the tibia reamer guide to accommodate this drill. The drill sleeve is placed medially and the canal is drilled. After turning the sleeve 180°, the lateral side is to be drilled.

Remove all instruments.

Assembling with trial components

Remark
Note that the trial components can be used fort he trial assembly in the same as the described technique below.

Assembling of the total femoral implant components

Start to mount the Proximal Femur, additional extension pieces and the reducer. Insert the proximal bar screw of the appropriated length (see table on page 2) (fig. 12).

figure 12

Adjust the rotation and lock the bar screw with the swing wrench while countering it with the engineers' wrench (fig. 13).

Remark
Please insert the safety screw later. The rotational position might need to be readjusted after the trial reduction.

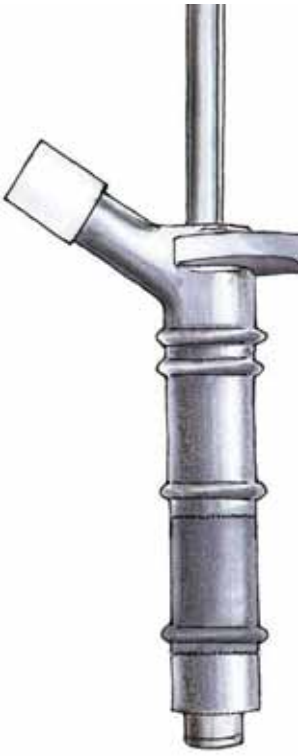


figure 13

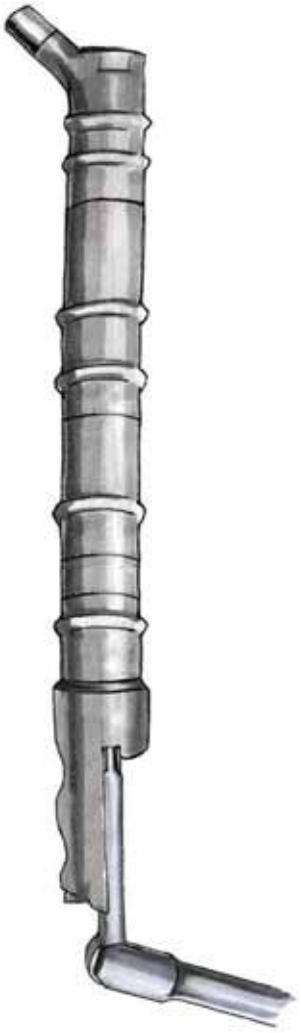


figure 14

Add the proximal part of the connecting part to the assembly. Insert the 25 mm screw (or the length shown on page 2).

Lock the screw tightly by using the swing wrench (fig.14).

Add the distal part of the connecting part and lock the two screws with the swing wrench (fig. 15). It is recommended that the screw heads are orientated towards the lateral side of the leg. This will ease the opening if a revision surgery has to be performed.

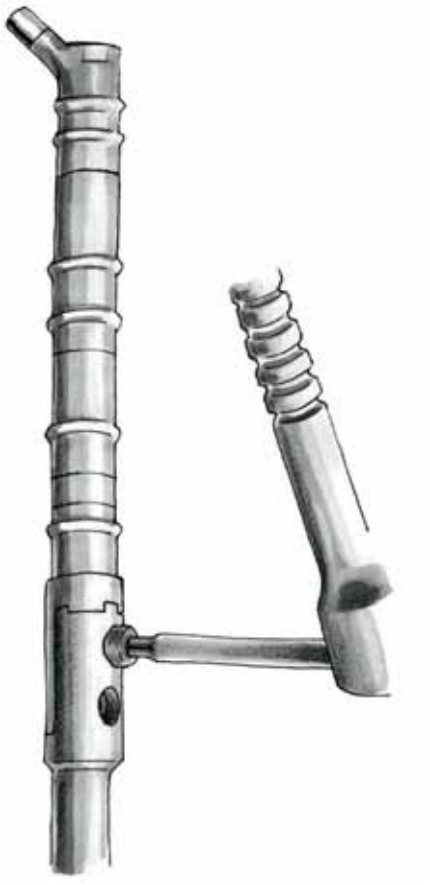


figure 15

Mount the Distal Femur to the distal part of connecting part (fig. 16) and insert the 45 mm screw) and insert the 45 mm screw (fig. 17) (or a 25mm screw when a 90mm distal femur is used).

