

SPINAL POSTERIOR FIXATION SYSTEM

THORACO-LUMBAR
FIXATION



Ulis



SURGICAL TECHNIQUE

SPINEVISION

INNOVATION THAT MATTERS

SURGICAL STEPS

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REFERENCES

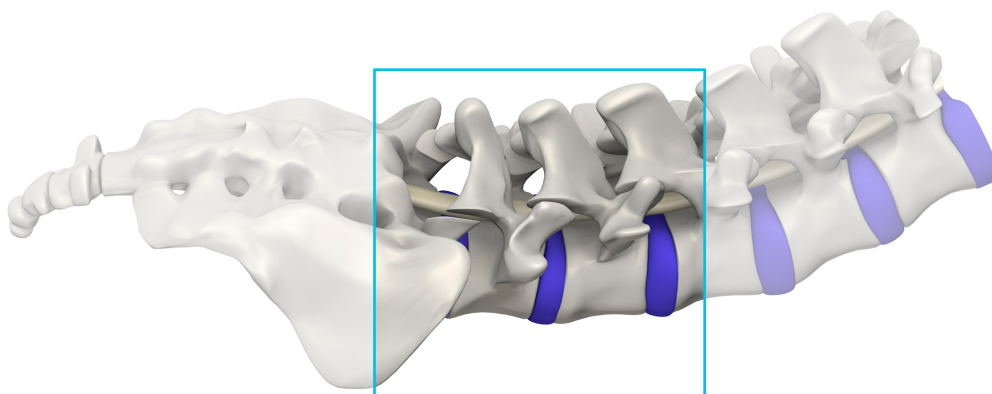
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PATIENT PREPARATION

The patient is placed on the operating room table using the standard position indicated for posterior fixation placement.



X-ray shall be used during the entire procedure: to confirm identification of the affected disc, good positioning of the screws and the final position of the whole assembly.



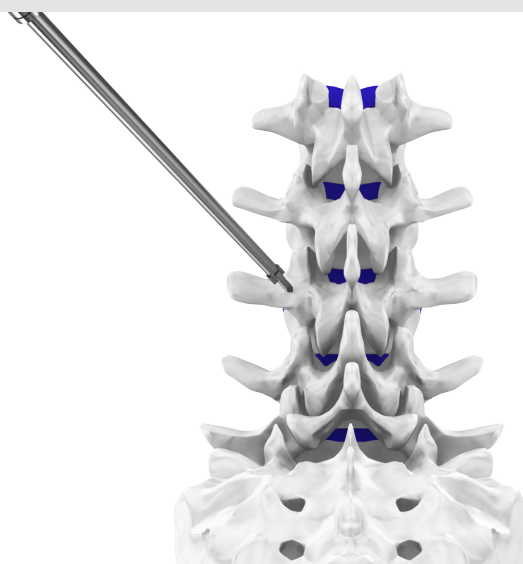
PEDICLE PREPARATION & SCREW SELECTION

Square Awl
U1-A121N1



Mark the affected segment after C-arm control. Perform the incision over the levels on which the screws must be inserted.

Once the different structures (facets, pedicles and processes) have been exposed, locate the entry point for screws on the pedicle and perforate the cortical bone using the square awl [U1-A121N1](#).





Lumbar Spatula
U1-A127



Lenke Probe
U1-A128



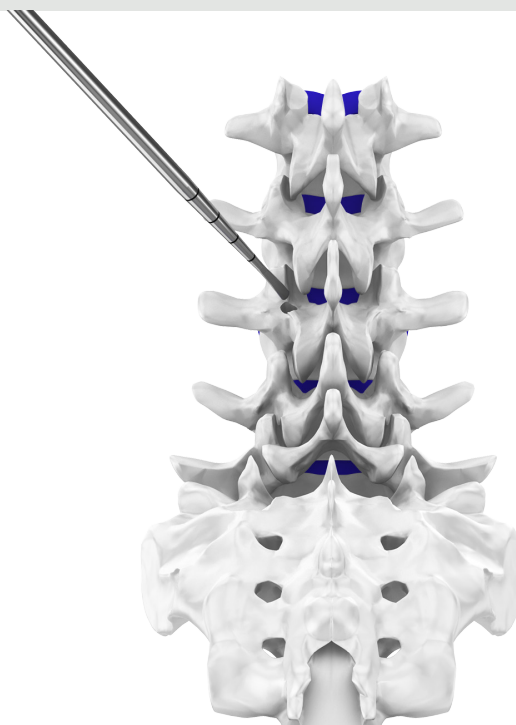
Curved Lumbar Spatula
U1-A127C



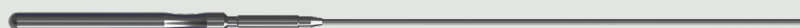
Straight Lenke Probe
U1-A128S

To create a pathway for screws in the pedicle, use the different pedicle probes available depending on surgeon's practice: **lumbar spatula U1-A127**, **lenke probe U1-A128**, **curved lumbar spatula U1-A127C** or the **straight lenke probe U1-A128S**.

