

## RETROGRADE TIBIAL NAIL

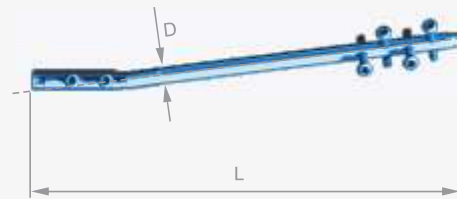
Self tapping  
locking screws Ø 4.5 mm  
X-01-86-xx



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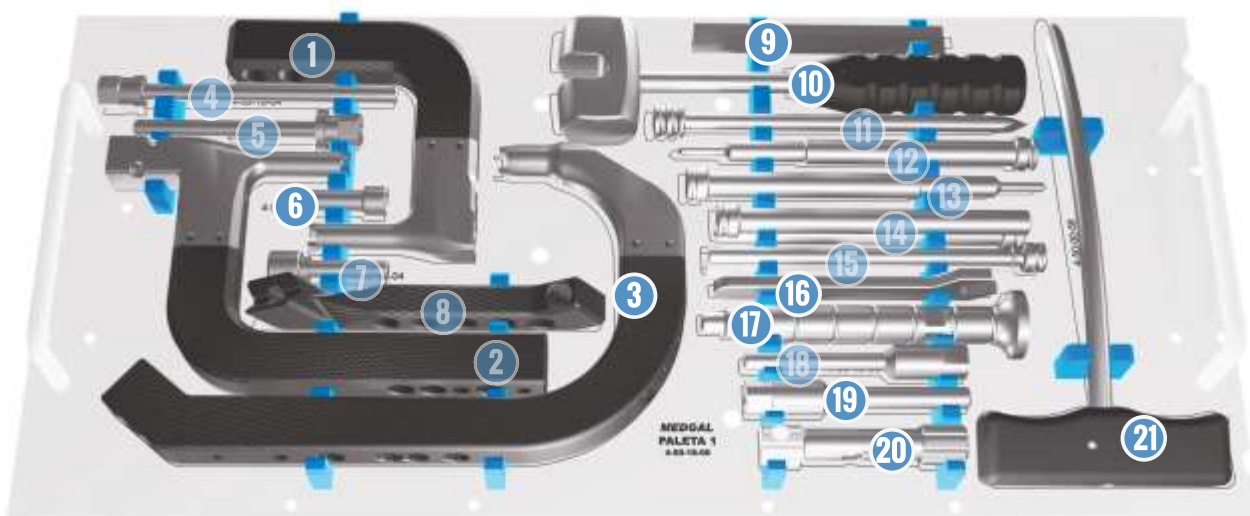


End cap  
X-07-95-05



L (mm)	D-9mm	D-10mm	D-11mm
140	X-08-11-140	X-08-12-140	X-08-13-140
150	X-08-11-150	X-08-12-150	X-08-13-150
160	X-08-11-160	X-08-12-160	X-08-13-160
170	X-08-11-170	X-08-12-170	X-08-13-170
180	X-08-11-180	X-08-12-180	X-08-13-180
190	X-08-11-190	X-08-12-190	X-08-13-190
200	X-08-11-200	X-08-12-200	X-08-13-200
210	X-08-11-210	X-08-12-210	X-08-13-210
220	X-08-11-220	X-08-12-220	X-08-13-220
230	X-08-11-230	X-08-12-230	X-08-13-230
240	X-08-11-240	X-08-12-240	X-08-13-240
250	X-08-11-250	X-08-12-250	X-08-13-250
260	X-08-11-260	X-08-12-260	X-08-13-260
270	X-08-11-270	X-08-12-270	X-08-13-270
280	X-08-11-280	X-08-12-280	X-08-13-280
290	X-08-11-290	X-08-12-290	X-08-13-290
300	X-08-11-300	X-08-12-300	X-08-13-300
310	X-08-11-310	X-08-12-310	X-08-13-310
320	X-08-11-320	X-08-12-320	X-08-13-320

