

SPINAL SYSTEM

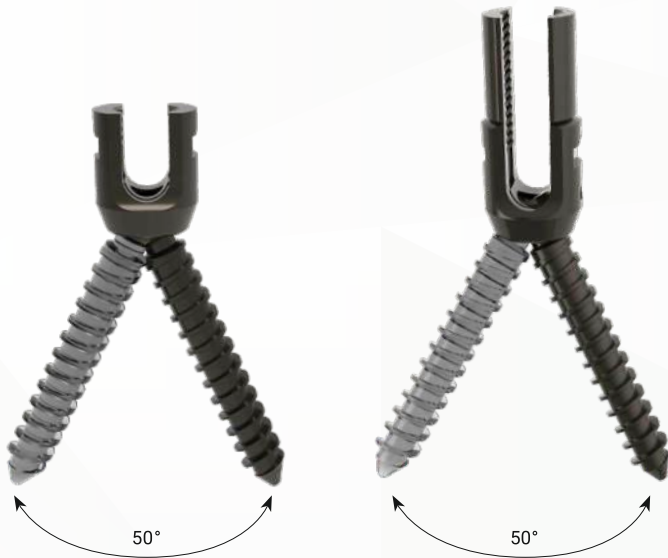
Surgical Technique



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Implants



Preassembled Polyaxial and Reduction Pedicle Screw

- ◆ Allows up to 50° of angulation to ease in situ connection to the longitudinal rod
- ◆ The rod reduction features are located at the top of the polyaxial head
- ◆ Dual Core/Double Lead thread designed to securely anchor the screw in cortical and cancellous bone



Pedicle Screw

- ◆ Designed for increased visual access to the anatomical structures
- ◆ Designed to allow for improved access to the surgical field
- ◆ Dual Core/Double Lead thread designed to securely anchor the screw in cortical and cancellous bone



Click-on Polyaxial and Reduction Screw Head

- ◆ The polyaxial head of the implant is designed for rod reduction
- ◆ To ease intraoperative planning, the polyaxial heads can be removed and replaced without removing the pedicle screw from the pedicle
- ◆ The reduction head allows for 14mm rod reduction



Locking Cap

- ◆ Square thread design reduces cross threading under high reduction loads
- ◆ 1-step locking cap designed to allow for complete fixation in one step (polyaxiality and run on rod)
- ◆ Available flat or with guidance



Transverse Connector

- ◆ The snap-on transverse connector is preassembled and requires only final positioning and tightening
- ◆ Telescoping body is arched to accommodate grafts and anatomical structures and is available in a range of lengths

AO Spine Principles

The four principles to be considered as the foundation for proper spine patient management underpin the design and delivery of the Curriculum: Stability – Alignment – Biology – Function.

