silony® MEDICAL

VERTICALE® AUGMENTATION

INSTRUMENTATION GUIDE

MADE IN GERMANY

TABLE OF CONTENTS

NOTE: The following guide is intended to familiarize you with the surgical procedure and use of the instruments and implants required for screw augmentation with the VERTICALE system. This instrumentation guide supplements the guide for the VERTICALE – Posterior Spinal Fixation System and refers to the steps for augmentation of screws. Instruments from Silony Medical are processed, serviced, and cared for in accordance with the information given in the instructions for use. Please read this guide and the instructions for use accompanying the implants carefully before using the implant, and also pay particular attention to the information provided in the appendix of this guide.

VERTICALE® – AUGMENTATION

VERTICALE is a posterior rod-screw fixation system for stabilizing the thoracic and lumbar spine.

The system was developed in close cooperation with experienced and qualified spinal surgeons as well as operating and sterilization staff in surgical environments. As a result, VERTICALE is a well-designed, modular, and versatile fixation system.
The addition of augmentable screws also ensures better fixation of the screws in the VERTICALE system. This is particularly necessary if the fixation of the screws in the vertebral body is not sufficiently stable. The VERTICALE augmentation system is therefore ideally suited for revisions after screw loosening or screw cutout as well as for patients with reduced bone density (e.g., osteoporosis).

The VERTICALE augmentation system includes polyaxial and reduction screws in a variety of lengths and diameters so that implants can be selected on the basis of individual and anatomic requirements.
The addition of the augmentable screws means that stabilization of degenerative spinal diseases, correction of deformities, and fixation of fractures is improved in patients with reduced bone density.

Like all other implants and instruments developed by Silony Medical, VERTICALE is a living system. Whether instrument or implant device—we are constantly working to expand and improve systems in order to optimally meet the needs of patients, physicians, and other medical personnel.

Indications

The VERTICALE system is indicated for use in the thoracic and lumbar spine and for iliosacral fixation procedures (T1–S2 / ilium). This includes all kinds of thoracic and lumbar instabilities that require comprehensive posterior pedicle screw fixation:

- Degenerative disc diseases
- Spondylolisthesis of all etiologies
- Stenosis
- Deformities such as scoliosis and kyphosis
- Fractures
- Spondylitis
- Tumors
- Revisions
- Pseudarthrosis

Contraindications

Under certain circumstances, implantation is prohibited or associated with substantial risks, even though there may be an indication for it. These include in particular:

- Anticipated or documented allergy or intolerance to the materials used (e.g., titanium or cobalt chromium)
- Any case in which the chosen implants would be too large or too small to achieve a successful result
- Any patient for whom the use of the implant would conflict with anatomical structures
- Missing bony structures that make solid anchoring of the implant impossible (e.g., in the case of fractures, tumors, or osteoporosis)

NOTE: Anterior, interbody support in the form of an intervertebral implant device, such as a ROCCIA Cage, is recommended for treating instabilities of the anterior spine and is used at the discretion of the operating surgeon and in accordance with the respective indication.

NOTE: Please also note the Instructions for Use provided with each product. They may include additional advice that leads to exclusion of the implant procedure.

VERTICALE® AUGMENTATION – INSTRUMENTATION

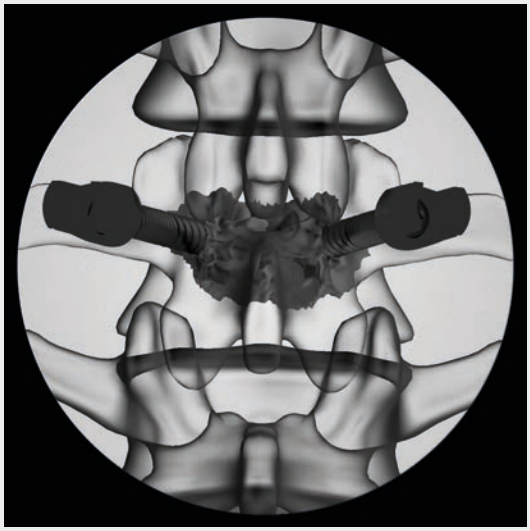
In the following section we describe only those particular steps that must be carried out when using the augmentable screws. For a general instrumentation guide for a posterior VERTICALE standard instrumentation that forms the basis of all subsequent work steps with additional instruments and implants, we ask that you study the instrumentation guide for the VERTICALE Posterior Spinal Fixation System. Multisegmental instrumentations are also explained in this guide.

Position and approach

The patient is positioned in the standard prone position for the posterior approach. The skin incision is performed medially above the spinous processes corresponding to the spinal segment to be treated. The soft tissue is then dissected until the anatomical structures of the spinal column can be clearly seen. The VERTICALE® augmentation system can also be used for minimally invasive approaches.

Selecting the pedicle screw

VPS-6240-KF1*
VERTICALE Poly Screw



To enable faster and easier identification, all VERTICALE Pedicle Screws are color-coded by diameter. The side of the VERTICALE Screw Tray has a scale to verify the correct length of the pedicle screw.

Using the A-P X-ray image, choose pedicle screws according to the pedicle diameter with the largest possible diameter.

Determine the length of the screw using the lateral X-ray image.

The VERTICALE augmentation screw has a perforation for cementation in the anterior third of the screw. Therefore, the screw should be selected such that its length extends to at least 2/3 of the diameter of the vertebral body and in the best case the anterior edge of the vertebral body (Fig. 1).

* Other pedicle screws are shown in the chapter 'Implants'.

Fig. 1 Augmented pedicle screw

Insertion of the pedicle screw

GI-3111*
Ratchet T-Handle cannulated

VI-1130**
VERTICALE Pedicle Screwdriver
T25

The VERTICALE Pedicle Screwdriver is used to screw in the pedicle screws. Detailed instructions for the VERTICALE Pedicle Screwdriver are available in the instrumentation guide for the VERTICALE Posterior Spinal Fixation System.

