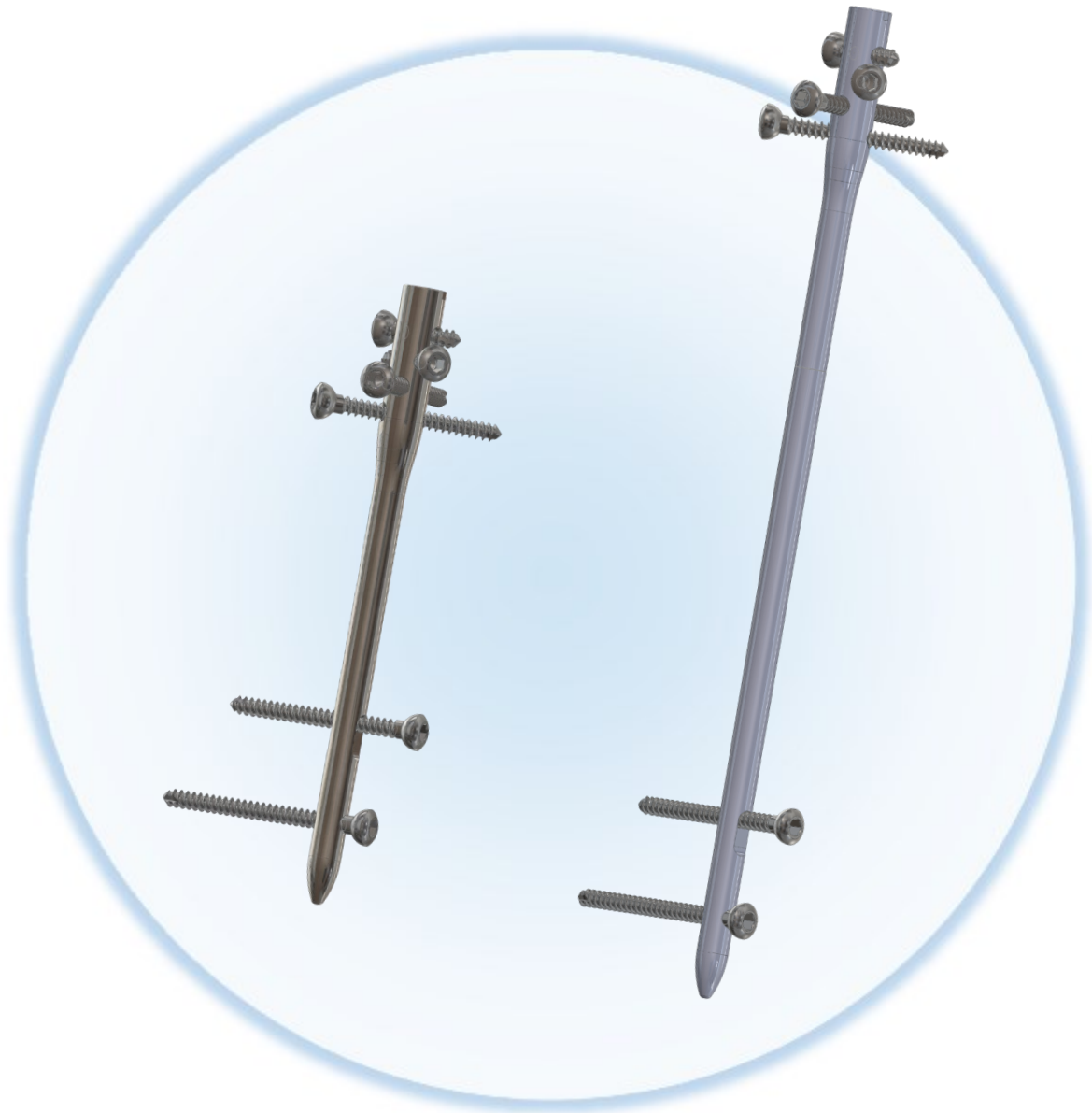




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**ARAMIS-T Trauma shoulder system**

Trauma humeral nail —Surgical Technique

# Humeral nail ARAMIS-T for traumatology

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### Humeral nail ARAMIS-T

The humeral nail ARAMIS-T for traumatology allows to treat effectively the fractures with 2, 3 ou 4 fragments from the upper extremity of the humerus and fractures of the diaphysis.

