



Adaptability



# Java



# Exposure

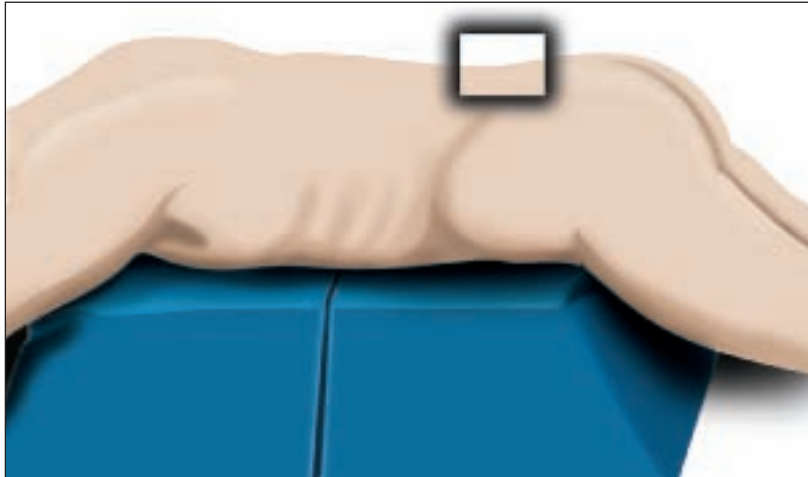


Figure 1

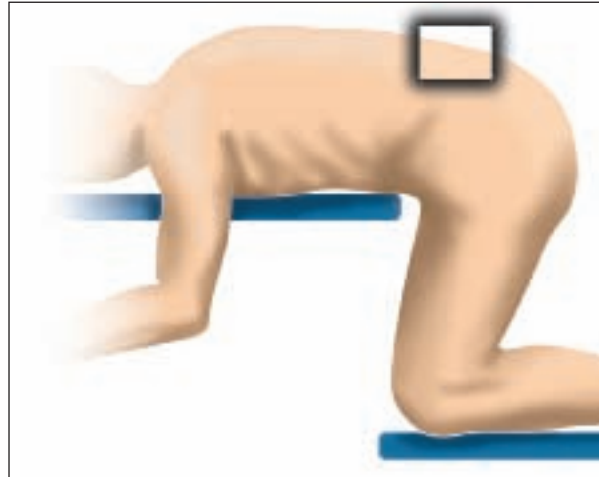


Figure 2



Figure 3

The patient is placed in the ventral decubitus (fig.1) or knee-chest (fig.2) position. Dissection is performed through the subcutaneous tissue to the spinous processes. The muscles are retracted laterally (fig.3).

# Screw Implantation

# Preparation



square awl



curette



Figure 4



Figure 5

The exact position of the pedicle entry point is essential. Proper orientation of the pedicle screw is dependent upon the position of the pilot hole.

Once the entry point of the pedicle screw has been determined, the square awl is used to pierce the bone cortex (fig.4).

The pilot hole is enlarged with the curette so that the screw can be guided through the pedicle into the vertebral body. The degree of screw convergence is determined by the surgeon's technique and the patient's anatomy (fig.5).

# Verification



Figure 6



Figure 7

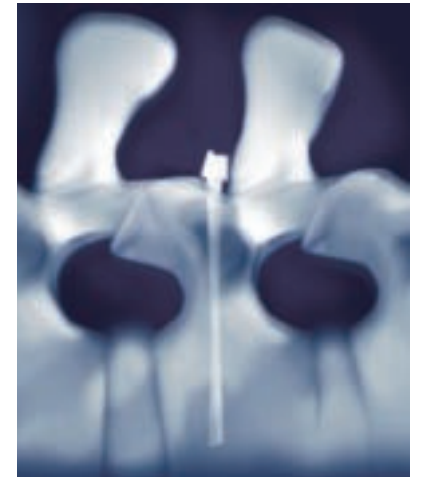


Figure 8

It is recommended to verify the proper orientation and depth of the screw path with the pedicle probe (fig.6). Final verification can be performed with the X-Ray markers (fig.7) and image intensifier (fig.8).

# Installing the screws (polyaxial)



Ratchet handle

TL polyaxial 3.5 mm screwdriver



Figure 9

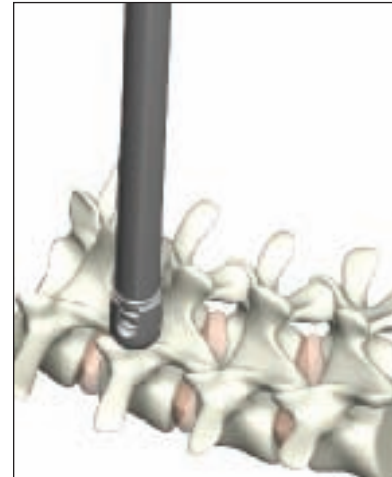


Figure 10



Figure 11

The screw is tightened on the TL polyaxial 3.5 mm screwdriver (fig.9) and inserted in the pedicle (fig.10 & 11). This installation is repeated for all the screws in the construct.

**Warning:** Screws under 5mm are used for thoracic spine only according to patient anatomy.

# Installing the screws (monoaxial)



Ratchet handle

TL monoaxial screwdriver



Figure 12

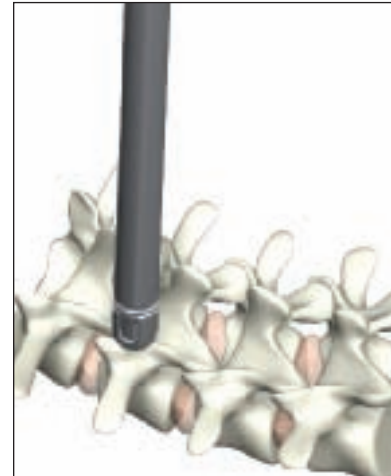


Figure 13



Figure 14

The screw is tightened on the TL monoaxial screwdriver (fig.12) and inserted in the pedicle (fig.13 & 14). This installation is repeated for all the screws in the construct.