Selecting the pedicle screws, preparing the screwdriver, and picking up the screw are carried out in accordance with the instrumentation guide for the VERTICALE Posterior Spinal Fixation System.
The pedicle screwdriver can be used for both short head screws and reduction screws by simply resetting.
To make alignment of the heads easier, the polyaxial screws should be able to be easily moved after being screwed in. However, the screw should always be positioned sufficiently deep in the pedicle to minimize the force exerted on the screw neck (Fig. 2).

* Further handles are shown in the chapter 'General Instruments'.

** Further handles are shown in the chapter 'Instruments'.

Fig. 2 Inserting the pedicle screw

Augmentation of the pedicle screw with the cement delivery adapter

VI-3012
VERTICALE Cement Delivery Adapter

VI-3020
VERTICALE Cement Delivery Counter Torque

VI-3050
VERTICALE Centering Tool

If augmentation of the screw is planned, this should be done immediately after insertion of all screws. It may already be necessary to have the screws firmly fixed for subsequent surgical steps to prevent loosening or cut-out of the screw. During distraction or compression and lordosis or rotation of a segment, forces are generated that can be transmitted to the screws. In patients with reduced bone density this can lead to loosening.

The cement is applied using the VERTICALE Cement Delivery Adapter and the VERTICALE Cement Delivery Needle. The use of the centering tool is recommended for orthograde alignment of the cement delivery adapter in the screw shaft. The centering tool is inserted together with the cement delivery unit (Fig. 3).

The cement delivery adapter is inserted into the counter torque until it engages. The cement delivery adapter is then mounted as a unit with the cement delivery counter torque, and the centering tool where applicable, onto the screw that has already been inserted into the pedicle. The cement delivery adapter must be screwed into the screw head far enough so that the counter torque with the marking corresponding to the length of the screw head ends up on the adapter (Fig. 4). The counter torque is necessary to prevent concurrent turning of the screw head when inserting the cement delivery adapter.

Fig. 3 Assembling the cement delivery adapter, cement delivery counter torque, and centering tool

Fig. 4 Screwing in the cementation unit

Augmentation of the pedicle screw with the cement delivery adapter

VI-3012
VERTICALE Cement Delivery Adapter

VI-3020
VERTICALE Cement Delivery Counter Torque

VI-3050
VERTICALE Centering Tool

The centering tool is removed after screwing in the cement delivery adapter (Fig. 5). Before starting the augmentation, the cement delivery adapters must be mounted onto all the pedicle screws that are to be augmented.

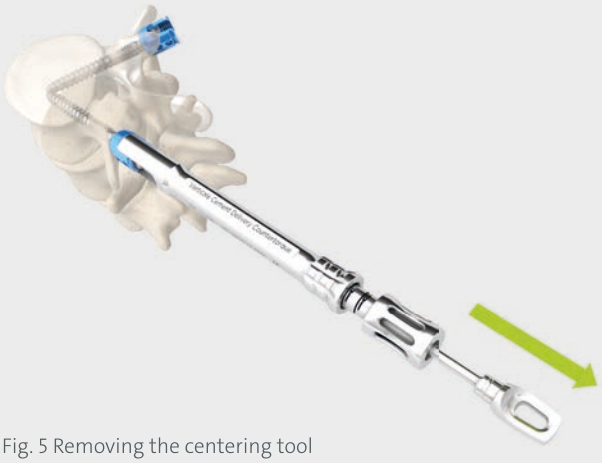


Fig. 5 Removing the centering tool

NOTE: The cement delivery adapter must be completely screwed into the screw head.
Only when the cement delivery adapter has completely reversed the polyaxiality of the screw is it adequately positioned in the screw head.
This requires an orthograde alignment of the adapter to the screw shaft. The use of a guide wire can be helpful here.

Application of bone cement with the cement delivery adapter

VI-3100
VERTICALE Cement Delivery Needle (disposable)

VI-3012
VERTICALE Cement Delivery Adapter

VI-3020
VERTICALE Cement Delivery Counter Torque

The VERTICALE Cement Delivery Needle, when using the VERTICALE Cement Delivery Adapter, controls the flow of cement into the screw and prevents leakage of cement into the screw head.
One VERTICALE Cement Delivery Needle is required for each screw. The needle is inserted into the cement delivery adapter and fixed using a snap-on hook (Fig. 6). The needle is designed so that it can be positioned in the cement delivery adapter without rotating.
If necessary, the needle must be turned slightly so that it is anchored into the cement delivery adapter.

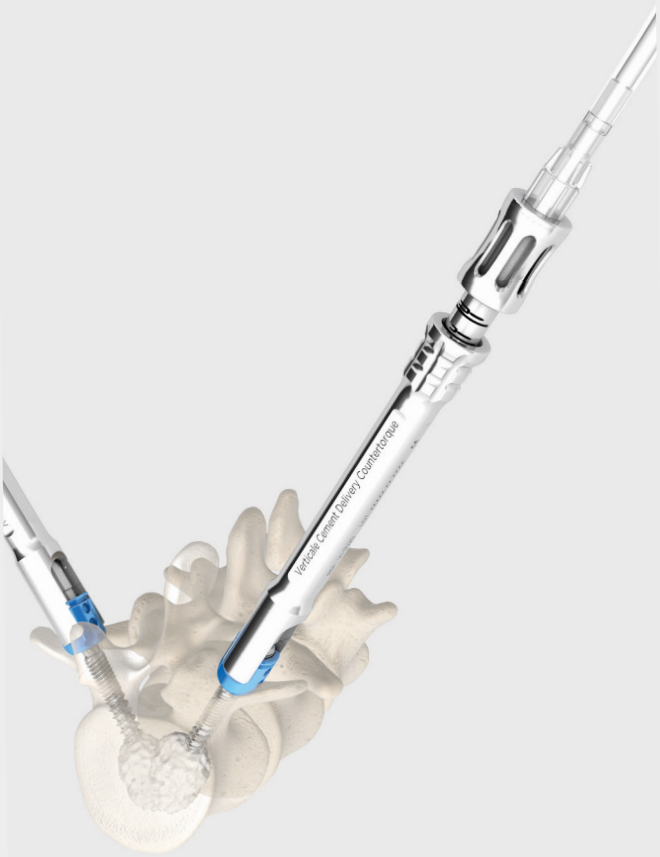


Fig. 6 Anchoring the needle in the cement delivery adapter

NOTE: The VERTICALE Cement Delivery Needle can also be used in an open surgical procedure without the adapter. The needle can be loosely anchored to the screw. Throughout the entire application procedure, the needle must be held against the screw while applying gentle pressure. If required, the needle can be held with the VERTICALE Rod Holder (VI-1320).
Visually check that the needle is in the correct position. It is recommended to continuously monitor the cement flow radiographically (AP and lateral). If the cement escapes uncontrollably, the application must be stopped.

