ROMEO®2 MIS

BY SPINEART

CANNULATED PEDICLE SCREW

CONTENT

CONCEPT AND DESIGN

The first ROMEO®2 MIS surgery, performed in 2011, represents a milestone: a percutaneous procedure was performed without the need of Kirschner wires!
The ROMEO®2 MIS system allows for 3 different options: pure percutaneous, bilateral mini-open and hybrid approach. A set of dedicated implants and versatile instruments makes the ROMEO®2 MIS the new standard in minimally invasive surgery.
ROMEO®2 MIS combined with the first fully radiolucent posterior retractor OTELO®MIS, provides an innovative, efficient and safe Minimally Invasive platform.
In each product development, Spineart is relentlessly driven by the same motto : Quality, Innovation, Simplicity.

AT A GLANCE

K-WIRELESS OPTION

STREAMLINED TIP

MICRO-OPEN AND/OR PERCUTANEOUS APPROACHES

SPONDYLOLISTHESIS REDUCTION

INDICATIONS

The ROMEO®2 MIS system implants are indicated for patients presenting with the following pathologies: spondylolisthesis, degenerative disc disease, thoracic and lumbar fractures, thoracic and lumbar vertebra, stenosis and spine deformities (scoliosis, cyphosis).

IMPLANTS

CANNULATED POLYAXIAL SCREW[2]

LENGTH / DIAMETER	Ø5	Ø6	Ø7
L30	MIS-PS 05 30-S	MIS-PS 06 30-S	MIS-PS 07 30-S
L35	MIS-PS 05 35-S	MIS-PS 06 35-S	MIS-PS 07 35-S
L40	MIS-PS 05 40-S	MIS-PS 06 40-S	MIS-PS 07 40-S
L45	MIS-PS 05 45-S	MIS-PS 06 45-S	MIS-PS 07 45-S
L50	MIS-PS 05 50-S	MIS-PS 06 50-S	MIS-PS 07 50-S
L55		MIS-PS 06 55-S	MIS-PS 07 55-S
L60		MIS-PS 06 60-S	MIS-PS 07 60-S

PERCUTANEOUS ROD / PRE-BENT[2] **ø5.4**	
L30	MIS-RT 10 30-S
L35	MIS-RT 10 35-S
L40	MIS-RT 10 40-S
L45	MIS-RT 10 45-S
L50	MIS-RT 10 50-S
L55	MIS-RT 10 55-S
L60	MIS-RT 10 60-S
L65	MIS-RT 10 65-S
L70	MIS-RT 10 70-S
L75	MIS-RT 10 75-S
L80	MIS-RT 10 80-S
L85	MIS-RT 10 85-S
L90	MIS-RT 10 90-S

PERCUTANEOUS ROD / STRAIGHT[1] [2] **ø5.4**	
L100	MIS-RT 01 00-S
L110	MIS-RT 01 10-S
L120	MIS-RT 01 20-S
L130	MIS-RT 01 30-S
L140	MIS-RT 01 40-S
L150	MIS-RT 01 50-S
L160	MIS-RT 01 60-S
L170	MIS-RT 01 70-S
L180	MIS-RT 01 80-S
L190	MIS-RT 01 90-S
L200	MIS-RT 02 00-S
L210	MIS-RT 02 10-S
L220	MIS-RT 02 20-S
L230	MIS-RT 02 30-S
L240	MIS-RT 02 40-S
L250	MIS-RT 02 50-S

SETSCREW[2]	ELL-SC 00 00-S

[1] Rods from 210 mm – 250 mm on demand.
[2] Implants can be delivered non sterile (MIS-PS XX XX-N, MIS-RT XX XX-N, ELL-SC 00 00-N)

TECHNICAL FEATURES

K-WIRELESS OPTION

- The K-Wireless option is designed to reduce intraoperative x-rays and the risk of a K-wire migration by simultaneously reducing the learning curve associated with common M.I.S. techniques

STREAMLINED TIP

- The screw tip allows for an effortless, self centering and K-Wireless screw insertion

MICRO-OPEN AND/OR PERCUTANEOUS APPROACHES

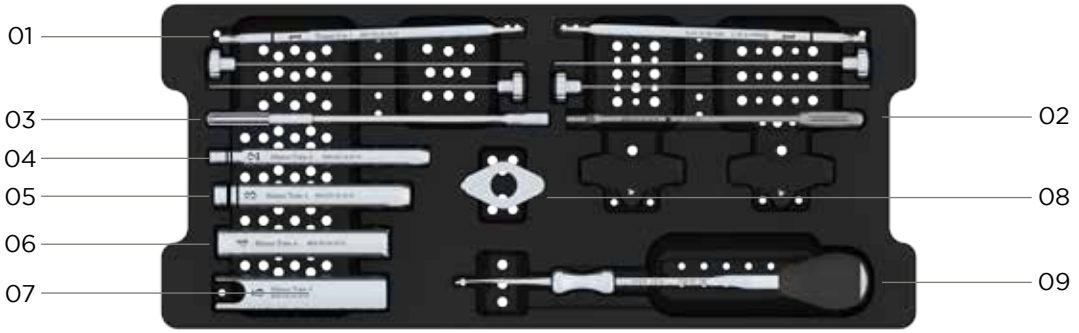
- The ROMEO®2 MIS system allows for bilateral micro-open, pure percutaneous or hybrid approaches to the thoracic junction and lumbar spine

