



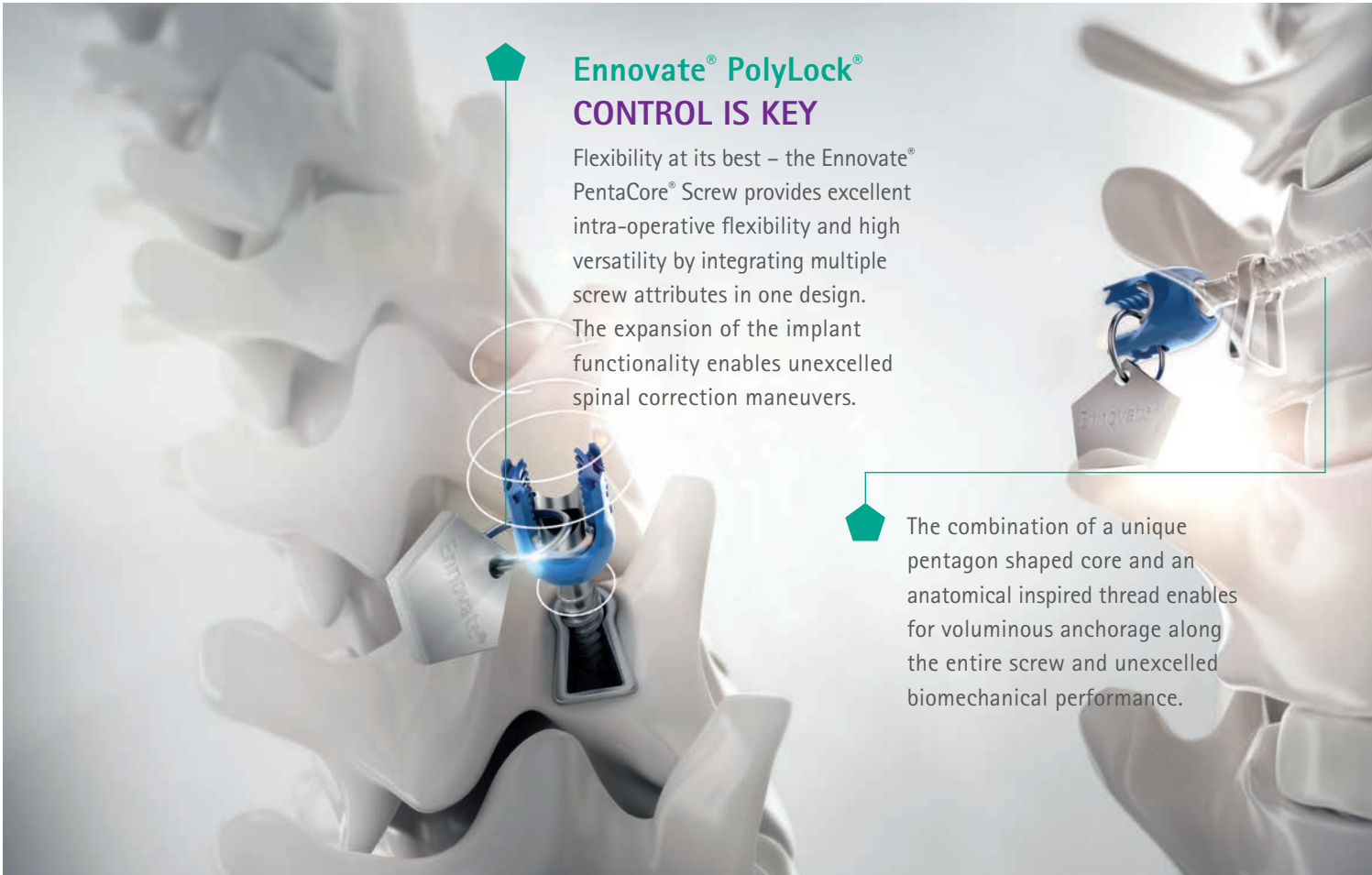
 **AESCULAP® Ennovate®**
SOLUTIONS BEYOND FUSION

SPINE SURGERY

AESCULAP® Ennovate®
DEGENERATIVE SPINE
OPEN WORKFLOW

AESCULAP® Ennovate®

DEGENERATIVE SPINE



Ennovate® PolyLock® CONTROL IS KEY

Flexibility at its best – the Ennovate® PentaCore® Screw provides excellent intra-operative flexibility and high versatility by integrating multiple screw attributes in one design. The expansion of the implant functionality enables unexcelled spinal correction maneuvers.

The combination of a unique pentagon shaped core and an anatomical inspired thread enables for voluminous anchorage along the entire screw and unexcelled biomechanical performance.



**Ennovate® PentaCore®
Screw**
**URNS DESIGN
INTO STABILITY**

The unique design allows for immediate grip and traction from the first turn, providing you with immediate bone purchase, tactile feedback and sense of control.

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ENGINEERED FOR SURGEONS, DESIGNED FOR HOSPITALS

Ennovate® is the epitome of the most advanced spinal platform provided by AESCULAP®. This solution platform leverages spinal fusion on a whole new level by placing the patient at the heart of the treatment and allowing the surgeon to perform uncompromising spinal corrections across all workflows.

The surgical manual is intended to be used as a guideline for correction techniques with Ennovate® in presence of a degenerated spine. Instrumented levels and the combination of implants and instruments are based on surgeon preference and patient pathology.

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A. PEDICLE PREPARATION & PEDICLE SCREW PLACEMENT

PEDICLE PREPARATION

- Identify the appropriate spinal landmarks for initiating cortex perforation.
- The perforation of the cortex is created with a Pedicle Awl.



- The perforation is followed by a Pedicle Probe to open the pedicle canal.
- All Pedicle Probes provide depth markings from 30 to 110 mm, in 10 mm increments, to determine the advancement into the pedicle canal.
- The Pedicle Probes are available as straight or curved Lumbar Probes/Thoracic Probes.
- Large Pedicle Probes are available for pedicle preparation, in combination with pedicle screws with a diameter starting from 5.5 mm.





Utilize a Pedicle Sounder to verify the integrity of the pedicle and vertebral body cortex.



If necessary, Pedicle Markers can be used as placeholders during pedicle preparation or for identification of proper anatomic location on the intra-operative imaging.

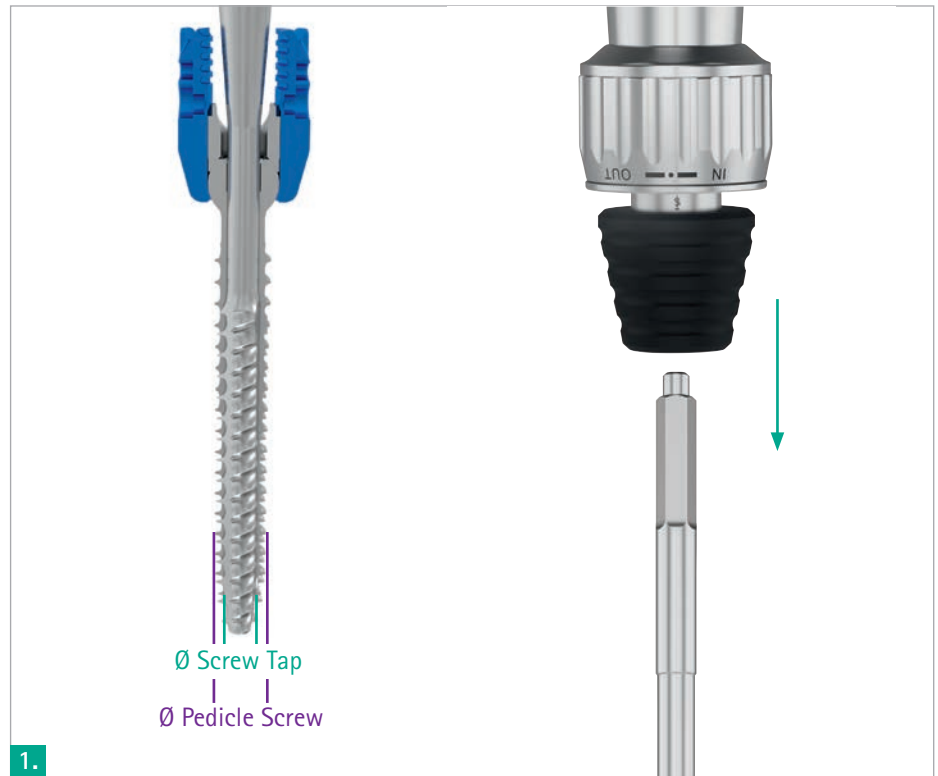
AESCULAP® Ennovate®

DEGENERATIVE SPINE

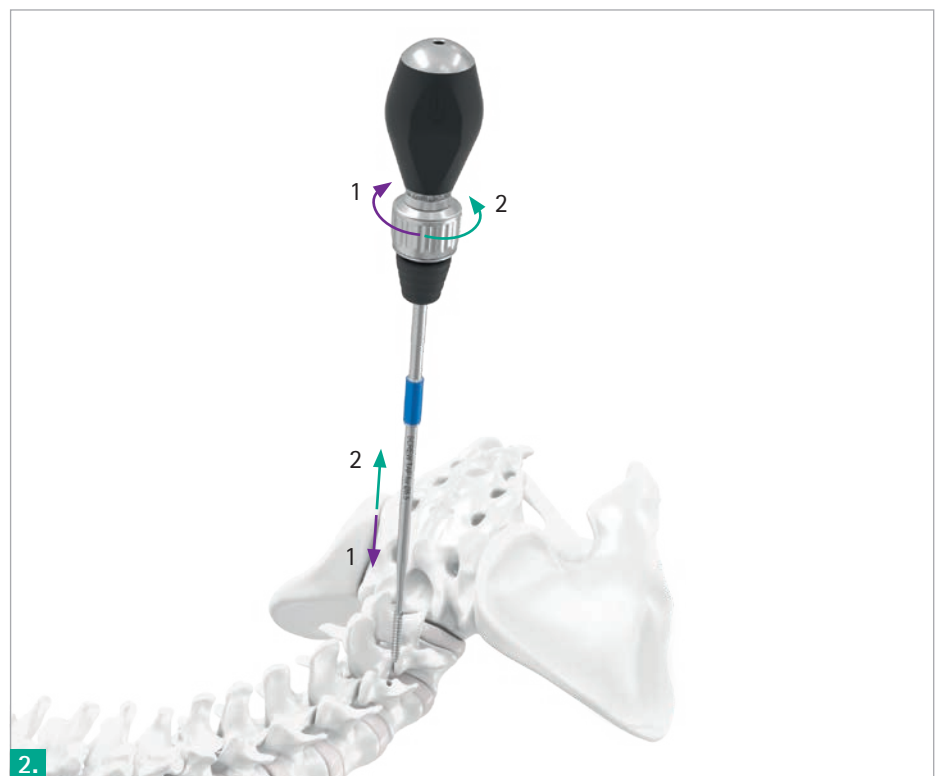
A. PEDICLE PREPARATION & PEDICLE SCREW PLACEMENT

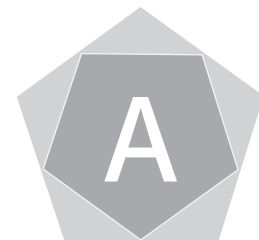
BONE TAPPING

- Screw Taps are undersized by 0.25 mm of the final pedicle screw diameter.
- For pedicle screw diameters 7.5 mm and larger it is recommended to apply a sequential tapping procedure, starting with a smaller tap and increasing the diameter stepwise until the desired diameter is reached.
- Attach the desired handle to the Screw Tap by sliding the hexagonal shaped portion of the shaft into the handle coupling until the stop.
- The ratcheting handles can be moved between forward (IN), locked (·), and reverse (OUT) positions by rotating the collar of the handle.

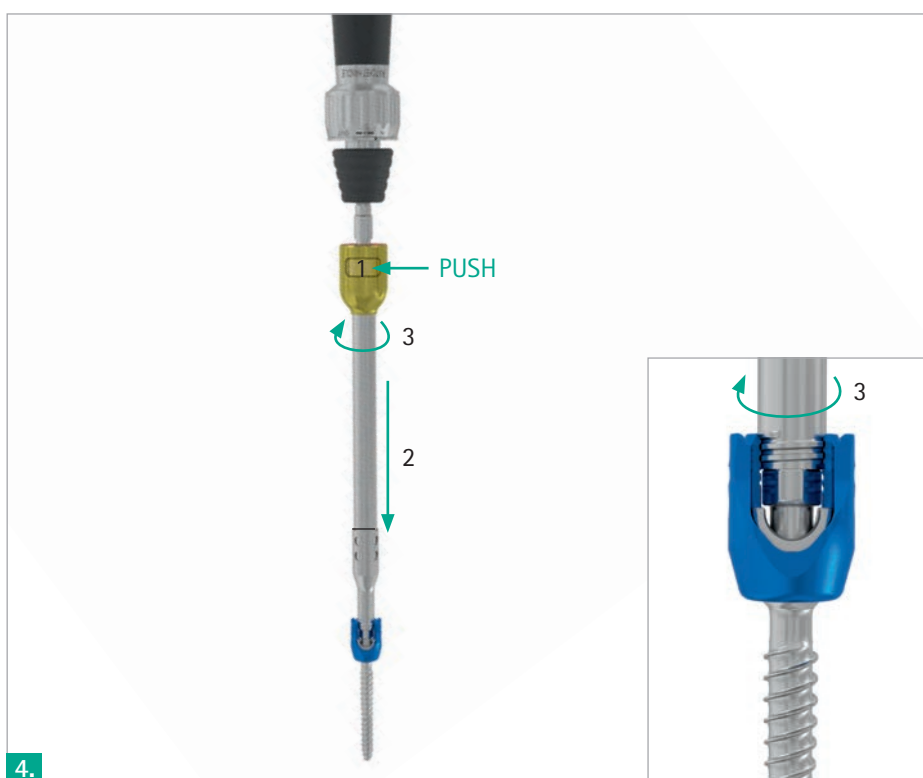


- Switch the ratchet to the forward (IN) position (1), apply the instrument to the prepared entry point and advance the tap to the desired depth by turning the handle clockwise.
- Once the pedicle has been tapped to the desired depth, switch the ratchet to the reverse (OUT) position (2) and turn the handle counter-clockwise.
- Utilize the Pedicle Sounder to verify the integrity of the pedicle and vertebral body cortex.
- Remove the Screw Tap from the handle by pulling the black collar backwards and then removing the Screw Tap.





- To determine the appropriate pedicle screw length palpate the prepared pedicle canal with a Pedicle Sounder.
- Clamp a hemostat to the exposed Pedicle Sounder and measure the length using the markings on the Pedicle Sounder.
- Select the appropriate pedicle screw diameter and length based on pre-operative planning and intra-operative measuring.



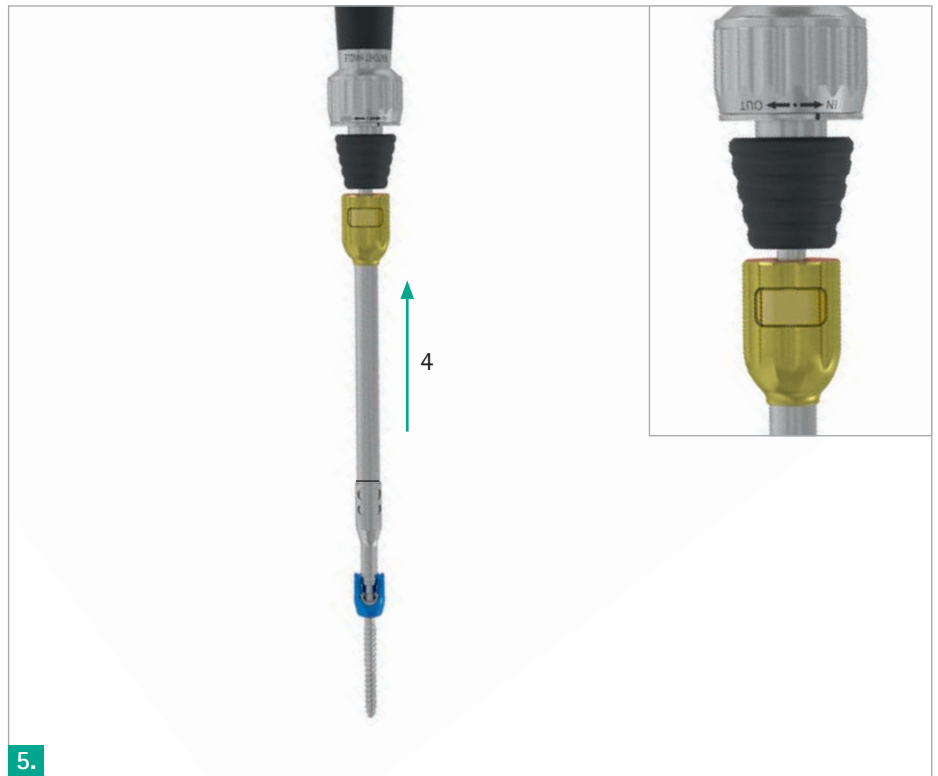
- Attach the desired handle to the Screwdriver by sliding the hexagonal shaped portion of the shaft into the handle coupling until the stop.
- Ensure the Screwdriver sleeve is in load position by pushing the golden button (1) and sliding the sleeve towards the tip of the Screwdriver (2).
- Place the tip of the Screwdriver assembly into the head of the pedicle screw.
- Rotate the golden knob clockwise to lock the threaded end of the Screwdriver into the pedicle screw head (3).