### TRAY 1



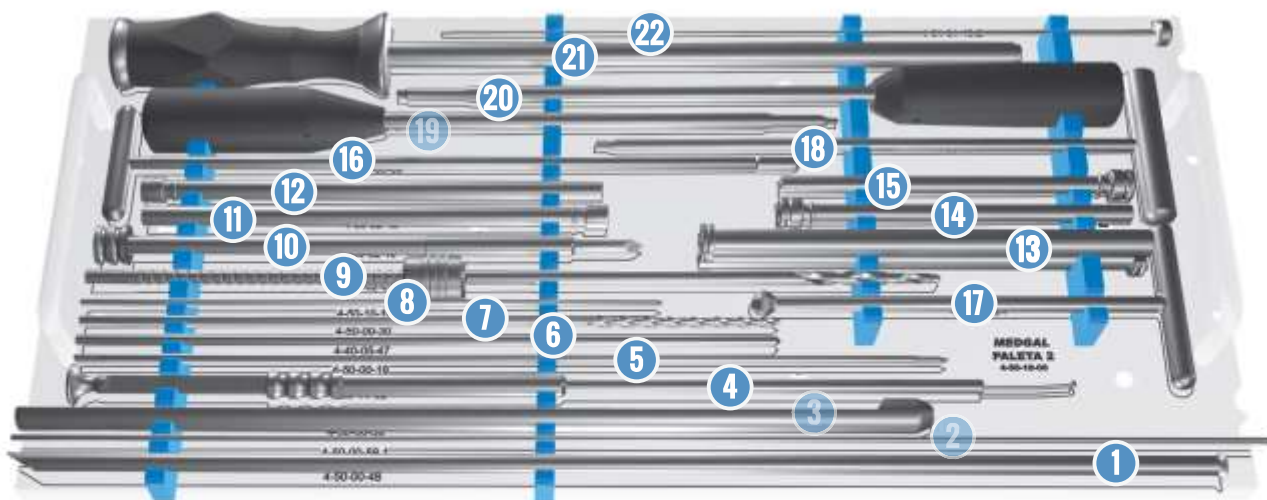
### REF NO.

1	Targeting handle for humeral nail	4-50-18-10
2	Targeting handle for tibial nail	4-50-19-01
3	Targeting handle for femoral nail	4-50-17-01
4	Nail holding screw M8 - long	4-50-18-04
5	Nail holding screw M8 - short	4-50-18-05
6	Nail holding screw M10	4-50-17-03
7	Connecting screw	4-50-25-04
8	Targeting adapter for reconstruction holes	4-50-04-04
9	Gauge	4-50-01-12
10	Hammer	4-51-01-16
11	Trocar	4-50-00-07
12	Control Pin Ø 4,6	4-50-00-08
13	Control Pin Ø 4,2	4-50-05-09
14	Protecion sleeve 2pcs.	4-50-00-06
15	Drill sleeve Ø 3,7 2pcs.	4-50-00-31
16	Wrench	4-50-00-41
17	Impactor	4-51-01-23
18	Extractor reducer M12/M8	4-50-18-06
19	Extractor reducer M12/M10	4-50-18-07
20	Guide wire handle	4-50-00-18
21	Cannulated awl	4-50-00-58

H = 200 mm  
CONTAINER  
4-99-100-200



### TRAY 2



	REF NO.
1 Tubular slide	4-50-00-48
2 Guide wire for Nail lenght gauge	4-50-00-59.1
3 Nail lenght gauge	4-50-00-59
4 Bone thickness gauge	4-50-14-02
5 Kirschner wire Ø 3-2 szt	4-50-00-19
6 Drill Ø 4,7	4-40-05-47
7 Drill Ø 3,7	4-50-00-30
8 Drill Ø 2,5	4-50-10-16
9 Step drill 6,5/4,8	4-50-02-07
10 Trocar	4-50-02-10
11 Drill sleeve Ø 6,5x Ø 9x205mm	4-50-02-12
12 Drill sleeve Ø 3,2x Ø 9x205mm	4-50-02-13
13 Drill sleeve Ø 9/ Ø 12x200mm	4-50-02-11
14 Drill sleeve Ø 4,7/ Ø 8x145mm	4-50-05-10
15 Drill sleeve Ø 6,5x Ø 8x155mm	4-50-05-11
16 Locking set pilot	4-50-05-06
17 Ball-tip screwdriver 10mm	4-51-01-24
18 Screwdriver s3.5 T handle	4-50-00-94
19 Screwdriver s2.5	4-50-10-17
20 Cannulated screwdriver s3,5	4-50-05-12
21 Locking screw of 4-50-05-12	4-51-01-19.2
22 Extractor	4-51-01-47