The appropriate depth for each vertebra is estimated by the surgeon.

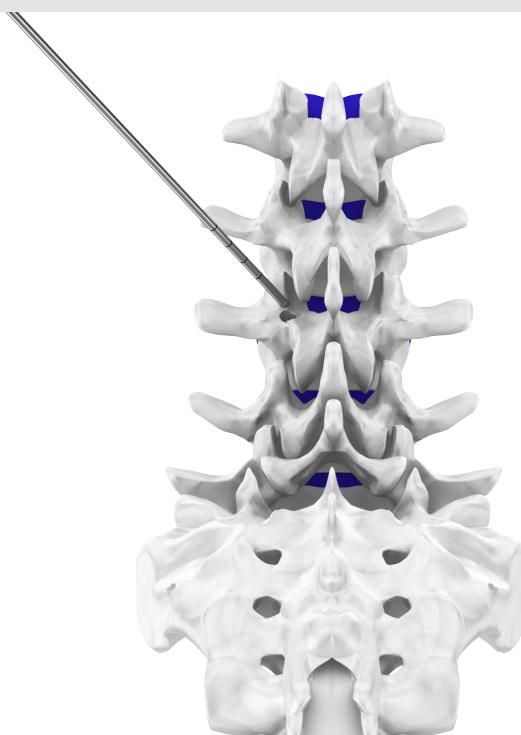


Pedicle probe with ball tip
U1-A124N1



The integrity of the intrapedicular cancellous bone can be checked with the **pedicle probe with ball tip U1-A124N1** by letting it slide on the pilot hole's wall.

The length of the screw to be inserted can be determined by putting the tip of the pedicle probe at the bottom of the hole and then marking the length of the inserted intrapedicular part with a forceps at the external pedicle's surface.

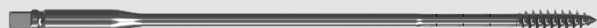




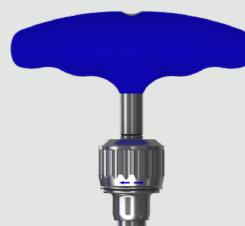
TAPPING



Cannulated ratcheting cylindrical handle
SD-A411ALSH



Sharp Taps
U1-A13XS



Cannulated ratcheting T-handle
SD-A411ATSH

Ø 4,5 mm	Ø 5,5 mm	Ø 6,5 mm	Ø 7,5 mm	Ø 8,5 mm
U1-A134S	U1-A135S	U1-A136S	U1-A137S	U1-A138S

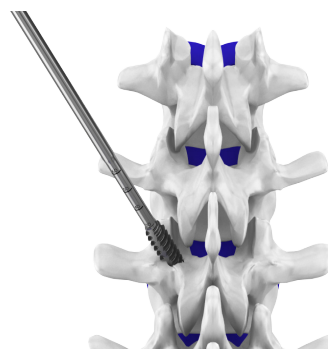
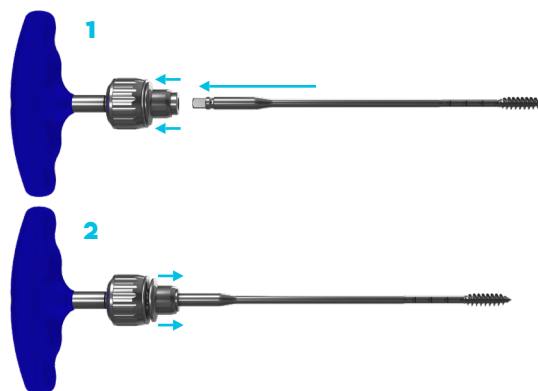
IS2-MXXXT: Multiaxial screw
IS2-MRXXXT: Reduction screw
IS2-SXXXT: Monoaxial screw

X= Diameter
XX= Length
Ex: IS2-M645T Ø6,5 & 45 mm

! WARNING !

The Ulis screws are color coded according to their diameters. It is mandatory to use the tap corresponding to the screw diameter.

- 1 To connect a sharp tap **U1-A13XS** to the ratcheting cylindrical handle **SD-A411ALSH** or T-handle **SD-A411ATSH**, pull the ring of the handle towards the silicon part.
- 2 While maintaining this position, insert the square tip of the sharp tap into the handle and release the ring to secure the connection between the two instruments.



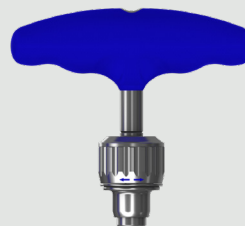
Always double check the connection of the two pieces before giving it to the surgeon.