SPONDYLOLISTHESIS REDUCTION

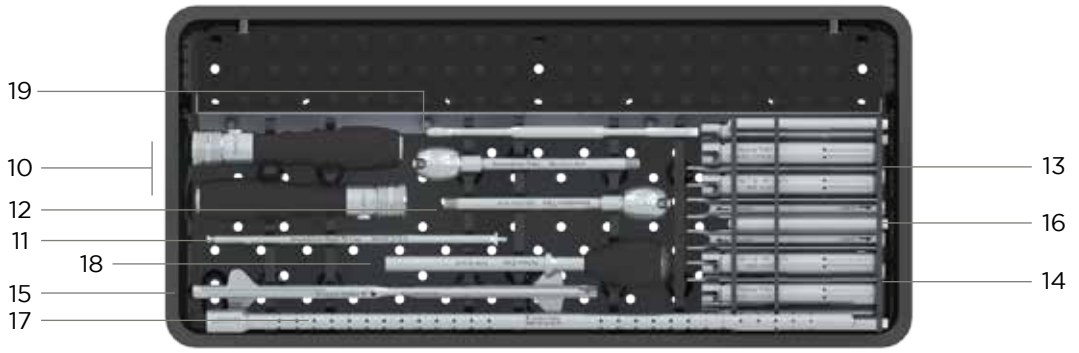
- The ROMEO®2 MIS system allows for bilateral, progressive, powerful and accurate spondylolisthesis reduction

INSTRUMENT SET

APPROACH RACK



SCREW INSERTION CONTAINER



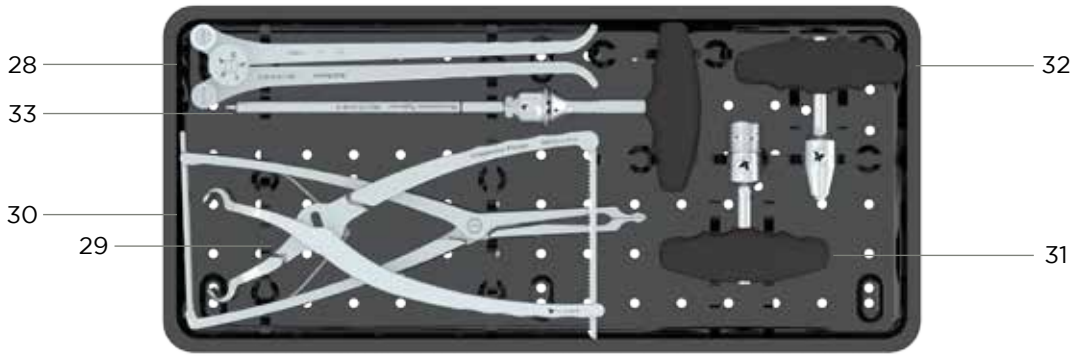
#	DESCRIPTION	REFERENCE
	APPROACH RACK	**MIS-BX 10 02-N**
	TROCAR 3 IN 1	
01	SQUARE AWL / DILATOR TUBE #1	MIS-IN 03 10-N
	NEEDLE	MIS-IN 03 15-N
	T-HANDLE	MIS-IN 03 14-N
02	TROCAR 3 IN 1 / TI STICK	MIS-IN 03 16-N
03	K-WIRE IMPACTOR	MIS-IN 38 00-N
04	DILATOR TUBE #2	MIS-IN 04 00-N
05	DILATOR TUBE #3	MIS-IN 05 00-N
06	DILATOR TUBE #4 / SERRATED	MIS-IN 06 02-N
07	DILATOR TUBE #5	MIS-IN 39 00-N
08	DILATOR TUBE #4 / SERRATED-PUSHER	MIS-IN 06 06-N
09	PEDICLE PROBE (K-WIRELESS)	MIS-IN 34 00-N

#	DESCRIPTION	REFERENCE
	SCREW INSERTION CONTAINER	**MIS-BX 10 01-N**
10	STRAIGHT HANDLE RATCHET	HAN-SI RA ST-N
11	SCREWDRIVER SHAFT PS CANNULATED	MIS-IN 33 01-N
12	SCREWDRIVER TUBE	ELL-IN 21 03-N
13	CLIPPING TUBE	MIS-IN 17 01-N
14	CLIPPING TUBE OPEN	MIS-IN 19 03-N
15	SETSCREW HOLDER W	ELL-IN 03 10-N
16	UNIVERSAL TUBE	MIS-IN 28 01-N
17	K-WIRE TUBE	MIS-IN 30 00-N
	K-WIRE W/BLUNT TIP	MIS-IN 02 00-N
18	RELEASE TUBE	MIS-IN 26 00-N
19	CENTERING GUIDE	MIS-IN 45 00-N

INSTRUMENT SET

ROD MANIPULATION RACK

FINAL TIGHTENING CONTAINER



#	DESCRIPTION	REFERENCE
	ROD MANIPULATION RACK	**MIS-BX 11 02-N**
20	CALIPER	MIS-IN 37 00-N
21	ROD INSERTER	MIS-IN 35 02-N
22	ROD INSERTER PERCUTANEOUS	MIS-IN 40 01-N
23	PERSUADER	MIS-IN 21 00-N
24	LOCKER	MIS-IN 11 00-N
25	SETSCREW TIGHTENER	ELL-IN 04 06-N
26	STABILIZER	MIS-IN 29 00-N
27	ROD TEMPLATE	ELL-IN 00 28-N

#	DESCRIPTION	REFERENCE
	FINAL TIGHTENING CONTAINER	**MIS-BX 11 01-N**
28	ROD BENDER	ELL-IN 00 09-N
29	COMPRESSION FORCEPS	MIS-IN 41 00-N
30	DISTRACTION FORCEPS	MIS-IN 42 00-N
31	T-HANDLE RATCHET	HAN-SI RA TE-N
32	T-HANDLE	HAN-SI MD TE-N
33	DYNAMOMETRIC TIGHTENER	ELL-IN 03 06-N