Then, two versions exist :

- Short nail for the proximal fractures .
- Long nail for the fractures of the diaphysis.

The choice between short nail and long nail can be decided intra operatively.

**The instrument set of the prosthesis for traumatology ARAMIS-T is the same as for the humeral nail.**

### An ergonomic instrument set

The instrument set, ergonomic and compact (only one box of ancillary), allows to position accurately the implant. It allows to use indifferently the usual superolateral approach, the setting up through percutaneous or bilboquet procedure.

### Anatomical reconstruction

Its straight shape and its low diameter allows its implantation procedure through the rotator cuff. The presence of holes in the metaphysis enable a freestanding locking for a lasting anatomical reconstruction.

### Note : Annotation in blue are technical indications

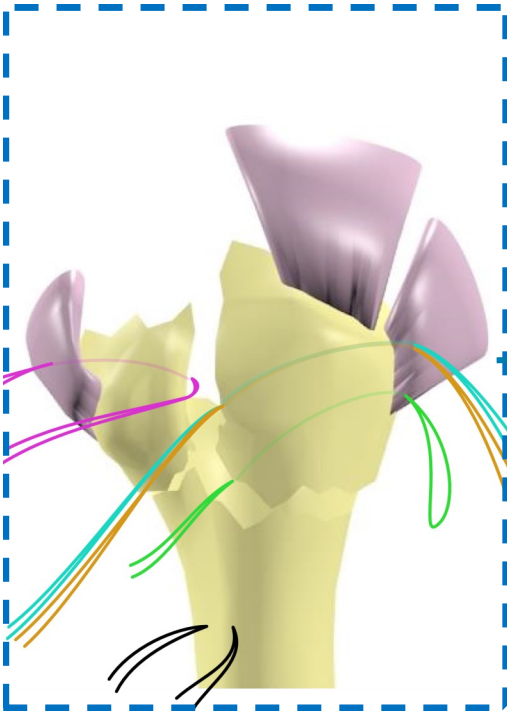
The manufacturer of this prosthesis, doesn't practice medicine and can't recommend neither this surgical technique nor other techniques in specific cases.

The surgeon has to define the appropriate technique for each patient.

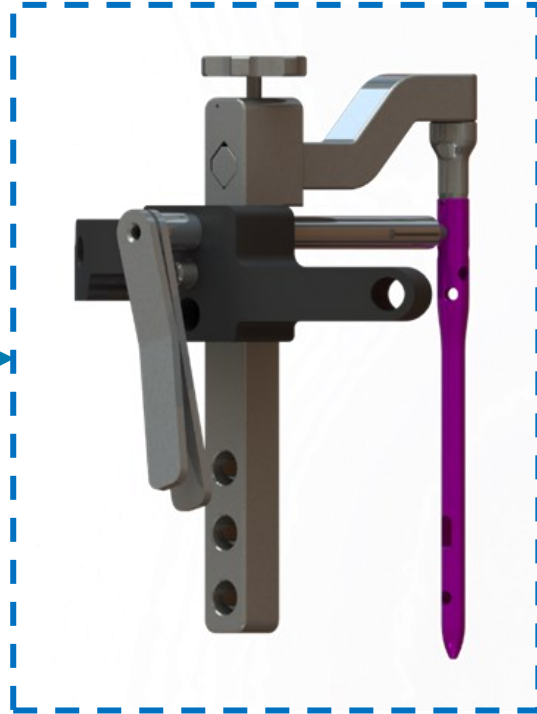
Read carefully the instruction for use.