**Warning:** Screws under 5mm are used for thoracic spine only according to patient anatomy

# Installing the rods



rod holder

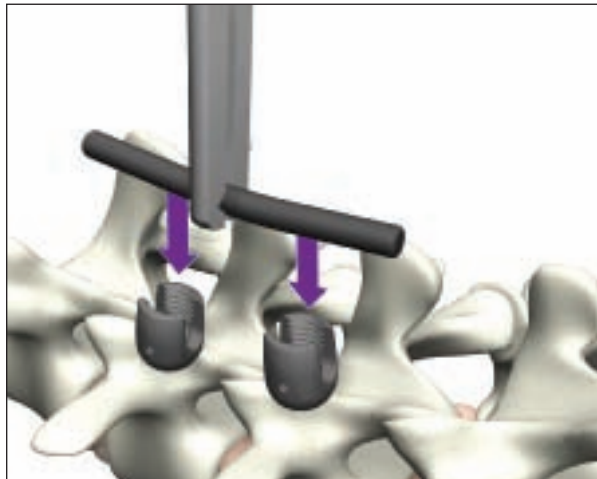


Figure 15

The rods are prepared and contoured by progressive bends until a shape similar to that defined by the bending trials is achieved.

In the case of short rods (30 to 100 mm) prebent versions simplify the initial approximation.

The rod is positioned in the heads with the rod holder (fig.15).



Figure 16

Once the rod set in place in the screwhead, a blocker is picked up with the TL blocker holder, the etched cross oriented upward.

The blocker guide is fitted on the screw head, and the blocker screwed until in contact but not tightened (fig.16). The same procedure is used for all the blockers of the construct.



Figure 17a



Figure 17b



Figure 17c

For spondylolisthesis reduction, the persuader should be used. With the persuader in the OPEN position, a first peg is inserted in one of the screwhead side holes (fig.17a), and the thumb wheel is then turned clockwise to close the persuader (fig.17b). Rotating the persuader to the closed position will pull the screw and push the rod inside the screwhead (fig.17c). When the IN PLACE position is achieved, the blocker can be screwed with the TL blocker holder (fig.18).

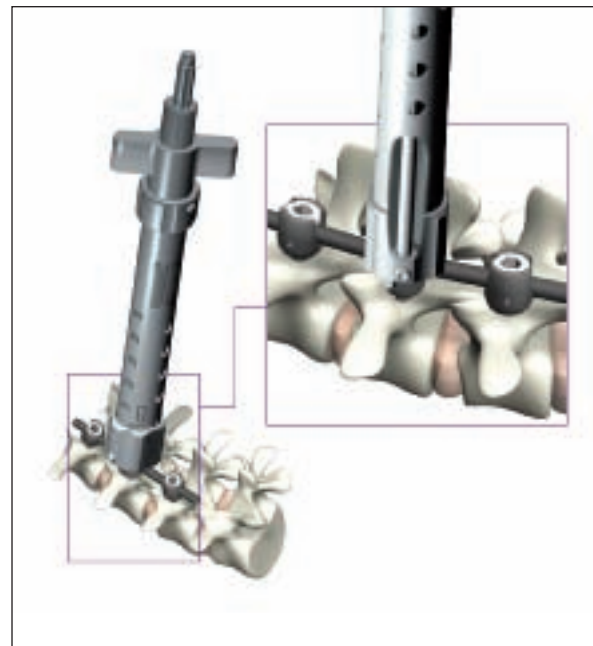


Figure 18



Figure 19

The persuader is removed by unscrewing the thumb wheel up to the OPEN position.

**Remark:** The same instrument may be used for both types of screws polyaxial and monoaxial. Turn the ring to adapt the persuader to the type of screw: align the mark on the ring and the arrow on the shaft to set it to the monoaxial configuration (fig.19).