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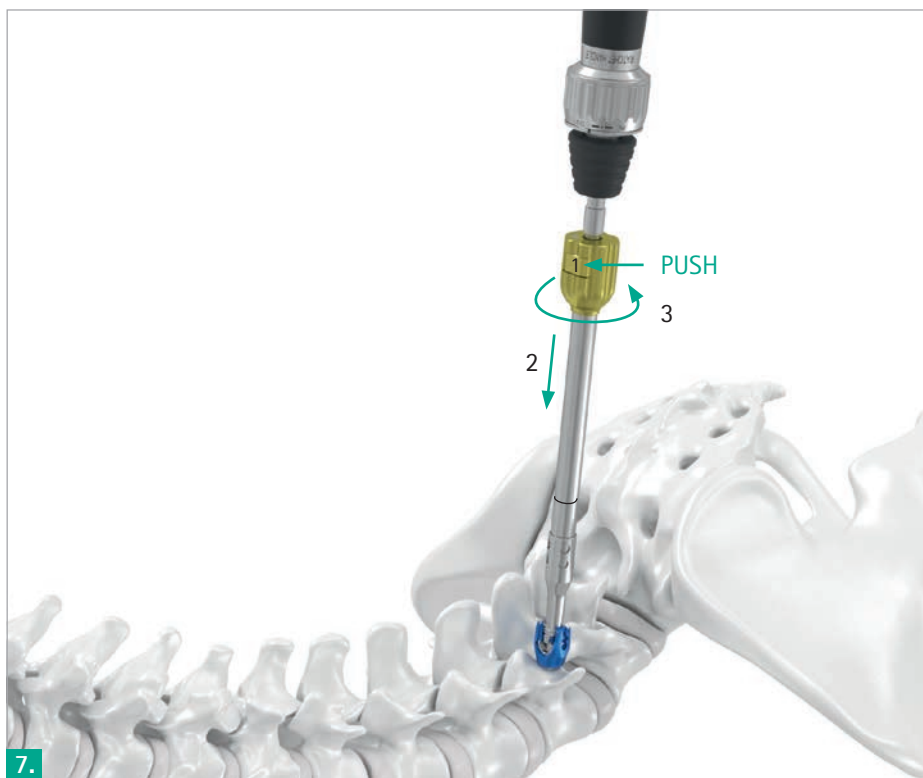
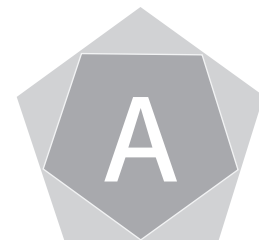
A. PEDICLE PREPARATION & PEDICLE SCREW PLACEMENT

- Proper fixation is reached when the pedicle screw is restricted polyaxially.
- If desired, additional screw connection can be achieved by holding the black handle while turning the golden knob of the Screwdriver clockwise.
- Slide the Screwdriver sleeve backward until an acoustic signal sounds (4).



- Switch the ratchet to the forward (IN) position (1), apply the instrument to the prepared entry point and advance the pedicle screw (2) to the desired depth by turning the black handle clockwise.





- Once the pedicle screw is fully inserted, press the golden button (1) on the golden knob and slide the Screwdriver sleeve towards the screw head (2).
- Turn the golden knob of the Screwdriver counter-clockwise to disengage the Screwdriver from the pedicle screw head (3).
- Ensure that the polyaxiality of the pedicle screw head is intact and that it shows limited interference with anatomical structures.
- The placement and size of the pedicle screws shall be confirmed with intra-operative imaging prior to rod insertion.



- If desired, align and position the pedicle screw heads using the Screw Head Manipulator.
- When using monoaxial screws, ensure proper alignment of the pedicle screw heads for all subsequent steps.
- For the alignment of monoaxial pedicle screws please use the Screwdriver.
- Screw height can be adjusted by attaching the Screwdriver to the pedicle screw, switching the ratchet to the reverse (OUT) position and turning the black handle counter-clockwise.

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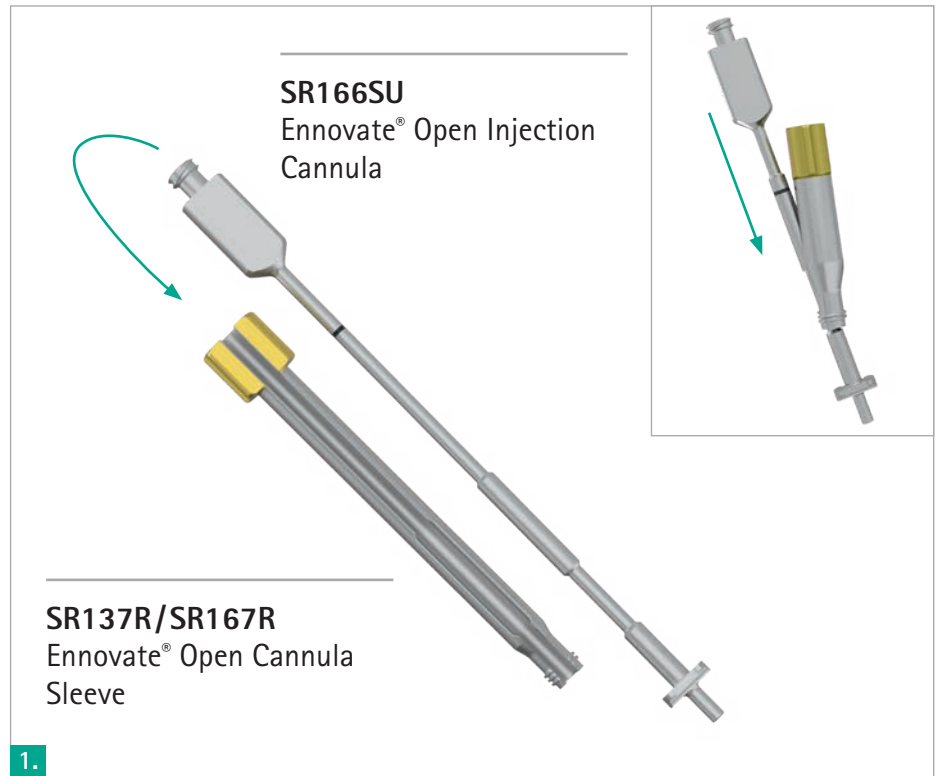
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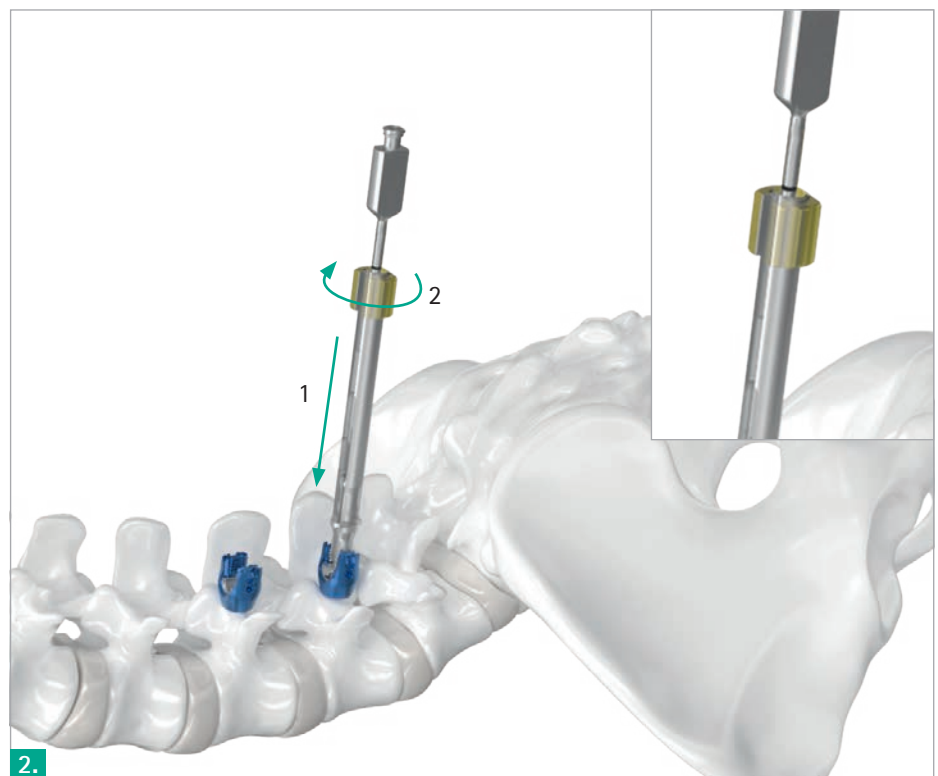
DEGENERATIVE SPINE

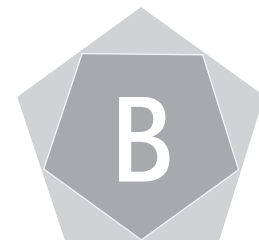
B. CEMENT DELIVERY (OPTIONAL)

- Please ensure that only Ennovate® Fenestrated PentaCore® Screws are used for the following steps.
- For Injector assembly, insert the Injection Cannula into the Cannula Sleeve. Ensure that the tip of Injection Cannula is aligned with the threaded portion of the Cannula Sleeve.

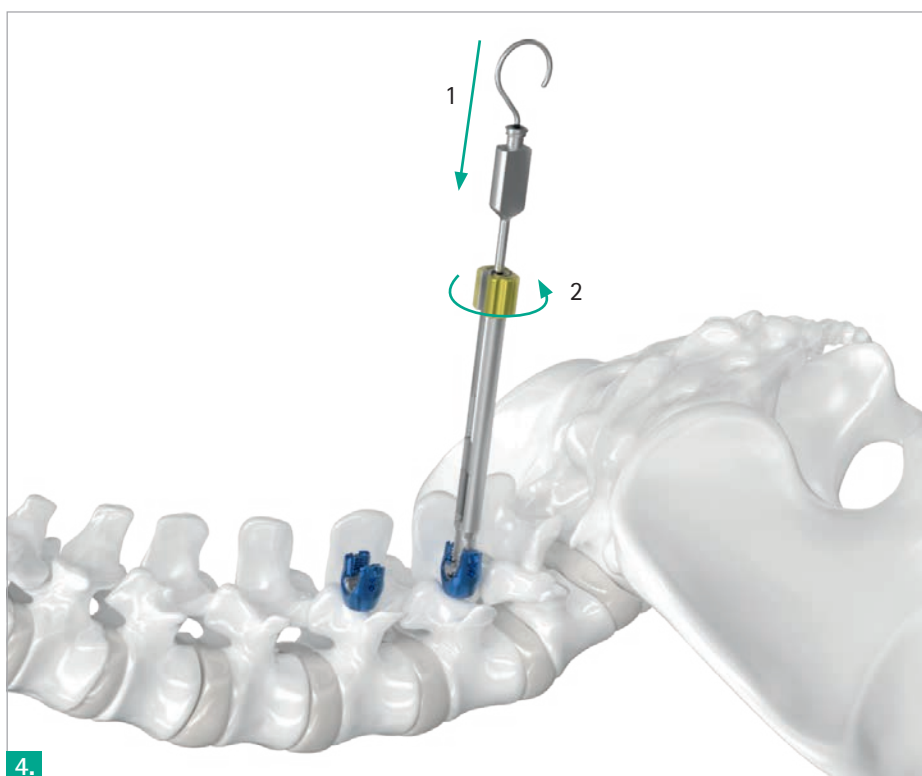


- Place the tip of the Injector into the head of the pedicle screw to be cemented (1).
- The Injector is engaged by turning the golden portion of the Cannula Sleeve clockwise (2) while firmly holding the flattened portion of the Injection Cannula in place.
- Proper fixation is reached when the pedicle screw is restricted polyaxially and the line marking on the Injection Cannula is flush with the upper end of the Cannula Sleeve. Visual and tactile confirmation of the connection is recommended.
- Before cement delivery, check if the cement has reached the desired viscosity for application and that the cement application systems provides a Luer Lock interface.





- Attach the cement applicator system firmly to the Luer Lock of the Injector.
- Inject the cement under slight pressure with the assistance of radiological imaging. The procedure should be monitored closely by the surgeon.
- Inject cement until it extrudes from the lateral slots of the Ennovate® Fenestrated PentaCore® Screw. Check continuously that no cement leakage occurs.
- Continue the injection until an adequate quantity of cement is introduced and shows in a cloud pattern.



- The handling time of the cement ends when its viscosity is so high that no further cement delivery is possible.
- After cement delivery, ensure the Injector remains in its position until the cement has hardened to its final stage.
- The Pestle can be used to push the remaining cement in the Injector into the pedicle screw (1).
- Once the cement has hardened, the Injector assembly can be removed by turning the golden portion of the Cannula Sleeve counter-clockwise (2) while firmly holding the flattened portion of the Injection Cannula in place.
- Visual confirmation of the pedicle screw head is recommended.

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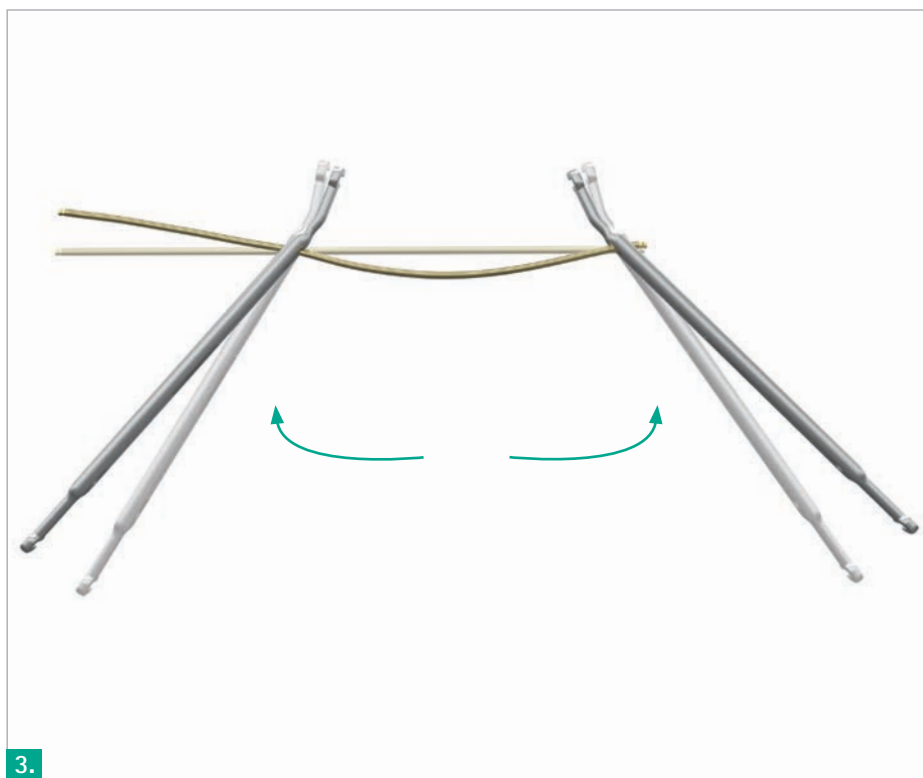
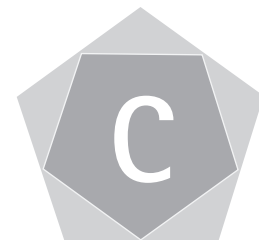
C. ROD CONTOURING AND PLACEMENT

- For rod contouring, the flexible Rod Template may be used to determine rod length and sagittal/coronal profile.
- Place the Rod Template into the pedicle screw heads and measure the desired rod length, taking into account a suitable rod overhang.
- If needed, a Rod Cutter may be used to assist rod cutting to the required length.



