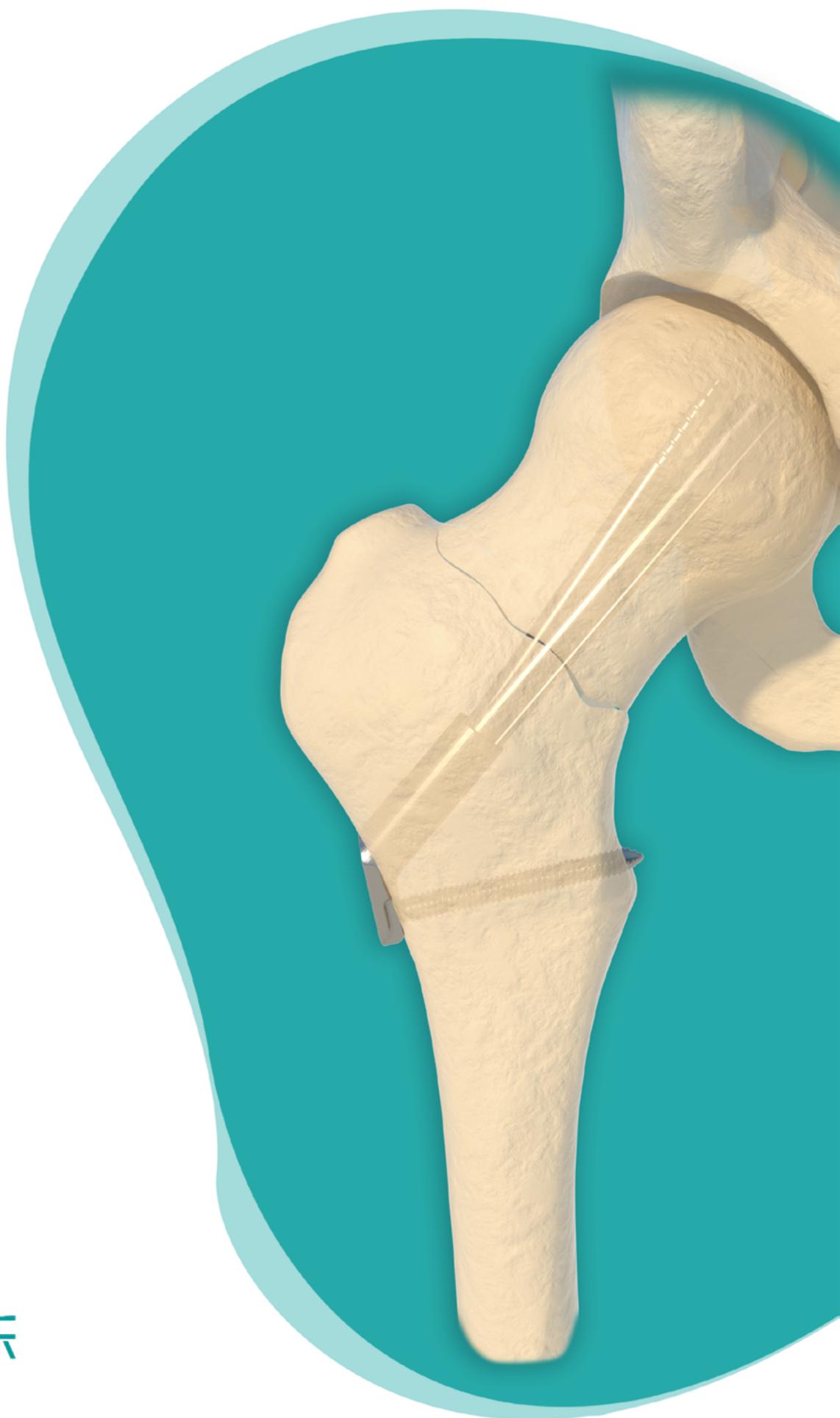


# 股骨颈动力交叉钉板系统

Femoral Neck Dynamic Plate-screw System



## Indications

- Femoral neck fractures in adults, including basicervical, transcervical, and subcapital types.
- Femoral neck fractures in adolescents (12-21 years) with fused growth plates or where the fracture line does not cross the growth plate.