Cannulated ratcheting cylindrical handle
SD-A411ALSH



Universal Screwdriver
MS2-A221

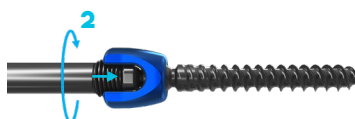
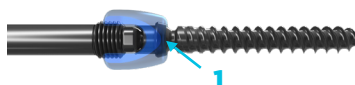


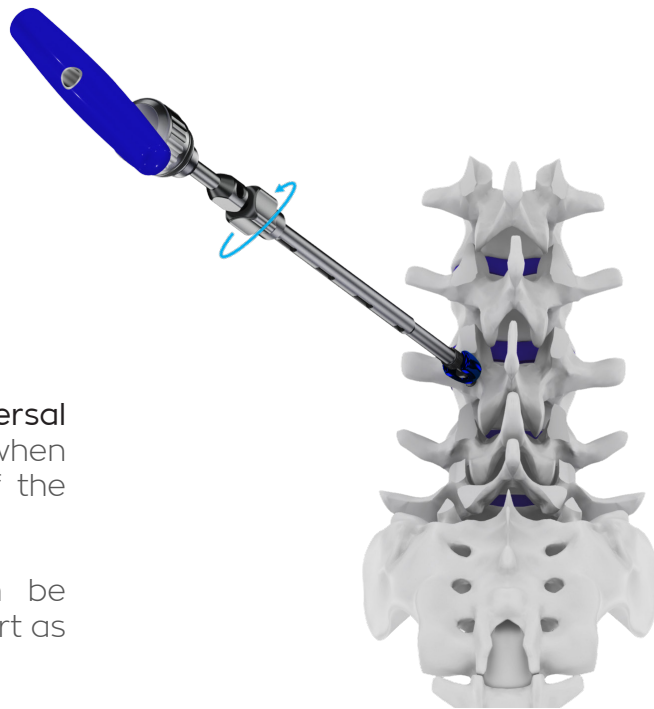
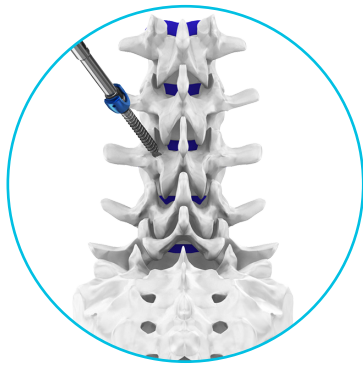
Cannulated ratcheting T-handle
SD-A411ATSH

To connect a Universal screwdriver [MS2-A221](#) to the cannulated ratcheting cylindrical handle [SD-A411ALSH](#) or T-handle [SD-A411ATSH](#), repeat the maneuver described in the previous step.



- 1 The screwdriver is the same for monoaxial, polyaxial and reduction screws. To connect it to a screw, position the implant on the screwdriver and make sure that the distal tip of the inner part of the screwdriver is entirely inserted into the screw head.
- 2 Then block the screw's multiaxiality by turning clockwise the square part of the Universal Screwdriver until it is not possible anymore. You can then insert the screw in the pedicle.





To disconnect a **Universal screwdriver** [MS2-A221](#) from the screw when fully inserted, turn the square part of the screwdriver unclockwisely.

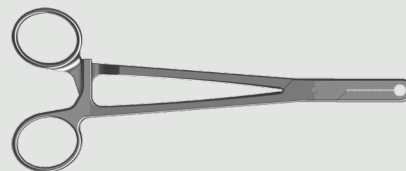
The Universal Screwdriver can then be removed and this step repeated to insert as many screw as needed.



ROD PREPARATION & HANDLING



French Bender
U1-A321



Rod Holder
U1-A214S

The ULIS system offers a large range of **prebent rods** from 30 mm up to 120 mm [MS1-R6XXXCT](#).

The system can also be used with **straight rigid rods** [L2-R6XXHT](#) which can be contoured at the desired curvature with the **french bender** [U1-A321](#).

The prepared rod can then be handled and inserted using the **rod holder** [U1-A214S](#).



! WARNING !

Rods must not be repeatedly or excessively bent beyond that which is absolutely necessary.

! WARNING !

If using the Flex+2 rods for dynamic stabilization or topping-off, it is mandatory not to bend it on the flexible part.

Never bend the Flex+2 rods above the transversal laser mark



ROD REDUCTION & SETSCREW INSERTION



Setscrew Holder
MS1-A231



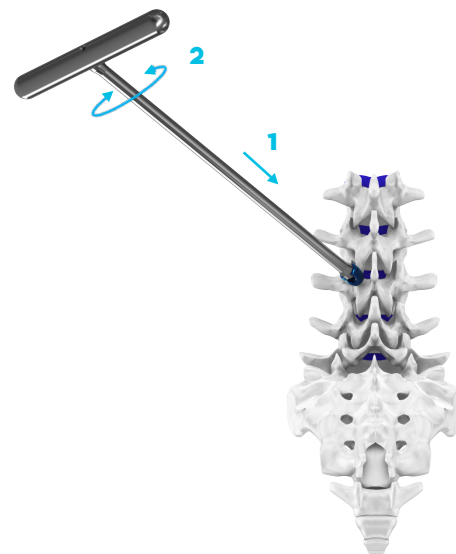
Screw Adjuster
MS1-A222

To align the screw head, or to adjust the screw depth for monobloc screws, use the **screw adjuster** [MS1-A222](#).