INSTRUMENTS

SQUARE AWL / DILATOR TUBE #1	MIS-IN 03 10-N

NEEDLE	MIS-IN 03 15-N

T-HANDLE	MIS-IN 03 14-N

TROCAR 3IN1/TI STICK	MIS-IN 03 16-N

K-WIRE IMPACTOR	MIS-IN 38 00-N

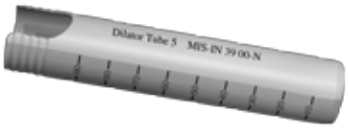
PEDICLE PROBE (K-WIRELESS)	MIS-IN 34 00-N

DILATOR TUBE #2	MIS-IN 04 00-N

DILATOR TUBE #3	MIS-IN 05 00-N

DILATOR TUBE #4 / SERRATED	MIS-IN 06 02-N

DILATOR TUBE #5	MIS-IN 39 00-N



DILATOR TUBE #4 / SERRATED-PUSHER	MIS-IN 06 06-N

INSTRUMENTS

STRAIGHT HANDLE RATCHET	HAN-SI RA ST-N

SCREWDRIVER SHAFT PS CANNULATED	MIS-IN 33 01-N

CLIPPING TUBE	MIS-IN 17 01-N

CLIPPING TUBE OPEN	MIS-IN 19 03-N

SETSCREW HOLDER W	ELL-IN 03 10-N

UNIVERSAL TUBE	MIS-IN 28 01-N

K-WIRE TUBE	MIS-IN 30 00-N

K-WIRE W/BLUNT TIP	MIS-IN 02 00-N

RELEASE TUBE	MIS-IN 26 00-N

CENTERING GUIDE	MIS-IN 45 00-N

SCREWDRIVER TUBE	ELL-IN 21 03-N

INSTRUMENTS

CALIPER	MIS-IN 37 00-N

ROD INSERTER	MIS-IN 35 02-N

ROD INSERTER PERCUTANEOUS	MIS-IN 40 01-N

PERSUADER	MIS-IN 21 00-N

ROD BENDER	ELL-IN 00 09-N

SETSCREW TIGHTENER	ELL-IN 04 06-N

STABILIZER	MIS-IN 29 00-N

ROD TEMPLATE	ELL-IN 00 28-N

LOCKER	MIS-IN 11 00-N

COMPRESSION FORCEPS	MIS-IN 41 00-N

INSTRUMENTS

DISTRACTION FORCEPS	MIS-IN 42 00-N

T-HANDLE RATCHET	HAN-SI RA TE-N

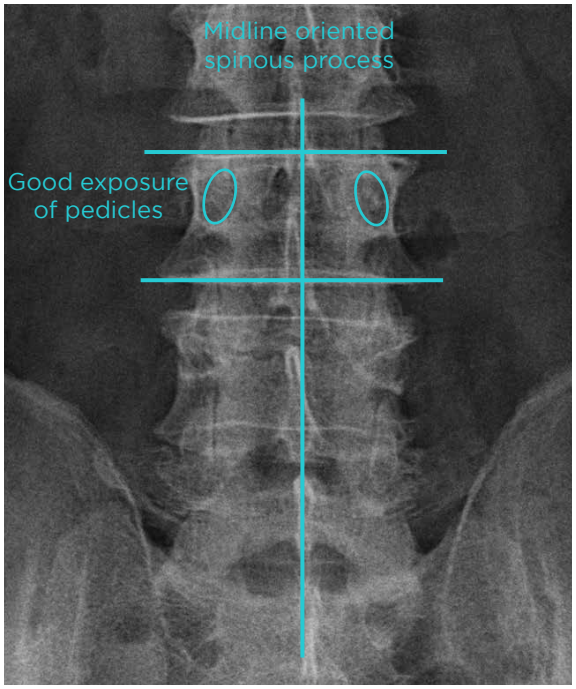
DYNAMOMETRIC TIGHTENER	ELL-IN 03 06-N

T-HANDLE	HAN-SI MD TE-N

SURGICAL TECHNIQUE

FLUOROSCOPIC ORIENTATION

Place the patient in the prone position on a radiolucent surgical table.



To obtain optimal visualization of the spine, ensure adequate clearance around the surgical table for the fluoroscopic C-arm. It should be able to rotate freely for AP, oblique and lateral views. Two C-arms can also be used in AP and lateral views.

All other tools used for patient positioning should be radiolucent too.

During the AP acquisition, verify that :

- the spinous processes are in the midline
- the endplates are linear

On the lateral view, verify that:

- the pedicles are superimposed
- the endplates are linear

Adjust the C-arm according to the lordosis of the vertebra level on the lateral image.

Note: It is important to start with a clear radiographic image in order to avoid any parallax distortion.

