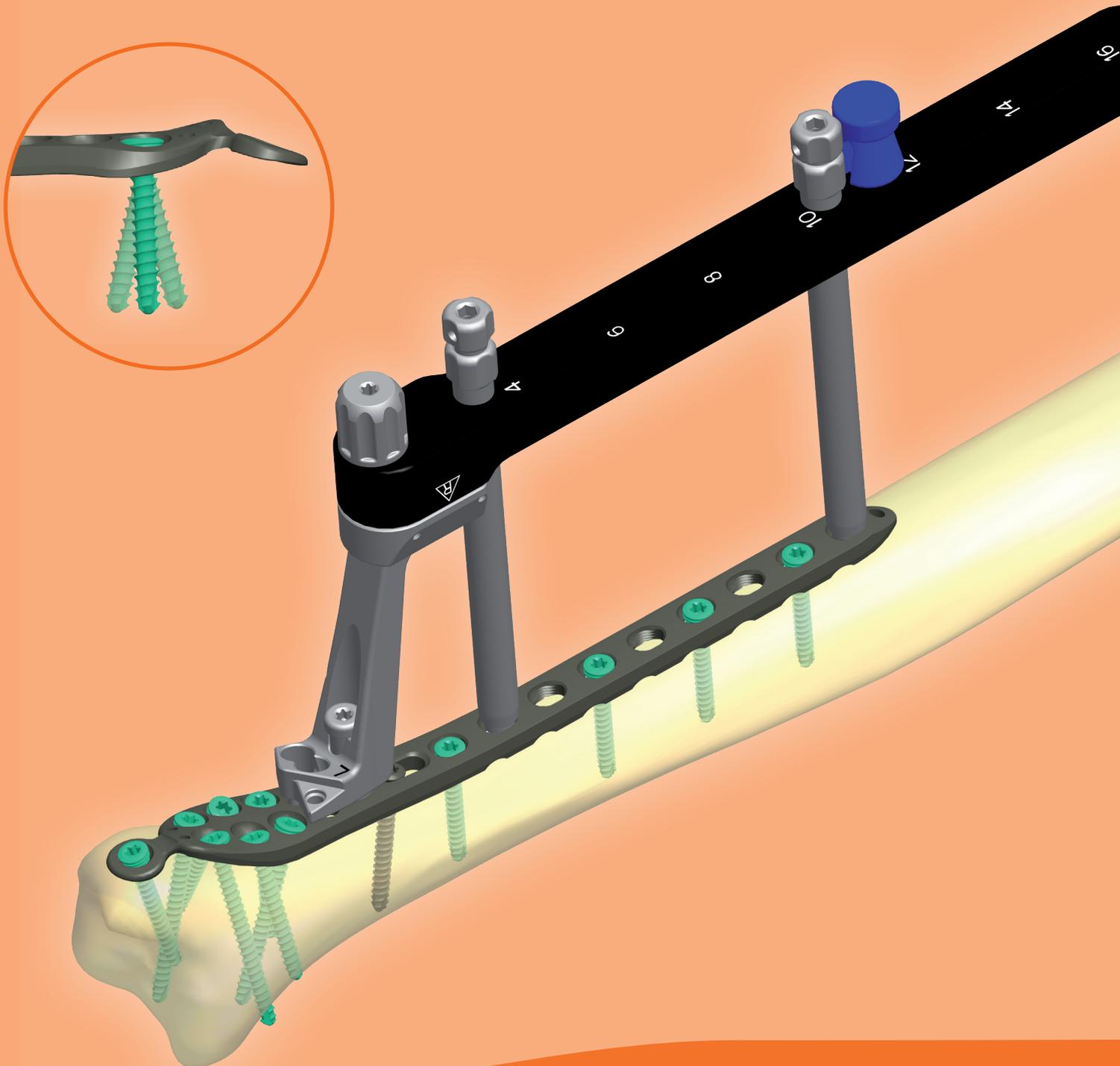


YDFIX Distal Tibia Plate



References

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1 | Introduction

Ydfix Distal Tibia plates, similarly to previous members of the Ydfix family, is capable of handling intra- and periarticular fractures. The distal tibia fractures can be fixed with 9 pcs of standardized, color coded 3.5 mm dia polyaxial screws even in case of the most difficult fracture patterns. The targeting system ensures minimal invasivity and keeping x-ray radiation on a minimum level while maintaining user friendly surgery.

1.1 | The implant

- Polyaxial angle stabilized system in step - free ± 15 deg angulation of insertion



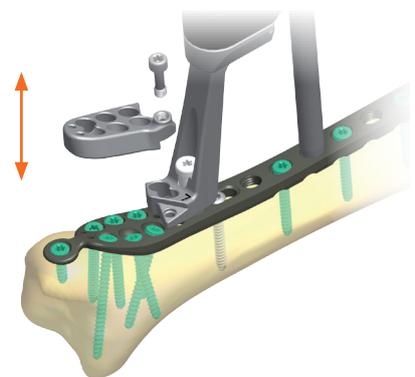
- Maximum 3 times of correction possibility when misidentifying the correct screw direction
- Optimal, pre-determined screw directions in the holes
- Thinned head, the implant does not interfere with the soft tissues
- Rounded edges to protect nearby soft tissues
- Ability to perform minimally invasive surgery
- Oval hole for plate positioning
- Bendable distal tab for medial malleolar fractures