Lock the screw with the socket wrench (Abb. 18).

figure 16

figureen 17 and 18

figure 19

figure 20a figure 20b

figure 21a figure 21b

figure 22

Use of trial implants

To check all resections performed, the tibial and femoral trial implants are used.

Screw the trial stem under the tibial trial of the selected size (fig. 19).

The stem is medialized and care should be taken to place the trial stem into the correct medio-lateral position. If necessary a trial spacer can be clicked under the trial tibial implant (fig. 19).

The tibial trial and stem can be inserted using the tibial impactor (fig. 20a and 20b).

The corresponding trial inlay is now placed on the tibial trial implant (fig. 21a), using the PE-inlay setting instrument (fig. 21b).

Perform a trial reduction to assure that the correct femoral rotation is achieved and the joint line is restored in the correct height (fig. 22).

Remark
Please notice that a coupling of the joint components is not possible at this stage when using the trial components. At a later stage the joint stability can be checked using the final implant components and the locking mechanism.

Remove the trial inlay. Screw the slide hammer into the tapered hole of the trial plateau and remove the trial components (fig. 23 and 24).

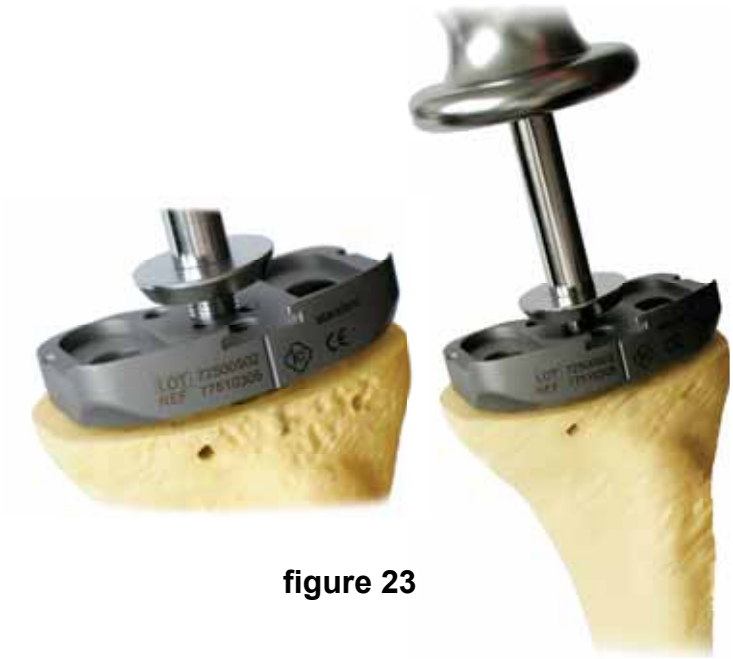


figure 23

figure 24

Tibial component assembly

Attach the selected tibial stem onto the cone of the tibia component and connect the two parts with the screws provided. An torque wrench 3.5 mm hex screw driver (fig. 25) should be used. The same way any tibial spacers should be added (fig. 25).

figure 25

figure 26a

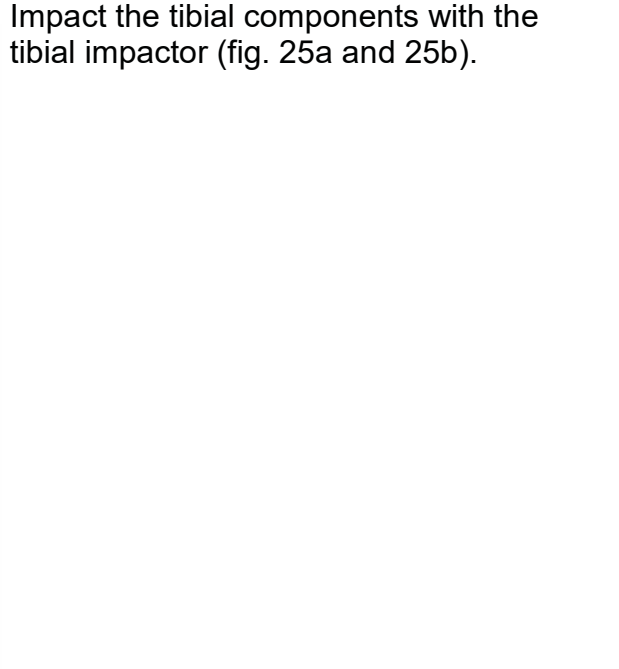


figure 26b

Impact the tibial components with the tibial impactor (fig. 25a and 25b).