H = 200 mm  
CONTAINER  
4-99-100-200



### TRAY 3



### REF NO.

1	Distal targeting device - femoral nail *	4-50-08-00
2	Distal targeting device - tibial nail *	4-50-25-01
3	Handle targeting device	4-50-00-03
4	Drill sleeve Ø3,7	4-50-00-38
5	Drill sleeve Ø2,5	4-50-10-15
6	Protection sleeve	4-50-00-29
7	Drill sleeve Ø3,7 2pcs.	4-50-00-371
8	Trocar	4-50-00-57
9	Control pins 2pcs.	4-50-00-22



\* Universal distal targeting device - tibial and femoral nail - (4-50-25-01 and 4-50-08-00)

4-50-16-01.M.

H = 200 mm  
CONTAINER  
4-99-100-200





CONTAINED PHRASES ARE NOT DETAILED INSTRUCTION!

CHOOSING THE RIGHT OPERATIVE TECHNIQUE IS RESPONSIBILITY OF THE DOCTOR.

01

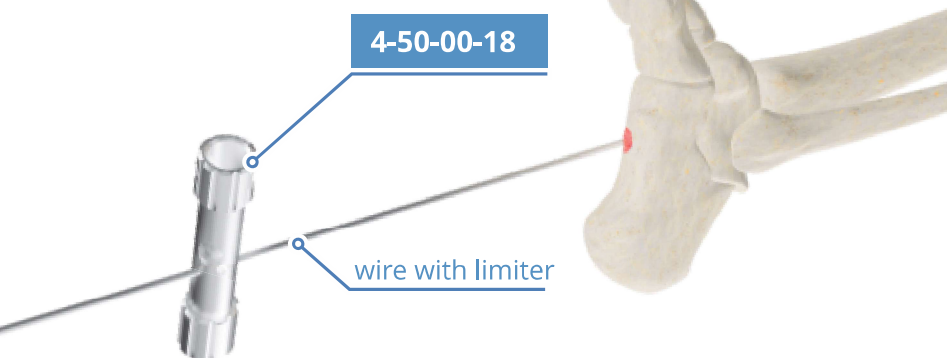
### BONE PREPARATION

Open the intramedullary canal using cannulated awl **4-50-00-58**.



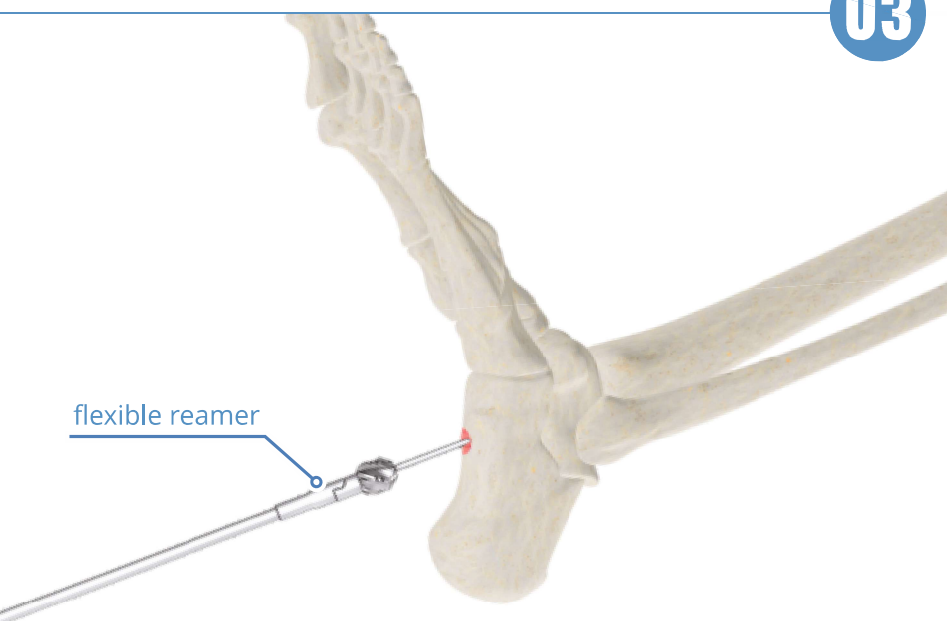
02

Insert guide wire with a limiter **4-50-00-45** into the intramedullary canal using handle **4-50-00-18**.