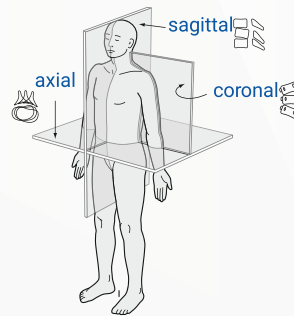
Stability

Stabilization to achieve a specific therapeutic outcome



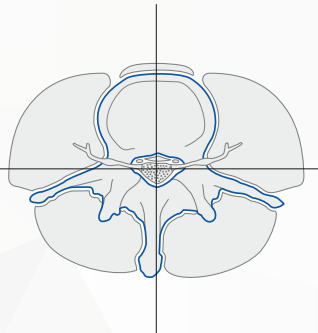
Alignment

Balancing the spine in three dimensions



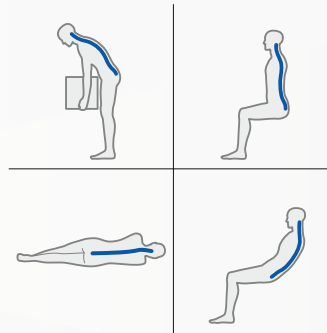
Biology

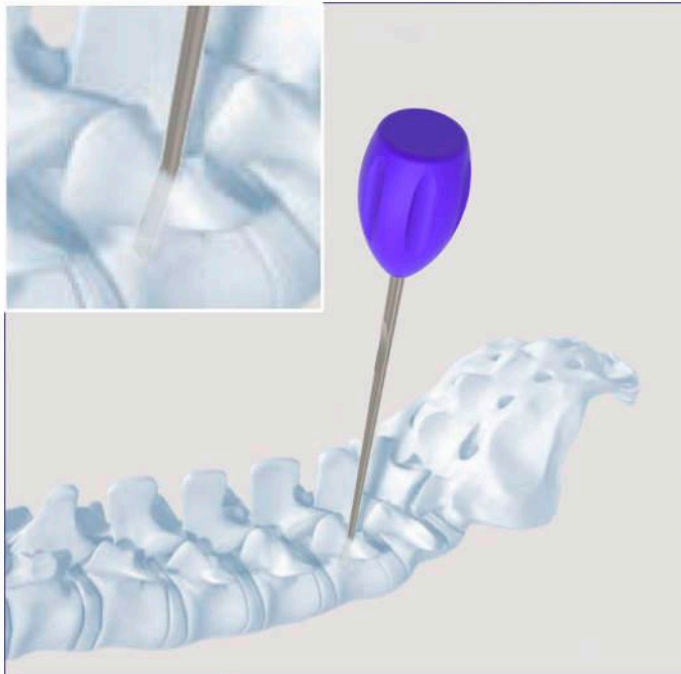
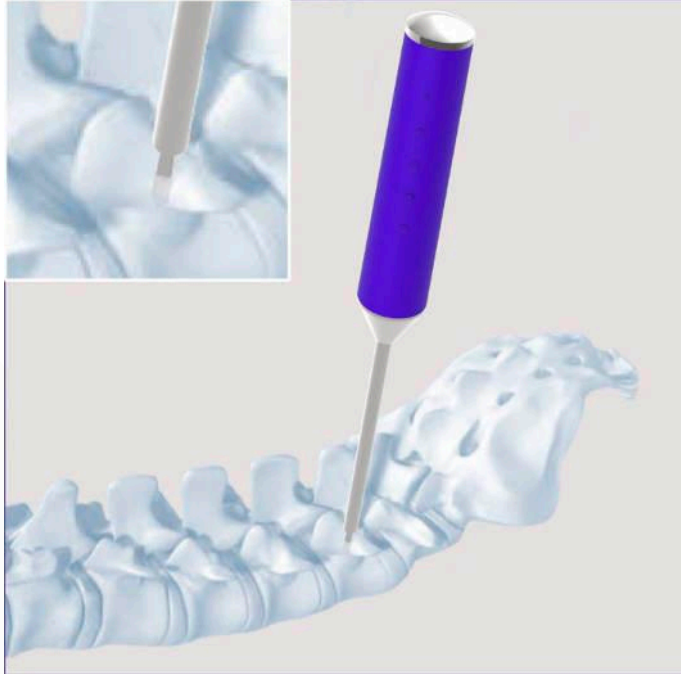
Etiology, pathogenesis, neural protection, and tissue healing



Function

Preservations and restoration of function to prevent disability





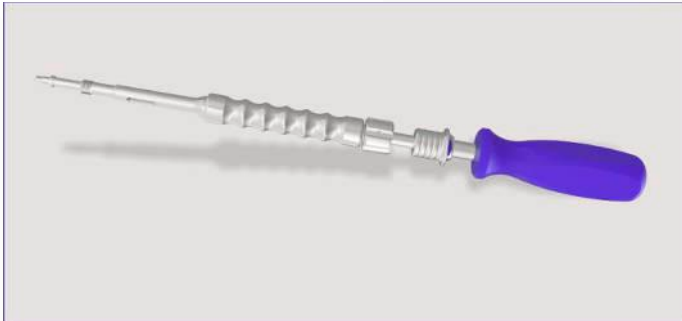
1. Prepare pedicles and determine screw lengths

Instruments

675.004 Open Awl

675.002 Curved Awl

Locate pedicles and use the awl to perforate the cortex. Use the probe to open the pedicle canal. Using radiographic imaging, confirm pedicle location, orientation and depth by inserting the probe. When selecting the appropriate length screw, use the markings on the probe to determine the pedicle depth.



