ABAY

SAĞLIK

Distal Fibula Plate One

Procedure Steps

Surgical Techniques

Abay Distal Fibula Plates

The Plates

The main features of the **Abay** Distal Fibula

- The Distal Fibula plate is anatomically shaped
- Low profile plate
- Compatible screw holes for locking or non-locking screws
- Similar instrumentation & procedure steps as conventional metal plates

Right & left Distal Fibula plates are available as follows:

Distal Fibula Plates

Ref. No	Description	Right /Left	Length	Length
0201-04089	Distal Fibula Anatomic Plate 4 Holes	Left	89 mm	8683109330053
0201-06116	Distal Fibula Anatomic Plate 6 Holes	Left	116 mm	8683109330060
0202-04089	Distal Fibula Anatomic Plate 4 Holes	Right	89 mm	8683109330077
0202-06116	Distal Fibula Anatomic Plate 6 Holes	Right	116 mm	8683109330084

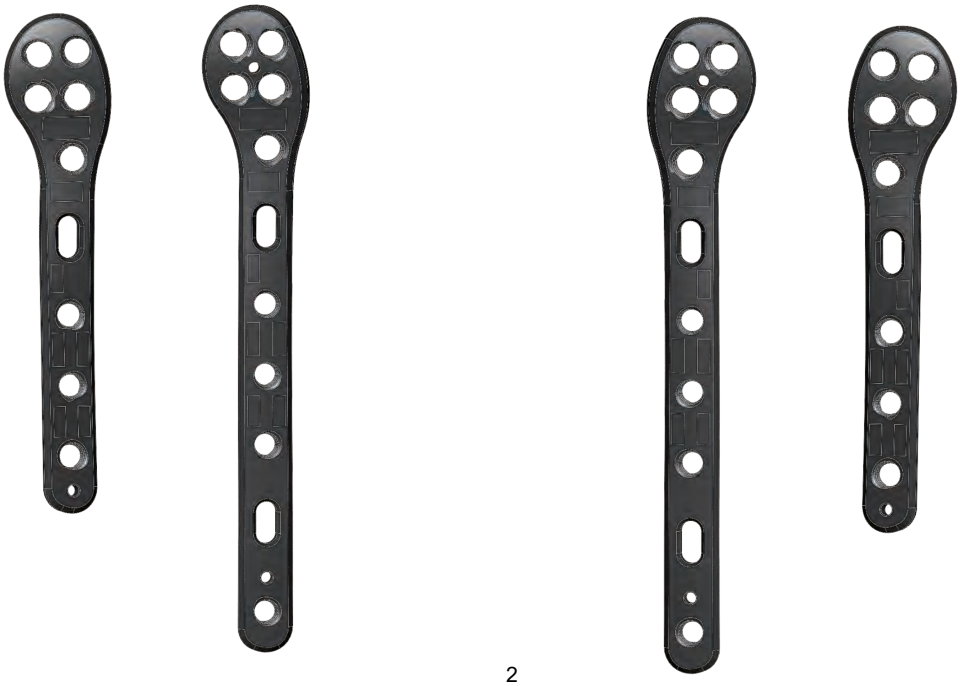
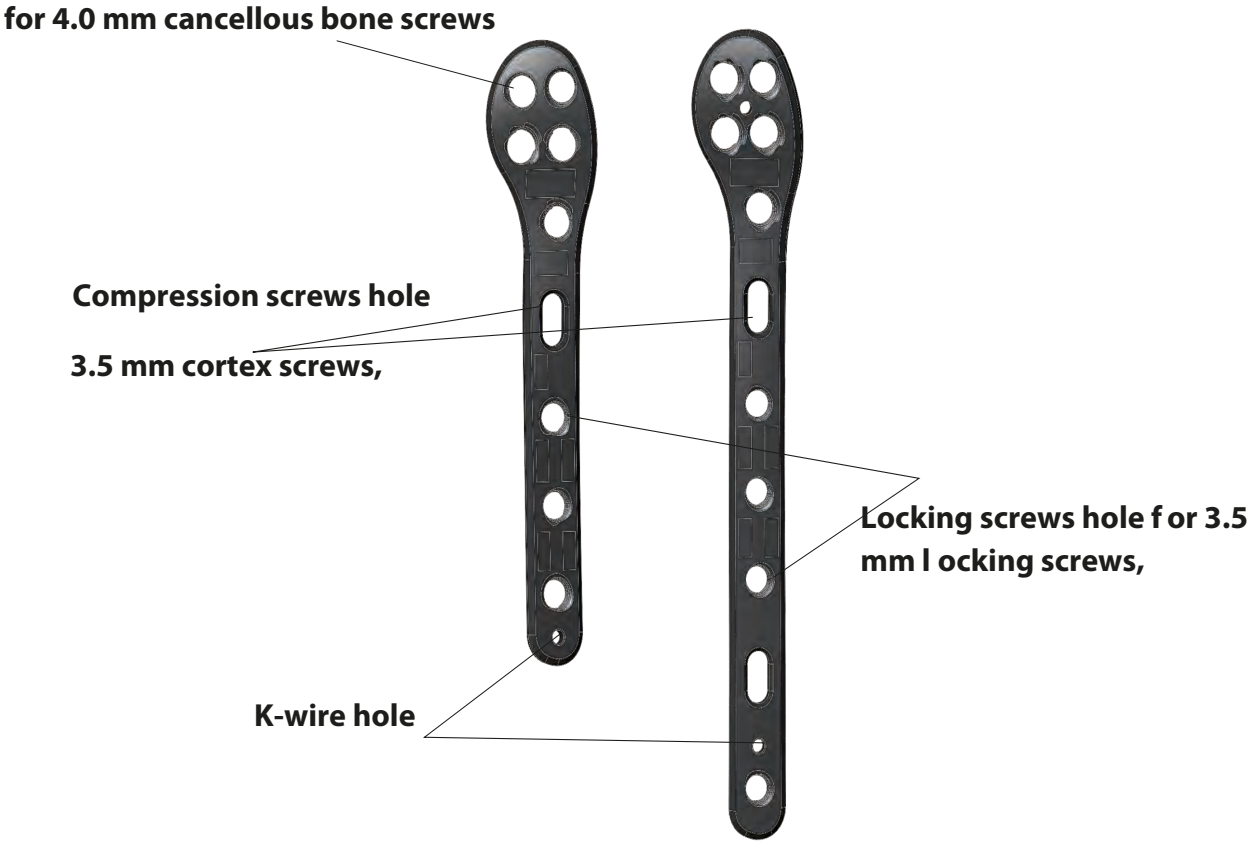


Plate Features

The distal fibula plates are part of the cfr - peek locking plate system that merges locking screw technology with conventional plating techniques.



