

Top Loading Pedicle Screw and Hook System for Posterior Stabilization

# URS System

Surgical Technique



**PRODUCT OBSOLETE - 30 June 2018**  
**DSEM/SPN/0215/0277(2)**

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 Image intensifier control

This description alone does not provide sufficient background for direct use of DePuy Synthes products. Instruction by a surgeon experienced in handling these products is highly recommended.

**Processing, Reprocessing, Care and Maintenance**

For general guidelines, function control and dismantling of multi-part instruments, as well as processing guidelines for implants, please contact your local sales representative or refer to:

<http://emea.depuyshes.com/hcp/reprocessing-care-maintenance>

For general information about reprocessing, care and maintenance of Synthes reusable devices, instrument trays and cases, as well as processing of Synthes non-sterile implants, please consult the Important Information leaflet (SE\_023827) or refer to:

<http://emea.depuyshes.com/hcp/reprocessing-care-maintenance>

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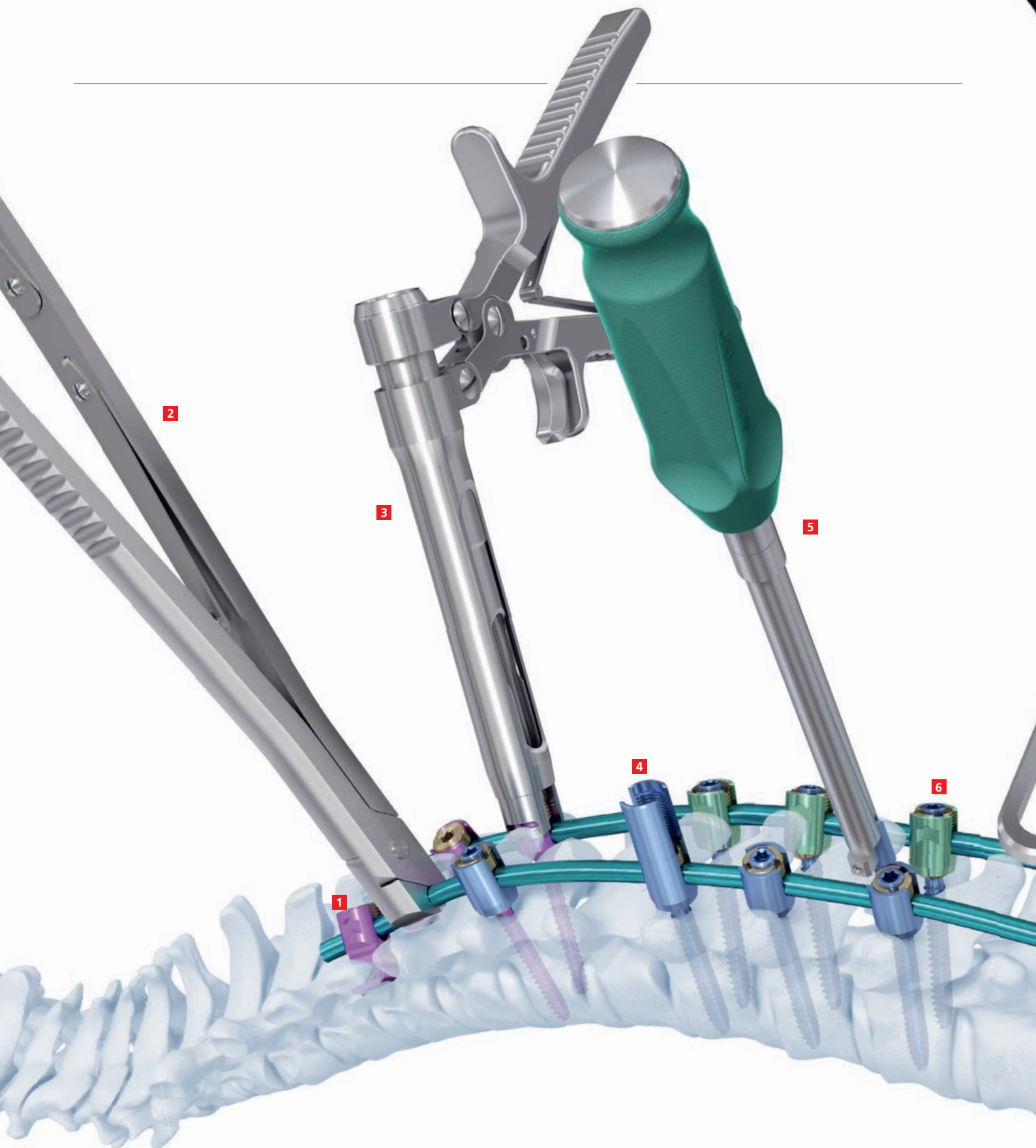
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# Overview





- 1 URS Hook**
- 2 Holding Forceps**
- 3 Reduction Instrument** for reduction up to 12 mm
- 4 Universal Reduction Screw (URS)** for reduction up to 16 mm
- 5 Tab Remover** for URS screw
- 6 Universal Degen Screw (UDS)**
- 7 Screwdriver** for URS, UDS, monoaxial screw, one-step locking cap and inner part of two-step locking cap
- 8 URS Monoaxial Screw**
- 9 Rocker Fork** for reduction up to 8 mm



# Implants

## Pedicle screws

Universal Reduction Screw (URS)

- Reduction tab screw allows for 16 mm rod reduction without reduction instruments

Universal Degen Screw (UDS)

- Degenerative screw
- Both URS and UDS screws allow for screw angulations up to  $\pm 45^\circ$

Monoaxial Screw

- Low profile
- Increased angular stability

- Dual Core/Double Lead Screw Design:



## Hooks

- Anatomical fit
- Enhanced hook portfolio

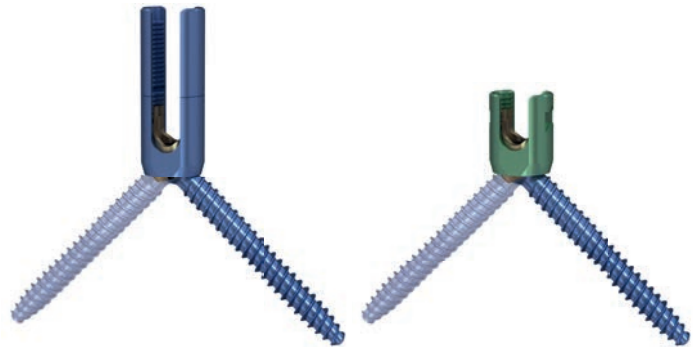
## Locking caps

Two-step locking cap

- Allows for vertebral body derotation for lordotic as well as parallel compression/distraction to control sagittal balance

One-step locking cap

- Allows for complete fixation in one step (polyaxiality and rod fixation)



URS

UDS



Monoaxial Screw



URS Pedicle Hook



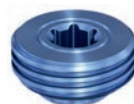
URS Lamina Hook



URS Transverse Process Hook



Two-step



One-step URS



One-step UDS/Monoaxial/Hook

# Instruments

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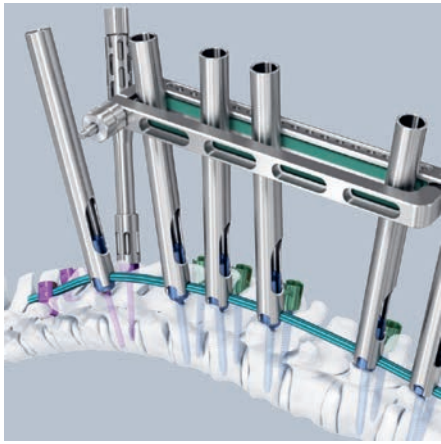
## All-in-one screwdriver

- Universal Reduction Screw (URS)
- Universal Degen Screw (UDS)
- Monoaxial screw
- Inner screw of the two-step locking cap
- One-step locking cap

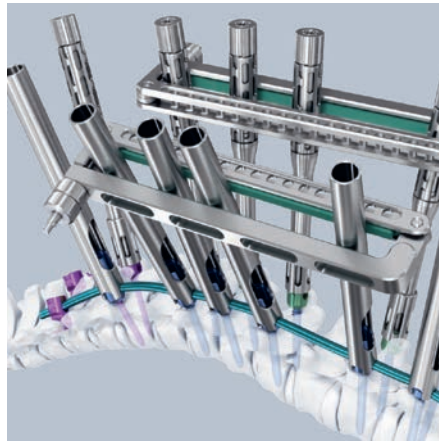


## Derotation

- Three options for vertebral body derotation



Unilateral en bloc derotation



Bilateral en bloc derotation



Segmental derotation

# 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.<sup>1,2</sup>

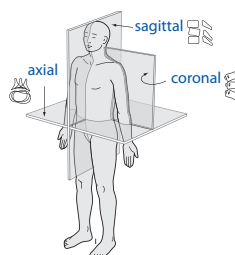
## Stability

Stabilization to achieve a specific therapeutic outcome



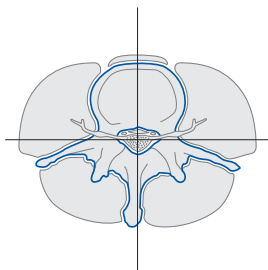
## Alignment

Balancing the spine in three dimensions



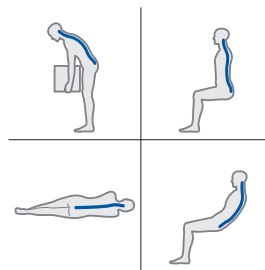
## Biology

Etiology, pathogenesis, neural protection, and tissue healing



## Function

Preservations and restoration of function to prevent disability



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<sup>1</sup> Aebi M, Thalgot JS, Webb JK (1998): AO ASIF Principles in Spine Surgery. Berlin: Springer.

<sup>2</sup> Aebi M, Arlet V, Webb JK, (2007): AOSPINE Manual (2 vols), Stuttgart, New York: Thieme.



# Indications and Contraindications

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## **Intended use**

The URS system is a posterior pedicle screw and hook fixation system (T1–S2) intended to provide precise and segmental stabilization of the spine in skeletally mature patients.

## **Indications**

- Deformities (i.e. scoliosis, kyphosis and/or lordosis, Scheuermann's disease)
- Degenerative disc disease
- Spondylolisthesis
- Trauma (i.e. fracture or dislocation)
- Tumor
- Stenosis
- Pseudarthrosis
- Failed previous fusion

## **Contraindications**

- Osteoporosis
- In fractures and tumors with severe anterior vertebral body disruption, an additional anterior support or column reconstruction is required.

# Screw Insertion

## 1. Pedicles and determine screw length

### Instruments

388.540	Pedicle Probe $\varnothing$ 3.8 mm with Canevasit Handle, length 230 mm, for Pedicle Screws $\varnothing$ 5.0 to 7.0 mm
388.550	Pedicle Awl $\varnothing$ 4.0 mm with Canevasit Handle, length 230 mm, for Pedicle Screws $\varnothing$ 5.0 to 7.0 mm
03.620.100	Handle with Ratchet, straight, with Quick Coupling
388.545	Feeler for Screw Channel, straight, $\varnothing$ 2.3 mm, length 275 mm

### Optional Instruments

388.546	Feeler for Screw Channel, curved, $\varnothing$ 2.3 mm, length 275 mm
388.538	Pedicle Probe $\varnothing$ 2.8 mm, length 230 mm
388.539	Pedicle Probe $\varnothing$ 4.8 mm with Canevasit Handle, length 230 mm, for Pedicle Screws $\varnothing$ 8.0 and 9.0 mm
388.655	Pedicle Probe $\varnothing$ 3.7 mm with Silicone Handle, length 240 mm, for Pedicle Screws $\varnothing$ 5.0 to 7.0 mm
388.656	Pedicle Awl $\varnothing$ 4.0 mm with Silicone Handle, length 255 mm, for Pedicle Screws $\varnothing$ 5.0 to 7.0 mm
388.551	Pedicle Awl $\varnothing$ 3.0 mm, length 230 mm, for Screws $\varnothing$ 4.0 and 4.2 mm
03.620.105	Tap for Pedicle Screws $\varnothing$ 5.0 mm with dual core, length 230 mm, with Hexagonal Coupling
03.620.106	Tap for Pedicle Screws $\varnothing$ 6.0 mm with dual core, length 230 mm, with Hexagonal Coupling



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

All pedicle screws are self-tapping; however, if tapping is preferred, use the appropriate tap.

**Note:** Do not use the pedicle probe for screws that are smaller or bigger than the recommended size.



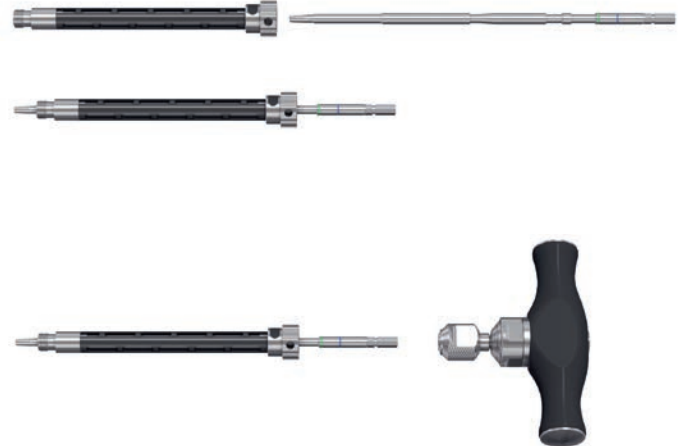
## 2. Assemble screwdriver

### Instruments

03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm

### Optional Instruments

03.620.100	Handle with Ratchet, straight, with Quick Coupling
03.636.001	Screwdriver Shaft Stardrive, T25, for Universal Reduction Screw
03.636.002	Holding Sleeve for Screwdriver Shaft No. 03.636.001

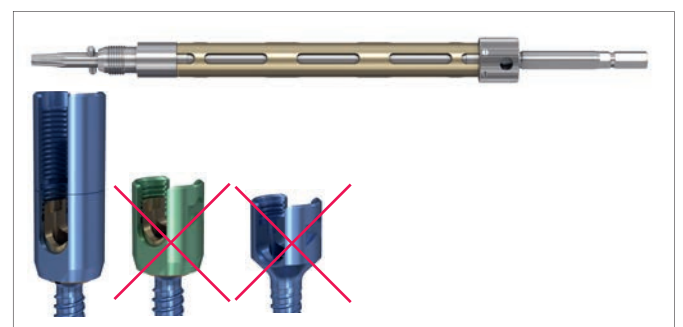


Slide the holding sleeve on the screwdriver shaft by pushing the button on the larger upper part of the screwdriver sleeve and attach the handle.

The black sleeve (03.689.002) and matching screwdriver shaft (03.689.001) are compatible with URS, UDS and monoaxial screws.



**Precaution:** The golden URS sleeve (03.636.002) and matching screwdriver shaft (03.636.001) can only be used with URS screws.



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### 3. Choose the appropriate screw

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#### Instruments

03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm

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#### Optional Instruments

03.620.100	Handle with Ratchet, straight, with Quick Coupling
03.636.001	Screwdriver Shaft Stardrive, T25, for Universal Reduction Screw
03.636.002	Holding Sleeve for Screwdriver Shaft No. 03.636.001

Choose a polyaxial or a monoaxial screw of the appropriate screw diameter and length based on probe feedback.