2. Assemble screwdriver

Instruments

- 675.012 Multi-axial Screwdriver (short)
- 675.006 Quick Coupling Straight Handle

Slide retaining sleeve on the screwdriver shaft and attach the ratchet handle.

Optional instruments

- 675.036 Hex Screwdriver SW3.5 with T Handle
- 675.035 Screwdriver SW3.5
- 675.029 Multi-axial Screwdriver (long)

3. Pick up screw

Instruments

675.012 Multi-axial Screwdriver (short)

675.005 Quick Coupling T Handle

Choose the appropriate screw diameter and length based on pedicle probe feedback.

Insert the screwdriver tip into the recess of the pedicle screw and rotate the green knob of the retaining sleeve clockwise until the tip of the sleeve is firmly attached to the pedicle screw.

Verify the screw length with the template provided in the screw module.

Note:

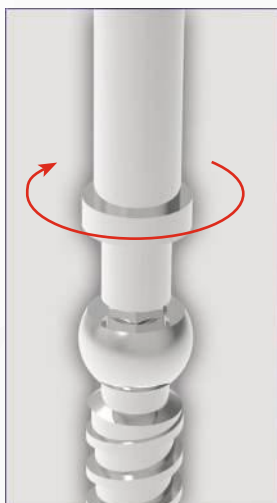
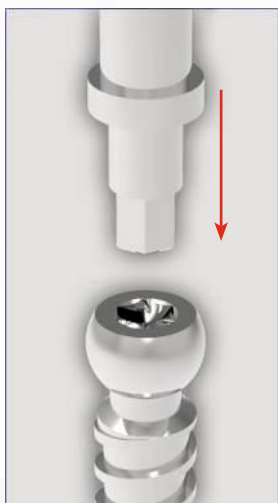
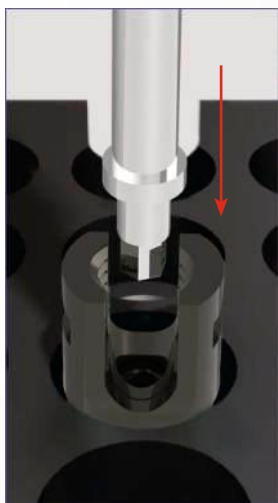
Set the ratchet to the neutral position before picking up a screw.

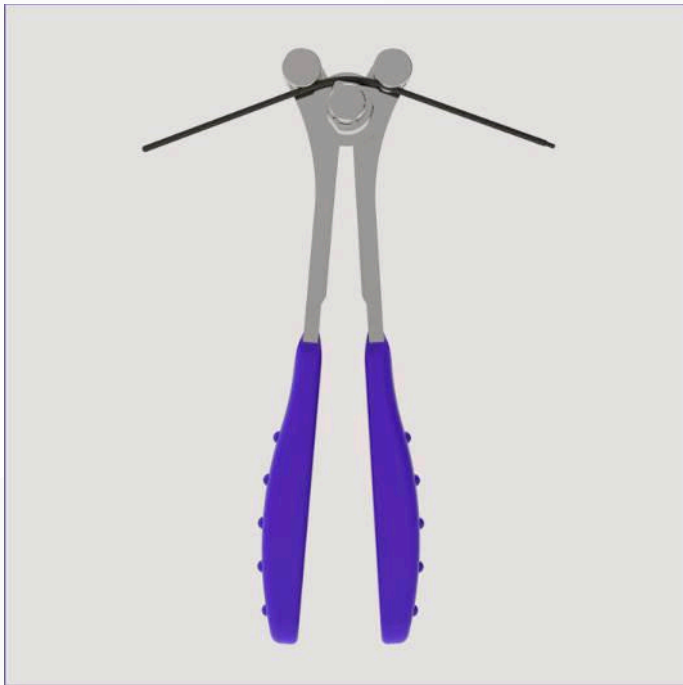
Optional instruments

675.036 Hex Screwdriver SW3.5 with T Handle

675.035 Screwdriver SW3.5

675.029 Multi-axial Screwdriver (long)





4. Select, cut and bend rod

Instruments

T425 Connecting Rod, 6.0mm, length 120mm
 675.017 Rod Bender

Use the head alignment tool to rotate and align the screw heads.

