

ChM[®]

Surgical technique

5,0 ChM Locked Plating
ChLPsystem

III. CATALOGUE PAGES

III.1. PLATES

5.0ChLP clavicular hook plate

		Catalogue no.	
H	O	Left	Right
12	5	3.4025.505	3.4026.505
	6	3.4025.506	3.4026.506
	7	3.4025.507	3.4026.507
	8	3.4025.508	3.4026.508
15	5	3.4027.505	3.4028.505
	6	3.4027.506	3.4028.506
	7	3.4027.507	3.4028.507
	8	3.4027.508	3.4028.508
18	5	3.4029.505	3.4030.505
	6	3.4029.506	3.4030.506
	7	3.4029.507	3.4030.507
	8	3.4029.508	3.4030.508

O - all threaded holes number in the plate

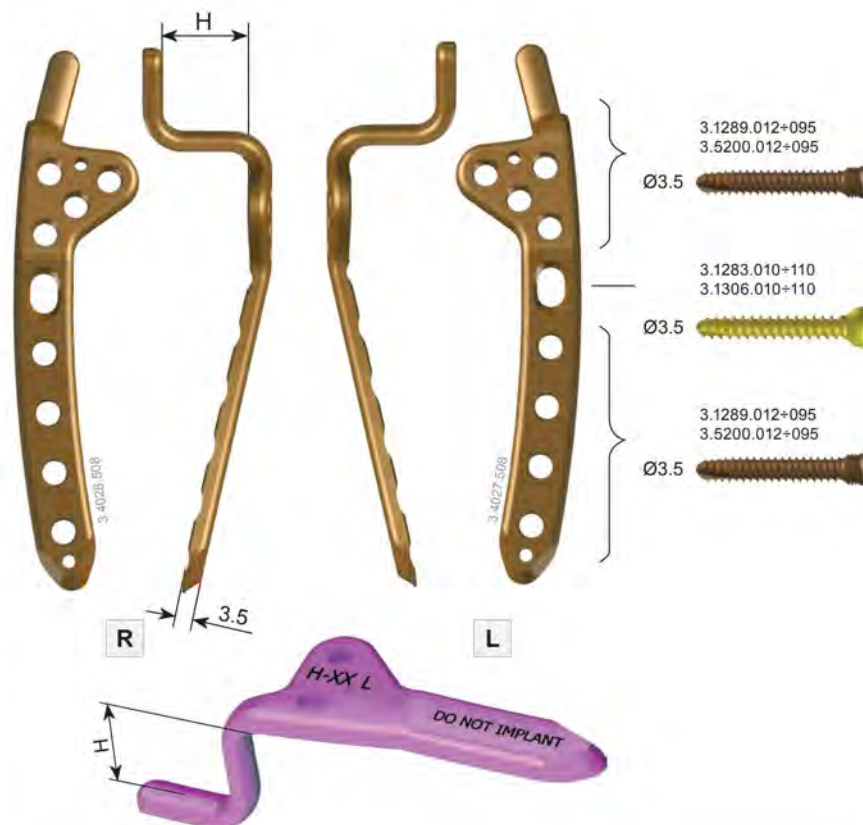
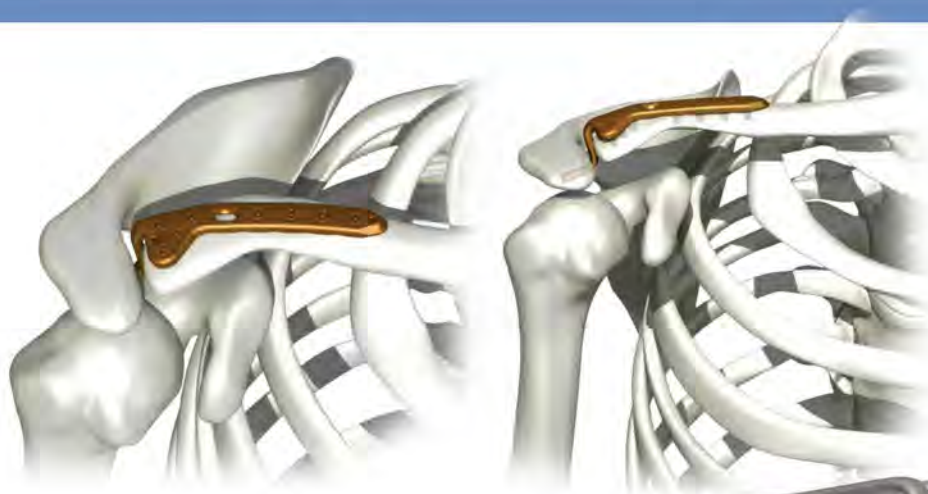


Plate trial

		Catalogue no.	
H [mm]		Left	Right
12		43.4025.505	43.4026.505
15		43.4027.505	43.4028.505
18		43.4029.505	43.4030.505



Palette for 5.0ChLP plates - 3.4025÷3.4030

No.	Catalogue no.	Name	Pcs
1	40.5758.150	Palette	1
2	12.0751.100	Container solid bottom 1/2 306x272x85 mm	1
3	12.0751.200	Perforated aluminum lid 1/2 306x272x15 mm Gray	1

40.5758.650

implants not included



Indications

- The clavicle shoulder end fractures.
- Acute and inveterate dislocation of the acromioclavicular joint.