**Note:** When reduction over a screw or a reduction distance of 12–16 mm is needed, use a URS screw.

The shaft position can be changed by pushing the button on the larger upper part of the screwdriver sleeve. There are two screwdriver positions.



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For use with the URS screw, push the shaft until the blue line only is visible.

**Note:** Make sure the screwdriver is in the correct position. In the URS position only the blue line is visible.



For use with the UDS screw, pull the shaft out until both the green and blue lines are visible.

**Note:** Make sure the screwdriver is in the correct position. In the UDS position the blue and green lines are visible.



For use with the monoaxial screw, pull the shaft out until both the green and blue lines are visible.

**Note:** Make sure the screwdriver is in the correct position. In the position for the monoaxial screw, the blue and green lines are visible.





## 4. Pick up screw

### Instruments

03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm

### Optional Instruments

03.620.100	Handle with Ratchet, straight, with Quick Coupling
03.636.001	Screwdriver Shaft Stardrive, T25, for Universal Reduction Screw
03.636.002	Holding Sleeve for Screwdriver Shaft No. 03.636.001

Insert the tip of the screwdriver shaft into the screw head (1). Make sure the tip of the screwdriver is fully seated in the recess of the screw head (2).

Hold the ratchet handle with one hand and turn the larger upper part of the sleeve clockwise with the other hand until the tip of the sleeve is firmly attached to the screw head (3, 4).

If the holding sleeve does not engage with the screw head, push down the holding sleeve while pressing the release button of the holding sleeve.

Verify the screw length with the template on the loading station (5).



## 5. Insert screw

### Instruments

03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm

### Optional Instruments

03.620.100	Handle with Ratchet, straight, with Quick Coupling
03.620.001	Screwdriver Stardrive, T25, with T-Handle
03.636.001	Screwdriver Shaft Stardrive, T25, for Universal Reduction Screw
03.636.002	Holding Sleeve for Screwdriver Shaft, for No. 03.636.001

Insert the screw (1).

**Note:** Hold the black part of the holding sleeve during screw insertion.

Remove the screwdriver by turning the larger upper part of the sleeve counterclockwise until the tip of the sleeve disengages from the screw thread (2). If the screw head turns while attached to the sleeve, hold the screw head firmly to disengage the screwdriver sleeve.

**Note:** Check for polyaxiality of the screw head. If required, adjust the screw height accordingly.



# Hook Insertion

## 1. Prepare for hook

Choose the appropriate hook type and prepare for hook insertion accordingly.

URS pedicle hooks can be anchored in the pedicle with a single screw type.

### Option A. Prepare pedicle for pedicle hook

#### Instrument

03.632.100 Pedicle Feeler, for Matrix

Using the pedicle feeler, open the facet capsule and locate the pedicle. Remove a small piece of the inferior articular process to ensure proper seating of the pedicle hook. Pedicle hooks should be placed in an up-going direction only.

### Option B. Prepare lamina for lamina hook

#### Instruments

03.632.013 Lamina Feeler, small, for Matrix

03.632.014 Lamina Feeler, large, for Matrix

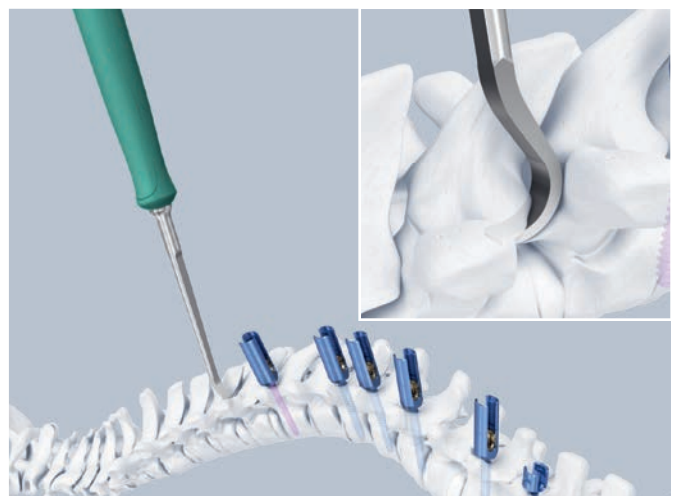
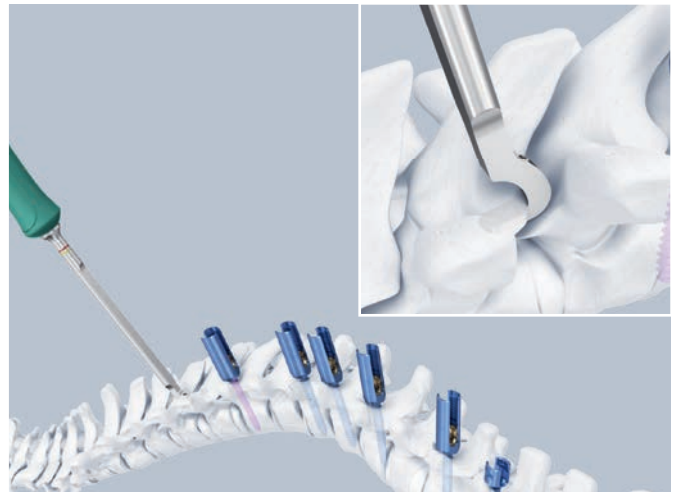
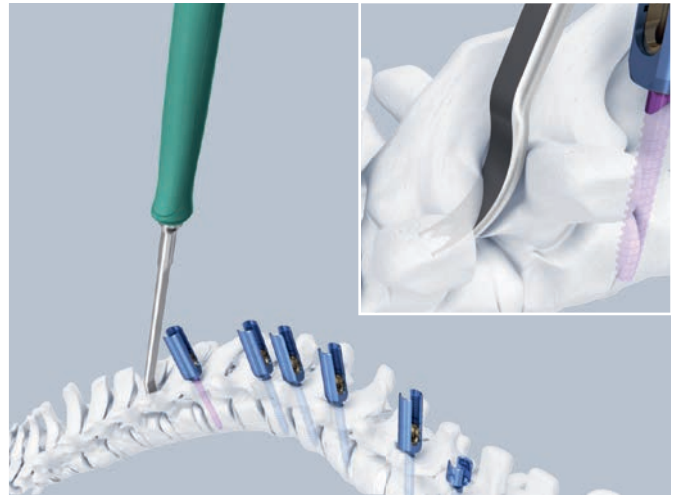
Using the appropriate lamina feeler, separate the ligamentum flavum from the underside of the lamina to ensure good bony contact with the lamina hook.

### Option C. Prepare transverse process for transverse process hook

#### Instrument

03.632.163 Transverse Process Finder for Matrix

Use the transverse process finder to separate the ligamentum flavum from the underside of the transverse process.



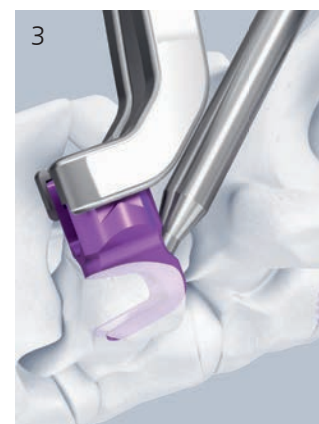
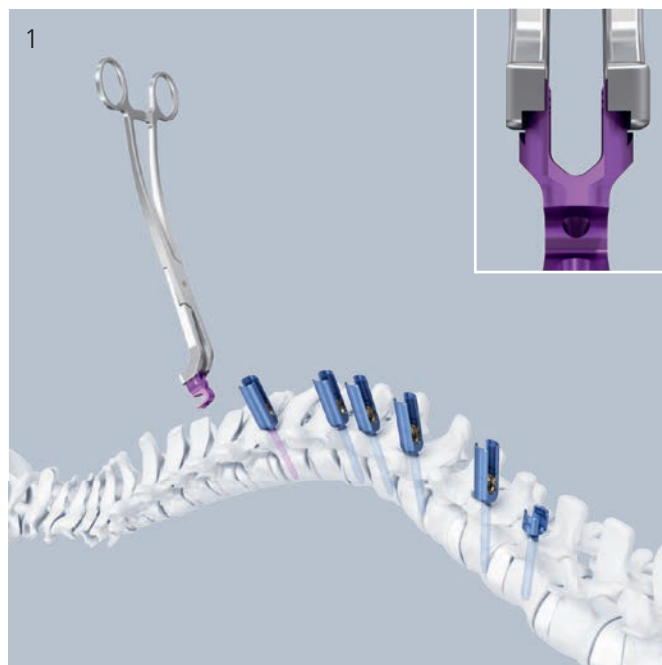
## 2. Insert hook

### Instruments

03.632.044	Hook Positioner, for Matrix
03.666.010	Hook Holding Forceps
314.070	Screwdriver, hexagonal, small, 2.5 mm, with groove
388.381	Holding Sleeve for Fillister Head Screws
387.060	Handle for Drill Sleeve 2.0
388.581	USS Drill Sleeve 2.0
315.190	Drill Bit $\varnothing$ 2.0 mm, length 100/75 mm, 3-flute, for Quick Coupling
319.060	Depth Gauge for Screws $\varnothing$ 1.5 to 2.0 mm, measuring range up to 38 mm

Attach the desired hook to the hook holding forceps (1). Place the hook in the desired location (2). The hook positioner may be used to facilitate placement of the hook (3).

If using a pedicle hook, a screw  $\varnothing$  3.2 mm may be inserted through the hole in the back of the hook to fit the pedicle hook in the pedicle tightly.



Use the 3-flute drill bit  $\varnothing$  2.0 mm with the USS drill sleeve 2.0 and an oscillating drill to drill the screw hole (4). The drill sleeve consists of two parts, the sleeve and the handle. These two components must be screwed together before use.

**Precaution:** Do not start the power drill if the bit does not hit bone after passing through the drill sleeve.

Remove the drill sleeve and determine the depth of the hole using the depth gauge (5).

Pick up a suitable screw for the pedicle hook with the holding sleeve and the hexagonal screwdriver. Insert the screw in the pre-drilled hole (6). The pedicle hook is now firmly attached to the pedicle.

**Note:** If using a lamina hook, ensure that the hook does not lie too deep or press upon the spinal cord.

Place the remaining hooks as determined in the preoperative plan.



# Rod Insertion

## 1. Determine rod contour and length

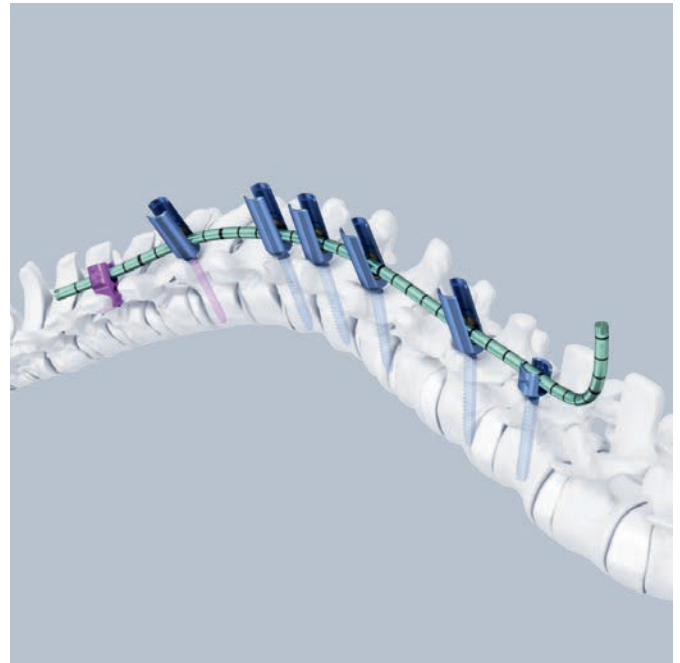
### Instruments

03.636.005	Tab Remover/Alignment Tool
388.880	Trial Rod $\varnothing$ 6.0 mm, length 400 mm

Use the extended tab remover/alignment tool to rotate and align the screw heads and to check polyaxiality of the screw heads.

Choose the appropriate rod. Use the trial rod to determine contour and length of the rod. Cut the rod to the required length with a  $\varnothing$  6.0 mm rod cutter.

**Precaution:** Cobalt chrome rods contain materials (cobalt, nickel and chrome) that can cause allergic reactions.





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## 2. Contour rod

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### Instrument

388.960	Bending Pliers with Rolls for USS Rods Ø 6.0 mm, length 300 mm
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### Optional Instruments

388.910	USS Bending Iron, left
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388.920	USS Bending Iron, right
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03.620.020	Rod Bender for Rods Ø 6.0 mm, with Radius Adjustment
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Contour the rod to match the trial rod using the bending pliers.

Bending irons can be used for further contouring after rod insertion.

**Note:** Do not reverse bend rods. Reverse bending may produce internal stresses, which may become the focal point for potential breakage of the implant.



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### 3. Insert rod

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#### Instrument

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388.440	Holding Forceps with broad Tip, length 290 mm, for Rods Ø 6.0 mm
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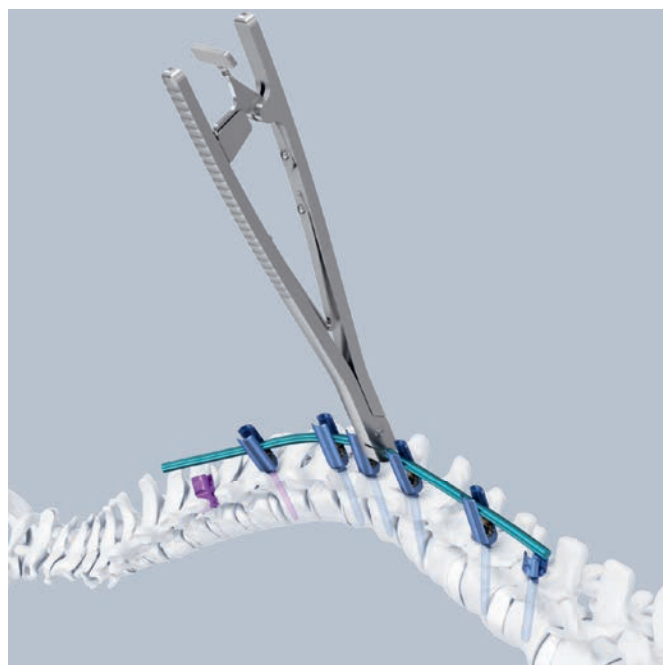
#### Optional instrument

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328.028	Holding Forceps, straight, with Scissors Grip, for Rods Ø 6.0 mm
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Insert the rod using the rod holding forceps.