## Contraindications:

- Peritrochanteric femoral fractures.
- Intertrochanteric femoral fractures.
- Subtrochanteric fractures.

This system should not be used in the following high-risk situations:

- Sepsis.
- Malignant primary or metastatic bone tumors.
- Material allergy.
- Compromised vascularity.



## Product characteristics

### Anti-Rotation Screw (Locking Screw IV)

- Locked main nail/anti-rotation-screw interface delivers rotational stability at a 7.5° fixed angle
- Can be passed through a femoral neck of reduced diameter



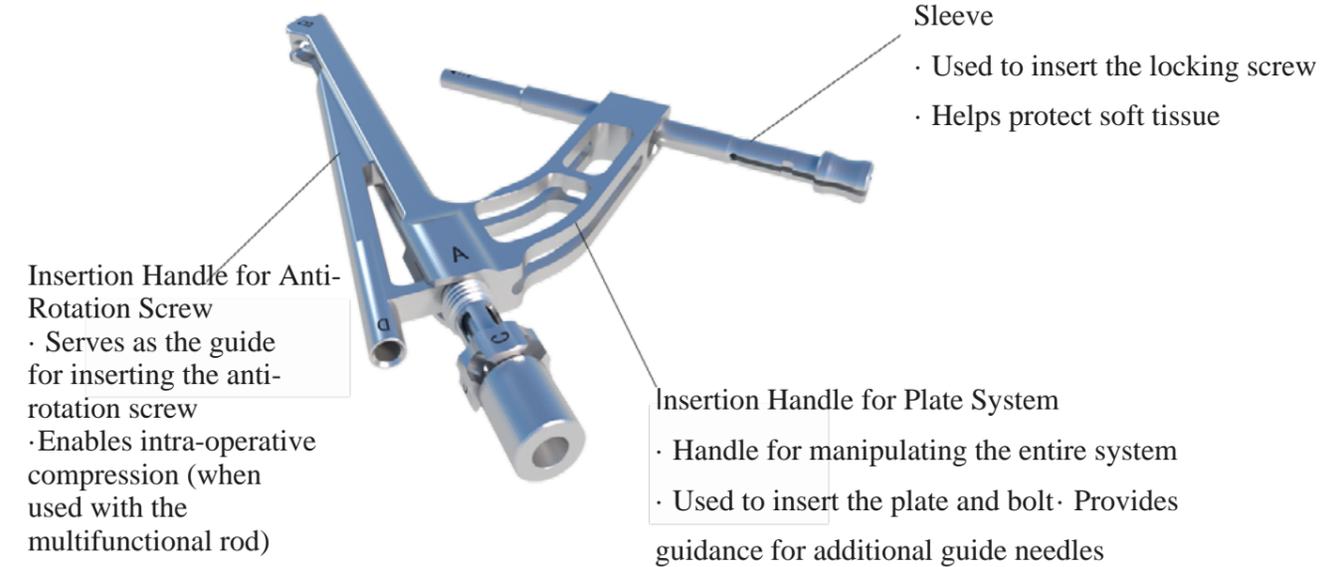
### Main Nail (Cannulated Lag Screw)

- Cylindrical-thread design preserves reduction during insertion
- Provides angular stability via a fixed-angle construct with the anti-rotation screw
- Locked screw/anti-rotation-screw interface incorporates a sliding mechanism that allows 20 mm of impaction
- Low-profile head minimizes lateral prominence

### Femoral-Neck Angle Plate

- Provides optimal implant footprint

## Instrument characteristic



## Specifications



Assembly Name	Specification Range
Femoral-Neck Angle Plate	130° 2 holes
	130° 3 holes

Assembly Name	Specification Range
Main Nail	Φ10 × (65–120)



Assembly Name	Specification Range
Locking Screw	Φ5.0 × (12–90)

Assembly Name	Specification Range
Anti-Rotation Screw	Φ6.5 × (59–114)