# Sacral fixation

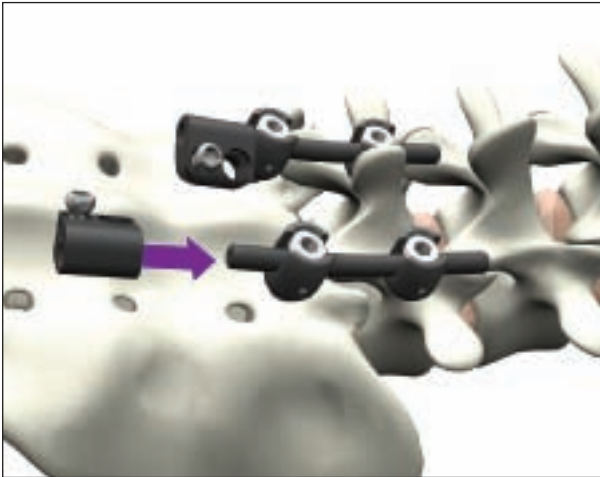


Figure 20

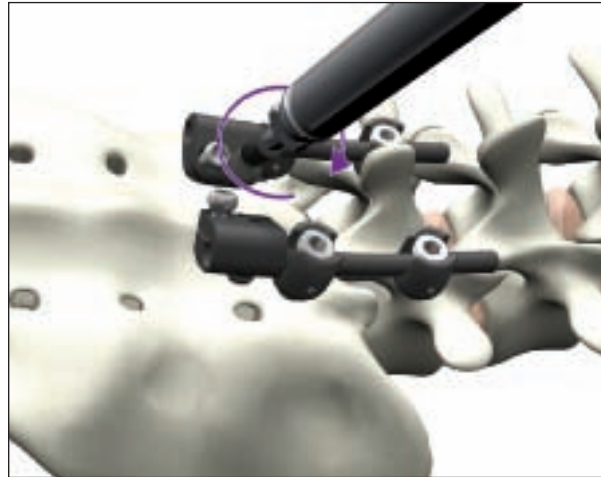


Figure 21

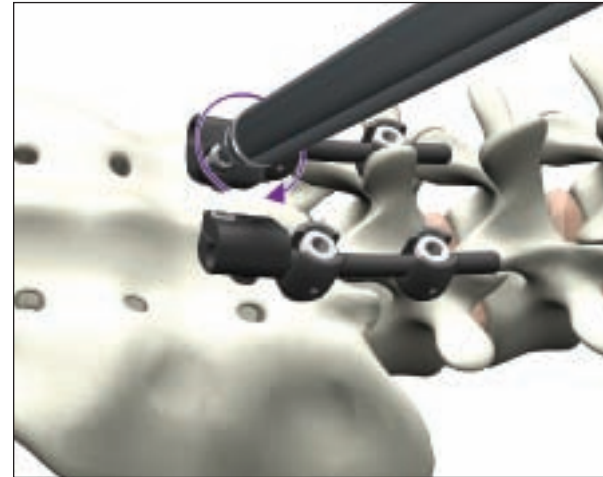


Figure 22

If additional bony purchase is necessary in the sacrum, the sacral fixation extender should be combined with the Top Loading pedicle screws. The sacral fixation extender is slid onto the rod, positioned on the bone (fig.20).

The square awl is used to pierce the bone cortex, and the secondary screw is inserted in the sacrum through the sacral fixation (fig.21).

First, one must make sure that the Top Loading blocker is firmly tightened.

Once the secondary screw is in position, the locking screw is tightened with the 3.5-mm TL screwdriver (fig.22).

# Hook Implantation

# Hook choice

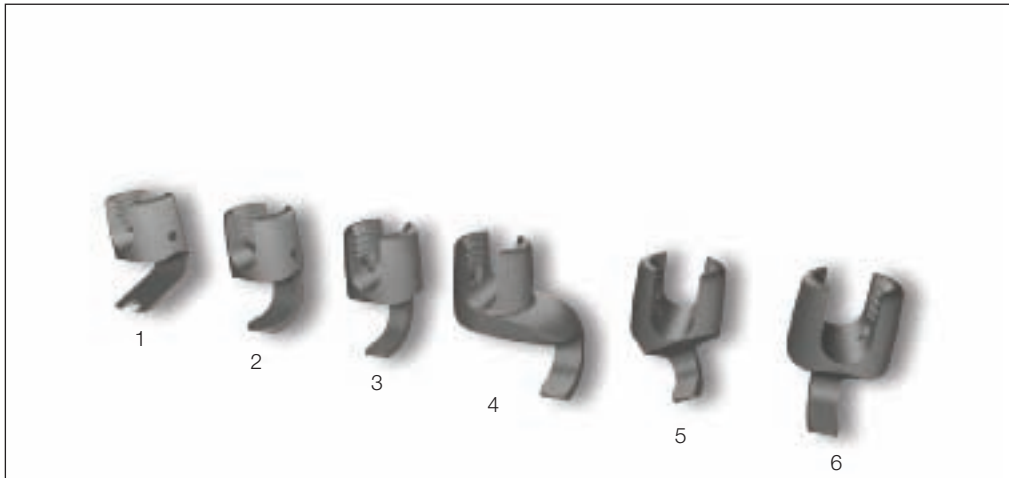


Figure 23

There are 6 hook types each tuned for a specific anatomic area and level treated : pedicle(1), laminar lumbar(2), narrow laminar lumbar(3), offset laminar lumbar(4), angled laminar thoracic(5) and straight laminar thoracic(6) (fig.23).

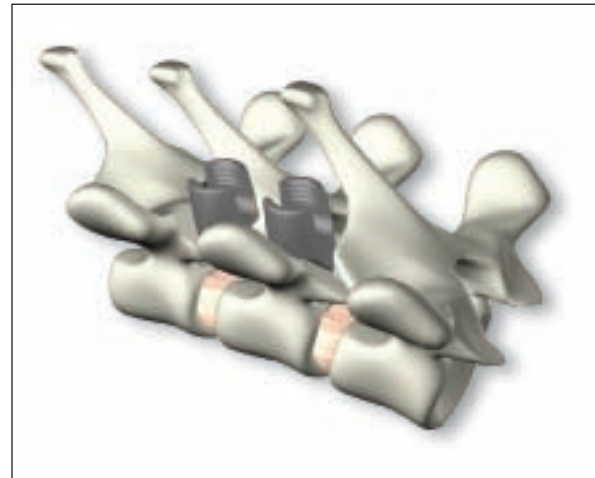


Figure 24

The hooks are attached to the strategic vertebrae, pre-operatively chosen by the surgeon. They can be isolated or associated to make a clamp. At the cephalic extremity of the construct, a pedicle-transverse process clamp(1) or a pedicle-laminar clamp(2) can be performed (fig.24).

(1): pedicle hook + lumbar laminar hook on the transverse of the same vertebra.

(2): pedicle hook + angled thoracic laminar hook on the transverse of the same vertebra.