# Rod Reduction

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**Option A. Reduce rod with URS screw (for reduction up to 16 mm)**

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**Instrument**

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03.636.007 Rod Pusher/Counter Torque for Universal Reduction Screw

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**Optional instrument**

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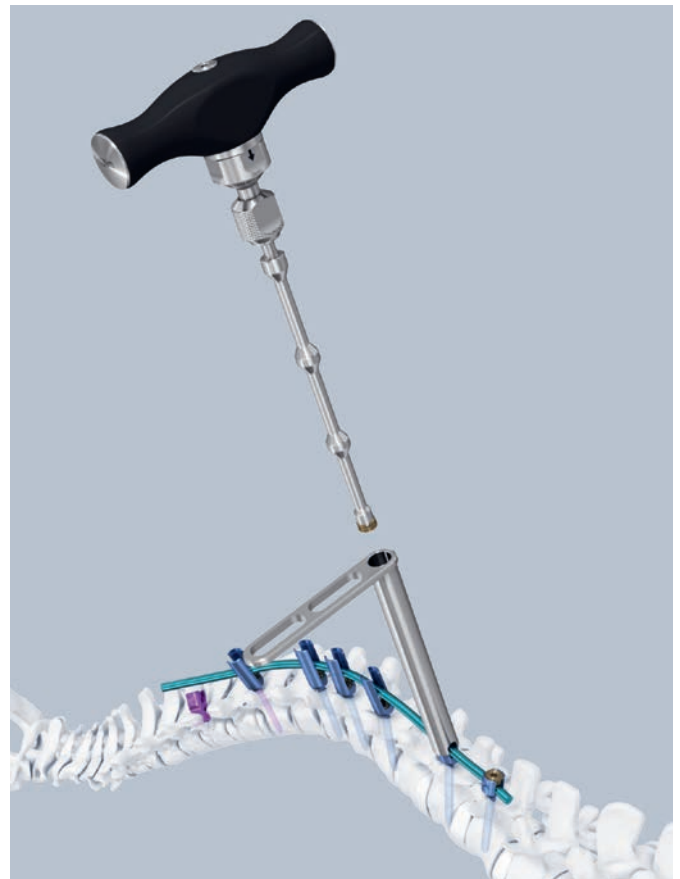
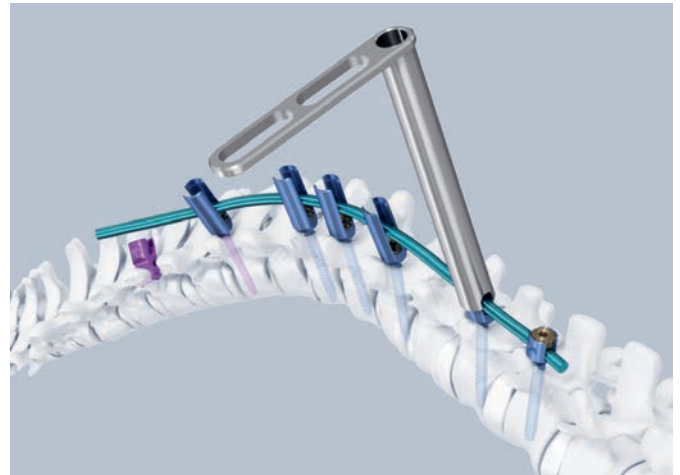
03.636.006 Derotation Instrument for Universal Reduction Screw

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Align the URS screw with the rod. Place the counter torque or derotation instrument over the screw head. Insert the locking cap through the counter torque or derotation instrument as described under "Locking Cap Insertion" (page 24).

Turn the locking cap to reduce the rod into the screw head.

**Note:** For locking cap insertion/rod reduction in combination with the URS screw, always use the counter torque or derotation tool for better guidance. If the locking cap is cross-threaded, turn back and realign the locking cap for proper insertion.



**Option B. Reduce rod with a reduction instrument (for reduction up to 12 mm)**

**Instrument**

03.689.003 Reduction Instrument for Universal Degen Screws

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

Once reduction has been achieved, the ratchet handle will remain in the reduced position. Keep the reduction instrument in the closed position until the locking cap is attached to the screw.

To remove the reduction instrument from the screw, ensure the ratchet handle is fully open. Hold the lower part of the instrument with one hand and press it against the screw head so that one tip disengages from the screw head. Then carefully tilt the reduction instrument downward.

**Note:** The reduction instrument can be used with UDS screws, monoaxial screws and hooks.



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**Option C. Reduce rod with a rocker fork (for reduction up to 8 mm)**

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**Instrument**

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03.689.004 Rocker Fork for Universal Degen Screws

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

**Note:** The rocker fork can be used with UDS screws, monoaxial screws and hooks.



# Locking Cap Insertion

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## Option A. Insert two-step locking cap

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### Instruments

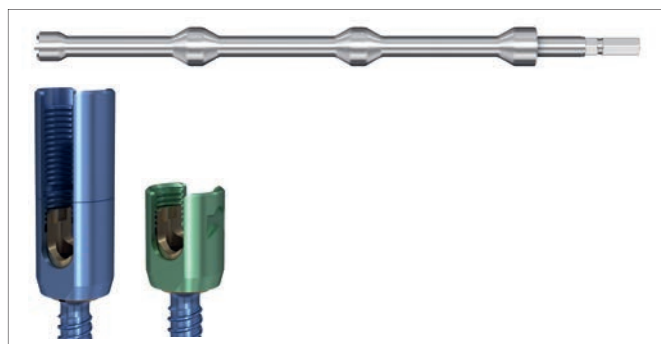
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- |            |   |
|------------|---|
| 03.636.003 | Screwdriver Shaft for Locking Cap for Universal Reduction Screw |
| 03.620.061 | T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm     |
| 03.636.007 | Rod Pusher/Counter Torque for Universal Reduction Screw         |
- 

### Optional instruments

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- |            |  |
|------------|--|
| 03.689.003 | Reduction Instrument for Universal Degen Screws                        |
| 03.636.004 | Screwdriver, cannulated, for Locking Cap for Universal Reduction Screw |
| 03.620.005 | Ratchet T-Handle with Low Toggle with Hexagonal Coupling 6.0 mm        |
| 03.620.100 | Handle with Ratchet, straight, with Quick Coupling                     |
| 03.636.008 | T-Handle with Hexagonal Coupling 6.0 mm                                |
| 03.636.006 | Derotation Instrument for Universal Reduction Screw                    |
| 03.636.010 | Screwdriver, small, for Locking Cap for Universal Reduction Screw      |
- 



Attach the screwdriver shaft for the two-step locking cap to the torque limiting handle.

Insert the tip of the screwdriver into the two-step locking cap. Press down firmly. The screwdriver is self-retaining.



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To ensure optimal cap alignment, insert the locking cap through the counter torque or derotation instrument. Thread the locking cap clockwise into the screw head. Maintain the maximum compression during insertion and tightening of the two-step locking cap.

**Precaution:** Secure the outer screw first before tightening the inner screw.



**Option B. Insert one-step locking cap**

**Instruments**

03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm
03.636.007	Rod Pusher/Counter Torque for Universal Reduction Screw

**Optional Instruments**

03.689.003	Reduction Instrument for Universal Degen Screws
03.689.004	Rocker Fork for Universal Degen Screws
03.620.100	Handle with Ratchet, straight, with Quick Coupling
03.636.006	Derotation Instrument for Universal Reduction Screw

Verify that the screwdriver shaft is in the correct position. When using the URS screws, only the blue line should be visible.

**Precaution:** Only use the blue one-step locking cap for the blue URS screw. Use the golden one-step locking cap with the green UDS screw, the monoaxial screw and the hook.



Insert the tip of the screwdriver shaft into the one-step locking cap. Press down firmly. The screwdriver is self-retaining.

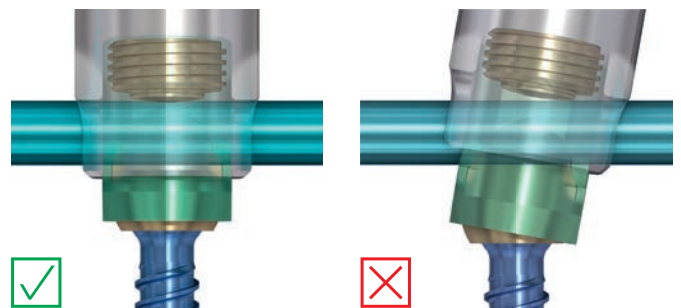
To ensure optimal cap alignment, insert the locking cap through the counter torque. Thread the locking cap clockwise into the screw head.

The one-step locking cap can also be inserted through the rod reduction instrument. Maintain the maximum compression during insertion and tightening of the one-step locking cap.

In combination with the rocker fork, insert the locking cap while maintaining reduction; use the counter torque for all further caps and further tightening.

**Note:** Always use the counter torque or reduction instrument for locking cap guidance.

**Note:** Always fully seat the rod pusher/counter torque on the rod. The instrument must be perpendicular to the rod.



# Deformity Correction

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There are several options for deformity correction when using the URS system:

1. Global derotation – rod rotation
2. Vertebral Body Derotation
  - A Standard derotation
  - B Unilateral en bloc derotation
  - C Bilateral en bloc derotation
  - D Segmental derotation

## 1. Deformity correction – rod rotation

### Instruments

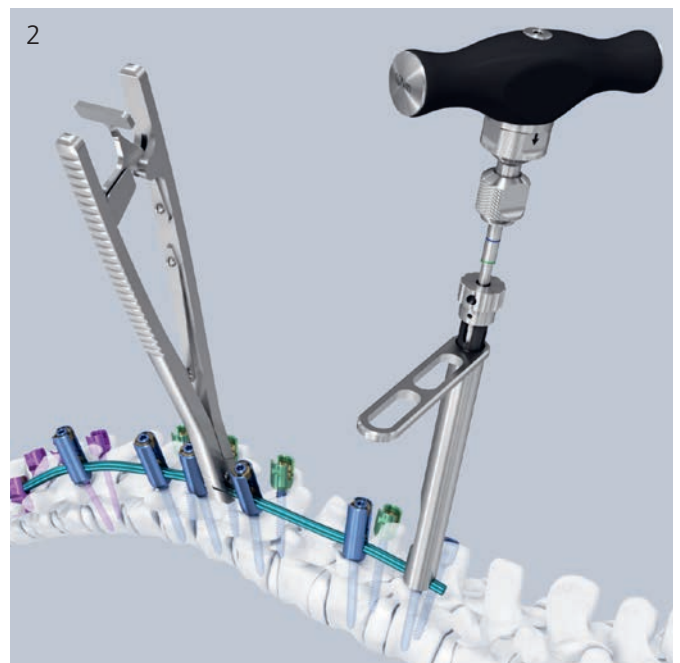
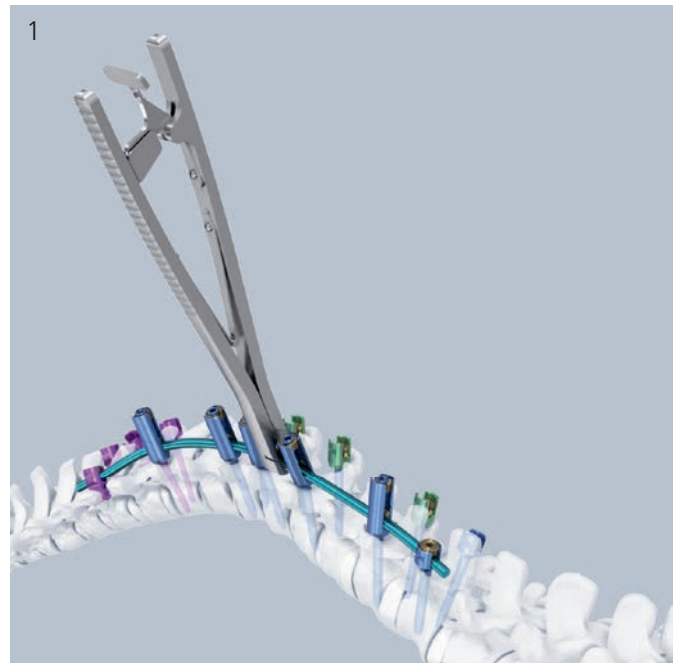
388.440	Holding Forceps with broad Tip, length 290 mm, for Rods Ø 6.0 mm
03.636.007	Rod Pusher/Counter Torque for Universal Reduction Screw
03.636.003	Screwdriver Shaft for Locking Cap for Universal Reduction Screw
03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.636.006	Derotation Instrument for Universal Reduction Screw

### Optional Instruments

03.636.001	Screwdriver Shaft Stardrive, T25, for Universal Reduction Screw
03.636.002	Holding Sleeve for Screwdriver Shaft No. 03.636.001

Rotate the rod with the holding forceps until the desired sagittal plane is reached (1). The rod rotation can be done before fully reducing the locking cap.

Final tighten the two-step locking cap as described under “Final Tightening” (page 44) at one end of the construct to maintain the orientation of the rod (2). Always use the counter torque for final tightening.

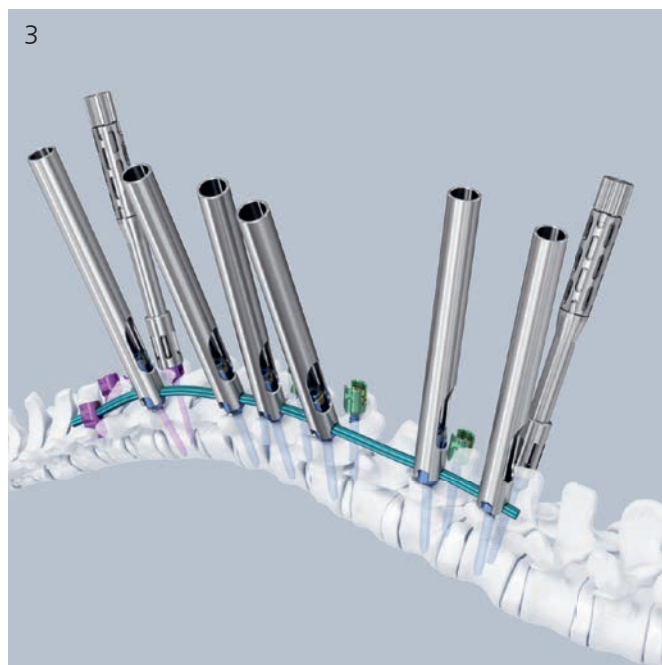


Slide the derotation instruments at all desired levels over the screw heads (3). Slowly reduce the locking caps at the different levels and final tighten the outer part of the locking caps.

Final tighten the inner screw of the locking cap only if no vertebral body derotation is performed.

**Note:** Rod rotation is also possible using one-step locking caps. Loosen the locking cap a quarter of a turn to allow for rotation.

**Note:** If vertebral body derotation is performed, do not final tighten the inner screw of the two-step locking cap.





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## 2. Deformity correction – vertebral body derotation

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### Option A. Standard derotation

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#### Instrument

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03.636.006	Derotation Instrument for Universal Reduction Screw
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Slide derotation instruments at all desired levels over the screw heads. Slowly reduce the locking caps at the different levels and final tighten the outer part of the locking caps.

Derotate the vertebral bodies with the derotation instruments until the desired correction is achieved.

Final tighten the inner part of the two-step locking caps as described under “Final Tightening” (page 46).

**Note:** Vertebral body derotation is also possible using monoaxial screws and one-step locking caps. Loosen the completely reduced locking cap a quarter of a turn to allow for rotation.



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**Option B. Unilateral en bloc derotation**

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**Instruments**

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03.671.088	Derotation Clamp, long
03.636.003	Screwdriver Shaft for Locking Cap for Universal Reduction Screw
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm
03.636.006	Derotation Instrument for Universal Reduction Screw

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**Optional Instruments**

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03.671.087	Derotation Clamp, short
03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001

---



Slide the derotation instruments at all desired levels over the screw heads. Slowly reduce the locking caps at the different levels.

Assemble the derotation clamp.