03

Prepare the intramedullary canal using flexible reamer (starting with the Ø 8,0 mm reaming head, ream to a diameter of 1-2 mm greater than the nail diameter. Ream in with mm increments. Do not force the reamer ).



04

4-50-00-48

wire without a limiter

Change guide wire with a limiter **4-50-00-45** to guide wire without a limiter **4-50-00-44** using tabular slide **4-50-00-48**.

05

4-50-18-04

4-50-01-23

4-50-19-01

4-51-01-16

Install impactor **4-50-01-23** into distal targeting device **4-50-19-01**. Assemble large handle **4-50-19-01** and nail using screw **4-50-18-04**.

06

4-51-01-47

4-50-01-23

4-50-19-01

4-51-01-16

If necessary - use extractor rod **4-51-01-47** to change position of the nail in the bone.

07



Prepare the cortical bone using the trocar **4-50-00-07** and sleeve **4-50-00-06**.

08



Drill through the compression nail hole using drill **4-50-00-30** and drill sleeve **4-50-00-31**.

09



Measure the thickness of the bone through the drilled hole using **4-50-14-02** in order to determine the length of the locking screw.



10

4-50-19-01

4-50-00-06

4-50-05-12

Insert the  $\varnothing$  4,5 mm locking screw using screwdriver **4-50-05-12**.

Insert  $\varnothing$  4,5 mm locking screw in **B** drilled hole using screwdriver **4-50-05-12**.

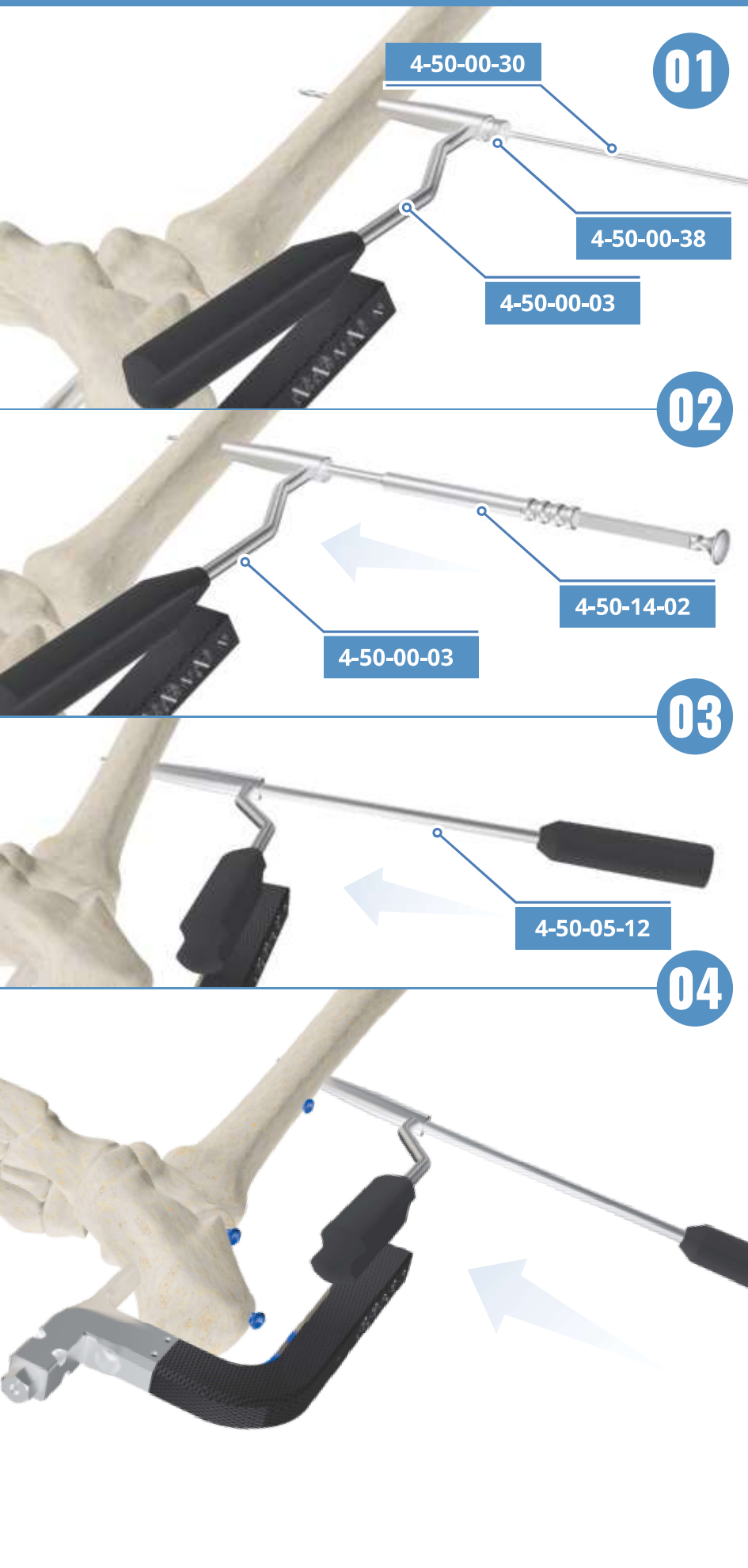
Measure the depth of drilling through the second (**B**) drilled hole in the same way like first hole.