# Synopsis traumatic version

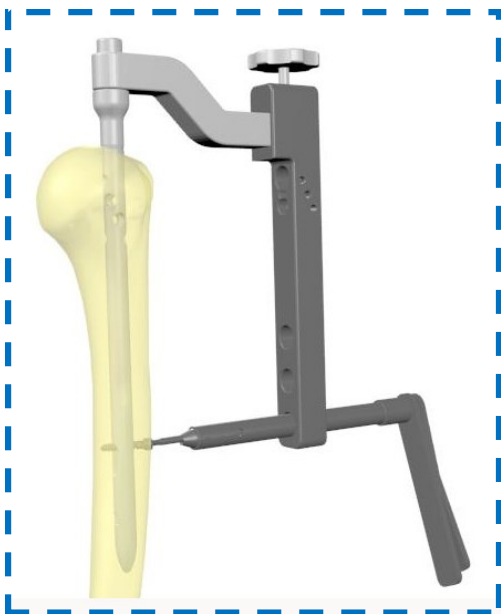
## HUMERAL NAIL



Tuberosities  
identification



Nail setting up and proximal  
interlocking



Distal interlocking

# Generalities

## Indications

- 3 or 4 part displaced fractures, without dislocation of the humeral head
- Fractures on the diaphysis

## Pre-operative planning

- Use templates to define component size and positioning
- Use a contralateral shoulder imaging if needed



Fig. 1

## Patient Installation

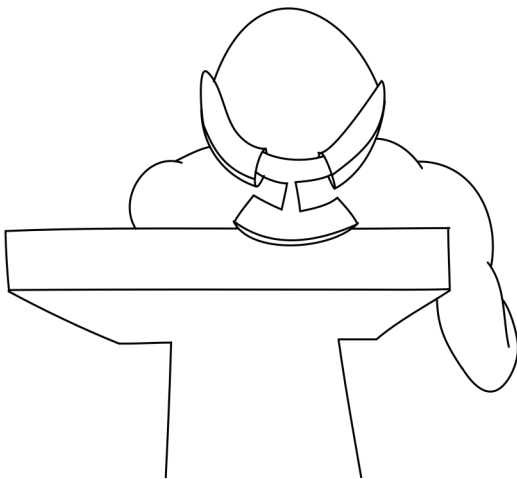


Fig. 2

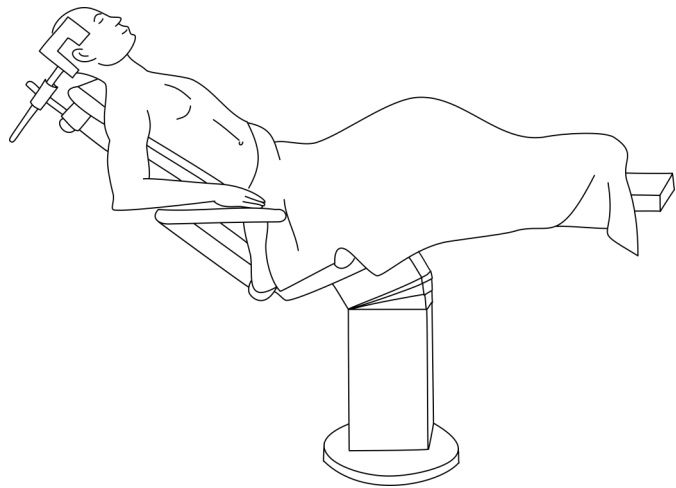


Fig. 3

The patient shall be lateralized enough on the table :

- To release the posterior shoulder face
- And to put the arm retropulsion

The image intensifier is positioned in order to realize intraoperative pictures.

# Surgical approaches



## Percutaneous

In the case of 2 or 3 part extraarticular fractures, and in the case of obtaining a prior reduction through external manipulation or through percutaneous manipulation, the nail setting up can be performed through percutaneous procedure.

## Usual superolateral approach

The incision begins on the anterolateral extremity of the acromion, then follows the direction of its anterior border, and downward 4 to 5 cm. Release the deltoid at the anterior edge of the acromion.

Extend the muscle incision down along the axis of the muscle fibers. The approach is direct on the different parts.

