

medartis®

PRECISION IN FIXATION

SURGICAL TECHNIQUE – STEP BY STEP

SpeedTip® CCS 5.0, 7.0

Cannulated Compression Screws

APTUS®



Contents

3	Introduction
	Product Materials
	Indications
	Contraindications
	Notices
	Color Coding
4	System Overview
5	Examples of Use
6–11	Surgical Technique Cannulated Compression Screws
12	Appendix
	Implants and Instruments

For further information regarding the APTUS product line visit:
www.medartis.com/products

Introduction

Product Materials

Medartis APTUS cannulated compression screws are made of titanium alloy (ASTM F136, ISO 5832-3). All of the titanium materials used are biocompatible, corrosion-resistant and non-toxic in a biological environment. K-wires are made of stainless steel (ASTM F 138); instruments are made of stainless steel, PEEK, aluminum or titanium

Indications

Treatment of fractures, osteotomies and arthrodesis of bones with the appropriate screw size.

Contraindications

- Pre-existing or suspected infection at or near the implantation site
- Known allergies and /or hypersensitivity to implant materials
- Inferior or insufficient bone quality to securely anchor the implant
- Patients who are incapacitated and/or uncooperative during the treatment phase
- Growth plates are not to be blocked with plates and screws

Notices

- In patients with Charcot Foot and/or other neuropathic diseases, the CCS 5.0 and CCS 7.0 are not to be used as stand-alone implants. They need to be used with supplemental fixation, such as additional screws and plates, across the fused joints.
- CCS 5.0 and CCS 7.0 screws have sharp threads and need to be picked up from the implant container by means of the screwdriver. Be cautious touching the screws directly.
- Screws are not to be positioned in the joint gap (exception: arthrodesis).

Color Coding

System Size	Color Code
APTUS 5.0	dark blue
APTUS 7.0	turquoise

Screws

Special implant screws have their own color:







Implant screws gold	5.0 Cannulated Compression Screws
	7.0 Cannulated Compression Screws



System Overview

The cannulated compression screws are available with short distal thread, long distal thread or fully threaded in different lengths.

For detailed ordering information, please refer to the APTUS Ordering Catalog, also available at www.medartis.com.

Description	Example	Main Feature	Compression	Screw Length (Increment)
CCS 5.0	 A-8210	Short distal thread	Yes	24–40 mm (2 mm), 45–70 mm (5 mm)
	 A-8211	Long distal thread	Yes	30–40 mm (2 mm), 45–70 mm (5 mm)
	 A-8212	Fully threaded	No	24–40 mm (2 mm), 45–70 mm (5 mm)
CCS 7.0	 A-8410	Short distal thread	Yes	40–110 mm (5 mm), 120–140 mm (10 mm)
	 A-8411	Long distal thread	Yes	40–110 mm (5 mm), 120–140 mm (10 mm)
	 A-8412	Fully threaded	No	40–110 mm (5 mm), 120–140 mm (10 mm)