- Self tapping but blunt ended screws to avoid tissue irritation
- Anodized Titanium raw material
- Torx headed screws

1.2 | Instruments

- Capable of drilling in preset and ± 15 deg directions step – free
- Easy to assemble targeting head for choosing either polyaxial or monoaxial fixation in the pre-determined directions.
- Radio translucent targeting arm for the tail holes
- Instruments and implants in one tray
- Optimized instruments
- Color coded torque limiting screwdriver



1.3 | Indication

- Extra- and intra-articular distal tibia fractures
- Distal tibia osteotomy

2.1 | Ydfix Distal Tibia plate - M



Holes on tail	Side
6H	left/right
8H	left/right
10H	left/right
12H	left/right
14H	left/right
16H	left/right
18H	left/right

Raw material
Anodised Titanium

2.2 | Ydfix screw Ø3.5 mm



Length (mm)
10 - 50

Raw material
Anodised Titanium

Colour
green

2.3 | Cortical screw - TX Ø3.5 mm



Length (mm)
10 - 50

Raw material
Anodised Titanium

Colour
grey

3 | Surgical description

3.1 | Patient positioning

In supine position of translucent table so that the image intensifier can make a-p and m-l images as well.

3.2 | Plate selection

During preoperative planning select the most appropriate size plate for the given fracture.

3.3 | Assembly of the targeting system and the plate

The targeting system for the plate head consists of a removable head (1) and a targeting arm (2) which helps plate introduction. This is fixed to the plate. If you operate with the removable head on the screws in the plate head can be inserted in a pre-determined optimal directions.

If you wish to enjoy the advantages of the polyaxial fixation then fix the targeting arm to the plate without the removable head.

The same carbon targeting guide is used for both left and right plates.

Steps of assembly:

Put the fixing screw into the targeting arm. (1) Place the targeting arm on the plate so that they rest on each other and the screw enters into its thread. The small peg shall also fit into its hole. These will ensure the correct position of the targeting arm. (2) Fix the plate and the targeting arm with a screwdriver.

Put the radiolucent arm on the targeting arm (3) and fix it with the nut (4). The nut shall be fixed with T15 screwdriver.

Check correct assembly by verifying the accurate match of the 2.8 mm drillbit in its drill sleeve and the center of the plate hole. If you do not use the longest plate put a plug as a mark to identify the last hole.



3.4 | Incision

Make an incision around the joint and lengthen it toward the proximal as much as necessary. Note

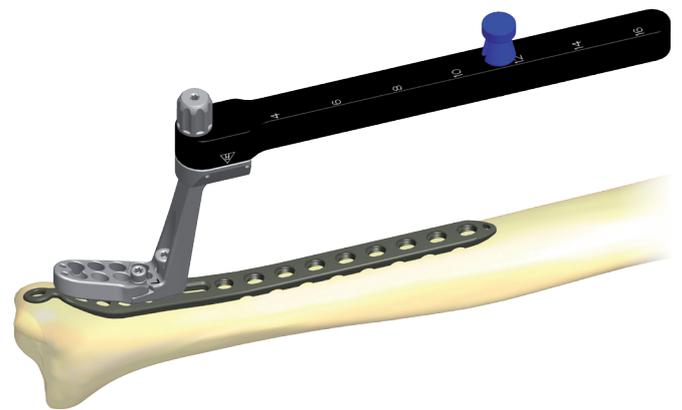
that holes on the plate tail can be locked minimally invasive.

3.5 | Modelling of the plate

For optimal fit we can modellate the plate- in case it is needed. There are two bending irons for this purpose. For the round holes of the head use the device with round marking, while for the oval holes of the shaft use the ones with keyhole marking. Drive the bending tools fully in the respective holes and always use two neighbouring holes. Perform bending.

Attention

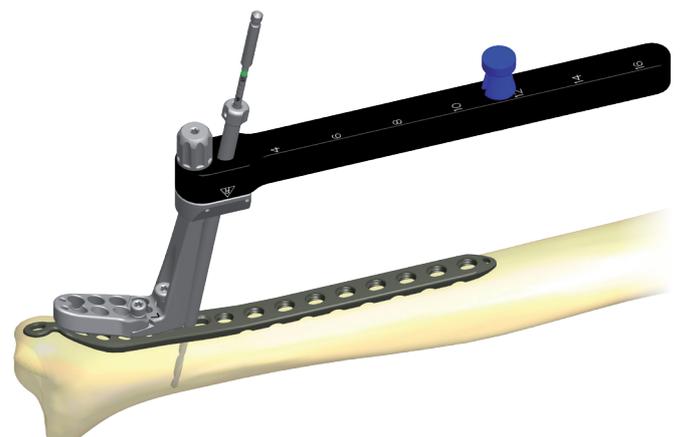
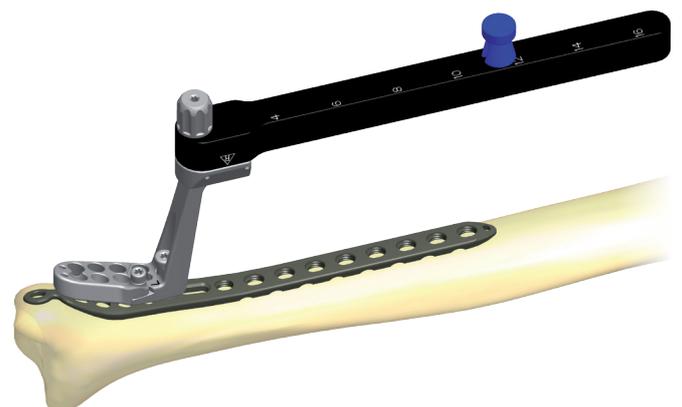
The bent plate cannot be targeted with the head- or carbon targeting devices!