## • Patient Positioning

1. Place the patient in a supine position on the operating table.



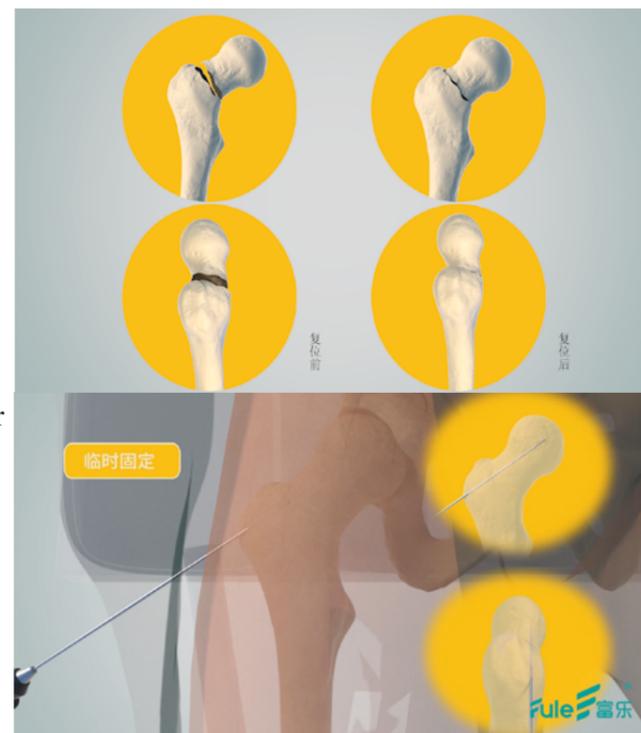
## • Guide Needle Insertion

1. Make a lateral pararectal incision approximately 6 cm long, starting 2-3 cm proximal to the tip of the greater trochanter.
2. Incise and expose the lateral surface of the vastus lateralis to achieve satisfactory implant placement access.
3. Use a 130° guide to insert another unused guide needle as the central guide needle.
4. Using a precision aiming device, position the guide needle at the center of the femoral head on the Anteroposterior (AP) view, confirmed under fluoroscopy.
5. On the lateral view, confirm the guide needle is positioned in the center of the femoral neck or head.



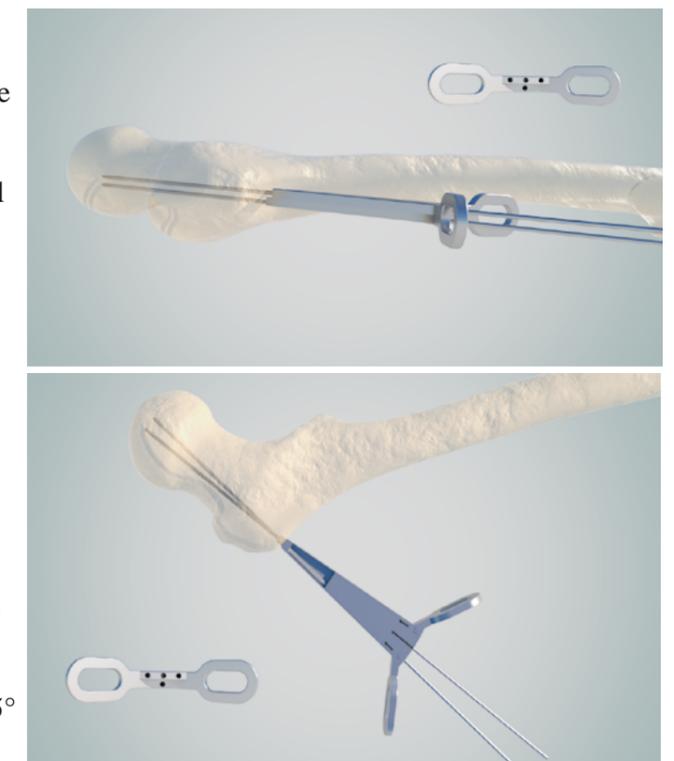
## • Fracture Reduction

1. Reduce the fracture through gentle traction/extension, internal/external rotation, and abduction/adduction (approximately 15°, parallel to the operating table).
2. Assess the reduction at the inferior neck cortex. If reduction is unsatisfactory, consider potential open reduction.
3. Insert a guide needle as a anti-rotation guide into the upper/medial part of the femoral neck to prevent rotation of the femoral head.