SURGICAL TECHNIQUE

STEP **1**

TROCAR 3 IN 1 ASSEMBLY

The Trocar 3in1 consists of:

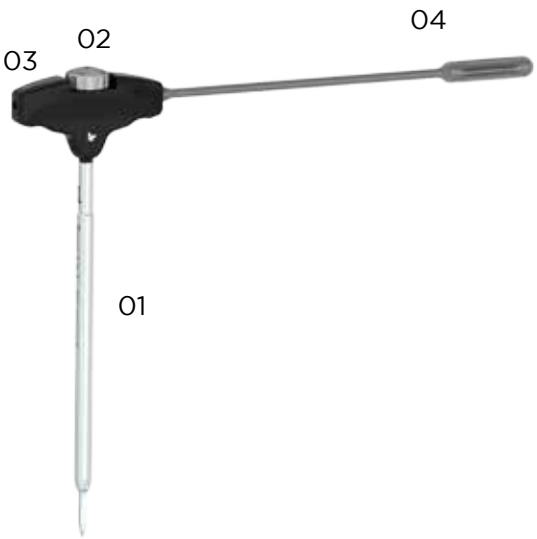
01. *Trocar 3 in 1 / Square awl / dilator tube # 1*
02. *Trocar 3 in 1 / Needle*
03. *Trocar 3 in 1 / T-handle*
04. *Trocar 3 in 1 / Ti stick*

Place the *T-Handle* onto the proximal (threaded side) of the *Square awl / dilator tube #1*. The part will slide into position, no screwing is required.

Place the Needle into the proximal part of the assembly. Fix it by threading the knob until locked into place.

Place the *stick* into the lateral end of the *T-handle* and fix by mating the threaded parts together.

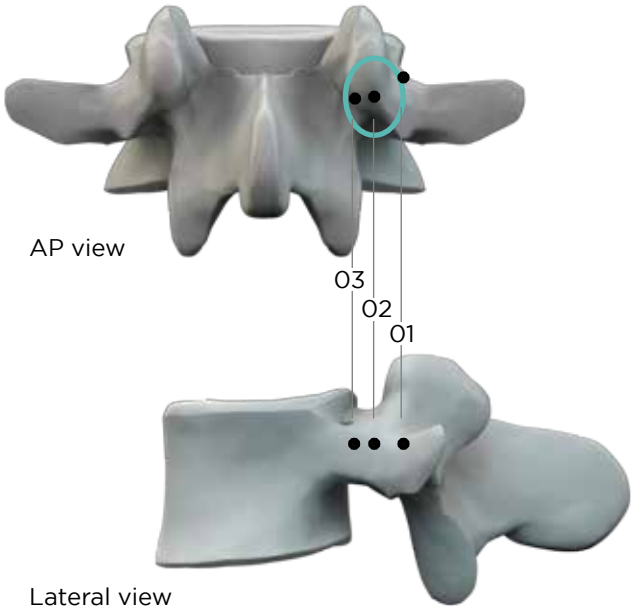
Note: The *Trocar 3 in 1* is used to create a path down the pedicle.



INSTRUMENT	REFERENCE
TROCAR 3 in 1	
SQUARE AWL / DILATOR TUBE #1	MIS-IN 03 10-N
NEEDLE	MIS-IN 03 15-N
T-HANDLE	MIS-IN 03 14-N
TI STICK	MIS-IN 03 16-N

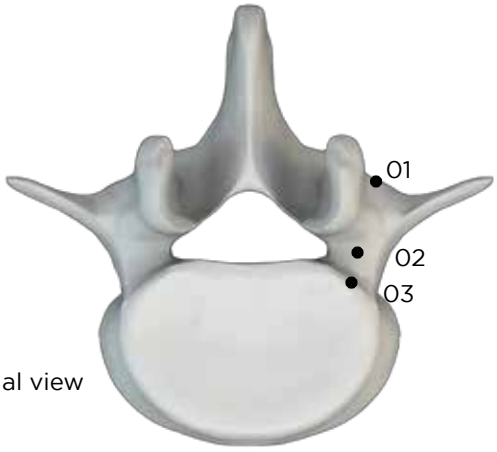
SURGICAL TECHNIQUE

STEP **2**

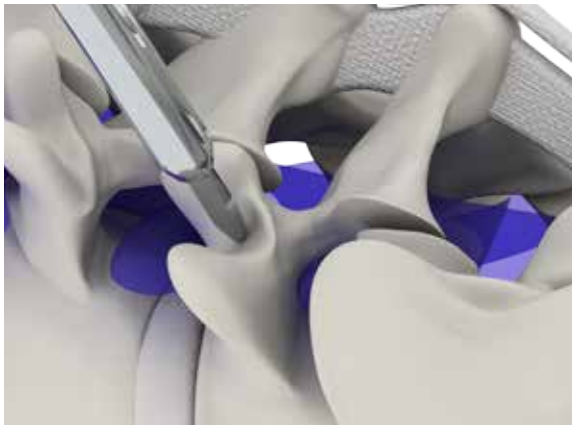


AP view

Lateral view



Axial view



PEDICLE TARGETING

Dock the Trocar 3 in 1 onto the superior lateral halves of the pedicle – **Position 1** - on the AP view. Hold onto the Trocar 3 in 1 / Ti stick during fluoroscopy in order to keep hands out of the x-ray field.

Using biplanar fluoroscopy, the trocar is inserted into the pedicle. Make sure that distal part of the Trocar 3 in 1 is lateral to the medial wall of the pedicle to ensure that the Trocar 3 in 1 is in the safe zone – **Position 2**.

The entry point into the vertebral body - **Position 3** – is located just at the limit of the safe zone following the trajectory either before.

Make adjustments using fluoroscopy.

Note: The Trocar 3 in 1 / square awl / dilator tube #1 has a depth-stop at 20 mm (22 mm total with the trocar needle) to limit the entry point depth.

At this point the surgeon must decide whether to use the K-wire or K-wireless technique.

INSTRUMENT	REFERENCE
TROCAR 3 in 1	
SQUARE AWL / DILATOR TUBE #1	MIS-IN 03 10-N
NEEDLE	MIS-IN 03 15-N
T-HANDLE	MIS-IN 03 14-N
TI STICK	MIS-IN 03 16-N

SURGICAL TECHNIQUE

STEP **3**

SEQUENTIAL DILATION

Carefully detach the Needle and T-handle from Trocar 3 in 1.