Insert  $\varnothing$  4,5 mm locking screw into second (**B**) drilled hole using screwdriver **4-50-05-12**.

Disassemble targeting device.

4-50-00-06

4-50-05-12



### FREEHAND LOCKING TECHNIQUE

Drill first distal nail hole using hand targeting device **4-50-00-03** sleeve **4-50-00-38** and drill **4-50-00-30**.

Measure the depth of drilling through the drilled hole, with bone thickness gauge **4-50-14-02** in order to determine the length of locking screw.

Insert  $\varnothing$  4,5 mm locking screw in first drilled hole using screwdriver **4-50-05-12**.

Repeat steps **1-3** to insert second  $\varnothing$  4,5 mm molar locking screw **x-01-84-xx**.

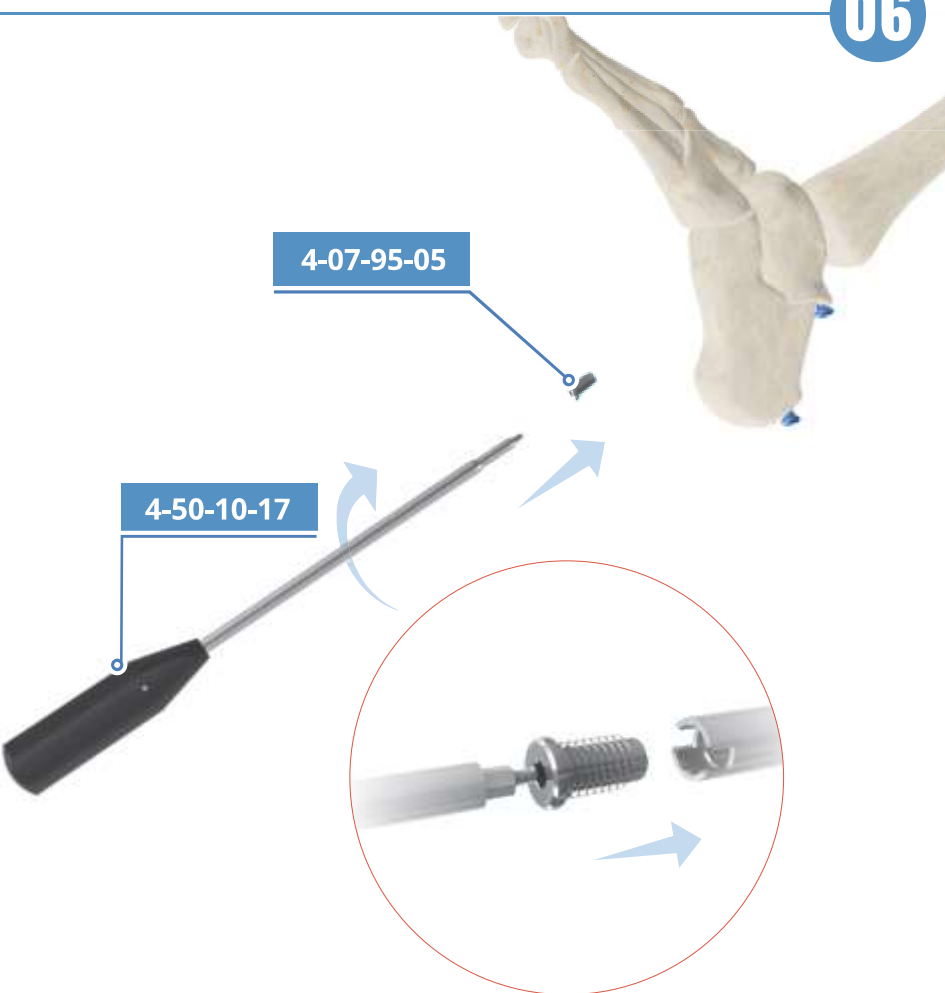
Lock distal holes.