Examples of Use

Shoulder

Fractures of the proximal humerus

Elbow

Fractures of the distal humerus

Knee

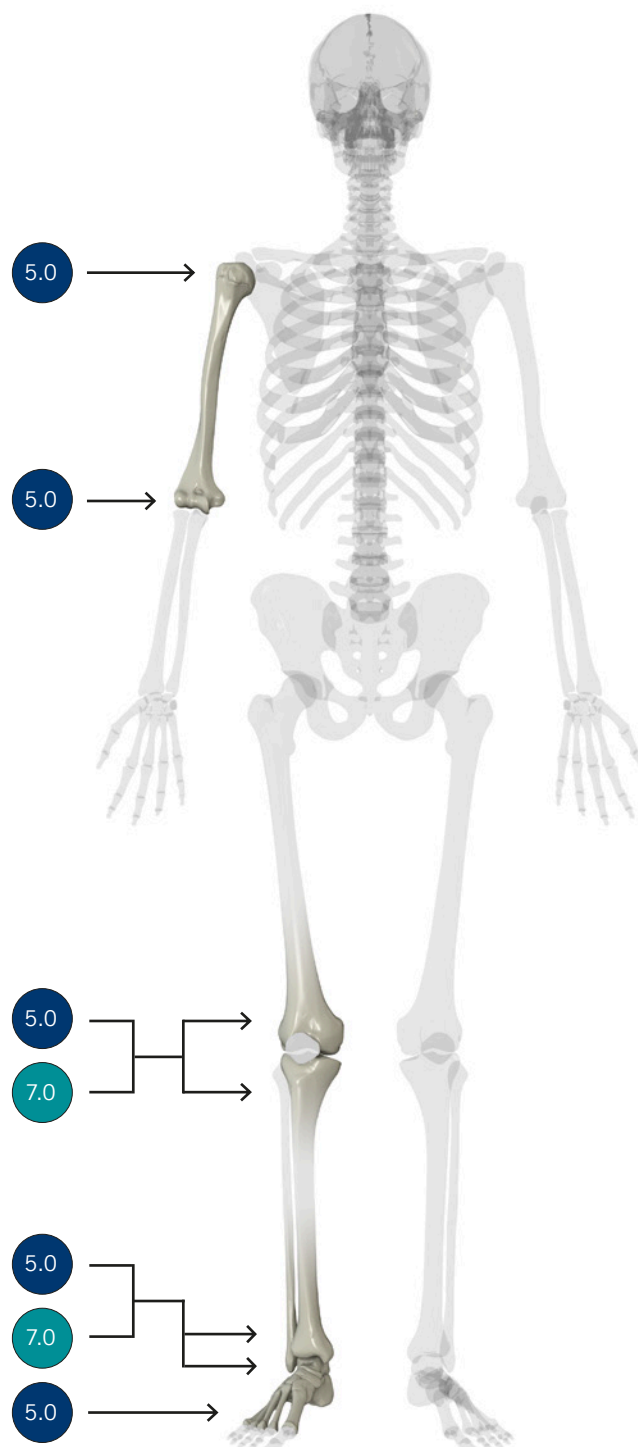
Fractures

- Proximal tibia
- Distal femur

Foot

Fractures, arthrodesis and osteotomies

- Upper ankle joint
- Lower ankle joint
- Midfoot
- Hindfoot



Surgical Technique

Cannulated Compression Screws

Use of dark blue color coded instruments for CCS 5.0. Use of turquoise color coded instruments for CCS 7.0.

Step 1A

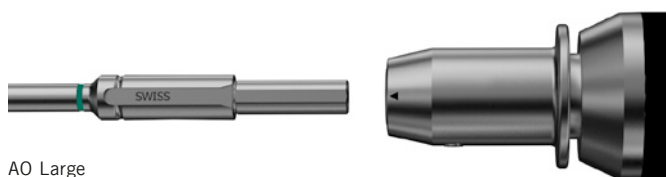
Connect the color coded protection sleeve to the cannulated handle with quick coupling AO, respectively AO Large.