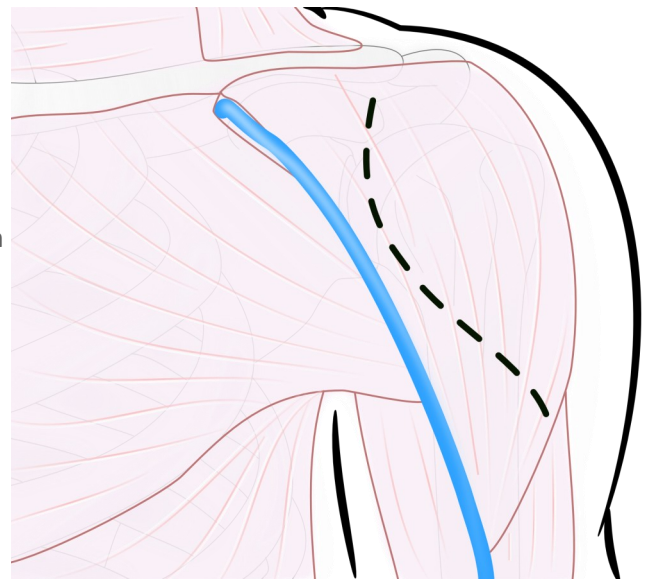


Fig. 4

## « Bilboquet technique »

The usual superoexternal approach is performed.

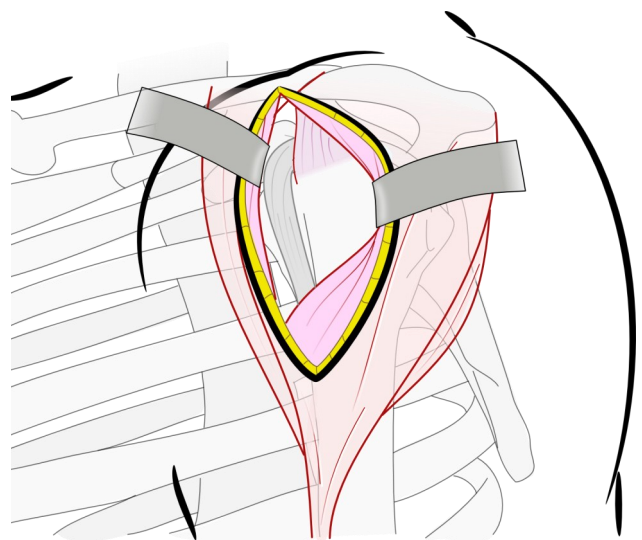


Fig. 5

## Exposure

In order to visualize the deep-structure, remove the haematoma.

Identify the two tuberosities (lesser tubercle inside and greater tubercle up and out). Suture loops will be set at the tendon-to-bone attachment, to the greater tubercle level and to the lesser tubercle level.



Fig. 6

# Humeral preparation

## Introduction

- The reduction of the fragments is carried out using a spatula and, if needed, external manipulations. In some cases, if a cephalo-tuberosal hinge is missing, it may be necessary to temporarily stabilize the humeral head with a temporary pin which will be removed at the end of the operation.
- The point of introduction is at the top of the articular surface from the humeral head. Trepphine with a square point and calibrate the humeral diaphysis using reamers (7,8,9 mm)

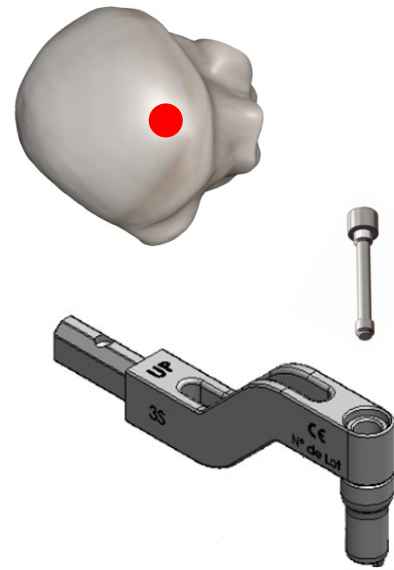


Fig. 7

## Choice of the correct size of the nail

- Calibration by increasing the diameter of the reamer (Fig. 8).
- The size of the last reamer defines the maximal size of the nail.
- Unite the nail on the nail connector, then introduce the nail in the humeral diaphysis.



