

# Aesculap® Targon® F/T

Interlocking Nail System for Femur and Tibia



Aesculap Orthopaedics

# Aesculap® Targon® F/T



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The Targon interlocking nail system is the result of years of clinical experience in the application of interlocking nails combined with the high technical competence of Aesculap. The implants are anatomically adapted and easy to implant thanks to simple and logical instrumentation. Proven quality and modern manufacturing processes ensure excellent load-bearing capacity in all relevant dimensions. The drilled implantation technique is supplemented by the drill-free technique for situations with a high degree of soft-parts damage, high blood loss (polytrauma) or severe thoracic trauma.

For the slender nails to withstand alternating flexion loads, the nails and locking screws are made of high-strength titanium alloys – and can still be applied with the same instrument set.

To minimize stock-keeping requirements, for each of the two bones – femur and tibia – implants have been developed that can be used in either the left or the right leg. As a result, the Targon interlocking nail system combines optimal anatomic adaptation, easy handling, bio-mechanical strength and 'last not least' economy.

...for  
**strong**  
connections



# Aesculap® Targon® F/T

Universal Interlocking Nail



## Nail diameter

Only 2 adapters for all nail diameters. Adapted diameters of nail head and nail shaft save subsequent proximal re-drilling.



## Wall thickness and profile

The wall thicknesses and profiles permit high strengths and sufficient flexibility with all nail diameters.

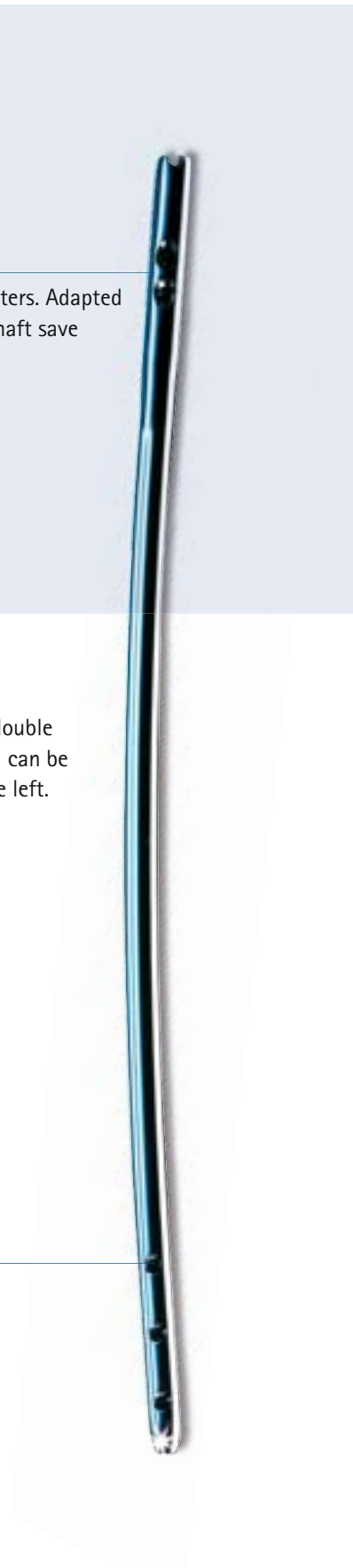


Reduced stock-holding through double oblique holes, i.e. the femoral nail can be used both on the right and on the left.



## Fixation hole positioning

The position of the lower fixation holes allows effective utilization of the procedure distally. No harm to the extensor tendons and to the anterior vessels through sagittal drilling.





### Proximal interlocking

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The position of the 3 transverse holes permits good utilization of the procedure proximally. No danger to popliteal vessels through sagittal holes. No danger to harm the tibiofibular joint through diagonal holes.

# Tibia

### Proximal nail design

No irritation of the patella ligament through bevelled proximal nail design.



### Nail curvature

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The three anatomical curves at 14°, 6° and 3° ensure easy insertion into the medullary canal.

# Aesculap® Targon® F/T

Solid Titanium Interlocking Nail

# Femur



## Grooves

Grooves along the nail (drainage effect) reduce the intramedullary pressure during implantation. Better endosteal revascularization.



## Solid nail

Solid nail made of titanium alloy (Ti6AL4V) reduces the risk of infection with open fractures.

# Tibia

## Nail insertion

Good cancellous penetration with pointed nail end (ice breaker effect). Effective dynamization almost always possible.



## Nail profile

Polygonal profile of the tibia nail ensures high strength with small diameter.

# Aesculap® Targon® F/T

Closure and Fixation Screw

## Targon Closure Screw

Prevents bony ingrowth



## Targon Fixation Screw

Continuous flat thread facilitates removal of the screw.  
Nail wedges in flat thread. No lateral migration.  
Deeper self-tapping thread for opposite cortical layer.  
Only one drilling process required.







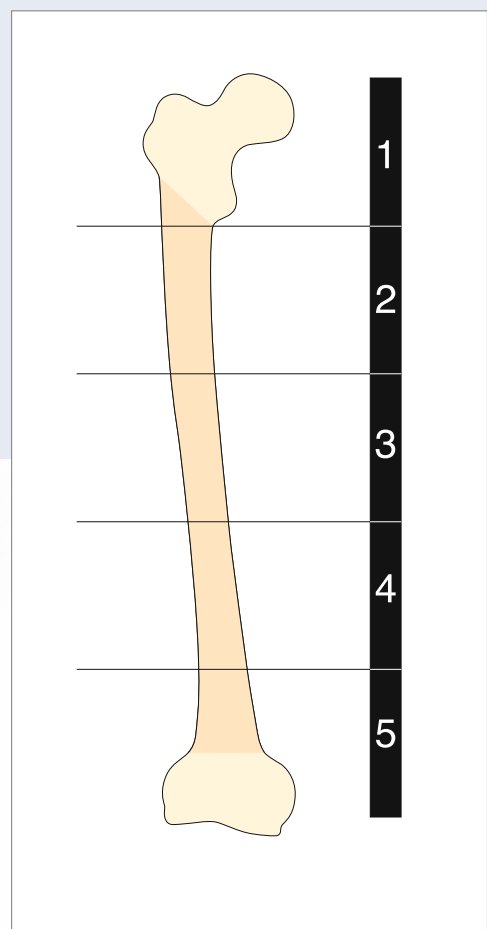
# Aesculap® Targon® F/T

Universal

## Femur

Reaming of the medullary cavity should be performed with an appropriate reaming system (deep notches in the reaming head) able to minimize the intramedullary pressure. It should be stopped as soon as the reamer gets in contact with the cortex. Excellent stability of fixation is obtained thanks to the good adaptation of the nail to the anatomy of the femur and to excellent fitting of the locking screws in the distal holes.

The universal interlocking nail for the femur covers all indications for reamed nailing in the shaft region. The oblique direction of the proximal interlocking hole and the availability of three holes far distally allow maximum use of this standard method for fixation in the femur, even in borderline indications.

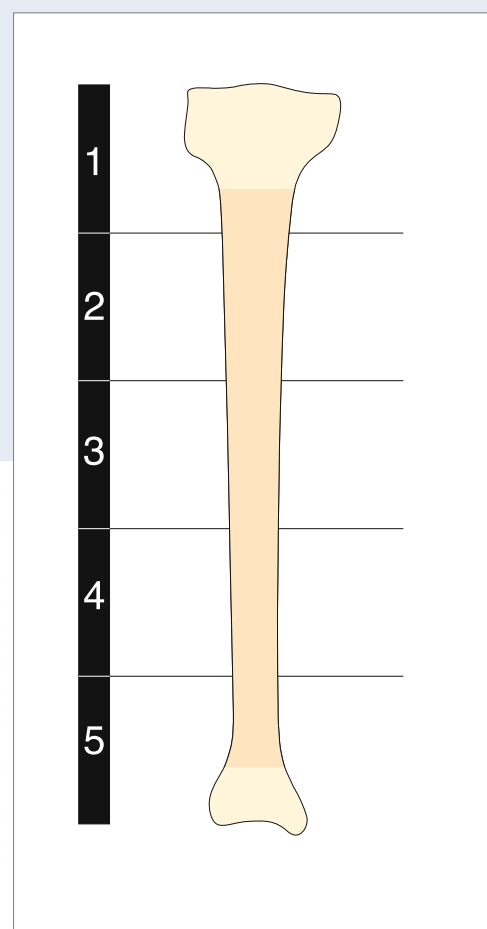


*Classification of fracture localisation according to one fifth method. Targon range of indications shown in dark beige.*

# Tibia

Reaming of the medullary cavity damages the blood flow through the inner cortex. Within a short time this damage is compensated by an increased blood supply from the periosteal vessels. Reaming should not make the cortex any thinner but only allow contact between nail and cortex. The product of reaming, containing living bone cells, accumulates in the fracture haematoma and thus promotes the formation of callus.

