

Biotech Pertrochanter Nail

Surgical Technique



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BIOTECH

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"Movement is Life"

Assembling of the nail and the targeting device

- On the basis of the pre-operative measurements, the perthrochanter nail of the right length and thickness is chosen.



- In the first step, fit the driver bushing onto the nail, and then fix them together with the help of the driver bolt.

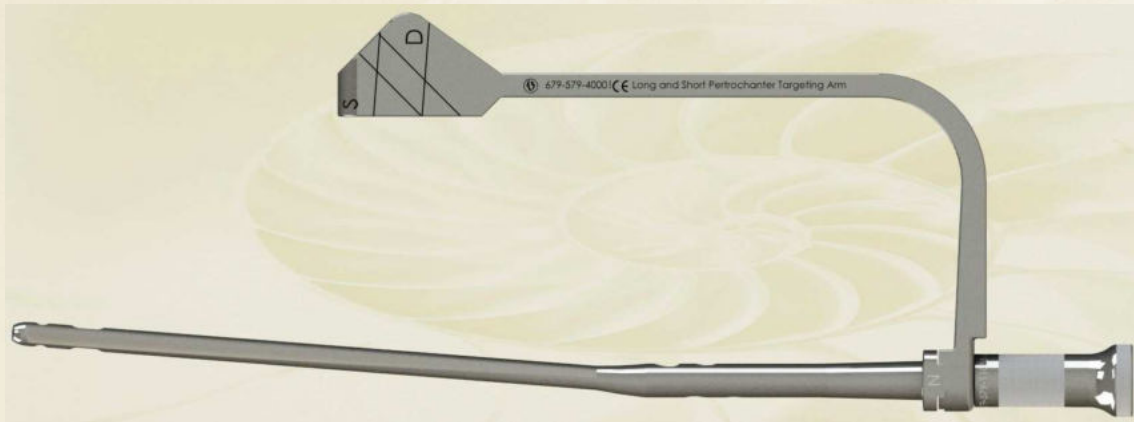


- Next, place the targeting arm (which is made of one whole block suitable for both proximal and distal targeting) onto the driver bushing. The targeting arm is fixed using the Nail Impactor.



The Nail Impactor is tightened using the hex T Wrench or a T wrench cardan joint.

- Place the driver handle onto the driver bushing and screw it in place properly until it touches the bottom, this is important to avoid any damaging of the threads later due to improper tightening. Make sure that every screw is tightened well, since any slight movements could result in an inaccurate targeting.

