CSLP VA. Cervical Spine Locking Plate with Variable Angle.

Technique Guide

SYNTHES®

Original Instruments and Implants of the Association for the Study of Internal Fixation – AO ASIF

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Image intensifier control

Warning
This description is not sufficient for immediate application of the instrumentation. Instruction by a surgeon experienced in handling this instrumentation is highly recommended.

Indications/Contraindications

Indications

The cervical spine locking plate with variable angle is used for internal anterior fixations of the spine (C2–T2) for the management of instability in the following situations:

– fractures
– degenerative disorders
– tumours
– partial or complete resection of a vertebral body

Contraindications

– Severe osteoporosis and indications not listed above
– Any indication where fusion is not required

Notes:

– Self-drilling expansion head screws must not be used together with cervical spine locking plates with a fixed screw angle since this impedes correct alignment of the screw with the plate hole, thereby preventing flush countersinking of the screw head in the plate hole. Self-drilling expansion head screws must not be used for bicortical screw fixation.

– Similarly, bicortical, self-tapping expansion head screws must not be used together with cervical spine locking plates with a fixed screw angle, otherwise the screw tips would cross.

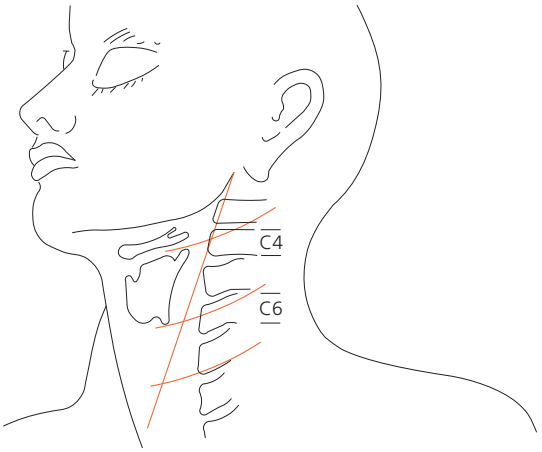
– For correct use of the cervical spine locking plates with a fixed screw angle please consult the corresponding Surgical Technique (Art. no. 036.000.062).

1

Position patient and surgical approach

For plating of the middle and lower cervical spine till T2 select the anterolateral approach. With the patient supine, turn the head slightly away from the operator. A long incision is recommended if the plating is to be extended over several segments.

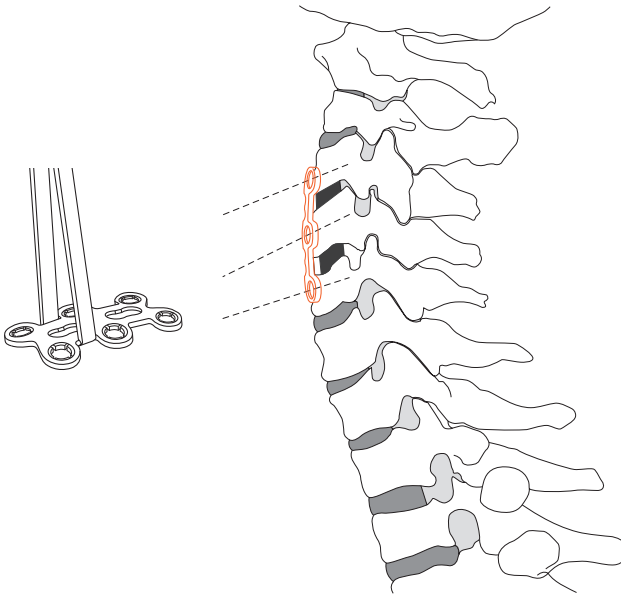
When exposing the vertebral bodies it is important to remove, or incise, the anterior longitudinal ligament only at those points where the intervertebral disc is to be bridged by the plating. Under no circumstances should the anterior longitudinal ligament be damaged in adjacent segments not included in the plating.