Start sequential dilation over Trocar 3 in 1 using Dilator tubes #2, #3, #4/serrated.

Advance all dilator tubes until black ring markings are clearly visible.

Place the Dilator tube #4/serrated-pusher over the Dilator tube #4/serrated top.
Lightly hammer the Dilator tube#4/serrated in order to firmly attach it to the bony structure.

At this step, it's recommended to remove the Serrated-pusher.

Screw the lateral side of the T-handle on the proximal side of the Square awl/dilator tube #1, and pull to remove Dilator tubes #1 to #3.

Note: It's important to keep the Dilator tube #4/serrated steady.

K-wire technique: Remove the Needle and the T-handle to allow the K-wire to be inserted into the pedicle.

Place the K-wire impactor over the K-wire and use a hammer to impact the K-wire.

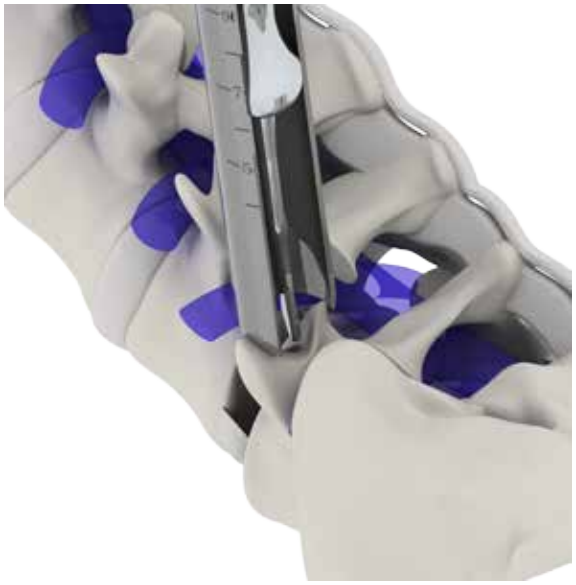
Use AP and Lateral fluoroscopy to confirm K-wire placement.

Remove the K-wire impactor.

INSTRUMENT	REFERENCE
DILATOR TUBE #2	MIS-IN 04 00-N
DILATOR TUBE #3	MIS-IN 05 00-N
DILATOR TUBE #4 / SERRATED	MIS-IN 06 02-N
DILATOR TUBE #4 / SERRATED-PUSHER	MIS-IN 06 06-N
TROCAR 3 IN 1	
K-WIRE IMPACTOR	MIS-IN 38 00-N

SURGICAL TECHNIQUE

STEP **4**



PEDICLE PREPARATION

Introduce the Pedicle probe (K-wireless) through Dilator tube #4 / serrated, the instrument is self-aligning. Prepare the pedicle canal by placing the pedicle probe distal tip curvature in a medial position.

Carry out AP and lateral controls under fluoroscopy during pedicle preparation maneuver.

The scaled graduation indicates the progression of the distal tip of the instrument into the pedicle canal.

Note: It's recommended to assemble the pedicle screw with the screwdriver before removing the pedicle probe.

INSTRUMENT	REFERENCE
PEDICLE PROBE (K-WIRELESS)	MIS-IN 34 00-N
DILATOR TUBE #4 SERRATED	MIS-IN 06 02-N

SURGICAL TECHNIQUE

STEP **5**

SCREWDRIVER ASSEMBLY

The Screwdriver consists of:

01. Screwdriver shaft PS cannulated
02. Screwdriver tube
03. Straight handle ratchet (or T-handle ratchet)

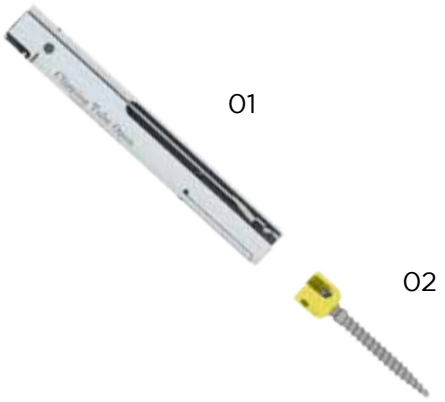
Slide the Screwdriver shaft PS cannulated into the Screwdriver tube until it clicks.

Connect the assembly to the handle option, e.g straight handle ratchet.

INSTRUMENT	REFERENCE
STRAIGHT HANDLE RATCHET	HAN-SI RA ST-N
T-HANDLE RATCHET	HAN-SI RA TE-N
SCREWDRIVER TUBE	ELL-IN 21 03-N
SCREWDRIVER SHAFT PS CANNULATED	MIS-IN 33 01-N

SURGICAL TECHNIQUE

STEP **6**



PEDICLE SCREW ASSEMBLY

Engage the screw head (02) to the Clipping tube open (01) or Clipping tube until it clicks.

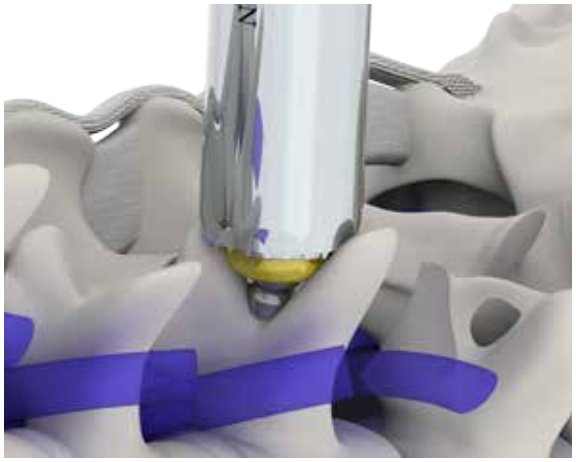
Insert the Screwdriver (03) through the assembly and engage its distal tip into the screw.

