

SOCORE

MISS



Surgical Procedure



NovaSpine

Table of Contents

Instruments Range	4
Indications	6
Site Preparation	6
Muscles Dilatation	7
Screw Setting	8
Screw Insertion	9
Rod Preparation and Insertion	9
Compression-Distraction	13
Final Tightening	15
Persuader Removal	15

Instruments Range



Cannulated Straight Handle
SIMDC159



Straight Ratchet Handle
SIMR153



Cannulated T handle
SIMTC178



Cannulated Ratchet T Handle
SIMTR186



Dynamometric T Handle
SIDK150



Jamshidi
SIJMI191



Wire
SIB225



Wire Holder
SIWH193



Dilators
S1 - SID201
S2 - SID202
S3 - SID203
S4 - SID204
S5 - SID205



Cannulated Taps
Ø5 - SITCA182
Ø6 - SITCB183
Ø7 - SITCC184



Cannulated Polyaxial Screwdriver
SITCL196



Screwdriver Cylinder
SICL197



Standard Persuader
SIPMI188



Tightening Screwdriver
SITS123



Lateral Opening Persuader
SIPMO189



Locking Screw Holder + Small T Handle
SIPVB119 + SIMPVB



Rod Holder
SIRHMI190



Counter Torque
SIMA199



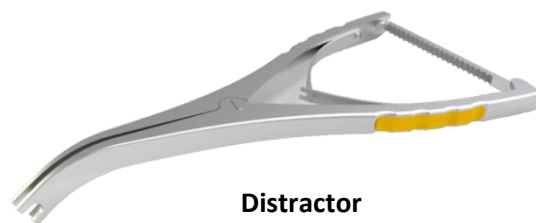
Persuader Screwdriver
SISMI192



Compressor
SIPC210



Compression-Distractor Device
SIBCD230



Distractor
SIPD121



Persuader Releaser
SIEB200



Long Vertebroplasty Tip
SIEVL299



Vertebroplasty Tip Pusher
SIEVP273

Indications

The SOCORE MISS System is indicated for spinal fusion procedures for skeletally mature patients with degenerative disc diseases, spinal stenosis, fractures and deformities. The SOCORE MISS system is intended for posterior fixation from T1 to S1 in a minimally open or percutaneous approach. The SOCORE fixation system may be supplemented with DIVA inter vertebral Cages.

Site Preparation

The location of pedicles entry points are marked on the skin. A small incision of the skin is made to help the insertion of the Jamshidi.

The Jamshidi is inserted through the incision until reaching the bone contact. An X-Ray is made to check the correct position of the Jamshidi. If the position is suitable push the Jamshidi into the pedicle until the stop (*Figure 1*).

Unscrew and remove the inner part (*Figure 1*).