## • Guide Needle Adjustment

1. Parallel Adjustment (8 mm): Place the adjustment guide over the initial guide wire (orange). Rotate the adjustment guide to position it posterior or inferior to the initial guide wire point (orange). Then insert a new guide wire through the parallel hole (green) and remove the initial guide wire.
2. Simultaneous Angular Adjustment (5°) and Entry Point Adjustment (5 mm): Place the adjustment guide over the initial guide wire (orange). Rotate the adjustment guide to reposition the initial guide wire point. Then insert a new guide wire through the 5° angled hole (green) on the desired side.



## • Determining Length

1. Slide the direct depth gauge over the central guide needle.
2. The device indicates the depth along the guide needle.
3. Ensure the guide needle is inserted to the subchondral bone (visible on AP fluoroscopy). Subtract 5 mm from the value read on the direct depth gauge, then select the implant with the nearest available length.



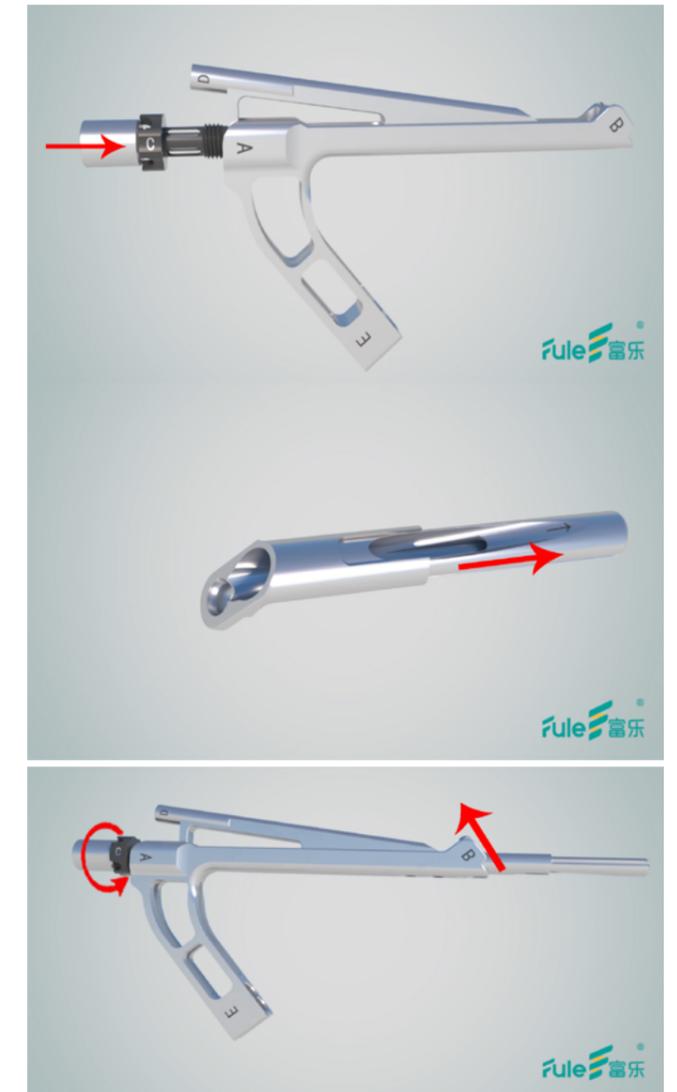
## • Drilling

1. Slide the step drill over the guide needle until it reaches the pre-determined standard depth (95 mm in the previous example). Tighten the nut to secure the reamer.
2. Drill downwards until the reamer stops on the bone.