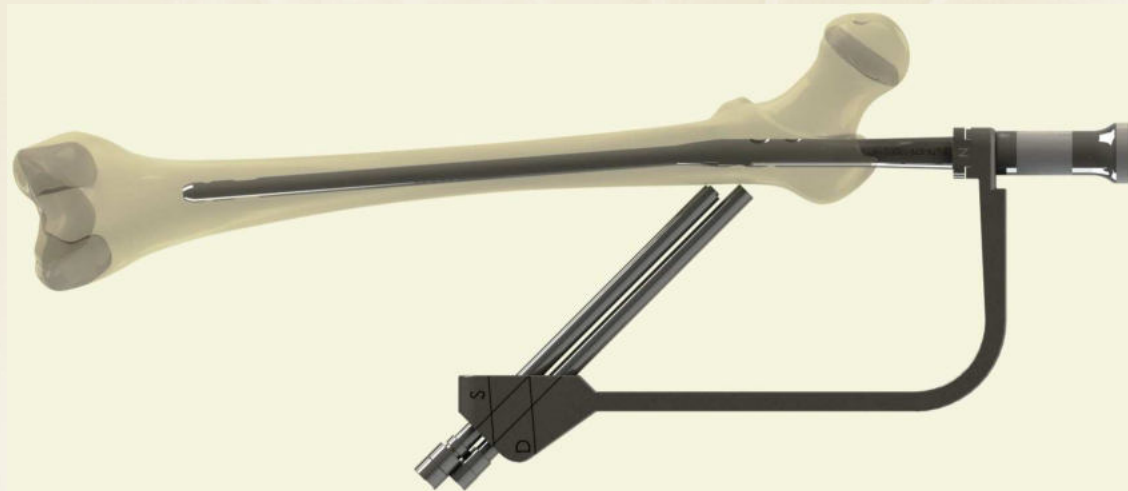


Insertion of the Intramedullary nail

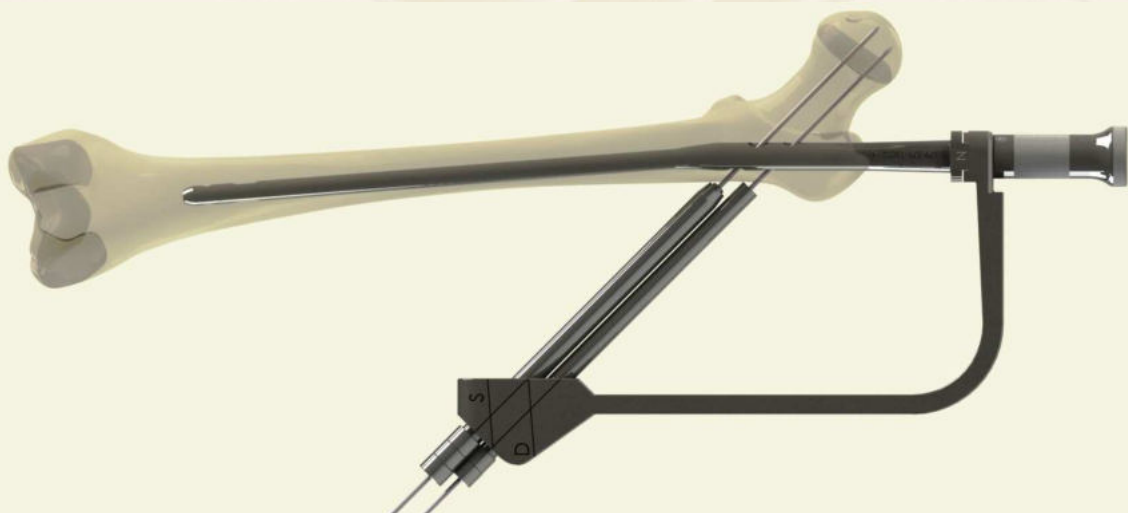
- Make a little incision proximally to the Trochanter Major, and then advance bluntly until the tip of Trochanter Major is reached. Due to the bend of the pertrochanter nail, the intramedullary canal should be opened from the trochanter tip side, either by using a sharp awl directly, or by using a drill first and later using a sharp awl to widen the opening.
- It is advisable to check how the thickness of the selected nail compares to the size of the intramedullary canal, prior to the insertion. Based on that, it can be decided whether to carry out the intramedullary reaming or not.
- After that carefully, while holding the nail near the targeting arm, it is introduced into the canal by continuously rotating it few degrees up and down. If necessary, apply few mild strokes with the hammer on the driver handle.

Insertion of the locking bone screws

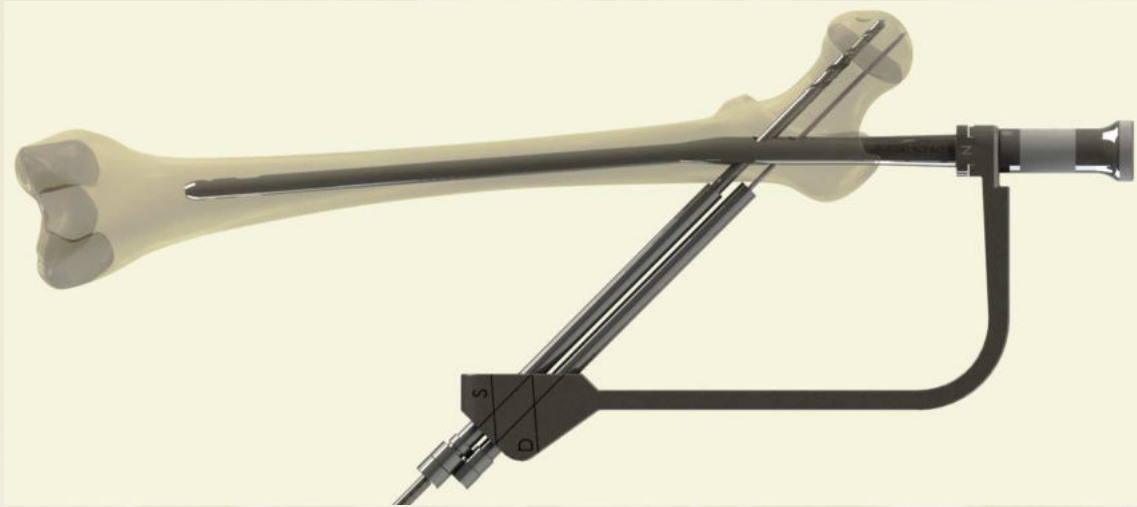
- Two oblique holes can be found on the nail's proximal side, of which the distal one is used for the insertion of the 8 mm dia. pertrochanter screw, while the proximal hole is for the insertion of the 6.5 mm dia. anti-rotational screw.
- First, prepare the place for the 8 mm pertrochanter screw. Screw the wire guide into the drill guide, and then the drill guide into the guide tube.
- Push the guide tube (with the wire guide and drill guides till inside) into the distal oblique hole of the targeting arm - and continue all the way -making a little incision in the skin- until reaching the cortex.