The universal interlocking nail for the tibia covers all indications for reamed nailing in the shaft region, except for fractures with severe soft tissue damage. The anatomical shape makes the insertion of the nail easy. The arrangement of the interlocking holes both proximally and distally allows maximum use of this standard method for fixation of the tibia, even for borderline indications.



*Classification of fracture localisation according to one fifth method. Targon range of indications shown in dark beige.*

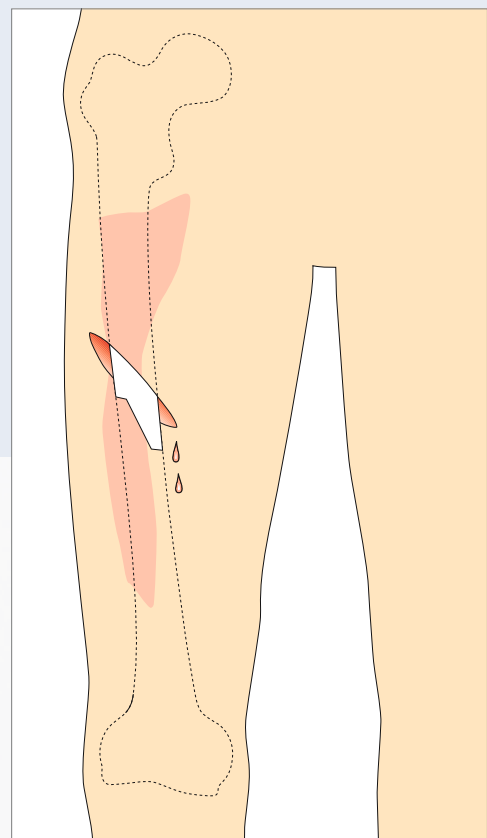
# Aesculap® Targon® F/T

Solid Titanium

## Femur

When the femoral medullary cavity is reamed, bone fat is mobilized and enters the venous blood stream. In most cases this process is neutralized by physiological mechanism but, after extensive blood loss (polytrauma) and in case of severe chest trauma, such mechanisms may be insufficient and ARDS can occur. The use of an unreamed femoral interlocking nail, with its thinner diameter and less forceful introduction, minimizes the raise of the intramedullary pressure and hence the negative pulmonary consequences. As the endosteal vessels are mainly preserved, the unreamed femoral nail is also indicated for fracture stabilization in case of severe soft tissue damage.

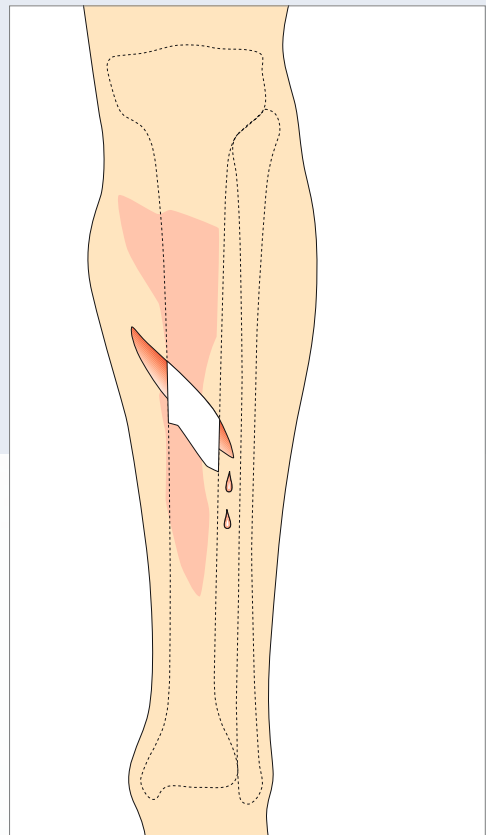
The thin solid femoral nail, made of a robust titanium alloy, is mainly recommended for the primary treatment of femoral shaft fractures both in case of polytrauma and severe soft tissue damage. The three gooves along the nail set drainage and thus keep the intramedullary pressure low. In addition, they make the regeneration of the intramedullary vessels possible.



# Tibia

Similar to the femur the insertion of a thin nail into the tibia minimizes the destruction of the endosteal blood supply. This aspect is important in case of grade II and III open fractures or in case of grade III closed fractures. In addition, stably fixed fragments which are kept »alive« offer the excellent protection against multiplying of bacterias in the contaminated area of open fractures. A meticulous soft tissue debridement must precede fracture stabilization.

The titanium nail for the tibia covers all indications for unreamed interlocking nailing in the shaft region. The anatomical shape makes insertion of the nail easy. Three interlocking holes both proximally and distally allow maximum use of this implant. The high capability of the titanium alloy to withstand alternate loads reduces the risk of metal fatigue.

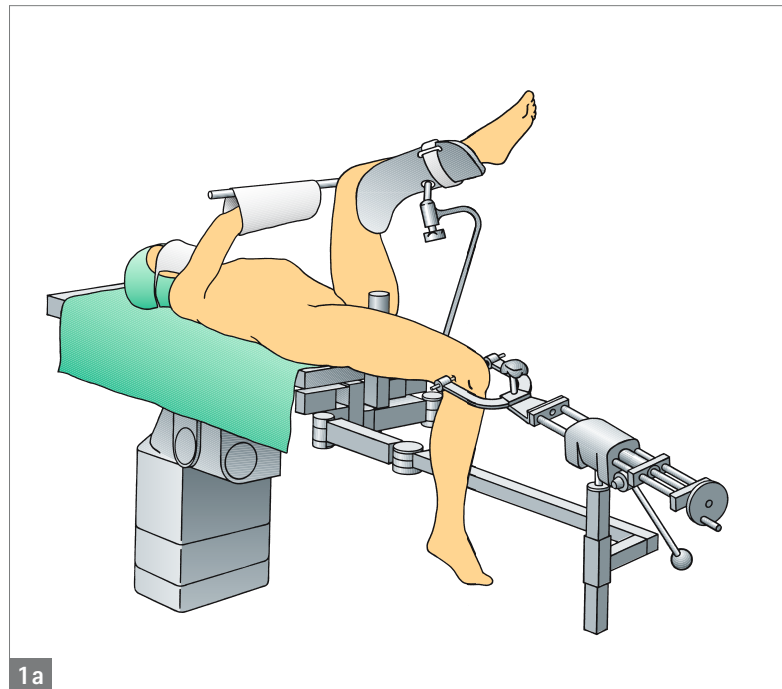


# Aesculap® Targon® F/T

## OP-Manual Femur

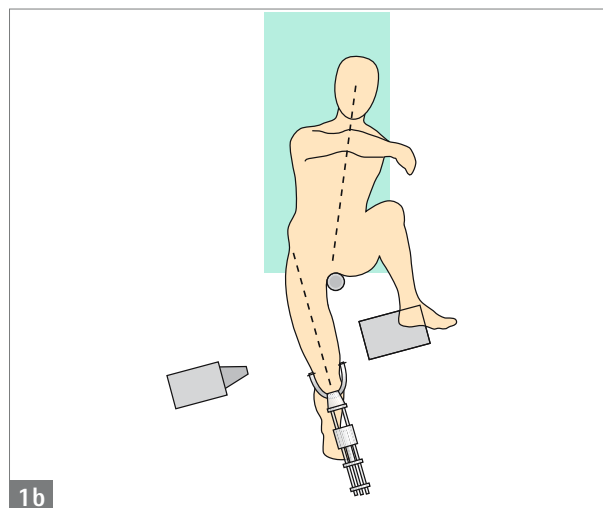
### Operation Technique for Targon "Femur" Interlocking Nails