Contraindications

Absolute:

- Health condition precluding surgery.
- Allergic reactions to the metal from which the implant is made.
- Active infection.

Relative:

- Stable lateral clavicle fractures.
- Significant weakening of the bone making it impossible to install/stabilize the implant properly.
- Abnormal perfusion of fracture area or surgical site.
- Excessive obesity.
- Lack of adequate tissue coverage.
- Psychiatric disorders or the disorders of the musculoskeletal system which may create a risk of fusion failure or complications in the postoperative period.
- Other medical conditions that exclude the potential benefits of the treatment.

The patient's position



Surgical approach



Anterior-upper approach of the sabre cut type.

Procedure stages

The fracture of the end of the clavicle connecting to the shoulder

- Uncovering the fracture.
- The choice of implants – determining the length and depth of the hook and the position of the implant.
- Installing the plate and adjusting the fracture „to the plate.“
- The installation of locking and/or compression screws.

Dislocation of the acromioclavicular joint

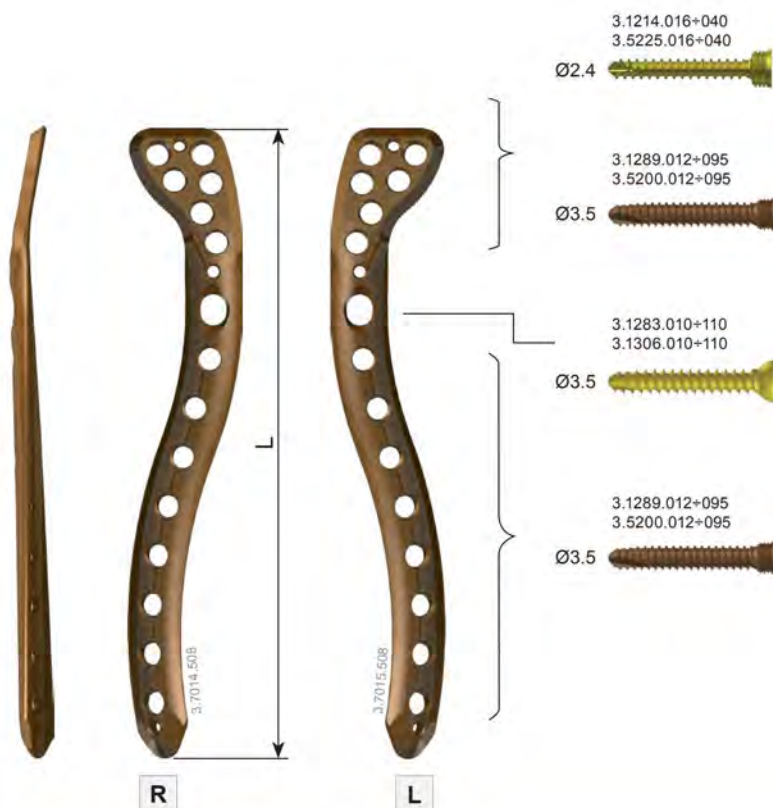
- Covering and “cleansing” of the joint - the possibility of the meniscus damage.
- The choice of implants – determining the length and depth of the hook and the position of the implant.
- Initial positioning and installing of the chosen plate. Ligamentous-capsularis reconstruction indicated.
- The installation of locking and/or compression screws.

5.0ChLP clavicle S plate

Catalogue no.			
O	L [mm]	Left	Right
3	71	3.7015.503	3.7014.503
4	80	3.7015.504	3.7014.504
5	90	3.7015.505	3.7014.505
6	99	3.7015.506	3.7014.506
8	116	3.7015.508	3.7014.508

O – threaded holes number in shaft part of the plate

available	3 - 11 holes (71 mm - 143 mm)
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Palette for 5.0ChLP plates - 3.7014/3.7015

No.	Catalogue no.	Name	Pcs	40.5758.630
1	40.5758.130	Palette	1	
2	12.0751.100	Container solid bottom 1/2 306x272x85 mm	1	
3	12.0751.200	Perforated aluminum lid 1/2 306x272x15 mm Gray	1	

implants not included



Indications

- The clavicle fractures.
- Non-union or malunions of clavicle.

Contraindications

Absolute:

- Health condition precluding surgery.
- Allergic reactions to the metal from which the implant is made.
- Active infection.

Relative:

- Significant weakening of the bone making it impossible to install/stabilize the implant properly.
- Abnormal perfusion of fracture area or surgical site.
- Excessive obesity.
- Lack of adequate tissue coverage.
- Psychiatric disorders or the disorders of the musculoskeletal system which may create a risk of fusion failure or complications in the postoperative period.
- Other medical conditions that exclude the potential benefits of the treatment.

The patient's position



Beach-chair or lying on the back position.

Surgical approach



Horizontal incision parallel to the clavicle in the supraclavicular fossae or above the clavicular area.