Fig. 8

- **Set the proximal targeting arch up on the nail connector.**

# Humeral nail positioning

Introduce the nail into the humerus with the nail connector (Fig. 9).

## Humeral height adjustment

- The nail should be lowered by several millimeters below the top of the humeral head.  
A control with an image intensifier is advised.

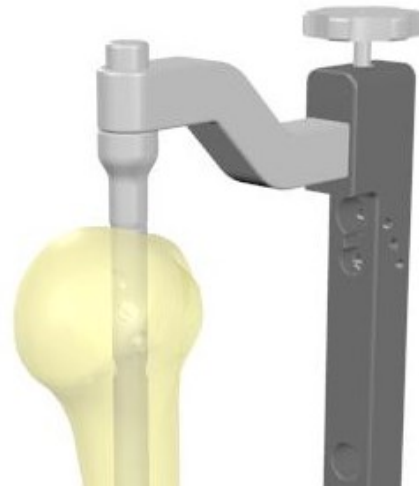


Fig. 9

## Setting up the humeral nail

- The targeting arch is fixed using the push-button (Fig.10)

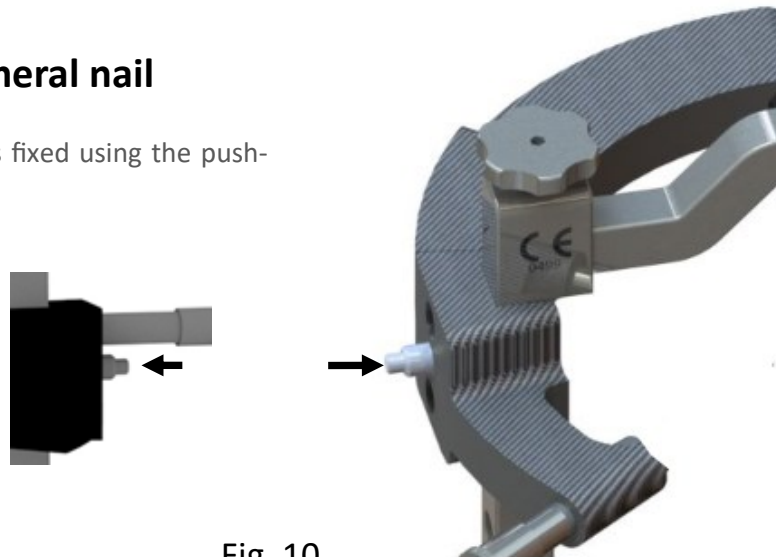


Fig. 10

- Once the proximal targeting arch is set up, place the guard tube of soft tissues and perform the drilling with the graduated drill  $\varnothing 3.2\text{mm}$  (Fig.11).