Application of bone cement with the cement delivery adapter

VI-3012
VERTICALE Cement Delivery Adapter

VI-3020
VERTICALE Cement Delivery Counter Torque

VI-3101
VERTICALE Plunger

After preparing the bone cement that will be used, the cement application can now be started.
The VERTICALE Cement Delivery Plunger VI-3101 is used to push the excess bone cement remaining in the needle into the vertebral body.
The lumen of a cement needle should be taken into account here (0.8 mL) and the cement should be compacted under fluoroscopic guidance.

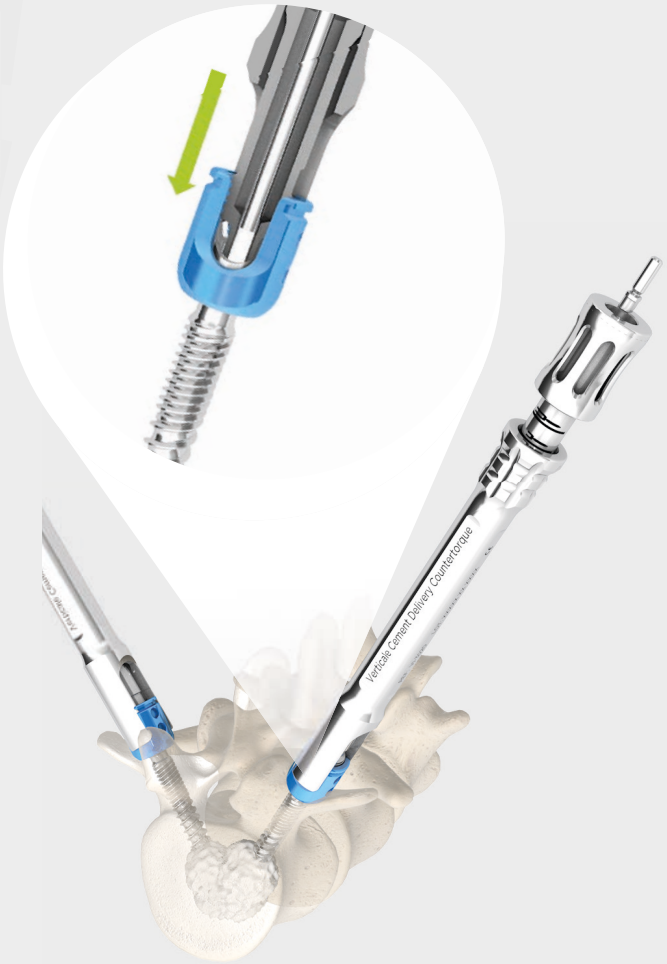


Fig. 7 Compacting the cement residues

Augmentation of the pedicle screw with the cement applicator (open surgery)

VI-3300
VERTICALE Cement Applicator, short head

VI-3310
VERTICALE Cement Applicator, long head

VI-3020
VERTICALE Centering Tool for cement applicator

If augmentation of the screw is planned, this should be done immediately after insertion of all screws. It may already be necessary to have the screws firmly fixed for subsequent surgical steps to prevent loosening or cut-out of the screw. During distraction or compression and lordosis or rotation of a segment, forces are generated that can be transmitted to the screws. In patients with reduced bone density this can lead to loosening of the screw.

The VERTICALE Cement Applicator can be used for the augmentation of both short-head and long-head screws. To apply the cement, the cement applicator is placed on the screw, which has already been inserted into the pedicle, and is then screwed in (Fig. 8).

The VERTICALE Cement Delivery Counter Torque VI-3020 is used to provide resistance. The VERTICALE Centering Tool VI-3320 can be used to help ensure the correct alignment of the VERTICALE Cement Applicator on the head of the screw. The centering tool is removed after screwing in the cement applicator. Before starting the augmentation, the cement applicators must be mounted onto all the pedicle screws that are to be augmented.

Cannulated and fenestrated short-head and long-head screws are suitable for augmentation.
The VERTICALE Cement Delivery Plunger VI-3101 is used to push the excess bone cement remaining in the needle into the vertebral body.

Fig. 8 Inserting the cement applicator

NOTE: The cement applicator must be completely screwed into the screw head. Only when the cement applicator has completely reversed the polyaxiality of the screw is it adequately positioned in the screw head. This requires an orthograde alignment of the applicator to the screw shaft. The use of a centering tool can be helpful here.

Augmentation of the pedicle screw with the cement applicator (minimally invasive)

VI-3300
VERTICALE Cement Applicator, short head

VI-3020
VERTICALE Centering Tool for cement applicator

The VERTICALE Cement Delivery Needle, when using the VERTICALE Cement Applicator, controls the flow of cement into the screw and prevents leakage of cement into the screw head.

One VERTICALE Cement Applicator is required for each screw.

After preparing the bone cement that will be used, the cement application can now be started.

For minimally invasive application, the VERTICAL Working Tower VI-4040 should be used to provide resistance for the screw head. The working tower is first mounted on all the screws to be cemented. As a result, the VERTICALE Cement Applicator is screwed into the screw head by the VERTICALE Working Tower. The VERTICALE Centering Tool VI-3320 is used for orthograde alignment. The centering tool is removed after screwing in the cement applicator (Fig. 9). Before starting the augmentation, the cement applicators must be mounted onto all the pedicle screws that are to be augmented.

Cannulated and fenestrated short-head and long-head screws are suitable for augmentation.
The augmentation can now be performed as described above for the open surgery application.