- Next, connect the K-wire to the drilling machine and drive it through the wire guide into the femoral neck until it reaches the subchondreal bone. To drill one wire for the pertrochanter screw, and one wire for the anti-rotation screw.



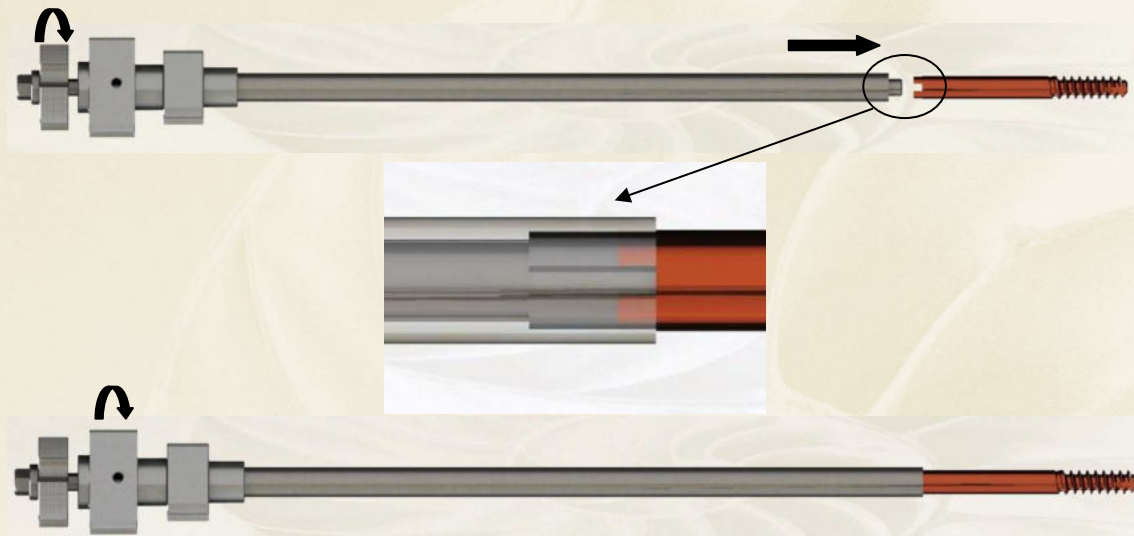
- Prepare the place for the 8mm dia. screw using the 6.5mm stepped reamer. (694-394-65400) Use the necessary guide tube.



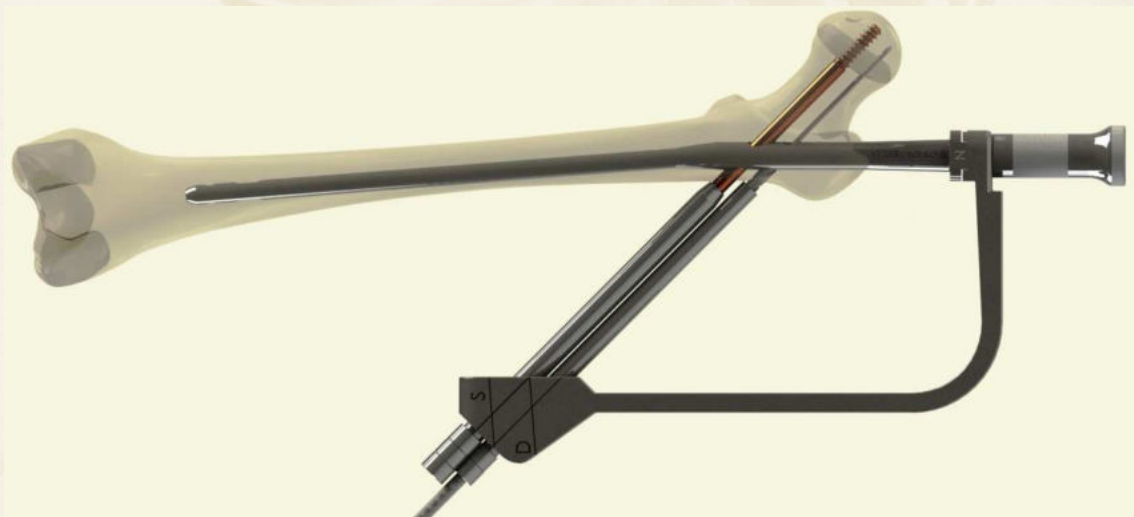
- In the case of the 8mm dia. petrochanter screw, the screw length can be determined using the scale of the stepped reamer.