- Rods may be contoured using the Rod Bender, which offers various bending radii.
- To contour the rod, set the bending radius by pulling the knob and turning it to the desired radius.
- Place the rod between the lower bending knob and both upper holding knobs. All rods show a line marking as a reference to assist sagittal plane contouring.
- For rod contouring, squeeze both handles, and repeat the contouring process along the rod, until the desired rod contour is achieved.





- Rods may be contoured using the Sagittal Rod Benders, which allow high radius bending.
- The Sagittal Rod Benders show straight and angled holes for enhanced rod accommodation.
- To contour the rod, slide the rod into the desired hole of each Sagittal Rod Bender.
- Grip the most distal portions of the Sagittal Rod Benders for enhanced mechanical advantage during contouring.
- By levering the Sagittal Rod Benders the rod is bent according to the desired contour.



- Align the contoured rod along the patient's physiological sagittal profile and place the rod into the pedicle screw heads.
- The Rod Holder may be used to assist rod placement or rod manipulation.
- If needed, Rod Rotation Wrenches can be engaged to the hexagon shaped ends of the rod to facilitate rod alignment.

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D. ROD REDUCTION

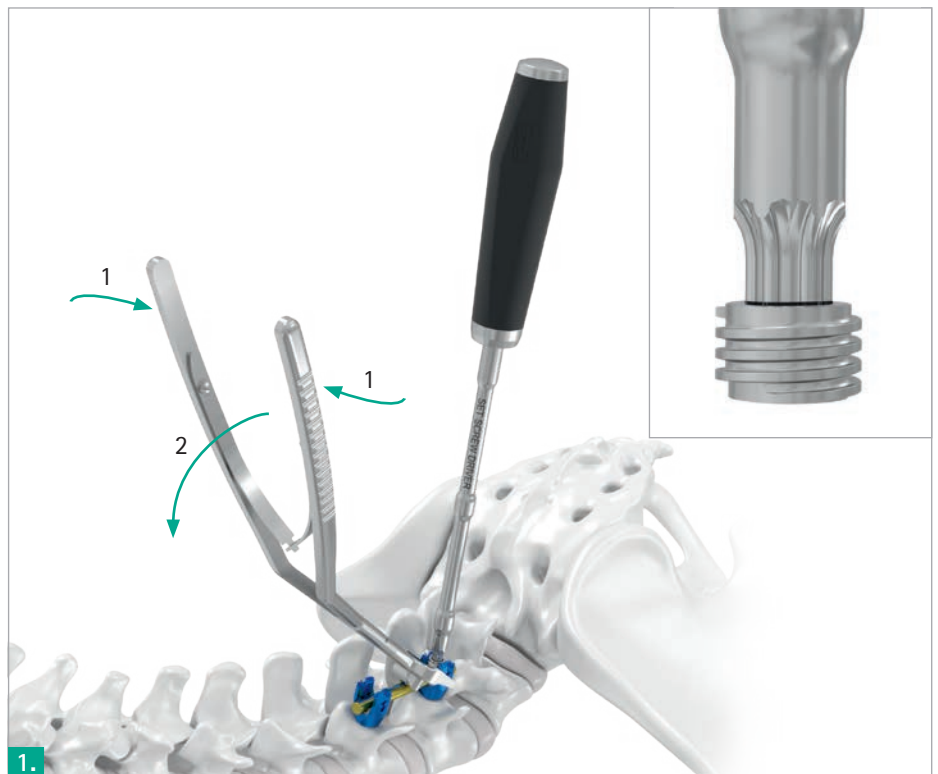
REDUCTION WITH ROD PUSHER

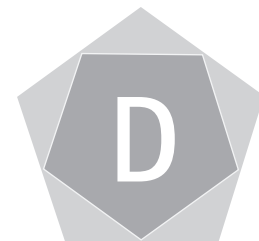
- Place the Rod Pusher next to the pedicle screw head which requires rod persuasion.
- Push the rod down until it touches the pedicle screw head.
- Load a Set Screw on the Set Screw Driver and ensure proper fixation of the implant based on its alignment with the laser marking on the instrument.
- Apply the Set Screw to the desired pedicle screw head and turn the Set Screw Driver clockwise in order to provisionally tighten the Set Screw and thus the rod.



REDUCTION WITH ROD REDUCER

- Guide the Rod Reducer over the rod, so that the working end of the instrument engages with the pedicle screw head interface.
- Squeeze both handles (1) together and lever the Rod Reducer backwards (2).
- Reduce the rod into the pedicle screw head until a positive stop is perceived.
- Load a Set Screw on the Set Screw Driver and ensure proper fixation of the implant based on its alignment with the laser marking on the instrument.
- Apply the Set Screw to the desired pedicle screw head and turn the Set Screw Driver clockwise in order to provisionally tighten the Set Screw and thus the rod.





FINAL TIGHTENING

- Assemble the Torque Wrench by attaching the Torque Wrench Handle 10 Nm to the Set Screw Driver by sliding the hexagonal shaped portion of the shaft into the handle coupling until the stop.
- If needed, load a Set Screw on the Set Screw Driver and ensure proper fixation of the implant based on its alignment with the laser marking on the instrument.



- Insert the Torque Wrench through the canalization of the Counter Torque Handle so the tip is exposed.
- Fully seat the tip of the Torque Wrench into the socket of the Set Screw. Engage the tip of the Counter Torque Handle with the pedicle screw head.
- Turn the Torque Wrench clockwise while firmly holding the Counter Torque Handle until an acoustic signal sounds. The acoustic signal is an indicator that final tightening of 10 Nm has been achieved.

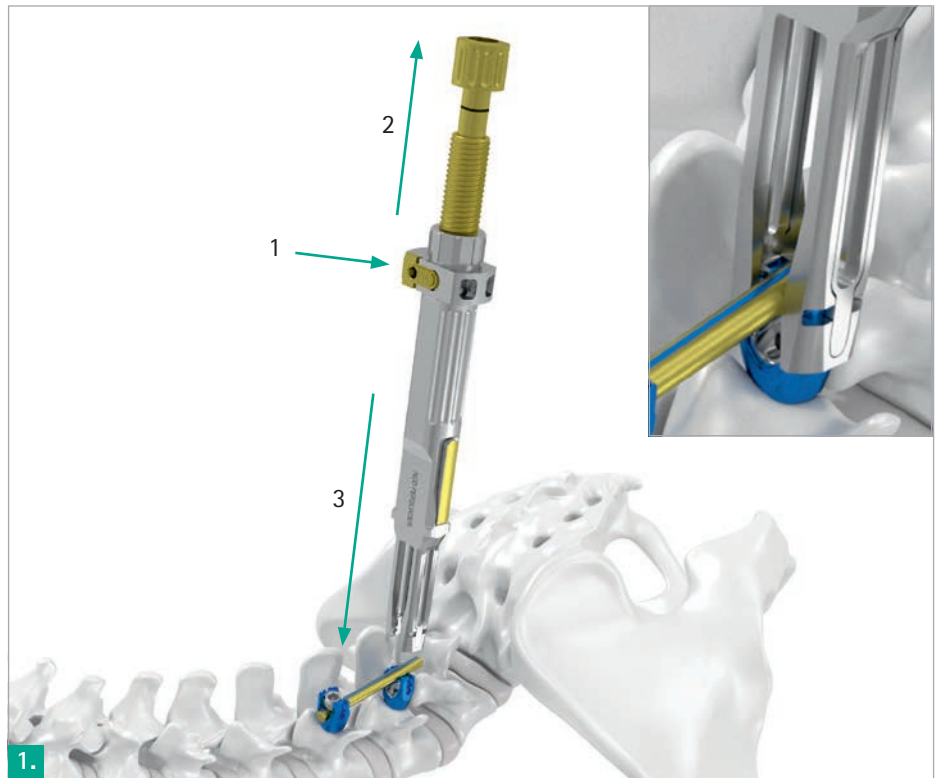
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DEGENERATIVE SPINE

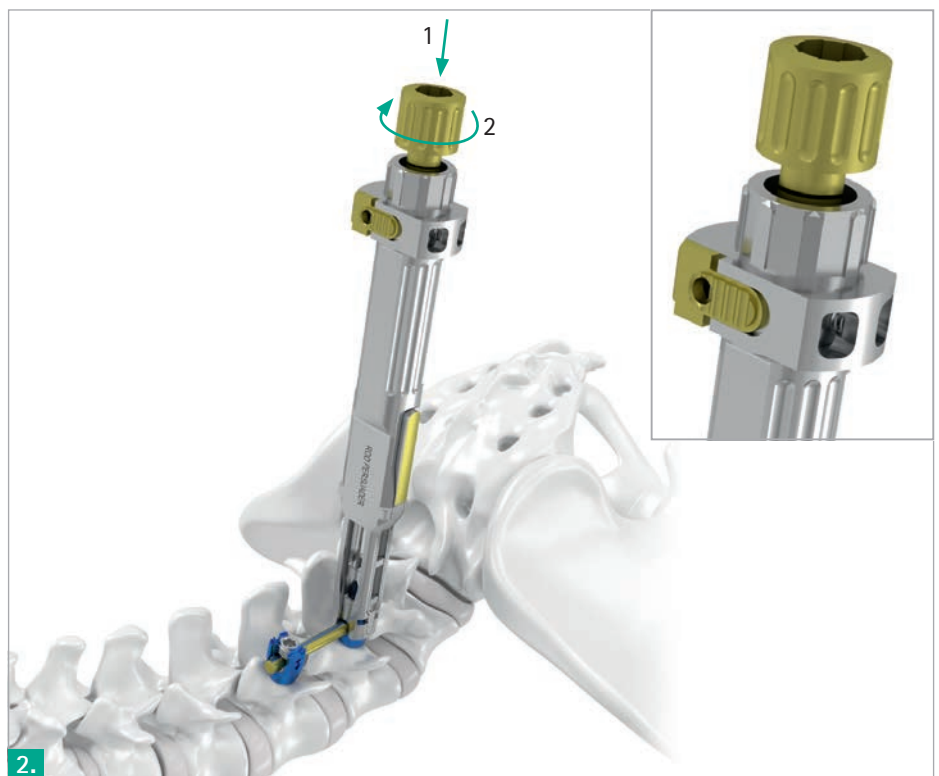
D. ROD REDUCTION

REDUCTION WITH ROD PERSUADER

- Prior to attachment, move the Rod Persuader into its unlocked position by pressing the golden button (1) and pulling the reduction spindle backwards (2) until a positive stop is perceived.
- To assist instrument attachment to the pedicle screws, slide the Rod Persuader over the pedicle screw head until the instrument interface engages to the implant (3).
- Visual and tactile confirmation of the connection is recommended. Ensure that the instrument connection arms are flush with the instrument working end.



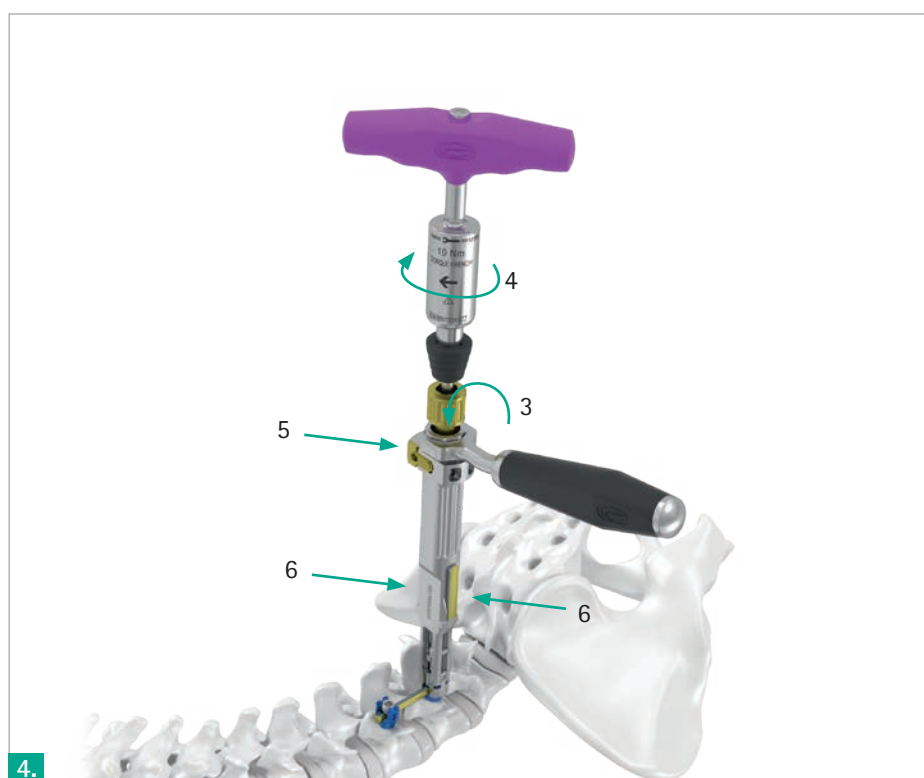
- Reduce the rod by either pushing the golden spindle down (1) or turning it clockwise (2) until the reduction sleeve contacts the rod.
- If needed, the Reduction/Tightening Handle may be used to facilitate rod pushing.
- Full rod reduction is achieved when the line marking on the golden spindle is flush with the top of the Rod Persuader.





FINAL TIGHTENING

- Assemble the Torque Wrench by attaching the Torque Wrench Handle 10 Nm to the Set Screw Driver by sliding the hexagonal shaped portion of the shaft into the handle coupling until the stop (1).
- Load a Set Screw on the Set Screw Driver and ensure proper fixation of the implant based on its alignment with the laser marking on the instrument.
- Insert the Torque Wrench through the cannulation of the Rod Persuader (2) and turn the Torque Wrench until the Set Screw engages with the pedicle screw head.



- Engage the Rod Persuader Counter Torque Handle to the coupling geometry on the Rod Persuader (3).
- Turn the Torque Wrench clockwise (4) while firmly holding the Rod Persuader Counter Torque Handle until an acoustic signal sounds. The acoustic signal is an indicator that final tightening of 10 Nm has been achieved.
- Detach the Rod Persuader from the pedicle screw head by pushing the golden knob (5) and simultaneously pulling the reduction spindle backwards until the stop.
- Push the golden buttons on both sides (6) and detach the Rod Persuader by pulling the whole assembly off the patient.