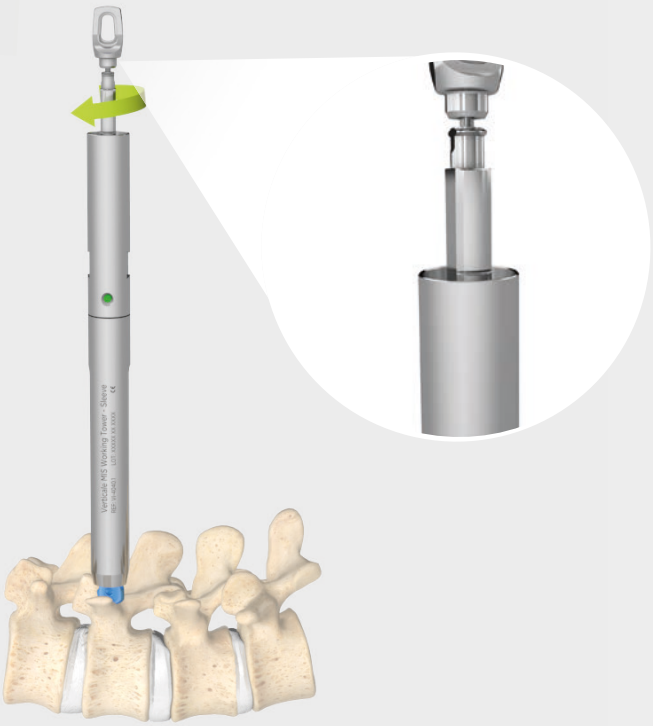


Fig. 9 Inserting the cement applicator through the working tower with the help of the centering tool

Removing the augmentation system

Once the cement injection is complete and the cement has fully cured, the cement application system is first removed from the needle or the cement applicator. Then the cement delivery adapter is loosened by screwing it off the pedicle screw head and removed from the screw (Fig. 10). The VERTICALE Cement Applicator and the VERTICALE Cement Delivery Needle are designed so that they can be loosened from the screw and the bone cement by simply rotating.

Fig. 10 Removing the cementation unit using the cement adapter as an example.

NOTE: If cement escapes from the screw head, this can have a negative effect on the function of the screw. Therefore, the needle must be left securely anchored in the screw head until the cement has fully cured. The screw head must be checked for traces of cement. Any cement residue must be removed.

Continuing the instrumentation steps

The other instrumentation steps (insertion of the rod, insertion of the set screw, any segmental corrections required such as distraction or compression, lordosis or kyphosis as well as segmental or global rotation) are carried out in accordance with the instrumentation guide of the VERTICALE Posterior Spinal Fixation System.

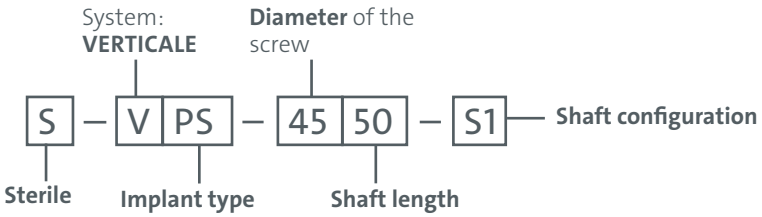
NOTE: In patients with reduced bone density or poor screw anchorage, screws can become loose despite the augmentation procedure. Therefore, all active corrections should be made with additional monitoring.

VERTICALE® PRODUCT INFORMATION

VERTICALE Implants

Article number explanation for screws, as an example

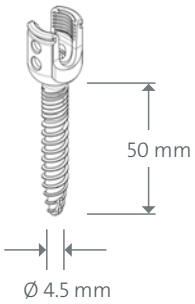
VERTICALE Poly Screw Ø 4.5 × 50 mm, solid



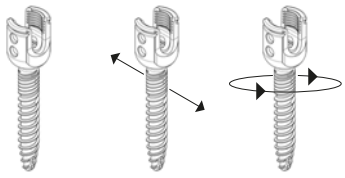
Diameter
Differentiation by color coding

- Ø 4.5 mm
- Ø 5.2 mm
- Ø 6.2 mm
- Ø 7.2 mm
- Ø 8.2 mm
- Ø 9.2 mm
- Ø 10.2 mm

Shaft dimensions



Implant type – Axial mobility



Shaft configuration – Shape

- Solid
- Cannulated
- Cannulated and fenestrated

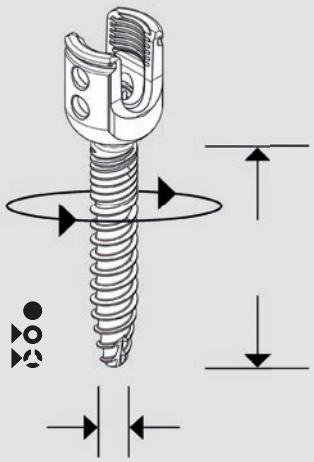
Article number	Description	Illustration
VPS-5235-KF1	VERTICALE Poly Screw Ø 5.2 ◊ 35 mm, can+fen	
VPS-5240-KF1	VERTICALE Poly Screw Ø 5.2 ◊ 40 mm, can+fen	
VPS-5245-KF1	VERTICALE Poly Screw Ø 5.2 ◊ 45 mm, can+fen	
VPS-5250-KF1	VERTICALE Poly Screw Ø 5.2 ◊ 50 mm, can+fen	
VPS-5255-KF1	VERTICALE Poly Screw Ø 5.2 ◊ 55 mm, can+fen	
VPS-5260-KF1	VERTICALE Poly Screw Ø 5.2 ◊ 60 mm, can+fen	
VPS-6235-KF1	VERTICALE Poly Screw Ø 6.2 ◊ 35 mm, can+fen	
VPS-6240-KF1	VERTICALE Poly Screw Ø 6.2 ◊ 40 mm, can+fen	
VPS-6245-KF1	VERTICALE Poly Screw Ø 6.2 ◊ 45 mm, can+fen	
VPS-6250-KF1	VERTICALE Poly Screw Ø 6.2 ◊ 50 mm, can+fen	
VPS-6255-KF1	VERTICALE Poly Screw Ø 6.2 ◊ 55 mm, can+fen	
VPS-6260-KF1	VERTICALE Poly Screw Ø 6.2 ◊ 60 mm, can+fen	
VPS-7235-KF1	VERTICALE Poly Screw Ø 7.2 ◊ 35 mm, can+fen	
VPS-7240-KF1	VERTICALE Poly Screw Ø 7.2 ◊ 40 mm, can+fen	
VPS-7245-KF1	VERTICALE Poly Screw Ø 7.2 ◊ 45 mm, can+fen	
VPS-7250-KF1	VERTICALE Poly Screw Ø 7.2 ◊ 50 mm, can+fen	
VPS-7255-KF1	VERTICALE Poly Screw Ø 7.2 ◊ 55 mm, can+fen	
VPS-7260-KF1	VERTICALE Poly Screw Ø 7.2 ◊ 60 mm, can+fen	
VPS-7270-KF1	VERTICALE Poly Screw Ø 7.2 ◊ 70 mm, can+fen	
VPS-7280-KF1	VERTICALE Poly Screw Ø 7.2 ◊ 80 mm, can+fen	