**Note:** Check that the silicone inlays are mounted.

Connect the derotation instruments with the derotation clamp. Final tighten the outer part of the locking caps as described under “Final Tightening” (see page 44).

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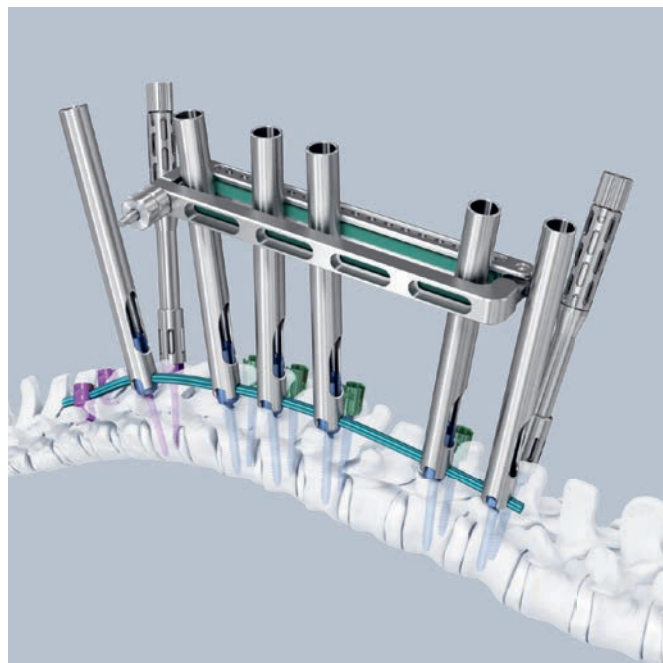
The screw head is now locked, and polyaxial movement no longer possible.

Derotate the vertebral bodies until the desired correction is achieved.  
Final tighten the inner part of the two-step locking caps.

**Note:** Vertebral body derotation is also possible using monoaxial screws and one-step locking caps. Loosen the completely reduced locking cap a quarter of a turn to allow for rotation.

**Precaution:** Excessive force may lead to damage to soft tissues and/or blood vessels.

It might be necessary to keep the cranial and caudal ends of the construct in position while performing vertebral body derotation. Segmental connectors may be used to achieve this (see page 37).



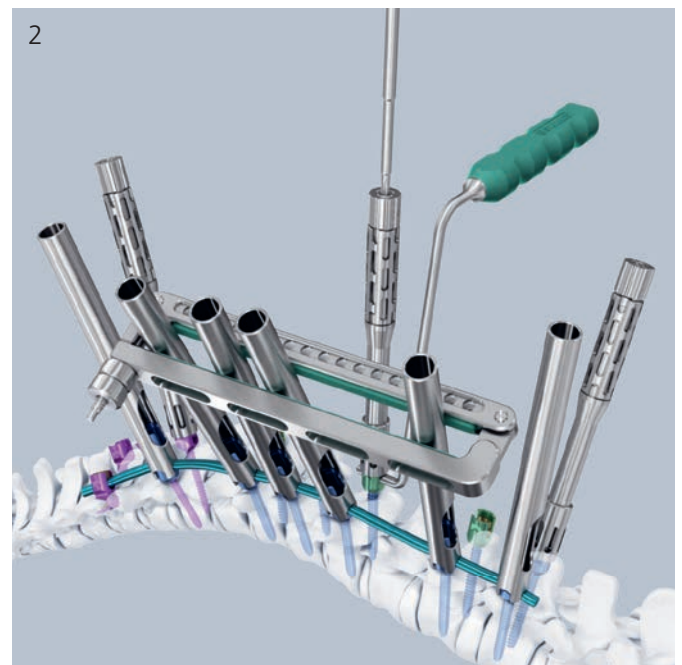
**Option C. Bilateral en bloc derotation**

**Instruments**

03.671.088	Derotation Clamp, long
03.671.096	Connectors for Derotation Clamp, size S
03.671.089	Socket Wrench for Connectors for Derotation Clamp
03.671.091	Counter Torque for Connectors for Derotation Clamp
03.636.003	Screwdriver Shaft for Locking Cap for Universal Reduction Screw
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm
03.636.020	Derotation Sleeve, single
03.636.021	Counter Torque for Derotation Sleeve, single
03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.636.006	Derotation instrument for Universal Reduction Screw

**Optional instruments**

03.671.087	Derotation Clamp, short
03.671.095	Connectors for Derotation Clamp, size XS
03.671.097	Connectors for Derotation Clamp, size M
03.671.098	Connectors for Derotation Clamp, size L
03.671.099	Connectors for Derotation Clamp, size XL
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001



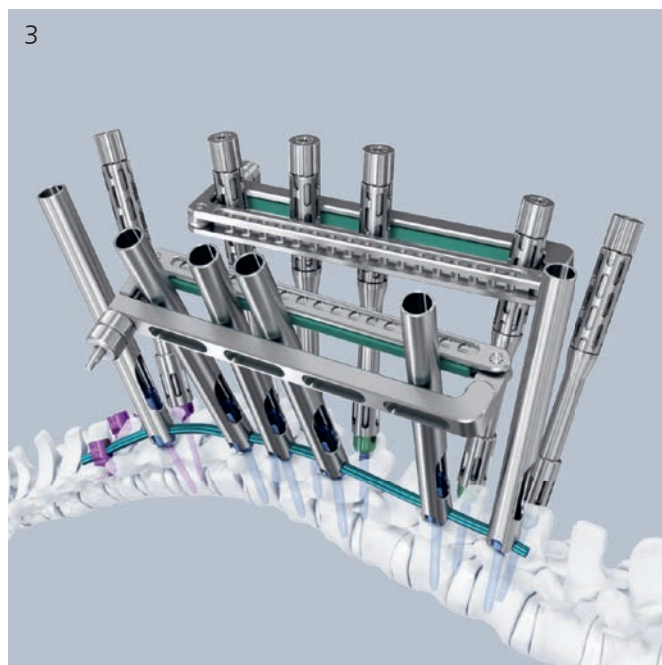
On the side at which the rod is placed, slide the derotation instruments at all desired levels over the screw heads. Slowly reduce the locking caps at the different levels.

Attach the derotation sleeves to the corresponding screws on the other side. Use the counter torque for derotation sleeve and the screwdriver T25 to fingertighten the sleeves (1, 2).

Assemble the two derotation clamps.

**Note:** Check that the silicone inlays are mounted.

Attach the two derotation clamps on both sides of the spine (3) so that the snap-in holes for the connectors face medially.

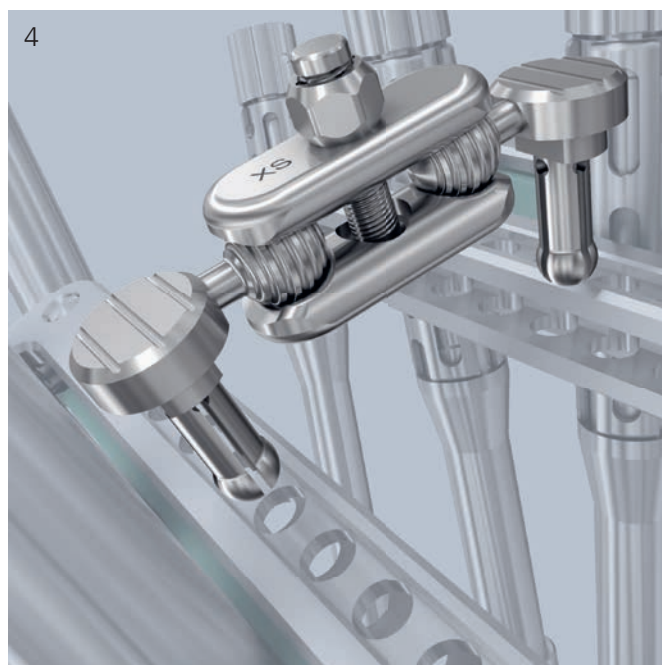


Final tighten the outer part of the locking cap as described under “Final Tightening” (page 44) and firmly tighten the derotation sleeves.

The screw heads are now locked, and polyaxial movement no longer possible.

Snap two connectors for the derotation clamp of the appropriate length into the holes for the connectors (4). Use the markings on the connectors for orientation. If the size of the connector does not properly match, pick a larger size and position it obliquely.

**Note:** Make sure to use the correct length of connectors.





Tighten the nut on the connectors for derotation clamp firmly to lock the two derotation clamps together using the socket wrench and the counter torque for derotation clamps (5).

**Note:** Always use the counter torque to tighten the nut on the connector.

Derotate the vertebral bodies until the desired correction is achieved (6).

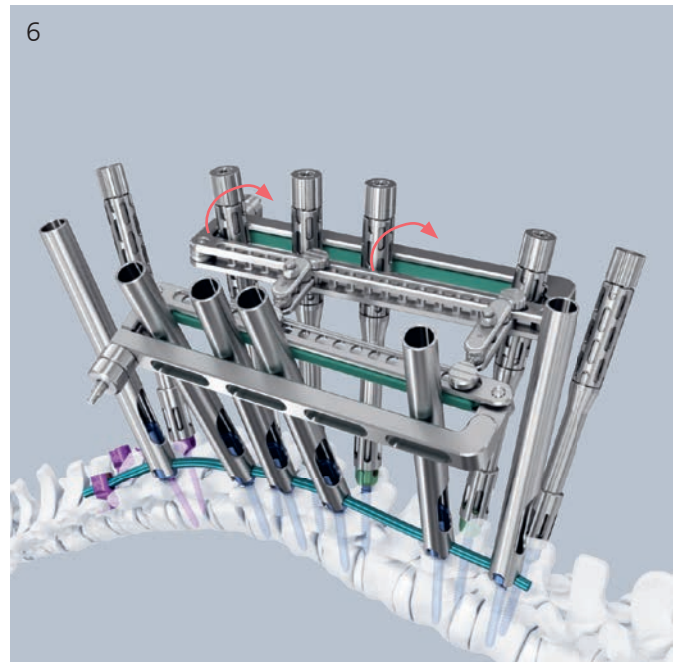
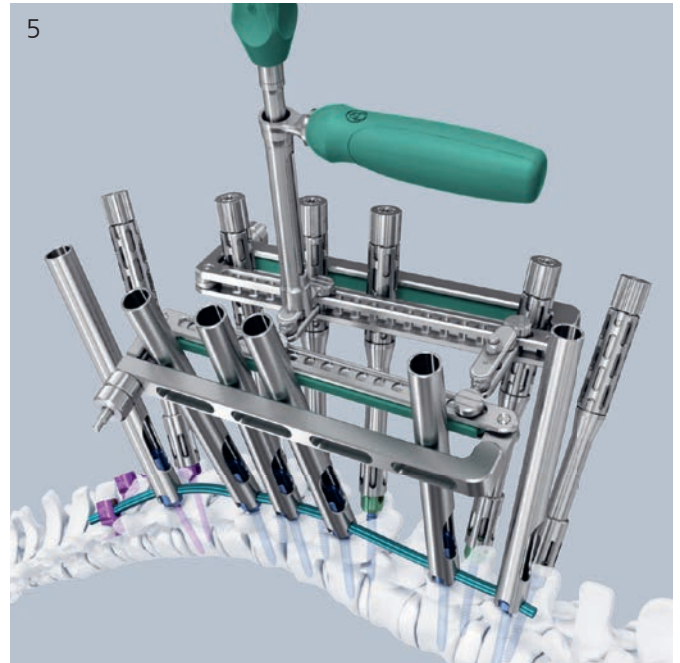
Final tighten the inner part of the two-step locking caps.

**Precaution:** Excessive force may lead to damage to soft tissues and/or blood vessels.

**Note:** Vertebral body derotation is also possible using monoaxial screws and one-step locking caps. Loosen the locking cap a quarter of a turn to allow for rotation.

**Note:** Since the simple derotation sleeve is compatible with all pedicle screws of the URS system, vertebral body derotation is also possible using UDS or monoaxial screws.

It might be necessary to keep the cranial and caudal ends of the construct in position while performing vertebral body derotation. Segmental connectors may be used to achieve this (see page 37).



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**Option D. Segmental derotation**

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**Instruments**

03.671.151	Segmental Connector, for URS, long
03.636.020	Derotation Sleeve, single
03.636.021	Counter Torque for Derotation Sleeve, single
03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm
03.636.006	Derotation Instrument for Universal Reduction Screw

**Optional instrument**

03.671.150	Segmental Connector, for URS, short
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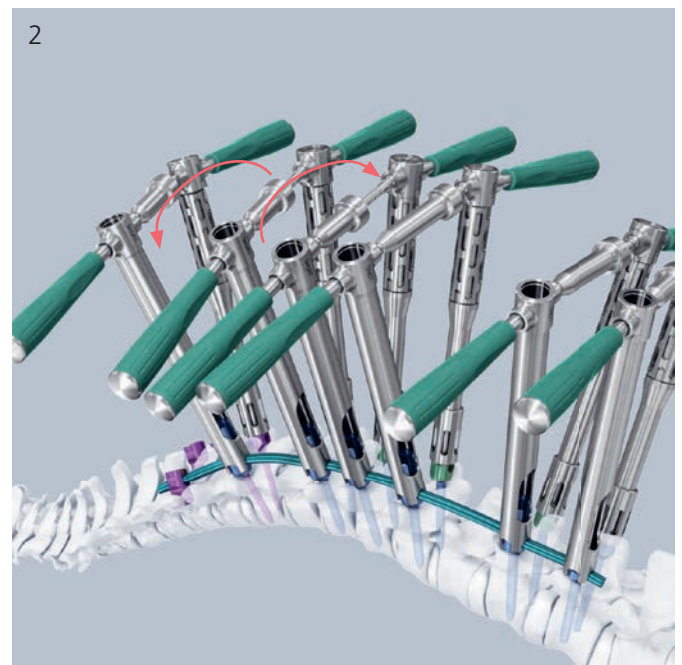
On the side at which the rod is placed, slide the derotation instruments at all desired levels over the screw heads. Slowly reduce the locking caps at the different levels.

Attach the derotation sleeves to the corresponding screws on the other side. Use the counter torque for derotation sleeve and the screwdriver T25 to finger-tighten the sleeves (1).

Assemble the segmental connectors.

Attach the segmental connector to connect the derotation instrument and the derotation sleeve over one vertebral body (2).

Repeat this step for all segments where segmental derotation is needed.





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Final tighten the outer part of the locking cap as described under “Final Tightening” (page 44) and firmly tighten the derotation sleeves.

The screw heads are now locked, and polyaxial movement no longer possible.

Rotate one segment in relation to another segment until the desired correction is achieved.

Final tighten the inner part of the two-step locking caps.

**Precaution:** Excessive force may lead to damage to soft tissues and/or blood vessels.

**Note:** Vertebral body derotation is also possible using monoaxial screws and one-step locking caps. Loosen the locking cap a quarter of a turn to allow for rotation.

**Note:** Since the simple derotation sleeve is compatible with all pedicle screws of the URS system, vertebral body derotation is also possible using UDS or monoaxial screws.