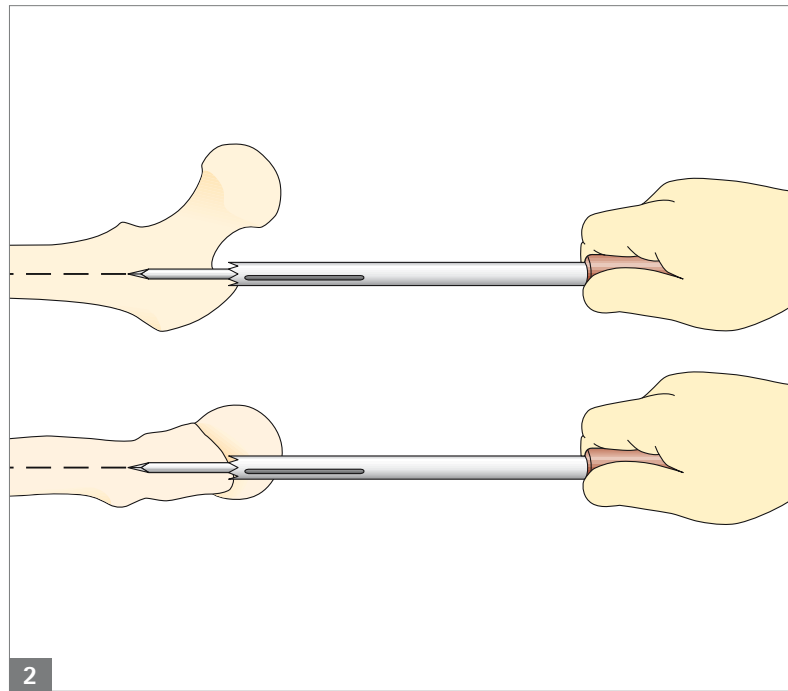
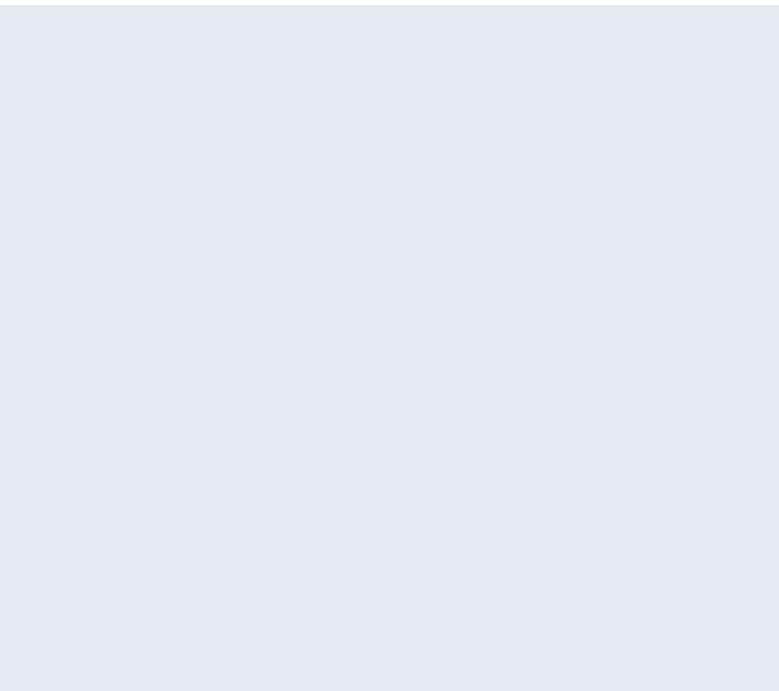
1



#### Patient Positioning

The patient is placed on the traction table in a supine position. (Fig. 1) Traction is exerted on the leg through a supra- or transcondylar Steinmann pin extension applied in the OR under sterile conditions. The leg should be extended in abduction or neutral position. By means of a traction device or a thorax brace, the upper part of the body is shifted to the opposite, healthy side. This positioning permits reliable reduction and fixation. The inclination of the upper body towards the opposite side permits easy access to the trochanter major. (Fig. 1b) In certain cases extension can be achieved with the help of a leather shoe (abduction and inclination!) It is also possible to perform interlocking nailing without a traction table, if the patient is in a lateral position. This position is recommended in case of open fractures and polytrauma (on a normal operation table), i. e. in cases where an unreamed nail is indicated.





### Access

The area of the trochanter tip is approached by a 5 cm long skin incision proximally of the trochanter major. The fascia lata and the attachment of the M. gluteus medius are split parallelly to the fibres.

Controlled by x-ray, the guide for the reamer is inserted at the medial incline of the trochanter major, in direction of the center of the medullary canal up to the guide plate sitting on the trochanter tip. (Fig. 2)

In the axial beam path of the image intensifier the point of entry should be at the transition from the middle to the dorsal third of the trochanter. In the anteroposterior beam path it should be at the mediocranial border of the trochanter tip, so that the guide plate is placed on the trochanter with its half surface lying free. The reamer is now moved over the guide to open the medullary canal. The diameter of the hole of entry corresponds to the proximal outer diameter of the solid titanium nail.

### Reaming

After reduction, the guide wire for the intramedullary reamer is inserted into the medullary canal. The guide wire is guided past the fracture zone and the thick end is driven centrally between the femoral condyles into the compacted spongiosa above the intercondylar notch.

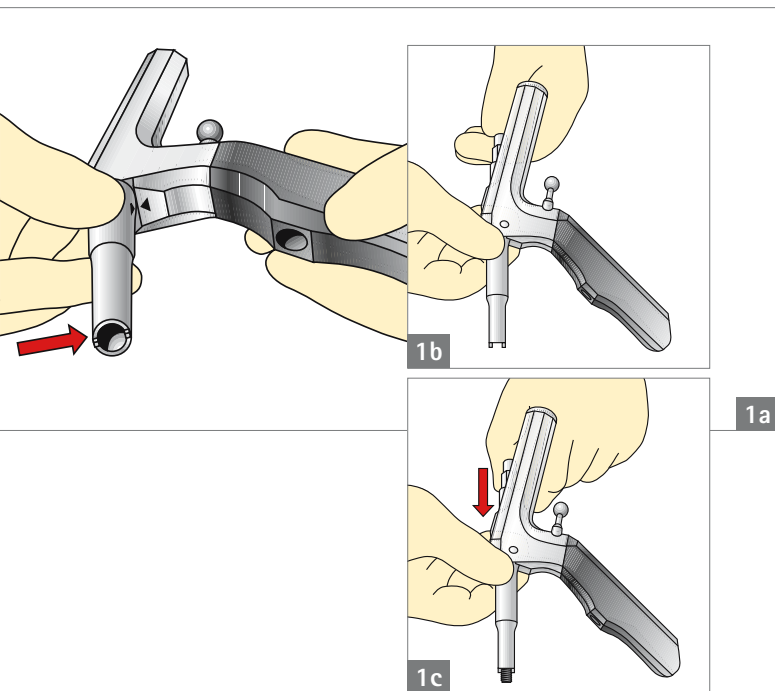
Using the flexible intramedullary reamer, the intramedullary canal is drilled open in steps of 0.5 mm (which is different from the conventional Küntscher nailing) up to the corticalis of the medullary isthmus. With interlocking nailing it is not necessary to guide the nail all along the corticalis of the diaphysis. The required nail diameter equals the diameter of the last reamer used minus 1 mm.

With distal fractures, a disproportion can result between the curvature of the nail and the antecurvature of the proximal fragment of the femoral shaft, which causes torsion of the slotted nail. In such situations, one should choose a nail diameter that is 1.5 to 2 mm smaller than the diameter of the last reamer used.

Upon completion of the reaming procedure, the teflon tube is applied to replace the guide wire with the spike for the nail. The teflon tube is removed. The exact central positioning of the spike for the nail is checked distally using the image intensifier. The nail length equals to the difference between the total length of the spike (90 cm) and the length of the part which is overlapping of the bone. In case of comminuted fractures, the correct nail length is determined preoperatively on the healthy femur with the help of the image intensifier and a x-ray scale.

# Aesculap® Targon® F/T

## OP-Manual Femur



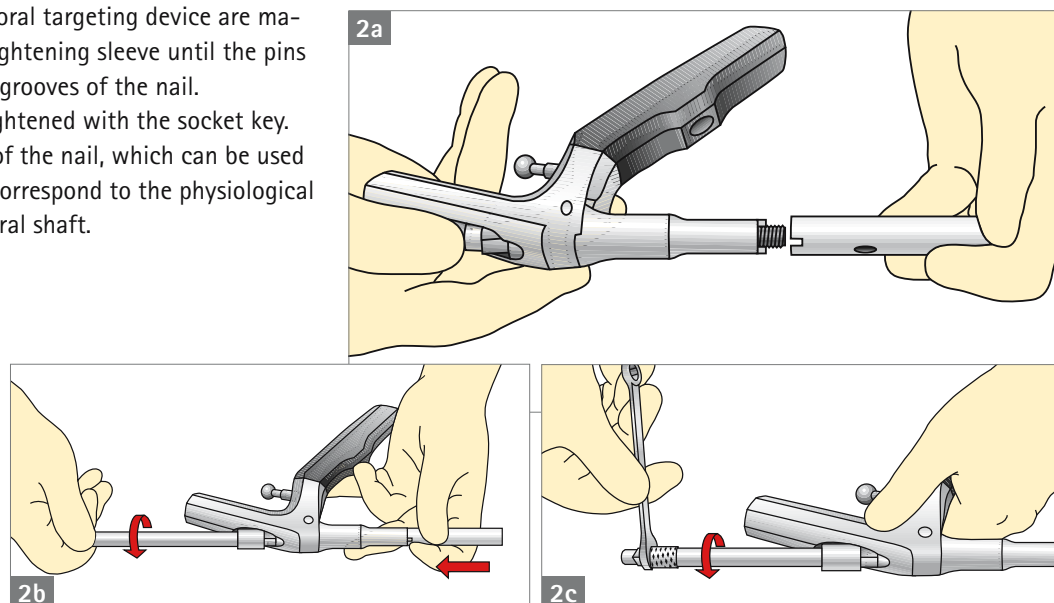
### Assembling the targeting and insertion instrument

A nail of the suitable length and diameter is mounted on the combined proximal targeting and insertion instrument. First the appropriate adapter for the nail is selected (A for nail diameters 8 – 11 mm; B for nail diameters 12 – 15 mm).