System:
VERTICALE

Implant type:
Pedicle screw

Configuration:
Polyaxial, cannulated and fenestrated shaft

Material:
Ti6Al4V ELI



D30008
D30000
D30049

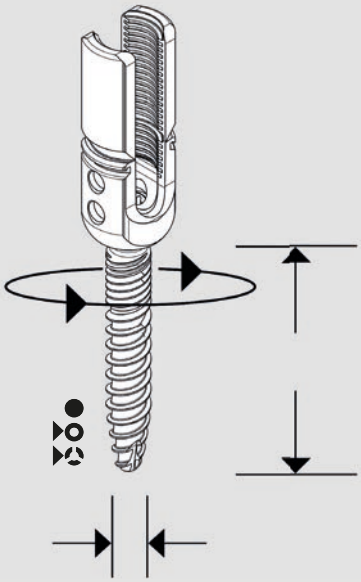
VERTICALE® Implants

System:
VERTICALE

Implant type:
Pedicle screw

Configuration:
Polyaxial, reduction, cannulated and fenestrated shaft

Material:
Ti6Al4V ELI



D30008
D30000

Article number	Description	Illustration
VPS-5235-RF2	VERTICALE Reduction Screw Ø 5.2 ◊ 35 mm, can+fen	
VPS-5240-RF2	VERTICALE Reduction Screw Ø 5.2 ◊ 40 mm, can+fen	
VPS-5245-RF2	VERTICALE Reduction Screw Ø 5.2 ◊ 45 mm, can+fen	
VPS-5250-RF2	VERTICALE Reduction Screw Ø 5.2 ◊ 50 mm, can+fen	
VPS-5255-RF2	VERTICALE Reduction Screw Ø 5.2 ◊ 55 mm, can+fen	
VPS-5260-RF2	VERTICALE Reduction Screw Ø 5.2 ◊ 60 mm, can+fen	
VPS-6235-RF2	VERTICALE Reduction Screw Ø 6.2 ◊ 35 mm, can+fen	
VPS-6240-RF2	VERTICALE Reduction Screw Ø 6.2 ◊ 40 mm, can+fen	
VPS-6245-RF2	VERTICALE Reduction Screw Ø 6.2 ◊ 45 mm, can+fen	
VPS-6250-RF2	VERTICALE Reduction Screw Ø 6.2 ◊ 50 mm, can+fen	
VPS-6255-RF2	VERTICALE Reduction Screw Ø 6.2 ◊ 55 mm, can+fen	
VPS-6260-RF2	VERTICALE Reduction Screw Ø 6.2 ◊ 60 mm, can+fen	
VPS-7235-RF2	VERTICALE Reduction Screw Ø 7.2 ◊ 35 mm, can+fen	
VPS-7240-RF2	VERTICALE Reduction Screw Ø 7.2 ◊ 40 mm, can+fen	
VPS-7245-RF2	VERTICALE Reduction Screw Ø 7.2 ◊ 45 mm, can+fen	
VPS-7250-RF2	VERTICALE Reduction Screw Ø 7.2 ◊ 50 mm, can+fen	
VPS-7255-RF2	VERTICALE Reduction Screw Ø 7.2 ◊ 55 mm, can+fen	
VPS-7260-RF2	VERTICALE Reduction Screw Ø 7.2 ◊ 60 mm, can+fen	
VPS-7270-RF2	VERTICALE Reduction Screw Ø 7.2 ◊ 70 mm, can+fen	
VPS-7280-RF2	VERTICALE Reduction Screw Ø 7.2 ◊ 80 mm, can+fen	

Article number	Description	Illustration
VPS-5235-KF2	VERTICALE Poly Screw ST Ø 5.2 ◊ 35 mm, can+fen	
VPS-5240-KF2	VERTICALE Poly Screw ST Ø 5.2 ◊ 40 mm, can+fen	
VPS-5245-KF2	VERTICALE Poly Screw ST Ø 5.2 ◊ 45 mm, can+fen	
VPS-5250-KF2	VERTICALE Poly Screw ST Ø 5.2 ◊ 50 mm, can+fen	
VPS-5255-KF2	VERTICALE Poly Screw ST Ø 5.2 ◊ 55 mm, can+fen	
VPS-5260-KF2	VERTICALE Poly Screw ST Ø 5.2 ◊ 60 mm, can+fen	
VPS-6235-KF2	VERTICALE Poly Screw ST Ø 6.2 ◊ 35 mm, can+fen	
VPS-6240-KF2	VERTICALE Poly Screw ST Ø 6.2 ◊ 40 mm, can+fen	
VPS-6245-KF2	VERTICALE Poly Screw ST Ø 6.2 ◊ 45 mm, can+fen	
VPS-6250-KF2	VERTICALE Poly Screw ST Ø 6.2 ◊ 50 mm, can+fen	
VPS-6255-KF2	VERTICALE Poly Screw ST Ø 6.2 ◊ 55 mm, can+fen	
VPS-6260-KF2	VERTICALE Poly Screw ST Ø 6.2 ◊ 60 mm, can+fen	
VPS-7235-KF2	VERTICALE Poly Screw ST Ø 7.2 ◊ 35 mm, can+fen	
VPS-7240-KF2	VERTICALE Poly Screw ST Ø 7.2 ◊ 40 mm, can+fen	
VPS-7245-KF2	VERTICALE Poly Screw ST Ø 7.2 ◊ 45 mm, can+fen	
VPS-7250-KF2	VERTICALE Poly Screw ST Ø 7.2 ◊ 50 mm, can+fen	
VPS-7255-KF2	VERTICALE Poly Screw ST Ø 7.2 ◊ 55 mm, can+fen	
VPS-7260-KF2	VERTICALE Poly Screw ST Ø 7.2 ◊ 60 mm, can+fen	
VPS-7270-KF2	VERTICALE Poly Screw ST Ø 7.2 ◊ 70 mm, can+fen	
VPS-7280-KF2	VERTICALE Poly Screw ST Ø 7.2 ◊ 80 mm, can+fen	

