

# NCB® Distal Femur System

Surgical Technique





## Surgical Technique NCB Distal Femur System

### Table of Contents

|   |           |
|---|-----------|
| <b>Introduction</b>                           | <b>4</b>  |
| <b>Indications</b>                            | <b>8</b>  |
| <b>Preoperative Planning</b>                  | <b>8</b>  |
| <b>Contraindications</b>                      | <b>8</b>  |
| <b>Patient Positioning</b>                    | <b>8</b>  |
| <b>Sample Cases</b>                           | <b>9</b>  |
| <b>Open Technique</b>                         |           |
| Incision                                      | 11        |
| Reposition                                    | 11        |
| Optional: Bone Spacers                        | 12        |
| Insertion of the NCB Plate                    | 12        |
| Insertion of the NCB Screws                   | 13        |
| <b>Tips and Tricks</b>                        | <b>16</b> |
| <b>MIS Technique*</b>                         |           |
| Incision                                      | 17        |
| Aiming Arm Assembly for Insertion             | 17        |
| Insertion of the NCB Plate                    | 17        |
| Reduction of the Metaphyseal Bone Part        | 18        |
| Insertion of the NCB Screws in the Shaft Part | 20        |
| <b>Implant Removal</b>                        | <b>23</b> |
| <b>Ordering Information</b>                   |           |
| Implants                                      | 24        |
| Graphic Case                                  | 27        |
| Standard Instruments                          | 28        |
| MIS Instruments                               | 30        |
| Planning Aid                                  | 32        |

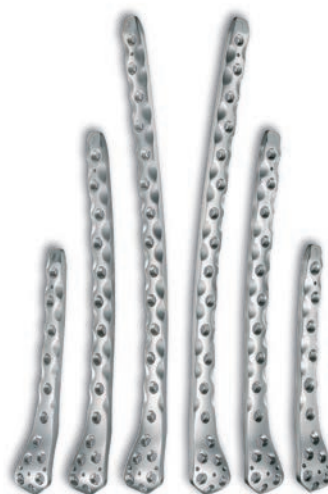
\*MIS *Minimally Invasive Solutions™* Technique by Zimmer

## Introduction

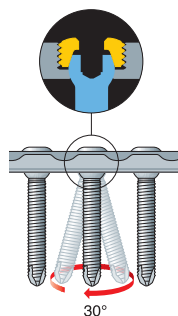
The **NCB DF System (Non-Contact Bridging for the Distal Femur) Plate** is an optimal solution for the treatment of complex fractures at the distal femur. The system allows for polyaxial screw placement with subsequent screw locking for improved stability especially within osteopenic bone. Before locking, the screws can act as lag screws and be used for fracture reduction; a benefit which is not offered with standard locking systems.

In the locked mode **NCB DF Plate** acts as an internal fixator without contact between the plate and the bone surface reducing the risk of periosteal blood supply impairment.

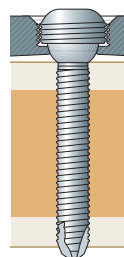
The surgical technique is based on the well-known standard plate osteosynthesis technique and in a last step all screws can be locked and be made angular stable. The instrumentation includes a fully radiolucent targeting device for a minimal-invasive surgical technique (MIS).



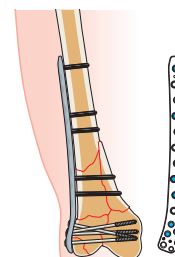
Implants sizes (5–9–13 holes) and types (left/right)



Polyaxial screw placement with subsequent locking option for optimal system stability. Possible fracture reduction with a lag screw



Non-Contact Bridging osteosynthesis reduces the risk of periosteal blood impairment



Anatomically contoured plate. Forged titanium alloy for better mechanical strength



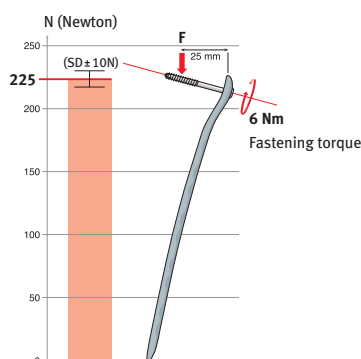
Locking cap Ø 8 mm



Spacer 1 to 3 mm



Blind screw



Angular stability of one **NCB Locked Screw**



Self-tapping screws:  
Double lead thread for fast screw insertion in cortical bone.  
Ø 5.0 mm **NCB** cortical screws L= 14–100 mm  
Ø 5.0 mm **NCB** cancellous screws L= 50–100 mm  
Ø 5.0 mm **NCB MotionLoc®** screws L= 30–60 mm  
Ø 3.5 mm cortical screw L= 50–85 mm

Materials: **NCB** Plates and Screws are made of Ti6Al4V, ISO 5832-3, ASTM F136; the 3.5 mm cortical screw self tapping is made of Ti6Al7Nb, ISO 5832-11, ASTM F1295.

## Cable Fixation Options

The following products from the *Zimmer® Cable-Ready®* Cable Grip System are compatible with the *NCB* Distal Femur System:

See data sheet REF 97-2232-015-00 for more specific instructions.



### **NCB Locking Plate Cable Button, 2.5mm, Hex Drive**

- Sterile
- Material: Ti6Al4V

REF 47-2232-060-00 Color: Gold\*  
REF 47-2232-060-01 Color: Blue

#### **Application**

This Cable Button is threaded directly into the *NCB* Plate hole to provide a positioning point for the Cable.

#### **Instructions**

To insert, use the 2.5mm hex screwdriver to thread the cable button into the plate hole. Do not fully tighten to allow the slots in the button to align with the cable.

To remove, use the 2.5mm hex screwdriver to unthread the cable button from the plate hole.



### **Hex Button, 3.5mm**

- Sterile
- Material: C. P. Titanium

REF 00-2232-002-35

#### **Application**

This Hex Button fits into the standard hex in the screw head (3.5mm hex). Therefore, it can be inserted into the *NCB* Screw head, or into the *NCB* Locking Cap.

**Note:** The Hex button is incompatible with the 2.5mm Hex of the Cortical self-tapping screws (REF 02.03131.0xx)



### **Cable Assembly Cerclage, 1.8mm**

- Sterile
- Material: CoCr

REF 00-2232-002-28  
REF 00-2232-004-18



Cable Fixation Options



Cable Fixation with  
Cable Button

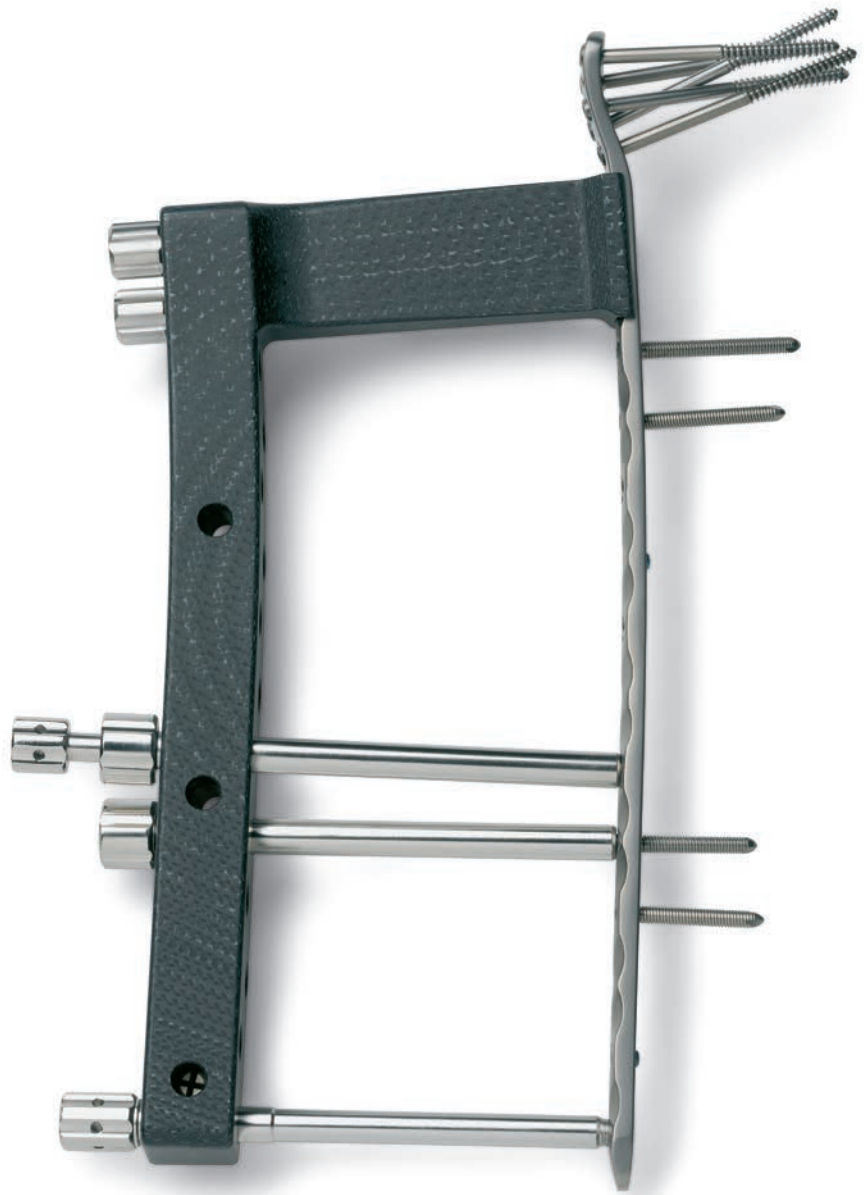


Cable Fixation with  
Hex Button

\* Not available in Europe, Middle East and Africa.