After cement hardening, insert the PE-Inlay in the tibial joint. Insert the inlay from behind, move it forward towards the anterior locking rim and push it down at the posterior part until it is locked securely (fig. 26a). Consider to use the impactor for PE-Inlay (fig. 26b).

Although trial inserts are available, it is recommended to insert the final PE-inlay at that time in order to reduce the surgery time.

figure 27a

figure 27b

Lock the screw with the swing wrench while countering the assembly with the engineers' wrench (fig. 28a).

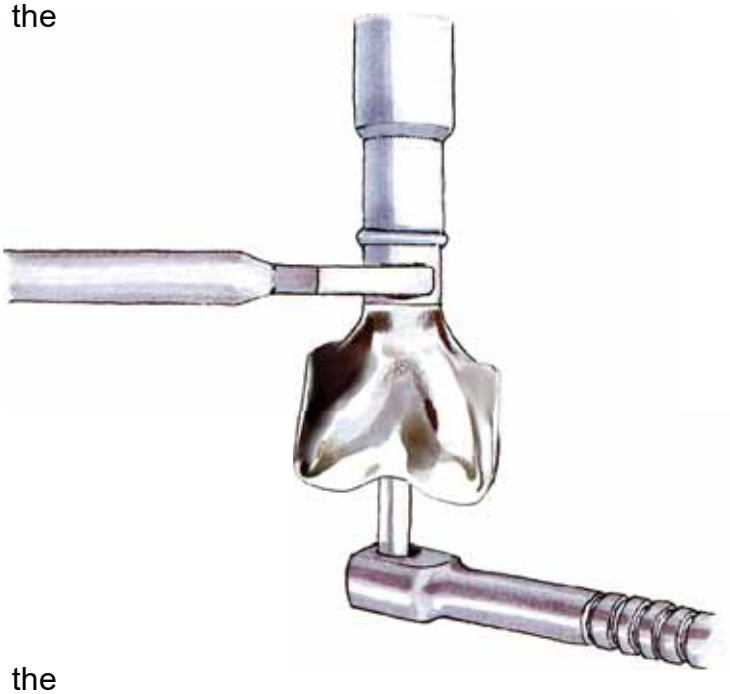


figure 28a

Insert the safety screw and lock it in the same way (fig. 28b).

figure 28b

Assemble the MUTARS® locking mechanism and the special MUTARS® instrument for locking mechanism. Therefore turn the attachment part of the lock by 100 degrees until it rests in the sleeve of the locking instrument (fig. 29).

figure 29

Insert the lock into the intracondylar notch of the femoral joint (fig. 30).

figure 30

Use the socket wrench to turn the locking instrument and the lock clockwise by 180 degrees (fig. 31).

figure 31

The lock is correctly positioned when the attachment part falls out of the sleeve of the locking instrument (fig. 32a).
Remove the locking instrument.

figure 32a

figure 32b

The instrument to insert the mechanism into the tibia component is now placed in the hole of the coupling and the mechanism is guided into the hole of the tibial plateau (fig. 32b).

The coupling mechanism should be fully engaged and placed in the correct rotational position.

figure 33a

The positioner is inserted into the screw hole of the short stem of the coupling mechanism (fig. 33a and 33b).

figure 33b

figure 34a

The coupling mechanism is held in place with the setting instrument while removing the positioner. Then the locking bolt is fixed with the torque wrench 3.5 mm hex screw driver into the tibial component (fig. 34a).

figure 34b

Be sure that the locking bolt is fully engaged into the tibia component (fig. 34b).

figure 35a

figure 35b

A hexagonal torque wrench 3.5 mm hex screw driver is used to screw in the Multilock security screw and to tighten the locking bolt (fig. 35a und 35b).

figure 36a

figure 36b

The implantation of the implant is now concluded. Stability and range of motion should be performed in flexion (fig. 36a) and extension (fig. 36b).

Removal of an implant

In case a tibia component should be removed the Multilock security screw and the locking bolt should be removed from ventrally using the torque wrench 3,5mm hex screw driver.

The locking instrument is then used to remove the locking mechanism from the femoral component.
.

The femoral component can now be removed using the slide hammer and the special extractor (fig. 37a and 37b).

figure 37a

The tibial extractor is now attached to the slide hammer and placed into the screw hole of the tibial component (fig. 37a).