Kirschner wire holes accept Kirschner wires (up to 2.0 mm) to temporarily fix the plate to the distal fibula, to temporarily reduce articular fragments, and to confirm the location of the plate, relative to the distal fibula.

The Screws

Proprietary self-tapping titanium screws are used to fixate the plate:

Low Profile Locking Screws

Ref. No	Description	Diameter	Length	Barcode
0201-013504	Low Profile Locking Screw	3.5 mm	4 mm	8683109330552
0201-013512	Low Profile Locking Screw	3.5 mm	12 mm	8683109330199
0201-013514	Low Profile Locking Screw	3.5 mm	14 mm	8683109330200
0201-013516	Low Profile Locking Screw	3.5 mm	16 mm	8683109330201
0201-013518	Low Profile Locking Screw	3.5 mm	18 mm	8683109330202
0201-013520	Low Profile Locking Screw	3.5 mm	20 mm	8683109330203
0201-013522	Low Profile Locking Screw	3.5 mm	22 mm	8683109330204
0201-013524	Low Profile Locking Screw	3.5 mm	24 mm	8683109330205
0201-013526	Low Profile Locking Screw	3.5 mm	26 mm	8683109330206
0201-013528	Low Profile Locking Screw	3.5 mm	28 mm	8683109330207
0201-013530	Low Profile Locking Screw	3.5 mm	30 mm	8683109330208

locking screws do not provide interfragmanter compression

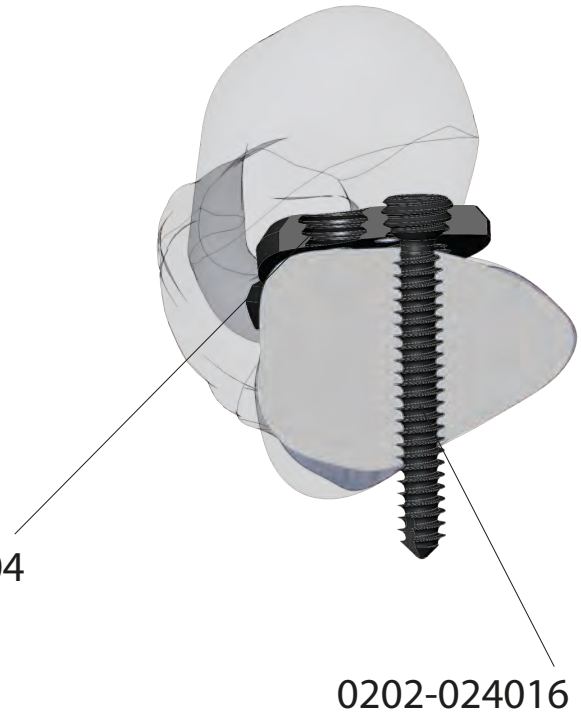
0201-013504

0201-013518

Locking Cansellouse Screws

Ref. No	Description	Diameter	Length	Barcode
0202-024004	Locking Cansellouse Screw	4.0 mm	4 mm	8683109330553
0202-024012	Locking Cansellouse Screw	4.0 mm	12 mm	8683109330209
0202-024014	Locking Cansellouse Screw	4.0 mm	14 mm	8683109330210
0202-024016	Locking Cansellouse Screw	4.0 mm	16 mm	8683109330211
0202-024018	Locking Cansellouse Screw	4.0 mm	18 mm	8683109330212
0202-024020	Locking Cansellouse Screw	4.0 mm	20 mm	8683109330213
0202-024022	Locking Cansellouse Screw	4.0 mm	22 mm	8683109330214
0202-024024	Locking Cansellouse Screw	4.0 mm	24 mm	8683109330215
0202-024026	Locking Cansellouse Screw	4.0 mm	26 mm	8683109330216
0202-024028	Locking Cansellouse Screw	4.0 mm	28 mm	8683109330217
0202-024030	Locking Cansellouse Screw	4.0 mm	30 mm	8683109330218

locking screws do not provide interfragmanter compression



Cortical Screws

Ref. No	Description	Diameter	Length	Barcode
0203-033512	Cortical Screw	3.5 mm	12 mm	8683109330219
0203-033514	Cortical Screw	3.5 mm	14 mm	8683109330220
0203-033516	Cortical Screw	3.5 mm	16 mm	8683109330221
0203-033518	Cortical Screw	3.5 mm	18 mm	8683109330222
0203-033520	Cortical Screw	3.5 mm	20 mm	8683109330223
0203-033522	Cortical Screw	3.5 mm	22 mm	8683109330224
0203-033524	Cortical Screw	3.5 mm	24 mm	8683109330225
0203-033526	Cortical Screw	3.5 mm	26 mm	8683109330226
0203-033528	Cortical Screw	3.5 mm	28 mm	8683109330227
0203-033530	Cortical Screw	3.5 mm	30 mm	8683109330228

0203-033526

Indications

The distal fibula plates are indicated for fractures - osteotomies and non-unions of the metaphyseal and
diaphyseal region of the distal fibula, especially in osteopenic bone

Contraindications

The product should not be used in the following cases:
- The state of bone structure and insufficiency of bone density
- Acute or chronic; local or systemic infections
- serious muscle, neurological or vascular diseases involving the bone in question
- Advanced osteoporosis
- Bone formation disorder
- Severe soft tissue damage
- Allergy to device raw material
- Immature patients with skeletal system

Preoperative Planning

Complete the preoperative radiographic assessment and prepare the preoperative plan. Determine plate length and distal screw locations to ensure proper plate selection and position, and screw placement in the distal fibula.