Use the trial rod to determine contour and length of the rod.

Select precontoured rod, or use rod bender to form rod according to the template.

Note:

- ◆ The screw height must be adjusted to the rod. If necessary, adjust the screw height using a screw driver without retaining sleeve.
- ◆ To restore polyaxiality of a screw head that has already been tightened, insert the alignment tool in the screw head and apply sufficient pressure to release the lock.

**5. Insert rod****Instruments**

675.015 Rod Holder

Insert the rod using the rod holding forceps.

Optional instruments

675.016 Rod Rotator

Note:

When using a connecting rod, it is important not to position the transition taper within the head of a screw or hook.



6. Reduce rod

Option A: Reduce rod with a rod pusher

Instruments

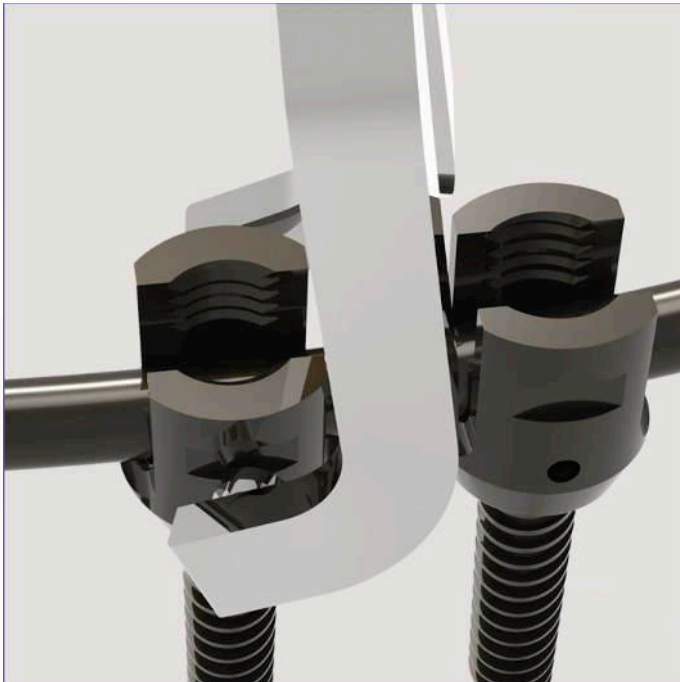
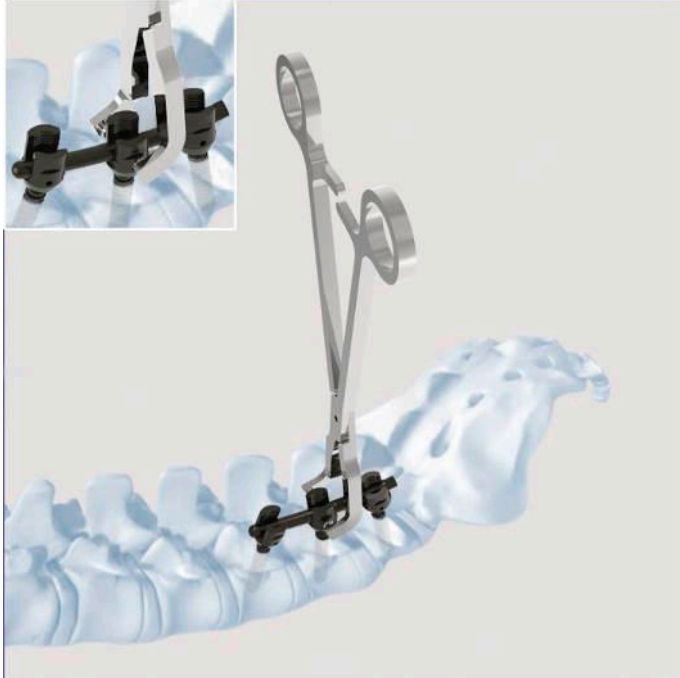
- 675.019 Rod Pusher
- 675.023 Anti-Rotating Sleeve

Connect detachable handle to the octagonal end of the rod pusher/counter torque.