The attachment is secured using the rod with the small chain (fig. 37b).

figure 37b

The tibial component is now removed using the slide hammer (fig. 37c).

figure 37c

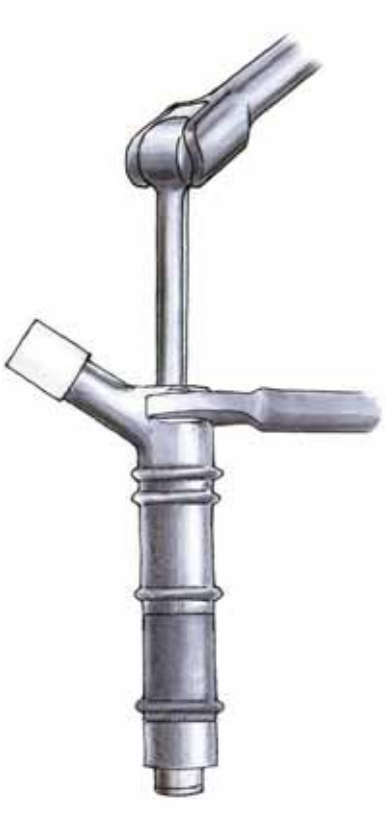


figure 38

Adaptation of the antetorsion of the Proximal Femur

The rotation of the Proximal Femur can be readjusted after trialing. If necessary unlock the bar screw and turn the proximal femur clockwise in 5° steps. If the antetorsion is correct, lock the bar screw with the swing wrench while using the engineers' wrench to counter (fig. 38).

figure 39

Please insert the safety screw and lock it in the same way (fig. 39).

The use of the attachment tube

Fix the tube, first proximally and then distally.
Pull the tube over the joint capsule and fix the tube to the capsule wall (fig. 40).

Put on a head or bipolar head and reduce the joint (fig. 41). Afterwards tighten the tube and fix the tube over and under the pads of the MUTARS® components (fig. 42).

Suture the muscles and tendon tissues to the meshes of the tube.

The trevira tube should turn up inward on the end. Put the tube over the rest of the joint capsule, if necessary split the tube (fig. 43).

Subsequently fix the tube on the rest of the capsule wall with sutures (fig. 43).

figure 40

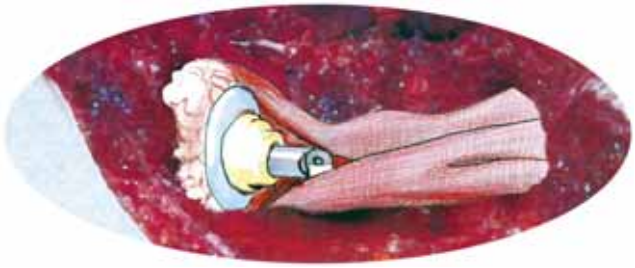


figure 41

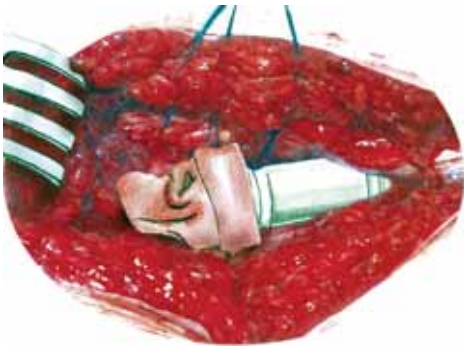


figure 42

figure 43

IMPLANTS

***S**: For anti-infective treatment, silver coated implants are available.

***N**: For anti-allergic treatment, TiN coated implants are available.

***SN:** Implants with Silver and TiN coating!

MUTARS® Proximal Femur *S

incl. safety screw

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3

5710-0205 50 mm
5710-0207 70 mm

MUTARS® extension piece *S

mat.: implatan®; $TiAl_6V_4$ acc to ISO 5832-3

5772-2504 40 mm
5772-2506 60 mm
5772-2508 80 mm
5772-2510 100 mm

MUTARS® reducer *S

mat.: implatan®; $TiAl_6V_4$ acc to ISO 5832-3

5730-0220 20 mm
5730-0230 30 mm

MUTARS® connecting part *S

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3

5730-0100 100 mm

IMPLANTS

MUTARS® Distal Femur M-O-M, incl. safety screw *S *N

mat.: implavit®;CoCrMo acc. to ISO 5832-4

5720-0045 110 mm left
5720-0040 110 mm right

5720-0047 90 mm left (on request)
5720-0042 90 mm right (on request)