Patient Positioning

Position patient

Position the patient supine with a sandbag (bump) underneath the buttock of the affected side. This allows the foot to lie in a neutral position and prevents the normal external rotation of the leg. Elevate the leg on a padded rest with the knee slightly flexed to assist placement in a neutral position.

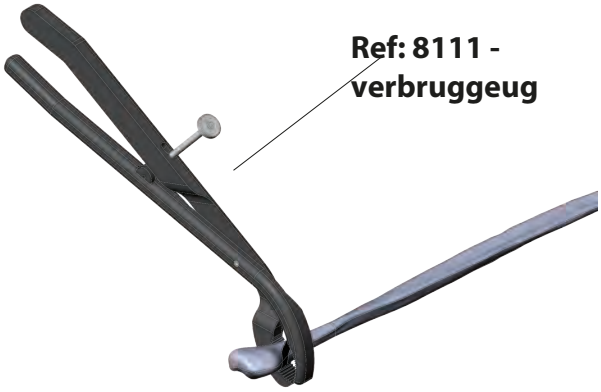
Approach

Make a straight lateral or posterolateral surgical incision to expose the fibular fracture, the distal fibula, and the fibular diaphysis. A lateral incision directly over the fibula can accentuate plate prominence and the wound closure will be directly over the implant. Alternatively, the incision can be placed along the posterolateral border of the fibula where there is improved soft tissue coverage

Reduction

The fracture must be reduced prior to plate application. To reduce the fibular fracture, peel back 2 mm of the periosteum at the tips of the fracture fragments

Step 1: Reduction



■Expose and clean the fracture site and reduce the fracture. It is critical that fibular length, alignment and rotation are accurately restored. In spiral or oblique fracture patterns, a clamp can be applied for reduction.

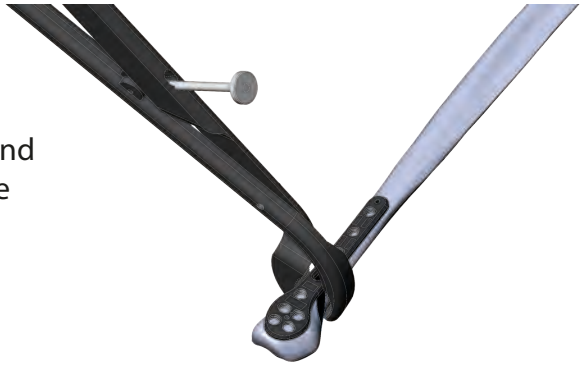
■ Temporarily clamp the fibular fracture once it is reduced.

■ Place k-wire to hold length and alignment and to obtain compression across the fracture site.

■ Application of an external fixator or distractor may facilitate obtaining fibular length, fracture reduction and visualization of the distal tibiofibular joint

■ Visualization of the distal fibula under image intensification in both the lateral and AP views is recom-mended

Step 2: Plate Position



■ The cfr - peek distal fibula plate can be along the lateral fibular shaft and positioned with the distal end of the plate approximately 5 mm from the tip of the fibula.

Fractures must be reduced and compresed before fixation of the fibula plate with locking screws

■ select a plate that is approximately four and five holes proximal to the fracture line.

■ kirschner wires can be placed through the distal end of the plate to assist with temporary maintenance of the reduction and for plate placement.

Step 3: Initial Plate Fixation

■ Place nonlocking screws in order to compress the plate against the bone proximally,
followed by locking screws in the distal metaphyseal bone. for nonlocking screws, use the selected drill guide to drill through both cortices

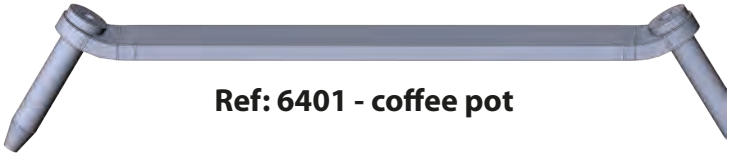
**K-wire holes in the plates can aid in temporary
fixation of the plate to the bone**

Ref: 6901 -1.0 mm kirshner wire

Beginning with the compression hole in the shaft of the plate drill with 2.8 drill bit using the drill guide

Step 4: Fixation with 3.5 mm cortex screw and variable angle drill guide

The fracture must be reduced and compressed before fixation of the cfr peek distal fibula plate with locking screws in simple fracture configurations.



Ref: 6401 - coffee pot

■Use the 2.8 mm drill bit through the universal drill guide to predrill the bone.

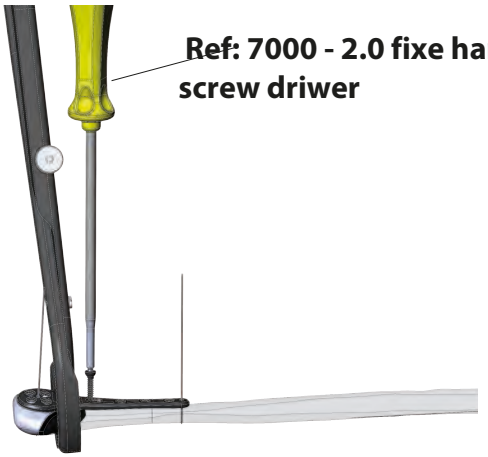
Ref: 6810 -2.8 mm diameter quick coupling drill

■Measure for screw length using the depth gauge.

Ref: 6203 - Small depth gauge for screwss

▪ İnsert a 3.5 mm cortex screw in the compression hole in the plate shaft adjust the plate positi-on if necessery and tighten the screw

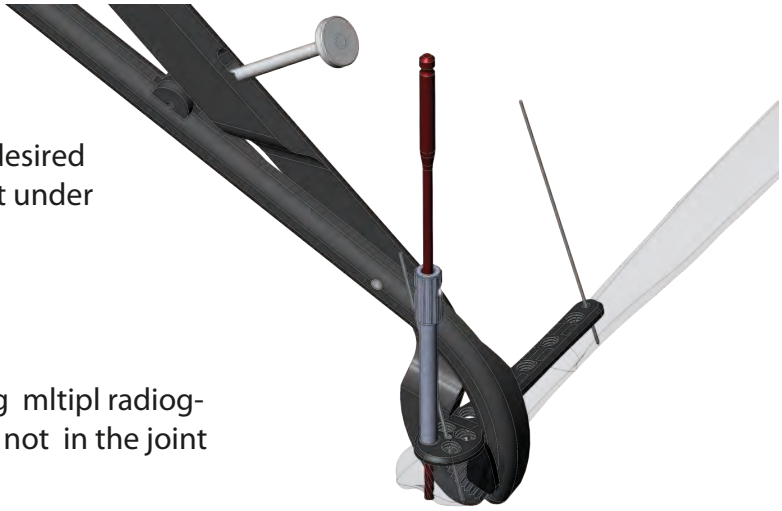
▪ Select and insert the appropriate 3,5 mm cortex screw using the screwdriver shaft attached to the handle



Ref: 7000 - 2.0 fixe handle screw driwer

- sleeve the 4.0 mm threaded drill guide into an fibula head hole until full seated use 28 drill bit to drill to the desired depth

the drill sleeve into one of the 4.0 mm locking holes until fully seated.