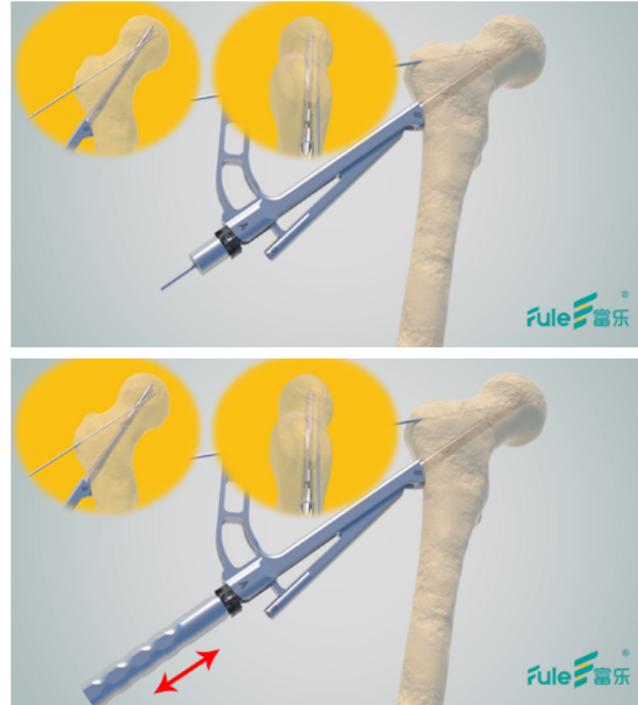
## • Assembling

1. Slide the insertion assembly into the insertion handle and do not tighten the black nut.
2. Attach the implant to the insertion handle.
3. Manually tighten the black nut on the insertion assembly to secure the implant.



## Inserting the Implant

1. Slide the reamer assembly over the guide needle until it reaches the pre-determined construct depth (95 mm in the previous example), and securely tighten the fixation knob.
2. Ream downwards until the reamer stops on the bone.



## Installing the Sleeve

1. Attach the sleeve to the inserter shaft.
2. Verify that the protection sleeve is fully seated.



## Removing the Guide Needle

1. Remove the central guide needle.
2. Retain the anti-rotation guide needle to prevent loss of reduction and femoral head rotation.



## Drilling

1. Drill the hole for the locking screw through the sleeve, using the depth measured directly from the drill bit or a depth gauge.
2. Use a depth gauge that passes through the sleeve to determine the depth of the borehole. The selection of screw length should be at least 4 millimeters longer than the determined hole depth.



## • Inserting the Locking Screw

1. Insert the locking screw to the length determined from the drill bit or depth gauge.
2. The locking screw can be inserted using power equipment, but final seating/tightening must be done using the screwdriver. Use the 4 Nm torque limiter with the appropriate handle and tighten slowly and carefully.
3. If using a dual-hole plate, repeat the steps to insert the predetermined screws.