MUTARS® screw

mat.: implatan®;$TiAl_6V_4$ acc. to ISO 5832-3

5792-1002 M10x 25 mm
5792-1004 M10x 45 mm
5792-1006 M10x 65 mm
5792-1008 M10x 85 mm
5792-1010 M10x105 mm
5792-1012 M10x125 mm
5792-1014 M10x145 mm
5792-1016 M10x165 mm
5792-1018 M10x185 mm
5792-1020 M10x205 mm
5792-1022 M10x225 mm

MUTARS® attachment tube

mat.: polyethylenterephtalat

5900-0300 35 mm
5900-0310 55 mm

MUTARS® tibial plateau M-O-M *N cementless, incl. screw for locking mechanism and safety screw

mat.: implavit®; CoCrMo acc to ISO 5832-4 Screw implatan®; $TiAl_6V_4$ acc. to ISO 5832-3 with TiN coating

5751-0203 xsmall
5751-0200 small
5751-0205 standard
5751-0210 large

IMPLANTS

MUTARS® tibial plateau M-O-M *N cemented, incl. screw for locking mechanism and safety screw

mat.: implavit®; CoCrMo acc .to ISO 5832-4 Screw implatan®; $TiAl_6V_4$ acc. to ISO 5832-3 with TiN coating

5751-0303	xsmall
5751-0300	small *S
5751-0305	standard *S
5751-0310	large *S

screw for locking mechanism

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3 with TiN coating

5720-1201

MUTARS® screw for tibial plateau M-O-M

mat.: implatan®; $TiAl_6V_4$
acc. to ISO 5832-3

5720-1205

MUTARS® tibial stem, cementless

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3

5756-1212	12 x 120 mm
5756-1214	14 x 120 mm
5756-1216	16 x 120 mm
5756-1218	18 x 120 mm
5756-1612	12 x 160 mm
5756-1614	14 x 160 mm
5756-1616	16 x 160 mm
5756-1618	18 x 160 mm
5756-2012	12 x 200 mm
5756-2014	14 x 200 mm
5756-2016	16 x 200 mm
5756-2018	18 x 200 mm

MUTARS® tibial stem, cemented *N

mat.: implavit®; CoCrMo acc. to ISO 5832-4

5755-1211	11 x 120 mm
5755-1213	13 x 120 mm
5755-1215	15 x 120 mm
5755-1611	11 x 160 mm
5755-1613	13 x 160 mm
5755-1615	15 x 160 mm
5755-2011	11 x 200 mm
5755-2013	13 x 200 mm
5755-2015	15 x 200 mm

IMPLANTS

MUTARS® PE-inlay
mat.: UHMWPE acc. to ISO 5834-2
5721-0013 xsmall
5721-0002 small
5721-0001 standard
5721-0006 large

MUTARS® locking mechanism M-O-M *N
mat.: implavit®; CoCrMo acc. to ISO 5832-12
5720-1200

MUTARS® patellar component, cemented
mat.: UHMW-PE acc. to ISO 5834-2
5720-1000

Intramedullary plug
mat.: UHMW-PE acc. to ISO 5834-2
0299-4000 small
0299-4010 large

MUTARS® tibial spacer *S
mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3
5800-2500 25 mm small right/left
5800-3505 35 mm small left
5800-5005 50 mm small left
5800-3500 35 mm small right
5800-5000 50 mm small right

5810-0500 5 mm rl/lm
5810-1000 10 mm rl/lm.
5810-1500 15 mm rl/lm.
5810-2000 20 mm rl/lm.
5805-0500 5 mm ll/rm
5805-1000 10 mm ll/rm.
5805-1500 15 mm ll/rm
5805-2000 20 mm ll/rm.