After length measurement, insert the \varnothing 8 mm necessary length pertrochanter screw in the compression wrench, and fixed with the first nut. Rotate the screw into the hole with second nut. If necessary, tightened with hexa wrench on the first nut end. (This is the interfragmentally compression)



- After that remove the Compression wrench, drill guide, guide tube and prepare the place for the 6,5 mm dia. anti-rotational screw. Drill through the wire d = 6.5 mm drill hole of the lateral cortex of the nails. (Use the necessary guide tube). The screw length can be determined using the scale of the drill. (the same way as before)



Insert the screw of the right length.



- Both, the 8 mm pertrochanter screw and the 6,5 mm anti-rotational screws are self-tapping.
- In the final step, the insertion of the distal locking bone screws takes place.
- On the distal side of the BSP Pertrochanter nail there is one dynamic hole (for which the corresponding hole on the targeting arm is marked with letter D) and one static hole (corresponding hole on the targeting arm marked with letter S). Both holes can be locked by 5mm dia. locking bone screws.

- Push the guide tube (together with drill bushing) through the selected hole on the targeting arm, making a little skin incision, all the way until it reaches the femoral cortex, and drill through the bone.



- With the help of a screw depth gauge determine the length of the 5 mm dia. locking bone screw.



- After removing the drill bushing, insert the locking bone screw through the guide tube.