# Insert Second Rod and Locking Caps

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## Instrument

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388.440	Holding Forceps with broad Tip, length 290 mm, for Rods Ø 6.0 mm
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## Optional instrument

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328.028	Holding Forceps, straight, with Scissors Grip, for Rods Ø 6.0 mm
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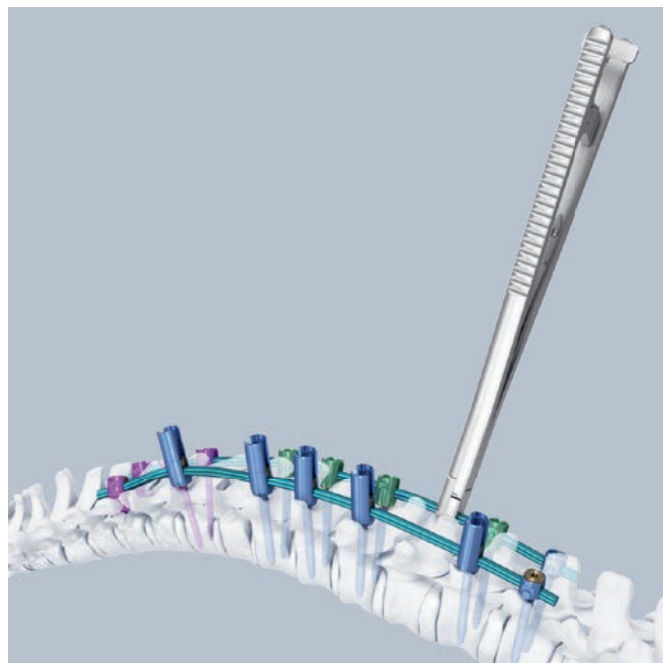
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Insert the second rod using the rod holding forceps, as described on page 20.

Insert locking caps on the other side as described under "Locking Cap Insertion":

Insert a two-step locking cap: see page 24.

Insert a one-step locking cap: see page 26.



# Distraction and Compression

## 1. Distraction

### Instruments

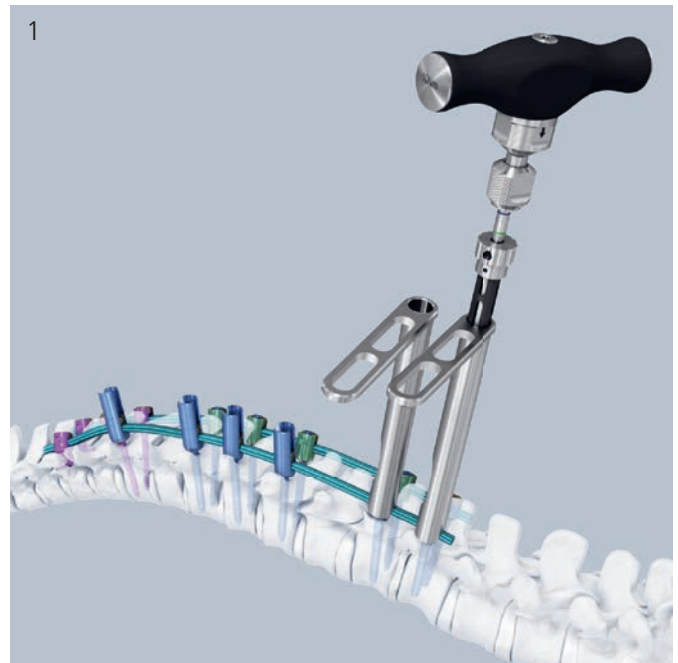
388.410	Spreader Forceps for Pedicle Screws, length 330 mm
03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm
03.636.007	Rod Pusher/Counter Torque for Universal Reduction Screw

### Optional Instruments

03.620.018	Distraction Forceps, for Lumbar Spine
03.632.000	Distraction Fork
03.636.001	Screwdriver Shaft Stardrive, T25, for Universal Reduction Screw
03.636.002	Holding Sleeve for Screwdriver Shaft No. 03.636.001

**Precaution:** Ensure all locking caps are fully reduced and provisionally tightened (see “Locking Cap Insertion”, page 24). Failure to do so could potentially lead to a misalignment.

Final tighten the outer and inner screws of the two-step locking cap of one screw with the 10 Nm torque limiter and counter torque to create a fixed point for distraction (1) (see “Final tightening of the two-step locking cap”, page 44).



Final tighten the outer part of the locking cap of the screw to be manipulated.

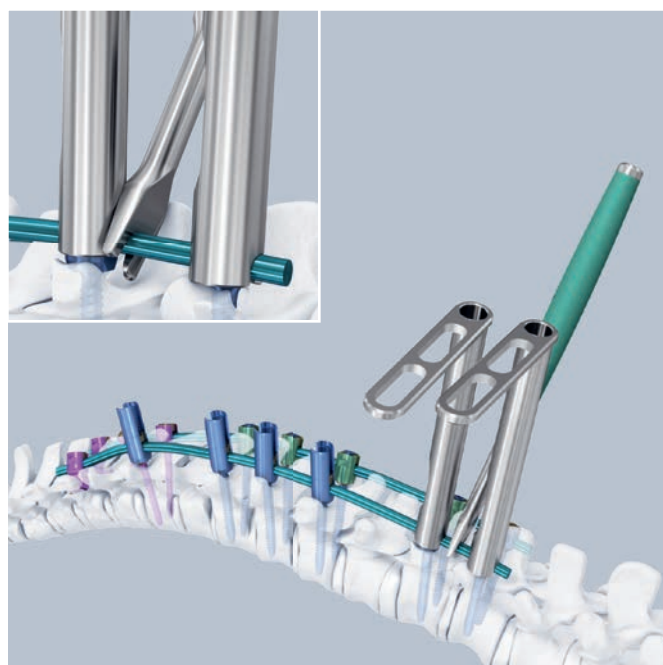
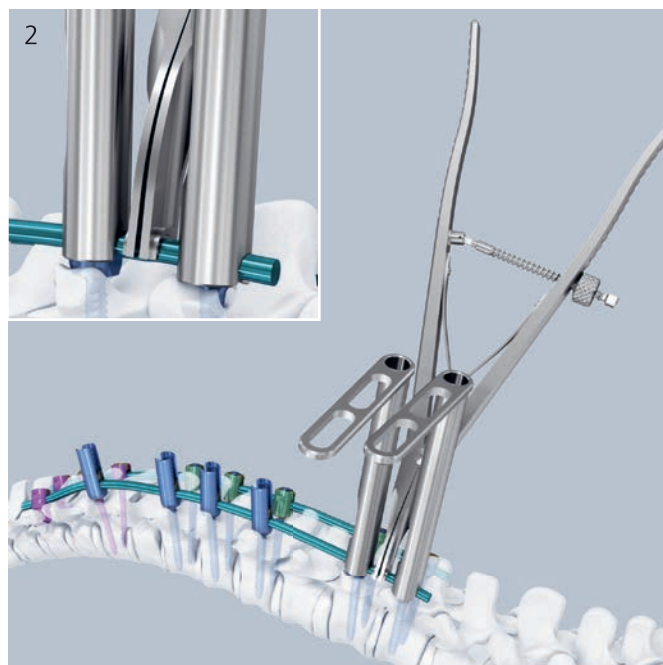
When using one-step locking caps, tighten one locking cap with the 10 Nm torque limiter and counter torque to create a fixed point for distraction (see «Final tightening of the one-step locking cap», page 48). Loosen the locking cap of the screw to be manipulated a quarter of a turn to allow for distraction.

Use the distraction forceps to distract the construct (2). When the desired position is achieved, tighten the locking cap with the screwdriver.

The rod holding forceps can be used as a temporary point of distraction when adjacent pedicle screws are too distant.

**Note:** Always remove the distraction forceps before final tightening.

**Note:** Use the distraction fork to widen the gap between the screw heads when proper distraction with the forceps is not possible due to proximity of the heads. Insert the distraction fork between the screws and manipulate until the desired gap is obtained. Always remove the distraction fork before final tightening.



## 2. Compression

### Instruments

388.422	Compression Forceps, length 335 mm, for Pedicle Screws
03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm
03.636.007	Rod Pusher/Counter Torque for Universal Reduction Screw

### Optional Instruments

03.636.001	Screwdriver Shaft Stardrive, T25, for Universal Reduction Screw
03.636.002	Holding Sleeve for Screwdriver Shaft No. 03.636.001



**Precaution:** Ensure all locking caps are fully reduced and provisionally tightened (see “Locking Cap Insertion”, page 24). Failure to do so could potentially lead to a misalignment.

Final tighten the outer and inner screws of the two-step locking cap of one screw with the 10 Nm torque limiter and counter torque to create a fixed point for compression (see “Final tightening of the two-step locking cap” page 44).

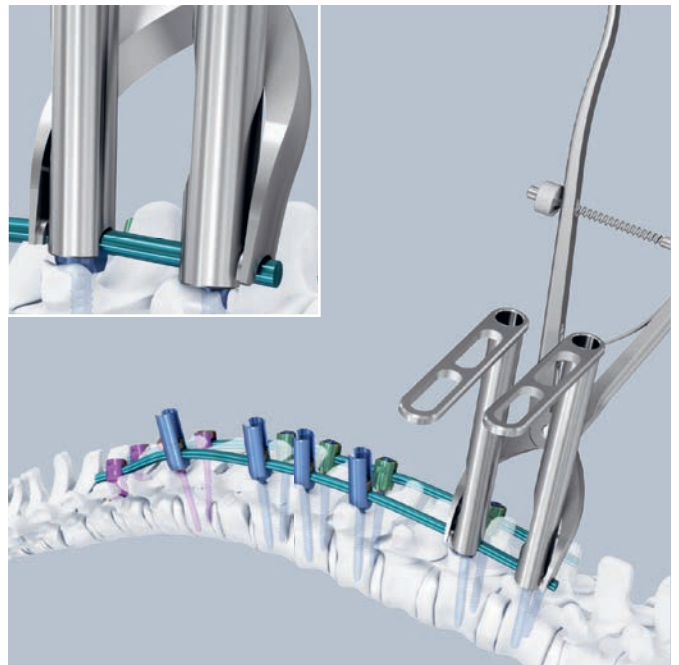
Final tighten the outer part of the locking cap of the screw to be manipulated.

When using one-step locking caps, tighten one locking cap with the 10 Nm torque limiter and counter torque to create a fixed point for compression (see “Final tightening of the one-step locking cap”, page 48). Loosen the locking cap of the screw to be manipulated a quarter of a turn to allow for compression.

Use the compression forceps to compress the construct. When the desired position is achieved, tighten the locking cap with the screwdriver.

The rod holding forceps can be used as a temporary point of compression when adjacent pedicle screws are too distant.

**Note:** Always remove the compression forceps before final tightening.



# Final Tightening

## 1. Final tightening of the two-step locking cap

### A. Final tightening of the outer part of the two-step locking cap

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#### Instruments

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03.636.003 Screwdriver Shaft for Locking Cap for Universal Reduction Screw

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03.620.061 T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm

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03.636.007 Rod Pusher/Counter Torque for Universal Reduction Screw

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#### Optional instrument

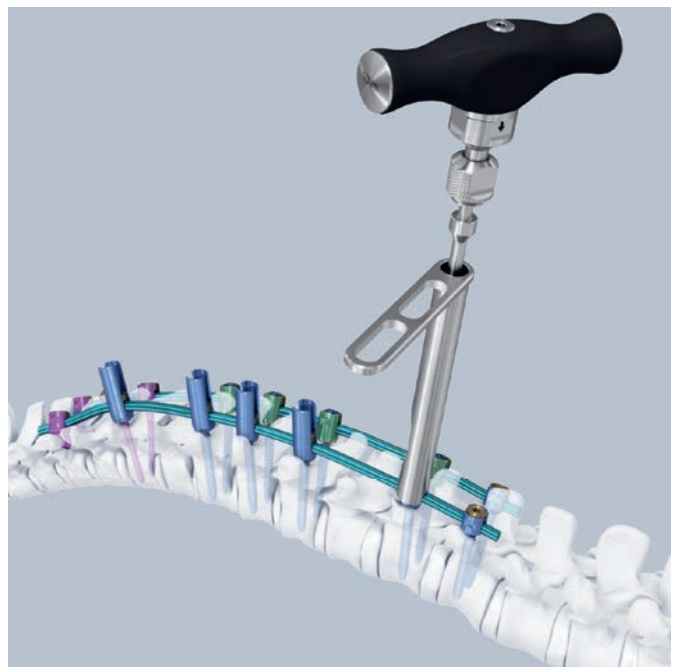
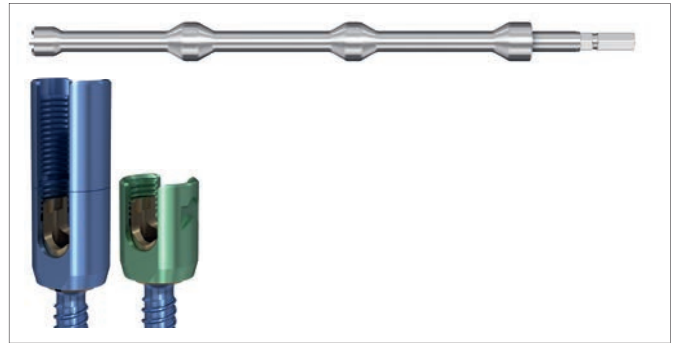
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03.620.019 Torque-limiting T-Handle, 10 Nm

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Attach the screwdriver shaft to the torque limiting handle. Place the rod pusher/counter torque over the screw head. Insert the screwdriver shaft through the rod pusher/counter torque. Make sure the screwdriver is completely inserted and turn until the torque limiting handle clicks. The click indicates that the outer part of the locking cap is tightened with 10 Nm.

**Note:** The 10 Nm torque limiting handle and the counter torque must be used for final tightening.



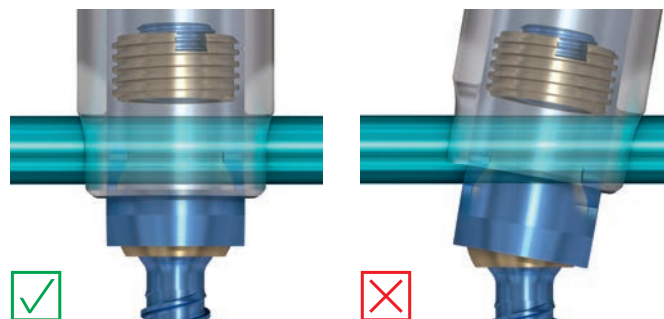


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**Note:** Always fully seat the rod pusher/counter torque on the rod. The instrument must be perpendicular to the rod during final tightening. It is recommended to check and control all locking caps with counter torque and torque limiting handle prior to proceeding.

The polyaxiality is blocked, but the rod can still move. In this position deformity correction and parallel distraction or compression is possible.

**Note:** The outer part of the locking cap must always be tightened before the inner part, otherwise the screw head may not lock properly.