Procedure stages

- Surgical approach and revealing the fracture.
- The initial reduction of fracture.
- The choice of implants – determining the length and position of the implant.
- Initial stabilization of the plate using bone forceps or compression screws.
- Insertion of the screws.

IV. SURGICAL TECHNIQUE

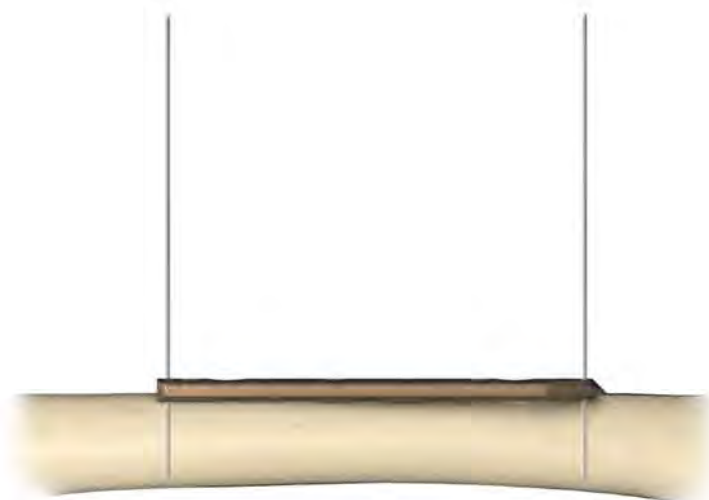
IV.1. TEMPORARY PLATE ATTACHMENT

When fracture is reduced and the plate position is confirmed, determine its temporary location using Kirschner wires 2.0 [40.4815.220].

Wires can be inserted in proximal holes of the plate and the most distal ones.

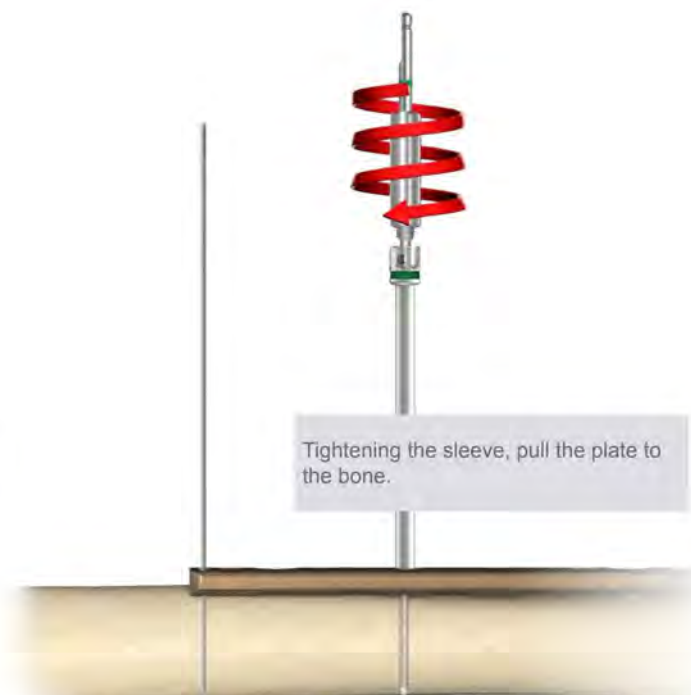


Confirm the plate position is correct taking X-ray image.



NOTE: The Setting-compressing screw 2.8/180 [40.5674.728] can be used to stabilize and tighten the plate up to the bone for temporary purposes. The screw is to be inserted via the Guide sleeve 5.0/2.8 [40.5673.728].

Locking screw Ø3.5 can be inserted in the hole after removal of the Setting-compressing screw 2.8/180.



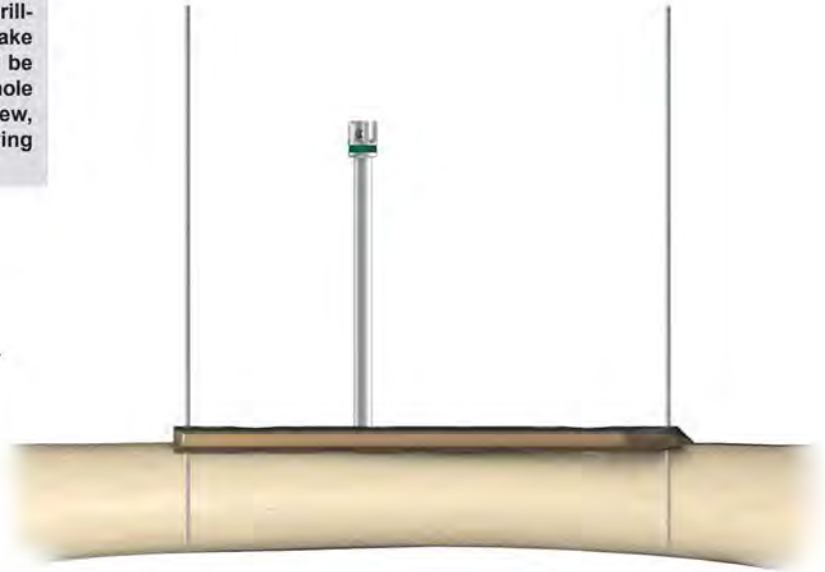
IV.2. LOCKING SCREW Ø3.5 INSERTION



It is important to drill exactly in the axis of a locking hole. Use always the appropriate guide sleeve when drilling. The guide sleeve will ensure the locking screw take an axial position towards the hole of the plate and be correctly locked in the plate. Unprepared drilling of a hole can lead to: thread skewing and jamming the screw, incorrect screw locking and problems when removing the screws (*thread seizure*).