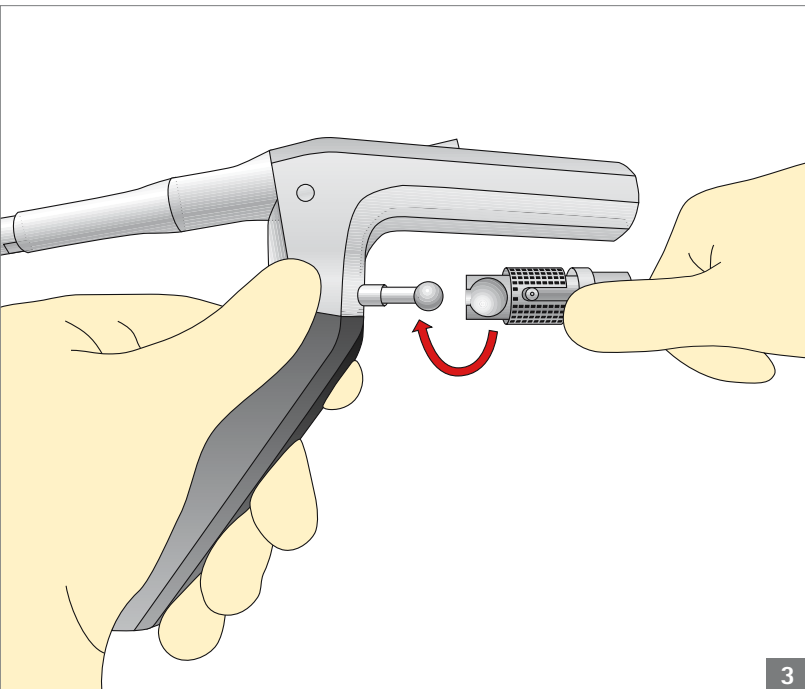
The adapter is inserted into the targeting instrument so that the arrow on the adapter points to the arrow on the targeting instrument.

Next, the appropriate adapter screw is pushed through the targeting instrument and adapter, thus coupling the system (Fig. 1a-c).

Now, the nail and the femoral targeting device are manually connected with a tightening sleeve until the pins of the adapter fit into the grooves of the nail. The tightening sleeve is tightened with the socket key. Important: The curvature of the nail, which can be used both right and left, must correspond to the physiological antecurvature of the femoral shaft.







### Inserting the nail

The nail is smoothly inserted with the hammer (in case of a reamed hollow nail over the spike).

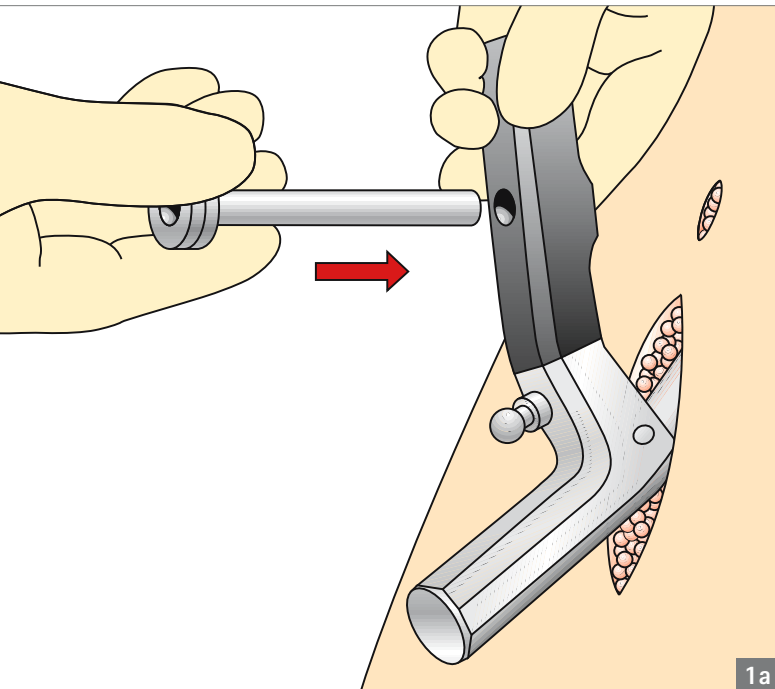
#### Important:

The hammer must always hit the inserter boss. It must never hit the targeting instrument because this would cause the targeting instrument to deform plastically and lose accuracy. The same applies should it be necessary to strike back the nail. To do this, always use the knock-out ball next to the inserter boss, applying the knocking out instrument and the slotted hammer. In this case the knocking out instrument is connected with the knock-out ball of the targeting instrument. Never knock out the nail by striking the hammer on the teflon handle of the targeting device.

Tap in the nail until the adapter approaches the entry of the medullary canal up to 1 cm, controlled by image intensifier.

# Aesculap® Targon® F/T

## OP-Manual Femur

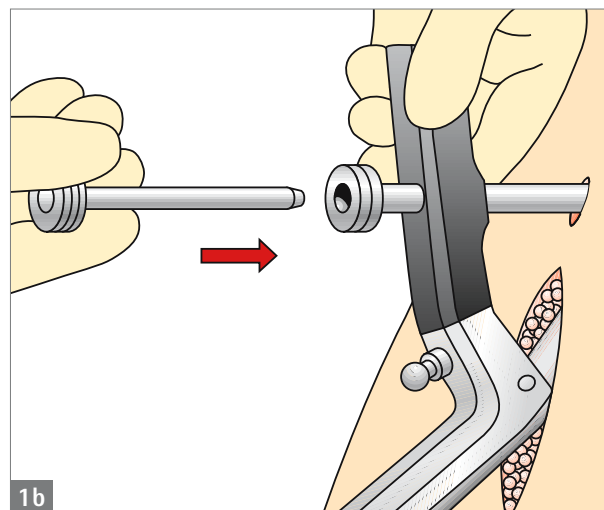


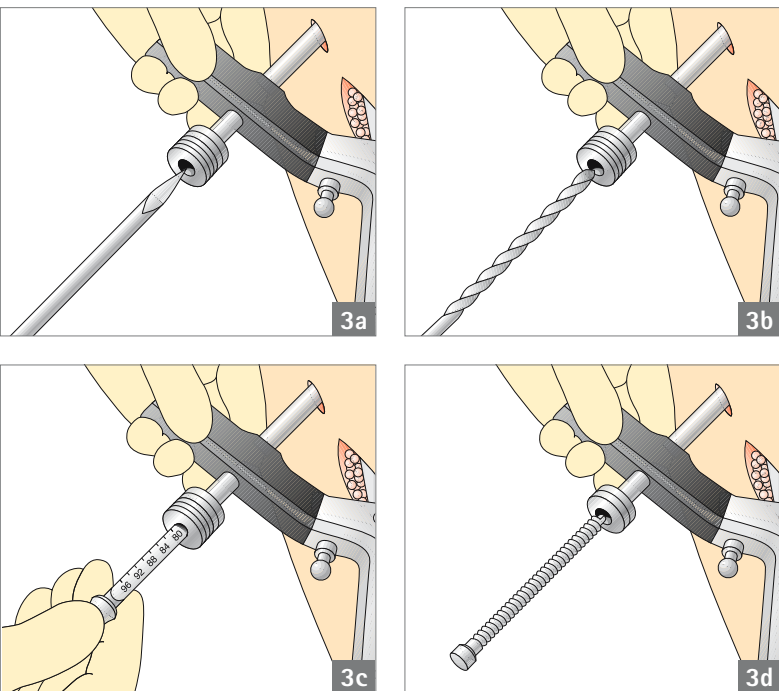
### Interlocking

For proximal fixation the tissue protecting sleeve with an inner diameter of 8 mm (1 ring) is inserted into the diagonal hole of the targeting instrument and pushed through the soft tissue until it reaches the lateral side of the trochanter major.

The inner drill sleeve, which has an inner diameter of 6 mm (2 rings), is inserted into the tissue protecting sleeve.