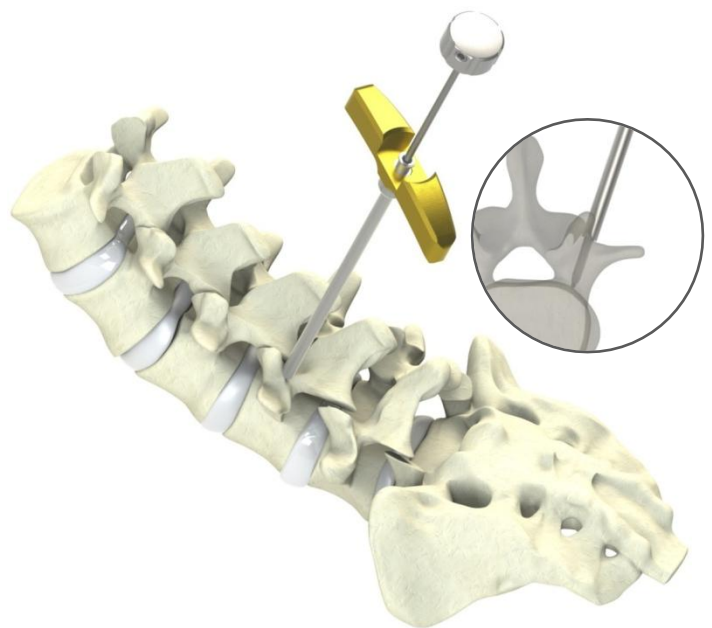


Figure 1

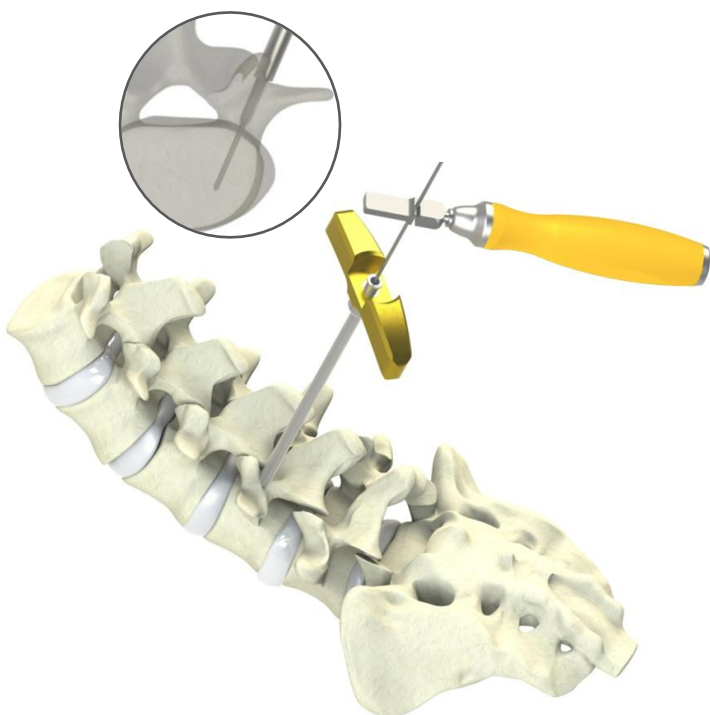


Figure 2

Insert a wire into the wire holder and screw the handle to fix it. Insert then the wire inside the Jamshidi and push it in the bone by hammering on the flat part of the wire holder until reaching the desired depth (*Figure 2*). Remove the wire holder by unscrewing the handle. The Jamshidi may now be removed.

Muscles Dilation

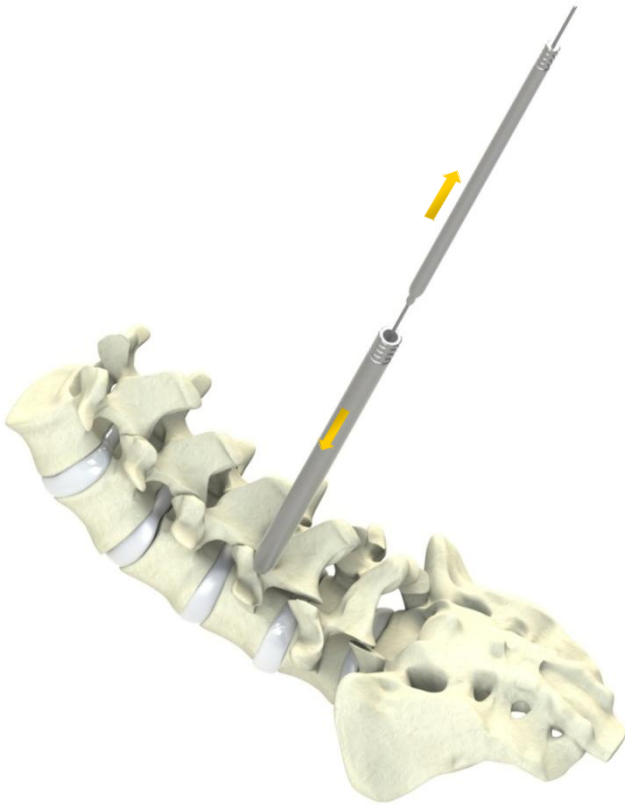


Figure 3

Slide the dilator S.1 over the wire and push it firmly. Dilator S.1 has a tip similar to the Jamshidi tip for an optimal stability. Slide the dilator S.2 over dilator S.1 then remove the dilator S.1 (Figure 3).

Assemble the tap to the handle and slide it over the wire, through S.2 dilator, to prepare the pedicle path up to desired depth (Figure 4). Color-code of the taps allows to select the right size.

Slide Dilators S.3 and S.4 over the dilator S.2 and remove dilators S.2 and S.3 (Figure 5).