# Hook insertion

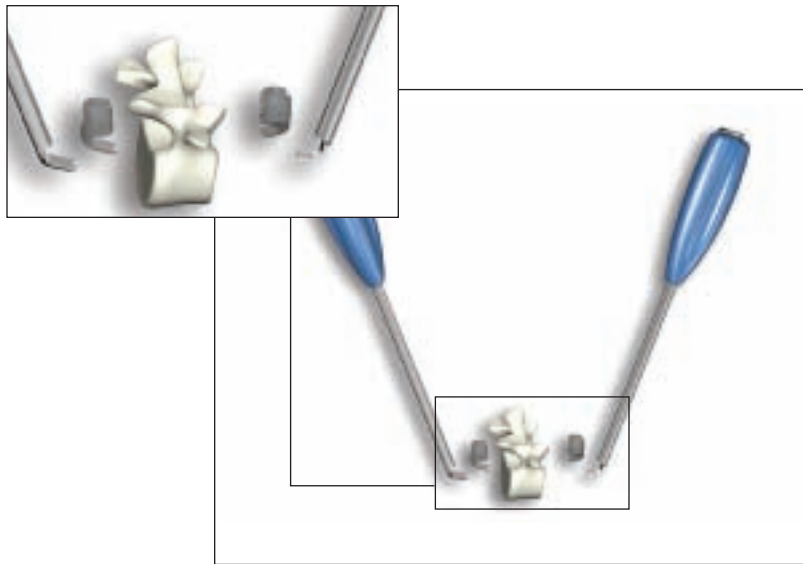


Figure 25

The appropriate elevator is used to prepare the hook site (fig.25).

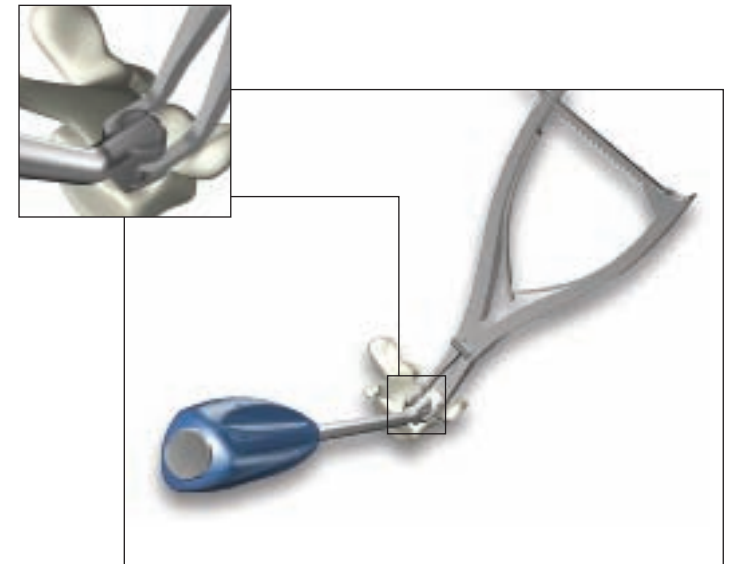


Figure 26

The desired hook is taken with the hook holder, and implanted in the prepared space. In case of necessity, the hook impactor may ease the hook insertion (fig.26).

# Installation of the rod

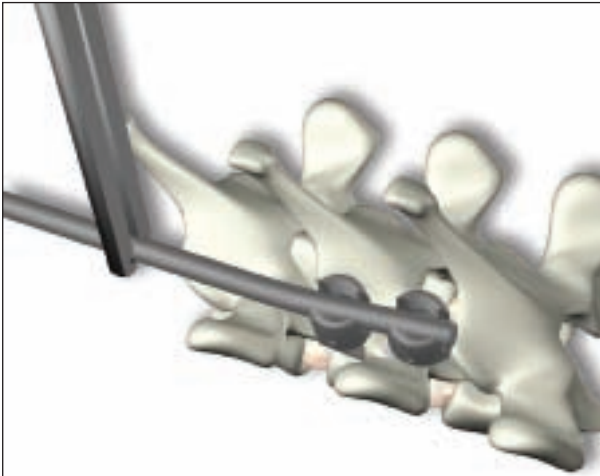


Figure 27

The rods are prepared and contoured by progressive bends until a shape similar to that defined by the bending trials is achieved. The rod is positioned at an extremity in the head with the rod holder (fig.27).

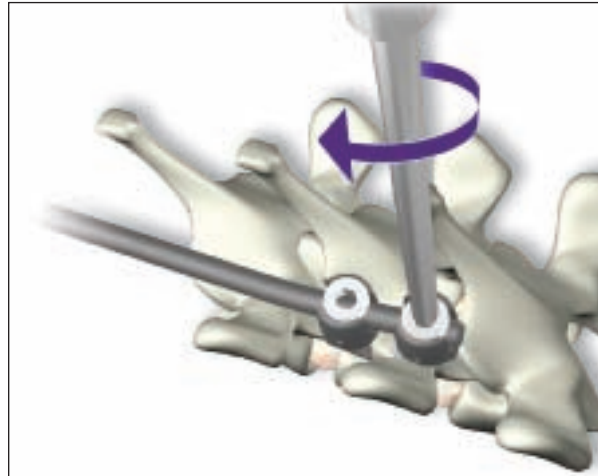


Figure 28

Once the rod is installed in the head, a blocker is picked up with the TL blocker holder, the etched cross oriented upwards. The blocker is screwed until in contact but not tightened (fig.28).



Figure 29

The dominoes can be used to connect two rods; 2 connection types are available aligned or with a 10mm offset (fig.29).