CCS 5.0: A-8000.23 + A-8000.20

CCS 7.0: A-8001.23 + A-8001.10



AO Coupling



AO Large

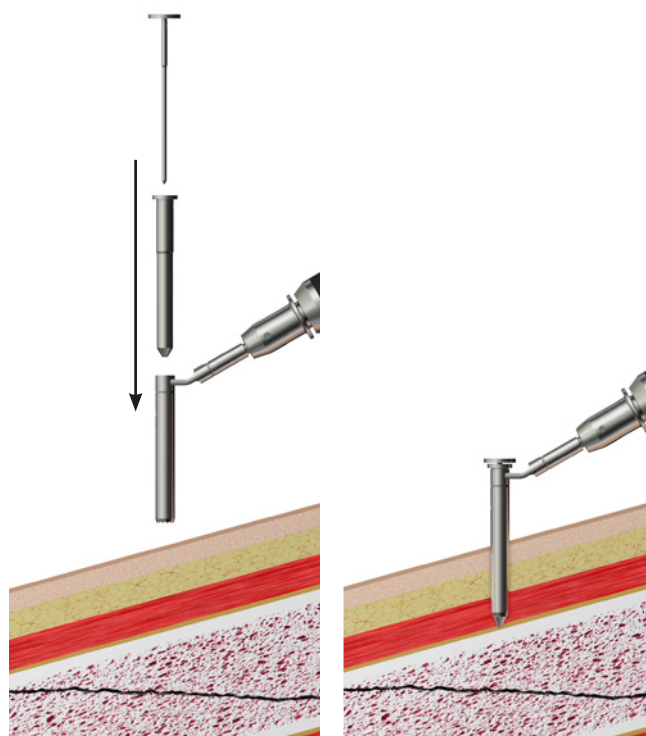


Step 1B

For minimally invasive screw insertion respectively for soft tissue protection, slide the K-wire guide and the trocar into the protection sleeve.

CCS 5.0: A-8000.23 + A-8000.24 + A-8000.25

CCS 7.0: A-8001.23 + A-8001.24 + A-8001.25



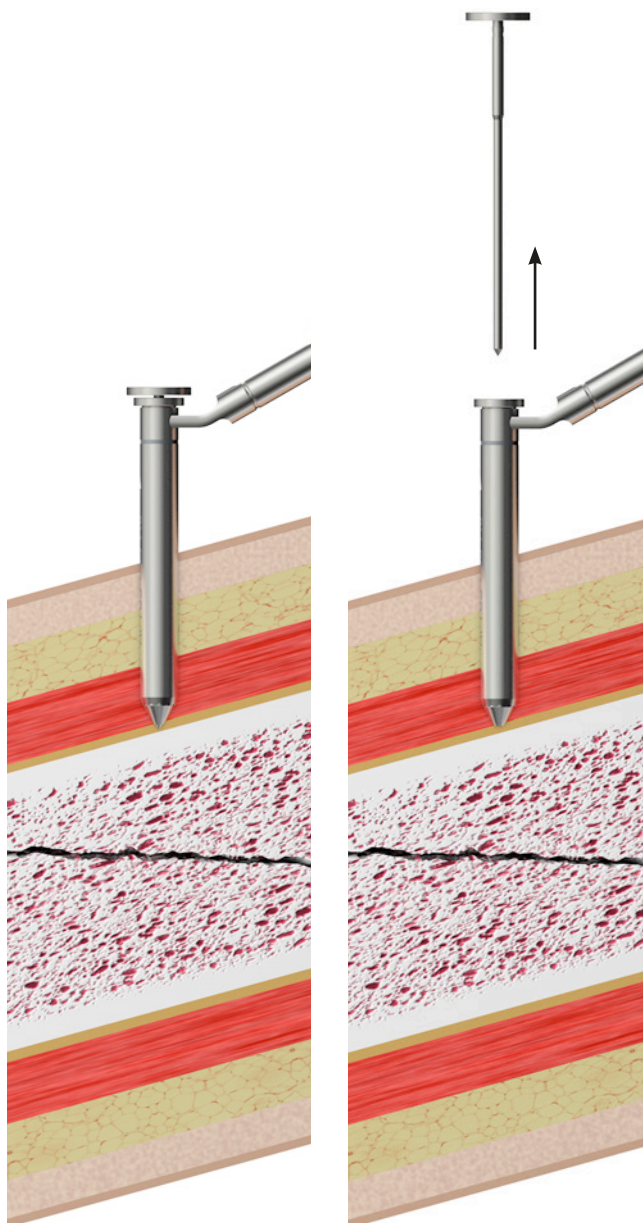
Step 2

Place the protection sleeve (A-8000.23, A-8001.23) onto the bone.

In case the trocar (A-8000.24, A-8001.24) was used, pull it off with a slight turning and pulling movement.

Notice

In case the K-wire guide (A-8000.25, A-8001.25) loosens, it needs to be moved back.

**Step 3A**

Select the required K-wire diameter depending on screw size and verify its size in the container's measuring module.

CCS 5.0: Ø 1.6 mm

CCS 7.0: Ø 2.2 mm

Notice

To ensure that the lengths of the screws to be used are assigned correctly, only original Medartis K-wires may be used. If alternative wires are used, the correct screw length selection cannot be assured!