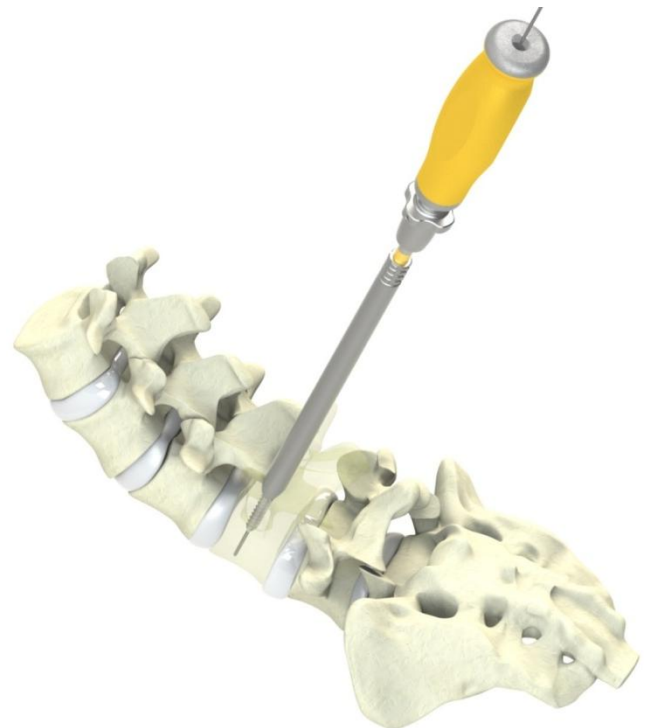


Figure 4

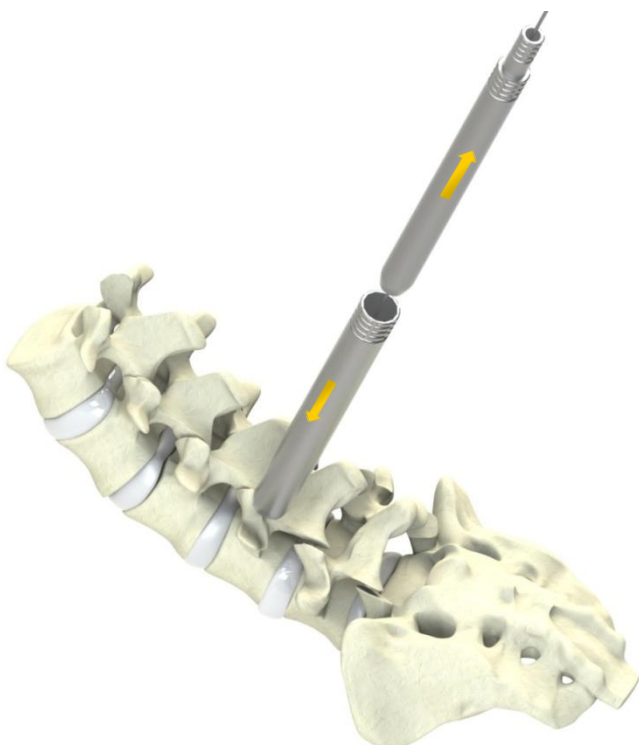


Figure 5

Screw Setting



Figure 6

Assemble the Screw to the Persuader by pushing the Persuader on the Screw head until hearing the click (Figure 6).

It is advised to use a lateral opening Persuader on the rod insertion side to allow the penetration of the Rod Holder into the persuader and ease Rod insertion.

Assemble the Screwdriver with the Cylinder and the standard or ratchet handle (Figure 7a). Insert the Screwdriver inside the Persuader (Figure 7b). Put the tip inside the Screw head and screw the cylinder into the Screw head (Figure 7c).