# Installation of the blockers



in-situ benders

persuader

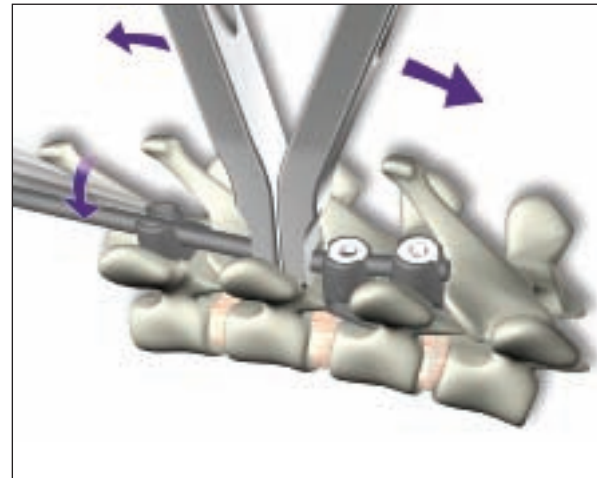


Figure 30

If the rod is positioned too far from the hook heads, the in-situ benders should be used to modify its curvature (fig.30).



Figure 31

To push the rod into the hook head, the persuader can be used in combination with the hook holder (fig.31). The blocker is set in place but not tightened. The same procedure is used for all the blockers of the construct.



# Construct Stabilization

# Transverse connectors



Figure 32

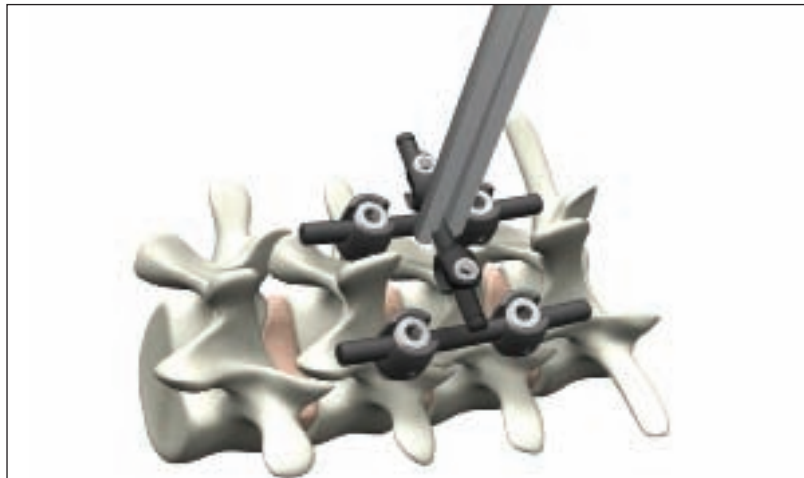


Figure 33

If necessary, a cross-connection is obtained by using transverse connectors (fig.32). They are pre-mounted to be used in distraction, but they can be used in contraction: pulling out the 2 connector blocks on the rod side with the arrow, and sliding them back onto the rod in the opposite order. Once the connector rod is set flat on the two longitudinal rods (fig.33), the two connector blocks

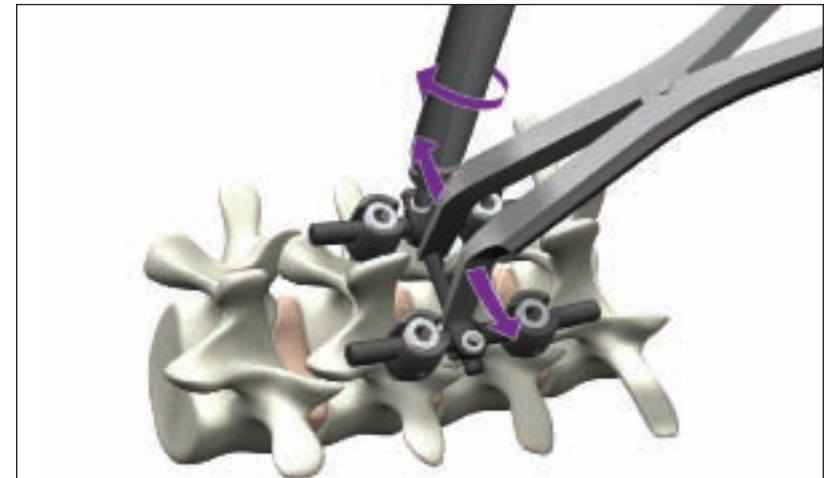
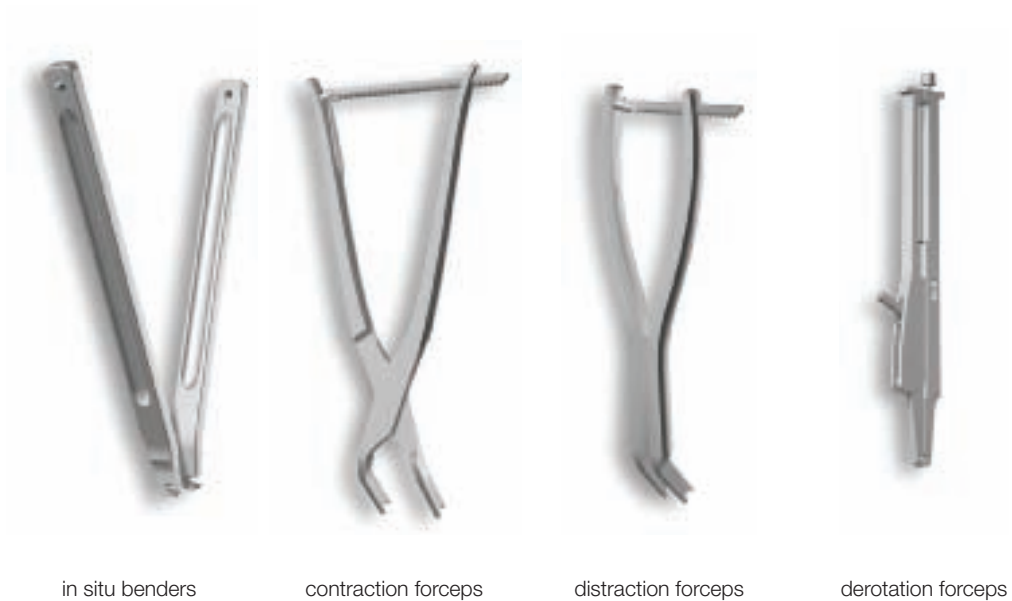


Figure 34

are distracted (or contracted) until they snap onto the rods. Then the screws are locked with the 3.5mm TL screwdriver in the desired position (fig.34).

