DensAccess. Anterior lag screw compression technique for the fixation of dens and transverse fractures.

Surgical Technique

Instruments and implants approved by the AO Foundation.

DePuy Synthes
COMPANIES OF Johnson&Johnson

Image intensifier control

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DensAccess. Anterior lag screw compression technique for the fixation of dens and transverse fractures.

Indications

Indication for DensAccess anterior lag screw compression technique is limited to dens fractures Type II and shallow Type III as proposed by Anderson and D'Alonzo (1974).

Contraindications

In oblique flexion fractures, the inferior fragment of the C2 vertebral body is too small for adequate screw fixation, and the fracture line prevents adequate compression across the fracture.

Technically it is difficult or impossible to perform the procedure in short-necked patients, obese patients, patients with limited motion of the cervical spine, and in patients with pronounced kyphosis of the cervical spine.

Cervical spine stenosis because of the danger of cord injury associated with hyperextension of the neck.

Fixation of a dens fracture (type III according to Anderson and D'Alonzo, 1974) in a 28-year-old male.

System Overview

Set overview

Art. No.		Units
187.030	DensAccess in Vario Case™	
292.020	Guide Wire ∅ 1.25 mm with trocar tip, length 200 mm, for Dens Screw Fixation, Stainless Steel	10
312.160	Drill Sleeve 1.25, with long handle	1
319.380	Cleaning Stylet ∅ 1.25 mm, for Cannulated Instruments	1
319.970	Screw Forceps, self-holding	1
387.550	Screw Length Indicator for Dens Screw Fixation, length 190 mm	
387.570	Countersink, cannulated, short, for Cannulated Screws ∅ 3.5 mm	1
387.580	Bone Lever with double tip, radiolucent, width 30 mm, length 290 mm	
395.330	Screwdriver with Transmission, cannulated, angled, for Cannulated Screws ∅ 3.5 mm	1

Radiolucent bone lever

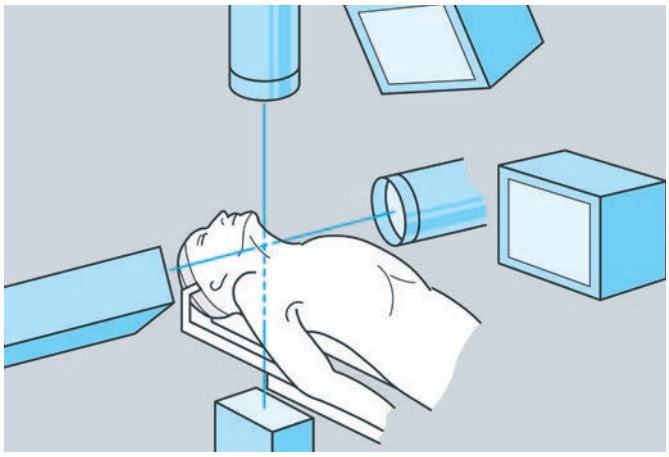
Cannulated Screws for DensAccess, self-drilling, with short thread (12 mm), Titanium Alloy (TAN)

Art. No.	Total length
405.428	28 mm
405.430	30 mm
405.432	32 mm
405.434	34 mm
405.436	36 mm
405.438	38 mm
405.440	40 mm
405.442	42 mm
405.444	44 mm
405.446	46 mm
405.448	48 mm
405.450	50 mm

1
Identify dens

The patient is in a supine position.

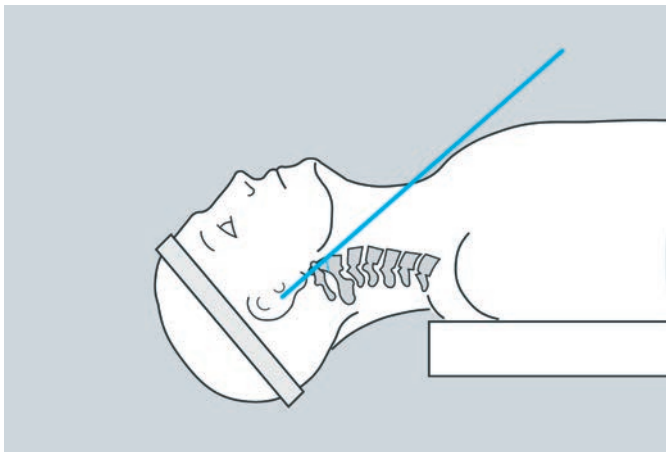
Two image intensifiers are necessary to identify the dens in the anteroposterior and lateral projections.



2
Determine the placement of the incision

Place the patient's head in the extended position to reduce the fracture and to facilitate the insertion of the screws.