Fig. 11

# Proximal locking

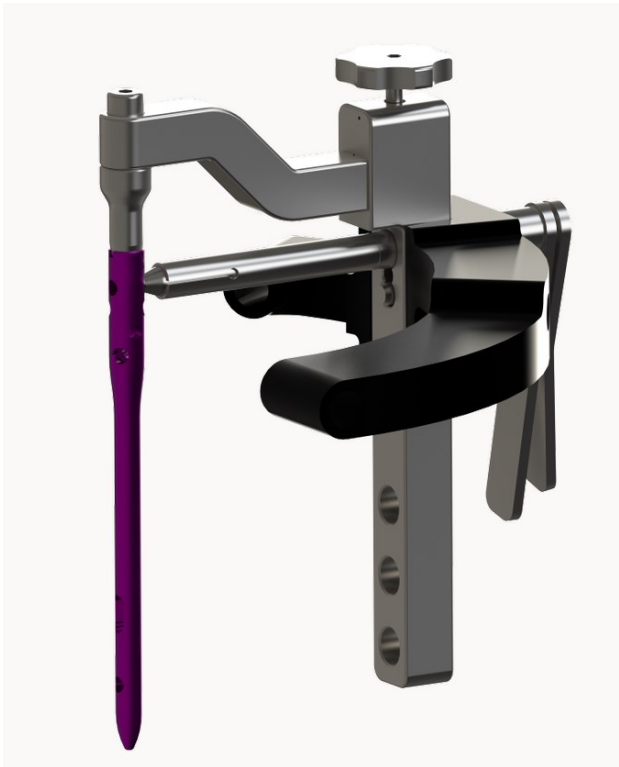


Fig. 12

## Proximal locking of the humeral nail

The proximal locking is performed with the targeting bow (Fig.12).

2 medio-lateral screws allow to stabilize the greater tubercle and the humeral head.

An appropriate positioning of the tuberosities helps to help for consolidation.

The drill is graduated, which gives the appropriate length of the screw (Fig.13).

Screws are set up without tapping.

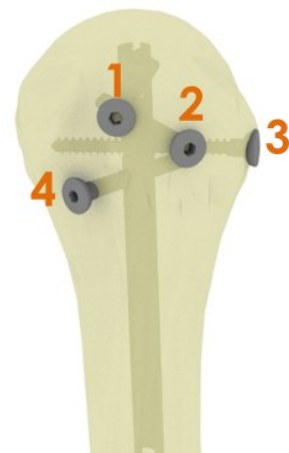
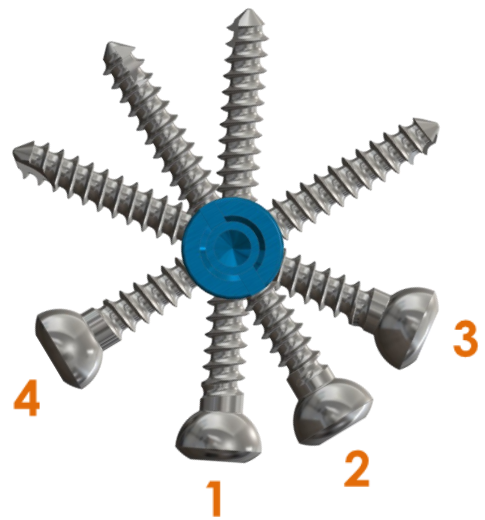
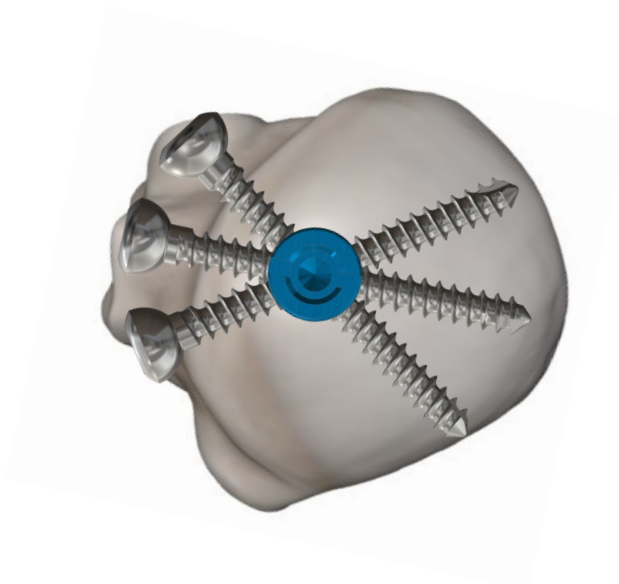