**Remark:** The transverse connector rod shape can be modified using the rod bender

# Reduction Maneuvers



These are done using the contraction forceps (fig.35), distraction forceps, derotation forceps or in situ benders (fig.36).

# Final tightening



counter torque wrench



4.5 screwdriver



4.5 torque measuring screwdriver

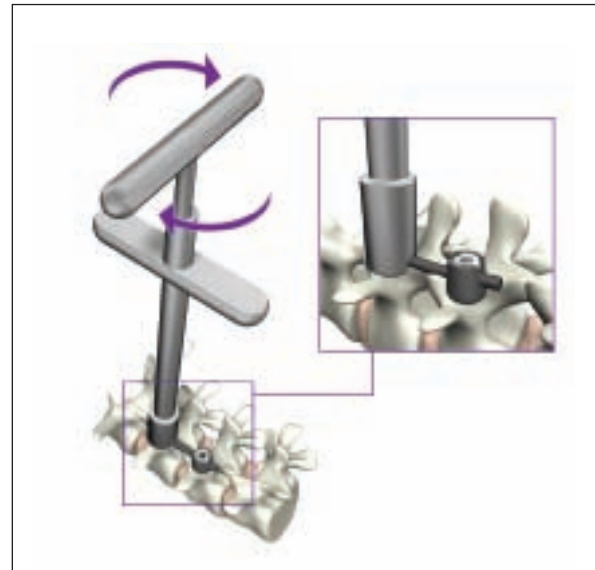


Figure 37

Final Tightening: Once all the reduction maneuvers have been completed, all the blockers are blocked with the 4.5 screwdriver and the Top Loading counter torque wrench (fig.37).



Figure 38

For greater security, 4.5 Torque measuring screwdriver can be used. The torque indicating mark of the latter is initially at zero. Turning the screwdriver until the mark is aligned with the black square applies a torque between 8 and 12 N.m. (fig 38).

# Catalog numbers

## JAVA TOP LOADING INSTRUMENTS

DESIGNATION	CATALOG NUMBER
Sleeve 3,5 screwdriver	SN2023-1-00401
Reduced clearance ratchet handle	SN2023-1-00411
TL Monoaxial Screwdriver	SN2036-1-00400
Square awl	SN2023-1-00500
TL Counter torque wrench	SN2023-1-00501
Pedicular probe	SN2023-1-00510
TL Blocker holder	SN2023-1-00512
Curette	SN2023-1-00520
Right X-ray marker	SN2023-1-00530
Left X-ray marker	SN2023-1-00531
Rod & plate bender	SN2023-1-00540
Rod pusher	SN2023-1-00541
Blocker guide	SN2023-1-00550
Distraction forceps	SN2023-1-00590
Contraction forceps	SN2023-1-00600
Derotation forceps	SN2023-1-00610
Rod holder	SN2023-1-00620
4.5 Screwdriver	SN2023-1-00750

DESIGNATION	CATALOG NUMBER
Persuader Mono & Poly	SN2023-1-00931
Trial rod - 100 mm	SN2023-1-00505
Trial rod - 200 mm	SN2023-1-00506
TL implants box Mono	SN2036-2-00006
TL implants box Poly	SN2023-2-00006
Java instruments container	SN2023-2-00010
Left rod bender	SN2023-1-00551
Right rod bender	SN2023-1-00554
Sleeve TL Monoaxial Screwdriver	SN2036-1-00401
Pedicle finder	SN2023-1-00591
Tap Ø5 mm	SN2023-1-00705
Tap Ø6 mm	SN2023-1-00706
Tap Ø7 mm	SN2023-1-00707
Torque measuring 4.5 screwdriver	SN2023-1-00755

# JAVA TOP LOADING IMPLANTS

## STANDARD

DESIGNATION	CATALOG NUMBER
<b>Blocker</b>	SN2023-0-00002
<b>Pre-Contoured Rod Ø5.5 L30</b>	SN2023-0-03051
<b>Pre-Contoured Rod Ø5.5 L40</b>	SN2023-0-04051
<b>Pre-Contoured Rod Ø5.5 L50</b>	SN2023-0-05051
<b>Pre-Contoured Rod Ø5.5 L60</b>	SN2023-0-06051
<b>Pre-Contoured Rod Ø5.5 L70</b>	SN2023-0-07051
<b>Pre-Contoured Rod Ø5.5 L80</b>	SN2023-0-08051
<b>Pre-Contoured Rod Ø5.5 L90</b>	SN2023-0-09051
<b>Pre-Contoured Rod Ø5.5 L100</b>	SN2023-0-10051
<b>Straight rod 120</b>	SN2023-0-12050
<b>Straight rod 160</b>	SN2023-0-16050
<b>Straight rod 200</b>	SN2023-0-20050
<b>Left Sacral Fixation</b>	SN2023-0-00205
<b>Right Sacral Fixation</b>	SN2023-0-00206
<b>Secondary Sacral Fixation Screw Ø6 L35</b>	SN2023-0-00200
<b>Transverse Connector Ø5.5 L52</b>	SN2023-0-52055
<b>Transverse Connector Ø5.5 L62</b>	SN2023-0-62055
<b>Transverse Connector Ø5.5 L72</b>	SN2023-0-72055
<b>Transverse Connector Ø5.5 L82</b>	SN2023-0-82055