3.5.1 | Positioning the plate

The plate can be inserted minimally invasive with the targeting arm. Guide the plate to the bone surface and push it along in proximal direction. Check optimal position with image intensifier.

Fix the plate with a grey cortical screw in the oval hole. For this, put a 2.8 mm drill sleeve through the arm without using soft tissue protectors. Set required angle and drill with the 2.8 mm drillbit.



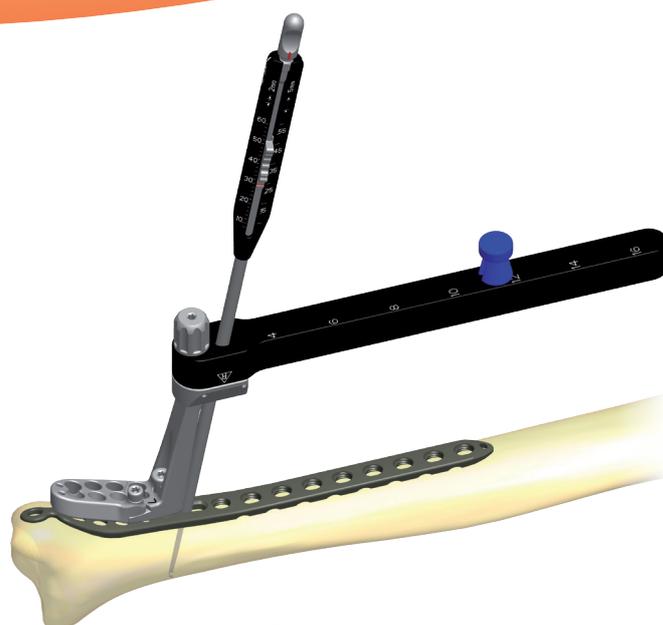
3 | Surgical description

Measure screw length.

Remove 2.8 mm drill sleeve and push the hook of the gauge through the hole. Push the moving part on the bone surface and select screw according to the read value.

Fix the screw in such a way that plate positioning is still possible by slightly moving the plate. After reaching the final position fix the plate by tightening the cortical screw.

Place the carbon arm back.

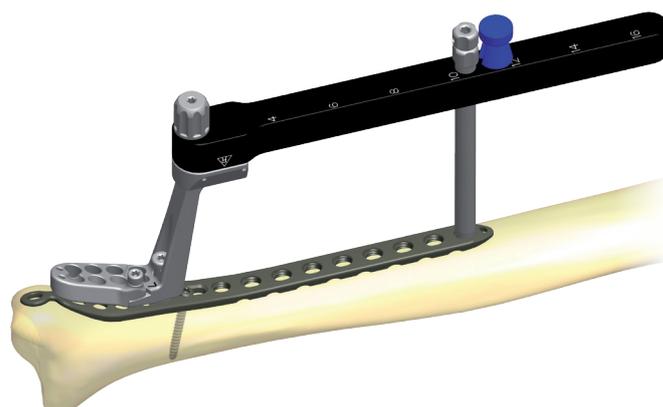


3.6 | Closing the frame

Make an incision at the most proximal hole of the used plate then push soft tissue protector and 2 mm drill sleeve through the carbon arm and fix it to the threaded hole of the plate. This way the centerline of the carbon arm's hole and the plate's hole are aligned.

Attention

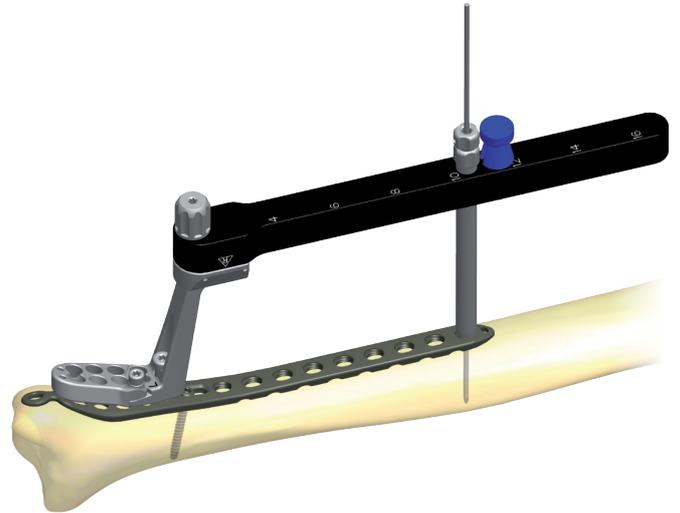
This step is always necessary for the perfect targeting.