The bone is marked using the trocar. The necessary drilling and the measuring of the length of the screw are both done through the inner drill sleeve. The length is indicated on the screw scale at the edge of the drill sleeve. Precise measurement of length is possible only if the inner drill sleeve touches the bone (verification with image intensifier possible!). After removal of the drill sleeve, the appropriate interlocking screw is inserted through the tissue protecting sleeve.





After removal of the targeting instrument, the proximal end of the nail is closed with the appropriate closure screw to prevent bony ingrowth (Table 1 + 2).

Distal fixation is done free-hand (similar to the lower leg) at the lateral side of the upper leg.

#### Important:

The image intensifier must be adjusted so that the nail hole through which fixation is to be performed is centered and circular in the image on the monitor.

### Nail removal

The patient is placed in a semi-lateral position. The fixation screws are removed first. The access incision is made in the old scar area. The upper end of the nail is exposed and the closure screw removed. To remove the nail, the appropriate adapter is screwed into the proximal nail thread and the nail is extracted with the knocking-out instrument and the slotted hammer.

### Unreamed nailing

In case of unreamed nailing, the solid titanium nail and the targeting device are connected in the same way. The length of the nail is measured either with a previously inserted nail spike as explained above or preoperatively with a x-ray scale to be applied on the healthy femur using image intensifier. The interlocking of the solid titanium nail is performed as described above.

# Aesculap® Targon® F/T

Ordering Information – Femur

# Femur

## Femur "Universal"

Description	Technical specifications	
	ø 10 – 11 mm	ø 12 – 15 mm
<b>Adapter</b>	A	B
<b>Adapter screw</b>	A	B
<b>Interlocking screw</b>		
prox.	ø 6 mm	ø 6 mm
dist.	ø 5 mm	ø 6 mm
<b>Drill</b>		
prox.	ø 4.5 mm	ø 4.5 mm
dist.	ø 3.5 mm	ø 4.5 mm
<b>Closure screw</b>	ø 8 mm	ø 10 mm
<b>Knock-out adapter</b>	ø 8 mm	ø 10 mm

Table 1

### Femur "Solid Titanium"

Description	Technical specifications
	Ø 8-11 mm
<b>Adapter</b>	A
<b>Adapter screw</b>	A
<b>Interlocking screw</b>	
prox.	Ø 6 mm
dist.	Ø 4.5 mm
<b>Drill</b>	
prox.	Ø 4.5 mm
dist.	Ø 3.5 mm
<b>Closure screw</b>	Ø 8 mm
<b>Knock-out adapter</b>	Ø 8 mm

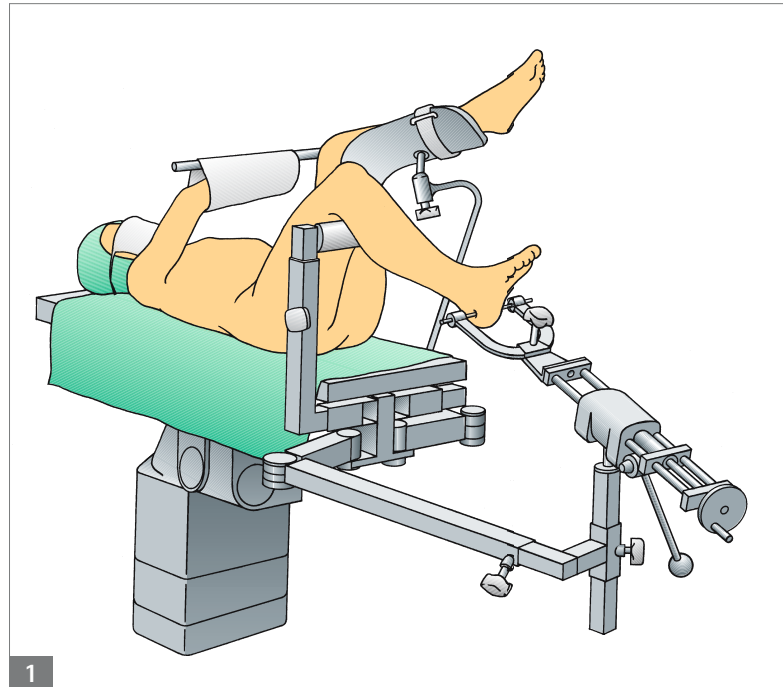
Table 2

# Aesculap® Targon® F/T

## OP-Manual Tibia

### Operation Technique for Targon "Tibial" Interlocking Nails

# 2



#### Positioning

The patient is placed on the traction table in supine position. Traction is exerted on the leg by means of a calcaneus extension. The flexion of the knee must be at least 80°.

In order to get a good exposure of the fractured leg under image intensifier, the healthy leg is held upwards (with the help of a leg support), the hip and knee joint being in flexion.

## Access

A longitudinal skin incision is made between the tip of the patella and the tuberositas tibiae. The patella tendon is split longitudinally in the medial third. Alternatively, access can be done medially past the patella tendon. After inserting a blunt retractor, the medullary cavity is opened with the opening reamer on the front side of the head of the tibia, after having mobilized Hoffa's fat pads towards cranial.

## Drilling

Once the fracture has been reduced, the guide wire is introduced into the medullary cavity. The guide wire must be precisely centered distally. The insertion of the reamer with rotating reamer head increases too much the entrance hole towards distal (attachment of the patella tendon). Therefore in a first step the reamer head is pushed into the medullary cavity without any rotation.

In a variation from the conventional Küntscher (Kuent-scher) nailing procedure, the medullary cavity is drilled only up to the corticalis of the medullary isthmus. Due to interlocking, it is not necessary to guide the nail all along the corticalis of the diaphysis. The required nail diameter equals the diameter of the last reamer used minus 1 mm.

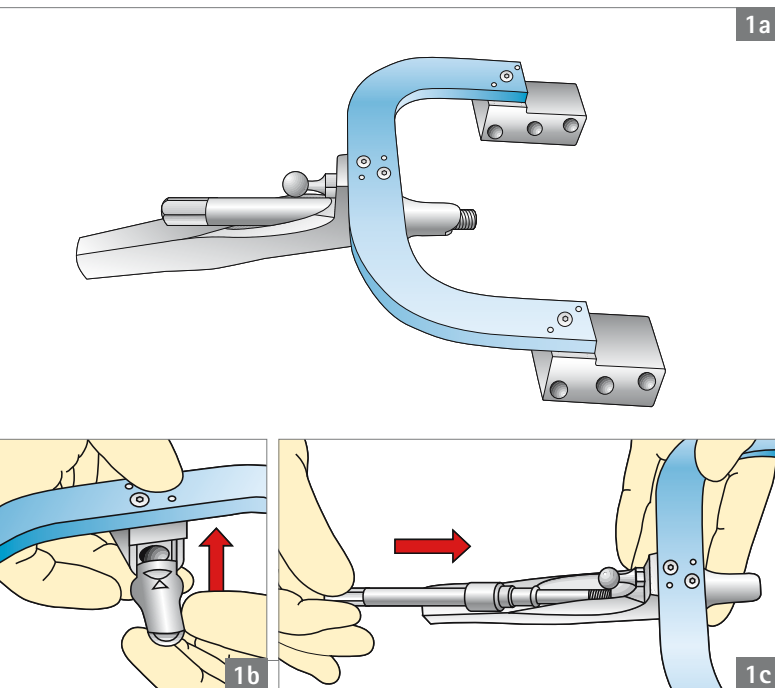
Upon completion of the drilling procedure, the teflon tube is used to replace the guide wire with the nail spike. The required nail length equals the difference between the total length of the nail spike (80 cm) and the length of that part of the spike which projects out of the bone.

### Important:

In case of comminuted fractures, the required nail length is determined preoperatively on the healthy tibia, using an image intensifier and a x-ray scale.