Determine the identification of the placement of the incision by placing a long guide wire along the side of the neck in the intended direction of the screw and viewing on the image intensifier.



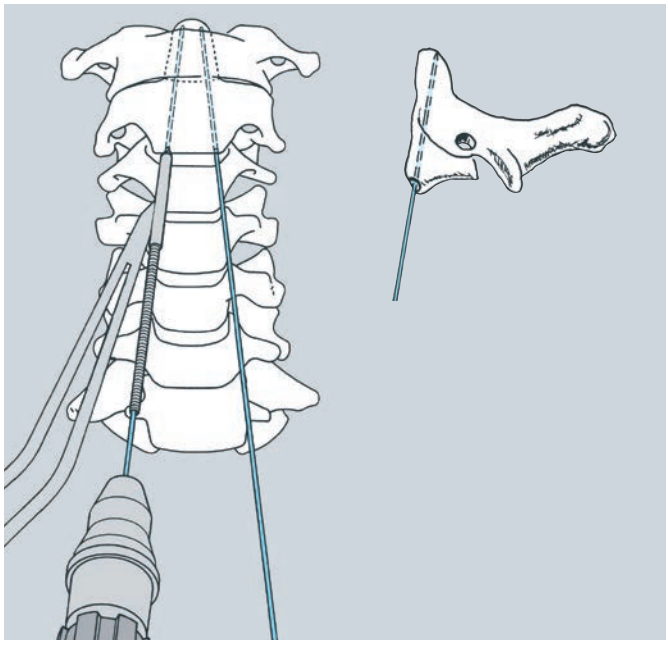
3
Insert guide wires

Identify the inferior edge of the body of the second cervical vertebra.

Note: It is absolutely essential to use tissue protectors when drilling and tapping to avoid damaging vital structures. An oscillating drill can be used.

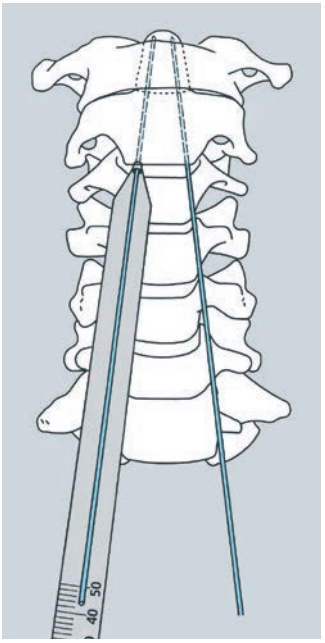
Insert two 200 mm long 1.25 mm guide wires. In the frontal plane, angle them approximately 5° towards the midline.

Note: In the sagittal plane, angle the wires slightly posteriorly in order to penetrate the posterior half of the tip of the dens.



4
Determine the length of the screw

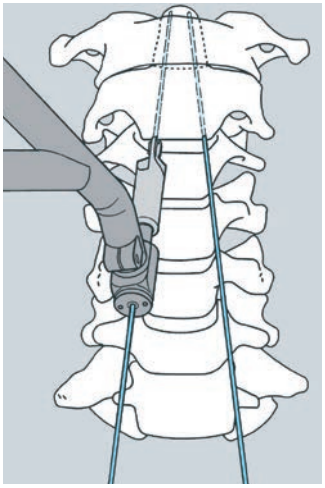
Determine the length of the screw by determining the protruding length of the guide wire with the Screw Length Indicator.



5
Open cortex using countersink

Mount the cannulated countersink on the angled cannulated screwdriver and slide the assembly over the guide wire.

The countersink penetrates the cortex of the inferior anterior edge of the C2 vertebral body.



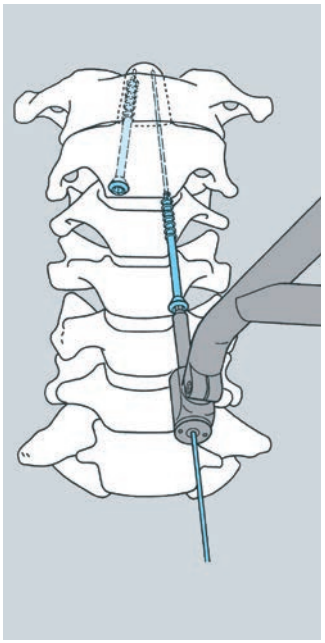
6
Implant DensAccess screw

The protruding end of the guide wire should be held to prevent any proximal migration of the wire into the foramen magnum during countersinking and screw insertion.

It is essential to observe these procedures on the lateral image intensifier to ensure the guide wire does not advance cranially.

Insert the appropriate length screw with the angled cannulated screwdriver.

Note: Observe the progress of the screw on the image intensifier.



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