### MIS Radiolucent Targeting Device

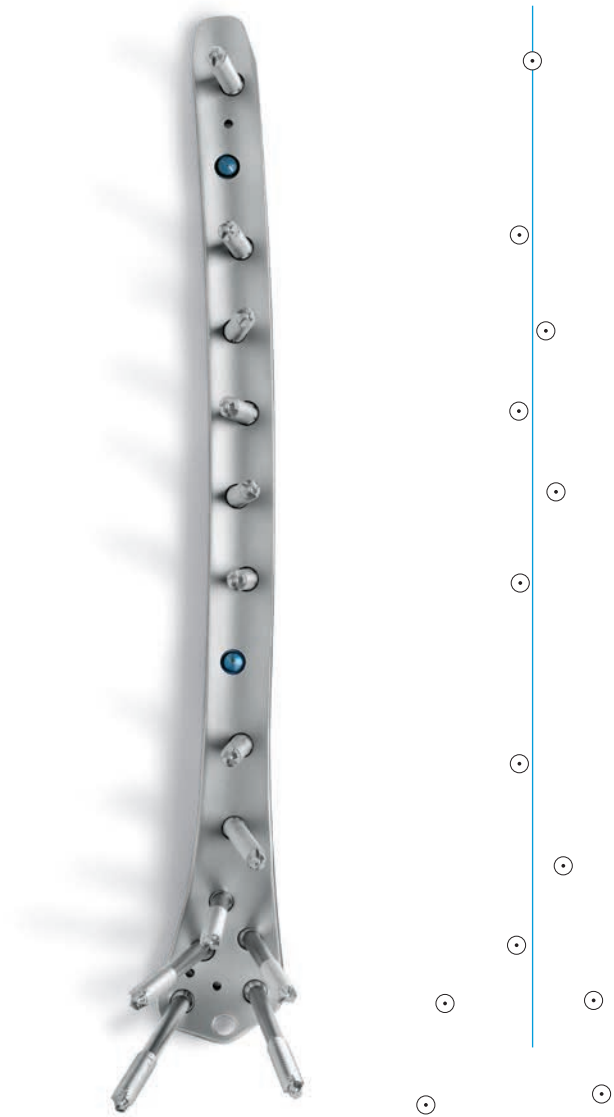
MIS\* operation technique with a fully radiolucent targeting device.



Targeting device and plate assembly

### Divergent Screw Alignment

The targeting device ensures divergent screw alignment for increased pull-out resistance in the metaphyseal and diaphyseal region.



Divergent screws alignment achieved using the targeting device



## Indications

The *NCB* Polyaxial Locking Plate System is indicated for temporary internal fixation and stabilization of fractures and osteotomies of long bones.

**Note:** The *NCB* Distal Femur Plate from the *NCB* Polyaxial Locking Plate System is specifically designed for the distal femur.

## Preoperative Planning

Prior to surgery, it is recommended to conduct preoperative planning using the X ray template (REF 06.01240.000).

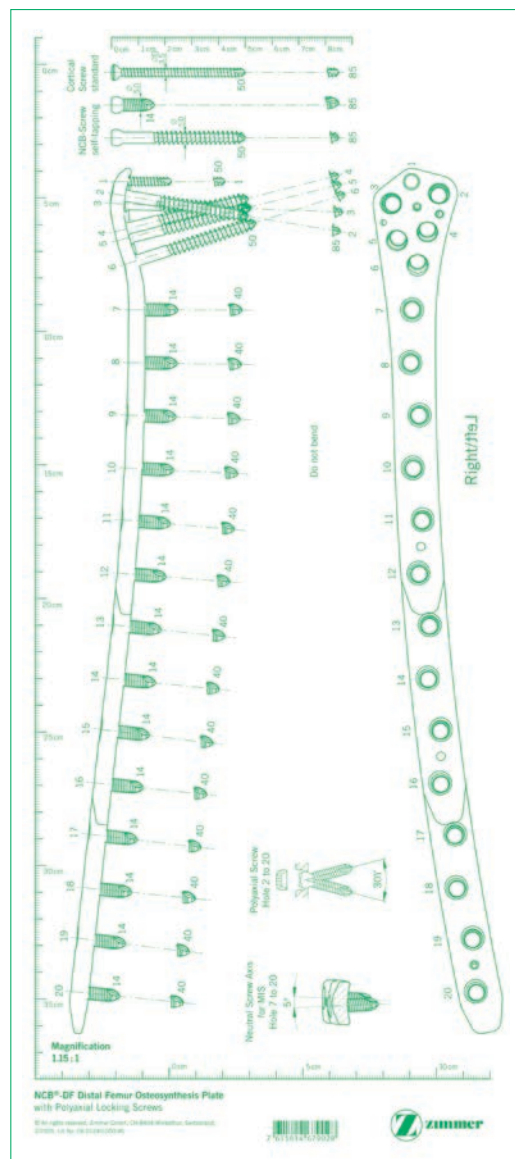
## Contraindications

- All concomitant diseases that may impair the fixation of the implant and/or the success of the intervention.
- Lack of bone substance or poor bone quality which makes stable seating of the implant impossible.
- Acute or chronic, local or systemic infections.
- Allergy to the implanted material.
- Severe muscular, neural or vascular diseases that endanger the extremities involved.

## Patient Positioning

Lay the patient in supine position on a radiolucent table. Support the knee, but allow the leg to move freely. Make sure that a true lateral X ray of the femur can be obtained in this position. Avoid strong traction and a completely extended knee because forces of the gastrocnemius muscle will generate hyperextension of the distal fragment.

To lessen the forces of the gastrocnemius, flex the leg approximately 20–40°.



X ray template REF 06.01240.000

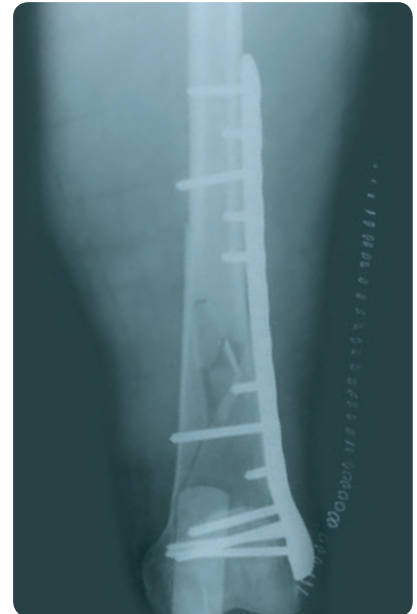


## Sample Cases

### Case 1: Extra-articular fracture



AP view preoperative



AP view postoperative



Lateral view postoperative



Lateral view showing 'non contact' of the plate

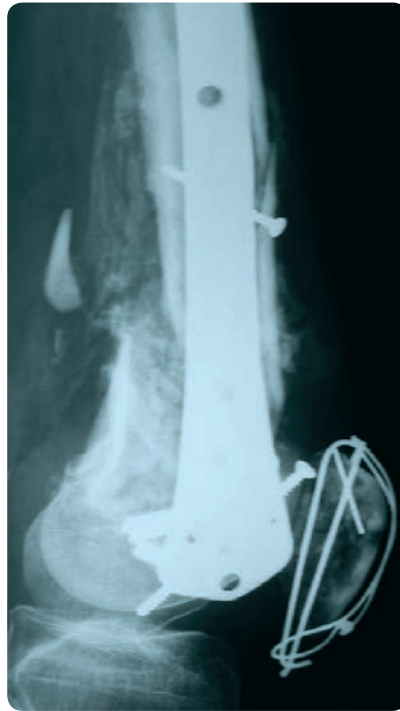
## Case 2: Intra-articular fracture



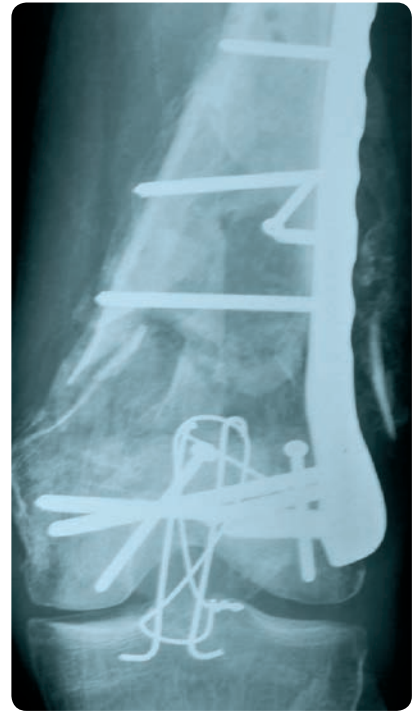
Lateral view preoperative



AP view preoperative



Lateral view postoperative

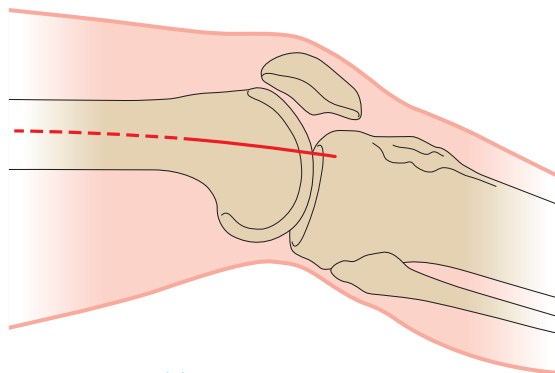


AP view postoperative

## Open Technique

### Incision

A lateral incision is recommended. The skin incision starts at Gerdy's tubercle and goes on in a proximal direction to expose the fracture zone. The muscles are left attached to the fracture fragments for optimal blood supply. Do not strip the periosteum.

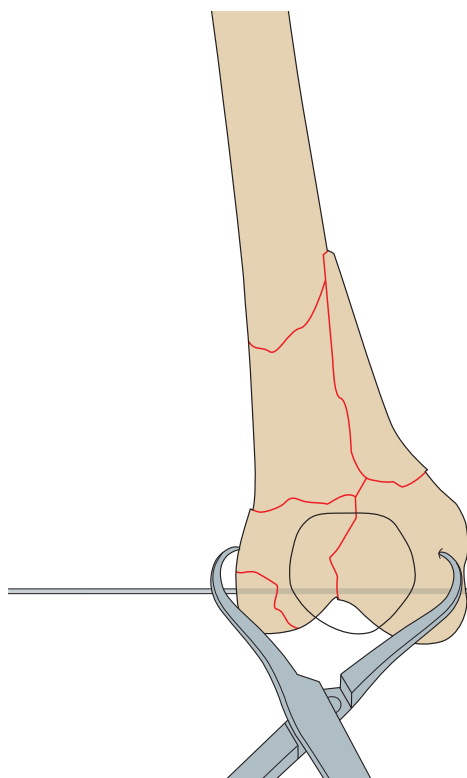


Incision

### Reposition

For intra-articular fracture an arthrotomy is performed to anatomically reduce the joint line.