MUTARS® screw for tibial spacer
mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3
5720-1203 for 5mm spacers
5720-1204 for 10-50 mm spacers

IMPLANTS

ic-head CoCrMo

mat.: implavit®; CoCrMo acc. to ISO 5832-12

2387-2800	28 mm, K
2387-2805	28 mm, M
2387-2810	28 mm, L
2387-2815	28 mm, XL
2387-3200	32 mm, K
2387-3205	32 mm, M
2387-3210	32 mm, L
2387-3215	32 mm, XL

ic-head Titan

mat.:implatan®; $TiAl_6V_4$ acc. to ISO 5832-3 with TiN-coating

2787-2800	28 mm, K
2787-2805	28 mm, M
2787-2810	28 mm, L
2787-2815	28 mm, XL
2787-3200	32 mm, K
2787-3205	32 mm, M
2787-3210	32 mm, L
2787-3215	32 mm, XL

The ic-heads Titan and CoCrMo with neck lengths of XXL and XXXL are available on special demand

ic-head Biolox® *forte*

mat.: Al_2O_3 acc. to ISO 6474

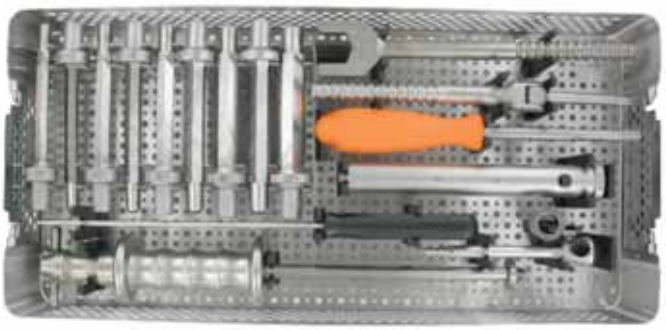
2587-2800	28 mm, K
2587-2805	28 mm, M
2587-2810	28 mm, L
2587-3200	32 mm, K
2587-3205	32 mm, M
2587-3210	32 mm, L

ic bipolar head CoCrMo

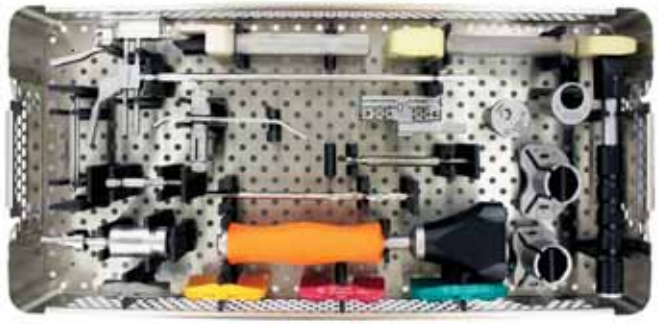
mat.: implavit® CoCrMo acc. to ISO 5832-4 and UHMW-PE (ISO 5834-2)

2151-0044	28/44 mm
2151-0046	28/46 mm
2151-0048	28/48 mm
2151-0050	28/50 mm
2151-0052	28/52 mm
2151-0054	28/54 mm
2151-0056	28/56 mm
2151-0058	28/58 mm
2151-0060	28/60 mm

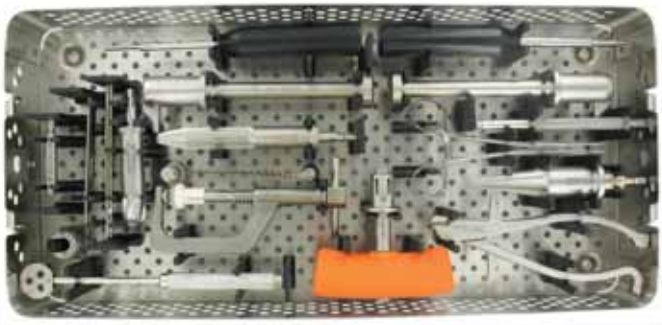
INSTRUMENTS



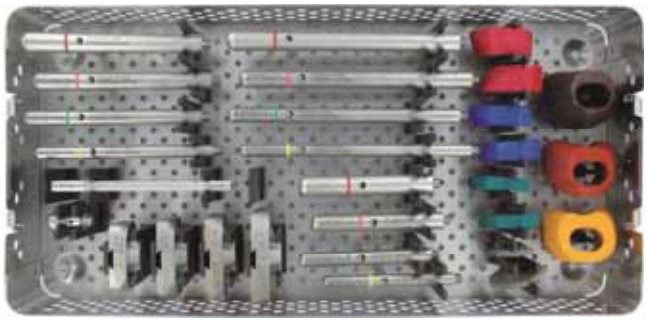
MUTARS® basic container
7999-5712



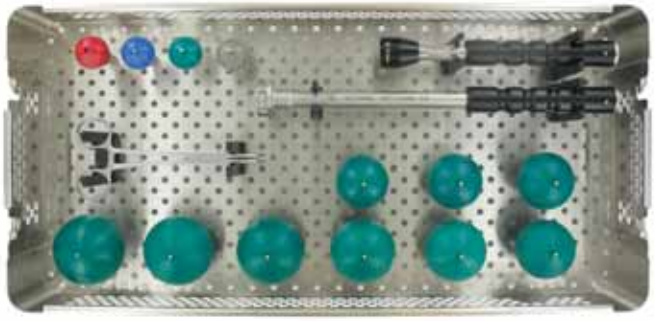
MUTARS® modular tibia instrument container I
7999-5733