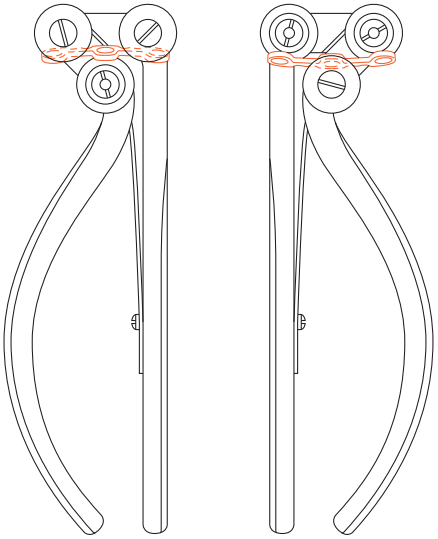
2

Select, pick up and position plate

Select a plate of the approximate length. The figures marked on the plate and implant rack refer to the distance between the cranial and caudal pairs of holes. Pick up the plate with the Holding Forceps for Cervical Spine Locking Plates (387.532) and position the plate on the segments to be bridged so that the pairs of holes are centred over the vertebral bodies and a sufficient gap is left between the screws to be inserted and the adjacent intact intervertebral discs.

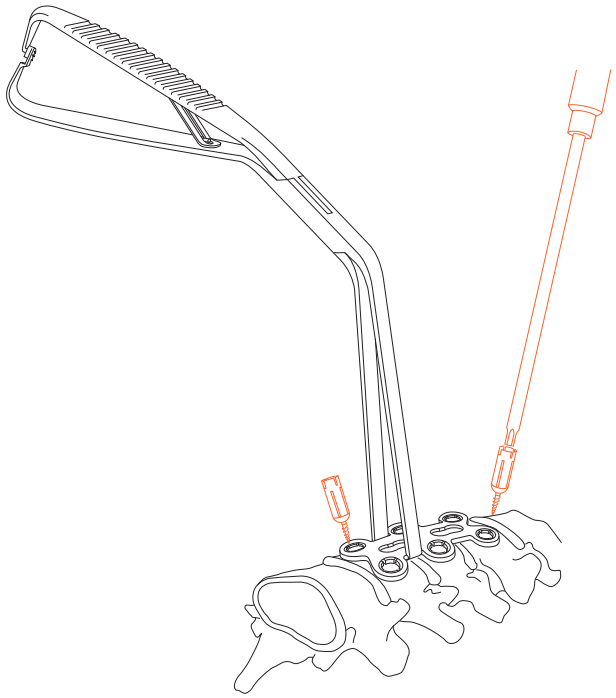


If the plate needs to be bent, ensure that the screw holes are not distorted, otherwise it will not be possible to insert the expansion head screws. To bend the plates, use the Universal Bending Pliers for Cervical Spine Locking Plates 4.0/4.35/4.5 (387.293). Do not bend the plate more than once.

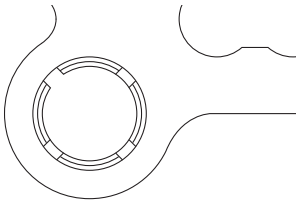


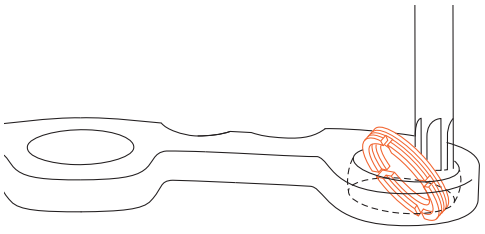
3
Fix plate

Using the self-holding, cruciform Screwdriver Shaft 4.0/4.35/4.5 (387.281) and Handle (311.430), pick up a Fixation Pin (387.595) and screw into a cranial plate hole. Insert a second fixation pin into the diagonally opposite plate hole. Remove the screwdriver and holding forceps.



Note: Before the plate is fixed to the bone, ensure that all swivel rings are correctly inserted. The four slots in the swivel ring must point upwards. If necessary, tilt and turn the swivel ring in the plate hole using the tip of the cruciform screwdriver shaft.