When the screw heads are aligned, insert the rod in the implant saddles using the **rod holder** [U1-A214S](#). Then place the setscrew using the **setscrew holder** [MS1-A231](#).

To load a **setscrew** [MS1-L100T](#) on the setscrew holder :

- 1 Pull up the trigger of the setscrew holder
- 2 While maintaining this position, slide the tip of the instrument in the «star» footprint of the setscrew.
- 3 Finally release the trigger of the setscrew holder.

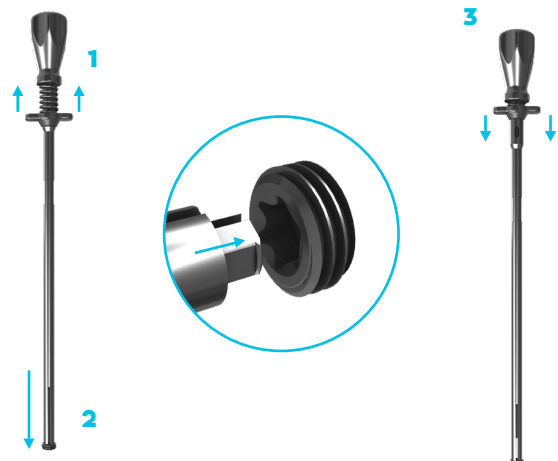


! WARNING !

Never use the setscrew holder MS1-A231 for the final tightening.

The Ulis system offers three options to persuade the rod :

- Rod pusher
- Persuader
- Reduction screws



OPTION A

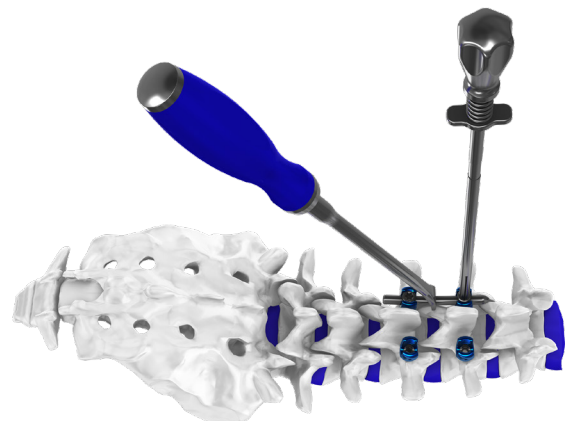
Rod Pusher
U1-A224



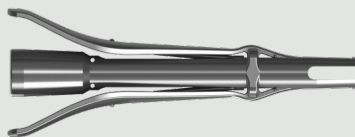
Use the **rod pusher** [U1-A224](#) to push the rod in the screw head prior to the setscrew insertion.

- 1** While maintaining the rod in the implant saddle with the rod pusher, engage partially the setscrew in the screw head and turn clockwise to thread it
- 2** Once the setscrew is in position, pull up the wing of the setscrew holder to release the connection and remove the setscrew holder.

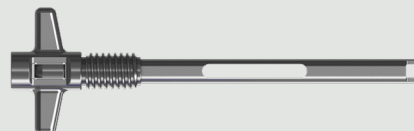
Repeat this step on all screws prior to apply correction maneuvers.



OPTION B



Persuader
IS1-A317



Inner Tube for Persuader
IS1-A316

If a more powerful reduction is needed, use the **persuader** [IS1-A317](#) and the **inner tube for persuader** [IS1-A316](#).