Advance rod into the screw head using the rod pusher/countertorque.

Precaution:

- If significant reduction forces are encountered, consider
- ◆ screw height adjustments
 - ◆ rod placement to reduce muscle entrapment.

**Option B: Reduce rod with a Pedical Screw Holder****Instruments**

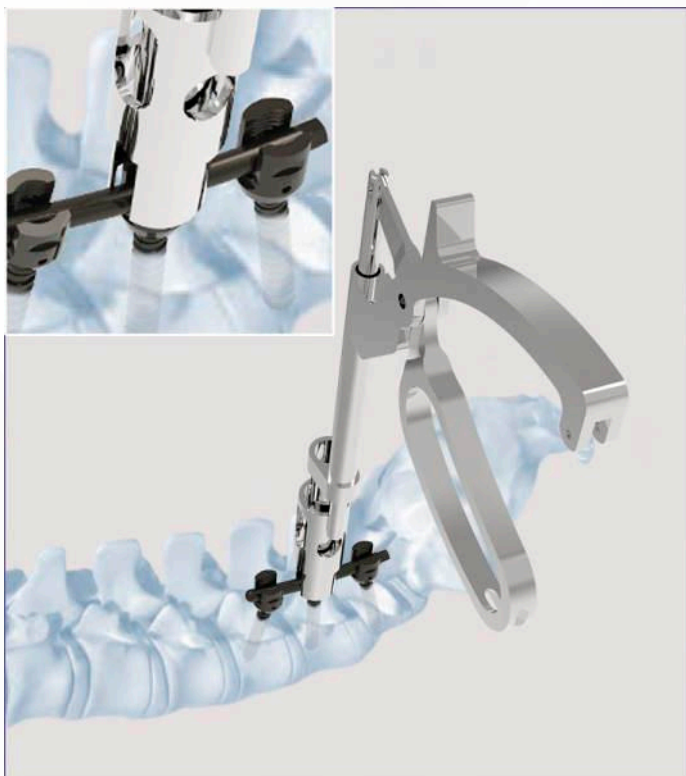
675.024 Pedical Screw Holder

Use a rocker fork to lever the rod into the head of the pedicle screw.

Precaution:

If significant reduction forces are encountered, consider

- ◆ screw height adjustments
- ◆ rod placement to reduce muscle entrapment.



Option C: Reduce rod with a rod persuader

Instruments

675.032 Rod Persuader

Ensure that the ratchet handle is fully open. Place the rod persuader over the rod and onto the screw head. Press down firmly until the tips engage the head of the screw. Squeeze the handle to seat the rod into the head of the pedicle screw.

Reduction travel:

15mm

Note:

The rod persuader can be used as counter torque for inal tightening of the locking cap.

Precaution:

If significant reduction forces are encountered, consider

- ◆ screw height adjustments
- ◆ rod placement to reduce muscle entrapment.



Monoaxial Screw 4.5mm

Titanium

Code No.	Length
T401.4530	30mm
T401.4535	35mm
T401.4540	40mm
T401.4545	45mm
T401.4550	50mm



Monoaxial Screw 5.5mm

Titanium

Code No.	Length
T401.5530	30mm
T401.5535	35mm
T401.5540	40mm
T401.5545	45mm
T401.5550	50mm



Monoaxial Screw 6.5mm

Titanium

Code No.	Length
T401.6530	30mm
T401.6535	35mm
T401.6540	40mm
T401.6545	45mm
T401.6550	50mm

Polyaxial Screw 4.5mm

Titanium



Code No.	Length
T402.4530	30mm
T402.4535	35mm
T402.4540	40mm
T402.4545	45mm
T402.4550	50mm