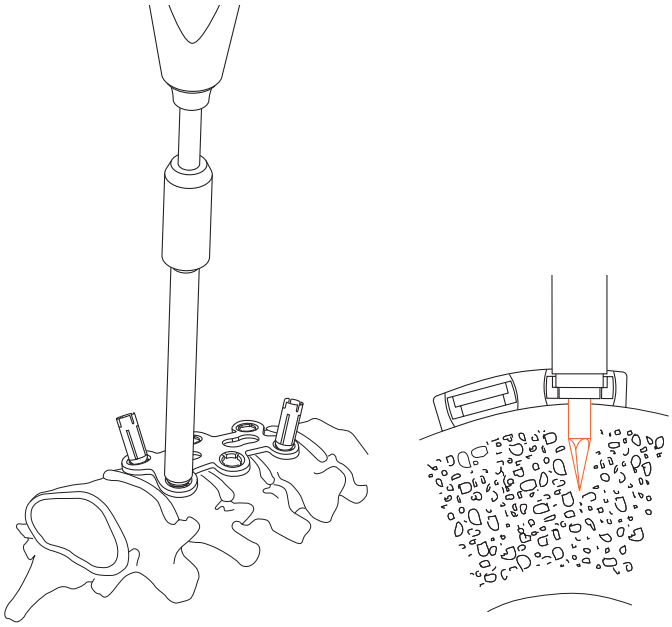


Self-drilling screws
for monocortical screw fixation
See page 7, step 4b, for details of how to use the bicortical self-tapping screws.

4a

Pierce hole in cortex

Locate the Awl for self-drilling Cervical Spine Expansion Head Screws (387.291) on the swivel ring and align the awl according to the selected screw angle. Press the awl to pierce a hole in the cortex. This hole piercing helps centre the self-drilling screw in the plate hole and guide it in the desired direction.



Self-drilling cervical spine expansion head screws

∅	Length	Colour code	Art. no.	Use
4.0 mm	14 mm	golden	(450.138)	standard screw
4.0 mm	16 mm	violet	(450.139)	for special cases
4.5 mm	14 mm	golden	(450.145)	emergency screw for 450.138
4.5 mm	16 mm	violet	(450.146)	emergency screw for 450.139

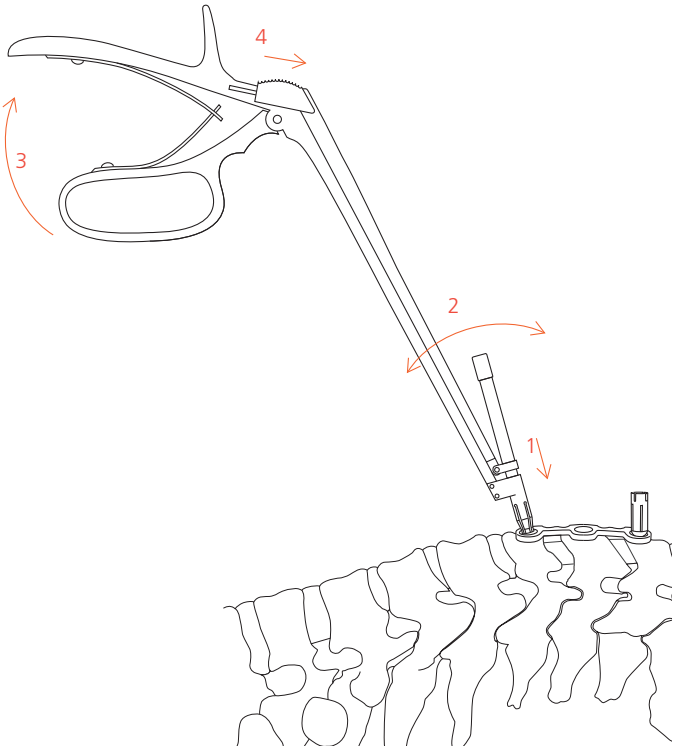
Note: In the event of wide bridging or poor bone quality, the surgeon must decide whether longer screws (16 mm), bicortical anchorage (see page 7) and/or dorsal stabilisation might be helpful in these obviously unstable cases. The 4.5 mm screws can be used as emergency screws if a 4.0 mm screw has damaged the bone and a larger screw thread is required.