Temporarily fix the bone fragments with 2.0 mm K-wires (REF 290.20.280). Make sure that the K-wires do not interfere with the location of the plate.

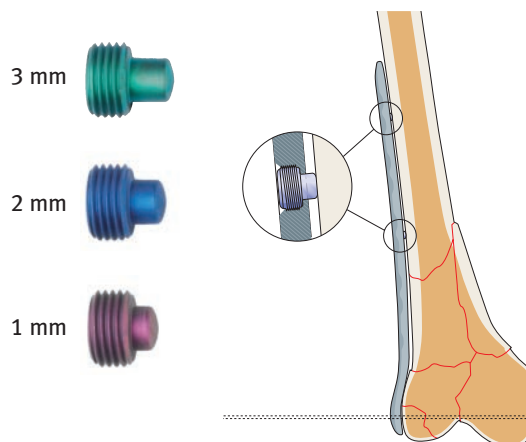


Temporary stabilization of the fracture

### Optional: Bone Spacers

Two bone spacers should be used in the diaphysis to avoid the contact of the plate with the bone surface reducing the risk of periosteal blood supply impairment. The spacers are available in sizes of 1 mm, 2 mm or 3 mm (REF 02.03150.311 to .313). The blue 2 mm spacer is usually used. Insert the adequate bone spacers into the plate before plate insertion.

**Note:** The bone spacers are single use only. The spacers can be removed after locking of the screws.



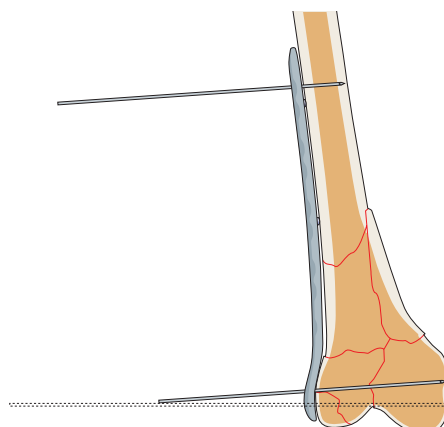
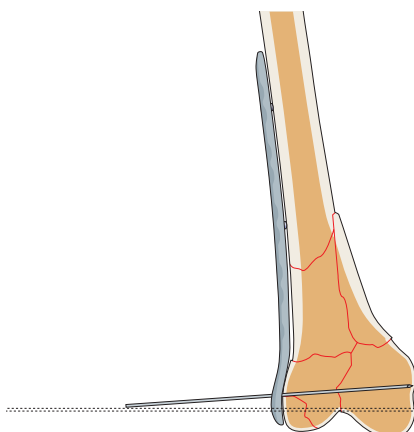
Bone spacers for non contact bridging

### Insertion of the NCB Plate

Insert the plate between the vastus lateralis muscle and the periosteum. Keep the proximal end in continuous contact with the bone surface during insertion. Place the distal end of the plate against the lateral condyle.

**Note:** The plate is anatomically shaped and does reach far distally close to the cartilage – bone interface.

Temporarily fix the plate with 2.0 mm K-wires (REF 290.20.280) at both ends of the plate.



Temporary plate fixation

## Insertion of the NCB Screws

Three screw types are offered with the *NCB* System. Cancellous screws preferably for the epi- and metaphysis as well as cortical bone screws which are optimal for placement in the diaphysis. Surgical technique (REF 97-3161-002-00 or 97-3161-004-00)\* has specific instructions for the *NCB MotionLoc* Screw.

## Cancellous Screws

1. For cancellous screws place the *NCB* Drill Guide 2.5 mm (REF 02.00024.010) into the plate hole and point into the direction of the screw axis.

**Note:** Press the drill guide into the plate hole in a perpendicular start position and tilt it into the needed direction. The drill guide needs to be in constant contact with the bottom ring of the hole. The guide limits the possible angular range of 30° for placing a locked *NCB* Screw. Always use the drill guide since it prevents to choose an excessive screw angle and failure of subsequent locking.

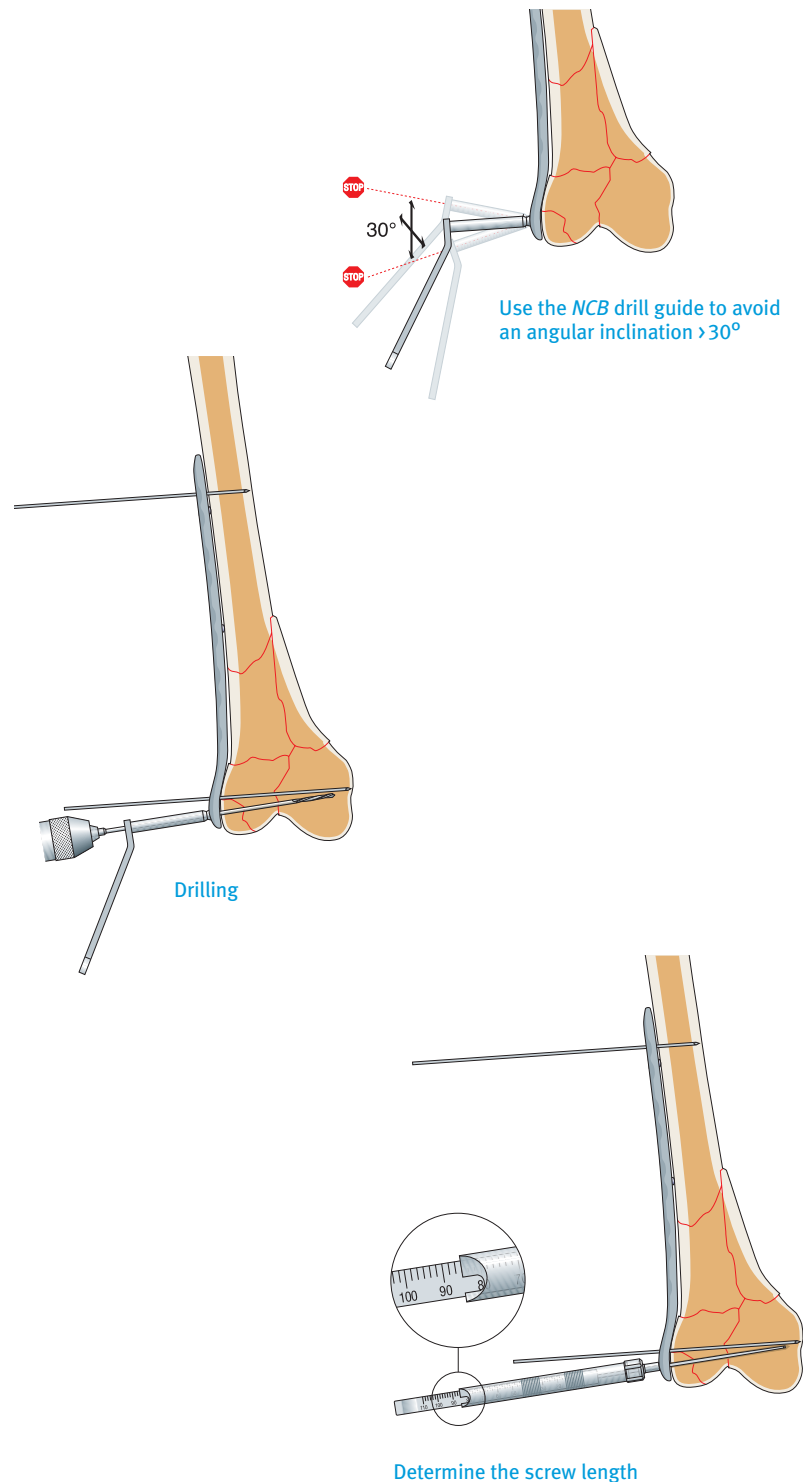
2. Drill with the 2.5 mm drill bit (REF 103.25.180). In case of good bone quality it is recommended to drill the cortex with a 4.3 mm drill bit. Take away the drill sleeve for this purpose.

Optionally the 95° guide (REF 02.00024.234/02.00024.235) can be used for distal screw placement.

**Note:** Right and left versions are available.

The 95° guide is fixed to the plate using the DF plate connection bolt for the targeting device (REF 02.00024.073). Place the appropriate *NCB* Drill Guide through one of the holes of the 95° guide and into the plate hole. Drill with the corresponding 2.5 mm or 4.3 mm drill bit. Repeat for the other hole in the 95° guide.

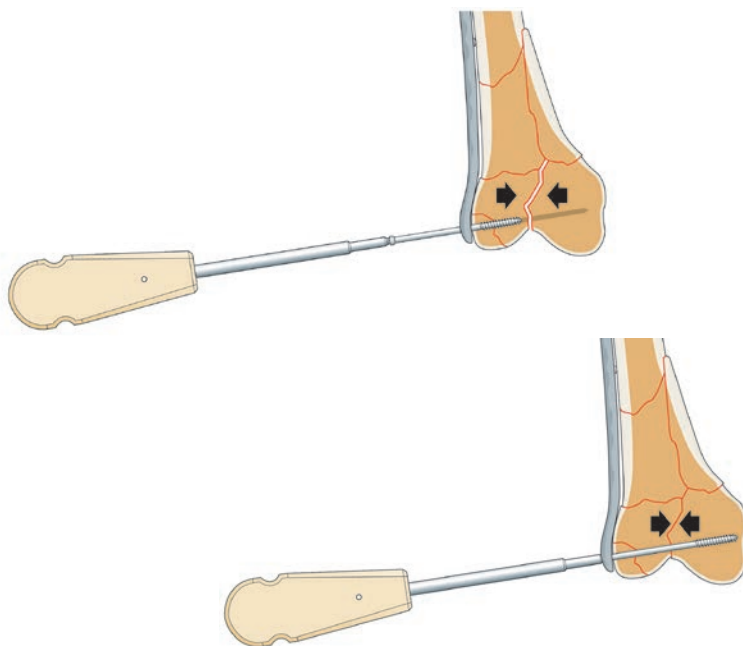
3. The appropriate screw length is determined with the *NCB* Depth Gauge (REF 02.00024.005)



\*97-3161-002-00 is for countries where *NCB MotionLoc* screws are approved to be used with only *NCB* plates and 97-3161-004-00 is for countries where *NCB MotionLoc* screws are approved to be used with both *NCB* as well as *NCB* Periprosthetic plates. See *NCB MotionLoc* package insert for approved plate/*MotionLoc* screw combinations.