Polyaxial Screw 5.5mm

Titanium



Code No.	Length
T402.5530	30mm
T402.5535	35mm
T402.5540	40mm
T402.5545	45mm
T402.5550	50mm

Polyaxial Screw 6.5mm

Titanium



Code No.	Length
T402.6530	30mm
T402.6535	35mm
T402.6540	40mm
T402.6545	45mm
T402.6550	50mm

**Reduction Screw 5.5mm**

Titanium

Code No.	Length
T406.5530	30mm
T406.5535	35mm
T406.5540	40mm
T406.5545	45mm
T406.5550	50mm

**Reduction Screw 6.5mm**

Titanium

Code No.	Length
T406.6530	30mm
T406.6535	35mm
T406.6540	40mm
T406.6545	45mm
T406.6550	50mm

**Connecting rods**Connecting Rod, length 300mm
Titanium

Code No.	Diameter
T425	6.0mm

**Cross Connector**

Code No.	Length
T426.3034	30mm x 34mm
T426.3442	34mm x 42mm
T426.4053	40mm x 53mm
T426.5070	50mm x 70mm

Instruments

675.004 Open Awl	675.001 Straight Awl
	
675.002 Curved Awl	675.039 Curved Probe
	
675.013 Screw Holder	675.036 Hex Screwdriver SW3.5
	
675.027 Wrench (2 pcs), with T-Handle	675.036 Hex Screwdriver SW3.5 with straight handle
	

675.017 Rod Bender**675.015 Rod Holder****675.006 Quick Coupling Straight Handle****675.032 Rod Persuader**



AGC.36 Spinal Pedicle Implant Set

T401	Monoaxial Screw 4.5mm, 5.5mm, 6.5mm x 30mm, 35mm, 40mm, 45mm, 50mm
T402	Polyaxial Screw 4.5mm, 5.5mm, 6.5mm x 30mm, 35mm, 40mm, 45mm, 50mm
T406	Reduction Screw 5.5mm, 6.5mm x 30mm, 35mm, 40mm, 45mm, 50mm
T425	Connecting Rod 6.0mm x 50mm, 60mm, 70mm, 80mm, 90mm, 100mm, 120mm, 140mm, 160mm, 180mm, 200mm, 250mm, 300mm
T426	Cross Connector 30mm x 34mm, 34mm x 42mm, 40mm x 53mm, 50mm x 70mm

AGC.37 Spinal Pedicle Instrument Set



675.001	Straight Awl
675.002	Curved Awl
675.003	Marker Insertor
675.037	Marker left (5 pcs)
675.038	Marker right (5 pcs)
675.004	Open Awl
675.005	Quick Coupling T Handle
675.006	Quick Coupling Straight Handle
675.007	Tap 4.5mm
675.008	Tap 5.5mm
675.009	Tap 6.5mm
675.010	Straight Probe
675.039	Curved Probe
675.040	Hard Probe
675.011	Mono-axial Screwdriver (short)
675.012	Multi-axial Screwdriver (short)
675.013	Screw Holder (2 pcs)
675.015	Rod Holder
675.016	Rod Rotator
675.017	Rod Bender
675.018	Bending Device (left and Right)
675.019	Rod Pusher
675.021	Spreader
675.022	Compressor
675.023	Anti-Rotating Sleeve
675.024	Rod Compressor
675.025	Breaker
675.027	Wrench (2 pcs)
675.028	Mono-axial Screwdriver (long)
675.029	Multi-axial Screwdriver (long)
675.030	Small Wreanch $\phi 4.0$
675.031	Template (2 pcs)
675.032	Rod Persuader
675.033	Rotating Device SW5.0
675.034	Rod Fork
675.035	Screwdriver SW3.5
675.036	Hex Screwdriver SW3.5
812.009	Ratcheting Handle



House of Ortho Tools

Plot No. G-2041/42/A, Kishan Gate, Lodhika G.I.D.C.,
Kalawad Road, Metoda, RAJKOT-360 021, (INDIA).

www.hardikinternational.com
info@hardikinternational.com

☎ : +91 97370 47470/1/2/4 S : [hardikinternational](https://www.hardikinternational.com)

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