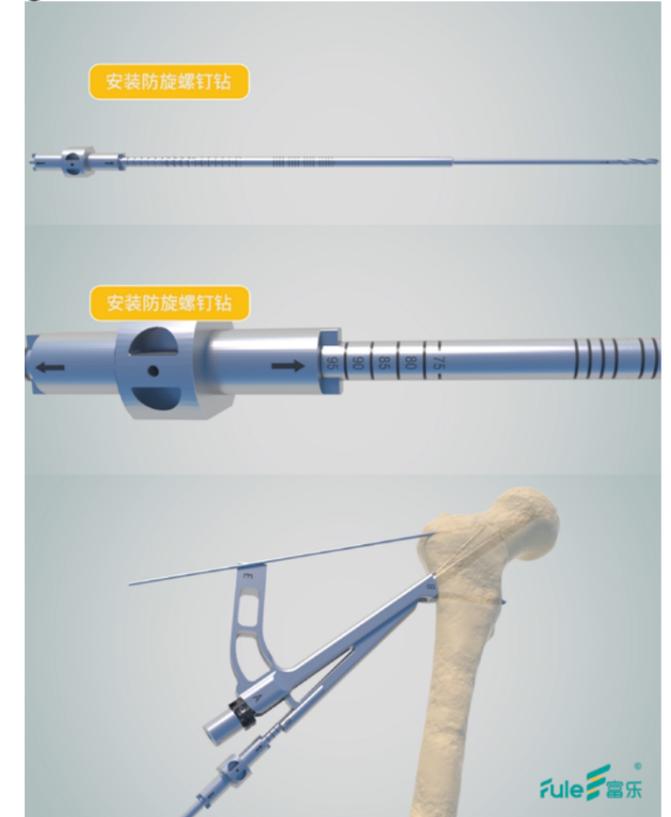
## • Removing the Sleeve

1. Remove the sleeve by pulling it off while holding the inserter steady.



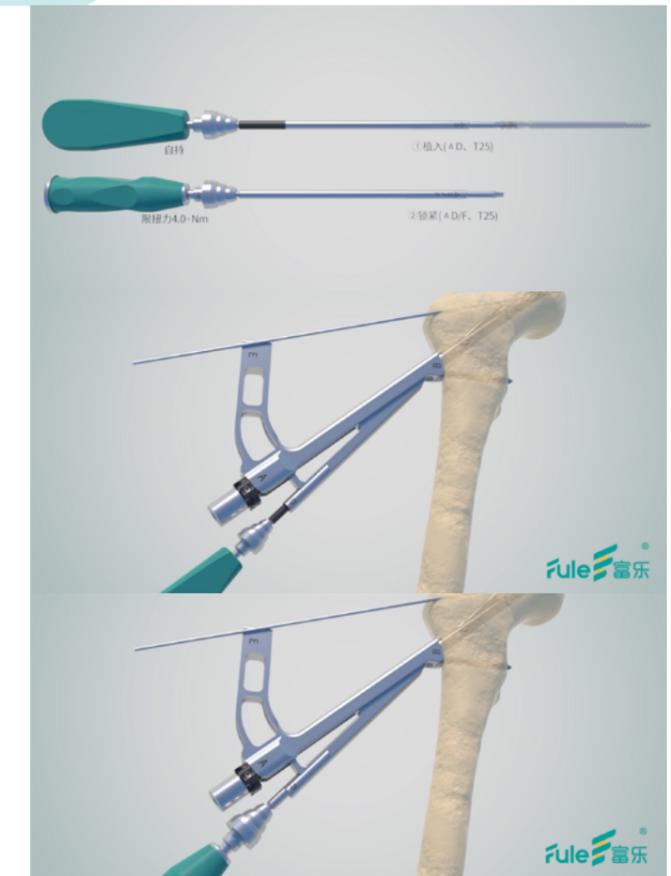
## • Anti-Rotation Screw Drilling

1. Set the anti-rotation screw drill stop to the predetermined construct depth (95 mm in the example).
2. Use the guide sleeve on the insertion assembly to drill the hole for the anti-rotation screw.
3. Drill until the drill stop contacts the guide sleeve of the insertion assembly, then remove the drill bit.