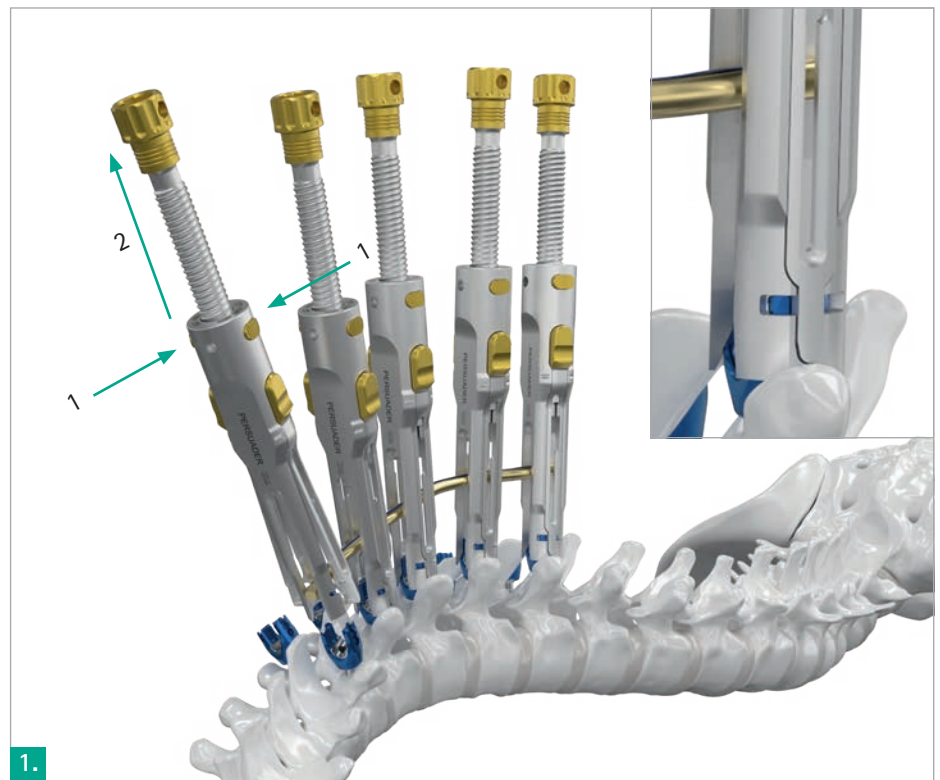
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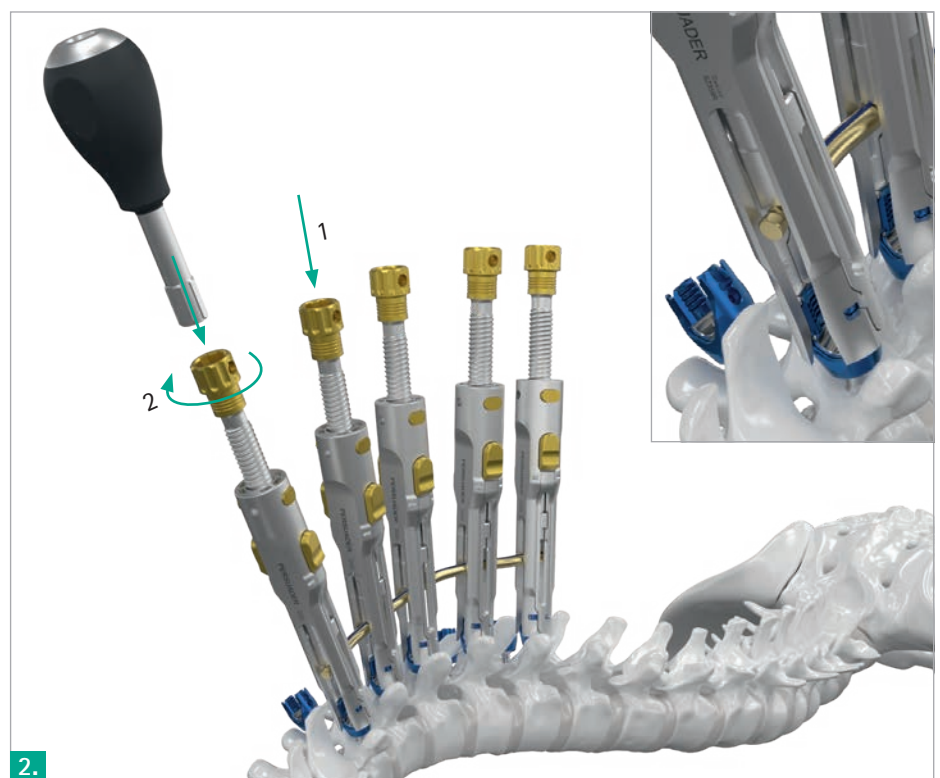
D. ROD REDUCTION

REDUCTION WITH QUICK TUBES

- Prior to attachment, move the Quick Tube into its unlocked position by pressing both golden buttons (1) and pulling the reduction spindle backwards (2) until a positive stop is perceived.
- To assist instrument attachment to the pedicle screws, slide the Quick Tube over the pedicle screw head until the instrument interface engages to the implant.
- Visual and tactile confirmation of the connection is recommended. Ensure that the instrument connection arms are flush with the instrument working end.

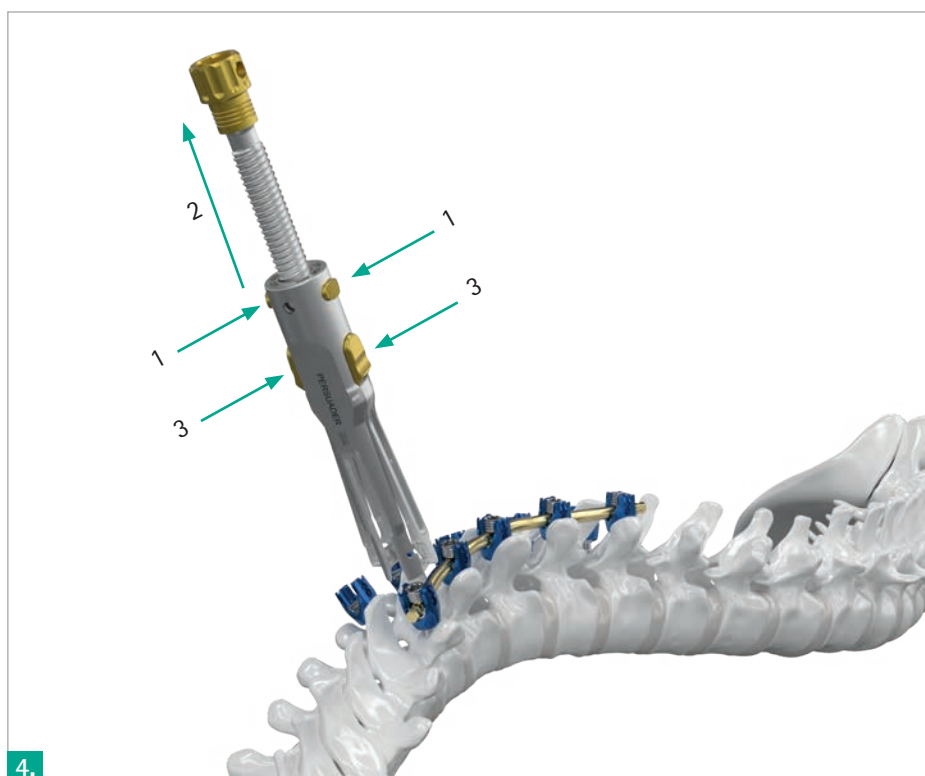


- Reduce the rod by either pushing the golden spindle down (1) or turning it clockwise (2) until the reduction spindle contacts the rod.
- If needed, the Reduction/Tightening Handle may be used to facilitate rod pushing.
- Full rod reduction is achieved when a positive stop is perceived.





- If desired, Set Screws can be inserted after rod reduction to maintain the desired correction.
- For Set Screw placement, load a Set Screw on the Cmplx Set Screw Driver and ensure proper fixation of the implant based on its alignment with the laser marking on the instrument.



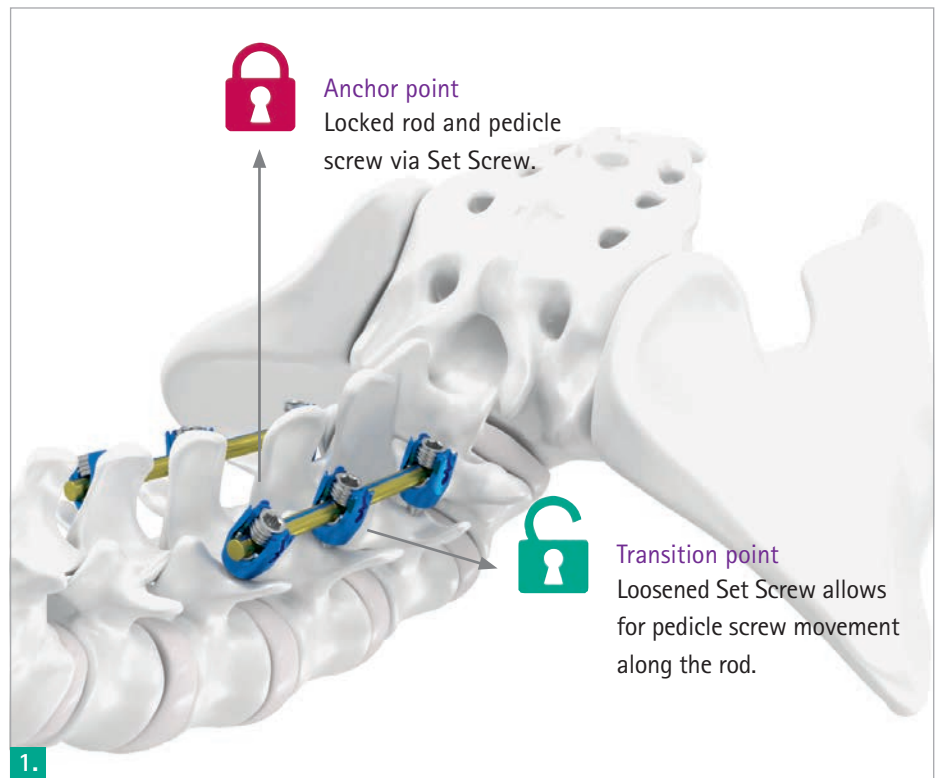
- Detach the Quick Tube from the pedicle screw head by pressing both golden buttons (1) and pulling the reduction spindle backwards (2) until a positive stop is perceived.
- Push both golden interfaces on the connection arms (3), in order to disengage the instrument from the pedicle screw head. Pull the whole instrument off the patient.

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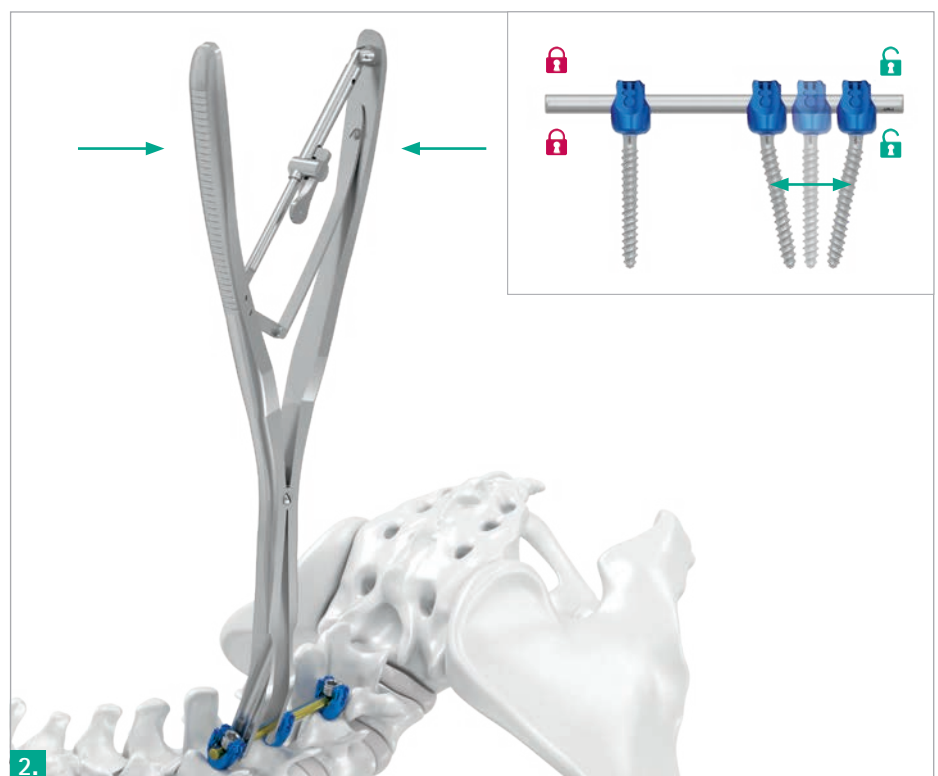
DEGENERATIVE SPINE E. SPINAL CORRECTION

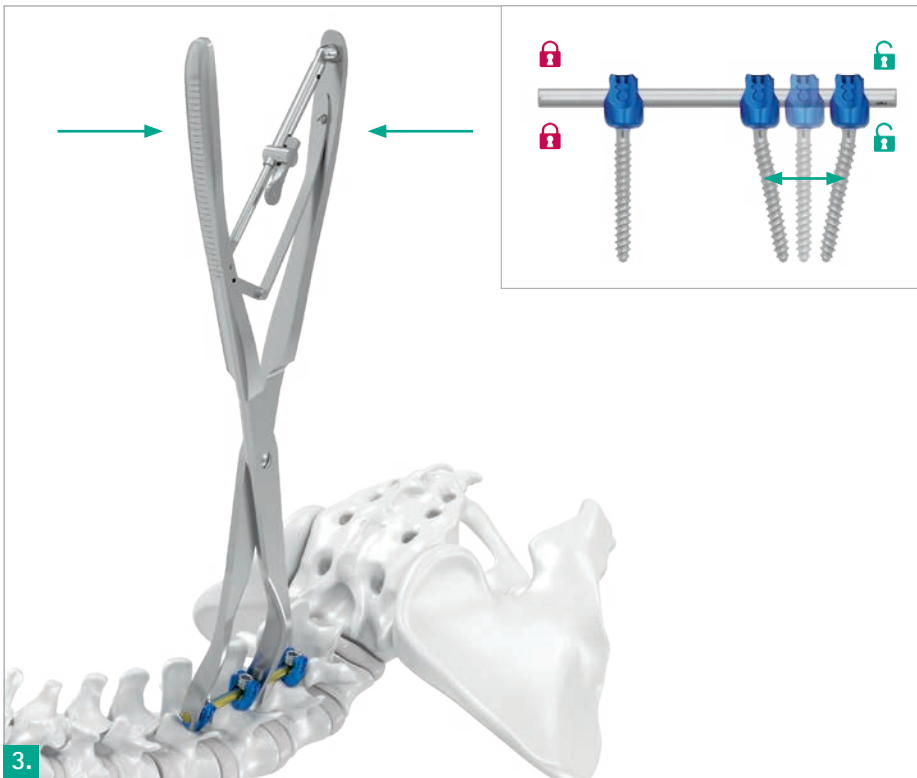
DISTRACTION AND COMPRESSION

- Select a starting point for the distraction or compression maneuver. Ensure the rod is fully reduced in the pedicle screw heads.
- Selectively loosen or tighten the adjacent Set Screws to allow force transmission, or to create a fixed point for the maneuver.



- For distraction, place the Distraction Forceps between/below the pedicle screw heads or Tubes and squeeze the handles until the aimed correction is achieved. As a result, the distance between the loaded elements increases.





For compression, place the Compression Forceps around /below the pedicle screw heads or Tubes and squeeze the handles until the aimed correction is achieved. As a result, the distance between the loaded elements decreases.



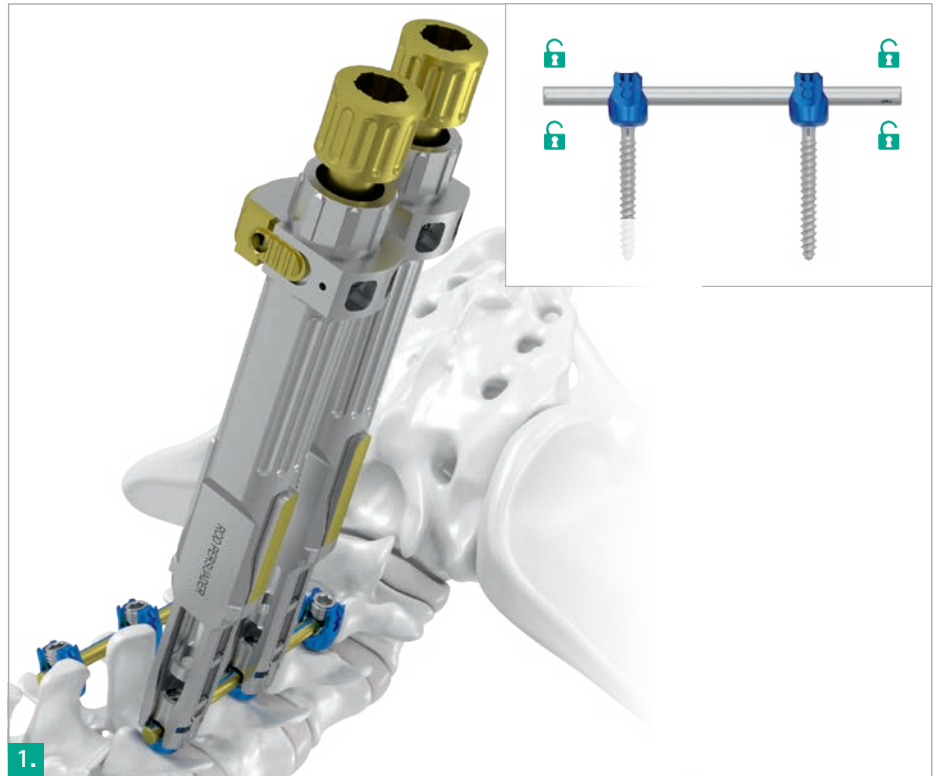
Once the desired correction is achieved, use the Set Screw Driver to retighten the Set Screw to retain the position of the spinal segment.