05

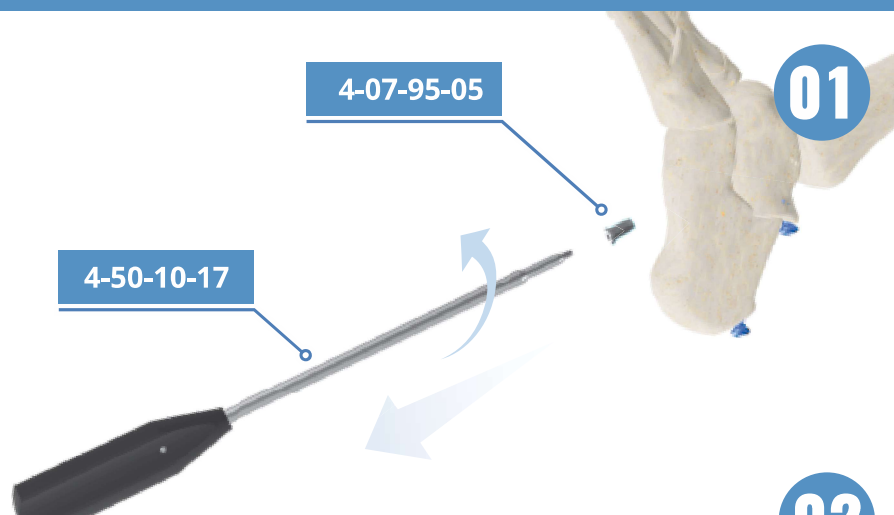


Remove M8 screw **4-50-18-04** and targeting device **4-50-19-01**.