CCS 5.0: A-5040.42 (trocar) or A-5044.42 (thread)
Ø 1.6 mm x length 200 mm

CCS 7.0: A-5040.74 (trocar) or A-5044.74 (thread)
Ø 2.2 mm x length 250 mm



Step 3B

Place the K-wire perpendicularly to the fracture or osteotomy line. Check the position of the K-wire by X-ray.

Step 4

Remove the K-wire guide (A-8000.25, A-8001.25).

Slide the depth gauge (A-8000.27, A-8001.27) over the K-wire until it touches the bone.

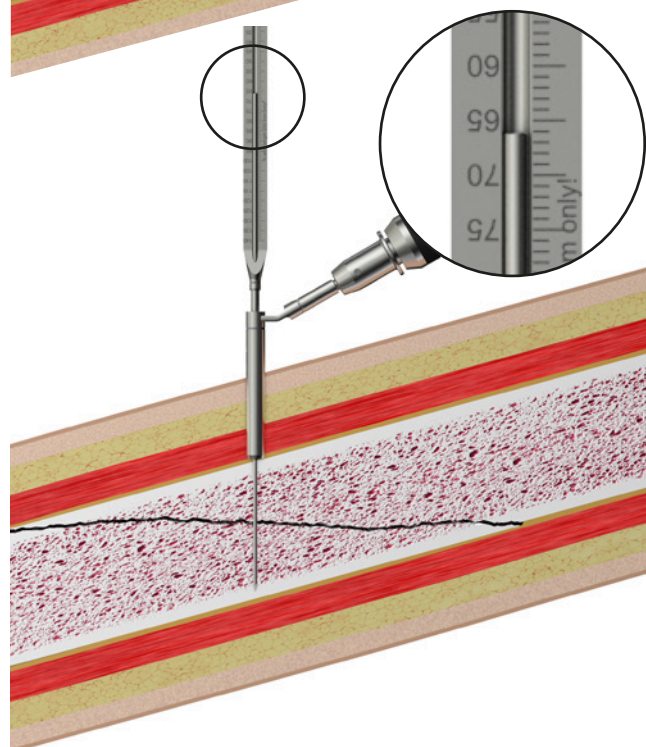
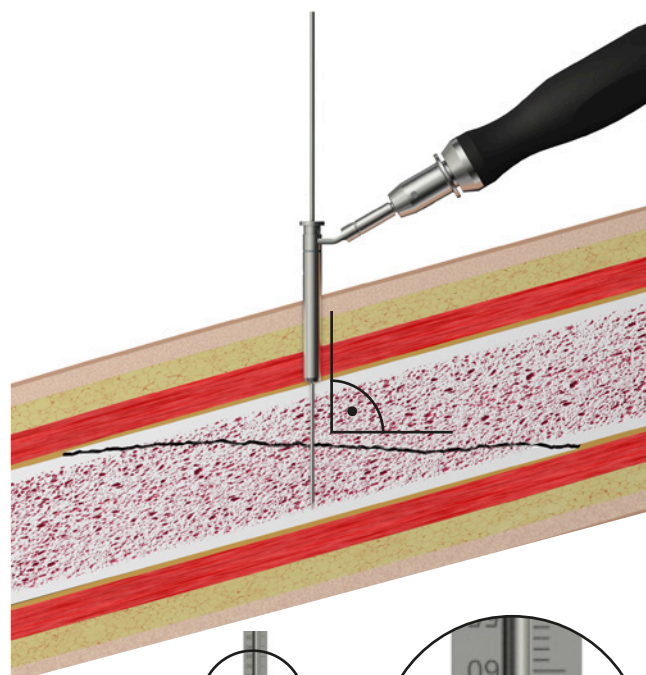
The value can be read from the end of the K-wire.

Notice

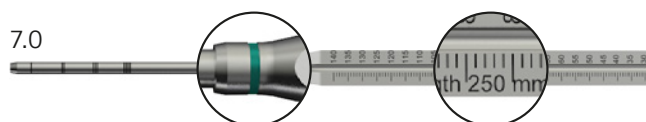
The depth gauge shows four laser-marked ring groups in the tip area for a rough estimate of the position relative to the soft tissue thickness when used **without** a protection sleeve.