Fig. 13



# Distal locking

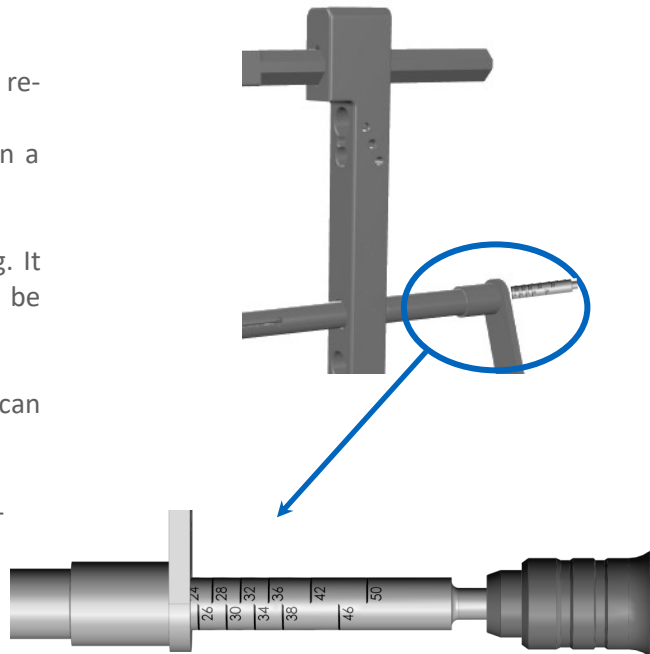
## Distal locking of the humeral nail

In this step, the proximal targeting bow can be removed, to leave only the distal k-wire guide. 2 medio-lateral screws enable to lock the nail in a distal way.

The intermediate hole enable a dynamic locking. It is advised that this setting with this hole should be used.

If a static locking is wished, then 2 distal screws can be set (Fig.14).

The drill is graduated, which gives the appropriate length of the screw (Fig.13).



**Screw length = L+4mm**

Fig. 13



Fig. 14



**Intermediate locking**

Fig. 15

# Instrument set references

<b>ETA M032</b>	Graduated drill $\varnothing 3.2$
<b>ETA AD01</b>	Stem adaptor for nail ancillary
<b>ETA RC00</b>	Nail connector
<b>ETA VF06</b>	Attachment screw
<b>ETA RT00</b>	Stem connector
<b>ETA VC04</b>	M4 short screw
<b>ETA SV00</b>	Communal part
<b>ETA T035</b>	Screwdriver hexa. 3.5mm
<b>ETA T001</b>	Guard tube
<b>ETA GB20</b>	K-wire guide
<b>ETA G0M0</b>	Round guide
<b>ETA IMPT</b>	Stem impactor
<b>ETA VS06</b>	Captive M6 screw
<b>ETA AV00</b>	Targeting bow



# Implant references

## SHORT HUMERAL NAIL

- ETI 1C07** Humeral nail L135 mm  $\varnothing$ 7mm
- ETI 1C08** Humeral nail L140 mm  $\varnothing$ 8mm
- ETI 1C09** Humeral nail L145mm  $\varnothing$ 9mm

## LONG HUMERAL NAIL

- ETI 0C07** Humeral nail L220mm  $\varnothing$ 7mm - long
- ETI 0C08** Humeral nail L225mm  $\varnothing$ 8mm - long
- ETI 0C09** Humeral nail L230mm  $\varnothing$ 9mm - long

## SCREW

- ETI V420** Locking screw  $\varnothing$ 4 L20mm / Cementless
- ETI V422** Locking screw  $\varnothing$ 4 L22mm / Cementless
- ETI V424** Locking screw  $\varnothing$ 4 L24mm / Cementless
- ETI V426** Locking screw  $\varnothing$ 4 L26mm / Cementless
- ETI V428** Locking screw  $\varnothing$ 4 L28mm / Cementless
- ETI V430** Locking screw  $\varnothing$ 4 L30mm / Cementless
- ETI V432** Locking screw  $\varnothing$ 4 L32mm / Cementless
- ETI V434** Locking screw  $\varnothing$ 4 L34mm / Cementless
- ETI V436** Locking screw  $\varnothing$ 4 L36mm / Cementless
- ETI V438** Locking screw  $\varnothing$ 4 L38mm / Cementless
- ETI V442** Locking screw  $\varnothing$ 4 L42mm / Cementless
- ETI V446** Locking screw  $\varnothing$ 4 L46mm / Cementless
- ETI V450** Locking screw  $\varnothing$ 4 L50mm / Cementless

# 3S

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