3.6.1 | Locking

To ensure stable bone-plate drill a 2 mm Kirschner wire into the before mentioned hole.

Other fixation option is to drill Kirschner wires into the hole at the proximal tip of the plate. The wire can be inserted off-axis at the side of the carbon arm.

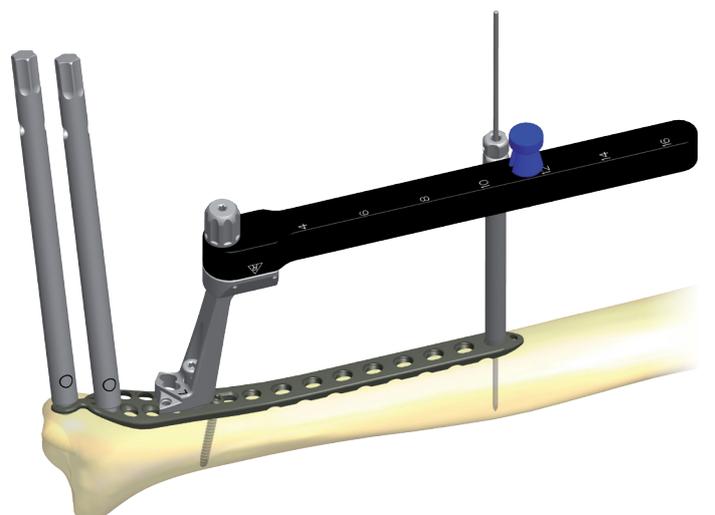


3.7 | Locking the head

On the plate head there are 8 holes plus one bendable tab.

3.8 | Modelling of the bendable tab

The tab can be adapted to bone surface by the bending tools included into the set. For this, remove the removable head, turn the bending tools into the tab and one neighbouring hole as well. Bend the tab carefully.



3 | Surgical description

3.9 | Angle stabilized fixation

YDT system offers two different distal locking options.

3.9.1 | Traditional, monoaxial locking

This case fix the removable head on the targeting arm and insert screws through that.

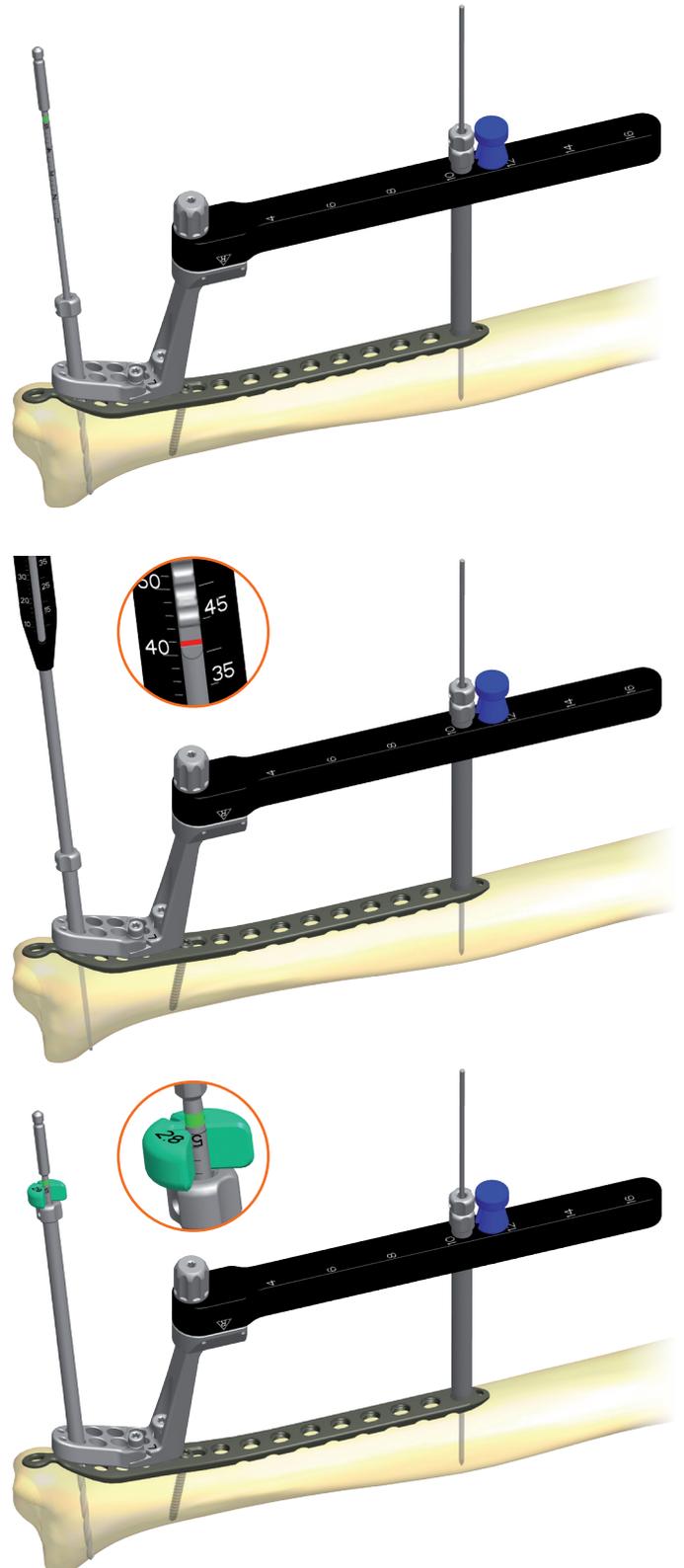
Put the 2.8 mm drill sleeve into the removable head and drill with the 2.8 mm drillbit. After drilling remove the sleeve. If it gets stuck, use the T15 screwdriver.