CCS 5.0: A-8000.27 (dark blue)

CCS 7.0: A-8001.27 (turquoise)



For K-wire length 200 mm



For K-wire length 250 mm

Step 5 — Optional

Pre-drill with the color coded twist drill over the K-wire through the protection sleeve.

CCS 5.0: A-8000.03 CCS 7.0: A-8001.01

Drill the first cortex with the color coded countersink over the K-wire through the protection sleeve.

CCS 5.0: A-8000.04 CCS 7.0: A-8001.02

Notice

The use of twist drills and/or countersinks is recommended in case of very hard bone.

Step 6A

Select a screw that is slightly shorter than the value assigned in Step 4 to allow for shortening through compression of the fracture gap.

Notice

This does not apply for fully threaded screws, as they do not create compression.

To remove the screws from the implant container, insert the appropriately color coded screwdriver blade perpendicularly into the screw head of the desired screw and pick up the screw with axial pressure.

CCS 5.0: A-8000.21 + A-8000.20

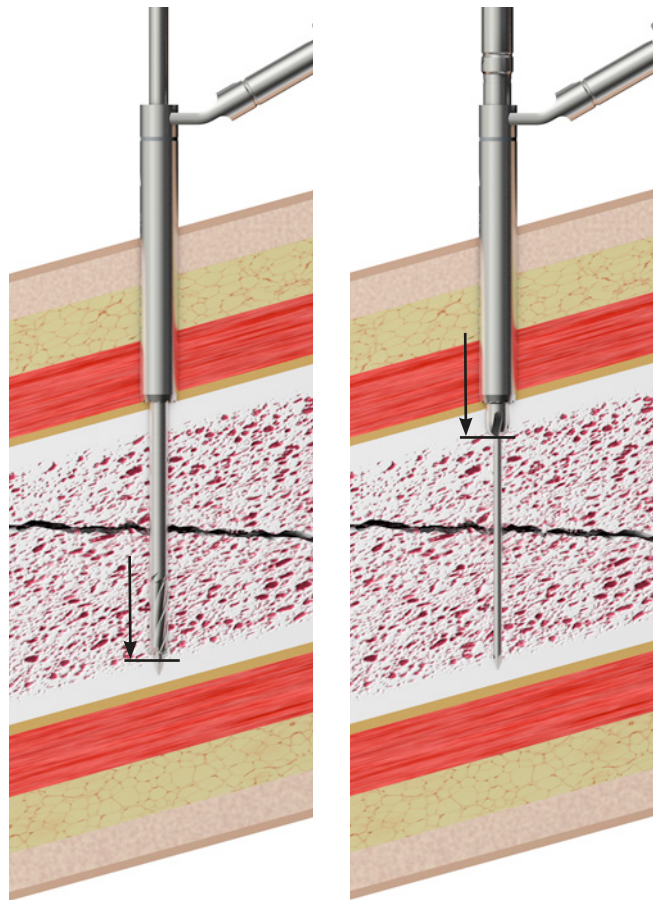
CCS 7.0: A-8001.11 + A-8001.10

Notice

The screw will not hold without axial pressure!
Vertically extract the screw from the compartment. Picking up the screw repeatedly may lead to permanent deformation of the self-retaining area of the HexaDrive inside the screw head. Therefore, the screw may no longer be able to be picked up correctly. In this case, a new screw has to be used.

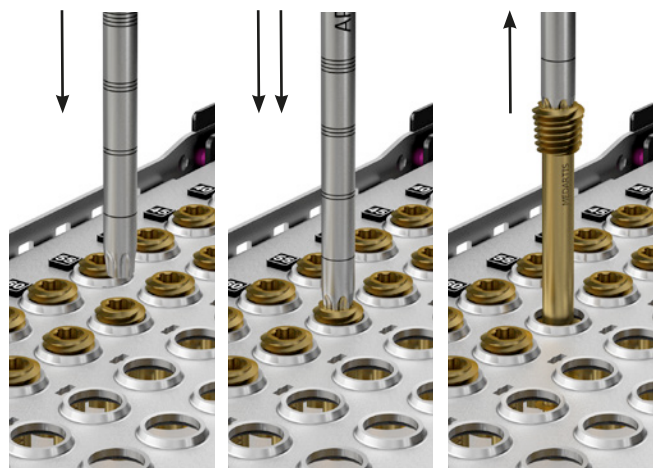
Recommendation

Screw pick-up from the implant container is eased by a slight counterclockwise movement.