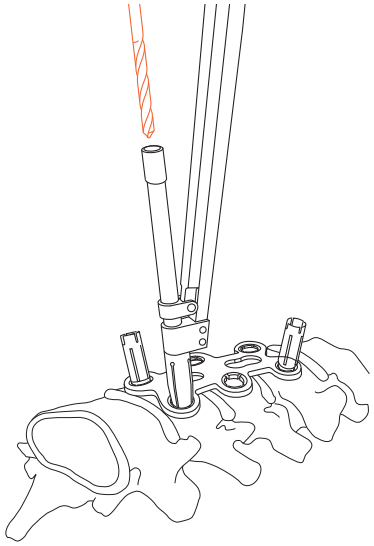
4b

Drill screw holes

Insert the self-holding Drill Sleeve (387.286) in the swivel ring in the plate hole (1) and incline it in the desired direction of drilling (2). Squeeze the handle (3) and lock the drill guide by pushing the slide forward.

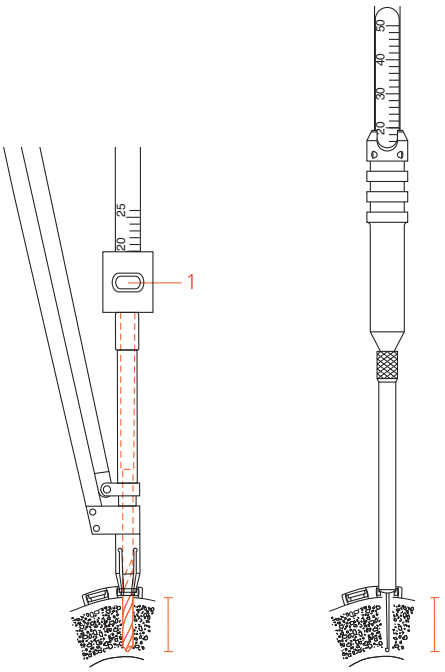
Note: Do not move the drill guide while it is inserted in the swivel ring and the handle is squeezed or locked, otherwise the interlock between the swivel ring and plate may be weakened.





For bicortical screw fixation use the Drill Bit with Fixation Sleeve (324.087). If this drill bit is used together with the self-holding drill guide (387.286), the drilling depth can be limited with the fixation sleeve (18–26 mm). Press the button (1) on the fixation sleeve and adjust the stop.

Check the drilling operation under the image intensifier. Measure the depth of the drilled hole through the plate hole using the Depth Gauge for Cervical Spine Expansion Head Screws (387.292). The measurement shown on the depth gauge scale corresponds with the screw length to be selected.



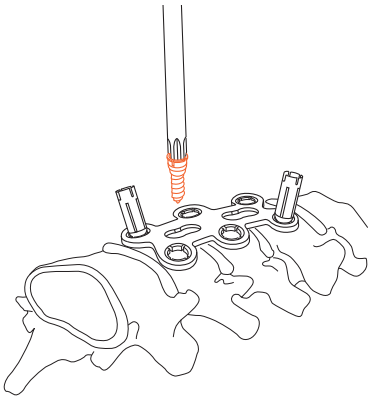
Cervical spine expansion head screws for bicortical screw fixation, self-tapping, ∅ 4.0 mm, green, (optional)

18 mm	(450.127)
19 mm	(450.128)
20 mm	(450.129)
21 mm	(450.192)
22 mm	(450.193)
23 mm	(450.194)
24 mm	(450.195)
25 mm	(450.196)
26 mm	(450.197)

5

Insert self-drilling or self-tapping expansion head screws

Pick up an expansion head screw using the self-holding cruciform screwdriver shaft 4.0/4.35/4.5 and handle, insert through the swivel ring in the direction of the pierced/predrilled hole and tighten until the screw head is countersunk in the swivel ring.