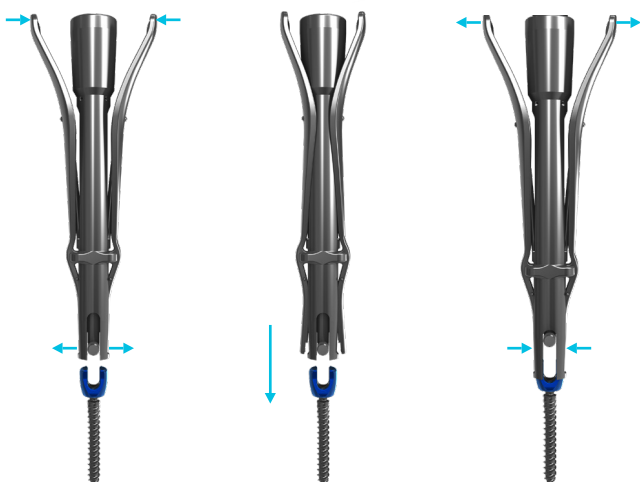
1

2

3

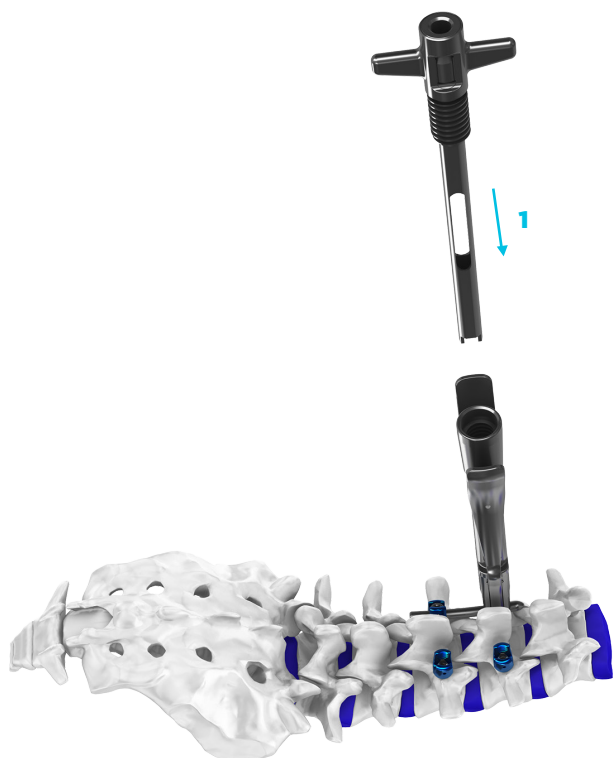
To position the persuader on the screw head:

- 1** Squeeze the flanges toward the tube to open the persuader at its distal end.
- 2** Slide down the persuader on the screw head. Repeat this step on all screws prior to apply correction maneuvers.
- 3** Release the flanges to connect the persuader to the screw.

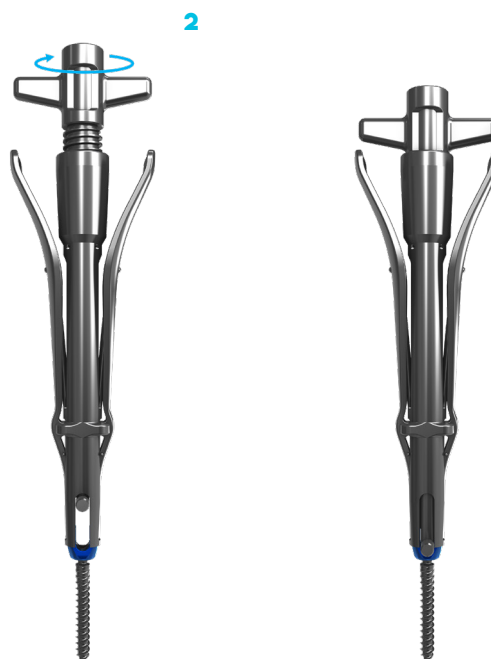


Once the persuader is positionned on the screw head, persuade the rod thanks to the **inner tube for persuader IS1-A316**:

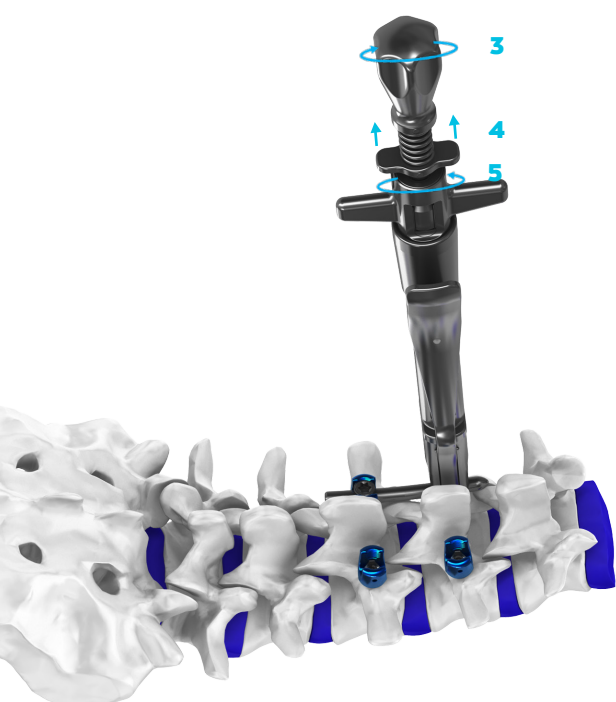
- 1 Slide the inner tube into the persuader in place.



- 2 Once the threaded part of the inner tube comes in contact with the superior edge of the persuader, begin screwing to reduce the rod in the implant saddle.