**B. Final tightening of the inner part of the two-step locking cap**

**Instruments**

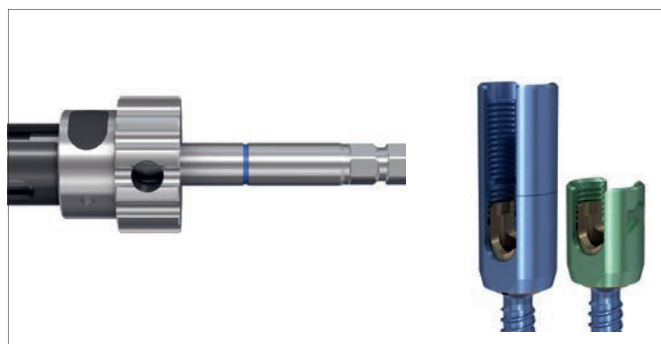
03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm
03.636.007	Rod Pusher/Counter Torque for Universal Reduction Screw

**Optional instruments**

03.636.001	Screwdriver Shaft Stardrive, T25, for Universal Reduction Screw
03.636.002	Holding Sleeve for Screwdriver Shaft No. 03.636.001
03.620.019	Torque-limiting Handle, 10 Nm

Assemble the holding sleeve onto the screwdriver shaft and attach the screwdriver shaft to the torque limiting handle. Verify that the holding sleeve is in the correct position. When using the URS screw, only the blue line should be visible.

Place the rod pusher/counter torque over the screw head. Insert the screwdriver shaft through the rod pusher/counter torque. Make sure the screwdriver is completely inserted and turn until the torque limiting handle clicks. The click indicates that the inner part of the locking cap is tightened with 10 Nm.



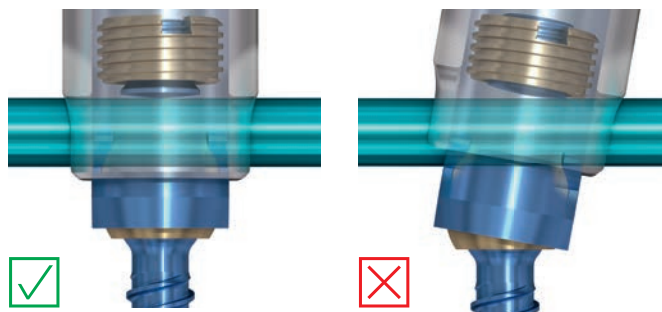
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**Note:** The 10 Nm torque limiting handle and the counter torque must be used for final tightening.

The polyaxiality is blocked, and the rod is now fixed to the pedicle screw.

**Note:** Always fully seat the rod pusher/counter torque on the rod. The instrument must be perpendicular to the rod during final tightening. It is recommended to check and control all locking caps with counter torque and torque limiting handle prior to proceeding.

After final tightening of all screws, use the torque-limiting handle and counter torque to sequentially revisit all locking caps. Start at the caudal left screw of the construct and proceed clockwise to systematically repeat final tightening of all locking caps of the construct.



## 2. Final tightening of the one-step locking cap

### Instruments

03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.689.002	Holding Sleeve for Screwdriver Shaft for No. 03.689.001
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm
03.636.007	Rod Pusher/Counter Torque for Universal Reduction Screw

Attach the assembled screwdriver to the torque limiting handle. Verify that the holding sleeve is in the correct position. When using the URS screws, only the blue line should be visible.



Place the counter torque over the screw head. Insert the screwdriver shaft through the rod pusher/counter torque. Make sure the screwdriver is completely inserted and turn until the torque limiting handle clicks. The click indicates that the locking cap is tightened with 10 Nm.

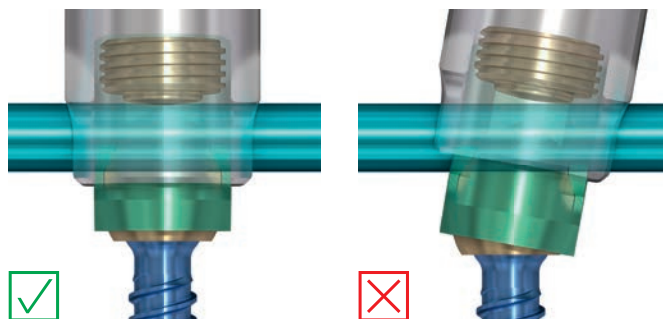
**Note: The 10 Nm torque limiting handle and the counter torque must be used for final tightening.**

The polyaxiality is blocked, and the rod is fixed to the pedicle screw.



**Note: Always fully seat the counter torque on the rod. The instrument must be perpendicular to the rod during final tightening. It is recommended to check and control all locking caps with counter torque and torque limiting handle prior to proceeding.**

After final tightening of all screws, use the torque limiting handle and counter torque to sequentially revisit all locking caps. Start at the caudal left screw of the construct and proceed clockwise to systematically repeat final tightening of all locking caps of the construct.



# Tab Removal

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**Instrument**

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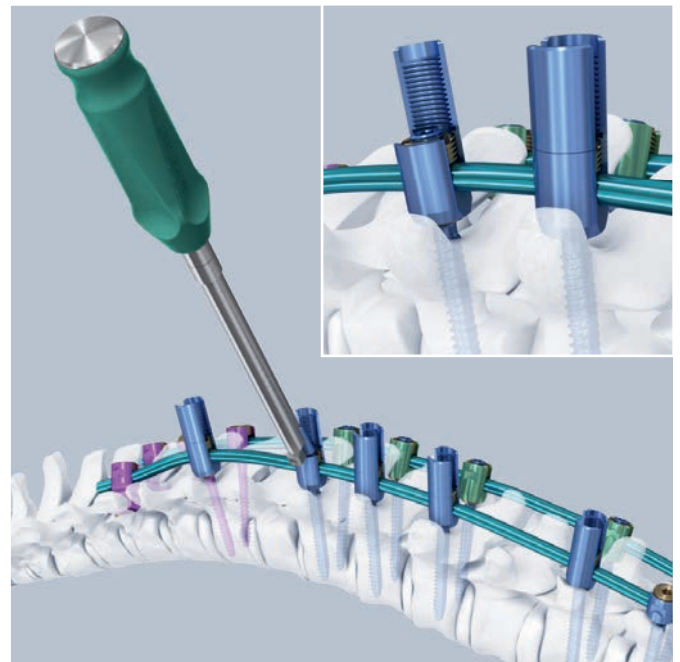
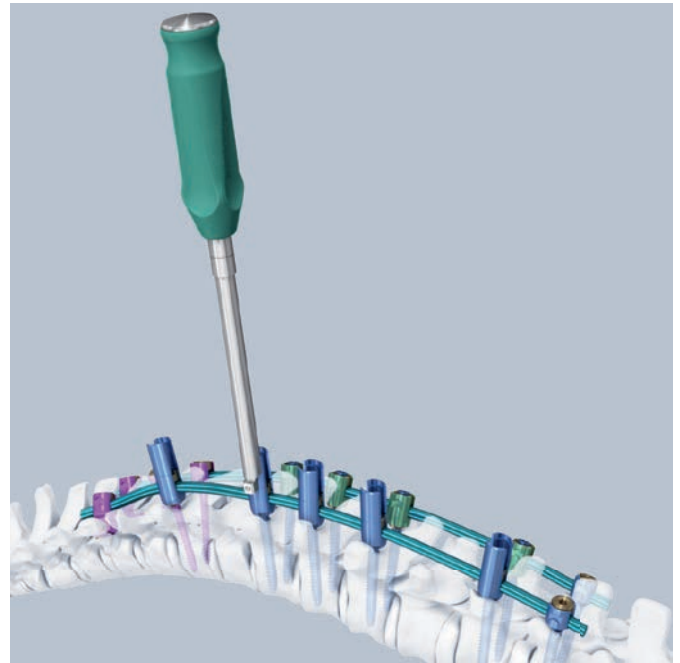
03.636.005 Tab Remover/Alignment Tool

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Slide the tab remover over the first extended tab and break it off by tilting the instrument towards the outside or inside of the screw.

The extended tab breaks off and remains in the tab remover and must be removed from the instrument.

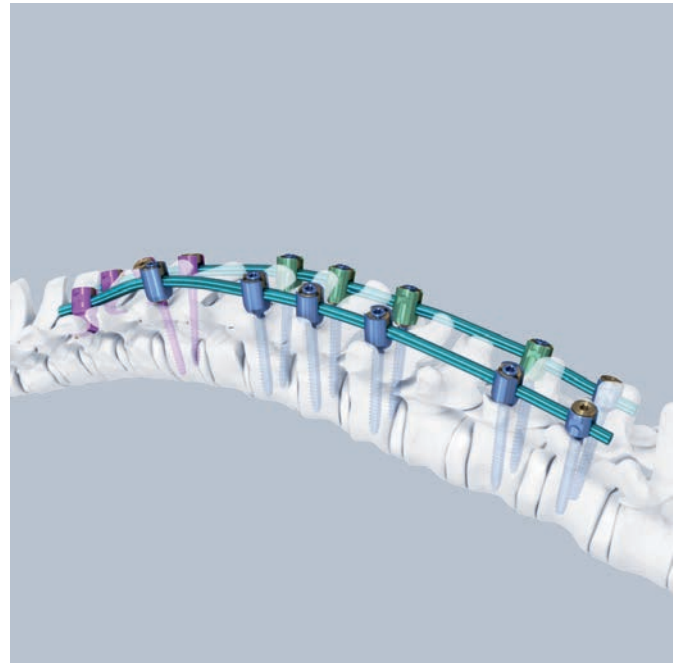
Slide the tab remover over the remaining extended tab and break it off by tilting towards the outside or inside of the screw.



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Repeat for all remaining screws. All extended tabs must be removed before the incision is closed.

**Note:** Only break off the extended tabs once all reduction and correction maneuvers have been accomplished.





# Transverse Connector (Optional)

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## Instruments

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03.620.018	Distraction Forceps, for Lumbar Spine
328.028	Holding Forceps, straight, with Scissors Grip, for Rods $\varnothing$ 6.0 mm
388.395	Screwdriver, hexagonal, long, 2.5 mm, length 293 mm

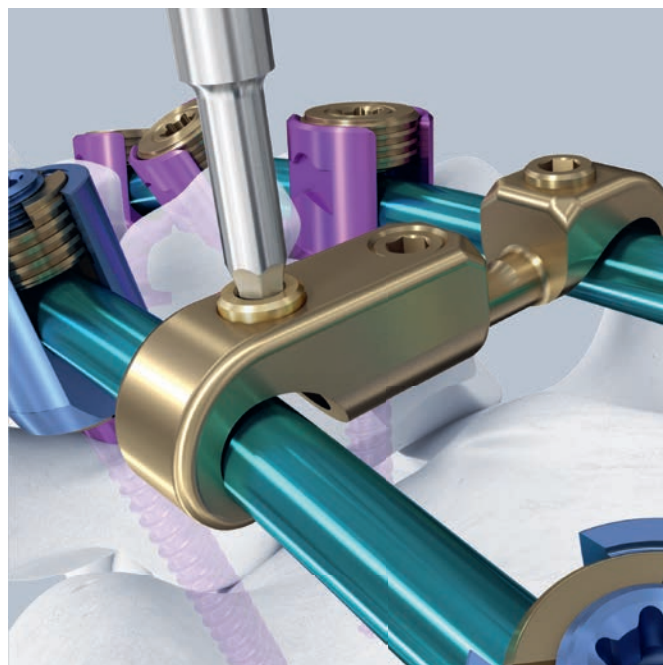
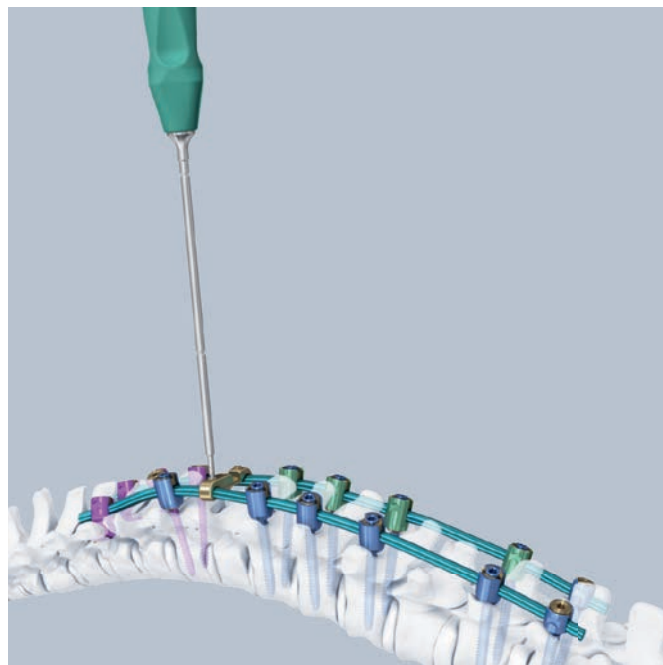
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Use the distraction forceps to estimate the distance between the two rods.

Select the appropriate transverse connector and attach it to the rods.

Insert the tip of the screwdriver into the fixation screw. The screwdriver should be fully seated in the recess of the screw.

Make sure the screw is fully tightened to ensure a stable construct.



# Two-step Locking Cap Removal

## Instruments

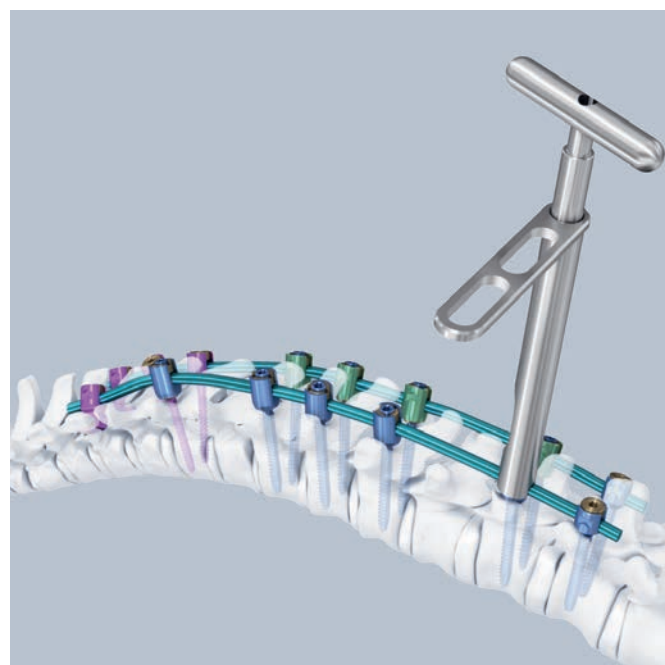
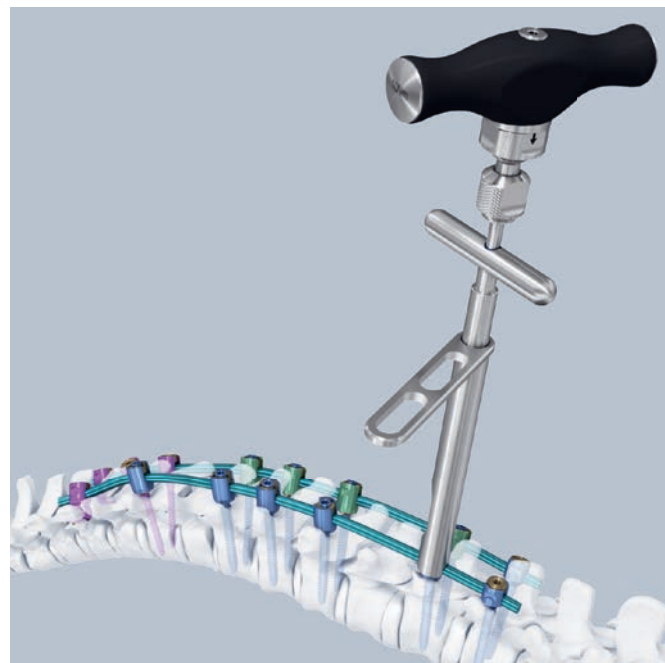
03.689.001	Screwdriver Shaft Stardrive, T25, for Universal Screws
03.620.061	T-Handle with Ratchet Wrench and with Torque Limiter, 10 Nm
03.636.004	Screwdriver, cannulated, for Locking Cap for Universal Reduction Screw
03.636.007	Rod Pusher/Counter Torque for Universal Reduction Screw

Remove the locking cap by using the cannulated screwdriver as a counter torque instrument and use the screwdriver T25 to loosen the inner part of the locking cap.