Measure screw length.

YDT system offers two measurement methods:

As per one, push the hook of the gauge through the hole. Push the moving part on the bone surface and select screw according to the read value. If the hole is a blind one deduct one mm from the read value.

The other method uses a green drill stop placed on the drillbit before drilling above the spiral part. Drill through the 2.8 mm sleeve. Below the stop the necessary value can be read.

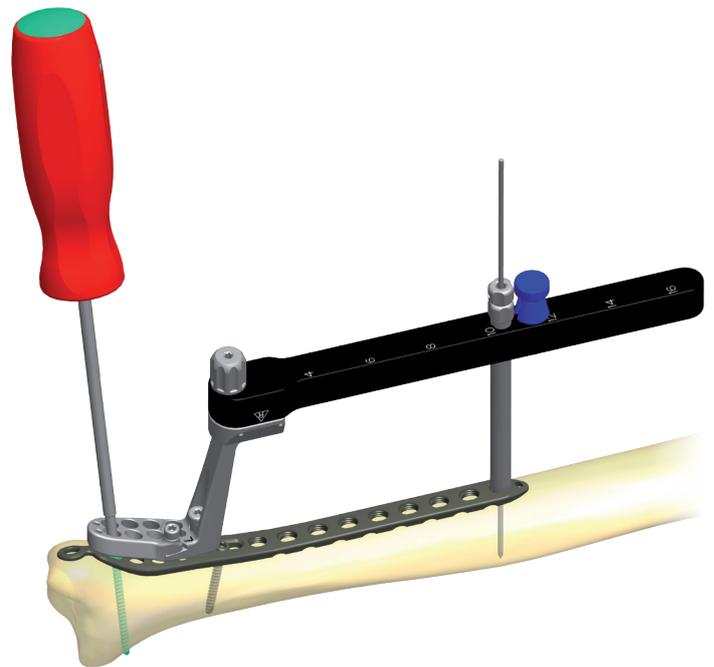


Drive the 3.5 mm screw in with a T15 /1.5 Nm screwdriver. Using torque limiting screwdriver reduces excessive fixation of the screw and plate during healing.

Repeat the above steps to enter the necessary screws in the pre-determined anatomically optimal directions.

Attention

After drilling through the short sleeves the scaled drillbit cannot be used for measuring screw length!"



3.9.2 | Polyaxial locking

This enables the surgeon to have a ± 15 degree deviation from the anatomically optimal, pre-determined direction. Apply the targeting arm without the removable head. This way the bendable tab and 4 most distal holes can be locked polyaxially. The rest 4 distal holes can be locked after the removal of the targeting arm.

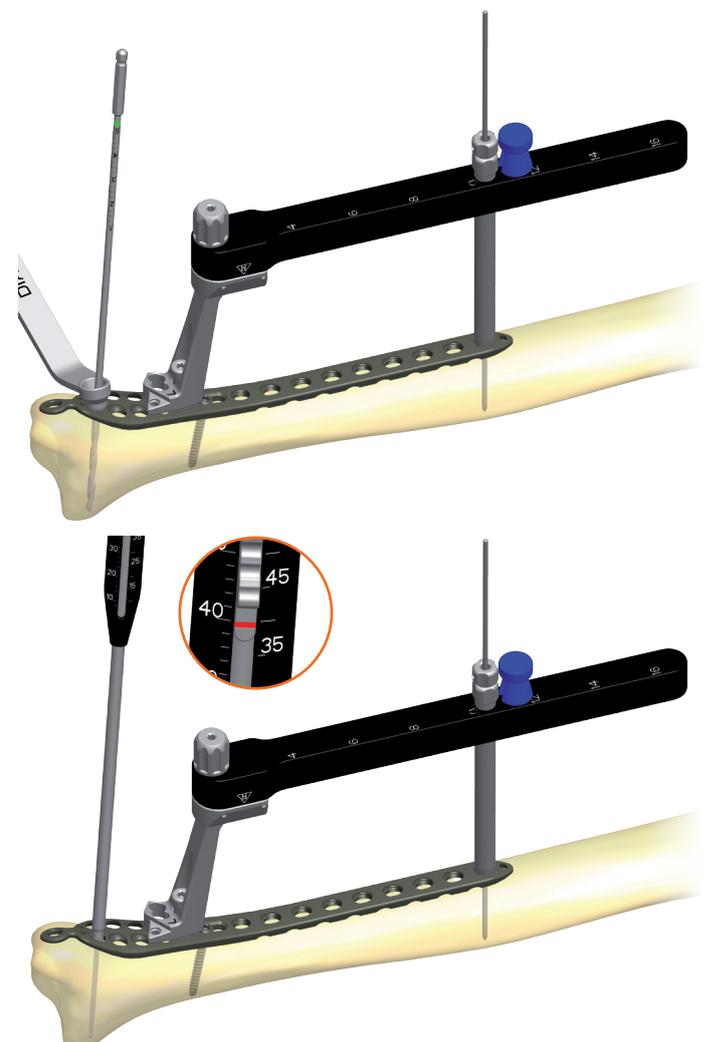
Use the conical side of the 2.8 mm double drill sleeve and the 2.8 mm drillbit. The tip of the sleeve fits into the hole and the axis of the conical sleeve is in the optimal direction. This ensures the ± 15 degree deviation from the optimal direction.