## SCOLIOSIS

DESIGNATION	CATALOG NUMBER
<b>Ductile rod length 30</b>	SN2023-0-03055
<b>Ductile rod length 40</b>	SN2023-0-04055
<b>Ductile rod length 50</b>	SN2023-0-05055
<b>Ductile rod length 60</b>	SN2023-0-06055
<b>Ductile rod length 70</b>	SN2023-0-07055
<b>Ductile rod length 80</b>	SN2023-0-08055
<b>Ductile rod length 90</b>	SN2023-0-09055
<b>Ductile rod length 100</b>	SN2023-0-10055
<b>Ductile rod length 120</b>	SN2023-0-12055
<b>Ductile rod length 160</b>	SN2023-0-16055
<b>Ductile rod length 200</b>	SN2023-0-20055
<b>Ductile rod length 300</b>	SN2023-0-30055
<b>Ductile rod length 400</b>	SN2023-0-40055
<b>Ductile rod length 500</b>	SN2023-0-50055

# JAVA MONOAXIAL SCREWS

## STANDARD

DESIGNATION	CATALOG NUMBER
<b>Monoaxial Pedicle Screw TL Ø4.5 L35</b>	SN2036-0-23545
<b>Monoaxial Pedicle Screw TL Ø4.5 L40</b>	SN2036-0-24045
<b>Monoaxial Pedicle Screw TL Ø4.5 L45</b>	SN2036-0-24545
<b>Monoaxial Pedicle Screw TL Ø5 L35</b>	SN2036-0-23505
<b>Monoaxial Pedicle Screw TL Ø5 L40</b>	SN2036-0-24005
<b>Monoaxial Pedicle Screw TL Ø5 L45</b>	SN2036-0-24505
<b>Monoaxial Pedicle Screw TL Ø5 L50</b>	SN2036-0-25005
<b>Monoaxial Pedicle Screw TL Ø5 L55</b>	SN2036-0-25505
<b>Monoaxial Pedicle Screw TL Ø6 L35</b>	SN2036-0-23506
<b>Monoaxial Pedicle Screw TL Ø6 L40</b>	SN2036-0-24006
<b>Monoaxial Pedicle Screw TL Ø6 L45</b>	SN2036-0-24506
<b>Monoaxial Pedicle Screw TL Ø6 L50</b>	SN2036-0-25006
<b>Monoaxial Pedicle Screw TL Ø6 L55</b>	SN2036-0-25506
<b>Monoaxial Pedicle Screw TL Ø7 L35</b>	SN2036-0-23507
<b>Monoaxial Pedicle Screw TL Ø7 L40</b>	SN2036-0-24007
<b>Monoaxial Pedicle Screw TL Ø7 L45</b>	SN2036-0-24507
<b>Monoaxial Pedicle Screw TL Ø7 L50</b>	SN2036-0-25007
<b>Monoaxial Pedicle Screw TL Ø7 L55</b>	SN2036-0-25507

## OPTIONAL

DESIGNATION	CATALOG NUMBER
<b>Monoaxial Pedicle Screw TL Ø5.5 L35</b>	SN2036-0-23555
<b>Monoaxial Pedicle Screw TL Ø5.5 L40</b>	SN2036-0-24055
<b>Monoaxial Pedicle Screw TL Ø5.5 L45</b>	SN2036-0-24555
<b>Monoaxial Pedicle Screw TL Ø5.5 L50</b>	SN2036-0-25055
<b>Monoaxial Pedicle Screw TL Ø5.5 L55</b>	SN2036-0-25555
<b>Monoaxial Pedicle Screw TL Ø6.5 L35</b>	SN2036-0-23565
<b>Monoaxial Pedicle Screw TL Ø6.5 L40</b>	SN2036-0-24065
<b>Monoaxial Pedicle Screw TL Ø6.5 L45</b>	SN2036-0-24565
<b>Monoaxial Pedicle Screw TL Ø6.5 L50</b>	SN2036-0-25065
<b>Monoaxial Pedicle Screw TL Ø6.5 L55</b>	SN2036-0-25565
<b>Monoaxial Pedicle Screw TL Ø7.5 L35</b>	SN2036-0-23575
<b>Monoaxial Pedicle Screw TL Ø7.5 L40</b>	SN2036-0-24075
<b>Monoaxial Pedicle Screw TL Ø7.5 L45</b>	SN2036-0-24575
<b>Monoaxial Pedicle Screw TL Ø7.5 L50</b>	SN2036-0-25075
<b>Monoaxial Pedicle Screw TL Ø5 L60</b>	SN2036-0-26005
<b>Monoaxial Pedicle Screw TL Ø5.5 L60</b>	SN2036-0-26055
<b>Monoaxial Pedicle Screw TL Ø6 L60</b>	SN2036-0-26006
<b>Monoaxial Pedicle Screw TL Ø6.5 L60</b>	SN2036-0-26065