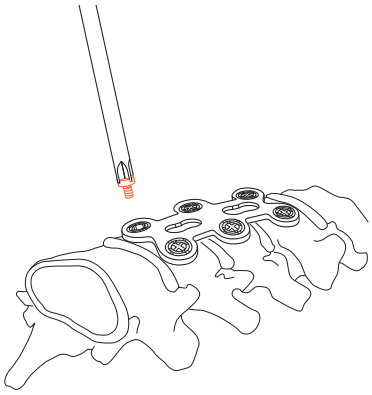


Note: Keep the screwdriver steady when picking up and inserting the screws and only apply gentle pressure to the screws otherwise the screw head may expand prematurely, thus preventing flush countersinking.

6

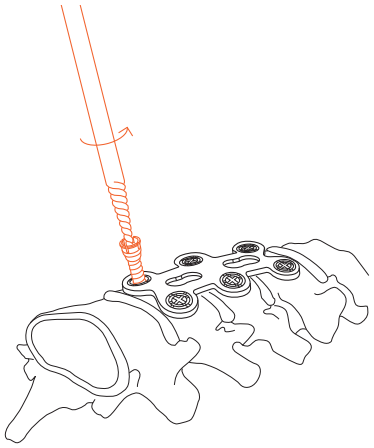
Lock screws

Pick up Locking Screws ∅ 1.8 mm (497.780) with the self-holding, cruciform Screwdriver Shaft 1.8 (387.285) and Handle and carefully screw into the screw heads. The locking screw expands the screw head and swivel ring to lock the screw in the plate.



Implant Removal

Remove the locking screws ∅ 1.8 mm from the expansion head screws using the self-holding, cruciform Screwdriver Shaft 1.8 (387.285) and Handle (311.430). Attach the conical Extraction Screw with left-hand thread (387.340) to the handle and screw counterclockwise into the expansion head screws. Remove the expansion head screws by continuing the counterclockwise turns. The removed expansion head screws can be released from the conical extraction screw by clockwise turns.

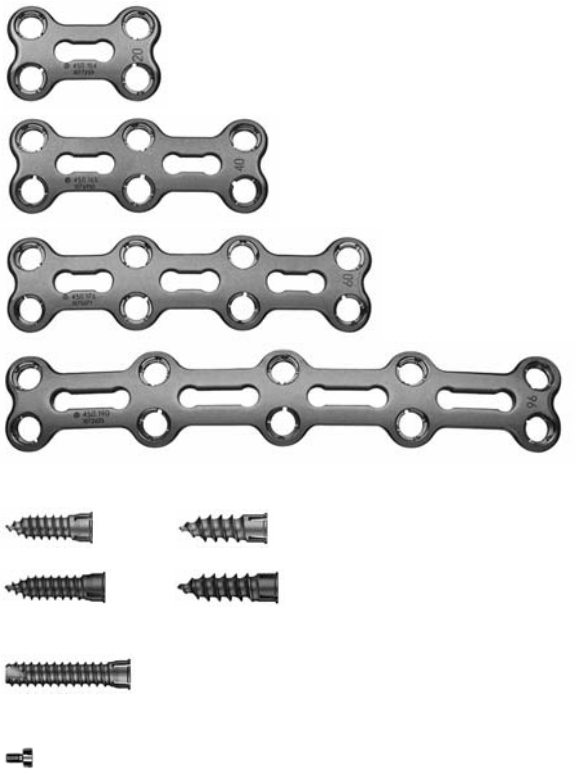


Implants

The CSLP VA system consists of the following implants:

- Cervical spine locking plates, with variable angle, precurved
- Cervical spine expansion head screws, self-drilling
- Bicortical cervical spine expansion head screws, self-tapping (optional)
- Locking screw

Further details of the implants and article numbers can be obtained from the Synthes Main Catalogue.



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