To insert the setscrew when the rod is completely seated in the implant saddle, load a setscrew on the setscrew holder as described above and slide down the assembly through the inner shaft for persuader.



- 3 Once the setscrew reaches the top of the screw head, turn Clockwisely to load it on the screw and secure the rod.
- 4 With the setscrew in position, pull up the wing of the setscrew holder to release the connection and remove the setscrew holder.
- 5 Remove the inner shaft for persuader by unscrewing it and sliding it up from the persuader. Then squeeze the persuader's flanges to disconnect it from the screw head.

Repeat these steps on all screws prior to apply correction maneuvers.

OPTION C



Tab Remover
IS2-A421



Setscrew Holder
MS1-A231



T30 Shaft
MS1-A411



Reduction screws [IS2-MRXXXXT](#) can also be used to help in rod reduction. The most convenient is to place reduction screws in the middle of the construct where spondylolisthesis reduction is often needed.

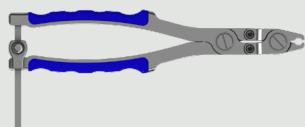
Introduce the rod in all screw heads and load a setscrew on the setscrew holder:

- 1 Engage the setscrew in the reduction screw's extended tabs using the setscrew holder or the [T30 shaft MS1-A411](#) and turn clockwise to screw it and reduce the rod.
- 2 Once the rod reaches the bottom of the implant saddle, disconnect the setscrew holder by pulling the wing up and removing it.
- 3 To break the extended tabs after the rod persuasion and setscrew tightening, use the [tab remover IS2-A421](#). Close the jaw on the extension and break it.



CORRECTION MANEUVERS

ROTATION OF THE ROD



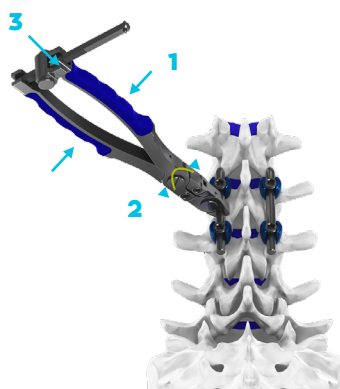
Rod Gripper
U1-A216



Open Rod Rotation Wrench
U1-A344N1

After all setscrew's placement, the rod can be rotated with the [rod gripper U1-A216](#).

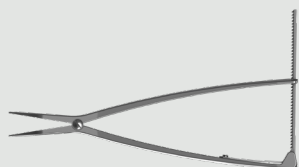
- 1 Strongly grip the rod in the instrument's jaw
- 2 Rotate the rod to give a normal curvature in the sagittal plan.
- 3 Release the grip by pushing the button on the rack and pinion.



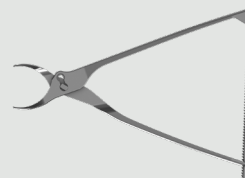
When using the **straight rigid rod** [L2-R6XXHT](#), grab the hexagonal end of the rod thanks to one or the other side of the **open rod rotation wrench** [U1-A344N1](#) and use it to rotate the rod.



DISTRACTION & COMPRESSION



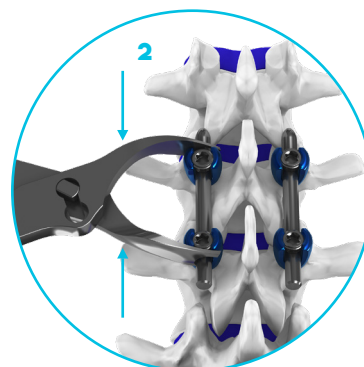
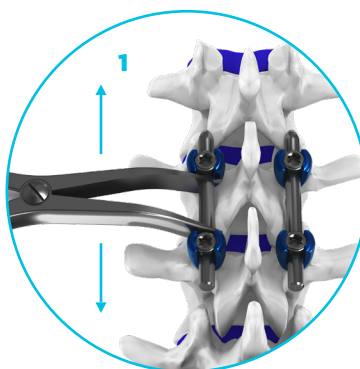
Distractor
U1-A342



Dual Axis Compressor
U1-A343

To adjust the restored disc height or the curvature of the spine, a **distractor** [U1-A342](#) and a **dual axis compressor** [U1-A343](#) are available.

- 1 To distract:** lock the setscrew on the screw used as « reference », place the jaw of the distractor as shown on the picture and distract by squeezing the handles. Lock the untightened setscrew when the desired distraction is obtained
- 2 To compress:** lock the setscrew on the screw used as « reference », place the jaw of the compressor as shown on the picture and compress by squeezing the handles. Lock the untightened setscrew when the desired compression is obtained.