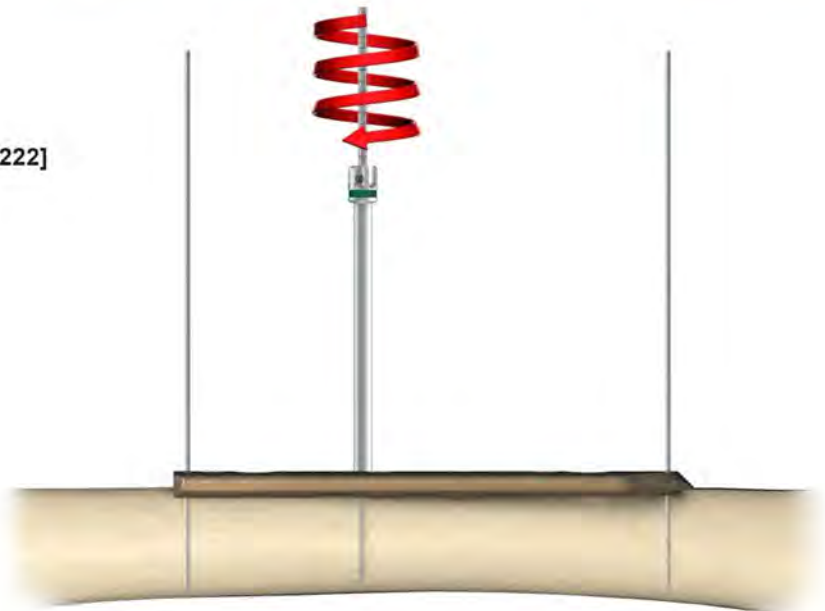
Guide sleeve screwing.

Insert the Guide sleeve 5.0/2.8 [40.5673.728] into the plate.



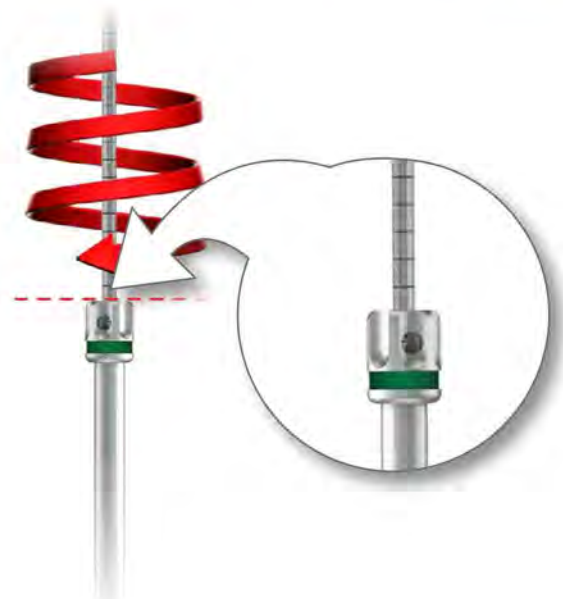
Drilling the hole

Ream the hole using the Drill with scale 2.8/220 [40.5653.222] until the desire depth is reached.