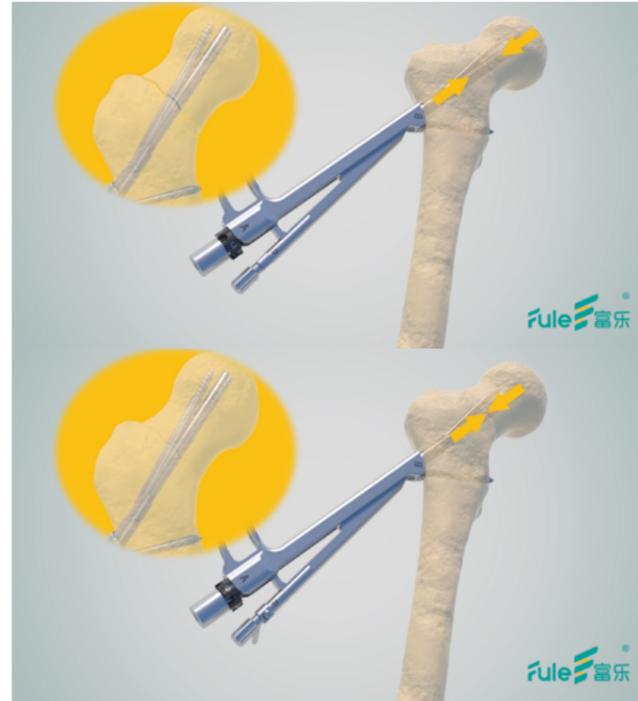
## • Inserting the Anti-Rotation Screw

1. Insert the anti-rotation screw to the predetermined construct depth (95 mm in the example).
2. Insertion and final tightening should be done slowly and manually using a screwdriver, 4 Nm torque limiter, and appropriate handle.
3. If the hardness of the bone hinders the insertion of the anti rotation screw, be careful when using a handle without a torque limiter for insertion.



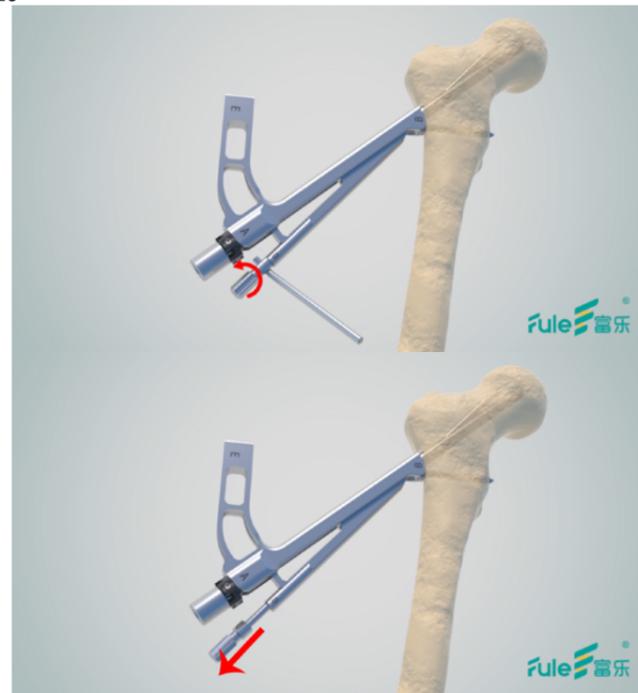
## • Intraoperative Compression

1. Insert the multifunctional rod through the anti-rotation screw guide. Rotate clockwise until the rod is fully seated, then hand-tighten.
2. Turn the black nut of the insertion assembly counterclockwise to apply interfragmentary compression.