Rotate the knob clockwise to engage the Screwdriver to the screw.

INSTRUMENT	REFERENCE
CLIPPING TUBE (SPONDYLO OR TRAUMA)	MIS-IN 17 01-N
CLIPPING TUBE OPEN	MIS-IN 19 03-N
SCREWDRIVER	

SURGICAL TECHNIQUE

STEP **7**



PEDICLE SCREW INSERTION

Keep the Dilator tube #4/serrated steady.

Remove the Pedicle probe (K-wireless) from the vertebra and advance the assembly through the Dilator tube #4/serrated.

Note: Continue to advance the screw until the black line on the selected Clipping tube reaches the proximal end of the Dilator tube#4/serrated to ensure that the screw has passed the Dilator tube.

Confirm the advancement of the screw down the proper trajectory by using fluoroscopy.

Remove the Screwdriver.

Verify polyaxial capability by manipulating the Clipping tube.

Repeat the steps for each pedicular screw.

K-wire technique: Place assembly over the K-wire and advance through the Dilator tube #4/serrated. Use fluoroscopy to confirm that the K-wire has not advance or retract. Advance the screw to the desired depth and confirm with fluoroscopy.

Remove the K-wire and the Screwdriver.

INSTRUMENT	REFERENCE
DILATOR TUBE #4/ SERRATED	MIS-IN 06 02-N
CLIPPING TUBE OPEN	MIS-IN 19 03-N
CLIPPING TUBE	MIS-IN 17 01-N
SCREWDRIVER	
K-WIRE W/BLUNT TIP	MIS-IN 02 00-N

SURGICAL TECHNIQUE

STEP **8**

ROD MEASURING

Insert the Caliper into the craniocaudal Clipping tubes.

Push the Caliper down until fully seated in the screw heads.

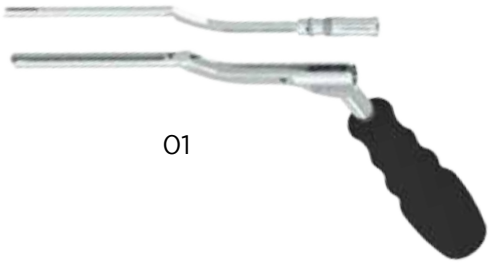
Read the exact rod length on the laser etched scale.

For accuracy in measurement, be sure that the Clipping tubes are vertically positioned.

INSTRUMENT	REFERENCE
CALIPER	MIS-IN 37 00-N
ROD TEMPLATE	ELL-IN 00 28-N
CLIPPING TUBE	MIS-IN 17 01-N
CLIPPING TUBE OPEN	MIS-IN 19 03-N

SURGICAL TECHNIQUE

STEP **9**



01

02

ROD INSERTER ASSEMBLY

Choose either the Rod inserter or the Rod inserter percutaneous.

For Rod inserter MIS-IN 35 02-N

Assemble the Rod inserter by inserting the inner bayonetted shaft into the main bayonetted shaft (**01**) and screwing the upper knob past the first set of threads (**02**) .

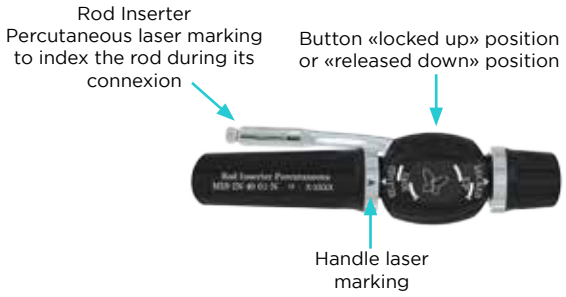
Align the laser marked lines of the square end of the rod and distal end of the Rod Inserter. Place the square feature of the rod into the square feature of the distal tip of the Rod Inserter, and screw the thumb screw of the Rod inserter by hand to fix into place.

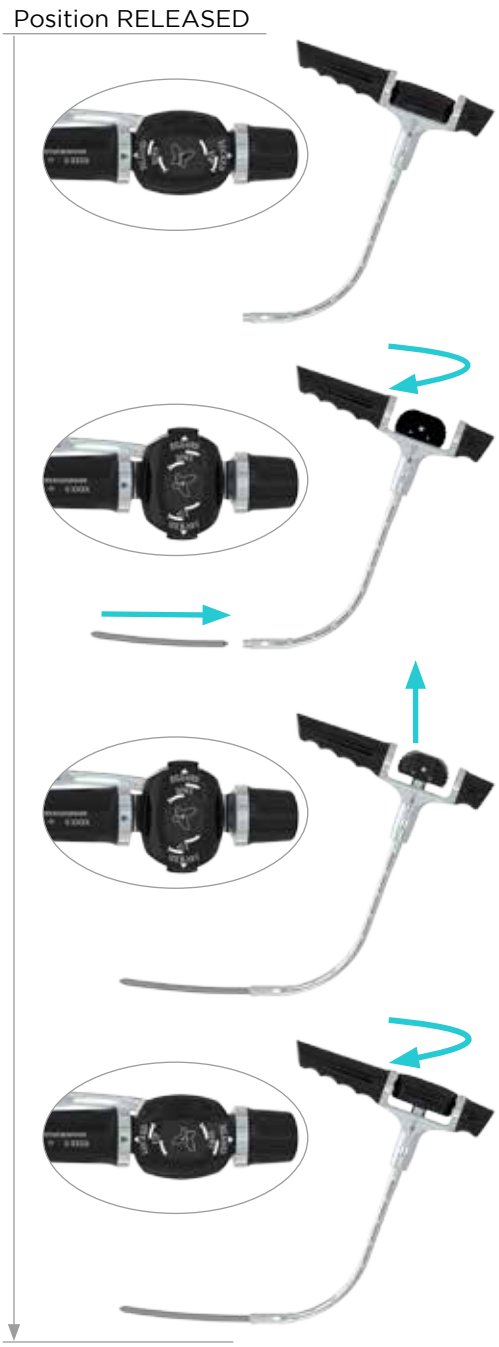
Note: Tighten the screw on top of the Rod inserter to ensure that the rod is securely attached.