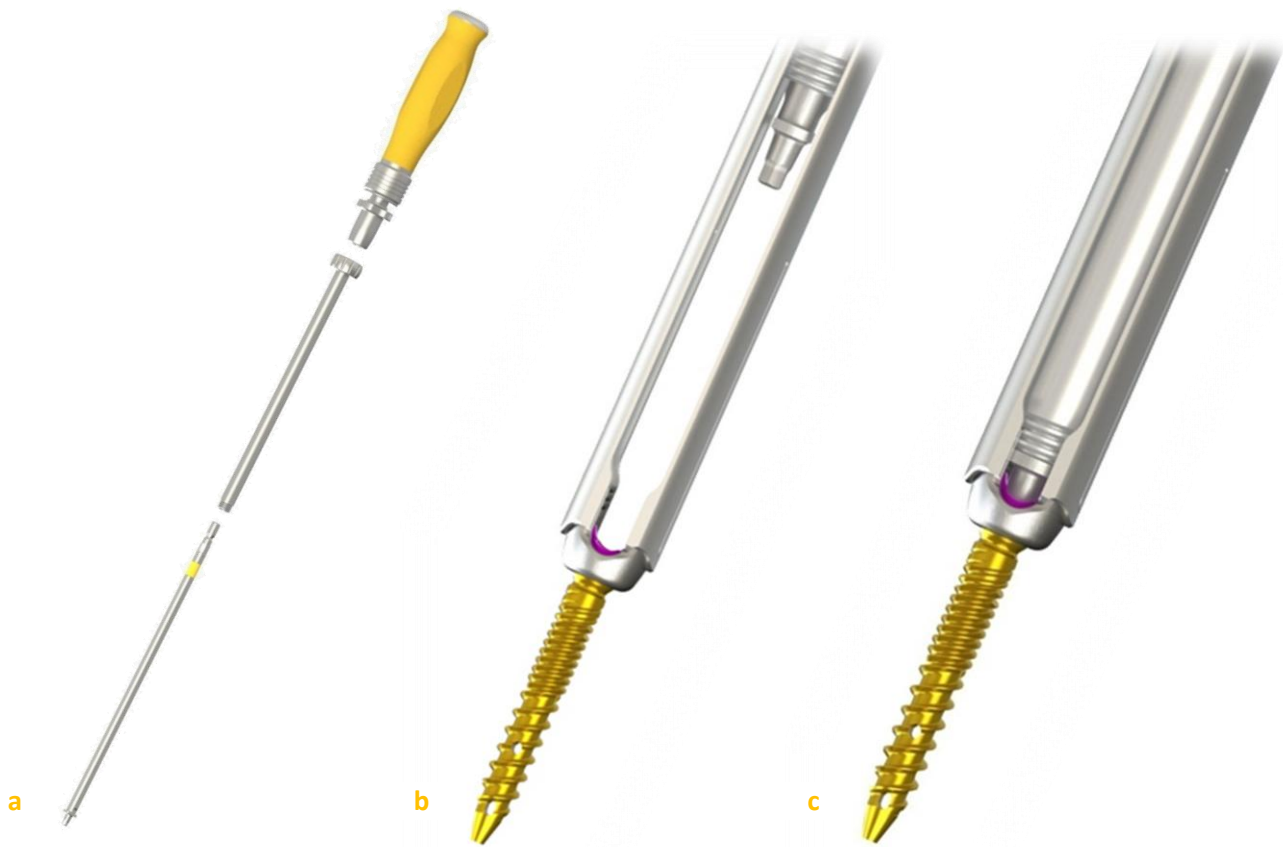


Figure 7

Screw Insertion

Place the screwdriver over the wire and insert the Screw through the dilator S.4 (*Figure 8*). It is highly recommended to screw it until complete insertion of the threading, reaching the edge below the head shown in *Figure 8*. This aims to provide optimal stability and resistance. Remove screwdriver, dilator and wire. The same procedure must be applied for every screw of the system.

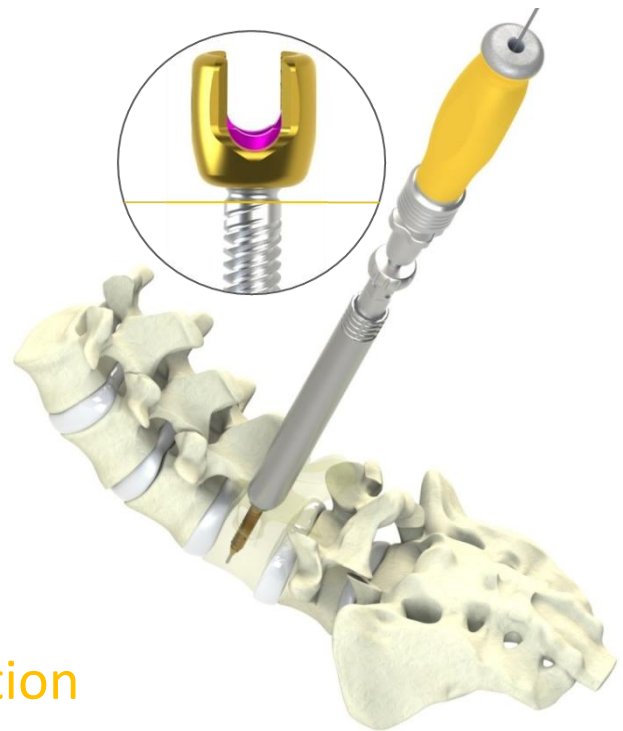


Figure 8

Rod Preparation and Insertion

Insert the Rod into the Rod Holder and tighten the inner part. During tightening, the click sound means that the rod is secured and cannot be removed without activation of the locker. Tighten firmly the inner part to lock the Rod in desired position. The position of the Rod can be changed by unscrewing slightly the inner part (*Figure 9*) then rescrewing to fix it in new position. Rod moves only in monoaxial direction. The locker shown in *Figure 10a* secures the Rod and avoids its loosening. To remove the Rod after the final tightening, push the locker back while unscrewing the inner part (*Figure 10b*).