06



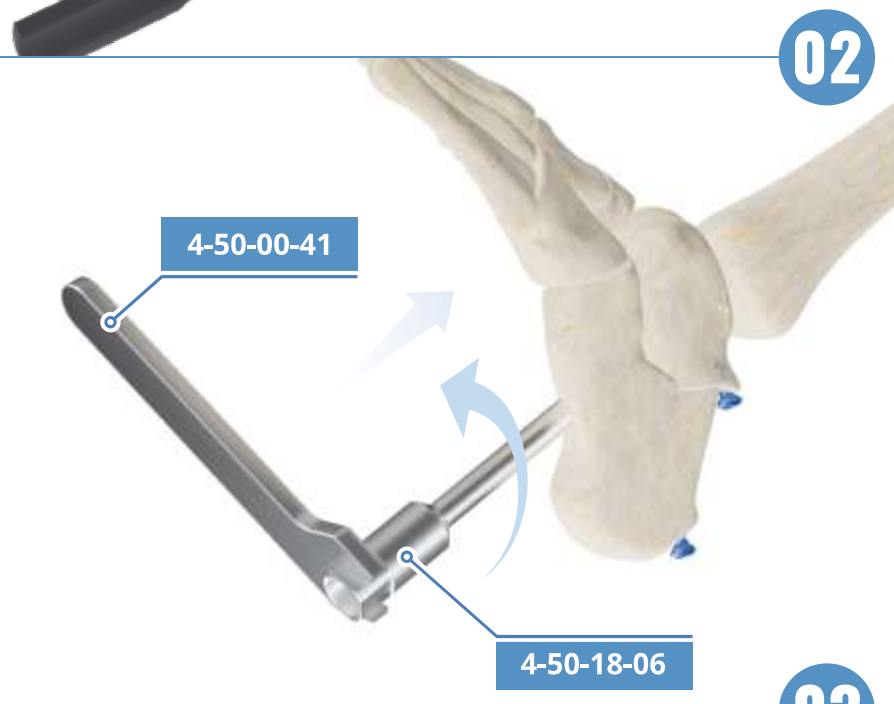
Insert end cap **4-07-95-05** using screwdriver **4-50-10-17**.



01

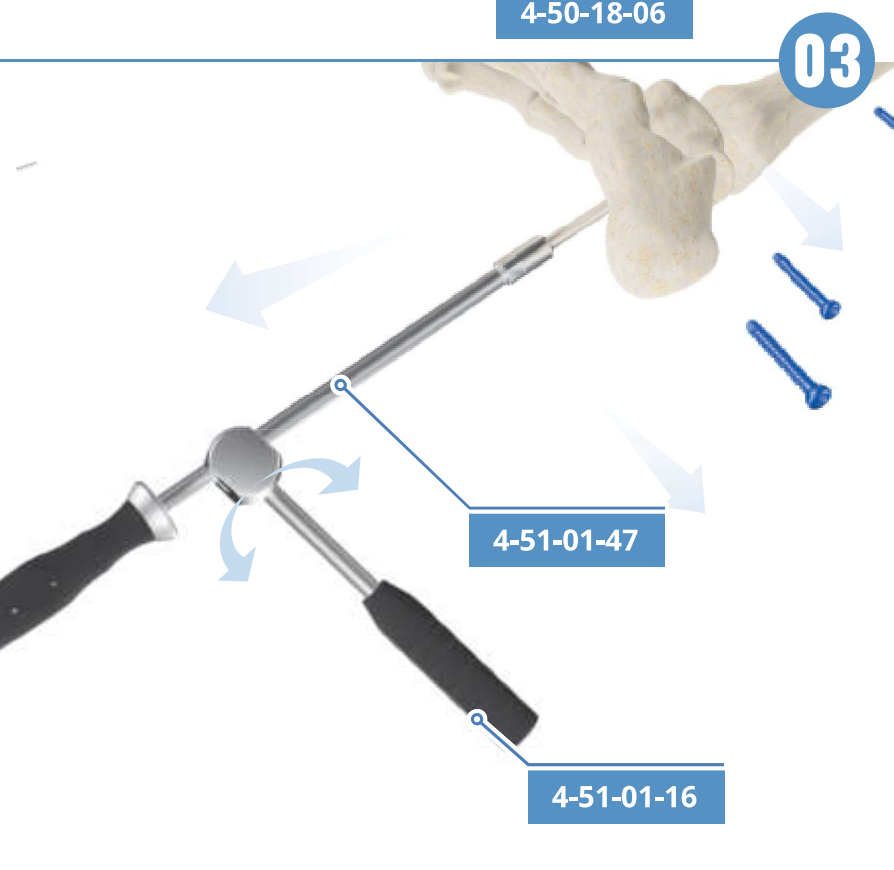
### NAIL EXTRACTION

Remove end cap **4-07-95-05** using screwdriver **4-50-10-17**.



02

Insert extractor reducer **4-50-18-06** into extractor **4-51-01-47** using wrench **4-50-00-41**.



03

Install extractor **4-51-01-47** in the nail and remove distal locking screw.

Remove the nail using hammer **4-51-01-16**