INSTRUMENT	REFERENCE
ROD INSERTER	MIS-IN 35 02-N

SURGICAL TECHNIQUE

STEP **9 bis**





ROD INSERTER ASSEMBLY

For Rod inserter Percutaneous MIS-IN 40 01-N

LOCK THE ROD: from «released position» to «locked position»

- The Rod Inserter Percutaneous is on the «released» position.
- Turn the button and release it down: introduce the rod so that the rod laser marking and the instrument's laser marking are facing each other.
- Pull-up the button: the clamp retracts itself and the rod is captured.
- Lock the rod: turn the button so that the «locked» arrow laser marking is aligned on the handle laser marking. The rod is tightened to the Rod Inserter in «locked» position and ready to be introduced.
- Verify the secure attachment of the rod.

Note: The estimated rod entry point is at 80 mm from the first Clipping tube.

RELEASE THE ROD IN SITU: from «locked position» to «released position»

- The Rod Inserter Percutaneous is on the «locked» position with the rod attached.
- Turn the button in down position: the clamp goes out and releases the rod.
- Place the button on «Released» position and take off the instrument.

INSTRUMENT	REFERENCE
ROD INSERTER PERCUTANEOUS	MIS-IN 40 01-N

SURGICAL TECHNIQUE

STEP **10**

ROD INSERTION

Attach the appropriate rod to the selected Rod inserter.

Pass the rod through the outer Clipping tube.

Note: The stabilizer can be used additionally in order to realign the Clipping tubes.

Confirm the good position of the rod by fluoroscopy.

Place the Universal tubes in the Clipping tubes in order to seat the rod into screw heads.

The rod should be locked down with at least one setscrew before disconnecting the Rod inserter so the rod can not move or lose its lordotic angle.

INSTRUMENT	REFERENCE
UNIVERSAL TUBE	MIS-IN 28 01-N
ROD INSERTER	MIS-IN 35 02-N
ROD INSERTER PERCUTANEOUS	MIS-IN 40 01-N
STABILIZER	MIS-IN 29 00-N

SURGICAL TECHNIQUE

STEP **10** (optional)

ROD REDUCTION

The Persuader can be used to reduce the rod into the screw head, making setscrew placement easier.

Place the Persuader (02) in open position (read marking « 20 ») onto the Clipping tube with Universal tube in place (01).

Lock the Persuader on the Clipping tube by turning it clockwise, until the opening matches with the laser etched point.

Start reduction by turning the threaded knob clockwise.

INSTRUMENT	REFERENCE
PERSUADER	MIS-IN 21 00-N
CLIPPING TUBE	MIS-IN 17 01-N
CLIPPING TUBE OPEN	MIS-IN 19 03-N
UNIVERSAL TUBE	MIS-IN 28 01-N

CLOSED POSITION

SURGICAL TECHNIQUE

STEP **10** (optional)

SPONDYLOLISTHESIS REDUCTION

Place the Universal tubes into the Clipping tubes and attach the Persuader in open position onto the contralateral and ipsilateral Clipping tube of the slipped vertebral body.

Lock the Persuaders on the Clipping tubes.

Start parallel reduction by turning the threaded knobs of the Persuaders clockwise. Use the Locker to support the reduction process.

Note: The reduction maneuver can be performed bilaterally and simultaneously.

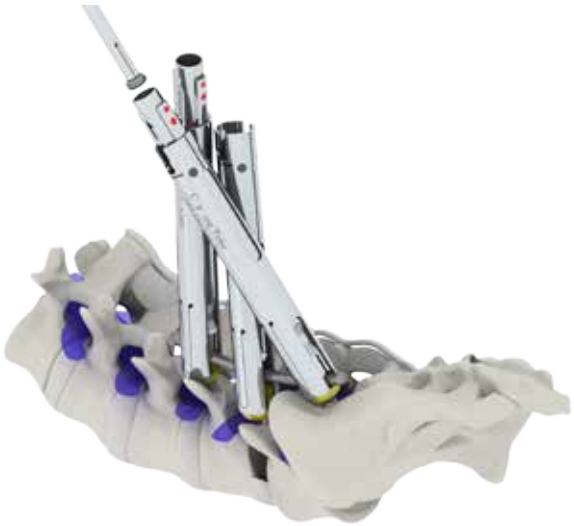
Verify the reduction under fluoroscopic control.

Carry out the preliminary tightening maneuver once the desired reduction has been achieved as described STEP 11.