MUTARS® modular tibia instrument container II
7999-5738



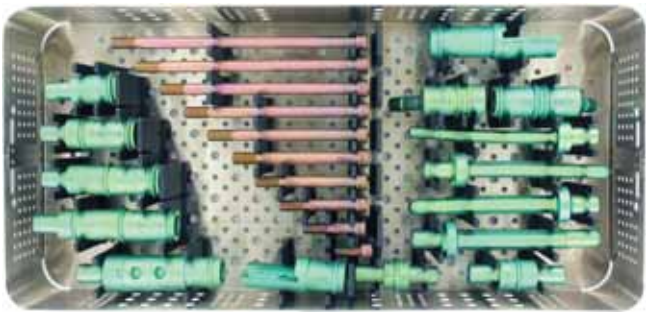
MUTARS® tibia modular trial container
7999-5736



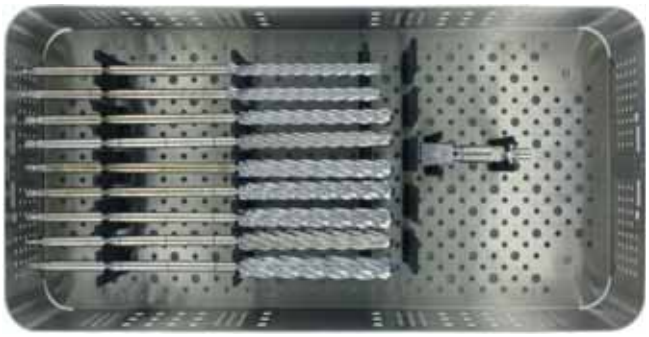
ic- bipolar container
7960-9999

INSTRUMENTS

MUTARS® trial container
7999-7701



MUTARS® rigid drills container
7999-5735



INSTRUMENTS

Content MUTARS® basis container

MUTARS® universal impactor
7210-0000

MUTARS® impact and extract sleeve
7230-0000

MUTARS® socket wrench
7420-0000

alternatively
MUTARS® socket wrench
7421-0000

MUTARS® swing wrench
7411-0000

MUTARS® engineers‘ wrench SW 24
7490-0000

MUTARS® slide hammer
7220-0001

MUTARS® rasp for femoral stem

7760-0112	12 mm
7760-0113	13 mm
7760-0114	14 mm
7760-0115	15 mm
7760-0116	16 mm
7760-0117	17 mm
7760-0118	18 mm