The polyaxial screw is now free for compression/distraction.

To completely remove the locking cap, remove the outer part of the locking cap with the cannulated screwdriver. The screwdriver is self-retaining so that the locking cap can easily be removed.

If the polyaxiality of the screw head is stuck in its position, use the rod pusher/counter torque or the derotation instrument to remobilize the screw head.



# Rod Reduction after Tabs are Broken off

## Instruments

03.620.091	Socket, hexagonal 6.0 mm
03.636.014	Reduction Instrument for Universal Reduction Screw
388.654	Ratchet with Handle, with Hexagonal Quick Coupling 6.0 mm

To assemble the instrument, slide the inner tube through the outer tube. Insert the black nut. Push the inner tube up towards the black nut and turn the black nut clockwise until the red line is visible at the 45 line.

Place the reduction instrument over the screw head. Press down firmly until the tips engage under the screw head. Push the outer tube downward until it sits on the rod. Load the hexagonal socket into the ratchet handle and insert it into the top of the reduction instrument.

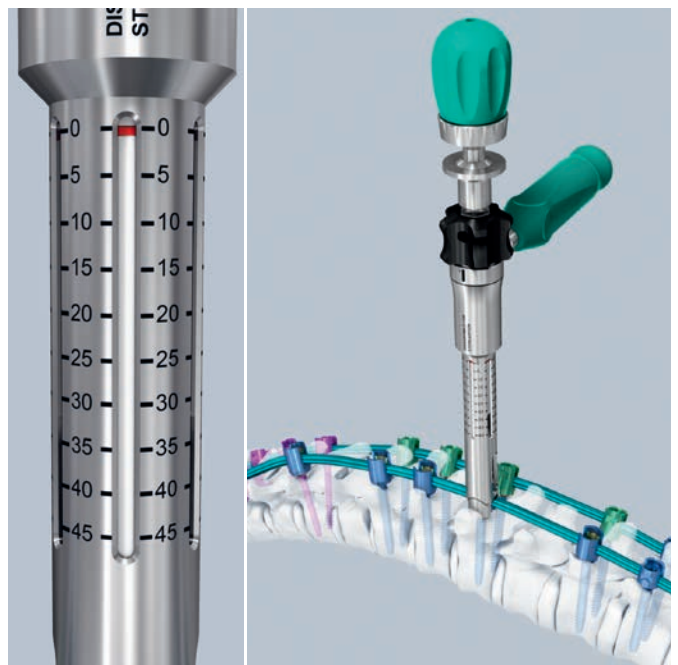
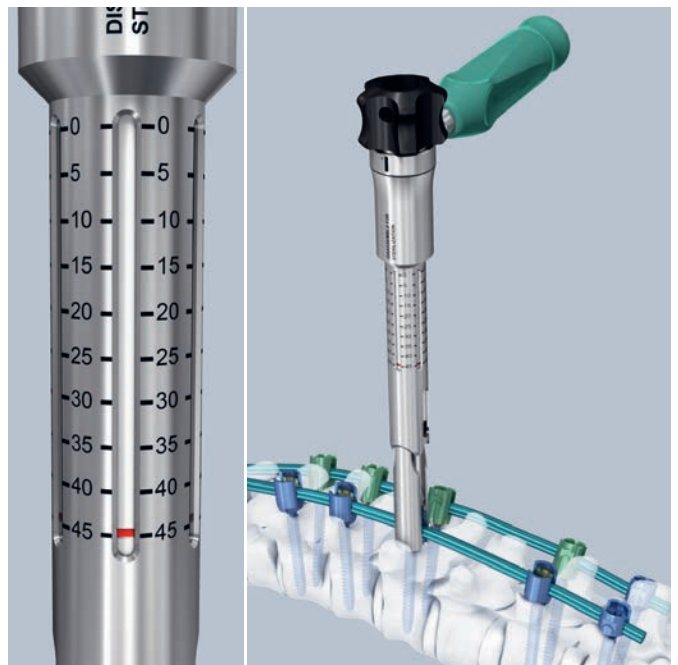
Rotate the ratchet handle clockwise to reduce the rod into the screw head. Full reduction is achieved when the red line on the side of the instrument is visible at the 0 line. Remove the hexagonal socket to insert a locking cap through the instrument.

To remove the instrument from the screw head, turn the palm handle counter-clockwise until the line on the side of the instrument is visible at the 45 line.

**Note:** The reduction instrument for universal reduction screw can be used as counter torque for final tightening of the locking cap.

**Note:** Ensure there is enough space underneath the screw head to attach the reduction instrument.

Insert locking cap through reduction instrument as described under "Locking Cap Insertion" (page 24).



# Remobilization of Screw Head

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## Instruments

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03.636.006 Derotation Instrument for Universal Reduction Screw

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03.636.013 Remobilization Tool for Universal Reduction Screw

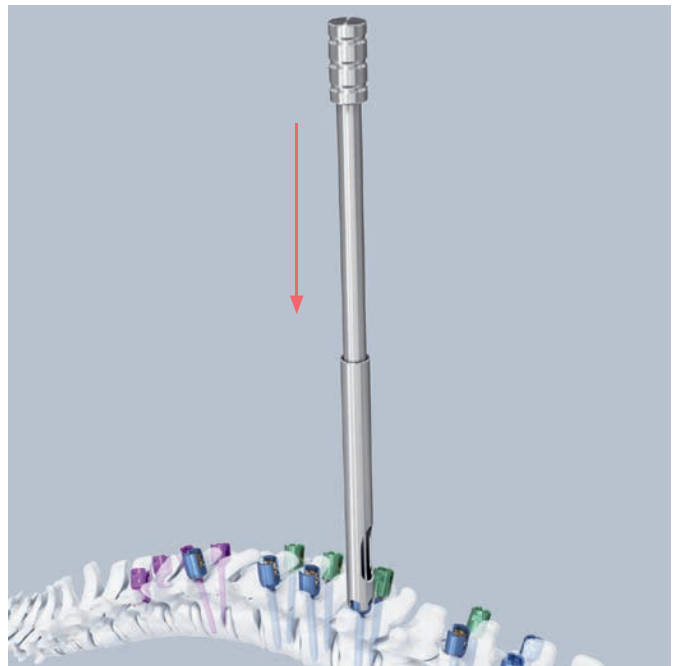
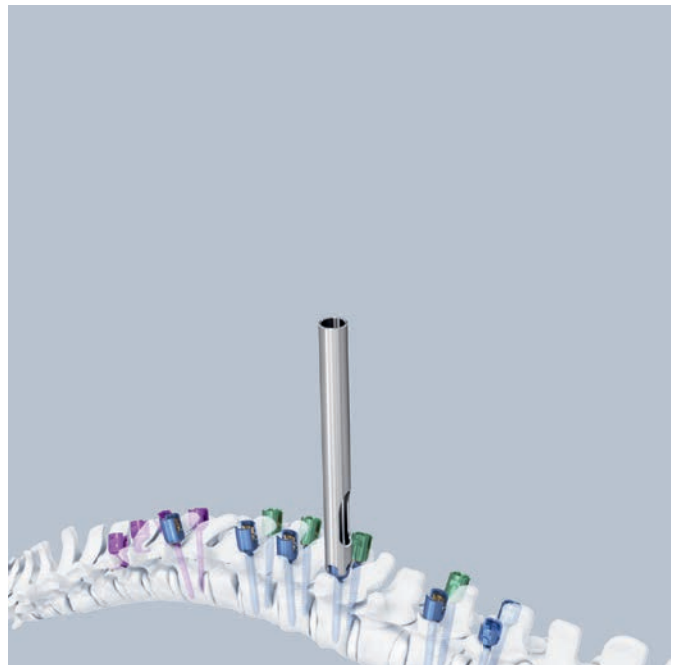
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The Universal Reduction Screws are designed to lock the construct and reduce the chance of screw head tilting during derotation maneuvers. Therefore, in certain cases, considerable force may be required to remobilize previously locked screw heads. In such cases, use the following techniques.

Place the derotation instrument over the screw head. Let the remobilization tool fall down through the tube onto the screw head. Repeat if necessary.

**Warning:** Excessive force may advance the screw.

**Warning:** The remobilization tool should only be used under image intensifier control.



If, after multiple attempts, the screw head is still immobile, the following technique should be used:

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**Instruments**

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03.636.007 Rod Pusher/Counter Torque for Universal Reduction Screw

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03.636.015 Sleeve Remover for Universal Reduction Screw

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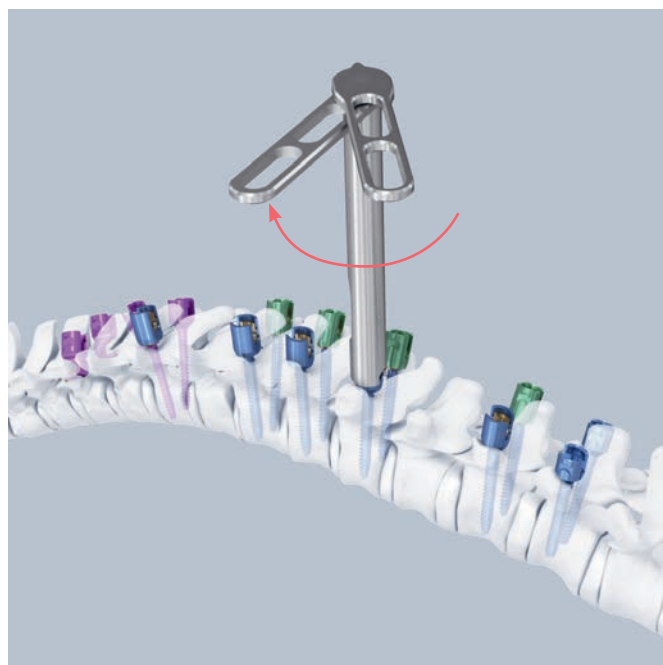
Place the counter torque onto the screw head.

Slide the sleeve removal instrument through the counter torque and press down firmly until tactile feedback is experienced.

Squeeze the handles together to rotate the sleeve inside the screw head.

Use a forceps to remove the sleeve from the screw head.

**Warning:** This screw is now destroyed and needs to be removed and replaced by a new screw. The removed screw may not be reused.



# Implants\*

## Universal Reduction Screws

- Dual core and double lead thread design
- Color coded by diameter
- Maximum angle of  $\pm 45^\circ$  around  $360^\circ$
- Material: TAN

Art. Nos.	Outer $\varnothing$ (mm)	Lengths (mm)
04.636.420–445	4.0	20–45
04.636.525–555	5.0	25–55
04.636.625–665	6.0	25–65
04.636.725–799	7.0	25–100
04.636.825–899	8.0	25–100
04.636.930–999	9.0	30–100



## Universal Degen Screws

- Dual core and double lead thread design
- Color coded by diameter
- Maximum angle of  $\pm 45^\circ$  around  $360^\circ$
- Material: TAN

Art. Nos.	Outer $\varnothing$ (mm)	Lengths (mm)
04.689.420–445	4.0	20–45
04.689.525–555	5.0	25–55
04.689.625–665	6.0	25–65
04.689.725–799	7.0	25–100
04.689.825–899	8.0	25–100
04.689.930–999	9.0	30–100



## Monoaxial Screws

- Dual core and double lead thread design
- Color coded by diameter
- Material: TAN

Art. Nos.	Outer $\varnothing$ (mm)	Lengths (mm)
04.666.420–445	4.0	20–45
04.666.525–555	5.0	25–55
04.666.625–665	6.0	25–65
04.666.725–799	7.0	25–100
04.666.825–899	8.0	25–100
04.666.930–999	9.0	30–100



\* All implants are also available sterile packed. Add suffix S to article number.

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**Hooks**

- Color coded by size
- Material: TAN

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04.666.001– URS Lamina Hook, extra-small – large  
04.666.004

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04.666.010 URS Lamina Hook, straight, small

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04.666.011 URS Lamina Hook, straight, large

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04.666.020 URS Lamina Hook, V-shaped, thoracic

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04.666.030 URS Tall Body Lamina Hook, medium

---

04.666.031 URS Tall Body Lamina Hook, large

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04.666.060 URS Lamina Hook, right, with offset

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04.666.061 URS Lamina Hook, left, with offset

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04.666.070 URS Lamina Hook, angled upwards

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04.666.071 URS Lamina Hook, angled downwards




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04.666.040– URS Pedicle Hook, small – large  
04.666.042




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04.666.050 URS Transverse Process Hook, right

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04.666.051 URS Transverse Process Hook, left





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498.024–  
498.026 USS Screw for Pedicle Hook,  
length 20–30 mm,  
Titanium Alloy (TAN), gold

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### Locking Caps

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04.636.001 Locking Cap for Universal Reduction  
Screw

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04.689.121 Locking Cap, one-step for  
Universal Reduction Screw, blue,  
Titanium Alloy (TAN)

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04.689.199 Locking Cap for Universal Degen  
Screws, Titanium Alloy (TAN)

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### Transverse Connectors

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497.795 Transverse Connector, low profile,  
length 25.5 to 30.5 mm, for Rods  
Ø 6.0 mm

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497.796 Transverse Connector, low profile,  
length 31.5 to 34 mm, for Rods  
Ø 6.0 mm, Titanium Alloy (TAN)

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497.797 Transverse Connector, low profile,  
length 35 to 41 mm, for Rods  
Ø 6.0 mm, Titanium Alloy (TAN)

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497.798 Transverse Connector, low profile,  
length 42 to 55 mm, for Rods  
Ø 6.0 mm, Titanium Alloy (TAN)

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**Rods**

∅ 6.0 mm, curved, soft, Pure Titanium

Art. No.	Length (mm)
04.620.140	40
498.139	45
04.620.150	50
498.140	55
04.620.160	60
498.141	65
04.620.170	70
498.142	75
04.620.180	80
498.143	85



∅ 6.0 mm, straight, soft, Pure Titanium

Art. No.	Length (mm)
498.150	50
498.151	75
498.152	100
498.153	125
498.154	150



∅ 6.0 mm, straight, hard, Pure Titanium

Art. No.	Length (mm)
498.102	50
498.103	75
498.104	100
498.105	125
498.106	150
498.108	200
498.112	300
498.116	400
498.119	500



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Ø 6.0 mm, straight, extra-hard, TAN, turquoise

<b>Art. No.</b>	<b>Length (mm)</b>
498.290	200
498.291	250
498.292	300
498.293	350
498.294	400
498.295	450
498.296	500



Ø 6.0 mm, Cobalt-Chrome Alloy (CoCrMo)

<b>Art. No.</b>	<b>Length (mm)</b>	
09.633.194	200	straight
09.633.195	300	straight
09.633.196	400	straight
09.633.197	500	straight
09.633.501	500	with Hexagonal End
09.633.186	400/80	Scoliosis Rod prebent