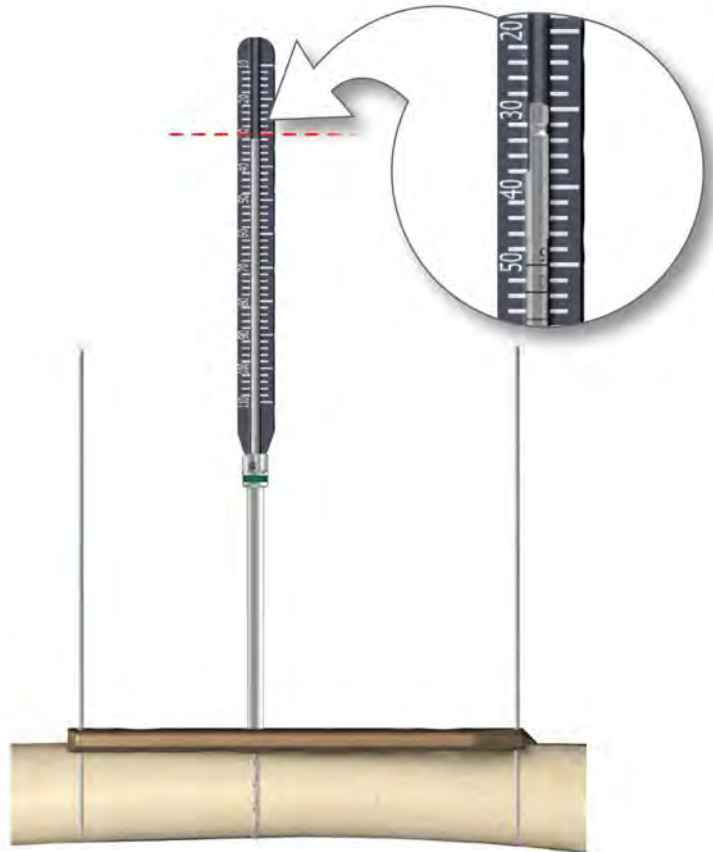


Hole depth measurement

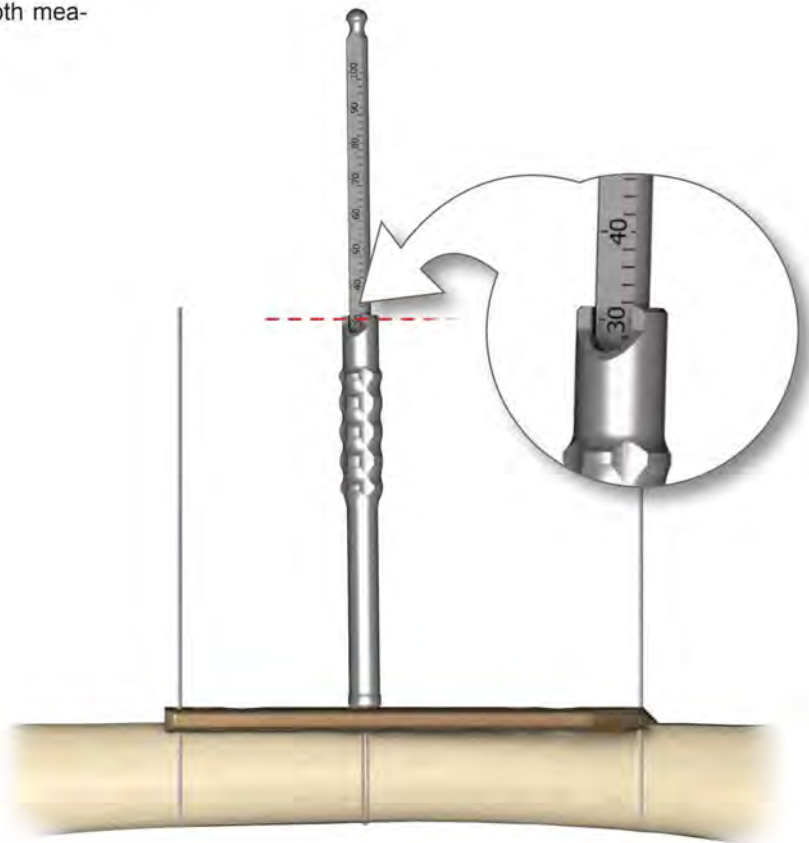
OPTION I: Read the value on the Drill with scale [40.5653.222] or



OPTION II: use the Screw length measure [40.5675.100].

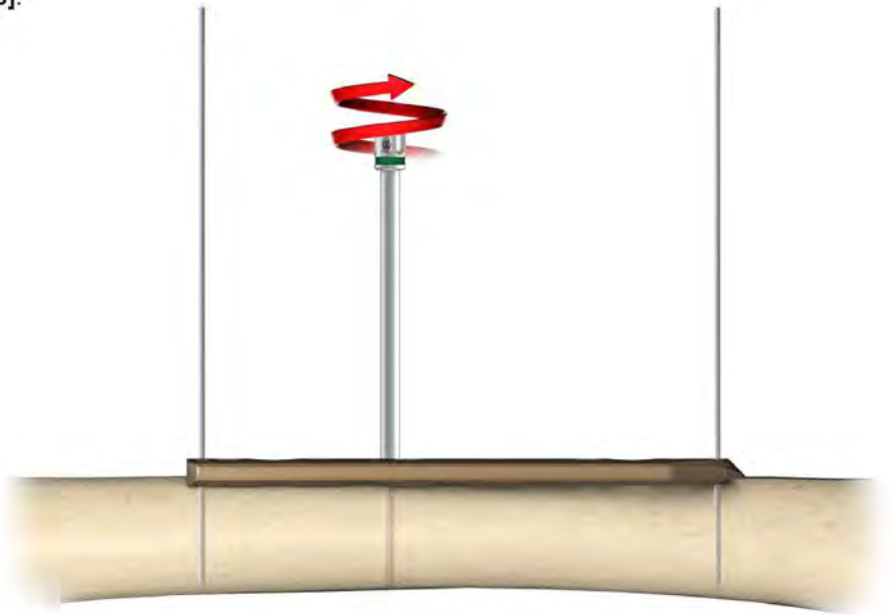


OPTION III: Unscrew the Guide sleeve 5.0/2.8 [40.5673.728] and define the screw length using the Depth measure [40.4639.500].