handle for intramedullary plug
7512-4001

MUTARS® medullary cavity reamer
7760-0501

INSTRUMENTS

Content MUTARS® Tibia container 1

MUTARS® tibial impactor
7800-0008

MUTARS® spacer block
7755-0010

MUTARS® spacer block rotation
7755-0023

hexagonal screw driver ¼" chuck, 3.5 mm
7512-0009

torque limiter ¼" chuck 7Nm
7512-0007

tibia cutting block revision 0°
7755-0054

I / M tibial alignment guide
7755-0024

MUTARS® tibial reamer guide
7755-0025 ± 2,5 ap
7755-0039 ± 2,5 ap x-small

fixation pin :: 77 mm, D: 3,2 mm
4223-0029

Universal drill 6 mm
REF 7630-0106

tibial resection stylus 15 mm
REF 7700-0415

INSTRUMENTS

MUTARS® tibial centralizer sleeve 5mm
7755-0008

MUTARS® sleeve for tibial preparator
7755-0022

MUTARS® patella drill
7351-0000

MUTARS® trial inlay

7721-0013	extra small
7721-0001	standard
7721-0002	small
7721-0006	large

MUTARS® impactor for PE-inlay
7210-0001

INSTRUMENTS

Content MUTARS® Tibia container 2

MUTARS® patella drill guide
7350-0000

MUTARS® patella clamp
7352-0001

drill 126 x 3,2 mm
4221-0019

pin inserter 3,2 mm
4223-0006

ic-pin extractor
7512-0800

ic t-handle
4223 -0023

resection check
4223-0009

MUTARS® instrument for locking mechanism
7720-1201

MUTARS® tibial reamer
7755-0003

extractor universal
7512-2026

setting instrument for locking mechanism
7751-1200

INSTRUMENTE

MUTARS® positioner for locking mechanism
7610-0003

MUTARS® tibial punch
7755 0004
7755-0028 xs

MUTARS® tibia preparator
7755-0021

MUTARS® tibia extractor M-O-M
7755-0020

MUTARS® reamer for stem preparation
7330-1003

MUTARS® assembling forceps
7720-1202

INSTRUMENTE

Content MUTARS® modular tibia trial container

MUTARS® tibia plateau modular trial
7751-0303 xsmall
7751-0300 small
7751-0305 standard
7751-0310 large

MUTARS® tibial spacer trial
7800-2500 25 mm small
7800-3500 35 mm small
7800-5000 50 mm small

MUTARS® tibial spacer trial
7810-0500 5 mm rl lm small
7805-0500 5 mm ll rm large
7810-1000 10 mm rl lm small
7805-1000 10 mm ll rm large
7810-1500 15 mm rl lm small
7805-1500 15 mm ll rm large
7810-2000 20 mm rl lm small
7805-2000 20 mm ll rm large

MUTARS® trial stem
7755-1211 11/120 mm tibial 11/160mm femoral
7755-1213 13/120 mm tibial 13/160mm femoral
7755-1215 15/120 mm tibial 15/160mm femoral
7755-1217 17/120 mm tibial 17/160mm femoral
7755-1611 11/160 mm tibial 11/200mm femoral
7755-1613 13/160 mm tibial 13/200mm femoral
7755-1615 15/160 mm tibial 15/200mm femoral
7755-1617 17/160 mm tibial 17/200mm femoral
7755-2011 11/200 mm tibial 11/240mm femoral
7755-2013 13/200 mm tibial 13/240mm femoral
7755-2015 15/200 mm tibial 15/240mm femoral
7755-2017 17/200 mm tibial 17/240mm femoral

MUTARS® trial locking mechanism
7720-1200

MUTARS® counter instrument for tibial joint
7755-0027

INSTRUMENTS

Content ic-bipolar conteiner

handle for bipolar sizing head
7960-6000

bipolar sizing head

7960-0044	28/44 mm
7960-0046	28/46 mm
7960-0048	28/48 mm
7960-0050	28/50 mm
7960-0052	28/52 mm
7960-0054	28/54 mm
7960-0056	28/56 mm
7960-0058	28/58 mm
7960-0060	28/60 mm

ic- head impactor
7512-4444

Trial head

7962-2800	28 mm short
7962-2805	28 mm medium
7962-2810	28 mm long
7962-2815	28 mm extra long

ic-forceps for bipolar head
7960-6010

INSTRUMENTS

Content MUTARS® trial container

MUTARS® Trial Prox. Femur
7710-0205 50 mm
7710-0207 70 mm

MUTARS® Trial reducer
7730-0220 20 mm
7730-0230 30 mm

MUTARS® Trial connecting part
7730-0100 100 mm

MUTARS® Trial extension piece
7772-2504 40 mm
7772-2506 60 mm
7772-2508 80 mm
7772-2510 100 mm

MUTARS® Trial connecting part
7750-0105 105 mm
7750-0125 125 mm

MUTARS® Trial femoral stem
7760-0011 11 mm
7760-0013 13 mm
7760-0015 15 mm
7760-0017 17 mm

MUTARS® Trial bar screw
7792-1002 M10x 25 mm
7792-1004 M10x 45 mm
7792-1006 M10x 65 mm
7792-1008 M10x 85 mm
7792-1010 M 10x105 mm
7792-1012 M 10x125 mm
7792-1014 M 10x145 mm
7792-1016 M 10x165 mm
7792-1018 M 10x185 mm
7792-1020 M 10x205 mm

INSTRUMENTS

Content MUTARS® rigid drill container

ic adapter male A/O, ic cannulated
7512-3602

rigid drill

4220-4010.1	10mm
4220-4011.1	11mm
4220-4012.1	12mm
4220-4013.1	13mm
4220-4014.1	14mm
4220-4015.1	15mm
4220-4016.1	16mm
4220-4017.1	17mm
4220-4018.1	18mm

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