INSTRUMENT	REFERENCE
PERSUADER	MIS-IN 21 00-N
UNIVERSAL TUBE	MIS-IN 28 01-N
CLIPPING TUBE	MIS-IN 17 01-N
CLIPPING TUBE OPEN	MIS-IN 19 03-N
SETSCREW HOLDER W	ELL-IN 03 10-N
LOCKER	MIS-IN 11 00-N

SURGICAL TECHNIQUE

STEP **11**



PRELIMINARY TIGHTENING

Load the Setscrew to the self-retaining distal tip of the Setscrew holder W.
Advance the setscrew through the Universal tube, or the Persuader if used.

Tighten by hand.

Repeat for all pedicle screws in the construct.

Remove the Persuader if applicable.

INSTRUMENT	REFERENCE
SETSCREW HOLDER W (SELF-RETAINING)	ELL-IN 03 10-N
UNIVERSAL TUBE	MIS-IN 28 01-N
LOCKER	MIS-IN 11 00-N
STABILIZER	MIS-IN 29 00-N
PERSUADER	MIS-IN 21 00-N

SURGICAL TECHNIQUE

STEP **12** (optional)

COMPRESSION AND DISTRACTION

Attach the Stabilizer onto the Clipping tubes in order to realign them.
Verify that the Universal tubes are in place.

Note: Prior to any compression or distraction maneuver, lock the setscrew at the extremity of the construct.

Insert the Dynamometric tightener into one of the craniocaudal Universal tube and attach the hexagonal tip of the instrument to the setscrew in order to generate a more rigid construct.

Apply the desired pressure to the Clipping tubes and maintain through the next step, final tightening.

INSTRUMENT	REFERENCE
DYNAMOMETRIC TIGHTENER	ELL-IN 03 06-N
COMPRESSION FORCEPS	MIS-IN 41 00-N
STABILIZER	MIS-IN 29 00-N
DISTRACTION FORCEPS	MIS-IN 42 00-N
UNIVERSAL TUBE	MIS-IN 28 01-N
SETSCREW HOLDER W	ELL-IN 03 10-N

SURGICAL TECHNIQUE

STEP **13**

FINAL TIGHTENING

Finally tighten the setscrews with the Dynamometric tightener in combination with the Stabilizer.

Remove the Compression forceps or the Distraction forceps if applicable.

INSTRUMENT	REFERENCE
STABILIZER	MIS-IN 29 00-N
DYNAMOMETRIC TIGHTENER	ELL-IN 03 06-N

SURGICAL TECHNIQUE

STEP **14**

CLIPPING TUBE RELEASE

Confirm that the final construct is completed before removing Clipping tubes.

Remove all the Universal tubes from the construct.

Place the Release tube into the Clipping tube and push down until the flanks of the Clipping tubes open.

Pull on the assembly to remove the Clipping tubes.

Repeat this step for each Clipping tubes.

INSTRUMENT	REFERENCE
RELEASE TUBE	MIS-IN 26 00-N
CLIPPING TUBE	MIS-IN 17 01-N
CLIPPING TUBE OPEN	MIS-IN 19 03-N

SURGICAL TECHNIQUE

RE-ATTACHING CLIPPING TUBES

Insert the Dilator tube #5 to expose the screw head.

Introduce the distal end of the Centering guide through the Dilator tube #5 until fully seated in the screw head.

Insert the Clipping tube along the guide tracks of the Centering guide.

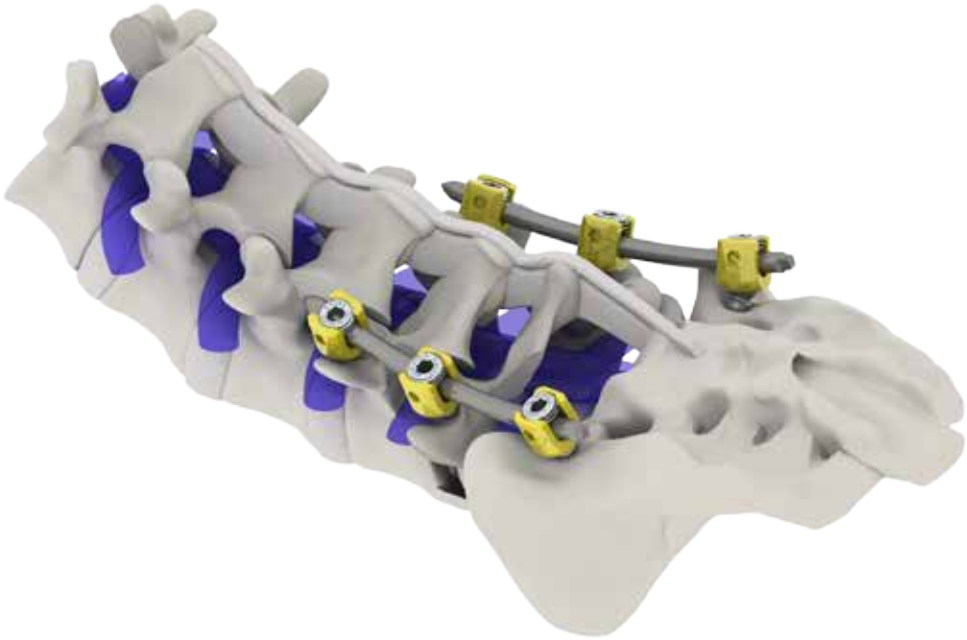
Push on the Clipping tube and connect it to the screw head until it clicks.

Remove the Centering guide.

INSTRUMENT	REFERENCE
CENTERING GUIDE	MIS-IN 45 00-N
CLIPPING TUBE	MIS-IN 17 01-N
CLIPPING TUBE OPEN	MIS-IN 19 03-N
DILATOR TUBE #5	MIS-IN 39 00-N

SURGICAL TECHNIQUE

FINAL CONSTRUCT



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