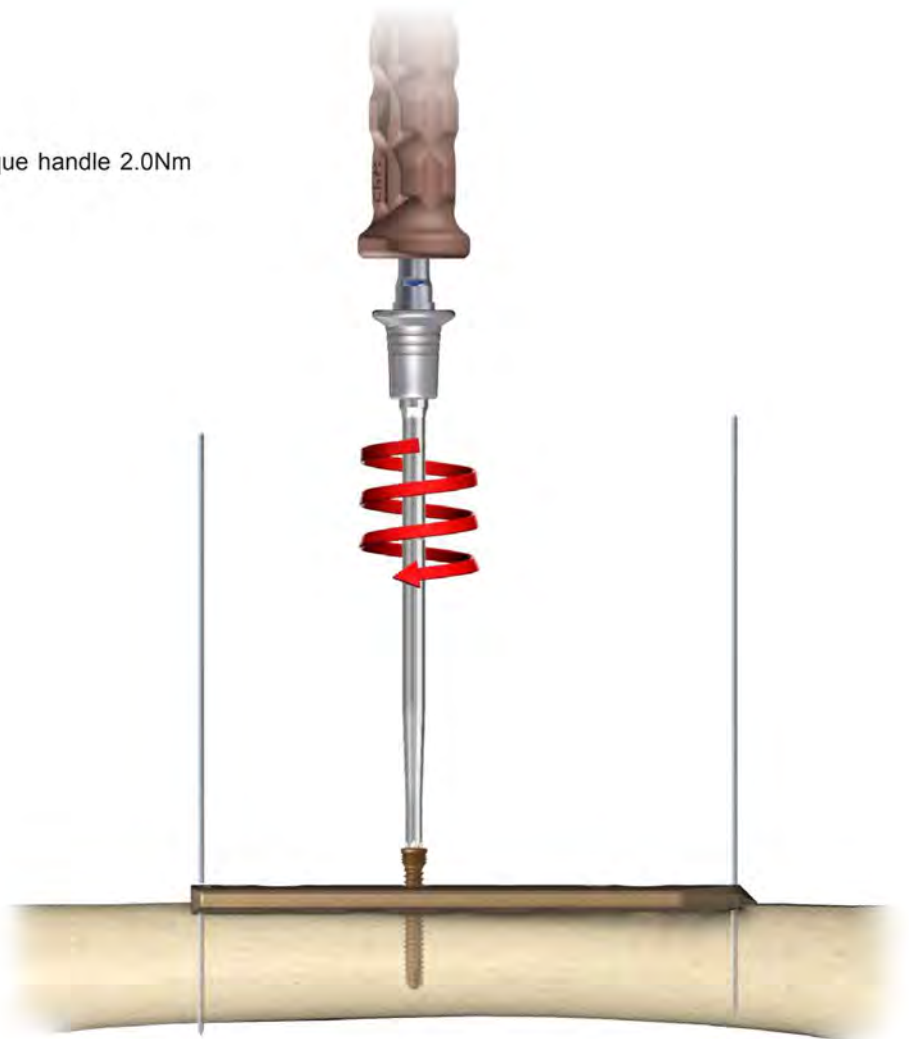


Screw insertion

Remove the Guide sleeve 5.0/2.8 [40.5673.728].



Insert the locking screw Ø3.5 using the Torque handle 2.0Nm [40.5635] and proper screwdriver tip.



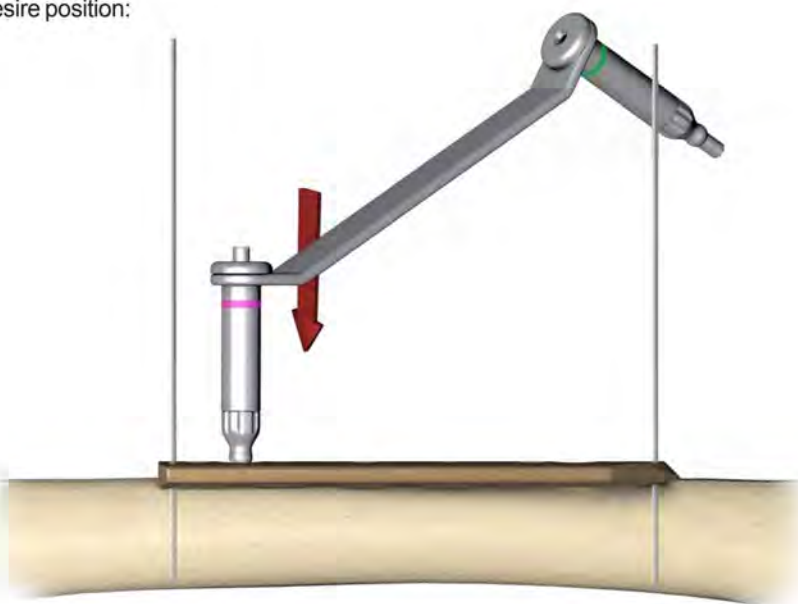
IV.4. CORTICAL SCREW Ø3.5 INSERTION

Compression guide setting

Set the Compression guide 2.5/2.8 [40.4804.700] in desire position:

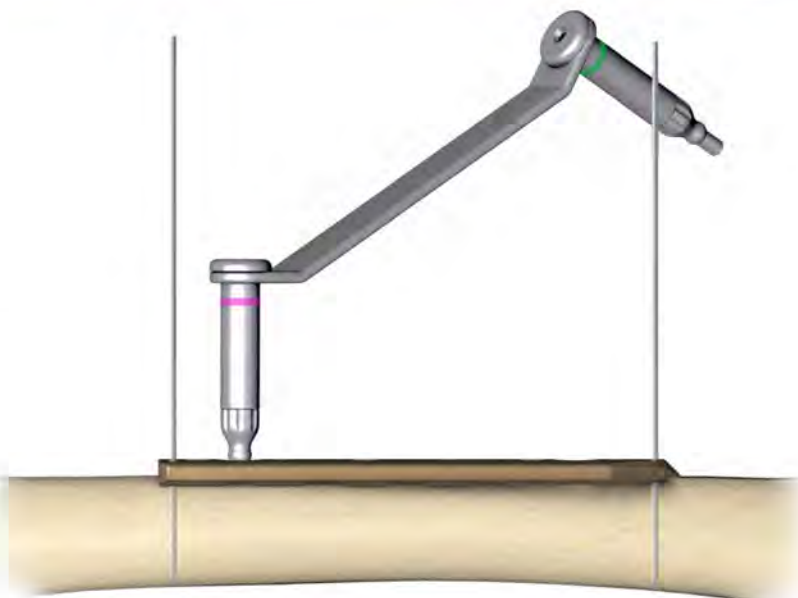
a. Neutral position

Press the guide to the plate to achieve the neutral position for screw insertion.



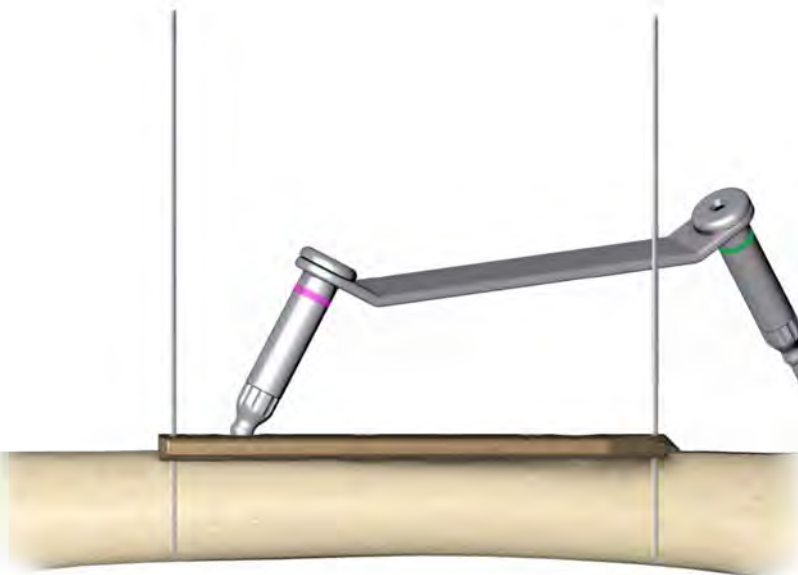
b. Compressive position

Move the guide without pressure to the edge of compression hole to achieve the compression position for screw insertion.



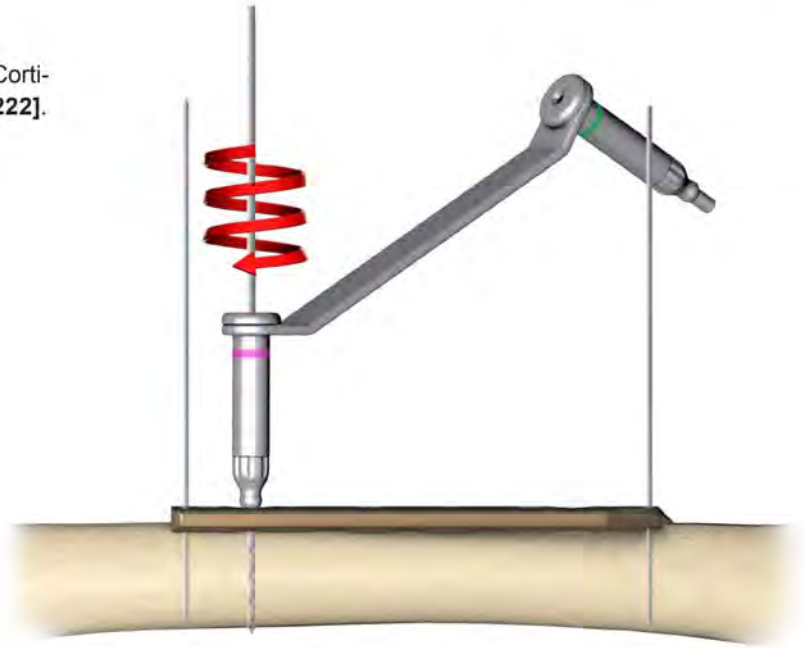
c. Angular position

Angular positioning of the guide is also available.