- Use the 2.8 mm drill bit to drill to the desired depth and check the depth of the drill bit under image intensification
- Remove drilll guide

Ensur proper joint reconstrixion
screw placement and screw lenght using mltipl radiographic views verify that distal screws are not in the joint by using additionalviews

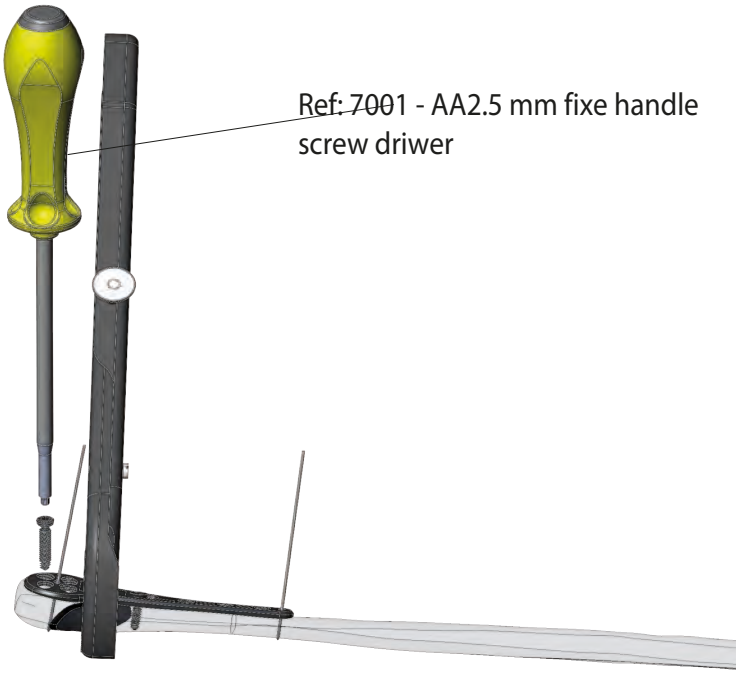
Sleeve the 4.0 mm threaded drill guide into an fibula head hole until full seated use 28 drill bit to drill to the desired depth

Ref: 6603 -3.5 mm diameter sleeve for drill

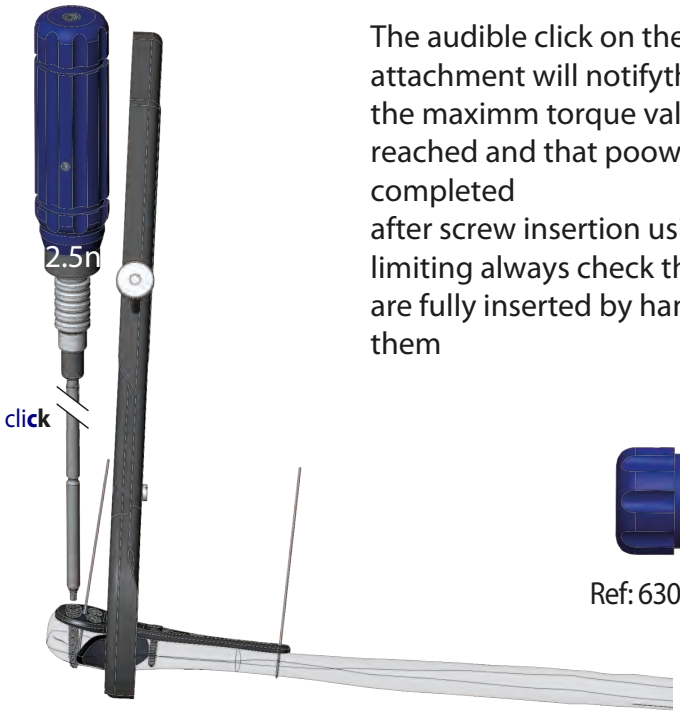
- screws may be also inserted manually using the screw driwer .be sure the plate is held securely to the bone to prevent plate rotation