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DEGENERATIVE SPINE E. SPINAL CORRECTION

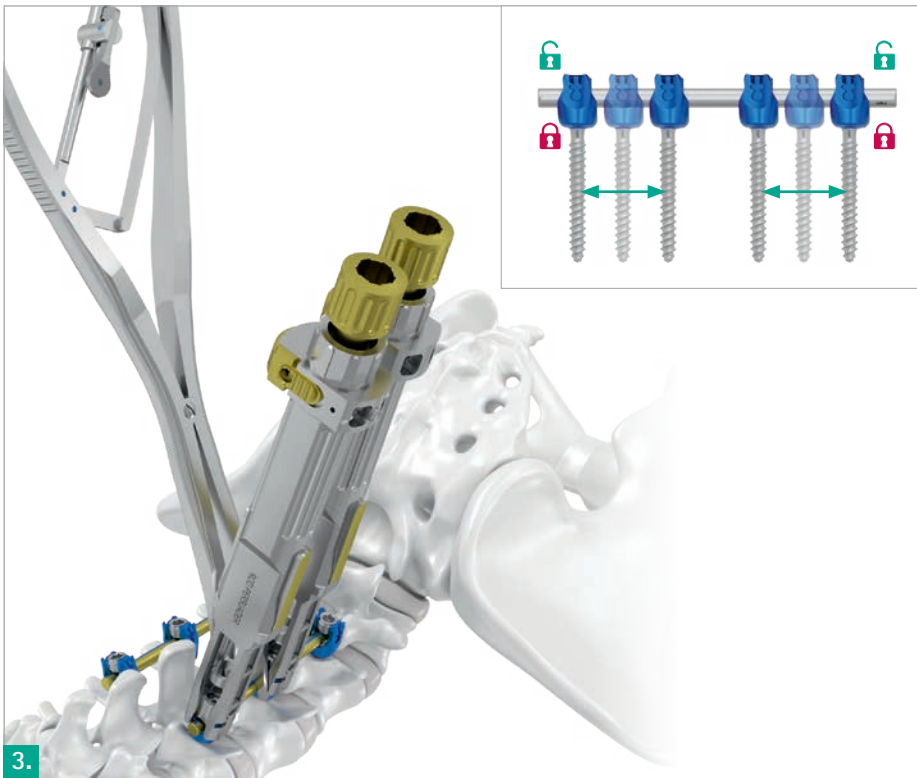
PARALLEL DISTRACTION AND COMPRESSION

- Select a starting point for the distraction or compression maneuver. Ensure the rod is fully reduced in the pedicle screw heads.
- Selectively loosen or tighten the adjacent Set Screws to allow force transmission, or to create a fixed point for the maneuver.

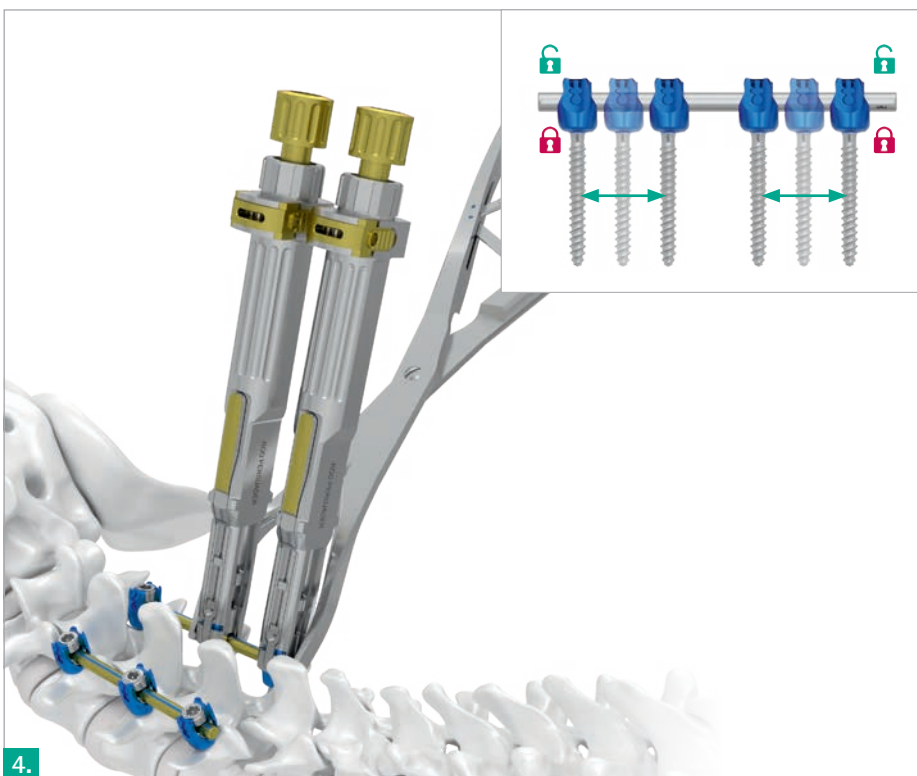


- Connect the Torque Wrench Handle 10 Nm to the PolyLock® Key by sliding the hexagonal shaped portion of the shaft into the coupling until the stop.
- Engage the Rod Persuader Counter Torque Handle to the coupling geometry on the Rod Persuader.
- Place the PolyLock® assembly into the upper geometry of the golden reduction spindle.
- Turn the PolyLock® assembly clockwise while firmly holding the Rod Persuader Counter Torque Handle until an acoustic signal sounds. The acoustic signal is an indicator that PolyLock® been achieved.





For distraction, place the Distraction Forceps between the Rod Persuaders/ below the pedicle screw heads and squeeze the handles until the aimed correction is achieved. As a result, the distance between the loaded elements increases evenly.



For compression, place the Compression Forceps around the Rod Persuaders/ below the pedicle screw heads and squeeze the handles until the aimed correction is achieved. As a result, the distance between the loaded elements decreases evenly.

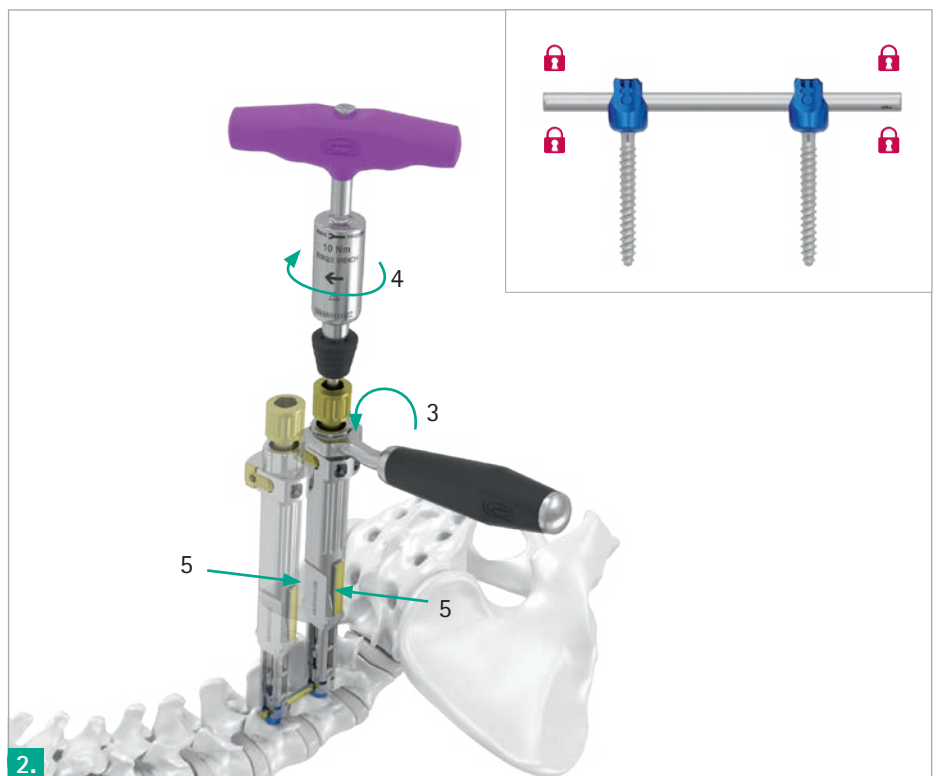
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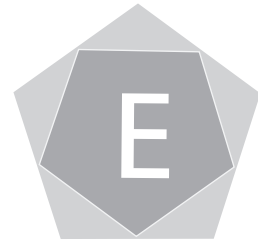
DEGENERATIVE SPINE E. SPINAL CORRECTION

- Once the desired correction is achieved, it is possible to provisionally tighten the Set Screw to retain the position of the spinal segment.
- If needed, final tightening can be applied by using the Torque Wrench and the Rod Persuader Counter Torque Handle.
- Assemble the Torque Wrench by attaching the Torque Wrench Handle 10 Nm to the Set Screw Driver by sliding the hexagonal shaped portion of the shaft into the handle coupling until the stop (1).
- Load a Set Screw on the Set Screw Driver and ensure proper fixation of the implant based on its alignment with the laser marking on the instrument.
- Insert the Torque Wrench through the cannulation of the Rod Persuader (2) and turn the Torque Wrench until the Set Screw engages with the pedicle screw head.



- Engage the Rod Persuader Counter Torque Handle to the coupling geometry on the Rod Persuader (3).
- Turn the Torque Wrench clockwise (4) while firmly holding the Rod Persuader Counter Torque Handle until an acoustic signal sounds. The acoustic signal is an indicator that final tightening of 10 Nm has been achieved.
- To release PolyLock®, place the PolyLock® assembly into the upper geometry of the golden reduction spindle.
- Turn the PolyLock® assembly counter-clockwise while firmly holding the Rod Persuader Counter Torque Handle until a decrease in torque is felt.





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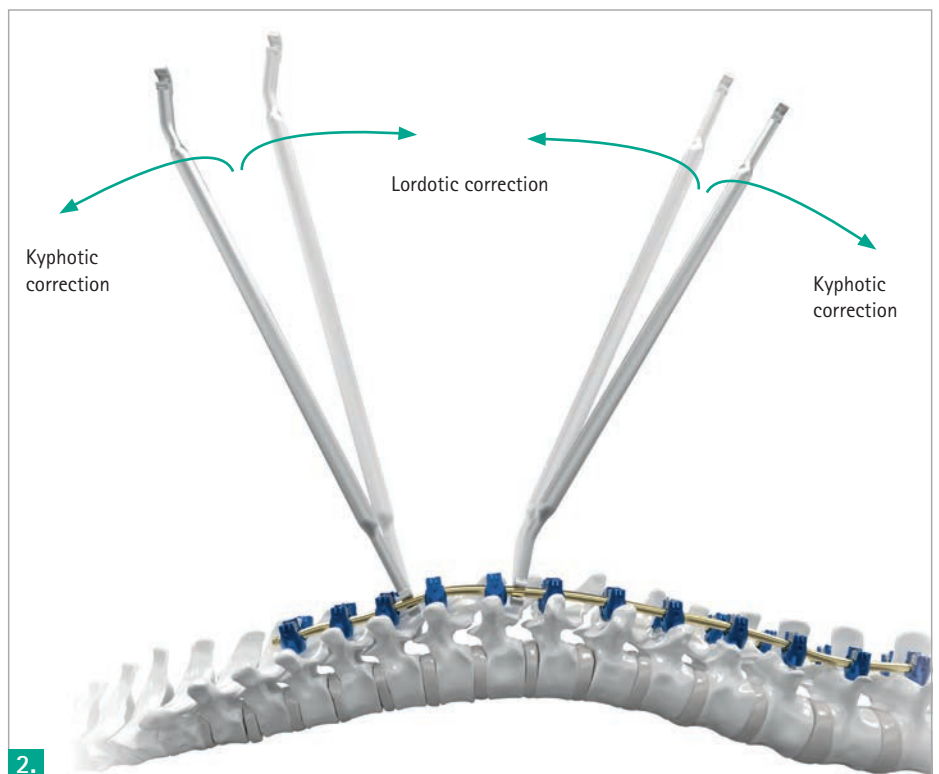
F. IN-SITU ROD CONTOURING

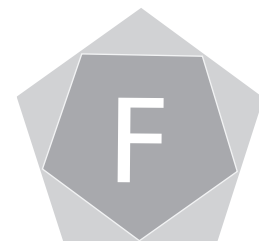
SAGITTAL PLANE CONTOURING

- Sagittal Rod Benders may be used to improve or adjust kyphosis and lordosis.
- The instruments have a straight and angled connection interface, which influences the bending radius and the outcome of the rod curvature.
- Place the rod interface of both Sagittal Benders on the rod section requiring bending.
- For small incremental bending, it is recommended to place the working ends as close as possible.
- For larger bending radii, it is recommended to increase the distance between the working ends.

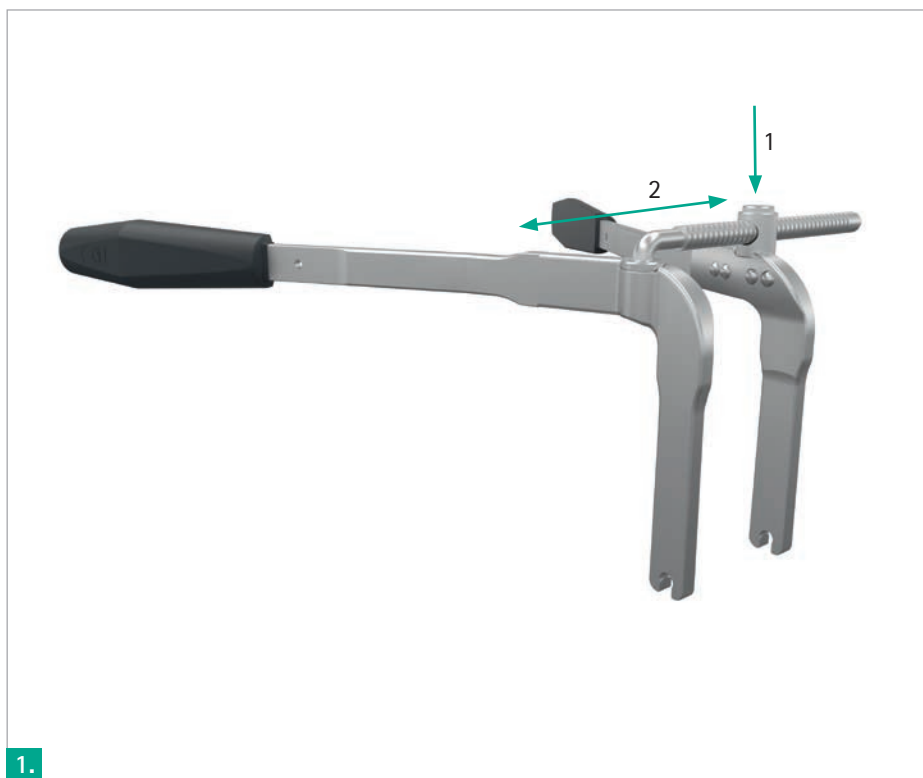


- By levering the upper portions of the Sagittal Benders together the rod is bent in a lordotic manner. By pulling the instruments away from each other the rod is bent kyphotically.

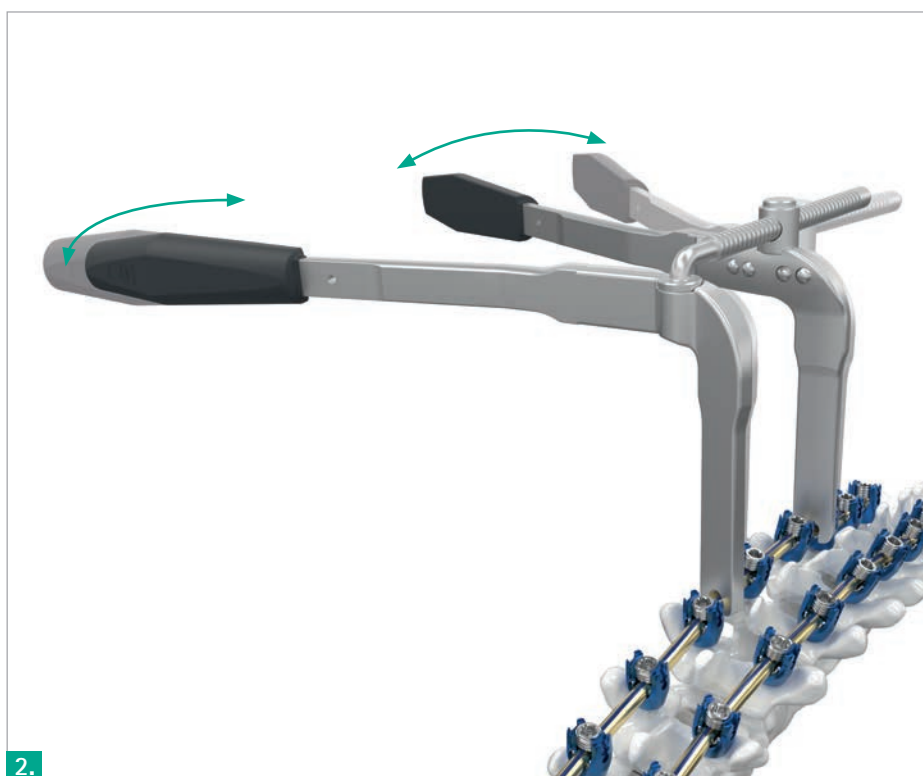




CORONAL PLANE CONTOURING



- Coronal Rod Benders may be used to improve coronal plane correction.
- The Coronal Benders have a connecting spindle which allow for the creation of large bending radii.
- If bigger bending radii are needed, press the button on the spindle (1) and adjust the distance between both Coronal Benders (2).