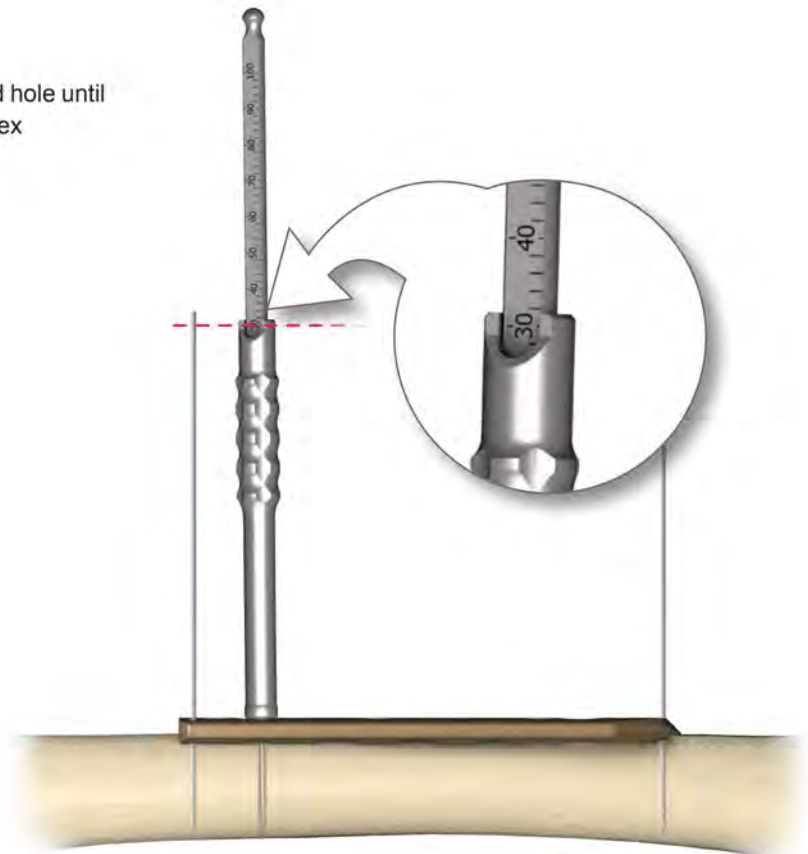
Drilling

Drill the hole through both cortices in desire position for the Cortical screw Ø3.5 insertion using the Drill Ø2.5/220 [40.5912.222].



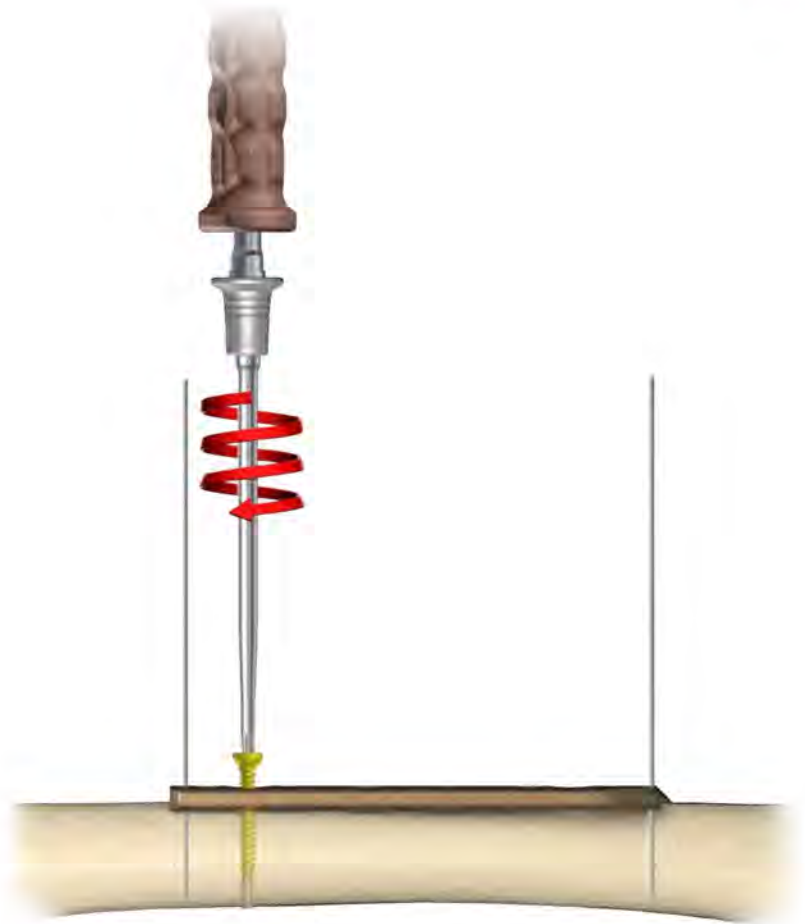
Hole depth measurement

Insert the Depth measure [40.4639.500] into the drilled hole until its hook anchors the outer surface of the opposite cortex



Screw insertion

Insert cortical screw Ø3.5.



V. POSTOPERATIVE TREATMENT

Postoperative treatment after locking plates does not differ from treatment after conventional stabilization.

VI. IMPLANT REMOVAL

In order to remove the screws, first unlock all locking screws from the plate. Then remove bone screws. This prevents the rotation of the plate while removing the last locking screw.



NOTE: After removing the tissues from the outer surface of plate and screws recesses, it is recommended to apply aiming block to the plate (see point. IV.3). The use of a protective guide will ensure that: the screwdriver is positioned in the screw axis, the device is correctly placed in the screw recess and that the risk of twisting the recess while removing the screw is reduced.