Drill with the 2.8 mm drillbit in the appropriate direction.

Use length gauge without the sleeve as per the image.

Attention

Drilling through the conical side of the double drill sleeve the drillbit cannot function as a length gauge.

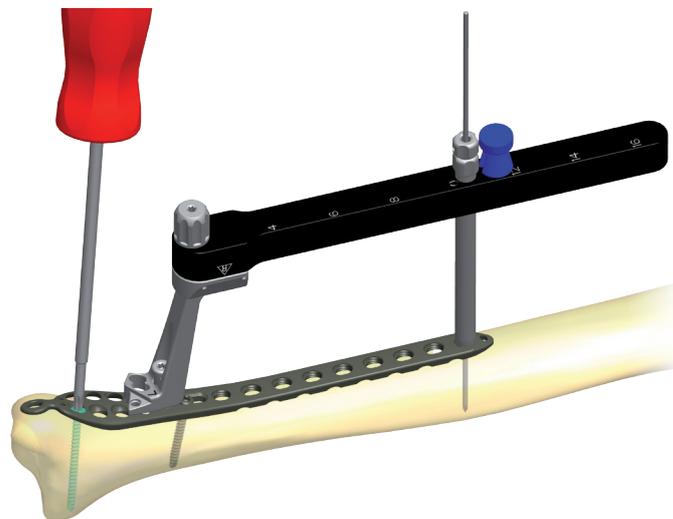


3 | Surgical description

After gauging drive the screw in with a T15 /1.5 Nm screwdriver. Repeat the above in all 4 distal holes which are to be used.

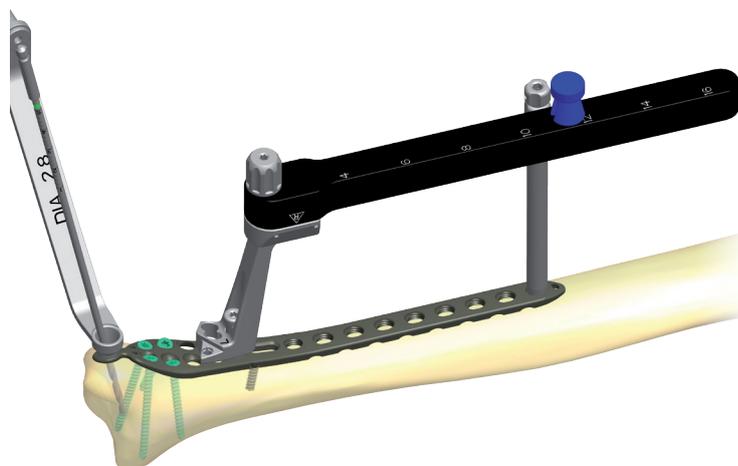
Attention

The rest 4 distal holes can be locked after the removal of the targeting arm.

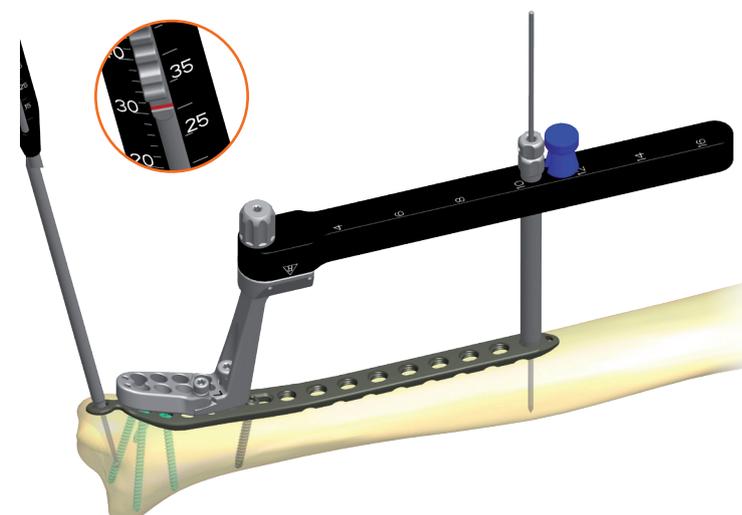


3.10 | The bending tab's fixation

Use the conical or the straight side of the double drill sleeve according to poly- or monoaxial locking.