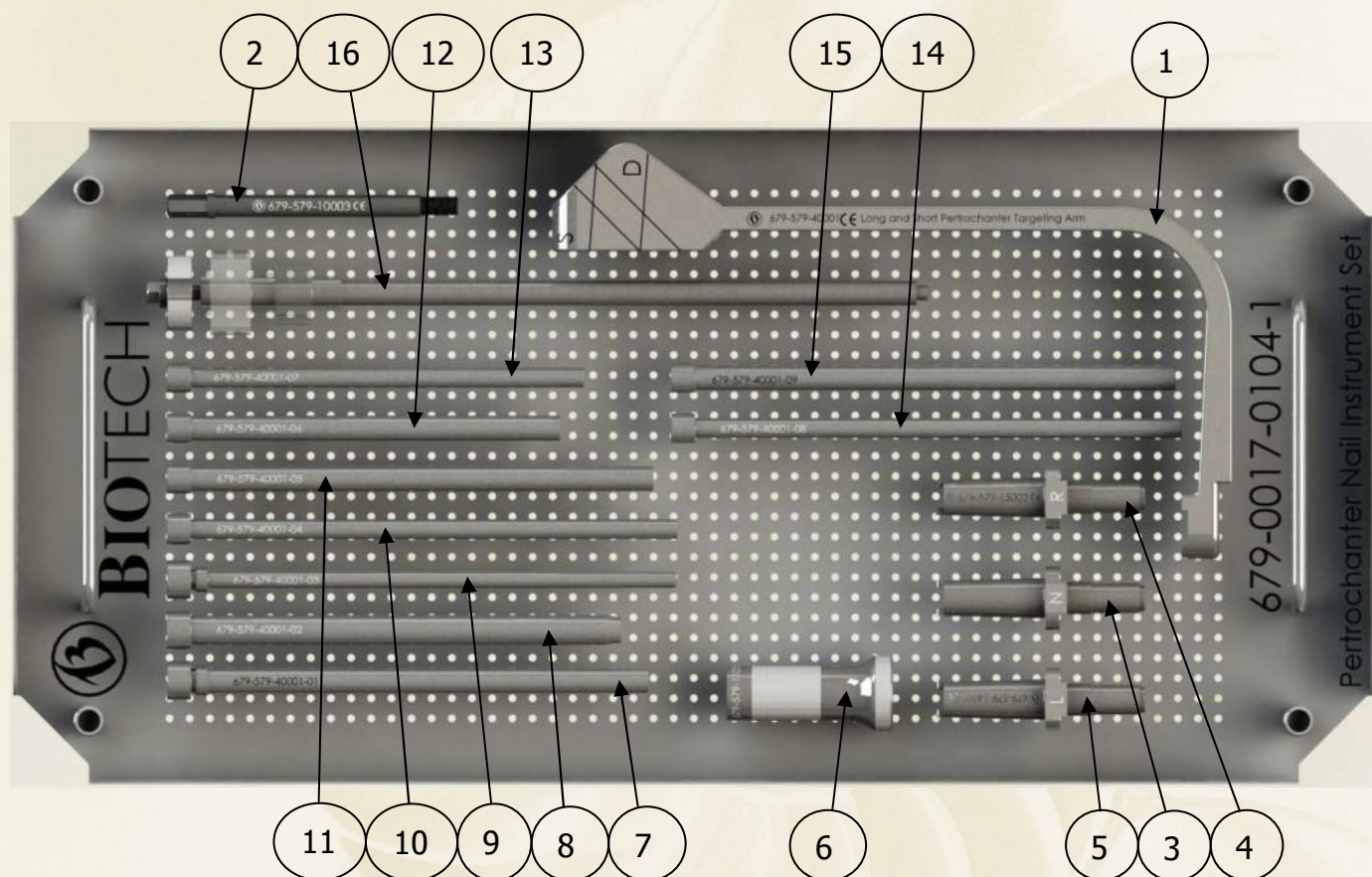


- Finally, close the end of the intramedullary nail using a nail end-cap.
- The targeting device can be dismantled using an 8mm wrench (with cardan joint). By loosening the driver handle the whole targeting unit can come off the nail effortlessly.

Techniques for the removal of the intramedullary nails

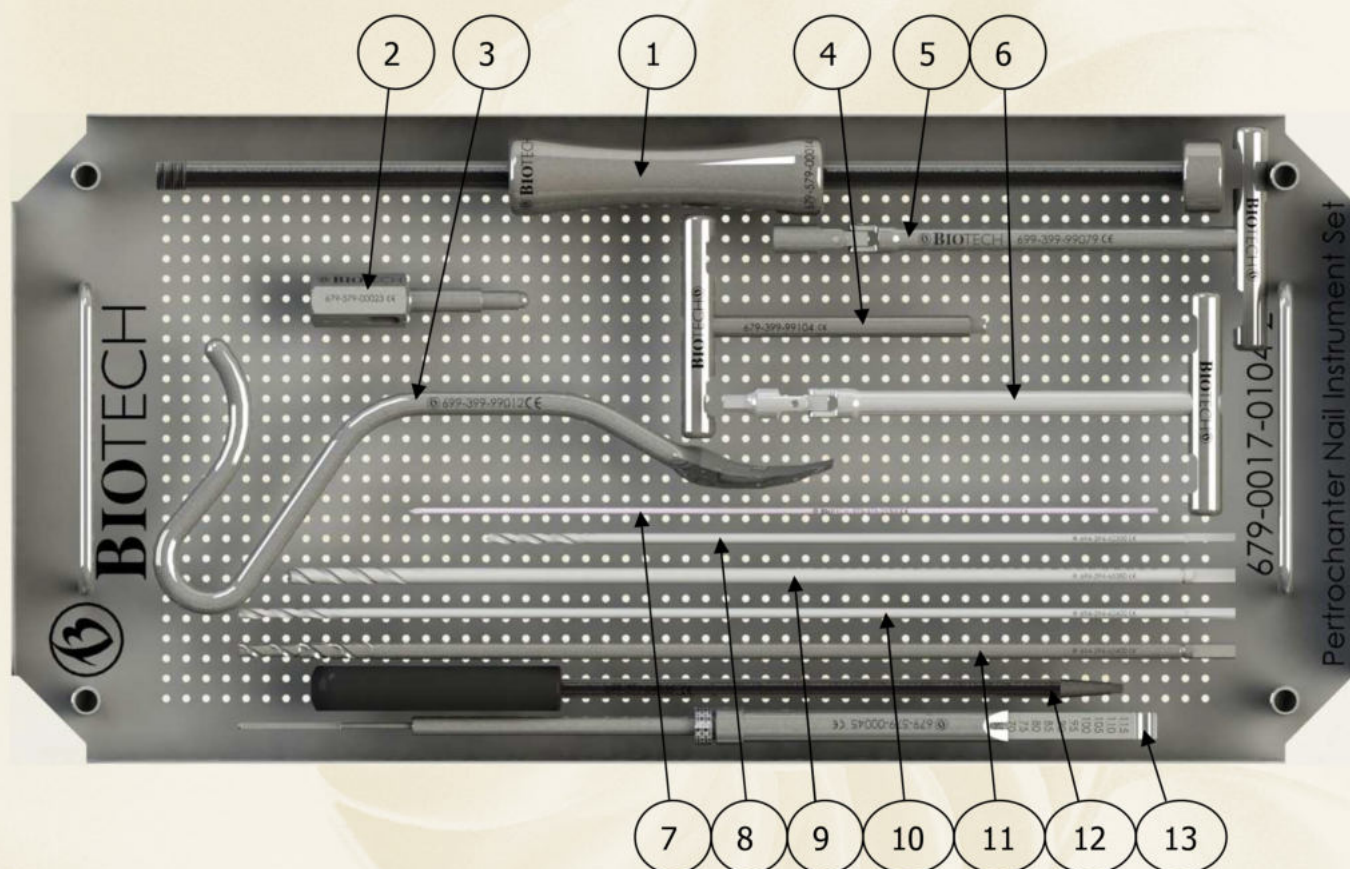
- For the removal of previously inserted intramedullary nail, first open up the head of the nail, and then remove the nail closing plug and all of the locking bone screws.
- Connect the extractor adapter to the nail.
- The nail hammer extractor -with the help of its threads - can be screwed into the extractor adapter. To prevent damaging of the threads, the connection should be tightly secured between the adapter and the hammer extractor's rod.
- Finally, by moving the hammer extractor the nail can be pulled out.