4. Insert the *NCB* Cancellous Screws using the *NCB* Screwdriver, (REF 02.00024.023) and apply compression. Cancellous screws are partially threaded and can be used for compression. In the epiphyseal and metaphyseal area screws should be tightened to reduce the fracture and to obtain close contact between the plate and the bone in order to buttress the fracture.

5. Remove the K-wire after screw insertion.

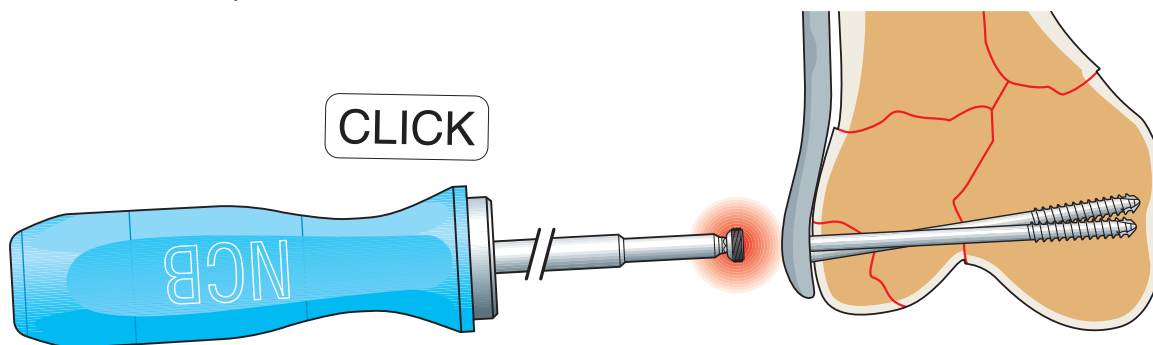
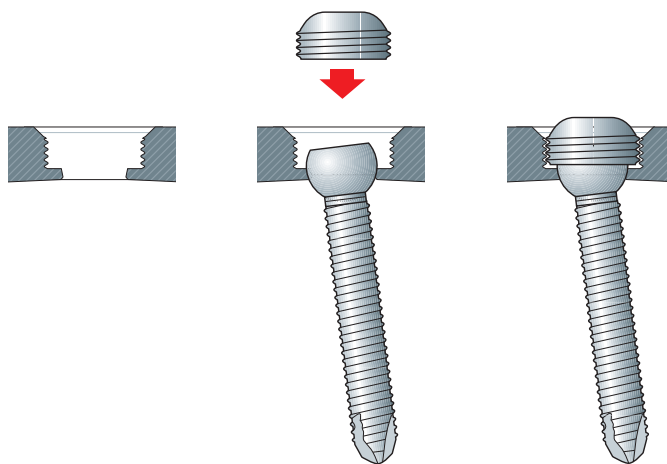


Use the *NCB* Screw Driver to tighten the screw and apply compression

6. To lock the screw insert the locking cap (REF 02.03150.300) and tighten the cap with the *NCB* Torque Screwdriver, 6 Nm (REF 02.00024.021) until a clicking sound is heard.

**Note:** Always use the torque screwdriver to tighten the locking caps and make sure not to tilt the screwdriver during its usage.

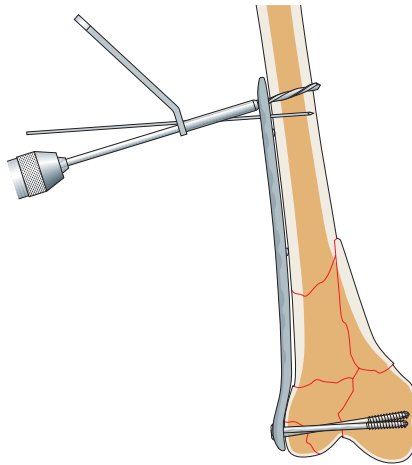
Not to do so could damage the hex drive of the cap and might complicate later extraction of the implant.



Insert the locking cap

### Cortical Screws

1. If an *NCB* cortical screw is used, use the *NCB* Drill Guide (REF 02.00024.011) and drill with the drill bit 4.3 mm (REF 02.00024.002). Drill through both cortices. In the case of hard cortical bone, tap the cortex with the taper (REF 02.00024.050).



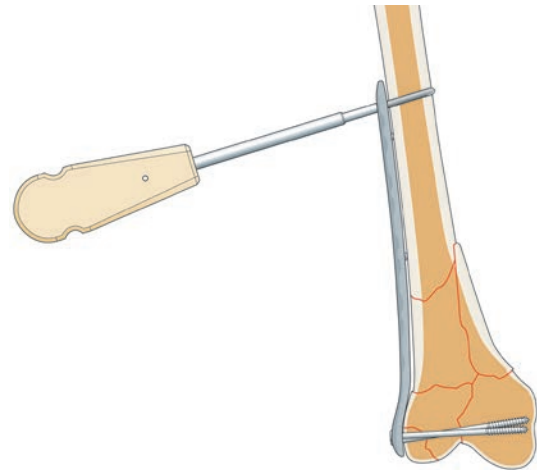
Drilling

2. Insert the *NCB* Screw using the *NCB* Screwdriver, (REF 02.00024.023).

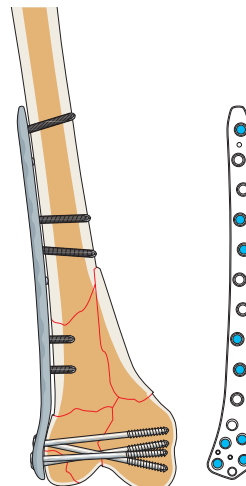
3. To lock the screw proceed as for the cancellous screws: insert the locking cap (REF 02.03150.300) and tighten the cap with the *NCB* Torque Screwdriver, 6Nm (REF 02.00024.021) until a clicking sound is heard.

4. In the diaphyseal area bone spacers are used to prevent close contact. After locking of the screws the spacers should be removed.

For the placement of the additional screws proceed as above.



Insert the cortical screw



Final plate fixation (example)



## Tips and Tricks

The polyaxiality of the system allows some varus/valgus correction during surgery.

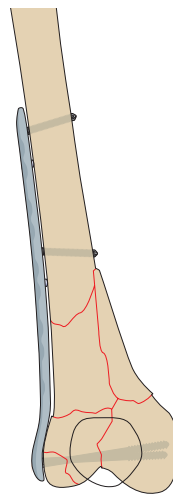
For this purpose insert four screws as shown in the figure without tightening the screws. Place the two distal screws anterior and posterior.

Now the fracture can be reduced by rotation around the bone axis of the proximal fragment and varus/valgus correction of the distal fragment.

Confirm satisfying alignment with the image intensifier and lock the screws using the locking caps.

Afterwards complete the osteosynthesis by adding additional screws where needed.

When inserting locking caps, turn the screw driver counter clockwise initially. The threads of the cap and the plate will “click”, indicating that the cap is properly aligned and less likely to cross-thread when turned clockwise.



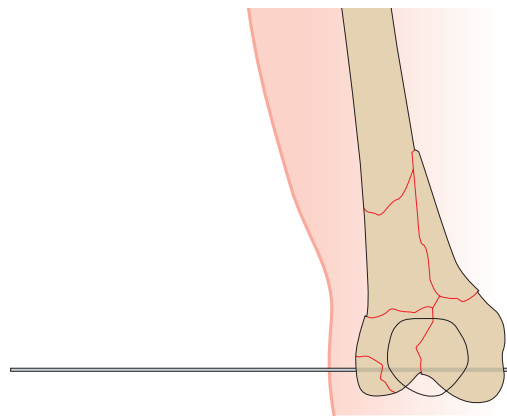
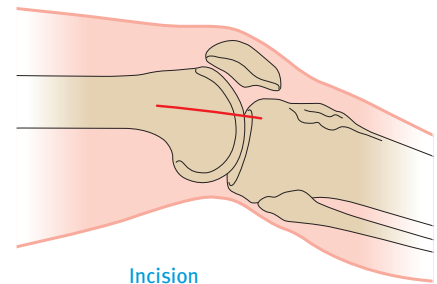
Varus/valgus corrections

## MIS Technique\*

### Incision

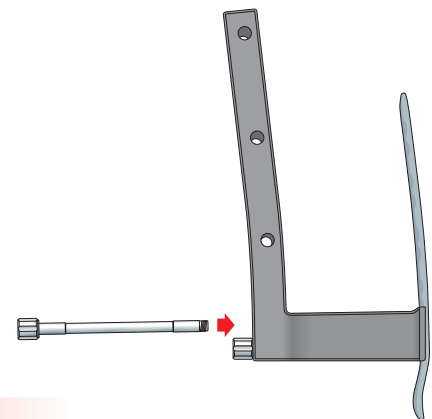
A lateral incision is recommended if a simple articular or extra-articular fracture is current. The skin incision starts at Gerdy's tubercle and extends approximately 80 mm in a proximal direction. The muscles are left attached to the fracture fragments for optimal blood supply. Do not strip the periosteum. For intra-articular fracture an arthrotomy is performed to anatomically reduce the joint line.