Pre-drilling

Use of countersink



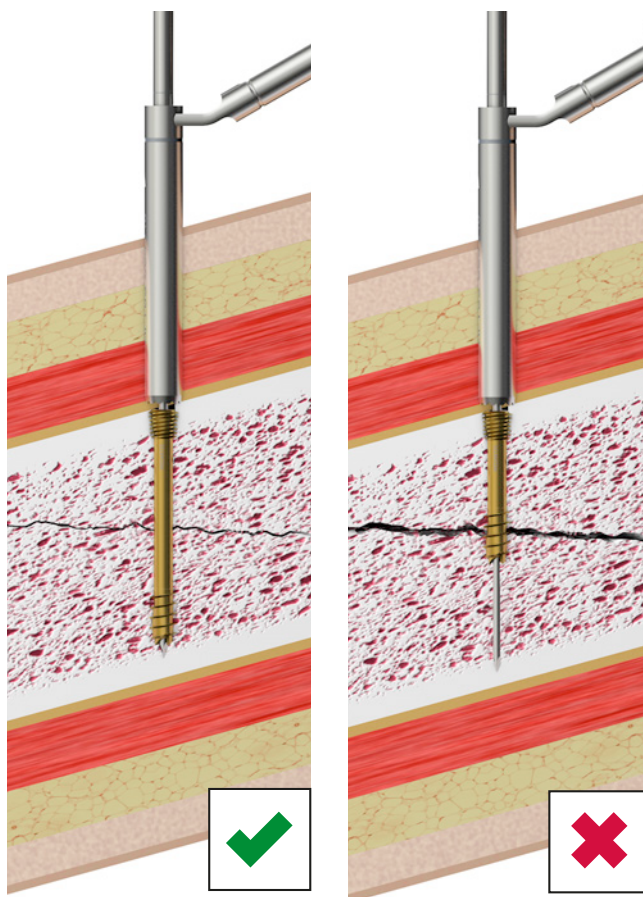
Step 6B

Check the screw length and diameter at the scale of the measuring module. The screw length is determined at the end of the screw head.



Notice

When selecting the screw, it is essential that the distal thread is not positioned within the fracture gap, as otherwise no compression can be achieved.



Fully threaded screws

As these screws do not compress, the thread can be positioned after reduction within the fracture gap. If compression of the fracture gap is desired, then a partially threaded screw has to be inserted first. Only afterwards a fully threaded screw is inserted for stabilization.

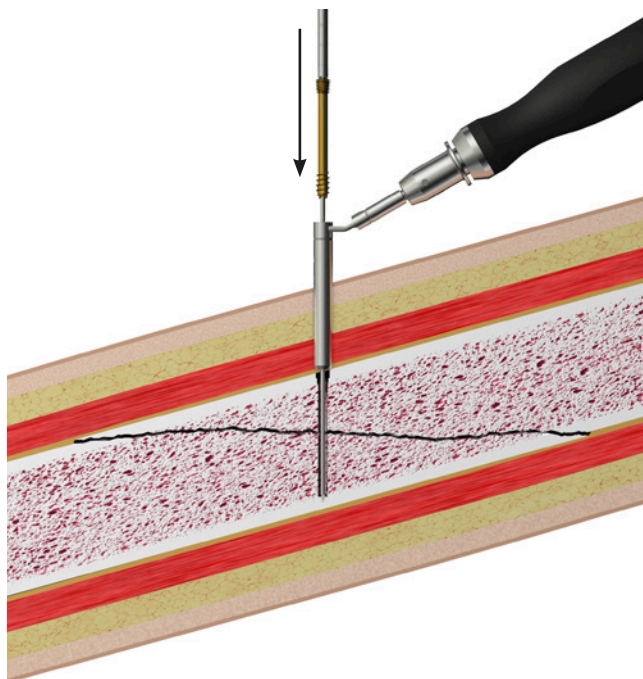
Step 7

When inserting the screw, apply sufficient axial pressure in order to allow for proper cutting and good thread formation.