- Place the interface of both Coronal Benders on the rod section requiring bending.
- For small radii, arrange the handles of the Benders such that the female and male instrument parts can contact directly.
- For larger radii, arrange the Bender spindle connection such that the Benders form a substantially perpendicular connection to the rod.
- Squeeze or pull the handles until the desired contouring is achieved.

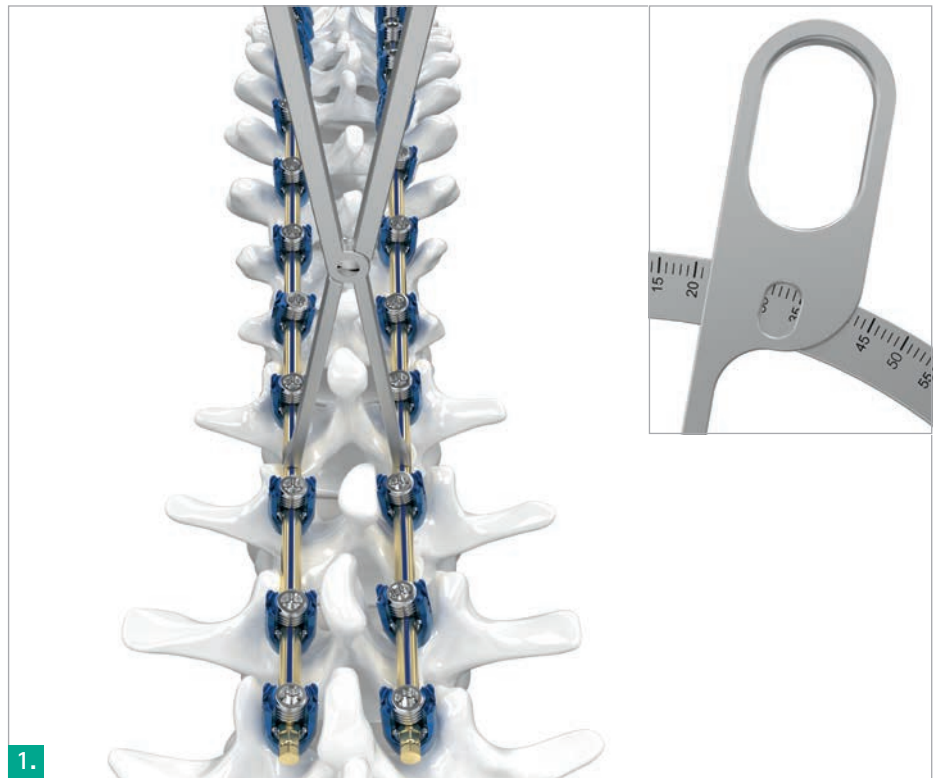
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DEGENERATIVE SPINE

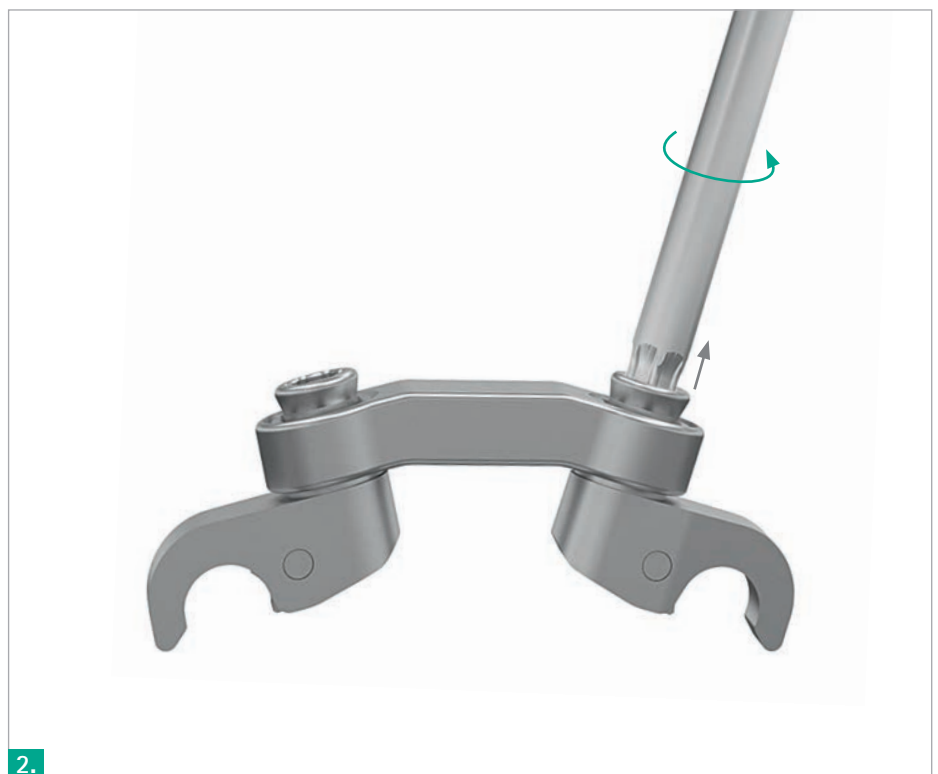
G. CONNECTOR PLACEMENT

CROSS CONNECTORS

- Determine the appropriate length of the Connector by placing the Connector Caliper on both rods.
- Choose the type of Cross Connector based on the present patient anatomy and measured length.



- Prior to implantation, ensure that the Cross Connector Set Screws do not interfere with the rods.
- For this, assemble the Connector Torque Wrench by attaching the Torque Wrench Handle 5 Nm to the Torque Wrench Shaft 5 Nm by sliding the square shaped portion of the shaft into the handle coupling until the stop.
- Fully seat the tip of the Connector Torque Wrench into the socket of the Cross Connector Set Screw and turn the Connector Torque Wrench counter-clockwise until a positive stop is perceived.





- For implantation, attach the Cross Connector Holder to the implant by sliding the instrument tip over a Cross Connector Set Screw and squeezing the handle until the first detent.
- Place both Cross Connector interfaces on the rods and ensure proper sitting.



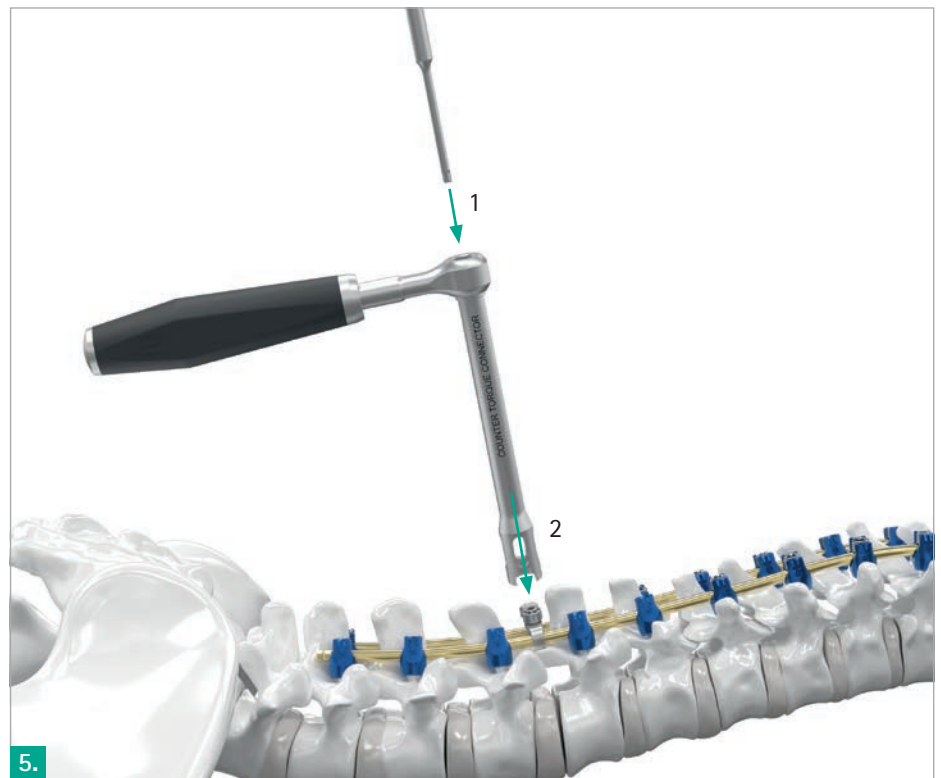
- Fully seat the tip of the Connector Torque Wrench into the socket of the Cross Connector Set Screw.
- Turn the Connector Torque Wrench clockwise for provisional Cross Connector engagement to the rod.

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DEGENERATIVE SPINE

G. CONNECTOR PLACEMENT

- Insert the Connector Torque Wrench through the canulation of the Connector Counter Torque Handle so the tip is exposed (1).
- Engage the tip of the Connector Torque Wrench with the Cross Connector Set Screw and the tip of the Connector Counter Torque Handle with the Cross Connector (2).



- Turn the Connector Torque Wrench clockwise while firmly holding the Connector Counter Torque Handle until an acoustic signal sounds. The sound is an indicator that the final tightening of 5 Nm has been achieved.





7.

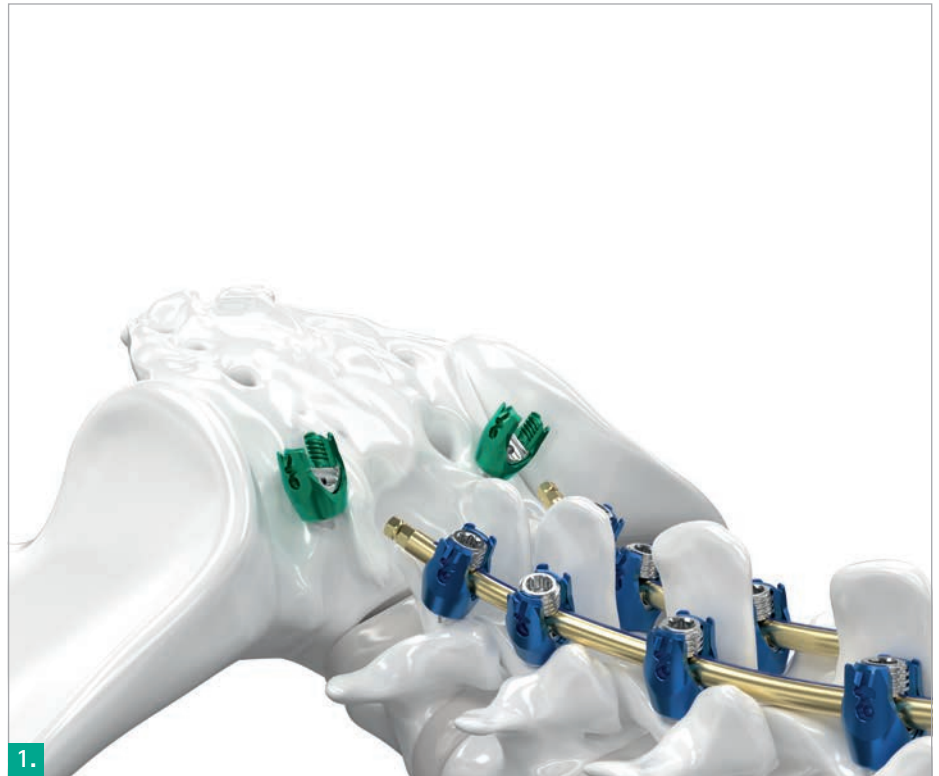
AESCULAP® Ennovate®

DEGENERATIVE SPINE

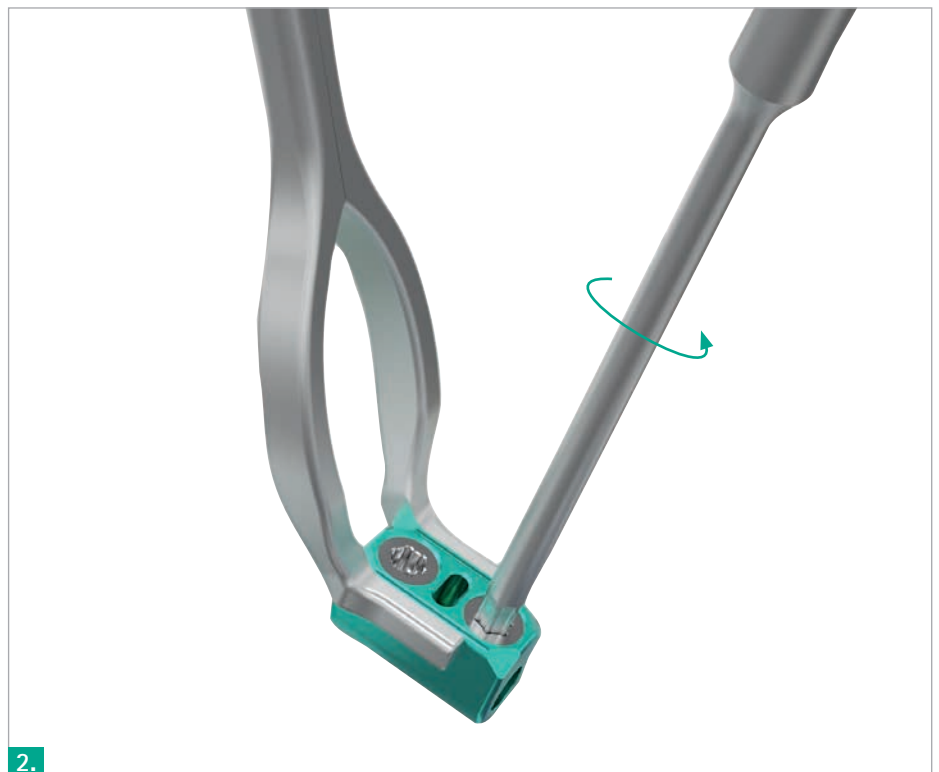
G. CONNECTOR PLACEMENT

AXIAL CONNECTORS

- Determine the appropriate length of the Axial Connector based on the present patient anatomy.
- Prior to implantation, ensure the Axial Connector Set Screws do not interfere with the rods.
- For this, assemble the Connector Torque Wrench by attaching the Torque Wrench Handle 5 Nm to the Torque Wrench Shaft 5 Nm by sliding the square shaped portion of the shaft into the handle coupling until the stop.



- Attach the Rod Connector Holder to the implant by placing the instrument interface on the lateral notches on the implant and squeezing the handles together until proper fixation is reached.
- Fully seat the tip of the Connector Torque Wrench into the socket of the Axial Connector Set Screw and turn the Connector Torque Wrench counter-clockwise until a positive stop is perceived.





- Slide the Axial Connector onto the end of the existing construct and confirm adequate implant placement using the window on the Axial Connector.
- Fully seat the tip of the Connector Torque Wrench into the socket of the Axial Connector Set Screw.
- Turn the Connector Torque Wrench clockwise for provisional Axial Connector engagement.



- The extension rod is placed inside the Axial Connector and secured by provisionally tightening the corresponding Axial Connector Set Screw.
- Secure the extension rod by additionally placing a Set Screw into the corresponding pedicle screw head.