Before insertion of the plate anatomically reduce the intra-articular fracture and fix it with a 3.5 mm cortical screw or a 2.0 mm K-wire. Make sure they do not interfere with the position of the plate and locking screws. Predrill 3.5mm cortical screw with 2.5mm drill bit (103.25.180) using screwdriver (109.01.020).



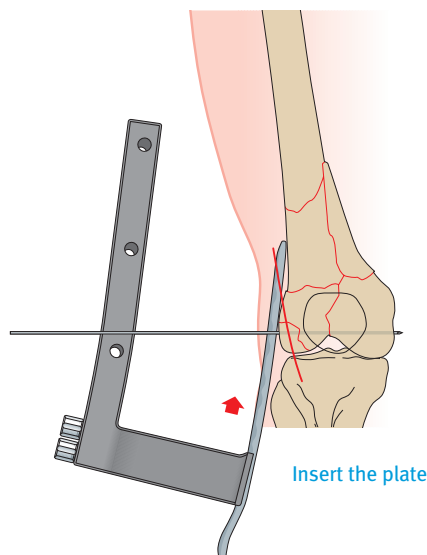
### Targeting Device Assembly for Insertion

Attach the *NCB* DF Targeting Device left (REF 02.00024.071) for a left *NCB* Plate and the right targeting device (REF 02.00024.070) for a right plate. Screw the two connection bolts (REF 02.00024.073) into the *NCB* Plate and tighten them with the hex screwdriver.



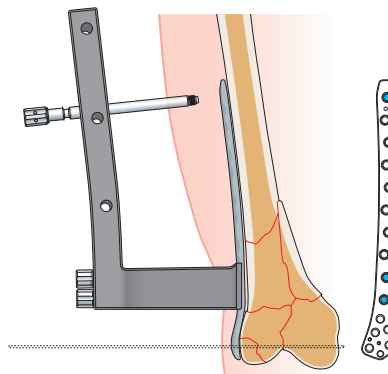
### Insertion of the *NCB* Plate

1. Insert the plate between the vastus lateralis muscle and periosteum. Keep the proximal end of the plate in close contact with the bone during insertion. Place the distal end of the plate onto the lateral condyle.



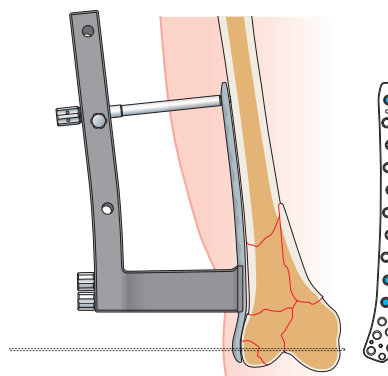
\*MIS Minimally Invasive Solutions Technique by Zimmer

2. Make a stab incision at the most proximal plate hole. Screw the *NCB* Stabilization Bolt (REF 02.00024.074) into the *NCB* Plate.



Insert the stabilization bolt

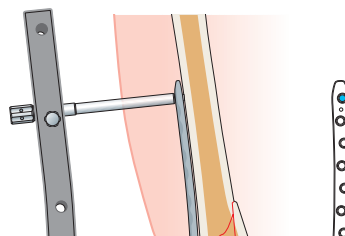
3. Adjust the correct distance between the targeting device and the plate by pushing the targeting device along the stabilization bolt and securing the correct distance with the *NCB* Safety Lock Pin (REF 02.00024.076). The safety locking pin needs to be inserted from the anterior side.



Insert the *NCB* Safety Locking Pin from the anterior side

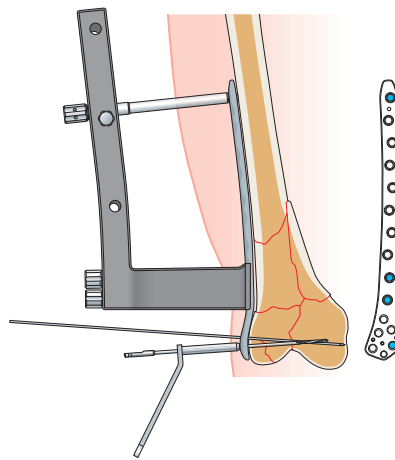
### Reduction of the Metaphyseal Bone Part

1. Insert a 2.0 mm Kirschner wire (REF 290.20.280) through the distal end of the plate for temporary reposition of the condyles.



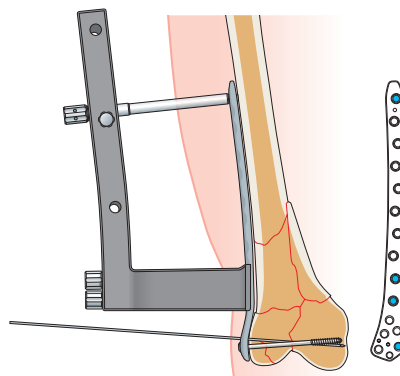
Temporary reposition of the condyles

2. For placing a *NCB* Cancellous Screw drill with the 2.5 mm drill bit (REF 103.25.180) and the *NCB* Drill Guide (REF 02.00024.010).



Use the *NCB* Drill Guide

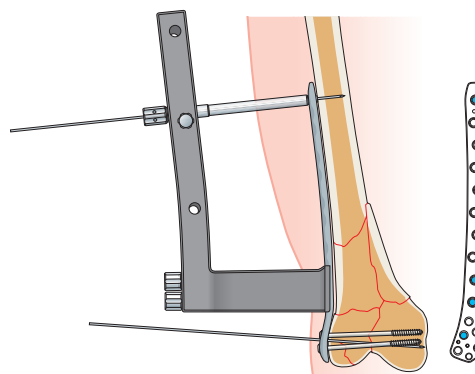
3. Insert an *NCB* Cancellous Screw and apply compression if needed.



Insert cancellous screw

4. Repeat drilling and insert a second *NCB* Cancellous Screw. Repeat the procedure if more screws are required, then lock the screws with locking caps (REF 02.03150.300).

Then adjust length and rotation under image intensifier and insert the proximal K-wire.



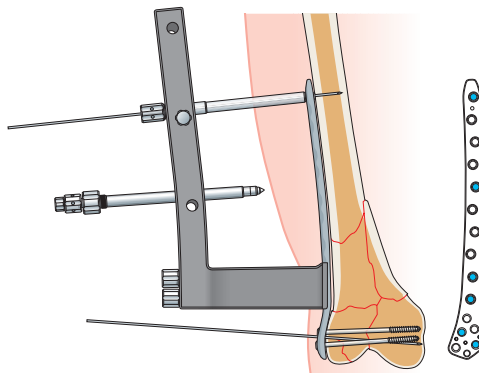
Insert additional cancellous screw

**Note:** Only the most distal screws can be locked if the targeting device is on. The other screws in the joint area need to be locked when the targeting device is off at the end of the operation.

### Insertion of the NCB Screws in the Shaft Part

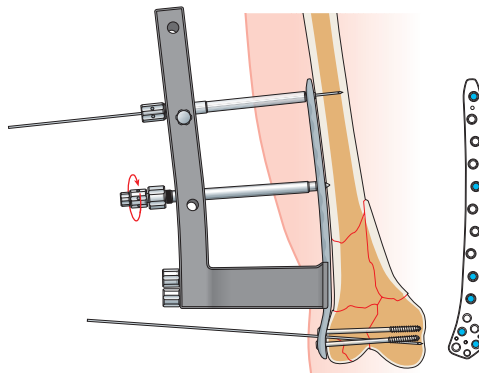
Start with placing a proximal screw close to the fracture site.

1. Make a stab incision to access the plate hole. Insert the *NCB* Trocar, drill guide and protection sleeve assembly (REF 02.00024.060 to .062).



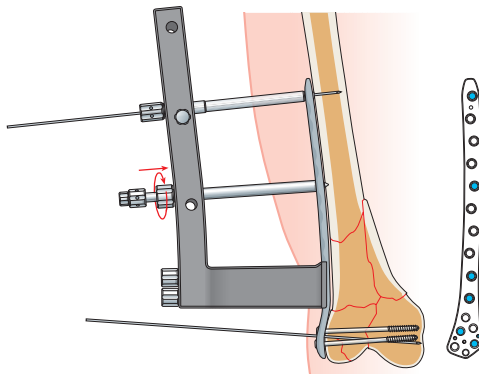
Insert tissue protection sleeves

2. Screw the drill guide into the plate hole.



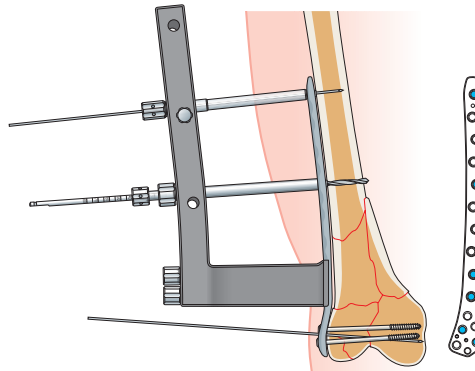
Screw the drill guide into the plate

3. Screw the protection sleeve into the targeting device. The sleeve will be in direct contact with the plate.



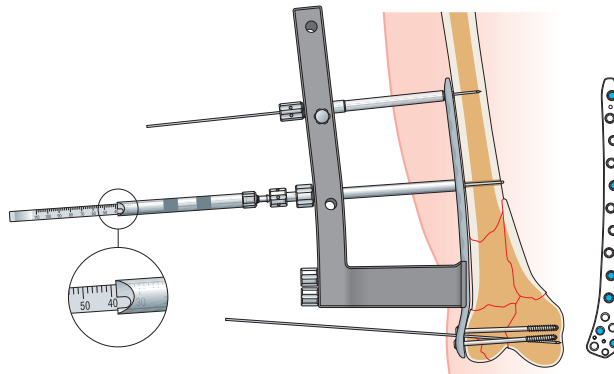
Screw the protection sleeve into the targeting device

4. Remove the trocar and drill using the 4.3 mm drill bit (REF 02.00024.003 ) for the 5 mm *NCB* Screw. The scaling on the drill bit can be used to determine the screw length.