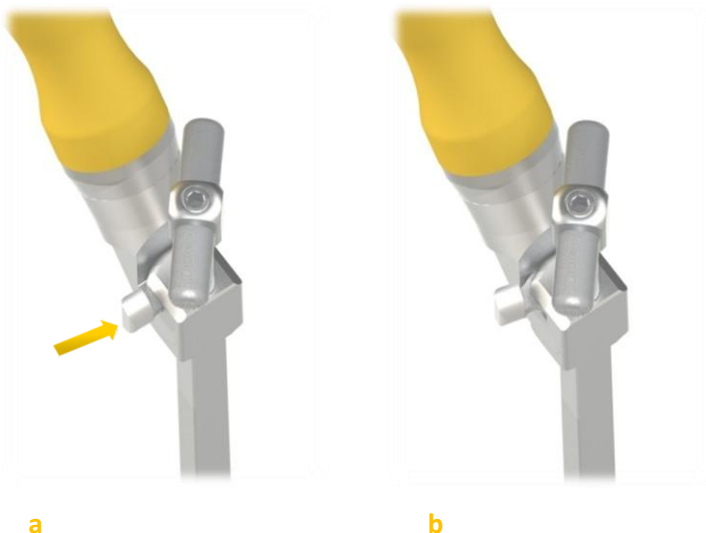


Figure 10



Figure 9

Rod Insertion

Mini Open technique

Set the rod in horizontal position (*Figure 11*). Tighten firmly the inner part, and insert the rod through the persuaders slots.

Push the rod down with the holder until fitting the heads of the screws.

Insert the external cylinders of the persuaders and screw them down to achieve the reduction of the rod inside the screws.



Figure 11

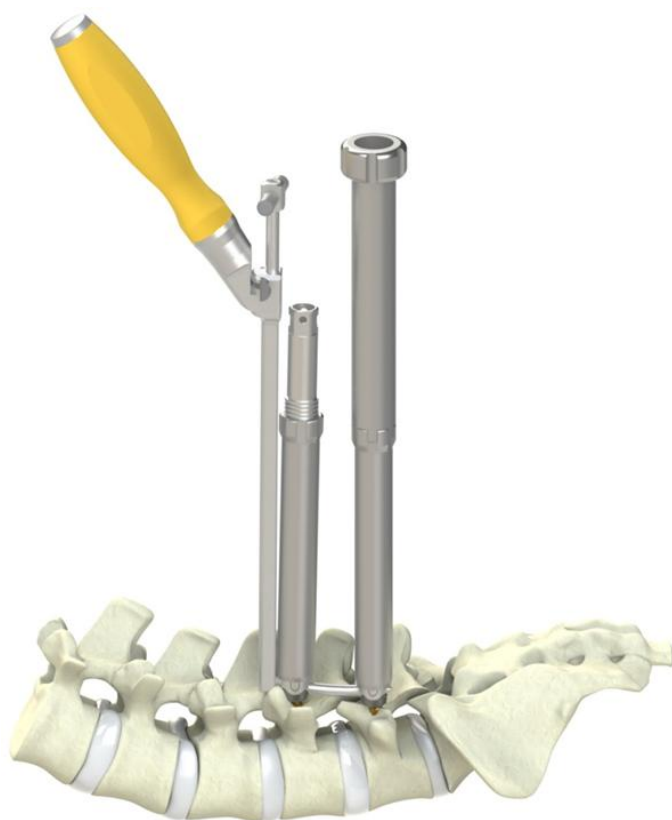


Figure 12

Use the Persuader screwdriver to ease the complete insertion of external cylinders and to put the rod in final position into the bottom of the screw head (*Figure 12*).

Rod Insertion

Percutaneous technique - option 1

Set the rod in vertical position shown in *Figure 13* and insert it until contact with the first persuader or inside the first persuader in case of lateral opening.

When the tip of the rod arrives to the head screws area, unscrew slightly the inner part and push down the rod holder to put the Rod in horizontal position (*Figure 14*).



Figure 13



Figure 14

Insert the external cylinders of the persuaders and screw them down to achieve the reduction of the rod inside the screws.

Use the Persuader screwdriver to ease the complete insertion of external cylinders and to put the rod in final position into the bottom of the screw head (*Figure 12*).

Rod Insertion

Percutaneous technique - option 2

An additional incision is required behind the screws to allow the insertion of the rod .