- The 4.0 mm cancellous locking screw can be inserted manually

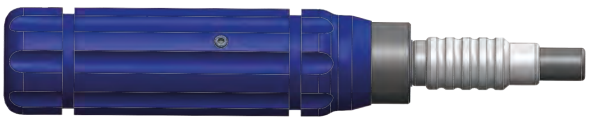
0202-024026



Ref: 7001 - AA2.5 mm fixe handle screw driwer



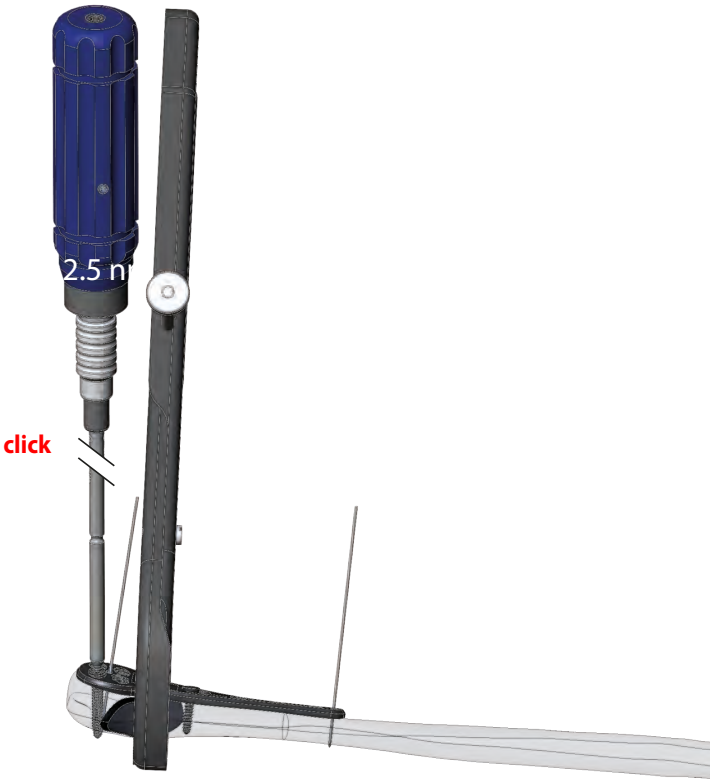
The audible click on the torque limiting attachment will notifythe surgeon that the maximm torque value has been reached and that poower insertion is completed
after screw insertion using the torqque limiting always check that the screws are fully inserted by hand tightening them



Ref: 6305 - 3.5 mm diameter torque limiter screw driwer

Use the 2.5 nm torque limiter to perform the final locking step for the cancellous leocking screws

The torque limiter prevents over tightening and ensures that the locking screws are securely locked in to plate



For dense bone ,usually inspect if the screw is counter-sunk after tightening with the torue limiter if required ,careflly tighten without the torque limiter until the screw head is flush with the plate surface

Step 5: Locking screw

■ for locking screws
use of fixe angled drill sleve

Carefuly insert the drill sleeve perpendiculer to the plate and in line eith the holes axis until it is seated in the desired

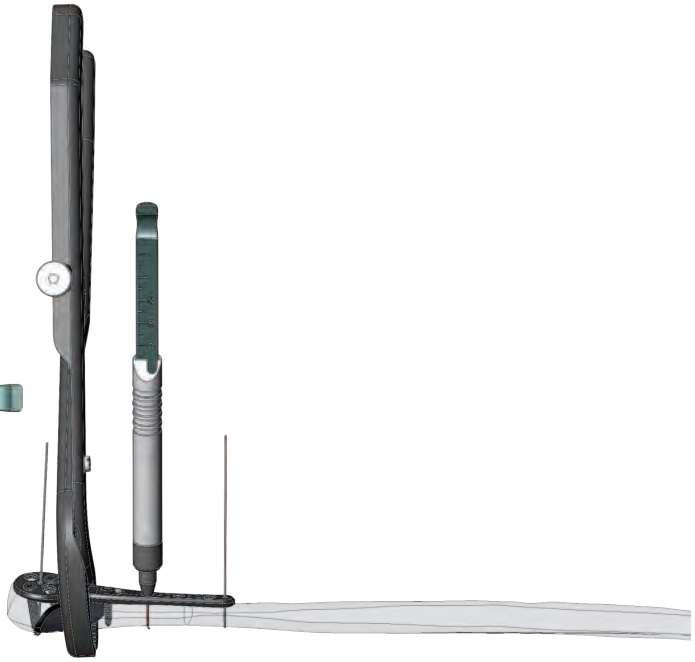
Ref: 6603 - 3.5 mm diameter sleeve for drill

Ref: 6810 -2.8 mm diameter quick coupling drill

■ drill with the drill bit 2.8

- Use the depth gauge to determine the screw lenght

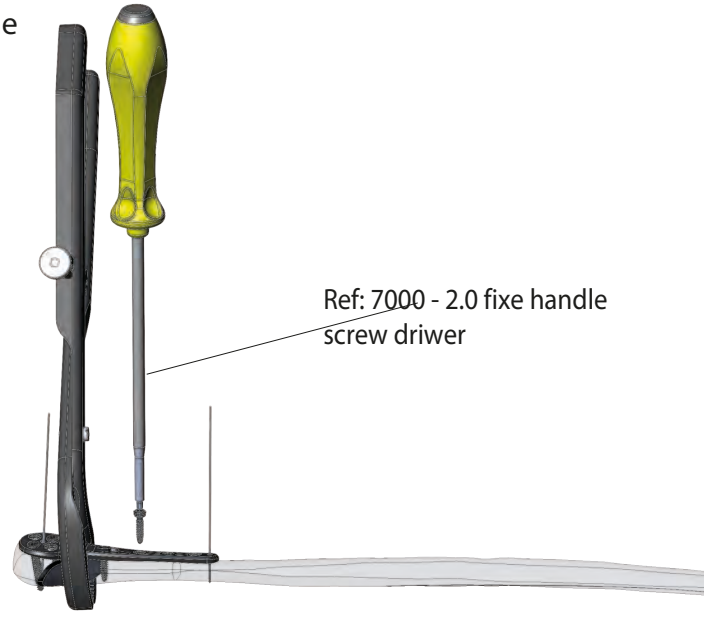
Ref: 6203 - small depth gauge for screwss



- Screws may be also inserted manually using the screw driwer .

Insert the locking screw with the screwdriver

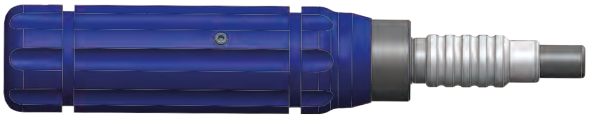
0201-013514



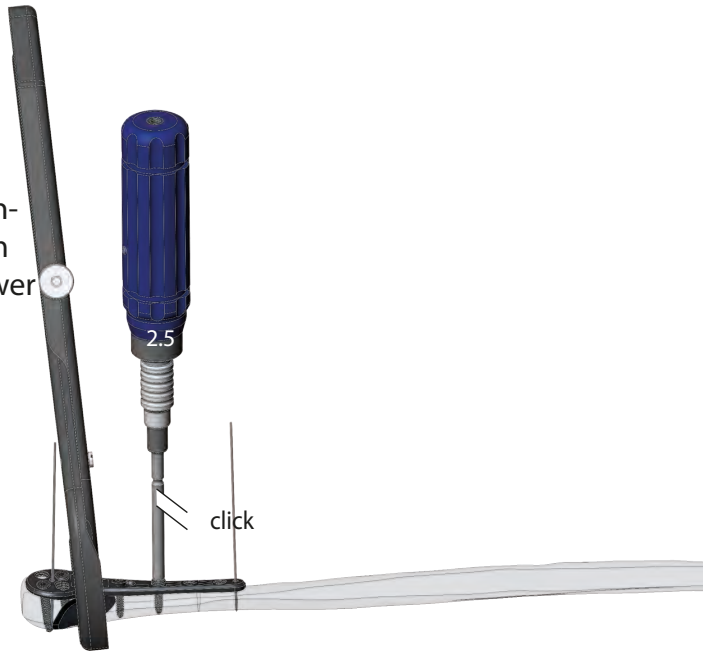
Ref: 7000 - 2.0 fixe handle screw driwer