DESIGNATION	CATALOG NUMBER
<b>Monoaxial Pedicle Screw TL Ø7 L60</b>	SN2036-0-26007
<b>Monoaxial Pedicle Screw TL Ø7.5 L55</b>	SN2036-0-25575
<b>Monoaxial Pedicle Screw TL Ø7.5 L60</b>	SN2036-0-26075
<b>Monoaxial Pedicle Screw TL Ø8 L35</b>	SN2036-0-23508
<b>Monoaxial Pedicle Screw TL Ø8 L40</b>	SN2036-0-24008
<b>Monoaxial Pedicle Screw TL Ø8 L45</b>	SN2036-0-24508
<b>Monoaxial Pedicle Screw TL Ø8 L50</b>	SN2036-0-25008
<b>Monoaxial Pedicle Screw TL Ø8 L55</b>	SN2036-0-25508
<b>Monoaxial Pedicle Screw TL Ø8 L60</b>	SN2036-0-26008

# JAVA POLYAXIAL SCREWS

## STANDARD

DESIGNATION	CATALOG NUMBER
TL Pedicle screw Ø4 lg 35	SN2023-0-23504
TL Pedicle screw Ø5 lg 35	SN2023-0-23505
TL Pedicle screw Ø5 lg 40	SN2023-0-24005
TL Pedicle screw Ø5 lg 45	SN2023-0-24505
TL Pedicle screw Ø5 lg 50	SN2023-0-25005
TL Pedicle screw Ø5 lg 55	SN2023-0-25505
TL Pedicle screw Ø6 lg 35	SN2023-0-23506
TL Pedicle screw Ø6 lg 40	SN2023-0-24006
TL Pedicle screw Ø6 lg 45	SN2023-0-24506
TL Pedicle screw Ø6 lg 50	SN2023-0-25006
TL Pedicle screw Ø6 lg 55	SN2023-0-25506
TL Pedicle screw Ø7 lg 35	SN2023-0-23507
TL Pedicle screw Ø7 lg 40	SN2023-0-24007
TL Pedicle screw Ø7 lg 45	SN2023-0-24507
TL Pedicle screw Ø7 lg 50	SN2023-0-25007
TL Pedicle screw Ø7 lg 55	SN2023-0-25507

## OPTIONAL

DESIGNATION	CATALOG NUMBER
TL Pedicle screw Ø5.5 lg 35	SN2023-0-23555
TL Pedicle screw Ø5.5 lg 40	SN2023-0-24055
TL Pedicle screw Ø5.5 lg 45	SN2023-0-24555
TL Pedicle screw Ø5.5 lg 50	SN2023-0-25055
TL Pedicle screw Ø5.5 lg 55	SN2023-0-25555
TL Pedicle screw Ø5.5 lg 60	SN2023-0-26055
TL Pedicle screw Ø6 lg 60	SN2023-0-26006
TL Pedicle screw Ø6.5 lg 35	SN2023-0-23565
TL Pedicle screw Ø6.5 lg 40	SN2023-0-24065
TL Pedicle screw Ø6.5 lg 45	SN2023-0-24565
TL Pedicle screw Ø6.5 lg 50	SN2023-0-25065
TL Pedicle screw Ø6.5 lg 55	SN2023-0-25565
TL Pedicle screw Ø6.5 lg 60	SN2023-0-26065
TL Pedicle screw Ø7 lg 60	SN2023-0-26007
TL Pedicle screw Ø7.5 lg 35	SN2023-0-25075
TL Pedicle screw Ø7.5 lg 40	SN2023-0-24075
TL Pedicle screw Ø7.5 lg 45	SN2023-0-24575
TL Pedicle screw Ø7.5 lg 50	SN2023-0-25075
TL Pedicle screw Ø7.5 lg 55	SN2023-0-25575
TL Pedicle screw Ø7.5 lg 60	SN2023-0-26075

# JAVA HOOKS

DESIGNATION	CATALOG NUMBER
<b>Straight domino Ø5.5</b>	SN2030-0-51001
<b>Offset domino Ø5.5</b>	SN2030-0-51002
<b>Rod Ø5,5 lg 300</b>	SN2030-0-30055
<b>Rod Ø5,5 lg 400</b>	SN2030-0-40055
<b>Pedicular hook</b>	SN2030-0-50001
<b>Wide laminar hook</b>	SN2030-0-50010
<b>Narrow laminar hook</b>	SN2030-0-50011
<b>Right offset laminar hook</b>	SN2030-0-50012
<b>Left offset laminar hook</b>	SN2030-0-50013
<b>Right anguled thoracic hook</b>	SN2030-0-50020
<b>Left anguled thoracic hook</b>	SN2030-0-50021
<b>Thoracic hook</b>	SN2030-0-50022
<b>Blocker</b>	SN2030-0-00001

DESIGNATION	CATALOG NUMBER
<b>Laminar elevator</b>	SN2030-1-00100
<b>Pedicular elevator</b>	SN2030-1-00110
<b>Hook holder</b>	SN2030-1-00200
<b>Persuader</b>	SN2030-1-00300
<b>Hook impactor</b>	SN2030-1-00400
<b>Container</b>	SN2030-2-00005

## Our Legacy

Founded in 1996, Abbott Spine was built on a foundation of innovation. For inspiration, we have listened to surgeons, studied surgical indications, techniques and biomechanics. We have discovered innovations that deliver simplicity to the operating suite and successful clinical outcomes to patients.

In addition to the enhancement of our core line of spinal fusion products, Abbott Spine is strategically focused on the establishment of a more diverse field of solutions for surgeons and patients. In collaboration with surgeon partners, we are dedicated to the exploration of art and science, developing therapies that are less invasive and intervene earlier in the continuum of care, as well as providing improvements for both surgeons and their patients.

Abbott Spine  
Cité Mondiale  
23, parvis des Chartrons  
33080 Bordeaux - France  
Tel. 33 (0)5 56 00 18 20  
Fax 33 (0)5 56 00 18 21  
wallis@abbottspine.com  
www.abbottspine.com

SN2023-9-000TE-V?? - 2006-08