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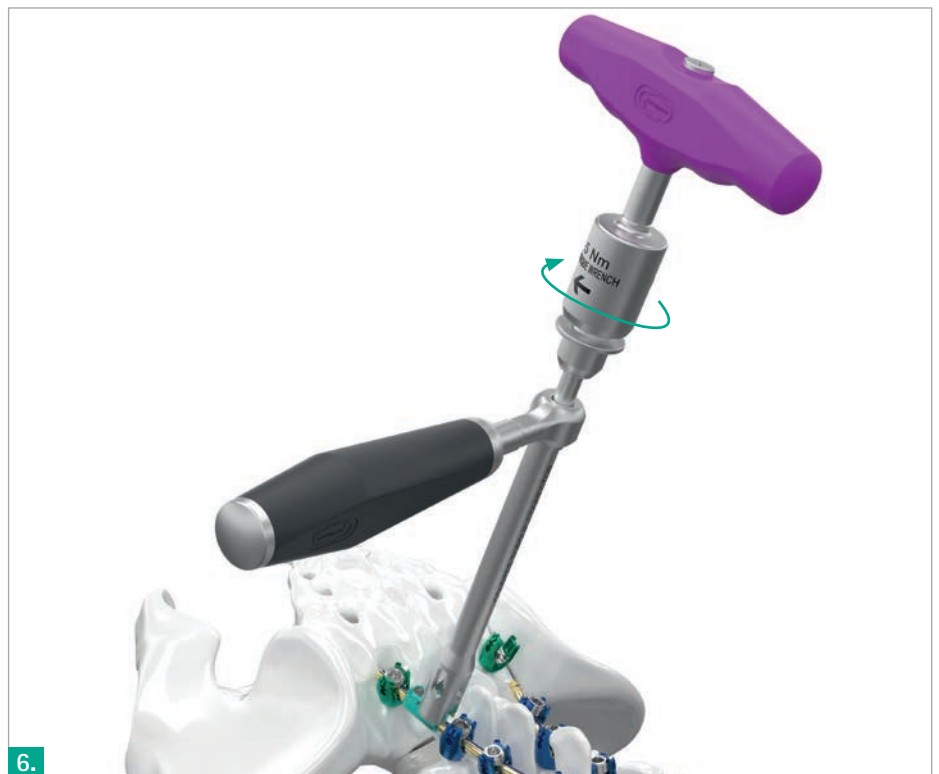
DEGENERATIVE SPINE

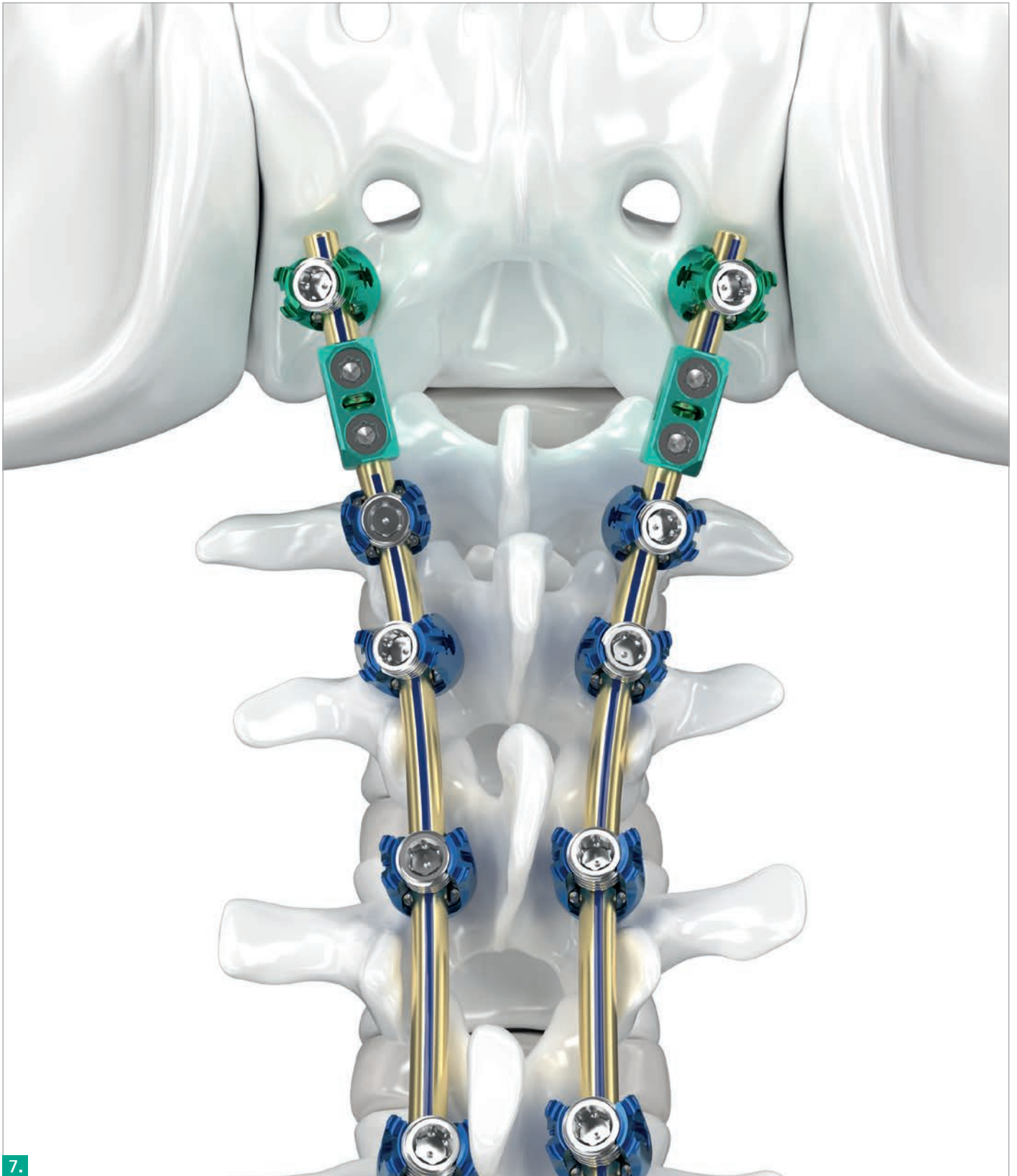
G. CONNECTOR PLACEMENT

- Insert the Connector Torque Wrench through the canulation of the Connector Counter Torque Handle so the tip is exposed.
- Engage the tip of the Connector Torque Wrench with the Axial Connector Set Screw and the tip of the Connector Counter Torque Handle with the Axial Connector.



- Turn the Connector Torque Wrench clockwise while firmly holding the Connector Counter Torque Handle until an acoustic signal sounds. The sound is an indicator that the final tightening of 5 Nm has been achieved.





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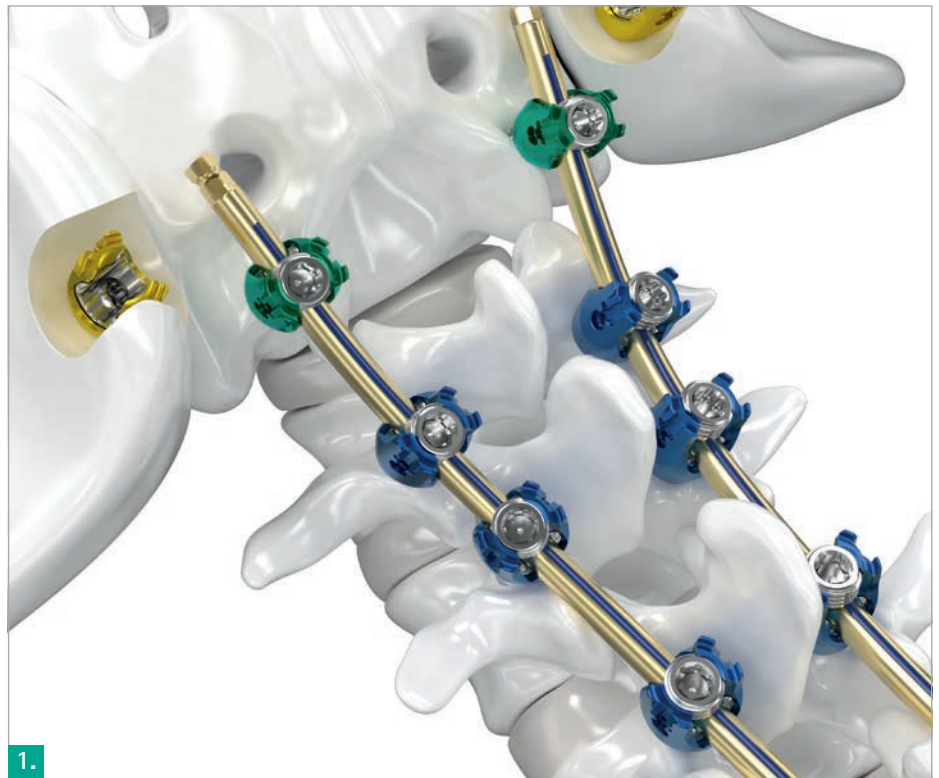
AESCULAP® Ennovate®

DEGENERATIVE SPINE

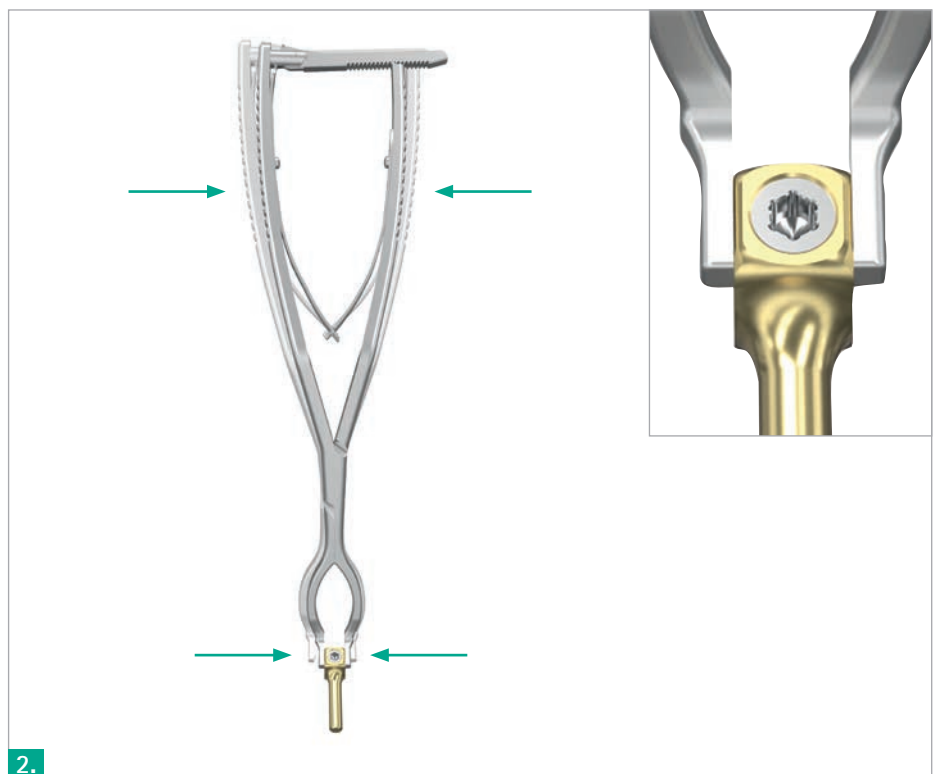
G. CONNECTOR PLACEMENT

LATERAL OFFSET CONNECTORS

- Determine the appropriate type and length of the Lateral Offset Connector based on the present patient anatomy.
- Prior to implantation, ensure the Lateral Offset Connector Set Screw do not interfere with the rod.
- For this, assemble the Connector Torque Wrench by attaching the Torque Wrench Handle 5 Nm to the Torque Wrench Shaft 5 Nm by sliding the square shaped portion of the shaft into the handle coupling until the stop.

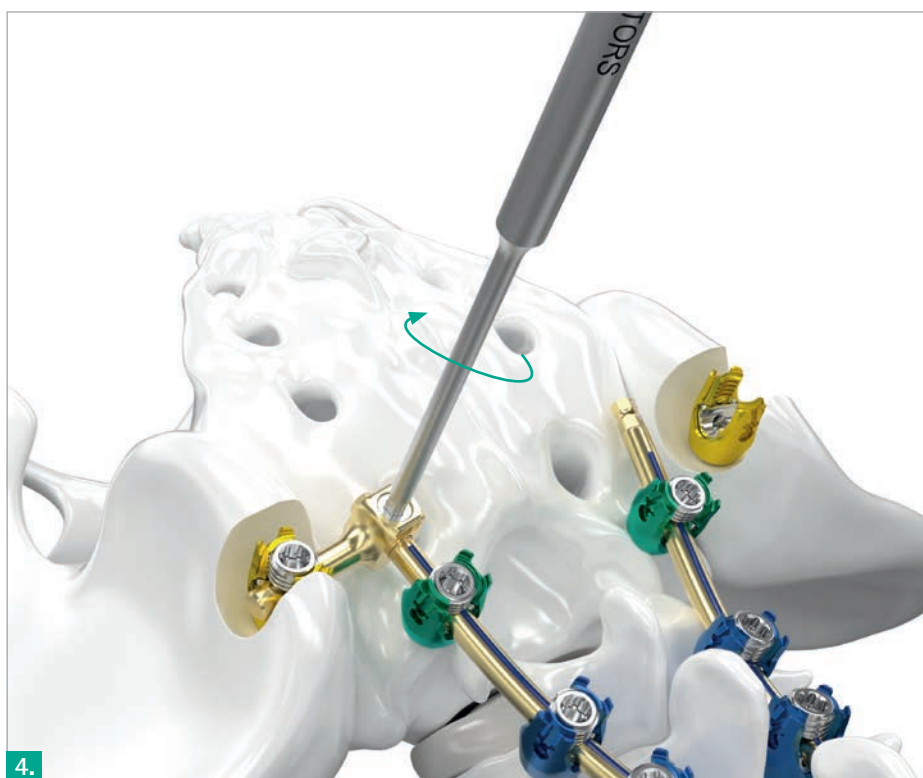


- Attach the Rod Connector Holder to the implant by placing the instrument interface on the lateral notches on the implant and squeezing the handles until proper fixation is reached.
- Fully seat the tip of the Connector Torque Wrench into the socket of the Lateral Offset Connector Set Screw and turn the Connector Torque Wrench counter-clockwise until a positive stop is perceived.





- For Closed Lateral Offset Connectors, slide the closed hole of the Lateral Offset Connector onto the overlapping rod of the existing construct (1).
- For Open Lateral Offset Connectors, attach the open interface of the Lateral Offset Connector onto the overlapping rod of the existing construct.
- Leverage the rod portion of the Lateral Offset Connector into the head of the pedicle screw to be connected (2).



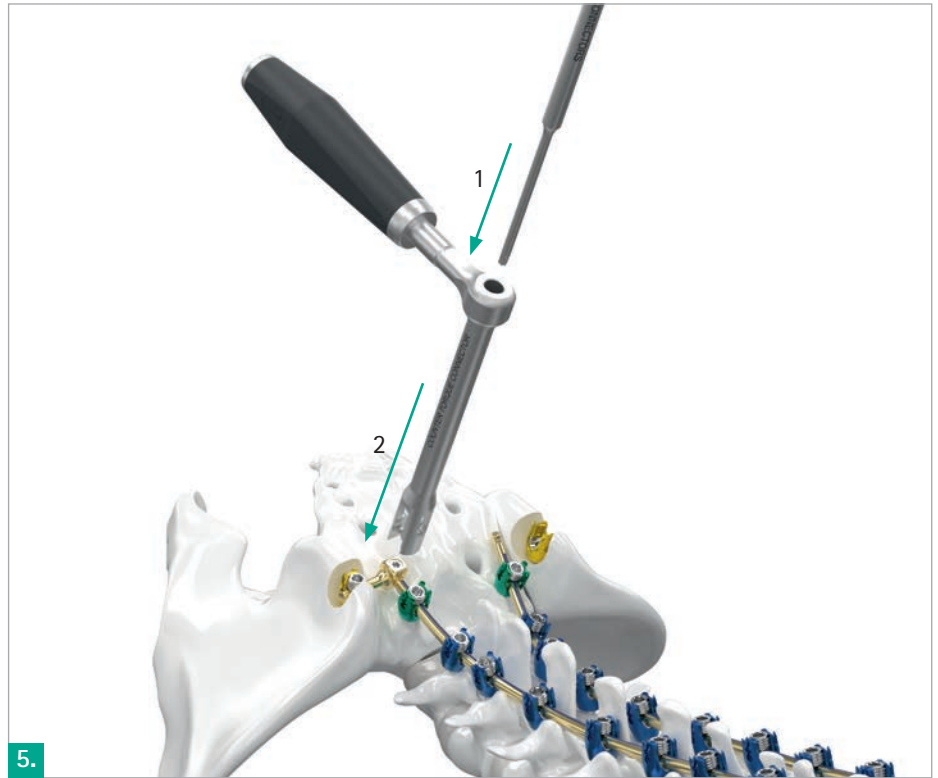
- Fully seat the tip of the Connector Torque Wrench into the socket of the Lateral Offset Connector Set Screw for provisional tightening.
- Secure the rod portion of the Lateral Offset Connector by additionally placing a Set Screw into the corresponding pedicle screw head.