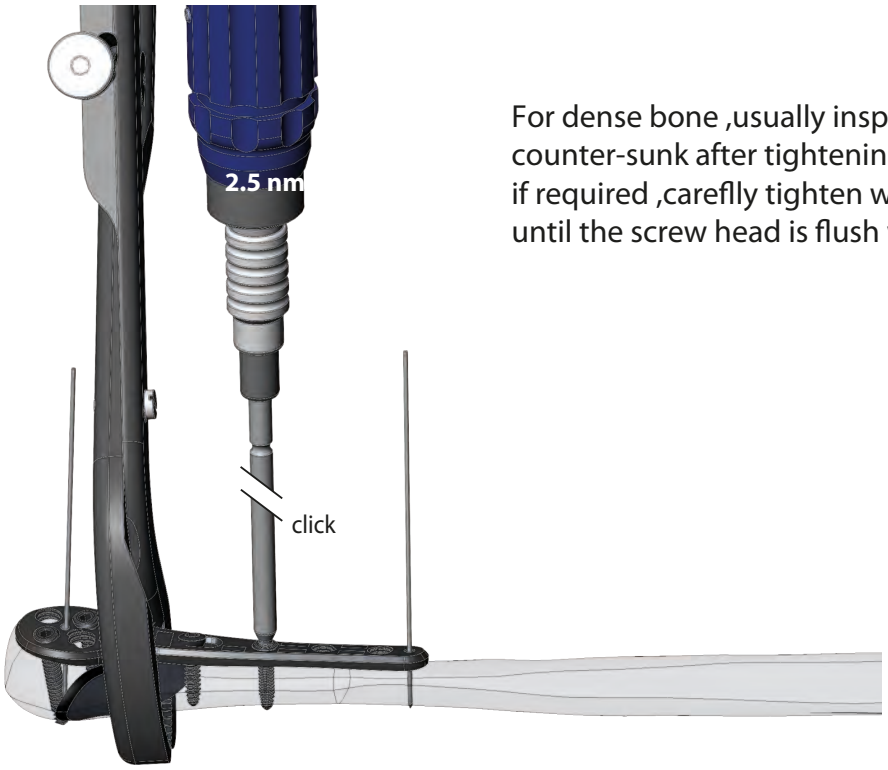
- use the 2.5 n torque limiter to perform the final locking step for the leocking screws

The audible click on the torque limiting attachment will notify the surgeon that the maximm torque value has been reached and that poower insertion is completed.



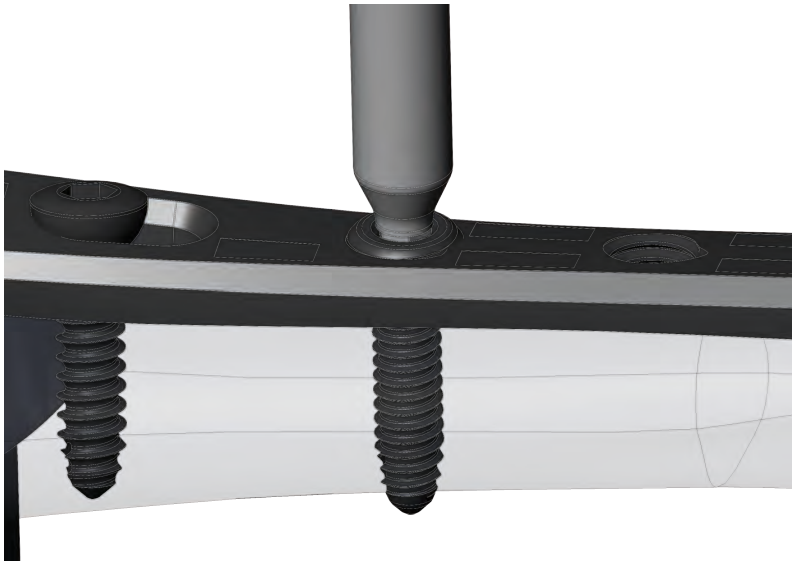
Ref: 6305 - 3.5 mm diameter torque limiter screw driwer





For dense bone ,usually inspect if the screw is counter-sunk after tightening with the torque limiter if required ,careflly tighten without the torque limiter until the screw head is flush with the plate surface

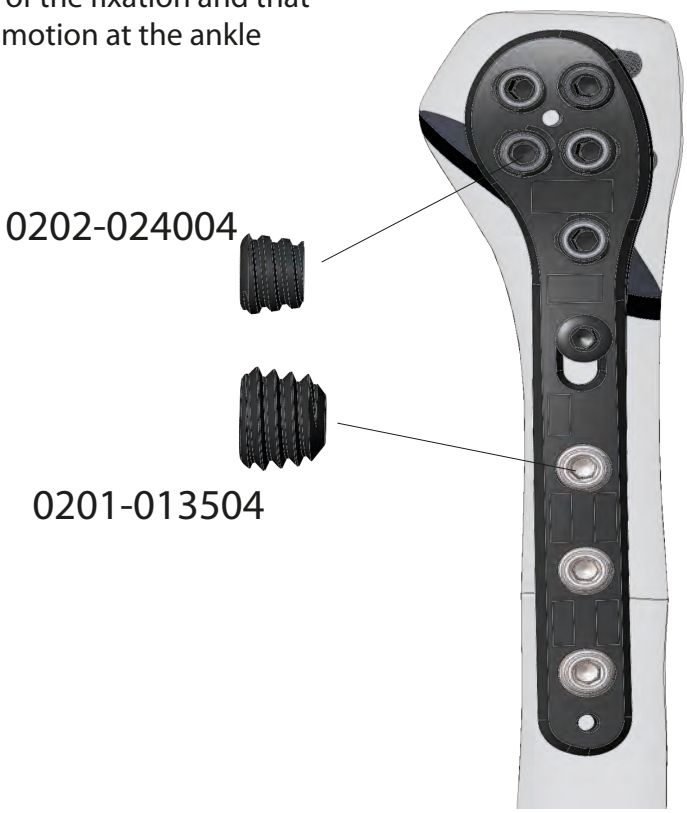
Repeat the procedure until all required shaft holes are used. Finally, check the locking of the screw.