Notice

Use the protection sleeve while inserting the screws.

CCS 5.0: A-8000.23 CCS 7.0: A-8001.23

**Step 8**

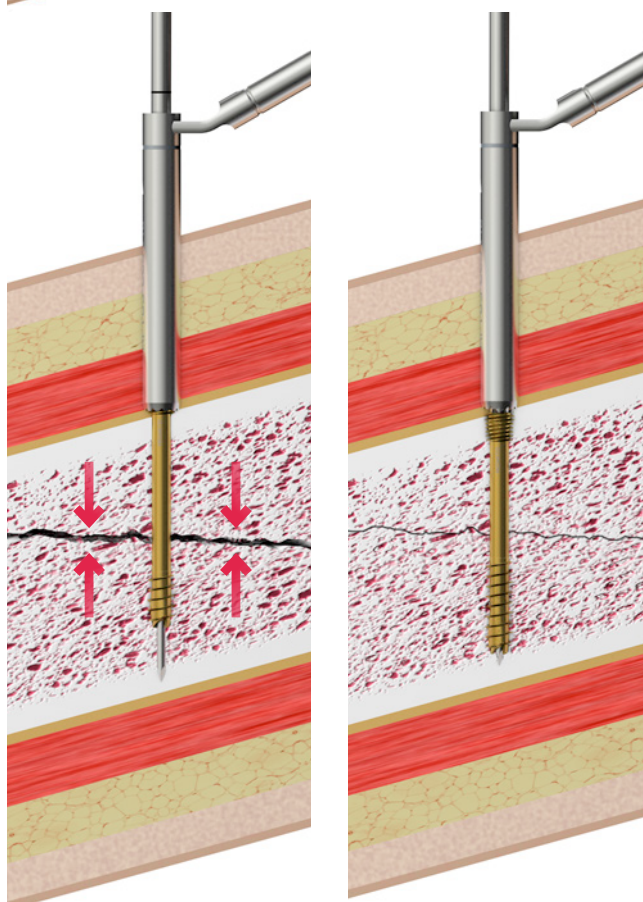
Turn the screw until the screw head is completely inserted in the bone.

Remove the K-wire.

Notice

The blade shows one single laser-marked ring in the shaft area for a rough orientation of the insertion depth relative to the soft tissue thickness when used **with** a protection sleeve. If the screw is completely inserted, this single ring is approximately positioned at the level of the end of the protection sleeve.

In addition, the blade — like the depth gauge (A-8000.27, A-8001.27) — shows four laser-marked ring groups in the tip area for a rough orientation of the insertion depth relative to the soft tissue thickness when used **without** a protection sleeve. If the screw is inserted in the soft tissue to the previously determined depth gauge's ring group, the screw head is approximately positioned at the level of the cortex.

**Caution**

The correct position of the screw, screw head and screw tip as well as the screw length always have to be verified using X-ray control.



Appendix

Implants and Instruments

For detailed ordering information, please refer to the APTUS Ordering Catalog, also available at www.medartis.com.