# Aesculap® Targon® F/T

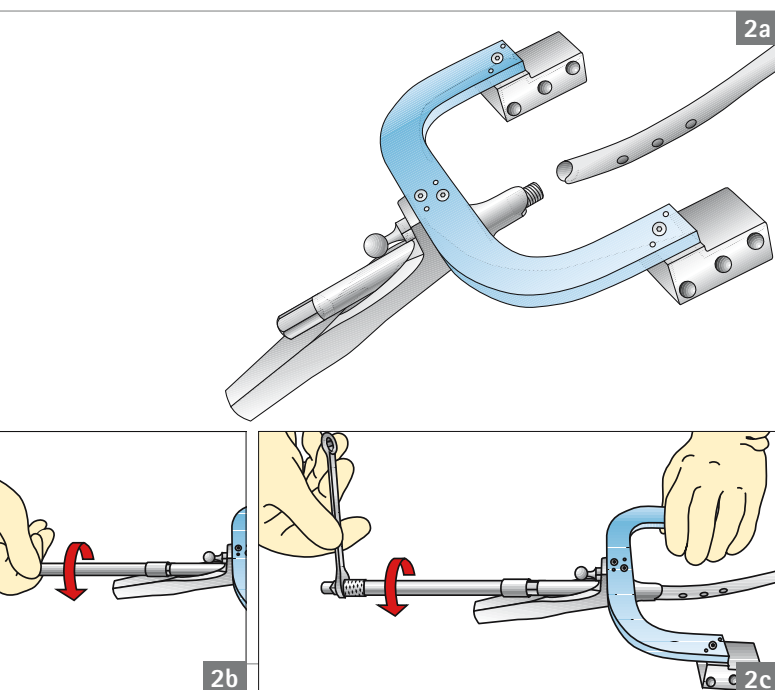
## OP-Manual Tibia



### Assembling the targeting and insertion instrument

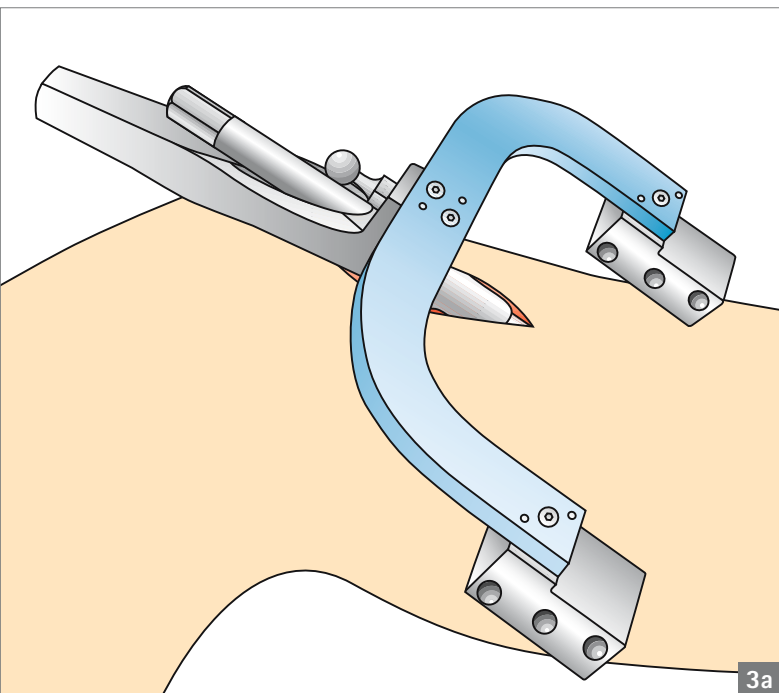
First the appropriate adapter is selected (A for nail diameters 8 – 11 mm, B for nail diameters 12 – 14 mm). The adapter is inserted into the targeting instrument so that the arrow on the adapter points to the arrow on the targeting instrument.

Next, the appropriate adapter screw is pushed through the targeting instrument and the adapter, thus coupling the system (Fig. 1a-c).

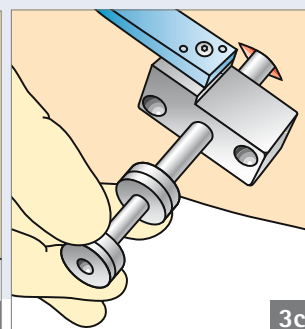
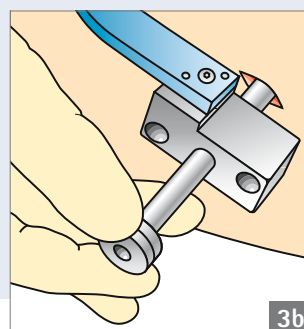


Now a nail of appropriate length and diameter is connected with the targeting device. The cambered, bevelled, proximal end of nail fits perfectly in the fish-jaw-type groove of the adapter. Afterwards, the adapter screw is tightened with the tightening sleeve using the socked key. Only in this case targeting accuracy for proximal interlocking can be assured.





For proximal interlocking the tissue protecting sleeve with an inner diameter of 8 mm (1 ring) is inserted into the hole of the targeting instrument and pushed through the soft tissue via a 1.5 cm long skin incision until it reaches the medial corticalis of the tibia head. The inner drill sleeve, which has an inner diameter of 6 mm (2 rings), is inserted into the tissue protecting sleeve and pushed forward to the bone (Fig. 3c).



### Inserting the nail

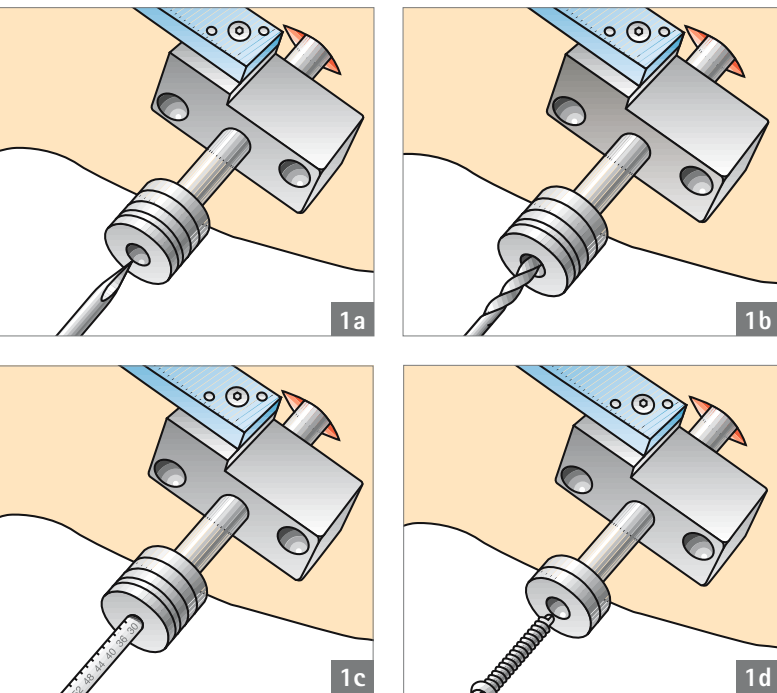
#### Important:

The hammer must always hit the inserter boss. It must never hit the targeting instrument, because this would cause the targeting instrument to deform plastically and lose accuracy. The same applies should it prove necessary to knock out the nail. To do this, always use the knock-out ball next to the inserter boss, the knocking out instrument, and a slotted hammer. The knocking out instrument is coupled to the knock-out ball at the bottom of the targeting instrument (as shown in Fig. F3, page 17). Never knock out the nail by striking the hammer on the teflon handle of the targeting device!

Tap in the nail under image intensifier, until the proximal nailend is at the same height as the corticalis of the tibia head.