IN SITU BENDING

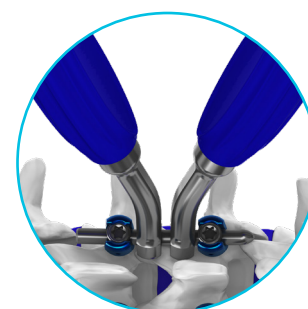
Left Sagittal Bender
U1-A329



Right Sagittal Bender
U1-A328



If additional correction of the curvature in the sagittal plane is needed, use the **right/left sagittal bender** [U1-A328/U1-A329](#) as shown besides.

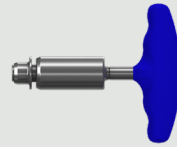


! WARNING !

Rods must not be repeatedly or excessively bent beyond that which is absolutely necessary.



Counter Torque
IS1-A431



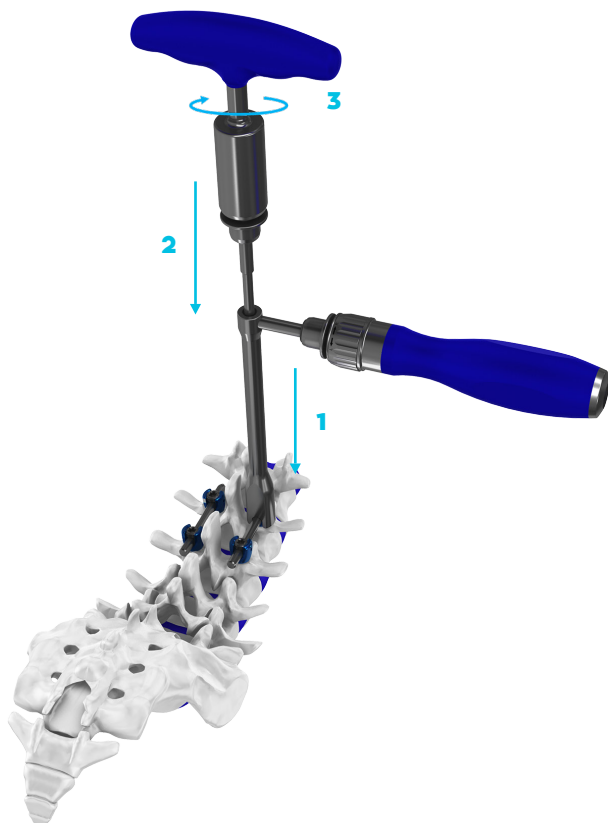
Torque Limiting
Handle
MS1-A421



Cannulated ratcheting
cylindrical handle
SD-A411ALSH



T30 Shaft
MS1-A411



Connect the T30 shaft [MS1-A411](#) to the torque limiting handle [MS1-A421](#).

- 1 Position the counter torque [IS1-A431](#) on the screw head as shown besides.
- 2 Slide the T30 shaft [MS1-A411](#) into the counter torque until the distal tip of the shaft engages in the setscrew's footprint.
- 3 While strongly holding the counter torque with the cylindrical handle, turn clockwise the torque limiting handle until it clicks 3 times. This will ensure a final tightening to a value of 8.5Nm.

Repeat this step on all setscrews to ensure final tightening of the construct.

! WARNING !

The proper tightening of the screw is ensured by 3 « clics » produced by the torque limiting handle when performing tightening. Never use the torque limiting handle to unscrew a setscrew. Always be sure to be on the neutral position of the ratcheting handle when performing tightening.