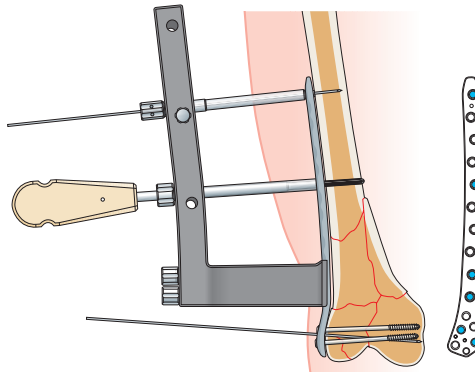
Drill the screw hole

5. Alternatively, determine the screw length using the *NCB* Depth Gauge (REF 02.00024.006).



Measure the screw length

6. Remove the drill guide and insert the appropriate screw using the *NCB* Hexagonal Screwdriver (REF 02.00024.023). The screw can be used for repositioning of a fragment.

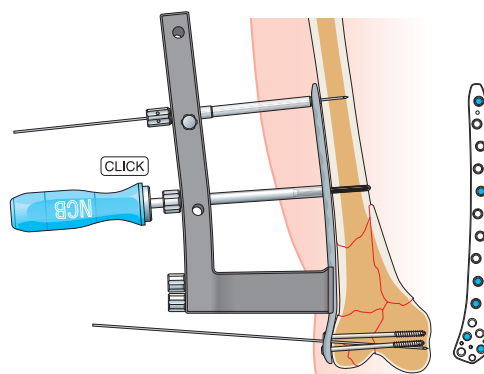


Insert the screw into the bone shaft

7. For locking of the screw insert the locking cap (REF 02.03150.300) and tighten the cap with the *NCB* Torque Screwdriver, 6 Nm (REF 02.00024.021) until a clicking sound is heard.

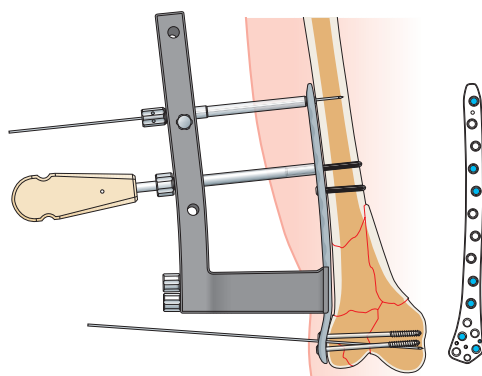
**Note:** Always use the torque screwdriver to tighten the locking cap and make sure not to tilt the screwdriver during its usage.

Not to do so could damage the hex drive of the screw and might complicate later extraction of the implant.



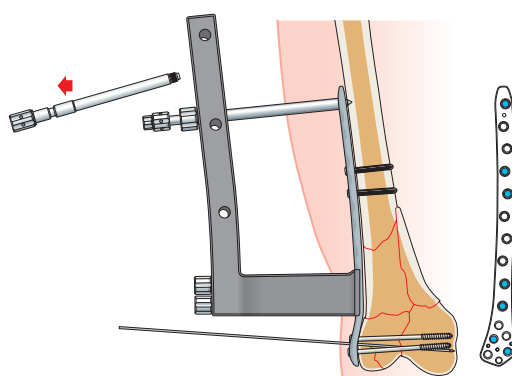
Insert the locking cap on top of the screw

8. Repeat step 1 to 7 to insert additional screws.



Insert additional screws

9. To place a screw at the most proximal end exchange the *NCB* Stabilization Bolt with the *NCB* Trocar, drill guide and protection sleeve assembly. Drill using the 4.3 mm drill bit (REF 02.00024.003) for the 5 mm *NCB* Screw and lock the screw with the *NCB* Locking Cap as described above.

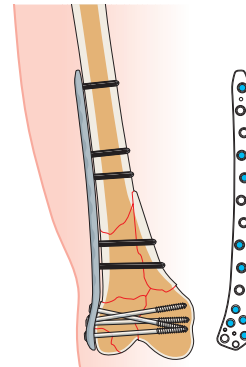


Exchange the stabilization bolt with the protection sleeve assembly



**10.** Remove the aiming arm if additional screws need to be placed at the position where the aiming arm is attached. Insert the screws as described in the open technique (page 15).

Place additional *NCB* Cancellous Screws in the joint area if needed.



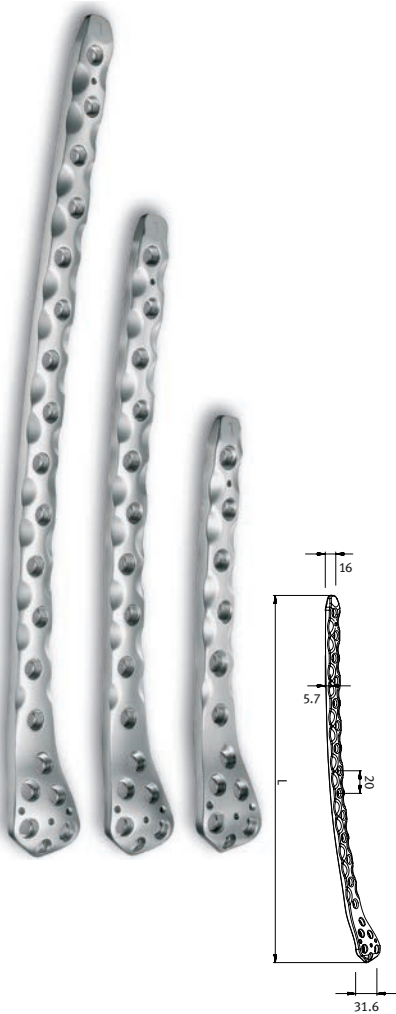
Final plate fixation (example)

## Implant Removal

To remove the *NCB* DF Plate, first remove all locking caps. Then loosen all the *NCB* Bone Screws without completely removing them (this prevents rotation of the bone plate when removing the last screw). After that completely remove all bone screws.

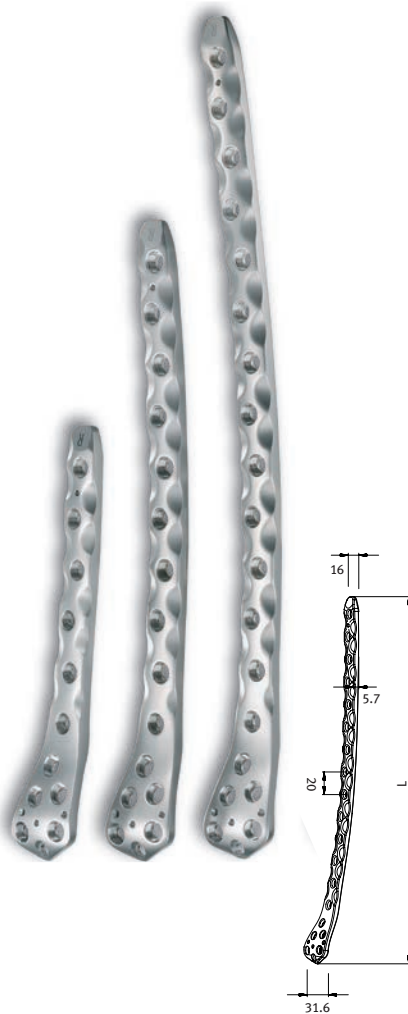
## Ordering Information

### Implants\*\*\*



NCB® Femur Plate, left  
Ti6Al4V

| Quantity* | Holes | mm  | REF          |
|-----------|-------|-----|--------------|
| 1         | 5     | 167 | 02.03260.105 |
| 1         | 9     | 246 | 02.03260.109 |
| 1         | 13    | 324 | 02.03260.113 |

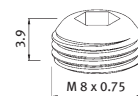


NCB® Femur Plate, right  
Ti6Al4V

| Quantity* | Holes | mm  | REF          |
|-----------|-------|-----|--------------|
| 1         | 5     | 167 | 02.03260.005 |
| 1         | 9     | 246 | 02.03260.009 |
| 1         | 13    | 324 | 02.03260.013 |



NCB® Locking Cap  
Ti6Al4V



| Quantity* | Ø mm | ○ mm | REF          |
|-----------|------|------|--------------|
| 15        | 8    | 3.5  | 02.03150.300 |

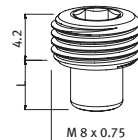


NCB® Blind Screw  
Ti6Al4V

| Quantity* | Ø mm | ○ mm | REF          |
|-----------|------|------|--------------|
| 5         | 8    | 3.5  | 02.03150.310 |



NCB® Spacer  
(red, blue, green)  
Ti6Al4V



| Quantity* | L mm | ○ mm | Color | REF          |
|-----------|------|------|-------|--------------|
| 2         | 1    | 3.5  | red   | 02.03150.311 |
| 2         | 2    | 3.5  | blue  | 02.03150.312 |
| 2         | 3    | 3.5  | green | 02.03150.313 |

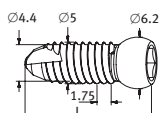
Materials: NCB Plates and Screws are made of Ti6Al4V, ISO 5832-3, ASTM F136; the cortical screw self tapping is made of Ti6Al7Nb, ISO 5832-11, ASTM F1295.

\* Indicates the quantity in the standard graphic case.

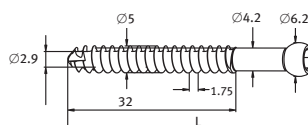
\*\*\* Sterile products are also available. For a complete list of available sterile products, please contact your sales representative.