Screws, K-Wires

Art. No.	Art. No.	Art. No.	Art. No.	Art. No.	Art. No.
A-5040.42	A-8210.65/1	A-8212.32/1	A-8410.75/1	A-8411.75/1S	A-8412.75/1S
A-5040.42/1	A-8210.65/1S	A-8212.32/1S	A-8410.75/1S	A-8411.80/1	A-8412.80/1
A-5040.42/1S	A-8210.70/1	A-8212.34/1	A-8410.80/1	A-8411.80/1S	A-8412.80/1S
A-5040.74	A-8210.70/1S	A-8212.34/1S	A-8410.80/1S	A-8411.85/1	A-8412.85/1
A-5040.74/1	A-8211.30/1	A-8212.36/1	A-8410.85/1	A-8411.85/1S	A-8412.85/1S
A-5040.74/1S	A-8211.30/1S	A-8212.36/1S	A-8410.85/1S	A-8411.90/1	A-8412.90/1
A-5044.42	A-8211.32/1	A-8212.38/1	A-8410.90/1	A-8411.90/1S	A-8412.90/1S
A-5044.42/1	A-8211.32/1S	A-8212.38/1S	A-8410.90/1S	A-8411.95/1	A-8412.95/1
A-5044.42/1S	A-8211.34/1	A-8212.40/1	A-8410.95/1	A-8411.95/1S	A-8412.95/1S
A-5044.74	A-8211.34/1S	A-8212.40/1S	A-8410.95/1S	A-8411.100/1	A-8412.100/1
A-5044.74/1	A-8211.36/1	A-8212.45/1	A-8410.100/1	A-8411.100/1S	A-8412.100/1S
A-5044.74/1S	A-8211.36/1S	A-8212.45/1S	A-8410.100/1S	A-8411.105/1	A-8412.105/1
A-8210.24/1	A-8211.38/1	A-8212.50/1	A-8410.105/1	A-8411.105/1S	A-8412.105/1S
A-8210.24/1S	A-8211.38/1S	A-8212.50/1S	A-8410.105/1S	A-8411.110/1	A-8412.110/1
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A-8210.28/1	A-8211.45/1	A-8212.60/1	A-8410.120/1	A-8411.120/1S	A-8412.120/1S
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A-8210.32/1	A-8211.55/1	A-8212.70/1	A-8410.140/1	A-8411.140/1S	A-8412.140/1S
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A-8210.34/1S	A-8211.60/1S	A-8410.35/1	A-8411.40/1	A-8412.40/1	
A-8210.36/1	A-8211.65/1	A-8410.40/1	A-8411.40/1S	A-8412.40/1S	
A-8210.36/1S	A-8211.65/1S	A-8410.40/1S	A-8411.45/1	A-8412.45/1	
A-8210.38/1	A-8211.70/1	A-8410.45/1	A-8411.45/1S	A-8412.45/1S	
A-8210.38/1S	A-8211.70/1S	A-8410.45/1S	A-8411.50/1	A-8412.50/1	
A-8210.40/1	A-8212.20/1	A-8410.50/1	A-8411.50/1S	A-8412.50/1S	
A-8210.40/1S	A-8212.22/1	A-8410.50/1S	A-8411.55/1	A-8412.55/1	
A-8210.45/1	A-8212.24/1	A-8410.55/1	A-8411.55/1S	A-8412.55/1S	
A-8210.45/1S	A-8212.24/1S	A-8410.55/1S	A-8411.60/1	A-8412.60/1	
A-8210.50/1	A-8212.26/1	A-8410.60/1	A-8411.60/1S	A-8412.60/1S	
A-8210.50/1S	A-8212.26/1S	A-8410.60/1S	A-8411.65/1	A-8412.65/1	
A-8210.55/1	A-8212.28/1	A-8410.65/1	A-8411.65/1S	A-8412.65/1S	
A-8210.55/1S	A-8212.28/1S	A-8410.65/1S	A-8411.70/1	A-8412.70/1	
A-8210.60/1	A-8212.30/1	A-8410.70/1	A-8411.70/1S	A-8412.70/1S	
A-8210.60/1S	A-8212.30/1S	A-8410.70/1S	A-8411.75/1	A-8412.75/1	

RCI

Art. No.
A-8000.03
A-8000.03S
A-8000.04
A-8000.04S
A-8001.01
A-8001.01S
A-8001.02
A-8001.02S

Instruments

Art. No.
A-8000.12
A-8000.20
A-8000.21
A-8000.23
A-8000.24
A-8000.25
A-8000.27
A-8001.10
A-8001.11
A-8001.12
A-8001.23
A-8001.24
A-8001.25
A-8001.27

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MANUFACTURER & HEADQUARTERS

Medartis AG | Hochbergerstrasse 60E | 4057 Basel/Switzerland
P +41 61 633 34 34 | F +41 61 633 34 00 | www.medartis.com

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