Square Awl

U1-A121N1



Lumbar Spatula

U1-A127



Curved Lumbar Spatula

U1-A127C



Lenke Probe

U1-A128



Straight Lenke Probe

U1-A128S



Sharp Tap

U1-A13XS



Pedicle Probe with ball Tip

U1-A124N1



Universal Screwdriver

MS2-A221



Screw Adjuster

MS1-A222



Screw Removal Instrument

IS2-A420



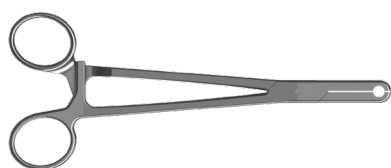
French Bender

U1-A321



Open Rod Rotation
Wrench

U1-A344N1



Rod Holder

U1-A214S



Setscrew Holder

MS1-A231



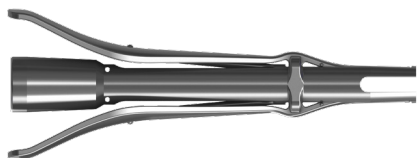
T30 Shaft

MS1-A411



Rod Pusher

U1-A224



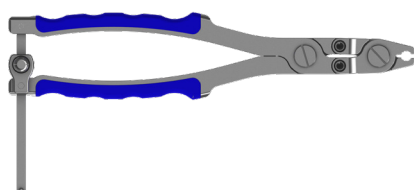
Persuader

IS1-A317



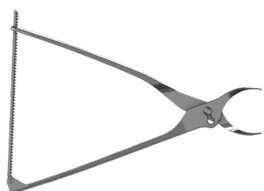
Inner Tube for Persuader

IS1-A316



Rod Gripper

U1-A216



Dual Axis Compressor

U1-A343



Distractor

U1-A342



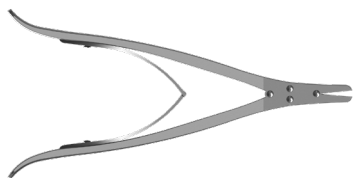
Right Sagittal Bender

U1-A328



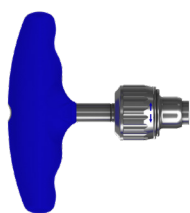
Left Sagittal Bender

U1-A329



Tab Remover

IS2-A421



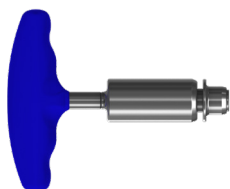
Cannulated Ratcheting
T-Handle

SD-A411TSH



Cannulated Ratcheting
Cylindrical Handle

SD-A411LSH



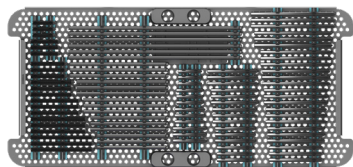
Torque Limiting Handle

MS1-A421



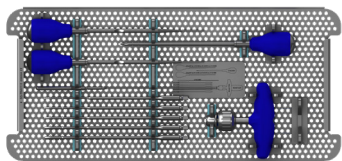
Ulris Screws Rack

SD-RACK1



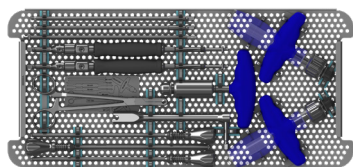
Tray 5 ULIS

IS1-TRAY115



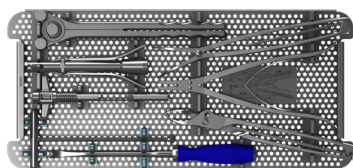
Pedicular Preparation Tray

SD-TRAY111



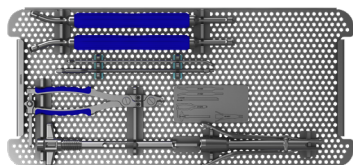
Tray 1 ULIS

IS1-TRAY111



Tray 2 ULIS

IS1-TRAY112



Tray 4 ULIS

IS1-TRAY114



SV Common Base

SD-BASE1168



SV Common Base
(2 levels)

SD-BASE11117



SV Common Lid

SD-LID11

SCREWS RANGE

MULTIAXIAL & MONOAXIAL SCREWS

Ø/L	25	30	35	40	45	50	55	60	70	80	90
4,5	✓	✓	✓	✓	✓						
5,5			✓	✓	✓	✓	✓	✓			
6,5			✓	✓	✓	✓	✓	✓			
7,5			✓	✓	✓	✓	✓	✓			
8,5			✓	✓	✓	✓	✓	✓	✓	✓	✓

* Only Multiaxial



IS2-MXXXT: Multiaxial screw
IS2-SXXXT: Monoaxial screw

X= Diameter
XX= Length
Ex: IS2-M645T: Ø6,5 & 45 mm

REDUCTION SCREWS

Ø/L	25	30	35	40	45	50	55	60
4,5	✓	✓	✓	✓				
5,5		✓	✓	✓	✓	✓	✓	✓
6,5			✓	✓	✓	✓	✓	✓
7,5			✓	✓	✓	✓	✓	



IS2-MRXXXT: Reduction screw

X= Diameter
XX= Length

COLOR CODED DIAMETERS

Ø 4,5 mm	Ø 5,5 mm	Ø 6,5 mm	Ø 7,5 mm	Ø 8,5 mm

Length	MS1-R6XXXCT	L2-R6XXCHT	L2-R6XXHT
	Prebent Percutaneous Rod	Prebent Rod with Hexagonal End	Straight Rod with Hexagonal End
	TiA6V	TiA6V	TiA6V
			
30	✓		
35	✓		
40	✓	✓	
45	✓		
50	✓	✓	
55	✓		
60	✓	✓	
65	✓		
70	✓	✓	
75	✓		
80	✓	✓	
85	✓		
90	✓	✓	
95	✓		
100	✓	✓	
110	✓	✓	✓
120	✓	✓	✓
130			✓
140			✓
250			✓
420			✓

This image shows a single page from a notebook. The top portion of the page is a solid blue header with the word "NOTES" written in white, uppercase letters. Below the header, the page is white and features horizontal blue ruling lines spaced evenly apart. On the left side, there is a small, dark blue tab-like shape extending downwards from the header area. At the bottom right corner of the page, there is a footer containing the text "Ulis" followed by a hexagonal logo with the letters "SV" inside, then the word "NOTES" and the number "19".

NOTES

[illegible]

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