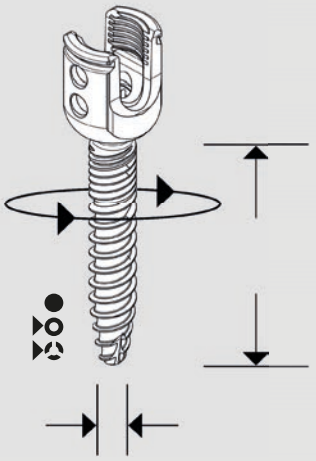
System:
VERTICALE

Implant type:
Pedicle screw

Configuration:
Polyaxial ST, cannulated and fenestrated shaft

Material:
Ti6Al4V ELI

All articles are also available as a sterile variant.
The article number is then preceded by the prefix S-.



D30008
D30000
D30049

VERTICALE® Implants

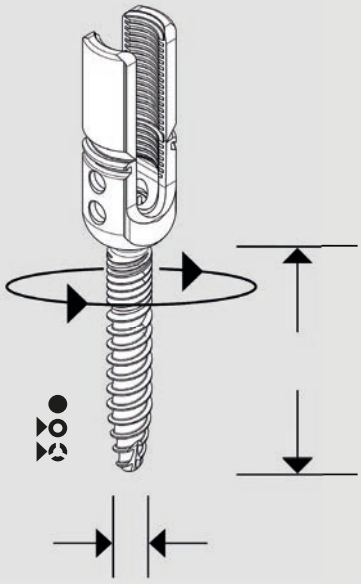
System:
VERTICALE

Implant type:
Pedicle screw

Configuration:
Polyaxial ST, reduction, cannulated and fenestrated shaft

Material:
Ti6Al4V ELI

All articles are also available as a sterile variant.
The article number is then preceded by the prefix S-.



D30008
D30000

Article number	Description	Illustration
VPS-5235-RF3	VERTICALE Reduction Screw ST Ø 5.2 ◊ 35 mm, can+fen	
VPS-5240-RF3	VERTICALE Reduction Screw ST Ø 5.2 ◊ 40 mm, can+fen	
VPS-5245-RF3	VERTICALE Reduction Screw ST Ø 5.2 ◊ 45 mm, can+fen	
VPS-5250-RF3	VERTICALE Reduction Screw ST Ø 5.2 ◊ 50 mm, can+fen	
VPS-5255-RF3	VERTICALE Reduction Screw ST Ø 5.2 ◊ 55 mm, can+fen	
VPS-5260-RF3	VERTICALE Reduction Screw ST Ø 5.2 ◊ 60 mm, can+fen	
VPS-6235-RF3	VERTICALE Reduction Screw ST Ø 6.2 ◊ 35 mm, can+fen	
VPS-6240-RF3	VERTICALE Reduction Screw ST Ø 6.2 ◊ 40 mm, can+fen	
VPS-6245-RF3	VERTICALE Reduction Screw ST Ø 6.2 ◊ 45 mm, can+fen	
VPS-6250-RF3	VERTICALE Reduction Screw ST Ø 6.2 ◊ 50 mm, can+fen	
VPS-6255-RF3	VERTICALE Reduction Screw ST Ø 6.2 ◊ 55 mm, can+fen	
VPS-6260-RF3	VERTICALE Reduction Screw ST Ø 6.2 ◊ 60 mm, can+fen	
VPS-7235-RF3	VERTICALE Reduction Screw ST Ø 7.2 ◊ 35 mm, can+fen	
VPS-7240-RF3	VERTICALE Reduction Screw ST Ø 7.2 ◊ 40 mm, can+fen	
VPS-7245-RF3	VERTICALE Reduction Screw ST Ø 7.2 ◊ 45 mm, can+fen	
VPS-7250-RF3	VERTICALE Reduction Screw ST Ø 7.2 ◊ 50 mm, can+fen	
VPS-7255-RF3	VERTICALE Reduction Screw ST Ø 7.2 ◊ 55 mm, can+fen	
VPS-7260-RF3	VERTICALE Reduction Screw ST Ø 7.2 ◊ 60 mm, can+fen	
VPS-7270-RF3	VERTICALE Reduction Screw ST Ø 7.2 ◊ 70 mm, can+fen	
VPS-7280-RF3	VERTICALE Reduction Screw ST Ø 7.2 ◊ 80 mm, can+fen	