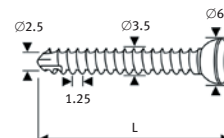
NCB® Screw, self-tapping  
Ti6Al4V



NCB® Cancellous Screw, 32 mm  
Ti6Al4V



Cortical Screw, self-tapping  
Ti6Al7Nb



| Quantity* | L mm | Ø mm | ○ mm | REF            |
|-----------|------|------|------|----------------|
| 2         | 14   | 5.0  | 3.5  | 02.03150.014   |
| 2         | 16   | 5.0  | 3.5  | 02.03150.016   |
| 2         | 18   | 5.0  | 3.5  | 02.03150.018   |
| 2         | 20   | 5.0  | 3.5  | 02.03150.020   |
| 2         | 22   | 5.0  | 3.5  | 02.03150.022   |
| 2         | 24   | 5.0  | 3.5  | 02.03150.024   |
| 2         | 26   | 5.0  | 3.5  | 02.03150.026   |
| 2         | 28   | 5.0  | 3.5  | 02.03150.028   |
| 2         | 30   | 5.0  | 3.5  | 02.03150.030   |
| 2         | 32   | 5.0  | 3.5  | 02.03150.032   |
| 2         | 34   | 5.0  | 3.5  | 02.03150.034   |
| 2         | 36   | 5.0  | 3.5  | 02.03150.036   |
| 2         | 38   | 5.0  | 3.5  | 02.03150.038   |
| 2         | 40   | 5.0  | 3.5  | 02.03150.040   |
| 2         | 42   | 5.0  | 3.5  | 02.03150.042   |
| 2         | 44   | 5.0  | 3.5  | 02.03150.044   |
| 2         | 46   | 5.0  | 3.5  | 02.03150.046   |
| 2         | 48   | 5.0  | 3.5  | 02.03150.048   |
| –         | 50   | 5.0  | 3.5  | 02.03150.050   |
| –         | 55   | 5.0  | 3.5  | 02.03150.055   |
| –         | 60   | 5.0  | 3.5  | 02.03150.060   |
| –         | 65   | 5.0  | 3.5  | 02.03150.065   |
| –         | 70   | 5.0  | 3.5  | 02.03150.070   |
| –         | 75   | 5.0  | 3.5  | 02.03150.075   |
| –         | 80   | 5.0  | 3.5  | 02.03150.080   |
| –         | 85   | 5.0  | 3.5  | 02.03150.085   |
| –         | 90   | 5.0  | 3.5  | 02.02150.090** |
| –         | 95   | 5.0  | 3.5  | 02.02150.095** |
| –         | 100  | 5.0  | 3.5  | 02.02150.100** |

| Quantity* | L mm | Ø mm | ○ mm | REF            |
|-----------|------|------|------|----------------|
| 2         | 50   | 5.0  | 3.5  | 02.03152.050   |
| 2         | 55   | 5.0  | 3.5  | 02.03152.055   |
| 2         | 60   | 5.0  | 3.5  | 02.03152.060   |
| 2         | 65   | 5.0  | 3.5  | 02.03152.065   |
| 2         | 70   | 5.0  | 3.5  | 02.03152.070   |
| 2         | 75   | 5.0  | 3.5  | 02.03152.075   |
| 2         | 80   | 5.0  | 3.5  | 02.03152.080   |
| 2         | 85   | 5.0  | 3.5  | 02.03152.085   |
| –         | 90   | 5.0  | 3.5  | 02.02152.090** |
| –         | 95   | 5.0  | 3.5  | 02.02152.095** |
| –         | 100  | 5.0  | 3.5  | 02.02152.100** |

| Quantity* | L mm | Ø mm | ○ mm | REF          |
|-----------|------|------|------|--------------|
| 1         | 50   | 3.5  | 2.5  | 02.03131.050 |
| 1         | 55   | 3.5  | 2.5  | 02.03131.055 |
| 1         | 60   | 3.5  | 2.5  | 02.03131.060 |
| 1         | 65   | 3.5  | 2.5  | 02.03131.065 |
| 1         | 70   | 3.5  | 2.5  | 02.03131.070 |
| 1         | 75   | 3.5  | 2.5  | 02.03131.075 |
| 1         | 80   | 3.5  | 2.5  | 02.03131.080 |
| 1         | 85   | 3.5  | 2.5  | 02.03131.085 |

\* Indicates the quantity in the standard graphic case.  
\*\* Available sterile only



#### NCB® MotionLoc® Screws, self-tapping

5.0 mm Cortical, Ti6Al4V, Non Sterile

See surgical technique (REF 97-3161-002-00 or 97-3161-004-00)\*\* for more specific instructions.

| Item Number  | ∅ mm | L mm | ○ mm |
|--------------|------|------|------|
| 02.03161.030 | 5.0  | 30   | 3.5  |
| 02.03161.032 | 5.0  | 32   | 3.5  |
| 02.03161.034 | 5.0  | 34   | 3.5  |
| 02.03161.036 | 5.0  | 36   | 3.5  |
| 02.03161.038 | 5.0  | 38   | 3.5  |
| 02.03161.040 | 5.0  | 40   | 3.5  |
| 02.03161.042 | 5.0  | 42   | 3.5  |
| 02.03161.044 | 5.0  | 44   | 3.5  |
| 02.03161.046 | 5.0  | 46   | 3.5  |
| 02.03161.048 | 5.0  | 48   | 3.5  |
| 02.03161.050 | 5.0  | 50   | 3.5  |
| 02.03161.052 | 5.0  | 52   | 3.5  |
| 02.03161.054 | 5.0  | 54   | 3.5  |
| 02.03161.056 | 5.0  | 56   | 3.5  |
| 02.03161.058 | 5.0  | 58   | 3.5  |
| 02.03161.060 | 5.0  | 60   | 3.5  |

#### Compatible Zimmer Products with the NCB Distal Femur System

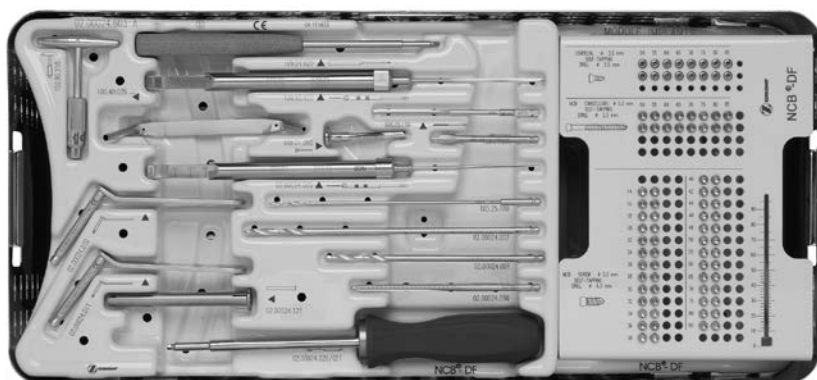
See data sheet REF 97-2232-015-00 for more specific instructions.

| REF sterile     | Description  |
|-----------------|--|
| 47-2232-060-00* | NCB Polyaxial Locking Plate Cable Button, Gold, 2.5mm Hex Drive, Material: Ti6Al4V |
| 47-2232-060-01  | NCB Polyaxial Locking Plate Cable Button, Blue, 2.5mm Hex Drive, Material: Ti6Al4V |
| 00-2232-002-35  | Hex Buttons, 3.5mm Hex, Material: C.P. Titanium                                    |
| 00-2232-002-28  | Cable-Ready Cable Assembly Cerclage, ∅ 1.8mm, L. 914mm, Material: CoCr             |
| 00-2232-004-18  | Cable-Ready Cable Assembly Cerclage, ∅ 1.8mm, L. 635mm, Material: CoCr             |

\* Not available in Europe, Middle East and Africa.

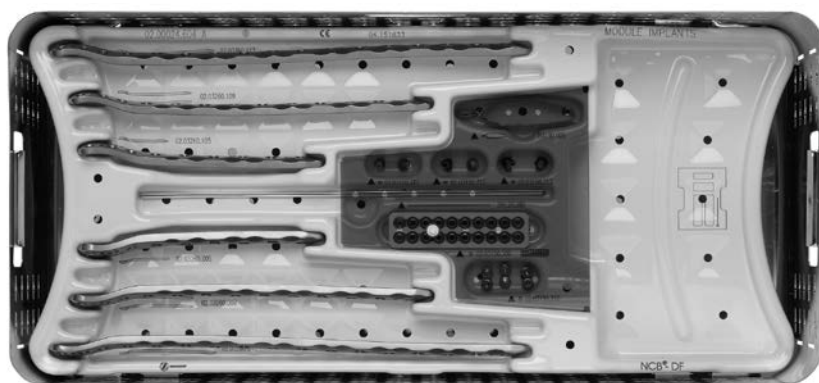
\*\* 97-3161-002-00 is for countries where NCB MotionLoc screws are approved to be used with only NCB plates and 97-3161-004-00 is for countries where NCB MotionLoc screws are approved to be used with both NCB as well as NCB Periprosthetic plates. See NCB MotionLoc package insert for approved plate/ MotionLoc screw combinations.