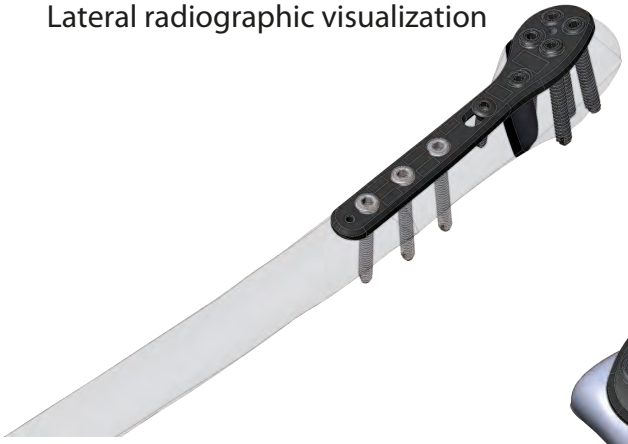
Confirm reduction and fixation Carefully assess the final reduction and fixation via direct visuali-zation and image intensification

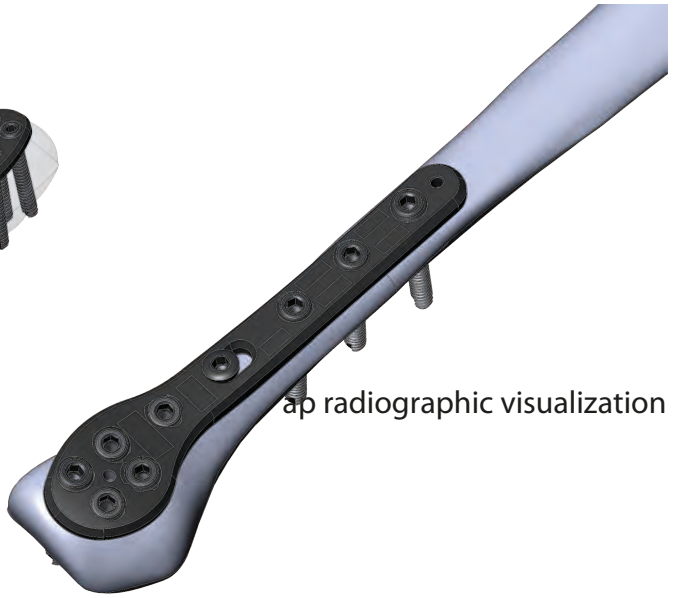
Complete the reduction and the stabilization of the fracture. Insert the remaining screws as previously described.

Confirm the stability of the fixation and that there is unrestricted motion at the ankle joint.



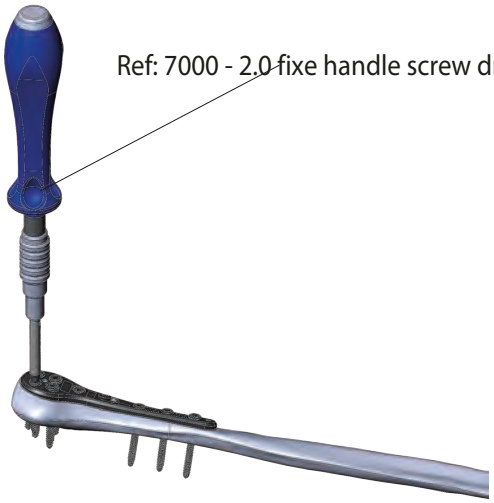
Lateral radiographic visualization





ap radiographic visualization

Implant Removal

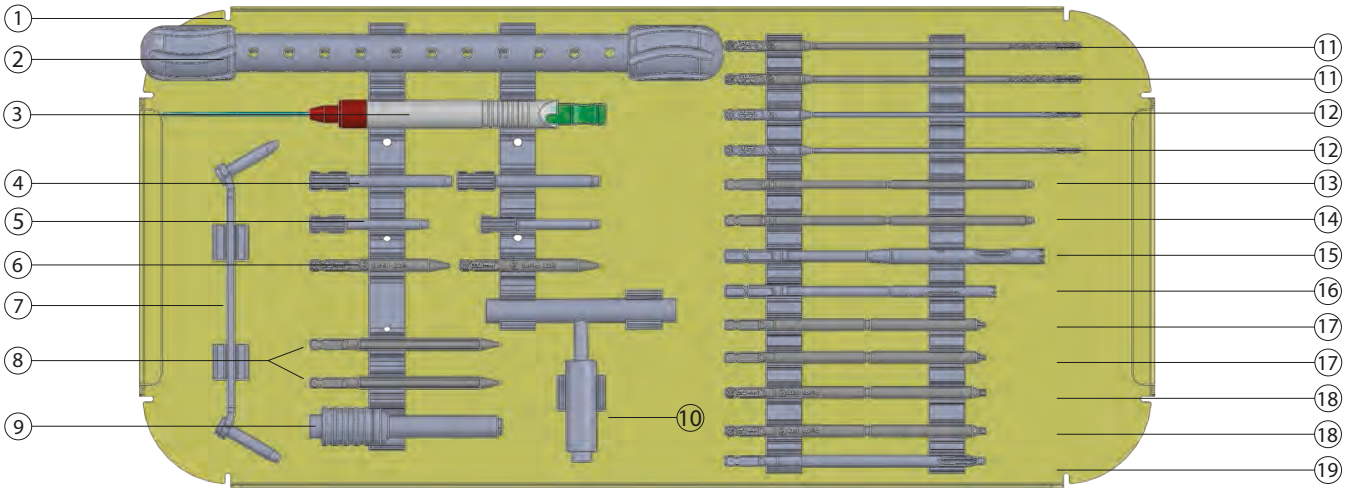


Unlock all screws from the plate, then remove the screws completely from the bone. This prevents
simultaneous rotation of the plate when unlocking the last locking screw. If a screw cannot be removed with the screwdriver (e.g. if the hexagonal or
Stardrive recess of the locking screw is damaged or if the screw is stuck in the plate), use the T-Handle with Quick-Coupling (311.440) to insert the conical Extraction Screw
(309.520 or 309.521) into the screw head, and unscrew the screw in a counterclockwise direction.