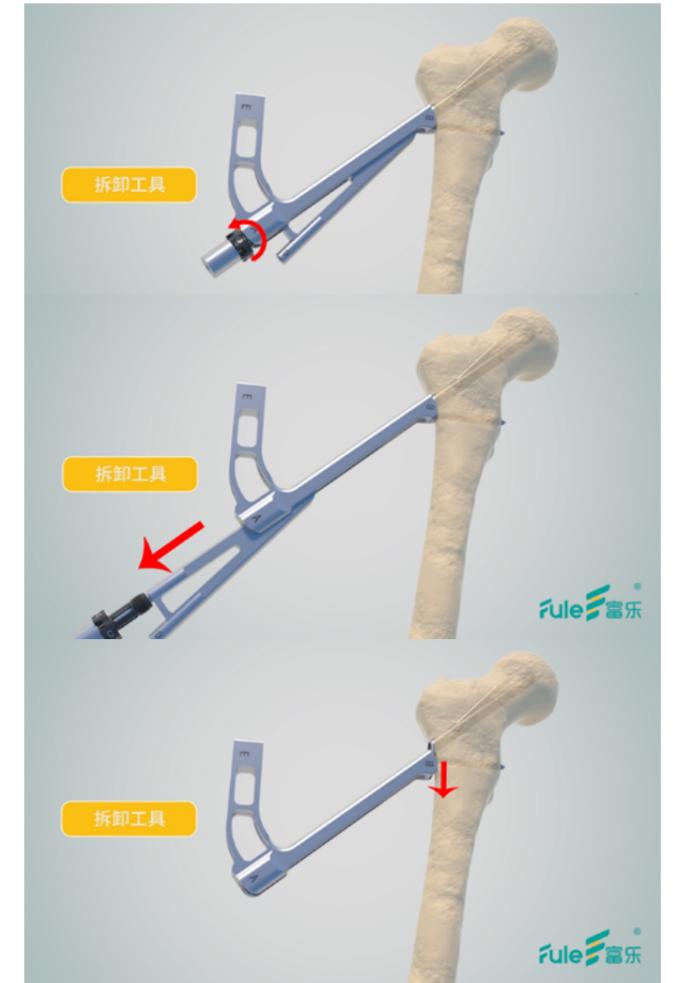
## • Disassembling the Instrument

1. Turn the rod counterclockwise to loosen it from the operative assembly.



## • Disassembling the Instrument

1. Turn the rod counterclockwise to loosen it from the operative assembly.
2. Unscrew the inserter from the insertion handle.
3. Separate the inserter from the chamfered end of the insertion handle by pulling it off.



## • Final Checking

1. Before wound closure, confirm the final position and size of the implants.



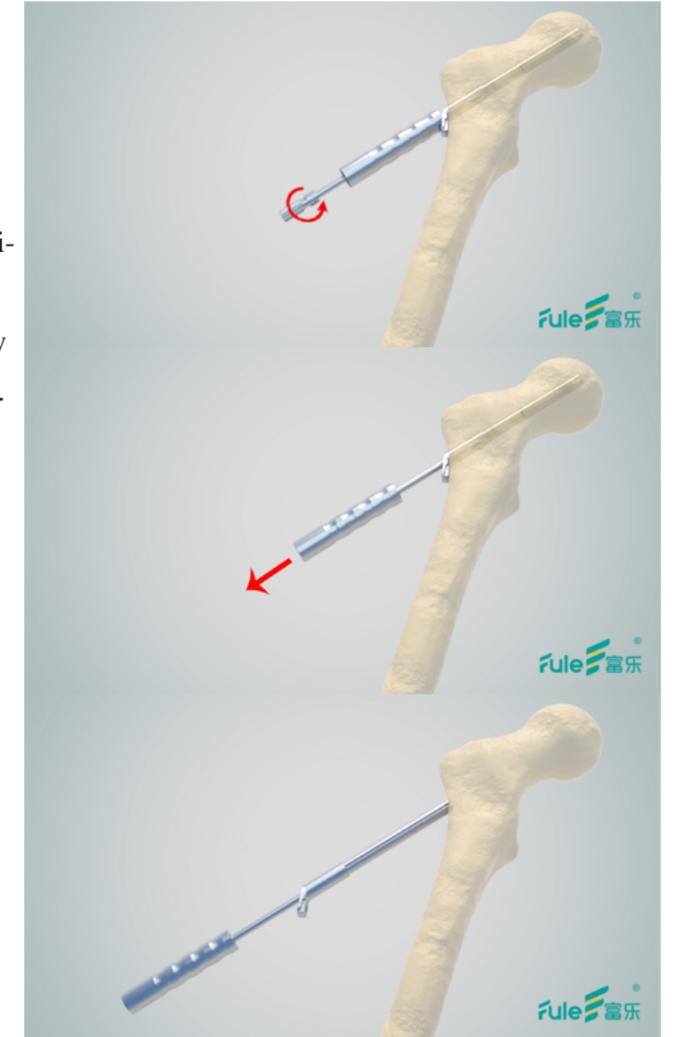
## Disassembling

1. Using the screwdriver shaft and an appropriate handle (without torque limiter), remove the fixation screws manually.



## Disassembling

1. Slide the cylindrical hammer onto the multifunctional rod.
2. Engage the multifunctional rod by rotating it clockwise in the direction of anti-rotation-screw removal.
3. Extract the plate and bolt simultaneously by striking outward with a copper hammer.



## Disassembling

1. If the anti-rotation screw cannot be engaged with the driver, use the multifunctional rod. Rotate clockwise to engage the anti-rotation screw. Apply traction to the multi-functional rod, then rotate counterclockwise to completely remove the anti-rotation screw.





专注骨科事业



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