Set the rod in the position shown in *Figure 15* and insert it through the muscles until passing through the slot of the first persuader. Twist the Persuader to make sure that the rod is inside the slot.

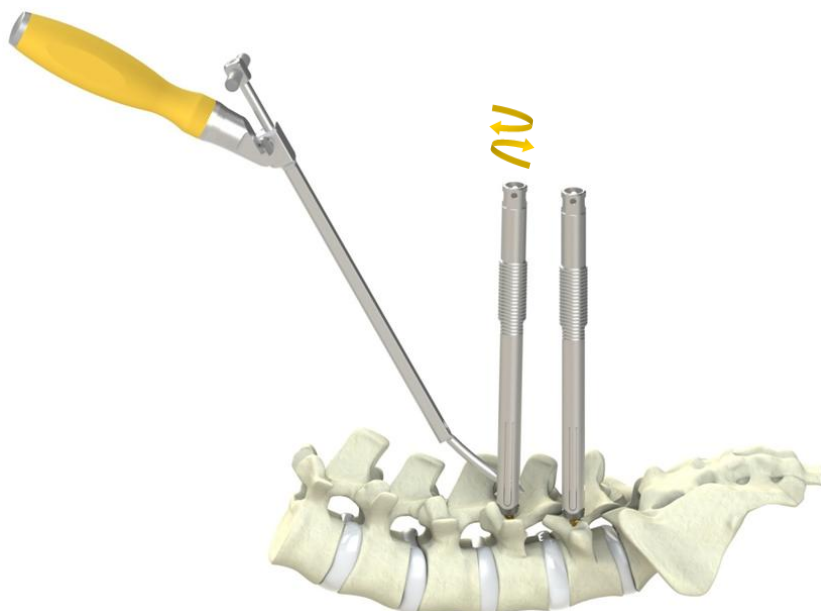


Figure 15

Unscrew slightly the inner part and push the rod holder down and forward in order to put the rod in horizontal position and to insert it into the slots of other persuaders (*Figure 16*).



Figure 16

Use the Persuader screwdriver to ease the complete insertion of external cylinders and to put the rod in final position into the bottom of the screw head (*Figure 17*).

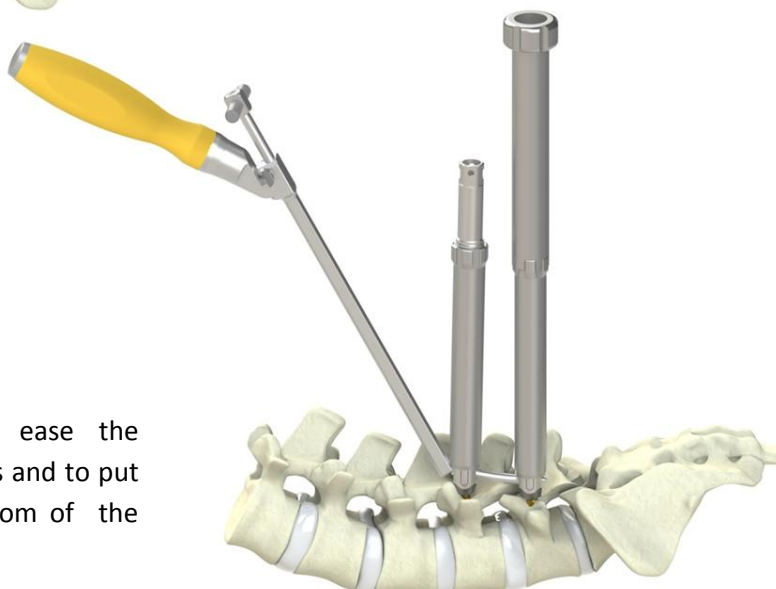


Figure 17

For each technique mentioned above, the following steps are the same.

The Locking Screw is assembled firmly to its holder and inserted through the Persuader (*Figure 18*). It is screwed until touching the rod without tightening.

The same operation is made for each pedicle Screw.



Figure 18

Compression - Distraction

If a correction (compression or distraction) is needed, the Compression-Distraction Device is inserted on the top of persuaders (*Figure 19*) and fixed with the locking knobs. The length between the two tubes can be modified and fixed by screwing and unscrewing the locking knobs. Compression (*Figure 20*) or distraction (*Figures 21*) is performed using the adapted clamp, and the assembly is fixed using the locking screw holder to tighten the Rod.

For compression, the compressor can be positioned around the Rod Holder and the opposite Persuader (*Figure 20*) or around the two Persuaders directly if there is enough space.