Remove 2.8 mm drill sleeve and push the hook of the gauge through the hole. Push the moving part on the bone surface and select screw according to the read value.



3.11 | Proximal locking

YDT system applies carbon targeting guide to lock the tail holes minimally invasive. On the tail we recommend monoaxial locking.

Put the soft tissue protector and the 2.8 mm drillbit through the carbon arm into the hole of the plate and drive it into the thread. Drill with 2.8 mm drillbit.

Remove the 2.8 mm drillbit and measure screw length.

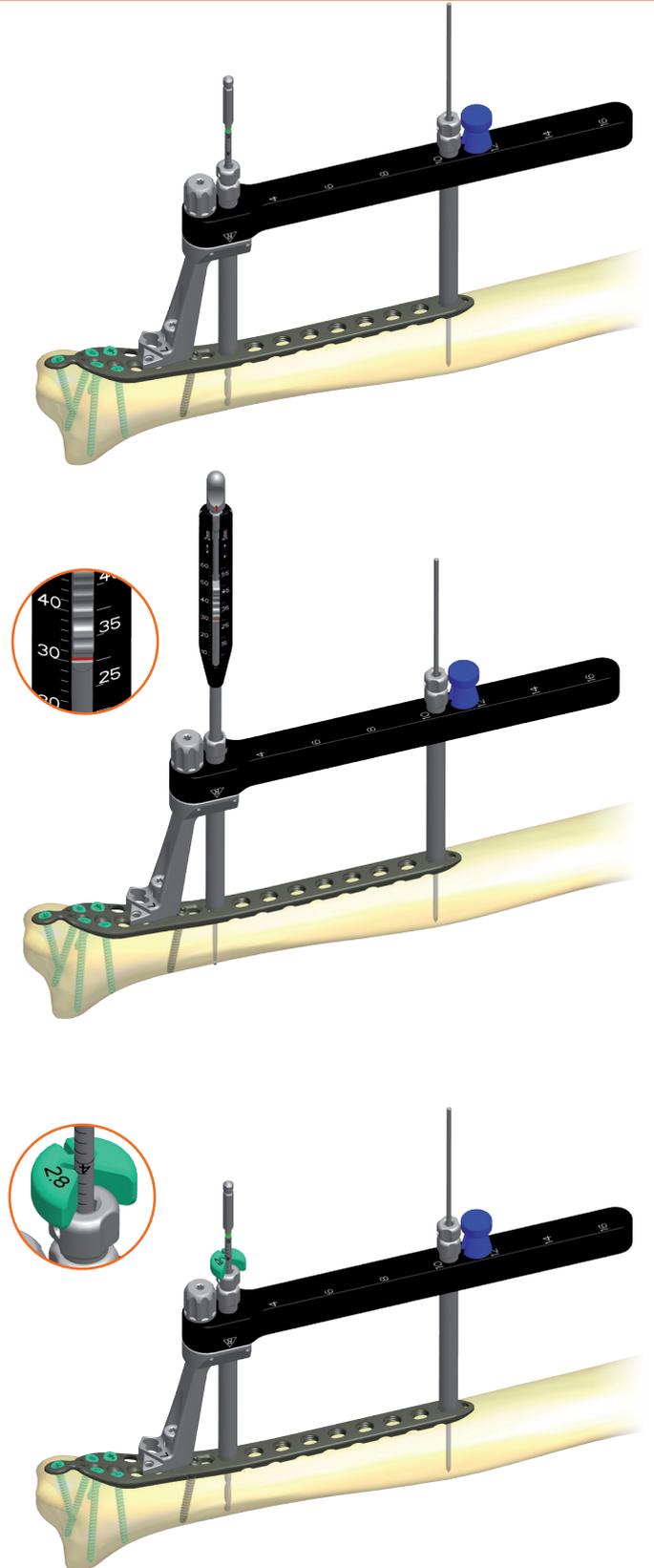
YDT system offers two measurement methods:

As per one, push the hook of the gauge through the hole. Push the moving part on the bone surface and select screw according to the read value. If the hole is a blind one deduct one mm from the read value.

The other method uses a green drill stop placed on the drillbit before drilling above the spiral part. Drill through the 2.8 mm sleeve. Below the stop the necessary value can be read.

Attention

After drilling through the short sleeves the scaled drillbit cannot be used for measuring screw length!

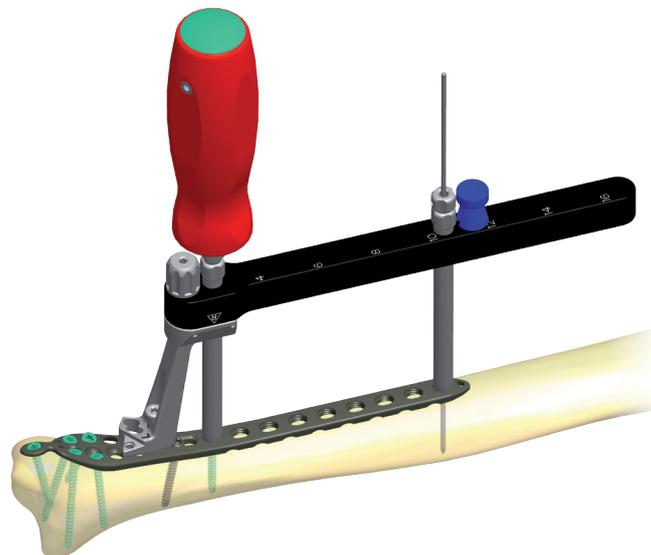


3 | Surgical description

Drive the screw in with T15/1.5 Nm screwdriver.
Repeat the above steps in all necessary holes.