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DEGENERATIVE SPINE

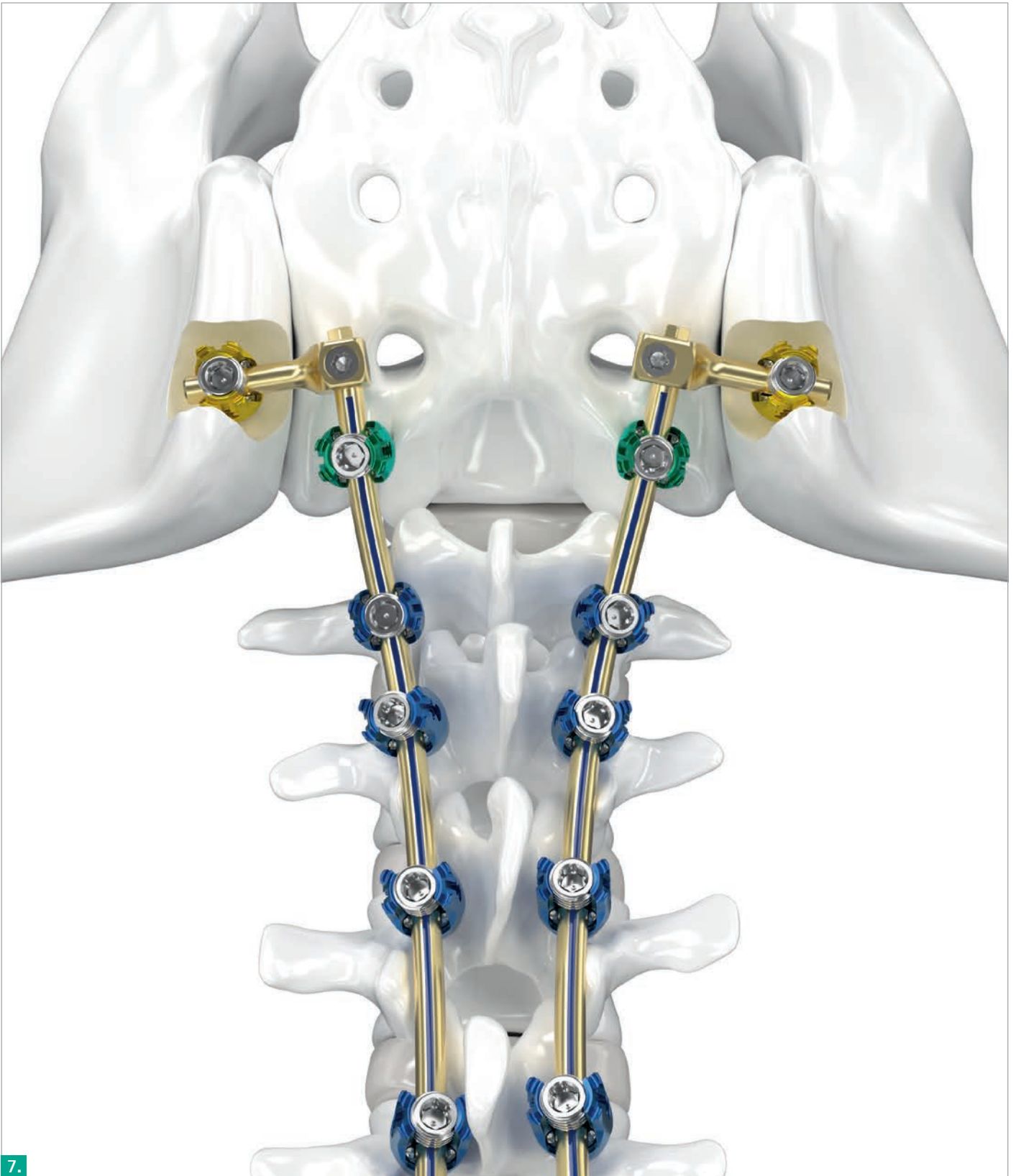
G. CONNECTOR PLACEMENT

- Insert the Connector Torque Wrench through the canulation of the Connector Counter Torque Handle so the tip is exposed (1).
- Engage the tip of the Connector Torque Wrench with the Lateral Offset Connector Set Screw and the tip of the Connector Counter Torque Handle with the Lateral Offset Connector (2).



- Turn the Connector Torque Wrench clockwise while firmly holding the Connector Counter Torque Handle until an acoustic signal sounds. The sound is an indicator that the final tightening of 5 Nm has been achieved.





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DEGENERATIVE SPINE

H. Ennovate® INSTRUMENTS

HANDLES



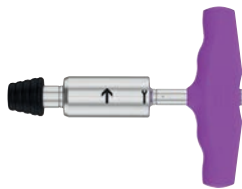
SZ222R
Ennovate® Ratchet Handle,
Straight



SZ224R
Ennovate® Ratchet Handle,
T-Shape



SZ225R
Ennovate® Ratchet Handle,
Drop Shape



SZ228R
Ennovate® Torque Wrench Handle,
10 Nm



SZ229R
Ennovate® Torque Wrench Handle,
5 Nm



SZ390R
Ennovate® Reduction/Tightening
Handle



SZ282R
Ennovate® Counter Torque Handle,
10 Nm



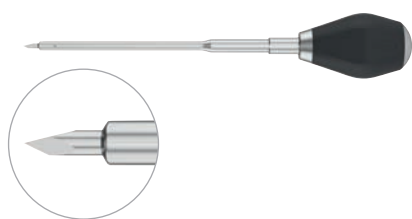
SZ292R
Ennovate® Counter Torque Handle,
5 Nm



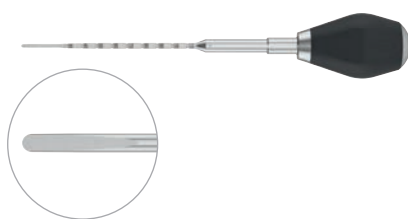
SZ276R
Ennovate® Rod Persuader Counter
Torque Handle



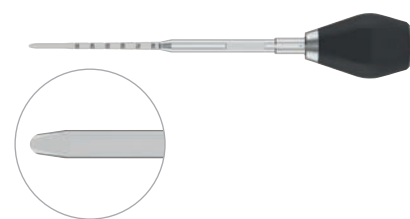
PREPARATION INSTRUMENTS



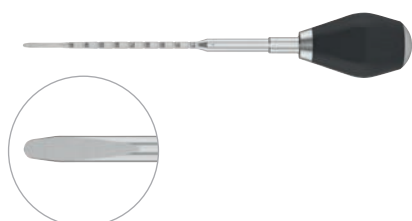
SZ241R
Ennovate® Pedicle Awl



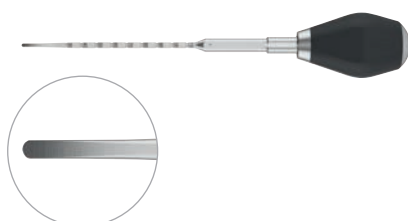
SZ242R
Ennovate® Lumbar Pedicle Probe,
Straight, Blunt tip



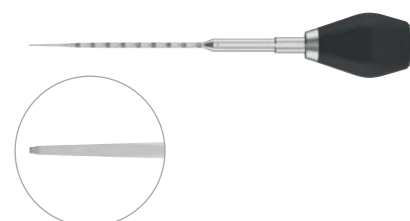
SZ376R
Ennovate® Lumbar Pedicle Probe,
Straight, Canulated



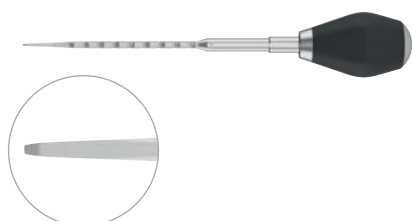
SZ263R
Ennovate® Lumbar Pedicle Probe,
Large, Straight, Blunt tip



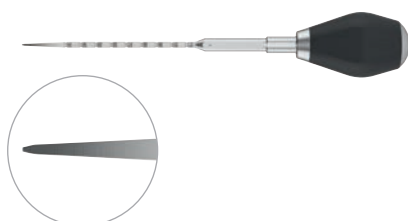
SZ243R
Ennovate® Lumbar Pedicle Probe,
Curved, Blunt tip



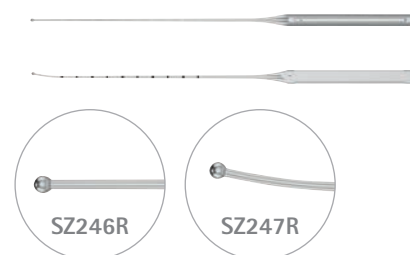
SZ244R
Ennovate® Thoracic Pedicle Probe,
Straight, Sharp tip



SZ264R
Ennovate® Thoracic Pedicle Probe,
Large, Straight, Sharp tip



SZ245R
Ennovate® Thoracic Pedicle Probe,
Curved, Sharp tip



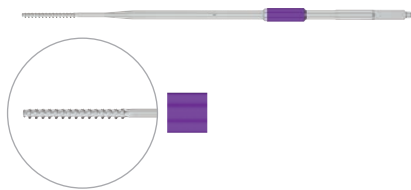
SZ246R/SZ247R
Ennovate® Pedicle Sounder,
Straight/Curved

AESCULAP® Ennovate®

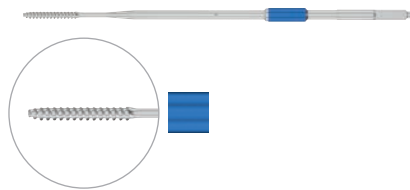
DEGENERATIVE SPINE

H. Ennovate® INSTRUMENTS

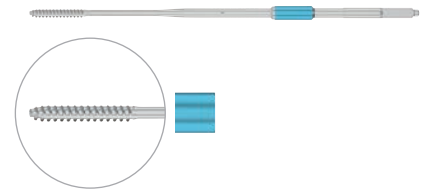
PREPARATION INSTRUMENTS



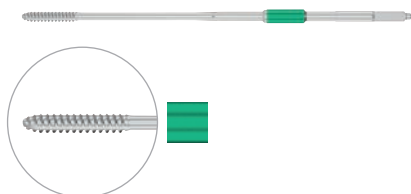
SZ254R
Ennovate® Screw Tap for Ø 4.5 mm,
Canulated



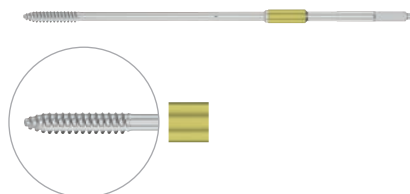
SZ255R
Ennovate® Screw Tap for Ø 5.5 mm,
Canulated



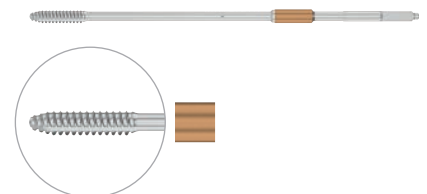
SZ256R
Ennovate® Screw Tap for Ø 6.5 mm,
Canulated



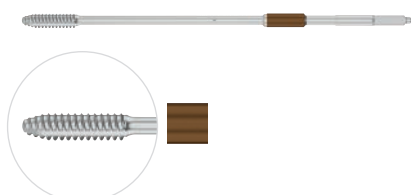
SZ257R
Ennovate® Screw Tap for Ø 7.5 mm,
Canulated



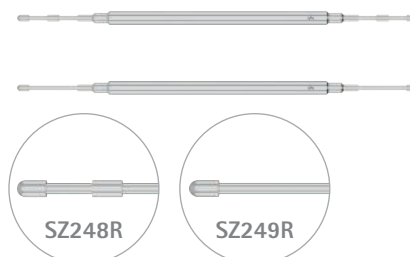
SZ258R
Ennovate® Screw Tap for Ø 8.5 mm,
Canulated



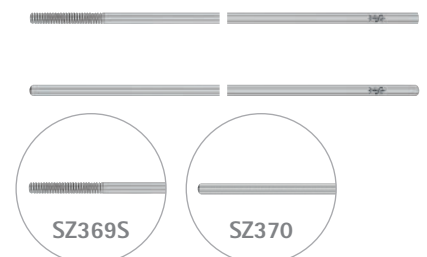
SZ259R
Ennovate® Screw Tap for Ø 9.5 mm,
Canulated



SZ260R
Ennovate® Screw Tap for Ø 10.5 mm,
Canulated



SZ248R/SZ249R
Ennovate® Pedicle Marker,
Dual Band/Single Band



SZ369S/SZ370
Ennovate® Guide Wire,
Stainless Steel/Nitinol



IMPLANTATION INSTRUMENTS



SZ480R
Ennovate® Cortical Reamer*



SZ262R
Ennovate® Screwdriver,
Canulated



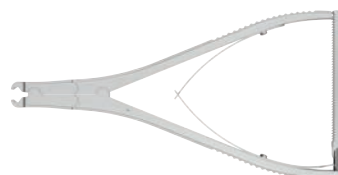
SZ196-SZ198
Spinal Rod Template
(120, 300 and 500 mm), re-usable*



SZ072SU-SZ074SU
Spinal Rod Template
(60, 150 and 290 mm), sterile*



SZ265R
Ennovate® Screw Head Adjuster



SZ272R
Ennovate® Rod Holder



SZ280R
Ennovate® Set Screw Driver,
with handle



SZ391R
Ennovate® Set Screw Driver,
with coupling



SZ283R
Ennovate® Set Screw Driver, with
coupling, long

* optional instruments, may be ordered separately

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H. Ennovate® INSTRUMENTS

IMPLANTATION INSTRUMENTS



SZ291R
Ennovate® Connector Caliper



SZ290R
Ennovate® Cross Connector Holder



SZ295R
Ennovate® Rod Connector Holder



SZ297R
Ennovate® Torque Wrench Shaft,
5 Nm



REDUCTION AND MANIPULATION INSTRUMENTS



SZ270R
Ennovate® Rod Bender



SZ332R
Ennovate® Rod Gripper*



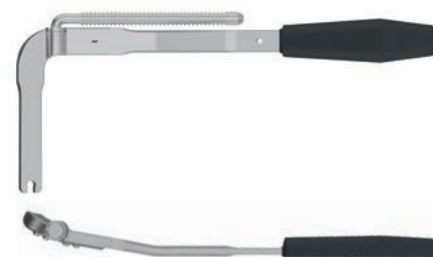
SZ333R
Ennovate® Rod Rotation Wrench*



SZ342R/SZ343R
Ennovate® Sagittal Rod Bender,
Left/Right*



SZ344R
Ennovate® Coronal Rod Bender,
Left*



SZ345R
Ennovate® Coronal Rod Bender,
Right*



SZ393R
Ennovate® PolyLock® Key



SZ273R
Ennovate® Rod Pusher



SZ275R
Ennovate® Rod Reducer, Fork Style

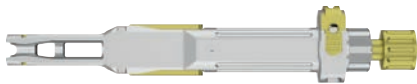
* optional instruments, may be ordered separately

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DEGENERATIVE SPINE

H. Ennovate® INSTRUMENTS

REDUCTION AND MANIPULATION INSTRUMENTS



SZ277R
Ennovate® Rod Persuader



SZ334R
Ennovate® Quick Tube, Long*



SZ359R
Ennovate® Quick Tube, Short*



SR166SU
Ennovate® Open Injection Cannula,
Long, sterile



SR167R
Ennovate® Open Cannula Sleeve,
Long



SR138SU
Ennovate® MIS Injection Cannula,
sterile*



SR139R
Ennovate® MIS Cannula Sleeve*



COMPRESSION AND DISTRACTION INSTRUMENTS



SZ233R
Ennovate® Parallel Distractor



SZ234R
Ennovate® Parallel Compressor



SZ252R
Ennovate® Tips for Parallel
Distractor and Compressor,
Straight



SZ253R
Ennovate® Tips for Parallel
Distractor and Compressor,
Offset



FW281R
Ennovate® Distraction Forceps,
On the rod, Straight



FW184R
Ennovate® Distraction Forceps,
On the rod, Offset



FW023R
Ennovate® Distraction Forceps,
Below the head, Straight



FW181R
Ennovate® Distraction Forceps,
Below the head, Offset



FW210R
Ennovate® Compression Forceps,
Below screw head

AESCULAP® Ennovate®

DEGENERATIVE SPINE

H. Ennovate® INSTRUMENTS

COMPRESSION AND DISTRACTION INSTRUMENTS



FW282R

Ennovate® Compression Forceps,
On the rod, Offset

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