BSP-Biotech Short Petrochanter Nailing instrument set 679-0017-0104-1



Biotech Code	Description	Pcs/Set
1. 679-579-40001.....	Petrochanter Targeting Arm	1
2. 679-579-10003.....	Driver Bolt.....	1
3. 679-579-13002.....	Driver Bushing N.....	1
4. 679-579-15002.....	Driver Bushing R.....	1
5. 679-579-14002.....	Driver Bushing L	1
6. 679-579-11055.....	Nail Impactor.....	1
7. 679-579-40001-01....	Drill Guide Ø6,5/5,2	1
8. 679-579-40001-02....	Drill Guide Ø12	1
9. 679-579-40001-03....	Wire Guide	1
10. 679-579-40001-04....	Drill Guide Ø8/4,5	1
11. 679-579-40001-05....	Guide Tube Ø10/8	1
12. 679-579-40001-06....	Guide Tube Ø10	1
13. 679-579-40001-07....	Guide Tube Ø8/4,5	1
14. 679-579-40001-08....	Wire Guide Ø6,5mm.....	1
15. 679-579-40001-09....	Tube for Ø6.5 Short Drill	1
16. 679-579-40003.....	Compression Wrench	1

BSP-Biotech Short Pertrochanter Nailing instrument set 679-0017-0104-2



Biotech Code	Description	Pcs/Set
1. 679-579-00014.....	Hammer Extractor.....	1
2. 679-579-00023.....	Extractor Adapter.....	1
3. 699-399-99012.....	Awl.....	1
4. 679-399-99104.....	T Wrench Out Hexa 6 mm.....	1
5. 699-399-99079.....	T Wrench In Hexa 8mm With Cardan.....	1
6. 699-399-99103.....	T Wrench Out Hexa 6mm With Cardan.....	1
7. 975-375-25350.....	Kirschner Wire Ø2,4mm L=350mm.....	3
8. 694-394-42300.....	Drill Ø4,2x250.....	2
9. 694-394-65380.....	Drill Ø6,5x380.....	1
10. 694-394-42400.....	Drill Ø4,2x400.....	2
11. 694-394-65400.....	Stepped Reamer Ø6,5xØ5,2x400.....	2
12. 699-399-04535.....	Screwdriver Hexa 3,5mm.....	1
13. 679-579-00045.....	Screw depth gauge.....	1



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