Article number	Description	Illustration
VFS-5235-RF2	VERTICALE Mono Reduction Screw Ø 5.2 ◊ 35 mm, can+fen	
VFS-5240-RF2	VERTICALE Mono Reduction Screw Ø 5.2 ◊ 40 mm, can+fen	
VFS-5245-RF2	VERTICALE Mono Reduction Screw Ø 5.2 ◊ 45 mm, can+fen	
VFS-5250-RF2	VERTICALE Mono Reduction Screw Ø 5.2 ◊ 50 mm, can+fen	
VFS-5255-RF2	VERTICALE Mono Reduction Screw Ø 5.2 ◊ 55 mm, can+fen	
VFS-5260-RF2	VERTICALE Mono Reduction Screw Ø 5.2 ◊ 60 mm, can+fen	
VFS-6235-RF2	VERTICALE Mono Reduction Screw Ø 6.2 ◊ 35 mm, can+fen	
VFS-6240-RF2	VERTICALE Mono Reduction Screw Ø 6.2 ◊ 40 mm, can+fen	
VFS-6245-RF2	VERTICALE Mono Reduction Screw Ø 6.2 ◊ 45 mm, can+fen	
VFS-6250-RF2	VERTICALE Mono Reduction Screw Ø 6.2 ◊ 50 mm, can+fen	
VFS-6255-RF2	VERTICALE Mono Reduction Screw Ø 6.2 ◊ 55 mm, can+fen	
VFS-6260-RF2	VERTICALE Mono Reduction Screw Ø 6.2 ◊ 60 mm, can+fen	
VFS-7235-RF2	VERTICALE Mono Reduction Screw Ø 7.2 ◊ 35 mm, can+fen	
VFS-7240-RF2	VERTICALE Mono Reduction Screw Ø 7.2 ◊ 40 mm, can+fen	
VFS-7245-RF2	VERTICALE Mono Reduction Screw Ø 7.2 ◊ 45 mm, can+fen	
VFS-7250-RF2	VERTICALE Mono Reduction Screw Ø 7.2 ◊ 50 mm, can+fen	
VFS-7255-RF2	VERTICALE Mono Reduction Screw Ø 7.2 ◊ 55 mm, can+fen	
VFS-7260-RF2	VERTICALE Mono Reduction Screw Ø 7.2 ◊ 60 mm, can+fen	
VFS-7270-RF2	VERTICALE Mono Reduction Screw Ø 7.2 ◊ 70 mm, can+fen	
VFS-7280-RF2	VERTICALE Mono Reduction Screw Ø 7.2 ◊ 80 mm, can+fen	

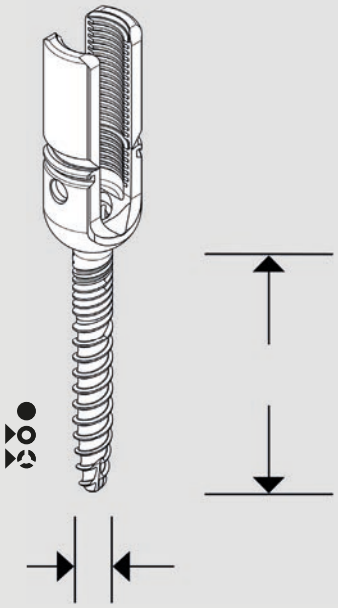
System:
VERTICALE

Implant type:
Pedicle screw

Configuration:
Monoaxial, reduction, cannulated and fenestrated shaft

Material:
Ti6Al4V ELI

All articles are also available as a sterile variant.
The article number is then preceded by the prefix S-.



D30008
D30000

VERTICALE® Implants

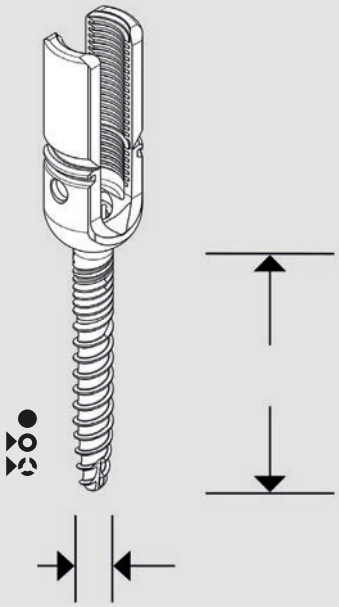
System:
VERTICALE

Implant type:
Pedicle screw

Configuration:
Monoaxial, reduction, cannulated and fenestrated shaft

Material:
Ti6Al4V ELI

All articles are also available as a sterile variant.
The article number is then preceded by the prefix S-.



D30008
D30000

Article number	Description	Illustration
VFS-8235-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 35 mm, can+fen	
VFS-8240-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 40 mm, can+fen	
VFS-8245-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 45 mm, can+fen	
VFS-8250-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 50 mm, can+fen	
VFS-8255-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 55 mm, can+fen	
VFS-8260-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 60 mm, can+fen	
VFS-8270-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 70 mm, can+fen	
VFS-8280-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 80 mm, can+fen	
VFS-8290-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 90 mm, can+fen	
VFS-8210-RF2	VERTICALE Mono Reduction Screw Ø 8.2 × 100 mm, can+fen	
VFS-9235-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 35 mm, can+fen	
VFS-9240-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 40 mm, can+fen	
VFS-9245-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 45 mm, can+fen	
VFS-9250-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 50 mm, can+fen	
VFS-9255-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 55 mm, can+fen	
VFS-9260-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 60 mm, can+fen	
VFS-9270-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 70 mm, can+fen	
VFS-9280-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 80 mm, can+fen	
VFS-9290-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 90 mm, can+fen	
VFS-9210-RF2	VERTICALE Mono Reduction Screw Ø 9.2 × 100 mm, can+fen	
VFS-0235-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 35 mm, can+fen	
VFS-0240-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 40 mm, can+fen	
VFS-0245-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 45 mm, can+fen	
VFS-0250-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 50 mm, can+fen	
VFS-0255-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 55 mm, can+fen	
VFS-0260-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 60 mm, can+fen	
VFS-0270-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 70 mm, can+fen	
VFS-0280-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 80 mm, can+fen	
VFS-0290-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 90 mm, can+fen	
VFS-0210-RF2	VERTICALE Mono Reduction Screw Ø 10.2 × 100 mm, can+fen	