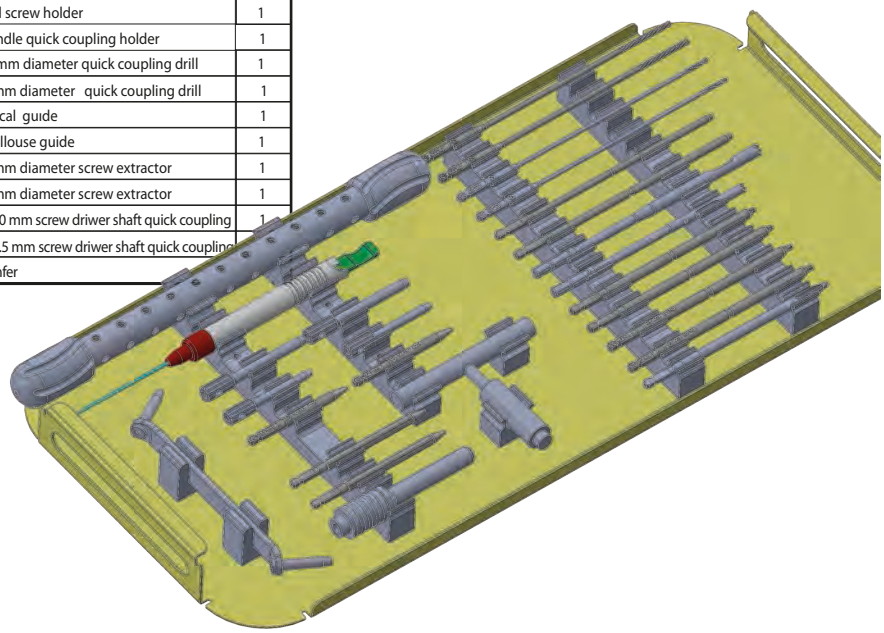
Ref: 6106 - 2.5 mm diameter reverse helical screw extractor

REf: 6102 - 3.5mm diameter screw extractor

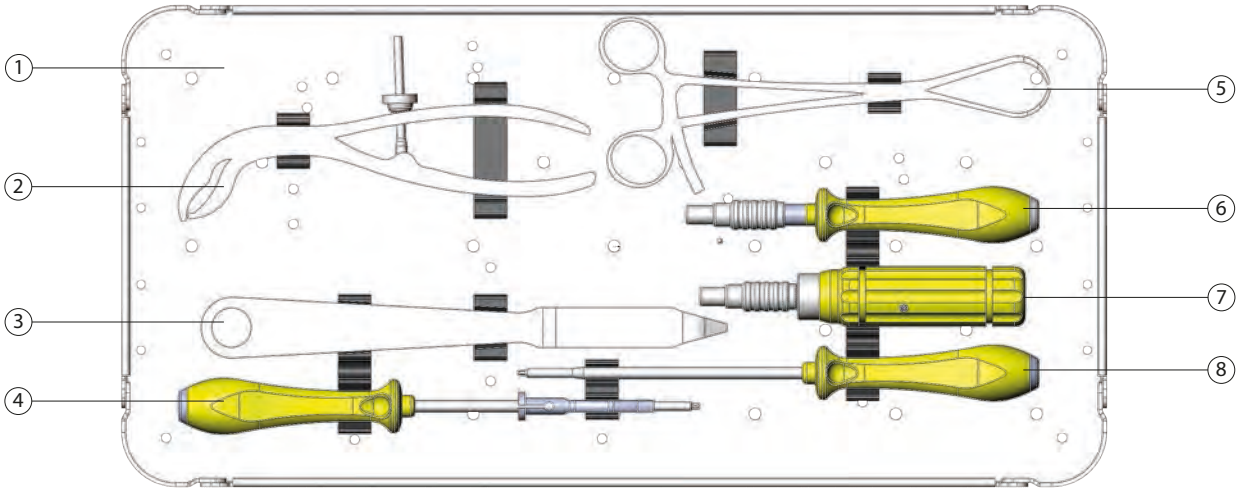
catoalog information- sets



NO	Product No	Product Name	Qty
1	7910	3.5mm diameter screw instrumantation set tray-1	1
2	6901	kirshner wire tube	1
3	6202	small depth gauge for screws	1
4	6603	3.5 mm diameter sleeve for drill	1
5	6601	2.0 mm diameter sleeve for drill	1
6	6105	2.0 mm diameter reverse helical screw extractor	1
7	6401	coffee pot	1
8	6106	2.5 mm diameter reverse helical screw extractor	1
9	6510	small screw holder	1
10	6009	t-handle quick coupling holder	1
11	6810	2.8 mm diameter quick coupling drill	1
12	6809	2.0 mm diameter quick coupling drill	1
13	7018	cortical guide	1
14	8102	ancellouse guide	1
15	6102	3.5mm diameter screw extractor	1
16	6101	2.0mm diameter screw extractor	1
17	6001	AA2.0 mm screw driwer shaft quick coupling	1
18	6002	AA2 .5 mm screw driwer shaft quick couplin	
19	8100	chamfer	



catoalog information- sets



No	Product No	Product Name	Qty
1	7802	3.5 mm diameter instrumantation set tray-2	1
2	8111	verbrugge	1
3	8108	small retractor	1
4	7001	AA2.5 mm fixe handle screw driwer	1
5	8106	small bone holder key	1
6	6303	small length screw driwer	1
7	6305	3.5 mm diameter torque limiter screw driwer	1
8	7000	2.0 fixe handle screw driwer	1

Case I

Pre-OP

Post-OP

Case II

Pre-OP

Post-OP

ABAY

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