# Instruments

03.689.001 Screwdriver Shaft Stardrive, T25,  
for Universal Screws



03.689.002 Holding Sleeve for Screwdriver Shaft,  
for No. 03.689.001



03.636.001 Screwdriver Shaft Stardrive, T25,  
for Universal Reduction Screw



03.636.002 Holding Sleeve for Screwdriver Shaft  
for No. 03.636.001



03.620.001 Screwdriver Stardrive, T25,  
with T-Handle



03.620.061 T-Handle with Ratchet Wrench and  
with Torque Limiter, 10 Nm



03.620.100 Handle with Ratchet, straight,  
with Quick Coupling



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328.028 Holding Forceps, straight, with Scissors Grip, for Rods  $\varnothing$  6.0 mm



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03.636.007 Rod Pusher/Counter Torque for Universal Reduction Screw



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03.689.004 Rocker Fork for Universal Degen Screws



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03.689.003 Reduction Instrument for Universal Degen Screws



03.636.005 Tab Remover/Alignment Tool



388.395 Screwdriver, hexagonal, long, 2.5 mm, length 293 mm



03.636.003 Screwdriver Shaft for Locking Cap for Universal Reduction Screw



03.636.004 Screwdriver, cannulated, for Locking Cap for Universal Reduction Screw



03.636.006 Derotation Instrument for Universal Reduction Screw



03.636.010 Screwdriver, small, for Locking Cap for Universal Reduction Screw



03.636.013 Remobilization Tool for Universal Reduction Screw



03.636.014 Reduction Instrument for Universal Reduction Screw



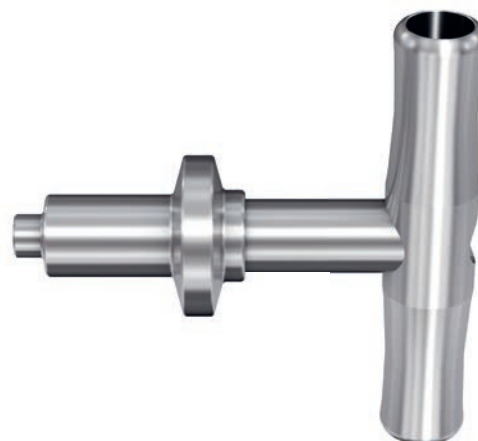
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03.636.015 Sleeve Remover for Universal Reduction Screw



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03.636.008 T-Handle with Hexagonal coupling 6.0 mm



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03.620.005 Ratchet T-Handle with Low Toggle with Hexagonal Coupling 6.0 mm

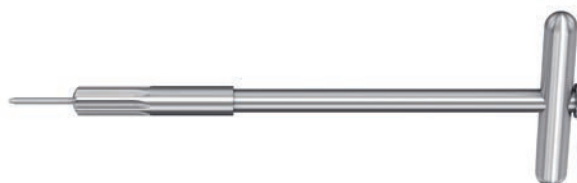




03.620.019 Torque-limiting T-Handle, 10 Nm



388.532 Reamer for preassembled Pedicle Screws



388.880 Trial rod  $\varnothing$  6.0 mm, length 400 mm



03.671.087 Derotation Clamp, short\*



03.671.088 Derotation Clamp, long\*



\* Silicone inlays are also available as spare parts. Use the article number 03.671.101 and 03.671.103 to order the short and the long silicone inlay.

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03.671.095 Connectors for Derotation Clamp,  
size XS



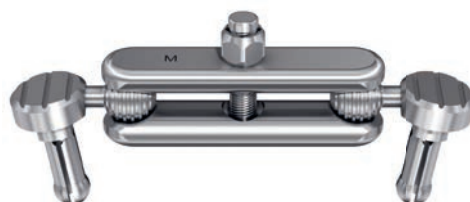
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03.671.096 Connectors for Derotation Clamp,  
size S



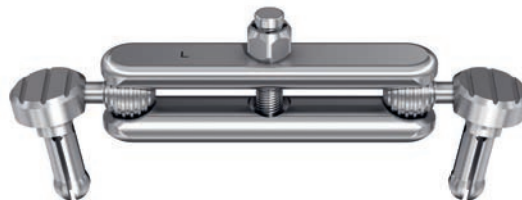
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03.671.097 Connectors for Derotation Clamp,  
size M



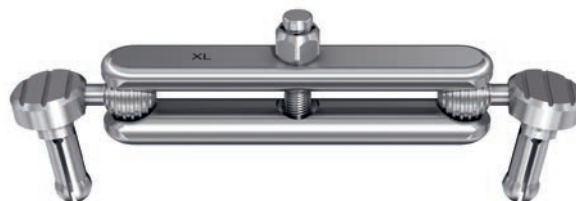
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03.671.098 Connectors for Derotation Clamp,  
size L



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03.671.099 Connectors for Derotation Clamp,  
size XL



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03.671.089 Socket Wrench for Connectors  
for Derotation Clamp



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03.671.091 Counter Torque for Connectors  
for Derotation Clamp



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03.636.020 Derotation Sleeve, single



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03.636.021 Counter Torque for Derotation Sleeve,  
single



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03.671.150 Segmental Connector, for URS, short



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03.671.151 Segmental Connector, for URS, long



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388.540 Pedicle Probe  $\varnothing$  3.8 mm with Canevasit Handle, length 230 mm, for Pedicle Screws  $\varnothing$  5.0 to 7.0 mm



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388.550 Pedicle Awl  $\varnothing$  4.0 mm with Canevasit Handle, length 230 mm, for Pedicle Screws  $\varnothing$  5.0 to 7.0 mm



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388.538 Pedicle Probe  $\varnothing$  2.8 mm, length 230 mm



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388.539 Pedicle Probe  $\varnothing$  4.8 mm with Canevasit Handle, length 230 mm, for Pedicle Screws  $\varnothing$  8.0 and 9.0 mm



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388.551 Pedicle Awl  $\varnothing$  3.0 mm, length 230 mm, for Screws  $\varnothing$  4.0 and 4.2 mm



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319.060 Depth Gauge for Screws  $\varnothing$  1.5 to 2.0 mm, measuring range up to 38 mm



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315.190 Drill Bit  $\varnothing$  2.0 mm, length 100/75 mm,  
3-flute, for Quick Coupling



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388.581 USS Drill Sleeve 2.0



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387.060 Handle for Drill Sleeve 2.0



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388.381 Holding Sleeve for Fillister Head Screws



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03.666.010 Hook Holding Forceps



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03.632.013 Lamina Feeler, small, for Matrix



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03.632.014 Lamina Feeler, large, for Matrix



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03.632.163 Transverse Process Finder for Matrix



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03.632.100 Pedicle Feeler, for Matrix



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03.632.044 Hook Positioner, for Matrix



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314.070 Screwdriver, hexagonal, small, 2.5 mm, with Groove



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388.410 Spreader Forceps for Pedicle Screws, length 330 mm



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03.620.091 Socket, hexagonal Ø 6.0 mm



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388.960 Bending pliers with Rolls for USS Rods Ø 6.0 mm, length 300 mm



388.440 Holding Forceps with broad Tip,  
length 290 mm, for Rods  $\varnothing$  6.0 mm



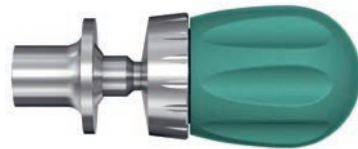
388.910 USS Bending Iron, left



388.920 USS Bending Iron, right



388.654 Ratchet with Handle, with Hexagonal  
Quick Coupling  $\varnothing$  6.0 mm



03.632.090 T-Handle with Ratchet Wrench,  
with Hexagonal Coupling  $\varnothing$  6.0 mm



388.870 Trial Rod  $\varnothing$  6.0 mm, length 150 mm





388.656 Pedicle Awl  $\varnothing$  4.0 mm with Silicone  
Handle, length 255 mm,  
for Pedicle Screws  $\varnothing$  4.0 to 7.0 mm



388.655 Pedicle Probe  $\varnothing$  3.7 mm with Silicone  
Handle, length 240 mm,  
for Pedicle Screws  $\varnothing$  5.0 to 7.0 mm





388.546	Feeler for Screw Channel, curved, Ø 2.3 mm, length 275 mm	
388.545	Feeler for Screw Channel, straight, Ø 2.3 mm, length 275 mm	
388.422	Compression Forceps, length 335 mm, for Pedicle Screws	
03.620.018	Distraction Forceps, for Lumbar Spine	
03.632.000	Distraction Fork	
03.620.020	Rod Bender for Rods Ø 6.0 mm, with Radius Adjustment	
03.620.105	Tap for Pedicle Screws Ø 5.0 mm with dual core, length 230 mm, with Hexagonal Coupling	
03.620.106	Tap for Pedicle Screws Ø 6.0 mm with dual core, length 230 mm, with Hexagonal Coupling	

# Vario Cases and Modules

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## Sets and Vario Cases for Implants

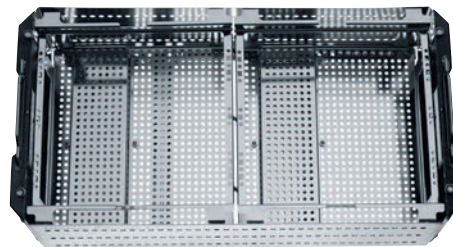
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01.636.001	Universal Reduction Screws in Vario Case, size 1/1
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68.636.001	Vario Case for Universal Reduction Screws, size 1/1, with Lid, without Contents
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**Note:** The Vario Case includes two screw frames. Screw modules have to be ordered separately, see page 75.

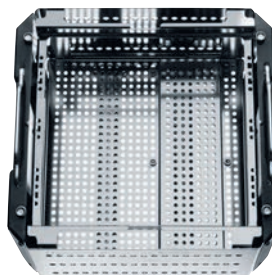
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01.636.002	Universal Reduction Screws in Vario Case, size 1/2
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68.636.002	Vario Case for Universal Reduction Screws, size 1/2, with Lid, without Contents
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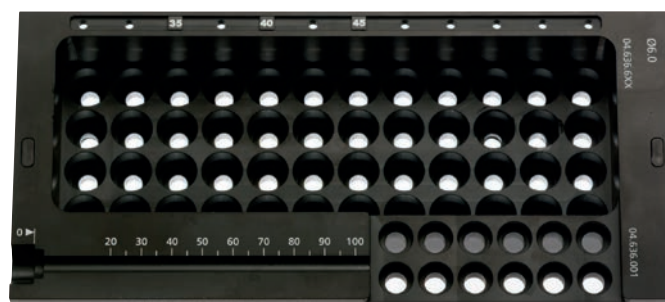


**Note:** The Vario Case includes one screw frame. Screw module has to be ordered separately, see page 75.

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**Screw Modules (to be ordered separately)**

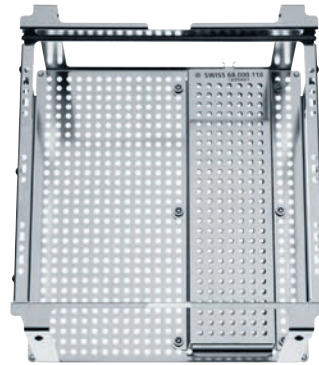
68.636.005	Module for Universal Reduction Screw Ø 4.0 mm
68.636.006	Module for Universal Reduction Screw Ø 5.0 mm
68.636.007	Module for Universal Reduction Screw Ø 6.0 mm
68.636.008	Module for Universal Reduction Screw Ø 7.0 mm
68.636.009	Module for Universal Reduction Screw Ø 8.0 mm
68.636.010	Module for Universal Reduction Screw Ø 9.0 mm
68.636.024	Module for Pedicle Screws Monoaxial, for URS
68.636.034	Module for Pedicle Screws Polyaxial Ø 4.0 mm, for URS
68.636.035	Module for Pedicle Screws Polyaxial Ø 5.0 mm, for URS
68.636.036	Module for Pedicle Screws Polyaxial Ø 6.0 mm, for URS
68.636.037	Module for Pedicle Screws Polyaxial Ø 7.0 mm, for URS
68.636.038	Module for Pedicle Screws Polyaxial Ø 8.0 mm, for URS
68.636.039	Module for Pedicle Screws Polyaxial Ø 9.0 mm, for URS
68.666.005	Loading Station for URS plus



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### Screw frame with drawer

Two screw modules fit in one screw frame. The frame can accommodate screws up to 60 mm. Different screw modules can be attached to the frame according to the customer's needs. A small drawer in the bottom of the frame can accommodate screws longer than 60 mm.



1

### Assembly and disassembly instructions for modules

#### A. Module attachment

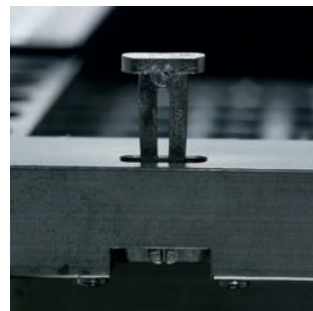
Insert the mounting clips through the holes in the module and attach to the frame (1).

Clips indicating screw lengths can be snapped into place.

#### B. Module removal

The modules can be removed from the frame with removal tools (2). Two removal tools are included in the order of Vario Cases 68.636.001 and 68.636.002.

Clips indicating screw lengths can be removed as shown by pushing the tip of a ball-point pen on the back of the module (3).



2



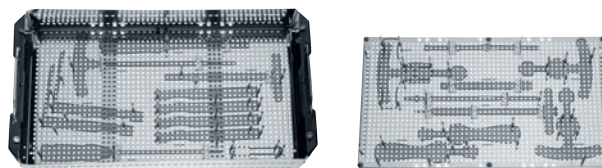
3



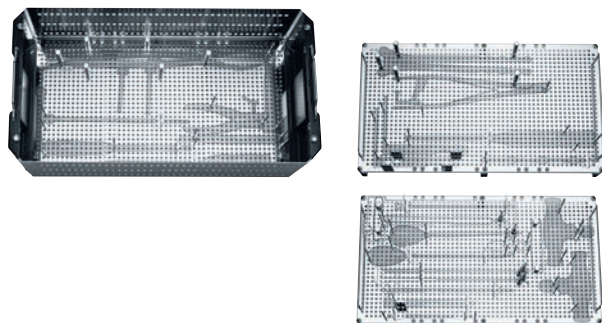
01.636.011	Implants for Universal Reduction Screw in Vario Case
68.636.011	Vario Case for Implants for Universal Reduction Screw, with Lid, without Contents
68.636.021	Module for Hooks, for URS, with Lid
68.622.012	Module for Transverse Connectors low profile
68.622.011	Module for Cross-Link Clamps with Rods

### Set and Vario Case for Instruments

01.636.012	Instruments for Universal Reduction Screw in Vario Case
68.636.012	Vario Case for Instruments for Universal Reduction Screw, with Lid, without Contents



187.200	USS General Instruments in Vario Case
68.636.013	Vario Case for Instruments for Universal Reduction Screw, for degenerative Surgery, with Lid, without Contents



### Set and Vario Case for Derotation Instruments

68.671.050	Vario Case for Derotation Instrument Set
68.671.051	Tray for URS Derotation Instruments
68.671.052	Tray for Connectors for URS Derotation Clamps