# Aesculap® Targon® F/T

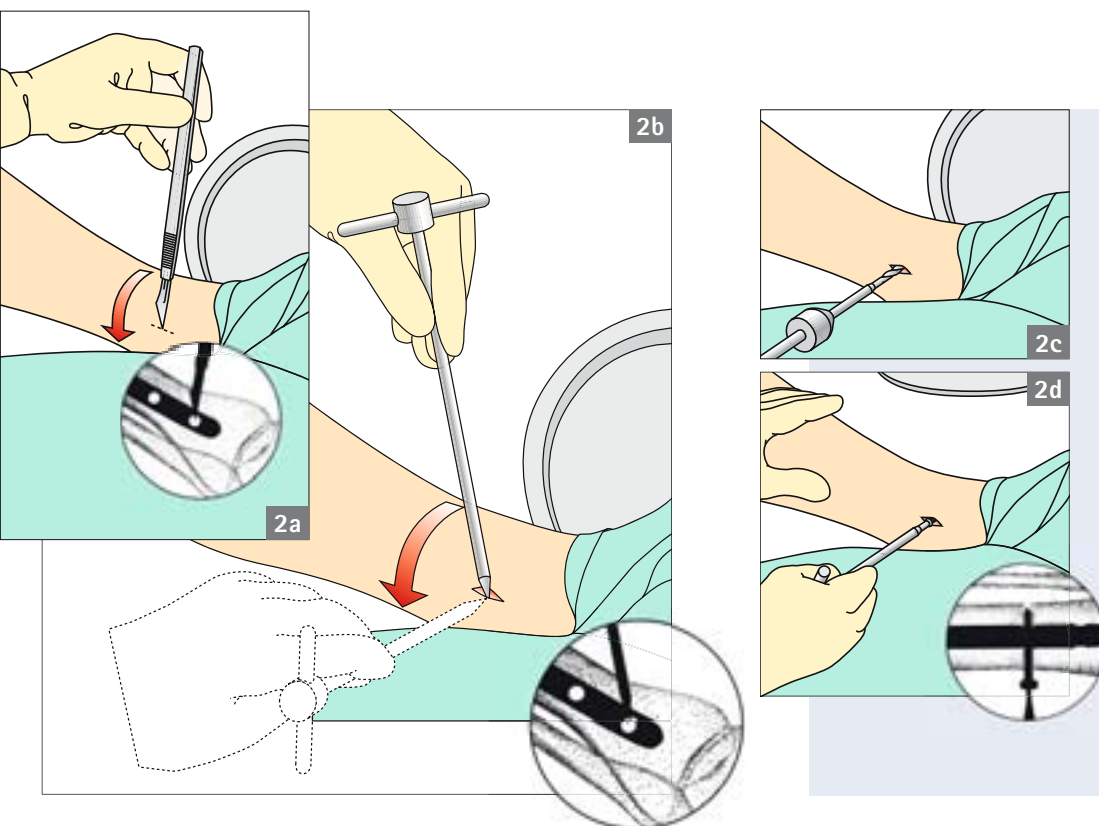
## OP-Manual Tibia



### Interlocking

The corticalis is marked with the trocar and the interlocking hole drilled. The screw is measured through the inner drill sleeve. The inner drill sleeve is removed and the appropriate interlocking screw is inserted through the tissue protecting sleeve (Fig. 1a-d).

After removal of the targeting instrument the proximal end of the nail is closed with the appropriate closure screw to avoid bony ingrowth (Table 1 and 2).



Interlocking is done free-hand at the medial side of the lower leg. The image intensifier must be adjusted so that the nail hole through which interlocking is done appears centered and circular in the image on the monitor. The scalpel with the long handle is held with its tip in the beam path until the x-ray shadow of the tip appears in the middle of the interlocking hole. Thus, the point for incision is localised. Make a 1.5 cm long skin incision. The subcutaneous tissue is split bluntly down to the bone with scissors.

Under x-ray beam, the tip of the trocar is guided to the point where it is in the middle of the interlocking hole. The tip is then pressed firmly against the bone and the trocar is straightened so that it points to the middle of the camera housing. The bone is thoroughly marked by slightly rotating the trocar while gently tapping it with the hammer. The tip of the twist drill is held against the marked hole (repeat check with image intensifier) and is drilled forward through both corticalia and the nail hole. When drilling has been done properly, the interlocking hole should appear considerably brighter in the x-ray image than before. Measuring of the screw length and insertion of the appropriate screw complete the distal interlocking procedure. The screw is placed correctly if its x-ray shadow disappears in the shadow of the nail. Afterwards, the proper fit and correct length of the

interlocking screw should always be verified in the a.p. beam path. To reduce the amount of radiation, this well-tried freehand technique with trocar and drill can be made safer with the help of a targeting trocar and a radiolucent drill attachment.

#### Nail removal

The interlocking screws are removed first. The longitudinal incision and splitting of the patella tendon are carried out in the old position. The proximal nail end is exposed and the closure screw removed.

To remove the nail, the appropriate knock-out adapter is screwed into the proximal nail thread and removed with the attached extraction instrument and the slotted hammer.

#### Unreamed nailing

In case of unreamed nailing, the solid titanium nail and the targeting instrument are connected in the same way. The length of the nail is determined either with a previously inserted nail spike as explained above, or preoperatively, by applying a x-ray scale on the healthy tibia under image intensifier.

The solid titanium nail is interlocked as described above.

# Aesculap® Targon® F/T

Ordering Information – Tibia

# Tibia

## Tibia "Universal"

Description	Technical specifications		
	ø 9 mm	ø 10-11 mm	ø 12-14 mm
<b>Adapter</b>	A	A	B
<b>Adapter screw</b>	A	A	B
<b>Interlocking screw</b>			
prox.	ø 4.5 mm	ø 5 mm	ø 5 mm
dist.	ø 4.5 mm	ø 5 mm	ø 5 mm
<b>Drill</b>			
prox.	ø 3.5 mm	ø 3.5 mm	ø 3.5 mm
dist.	ø 3.5 mm	ø 3.5 mm	ø 3.5 mm
<b>Closure screw</b>	ø 8 mm	ø 8 mm	ø 10 mm
<b>Knock-out adapter</b>	ø 8 mm	ø 8 mm	ø 10 mm

Table 1

### Tibia "Solid Titanium"

Description	Technical specifications
	Ø 8-11 mm
<b>Adapter</b>	A
<b>Adapter screw</b>	A
<b>Interlocking screw</b>	
prox.	Ø 4.5 mm
dist.	Ø 4.5 mm
<b>Drill</b>	
prox.	Ø 3.5 mm
dist.	Ø 3.5 mm
<b>Closure screw</b>	Ø 8 mm
<b>Knock-out adapter</b>	Ø 8 mm

Table 2

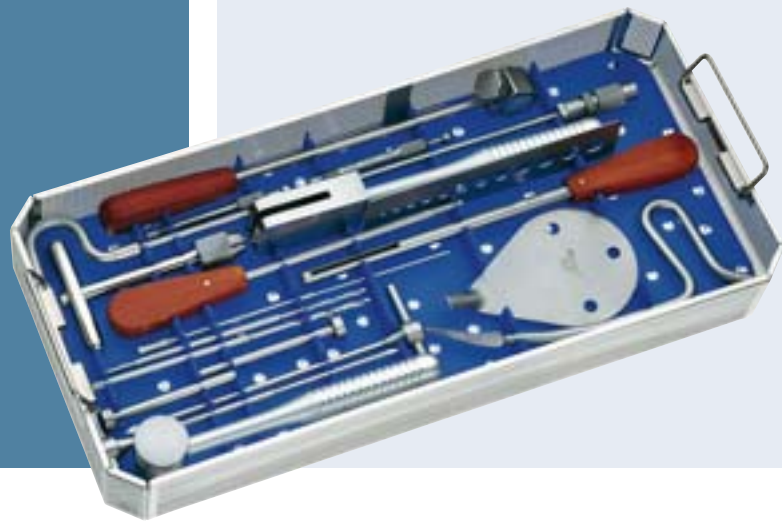
# Ordering Information

## Instruments

KH200

Basic-Instrument-Set

4



Article no.	Description	Pieces	Article no.	Description	Pieces
KH099R	Drill and nail gauge	1	KH113R	Slotted hammer for knock-out instr.	1
KH301R	Screw scale	1	FL066R	Hammer 550 g	1
KH320S	Guide wire for tibia nail 2.5 mm x 80 cm	1	LX202S	Handle with three jaw chuck ø 6.3 mm	1
KH304S	Guide wire for femur nail 4 mm x 90 cm	1	AA809	Plastic x-ray scale	1
KH305P	Teflon tube	1	KH265R	Trocar 6 mm	1
KH322R	Screw driver SW 4.5 mm	1	KH285R	Trocar 4.5 mm	1
KH310R	Knocking-out instrument	1	KH266S	Drill sleeve 6 mm	1
KH311R	Knock-out adapter for nail 8-11 mm	1	KH271R	Tissue protecting sleeve	1
KH312R	Knock-out adapter for nail 12-15 mm	1	KH267R	Twist drill 3.5 mm	1
KH313R	Distal targeting instrument	1	KH268R	Twist drill 4.5 mm	1
KH314R	Targeting trocar f. distal targeting instr., 3 mm	1	KH201R	Wire basket with silicon storage	1
KH317R	Opening reamer	1	JF511	Wrapping cloth	1
KH318R	Hollow reamer	1	JG645B	Identification plate	1
KH323R	Guide pin	1	JG646B	Identification plate	1

## KH202

### Targeting Instruments

# 5



Article no.	Description	Pieces
KH210R	Femur targeting device	1
KH211R	Adapter for femur nail 8 -11 mm	1
KH213R	Adapter for femur nail 12 - 15 mm	1
KH280R	Tibia targeting device	1
KH281R	Adapter for tibia nail 8 -11 mm	1
KH283R	Adapter for tibia nail 12 -14 mm	1
KH262R	Adapter screw for tibia nail 8 -11 mm	1
KH264R	Adapter screw for tibia nail 12 -14 mm	1
KH212R	Adapter screw for femur nail 8 -11 mm	1
KH214R	Adapter screw for femur nail 12 -15 mm	1
KH324C	Socket key SW 10	1
KH308R	Tightening sleeve SW 10	1
KH203R	Wire basket with storage	1
JF511	Wrapping cloth	1
JG645B	Identification plate	1

recommended container for KH202 (storage KH203): JK442 (tray) + JK489 (lid)

recommended container for KH200 + KH202 (storage KH203 + KH201R): JK444 (tray) + JK489 (lid)