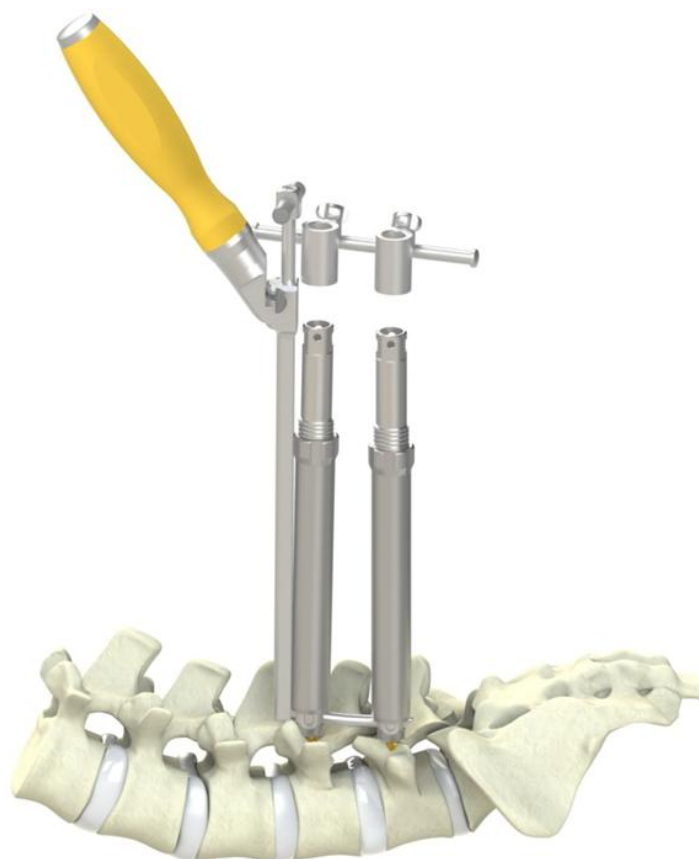


Figure 19

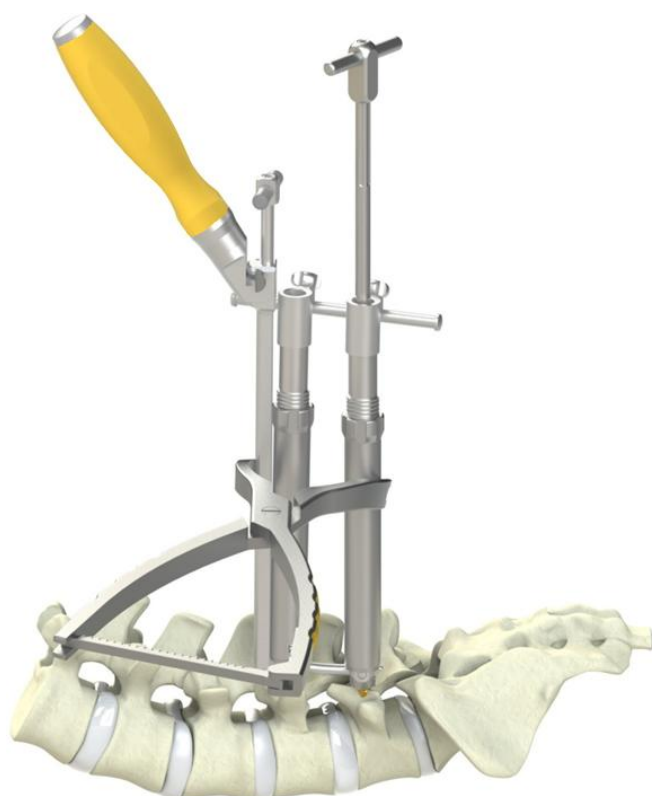


Figure 20



Figure 21

Final Tightening

Set the Counter Torque on the top of the Persuader and insert the tightening screwdriver with the T dynamometric handle inside the Persuader until reaching the locking screw. (*Figure 22*). **The external cylinder of Persuaders must be in place and in contact with the rod.** Make the final tightening until hearing the click of the dynamometric key, then remove the screwdriver and the counter torque.



Figure 22

Persuader Removal

The external cylinder of the Persuader is unscrewed up to 10-15mm from the hexagon limit of the persuader as indicated in *Figure 23*. Insert the Releaser through the Persuader. The tabs of the releaser must hide the lateral holes of the persuader as shown in the zoomed view of *Figure 23*. Screw the inner part of the Releaser and remove both Persuader and Releaser (*Figure 24*). The same steps are followed to remove each Persuader.

The whole procedure above is followed to fix the other side of vertebrae. The final construct is shown in *Figure 25*.