## Graphic Case



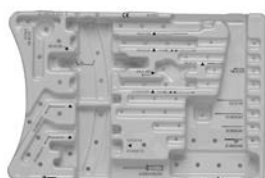
NCB® DF Plate standard graphic case  
for open technique (with content)

REF  
**ZS02.00024.600**



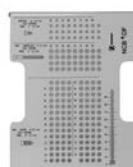
NCB® Graphic Case for Femur  
(empty)

REF  
02.00024.610



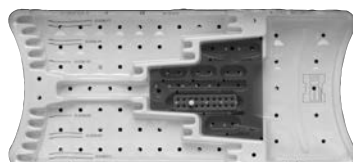
NCB® DF Plate graphic case  
modul instruments

REF  
02.00024.603



NCB® DF Plate graphic case  
modul screw rack

REF  
02.00024.605



NCB® DF Plate graphic case  
modul implants

REF  
02.00024.604

NCB® DF Plate graphic case, lid

REF  
02.00024.601

NCB® DF Plate graphic case, base (inox)

REF  
02.00024.602

## Standard Instruments



NCB® Drill Bit, with quick coupling

| Quantity* | L mm | Ø   | REF          |
|-----------|------|-----|--------------|
| —         | 145  | 4.3 | 02.00024.001 |
| 1         | 195  | 4.3 | 02.00024.002 |



NCB® Torque Screwdriver, 6 Nm

| Quantity* | L mm | Ø   | REF          |
|-----------|------|-----|--------------|
| 1         | 280  | 3.5 | 02.00024.021 |



Screw forceps self-holding

| Quantity* | REF        |
|-----------|------------|
| 1         | 100.90.005 |



NCB® Measuring Device

| Quantity* | L mm | Ø           | REF          |
|-----------|------|-------------|--------------|
| 1         | 110  | 5.0/4.5/4.0 | 02.00024.005 |



NCB® Tap for quick coupling

| Quantity* | L mm | Ø   | REF          |
|-----------|------|-----|--------------|
| 1         | 145  | 5.0 | 02.00024.050 |



Depth gauge small for screws

| Quantity* | L mm | Ø       | REF        |
|-----------|------|---------|------------|
| 1         | 110  | 3.5/4.0 | 100.90.025 |



NCB® Drill Guide

| Quantity* | Ø   | REF          |
|-----------|-----|--------------|
| 1         | 2.5 | 02.00024.010 |



NCB® Locking Screw Holder for 3.5 hexagonal screwdriver

| Quantity* | L mm | Ø   | REF          |
|-----------|------|-----|--------------|
| —         | 95   | 5.0 | 02.00024.121 |



T-handle, with quick coupling

| Quantity* | REF        |
|-----------|------------|
| 1         | 100.90.210 |



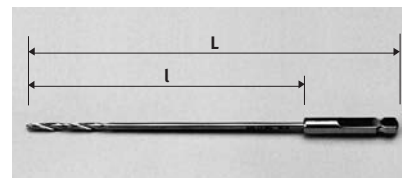
NCB® Drill Guide

| Quantity* | Ø   | REF          |
|-----------|-----|--------------|
| 1         | 4.3 | 02.00024.011 |



Double drill guide

| Quantity* | Ø           | REF        |
|-----------|-------------|------------|
| 1         | 2.5/3.5/4.0 | 100.40.035 |



Two-flut. drill bit, with quick coupling

| Quantity* | L mm | l   | Ø   | REF        |
|-----------|------|-----|-----|------------|
| 1         | 180  | 154 | 2.5 | 103.25.180 |

\*Indicates the quantity in the standard graphic case.



Tap for quick coupling

| Quantity* | L mm | Ø   | REF        |
|-----------|------|-----|------------|
| 1         | 110  | 3.5 | 106.35.110 |



Kirschner wire, Stainless Steel

| Quantity* | L mm | Ø   | REF        |
|-----------|------|-----|------------|
| 5         | 280  | 2.0 | 290.20.280 |



Countersink, for quick coupling

| Quantity* | Ø         | REF        |
|-----------|-----------|------------|
| —         | 3.5 / 4.0 | 108.01.035 |



95° Drill Guide

| Quantity* | REF                |
|-----------|--------------------|
| —         | Right 02.00024.234 |
| —         | Left 02.00024.235  |



Small hexagonal screwdriver without holding sleeve, hexagonal 2.5 mm

| Quantity* | REF        |
|-----------|------------|
| 1         | 109.01.020 |



Holding sleeve for small hexagonal screwdrivers

| Quantity* | REF        |
|-----------|------------|
| 1         | 109.01.060 |

\*Indicates the quantity in the standard graphic case.



## MIS Instruments



NCB® DF Plate graphic case module MIS instruments, includes additional instruments for the MIS technique (with content)

| Quantity** | REF                   |
|------------|-----------------------|
| 1          | <b>ZS02.00024.650</b> |

NCB® DF Plate graphic case module MIS instruments (no content)

| Quantity** | REF          |
|------------|--------------|
| 1          | 02.00024.606 |



Assembly pin

| Quantity** | REF          |
|------------|--------------|
| 1          | 02.00002.001 |



NCB® DF Plate Drill Bit 4.3

| Quantity** | L mm | REF          |
|------------|------|--------------|
| 1          | 300  | 02.00024.003 |



NCB® DF Plate Measuring Device

| Quantity** | REF          |
|------------|--------------|
| 1          | 02.00024.006 |



NCB® DF Plate Hexagonal Screwdriver for femur SW 3.5

| Quantity** | L mm | REF          |
|------------|------|--------------|
| 1          | 275  | 02.00024.023 |



NCB® DF Plate Hexagonal Screwdriver Shaft SW 3.5

| Quantity** | L mm | REF          |
|------------|------|--------------|
| 1          | 180  | 02.00024.024 |

\*\*Indicates the quantity in the MIS graphic case module.



NCB® DF Plate Taps for quick coupling

| Quantity** | L mm | Ø   | REF          |
|------------|------|-----|--------------|
| 1          | 250  | 5.0 | 02.00024.051 |



NCB® DF Plate Targeting Device for plates

| Quantity** | Side  | REF          |
|------------|-------|--------------|
| 1          | right | 02.00024.070 |
| 1          | left  | 02.00024.071 |



NCB® DF Plate Soft Tissue Protection Sleeve

| Quantity** | Ø        | REF          |
|------------|----------|--------------|
| 2          | 10.0/8.2 | 02.00024.060 |



NCB® DF Plate Connection Bolt for targeting device

| Quantity** | L mm | REF          |
|------------|------|--------------|
| 2          | 144  | 02.00024.073 |



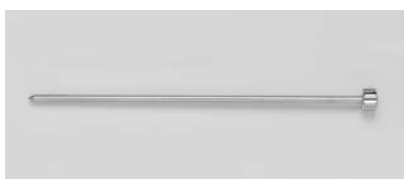
NCB® DF Plate Drill Guide

| Quantity** | Ø       | REF          |
|------------|---------|--------------|
| 1          | 8.2/4.3 | 02.00024.061 |



NCB® DF Stabilization Bolt for targeting device

| Quantity** | L mm | REF          |
|------------|------|--------------|
| 1          | 153  | 02.00024.074 |



NCB® DF Plate Trocar

| Quantity** | Ø   | REF          |
|------------|-----|--------------|
| 1          | 4.3 | 02.00024.062 |

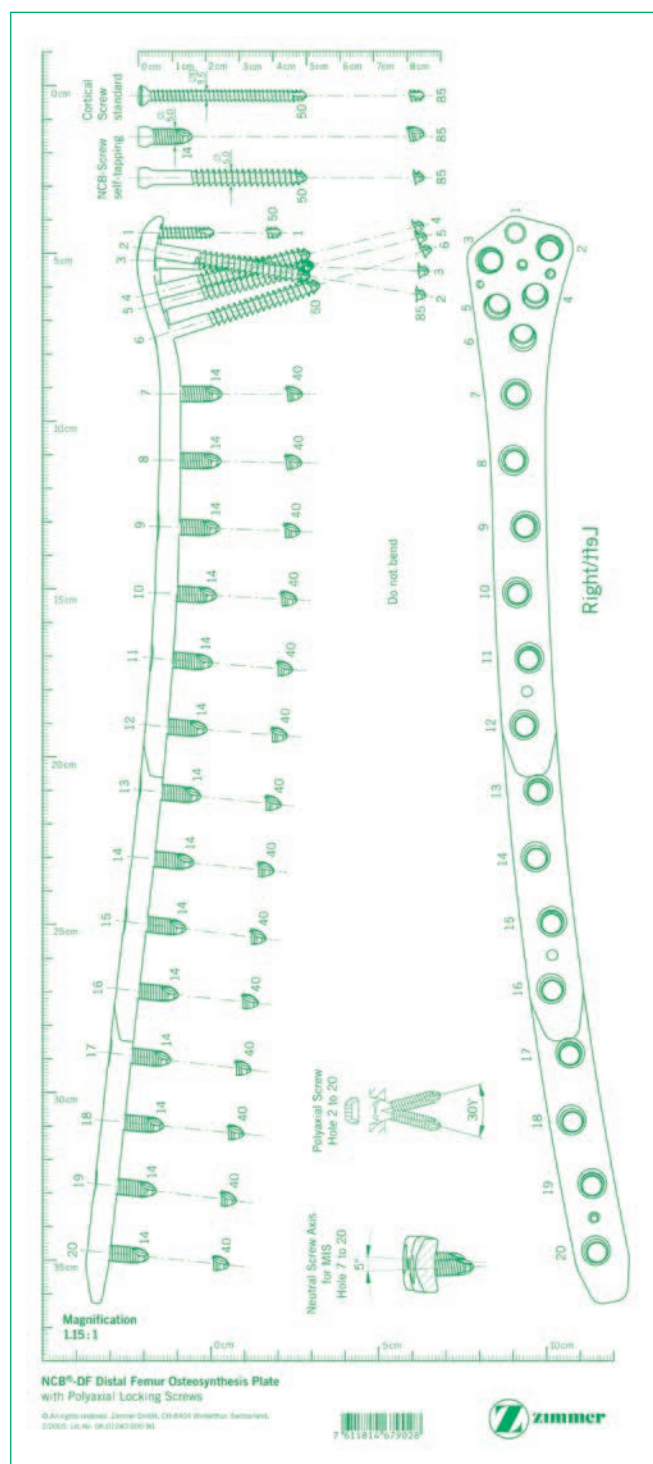


NCB® Safety Lock Pin for targeting device for femur

| Quantity** | REF          |
|------------|--------------|
| 2          | 02.00024.076 |

\*\* Indicates the quantity in the MIS graphic case module.

## Planning Aid



## This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## Notes

[illegible]



#### Disclaimer

This documentation is intended exclusively for physicians and is not intended for laypersons. Information on the products and procedures contained in this document is of a general nature and does not represent and does not constitute medical advice or recommendations. Because this information does not purport to constitute any diagnostic or therapeutic statement with regard to any individual medical case, each patient must be examined and advised individually, and this document does not replace the need for such examination and/or advice in whole or in part. Please refer to the package inserts for important product information, including, but not limited to, contraindications, warnings, precautions, and adverse effects.

Contact your Zimmer representative or visit us at [www.zimmer.com](http://www.zimmer.com)



Lit. No. 06.01221.012 – Ed. 2015-08



\*+H84406012210121/\$150826H15%\*