# Ordering Information

## Implants

### Basic-Sets Universal Nail

# 6

#### KH220 Femur

ø	Article no.	Length	Pieces	ø	Article no.	Length	Pieces	ø	Article no.	Length	Pieces
	KA464S	360	1		KA564S	360	1		KA664S	360	1
	KA466S	380	1		KA566S	380	1		KA666S	380	1
11	KA468S	400	1	12	KA568S	400	1	13	KA668S	400	1
	KA470S	420	1		KA570S	420	1		KA670S	420	1
	KA472S	440	1		KA572S	440	1		KA672S	440	1

Includes tray KH221R





## KH222 Tibia

ø	Article no.	Length	Pieces
10	KC356S	285	1
	KC358S	300	1
	KC359S	315	1
	KC361S	330	1
	KC362S	345	1

ø	Article no.	Length	Pieces
11	KC456S	285	1
	KC458S	300	1
	KC459S	315	1
	KC461S	330	1
	KC462S	345	1

ø	Article no.	Length	Pieces
12	KC556S	285	1
	KC558S	300	1
	KC559S	315	1
	KC561S	330	1
	KC562S	345	1

Includes tray KH223R



# Ordering Information

## Implants

Basic-Sets Solid Titanium

7

### KH224 Femur

ø	Article no.	Length	Pieces	ø	Article no.	Length	Pieces
	KD264T	360	1		KD364T	360	1
	KD266T	380	1		KD366T	380	1
9	KD268T	400	1	10	KD368T	400	1
	KD270T	420	1		KD370T	420	1
	KD272T	440	1		KD372T	440	1

Includes tray KH225R



### KH226 Tibia

ø	Article no.	Length	Pieces
	KE156T	285	1
	KE158T	300	1
<b>8</b>	KE159T	315	1
	KD161T	330	1
	KD162T	345	1

ø	Article no.	Length	Pieces
	KE256T	285	1
	KE258T	300	1
<b>9</b>	KE259T	315	1
	KE261T	330	1
	KE262T	345	1

Includes tray KH227R



recommended container for storage of the basic implant sets: JK442 (tray) + JK489 (lid)

# Ordering Information

## Implants

### Interlocking Screws



includes tray KH208R

# 8

	Ø	Special lengths
Titanium	4.5	KB364T 64
		KB368T 68
		KB372T 72
		KB376T 76
		KB380T 80
Steel	5	KB464S 64
		KB468S 68
		KB472S 72
		KB476S 76
		KB480S 80

to be ordered separately

recommended container for KH208 (storage KH208R):  
JK441 (tray) + JK489 (lid)

### KH208

Ø	Steel Article no.	Length	Pieces	Titanium Article no.	
4.5	KB720S	20	2	KB320T	
	KB724S	24	2	KB324T	
	KB728S	28	2	KB328T	
	KB732S	32	2	KB332T	
	KB736S	36	4	KB336T	
	KB740S	40	4	KB340T	
	KB744S	44	4	KB344T	
	KB748S	48	4	KB348T	
	KB752S	52	4	KB352T	
	KB756S	56	2	KB356T	
	KB760S	60	2	KB360T	
	5	KB420S	20	2	
		KB424S	24	2	
		KB428S	28	2	
KB432S		32	2		
KB436S		36	4		
KB440S		40	4		
5	KB444S	44	4		
	KB448S	48	4		
	KB452S	52	4		
	KB456S	56	2		
KB460S	60	2			

Ø	Steel Article no.	Length	Pieces	Titanium Article no.
6	KB236S	36	2	KB636T
	KB240S	40	2	KB640T
	KB244S	44	2	KB644T
	KB248S	48	4	KB648T
	KB252S	52	4	KB652T
	KB256S	56	4	KB656T
	KB260S	60	4	KB660T
	KB264S	64	4	KB664T
	KB268S	68	4	KB668T
	KB272S	72	2	KB672T
	KB276S	76	2	KB676T
	KB280S	80	2	KB680T
	KB284S	84	2	KB684T
	KB288S	88	2	KB688T
	KB292S	92	2	KB692T
	KB296S	96	2	KB696T

Closure screws			
To be used with	for nail Ø	Article no.	Pieces
Solid Titanium nail	8-11	KB200T	2
Universal nail	9-11	KB201S	2
	12-15	KB202S	2

## Interlocking Nails

### Femur

# 9

#### Femur Universal

ø	Article no.	Length	ø	Article no.	Length
10	KA351S	240	13	KA662S	340
	KA354S	260		KA664S	360
	KA356S	280		KA666S	380
	KA358S	300		KA668S	400
	KA360S	320		KA670S	420
	KA362S	340		KA672S	440
	KA364S	360		KA674S	460
	KA366S	380		KA676S	480
	KA368S	400	KA764S	360	
	KA370S	420	KA766S	380	
	KA372S	440	KA768S	400	
	KA374S	460	14	KA770S	420
	KA458S	300	KA772S	440	
	KA460S	320	KA774S	460	
KA462S	340	KA776S	480		
11	KA464S	360	KA864S	360	
	KA466S	380	KA866S	380	
	KA468S	400	KA868S	400	
	KA470S	420	15	KA870S	420
	KA472S	440		KA872S	440
	KA474S	460		KA874S	460
KA558S	300	KA876S	480		
KA560S	320				
KA562S	340				
KA564S	360				
12	KA566S	380			
	KA568S	400			
	KA570S	420			
	KA572S	440			
	KA574S	460			
	KA576S	480			
<b>Special Lengths</b>					
12	KA500S	max. 600 mm for arthrodesis			
13	KA600S				

#### Femur Solid Titanium

ø	Article no.	Length	ø	Article no.	Length
8	KD152T	240	10	KD362T	340
	KD154T	260		KD364T	360
	KD156T	280		KD366T	380
	KD158T	300		KD368T	400
	KD160T	320		KD370T	420
	KD162T	340		KD372T	440
	KD164T	360		KD374T	460
	KD166T	380		KD376T	480
	KD252T	240		KD462T	340
	KD254T	260		KD464T	360
9	KD256T	280	11	KD466T	380
	KD258T	300		KD468T	400
	KD260T	320		KD470T	420
	KD262T	340		KD472T	440
	KD264T	360		KD474T	460
	KD266T	380		KD476T	480
	KD268T	400			
	KD270T	420			
	KD272T	440			
	KD274T	460			
KD276T	480				

# Ordering Information

## Implants

### Interlocking Nails

#### Tibia

#### Tibia Universal

ø	Article no.	Length	ø	Article no.	Length
9	KC255S	270	12	KC556S	285
	KC256S	285		KC558S	300
	KC258S	300		KC559S	315
	KC259S	315		KC561S	330
	KC261S	330		KC562S	345
	KC262S	345		KC564S	360
	KC264S	360		KC565S	375
	KC265S	375		KC567S	390
	KC267S	390		KC568S	405
	KC268S	405		KC656S	285
	KC352S	240		KC658S	300
	KC353S	255		KC659S	315
	KC355S	270		KC661S	330
	KC356S	285		13	KC662S
KC358S	300	KC664S	360		
KC359S	315	KC665S	375		
KC361S	330	KC667S	390		
10	KC362S	345	KC668S	405	
	KC364S	360	KC756S	385	
	KC365S	375	KC758S	300	
	KC367S	390	KC759S	315	
	KC368	405	KC761S	330	
	KC455S	370	14	KC762S	345
KC456S	285	KC764S		360	
KC458S	300	KC765S		375	
KC459S	315	KC767S		390	
KC461S	330	KC768S		405	
11	KC462S	345		Special Lengths	
	KC464S	360	10	KC300S	max. 420 mm
	KC465S	375	11	KC400S	
	KC467S	390	12	KC500S	
	KC468S	405	13	KC600S	

#### Tibia Solid Titanium

ø	Article no.	Length	ø	Article no.	Length	
8	KE152T	240	9	Special Lengths		
	KE153T	255		8	KE100T	max.
	KE155T	270		9	KE200T	420 mm
	KE156T	285				
	KE158T	300				
	KE159T	315				
	KE161T	330				
	KE162T	345				
	KE164T	360				
	KE165T	375				
	KE167T	390				
	KE168T	405				
	KE252T	240				
	KE253T	255				
	KE255T	270				
	KE256T	285				
	KE258T	300				
	9	KE259T		315		
KE261T		330				
KE262T		345				
KE264T		360				
KE265T		375				
KE267T		390				
KE268T		405				
KE355T		270				
KE356T		285				
KE358T		300				
KE359T		315				
10		KE361T	330			
	KE362T	345				
	KE364T	360				
	KE365T	375				
	KE367T	390				
	KE368T	405				