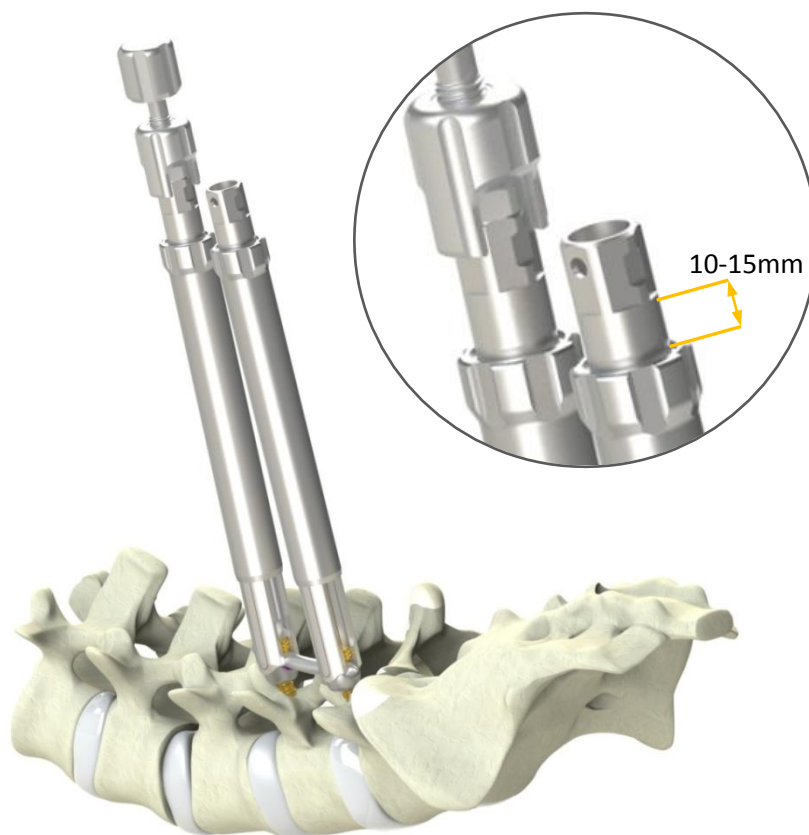


Figure 23

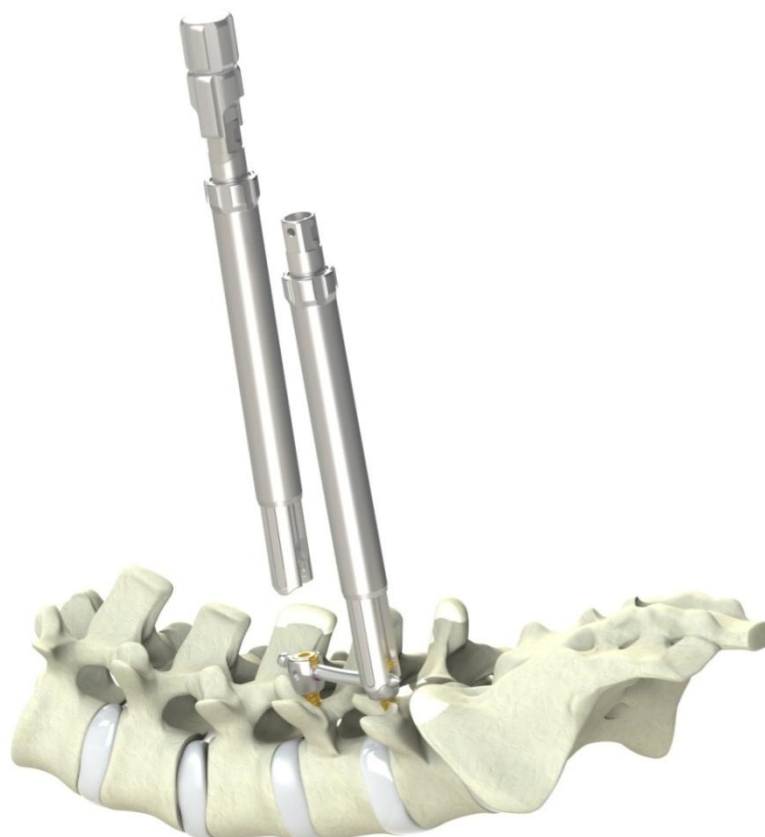


Figure 24



Figure 25

The surgical technique shown is for illustrative purpose only. The actual techniques employed will always depend on surgeons' medical judgment and can differ from one patient to another.



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