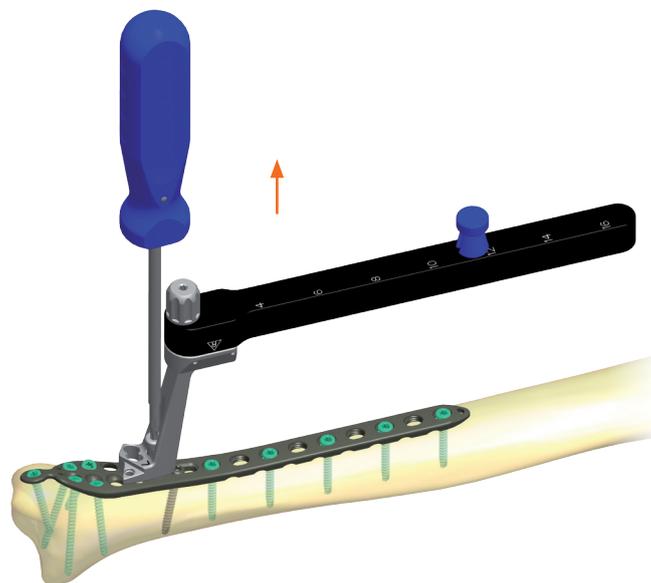
Attention

If you wish to lock the most proximal hole do it as the last step. The Kirschner wire stabilized the system through the surgery. To insert the screw remove the Kirschner wire.



3.12 | Removal of the targeting arm

Remove sleeves and soft tissue protectors. Use T15 screwdrivers to remove fixing screw and move the targeting arm away from the plate. The rest 4 of the distal holes can be locked now. Follow point 3.9.2.





4 | Implant list

4.1 | Ydfix Distal Tibia plate - M



Type	Holes	Length (mm)	Anodised Titanium
Left	9 + 6	137	3028402006
Left	9 + 8	161	3028402008
Left	9 + 10	186	3028402010
Left	9 + 12	209	3028402012
Left	9 + 14	233	3028402014
Left	9 + 16	257	3028402016
Left	9 + 18	281	3028402018
Right	9 + 6	137	3028401006
Right	9 + 8	161	3028401008
Right	9 + 10	185	3028401010
Right	9 + 12	209	3028401012
Right	9 + 14	233	3028401014
Right	9 + 16	257	3028401016
Right	9 + 18	281	3028401018

4.2 | Ydfix screw Ø3.5 mm



Length (mm)	Anodised Titanium
10	1017435010
12	1017435012
14	1017435014
16	1017435016
18	1017435018
20	1017435020
22	1017435022
24	1017435024
26	1017435026
28	1017435028
30	1017435030
32	1017435032
34	1017435034
36	1017435036
38	1017435038
40	1017435040
42	1017435042
44	1017435044
46	1017435046
48	1017435048
50	1017435050

4.3 | Cortical screw - TX Ø3.5 mm



Length (mm)	Anodised Titanium
10	1032435010
12	1032435012
14	1032435014
16	1032435016
18	1032435018
20	1032435020
22	1032435022
24	1032435024
26	1032435026
28	1032435028
30	1032435030
32	1032435032
34	1032435034
36	1032435036
38	1032435038
40	1032435040
42	1032435042
44	1032435044
46	1032435046
48	1032435048
50	1032435050

5.1 | Filled-up tray

Surgical instrument

Description	Size	Quantity	Cat. no.
Target device - YDT plate		1	5280122902
Screwdriver	T15	1	5210720015
Torque screwdriver	T15/1.5Nm	1	5210510044
Plate bender	6 mm	2	5280122907
Plate bender - V	6 mm	2	5280122914
Length gauge	8-60 mm	1	5280122904
Double drill sleeve -	2.8 mm	1	5280122903
Double drill sleeve - - V	Small	1	5275212902
Spiral drill with quick connecting end	2.8x190mm	2	5280122906
Kirschner wire	2x210	6	5937520210
Screw forceps		1	5939999002
Drill stop	2.8 mm	2	5210510227
Tray (empty) YDT			5233800019
Filled-up tray (YDT)			5233800018

5 | Instrument list

5.2 | Instruments

Target device - YDT plate



Screwdriver (T15)



Torque limiting screwdriver (T15/1.5 Nm)



Plate bender (6 mm)



Plate bender - V (6 mm)



Length gauge (8-60 mm)



Double drill sleeve - (2.8 mm)



5.2 | Instrument

Double drill sleeve - V (Small)



5275212902

Spiral drill with quick coupling end (2.8x190mm)



5280122906

Kirschner wire (2x210 mm)



5937520210

Screw forceps



5939999002

Drill stop (2.8 mm)



5210510227



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