Article number	Description	Illustration
VUS-5235-RF2	VERTICALE Uni Reduction Screw Ø 5.2 ◊ 35 mm, can+fen	
VUS-5240-RF2	VERTICALE Uni Reduction Screw Ø 5.2 ◊ 40 mm, can+fen	
VUS-5245-RF2	VERTICALE Uni Reduction Screw Ø 5.2 ◊ 45 mm, can+fen	
VUS-5250-RF2	VERTICALE Uni Reduction Screw Ø 5.2 ◊ 50 mm, can+fen	
VUS-5255-RF2	VERTICALE Uni Reduction Screw Ø 5.2 ◊ 55 mm, can+fen	
VUS-5260-RF2	VERTICALE Uni Reduction Screw Ø 5.2 ◊ 60 mm, can+fen	
VUS-6235-RF2	VERTICALE Uni Reduction Screw Ø 6.2 ◊ 35 mm, can+fen	
VUS-6240-RF2	VERTICALE Uni Reduction Screw Ø 6.2 ◊ 40 mm, can+fen	
VUS-6245-RF2	VERTICALE Uni Reduction Screw Ø 6.2 ◊ 45 mm, can+fen	
VUS-6250-RF2	VERTICALE Uni Reduction Screw Ø 6.2 ◊ 50 mm, can+fen	
VUS-6255-RF2	VERTICALE Uni Reduction Screw Ø 6.2 ◊ 55 mm, can+fen	
VUS-6260-RF2	VERTICALE Uni Reduction Screw Ø 6.2 ◊ 60 mm, can+fen	
VUS-7235-RF2	VERTICALE Uni Reduction Screw Ø 7.2 ◊ 35 mm, can+fen	
VUS-7240-RF2	VERTICALE Uni Reduction Screw Ø 7.2 ◊ 40 mm, can+fen	
VUS-7245-RF2	VERTICALE Uni Reduction Screw Ø 7.2 ◊ 45 mm, can+fen	
VUS-7250-RF2	VERTICALE Uni Reduction Screw Ø 7.2 ◊ 50 mm, can+fen	
VUS-7255-RF2	VERTICALE Uni Reduction Screw Ø 7.2 ◊ 55 mm, can+fen	
VUS-7260-RF2	VERTICALE Uni Reduction Screw Ø 7.2 ◊ 60 mm, can+fen	
VUS-7270-RF2	VERTICALE Uni Reduction Screw Ø 7.2 ◊ 70 mm, can+fen	
VUS-7280-RF2	VERTICALE Uni Reduction Screw Ø 7.2 ◊ 80 mm, can+fen	

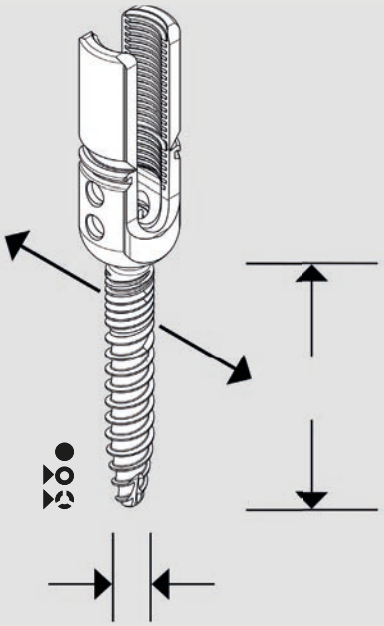
System:
VERTICALE

Implant type:
Pedicle screw

Configuration:
Uniplanar, reduction, cannulated and fenestrated shaft

Material:
Ti6Al4V ELI

All articles are also available as a sterile variant.
The article number is then preceded by the prefix S-.



D30008
D30000

VERTICALE® Implants

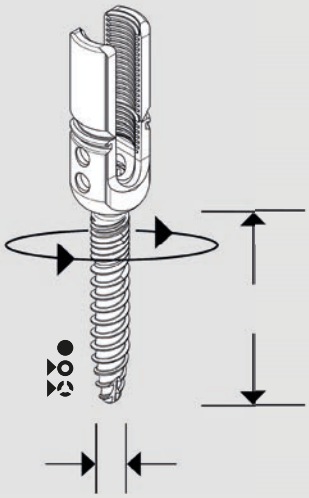
System:
VERTICALE

Implant type:
Pedicle screw

Configuration:
Polyaxial ST, reduction, cannulated and fenestrated shaft

Material:
Ti6Al4V ELI

All articles are also available as a sterile variant.
The article number is then preceded by the prefix S-.



D30008
D30000

Article number	Description	Illustration
VPS-8235-RF3	VERTICALE Reduction Screw ST Ø 8.2 ◊ 35 mm, can+fen	
VPS-8240-RF3	VERTICALE Reduction Screw ST Ø 8.2 ◊ 40 mm, can+fen	
VPS-8245-RF3	VERTICALE Reduction Screw ST Ø 8.2 ◊ 45 mm, can+fen	
VPS-8250-RF3	VERTICALE Reduction Screw ST Ø 8.2 ◊ 50 mm, can+fen	
VPS-8255-RF3	VERTICALE Reduction Screw ST Ø 8.2 ◊ 55 mm, can+fen	
VPS-8260-RF3	VERTICALE Reduction Screw ST Ø 8.2 ◊ 60 mm, can+fen	
VPS-9235-RF3	VERTICALE Reduction Screw ST Ø 9.2 ◊ 35 mm, can+fen	
VPS-9240-RF3	VERTICALE Reduction Screw ST Ø 9.2 ◊ 40 mm, can+fen	
VPS-9245-RF3	VERTICALE Reduction Screw ST Ø 9.2 ◊ 45 mm, can+fen	
VPS-9250-RF3	VERTICALE Reduction Screw ST Ø 9.2 ◊ 50 mm, can+fen	
VPS-9255-RF3	VERTICALE Reduction Screw ST Ø 9.2 ◊ 55 mm, can+fen	
VPS-9260-RF3	VERTICALE Reduction Screw ST Ø 9.2 ◊ 60 mm, can+fen	
VPS-0235-RF3	VERTICALE Reduction Screw ST Ø 10.2 ◊ 35 mm, can+fen	
VPS-0240-RF3	VERTICALE Reduction Screw ST Ø 10.2 ◊ 40 mm, can+fen	
VPS-0245-RF3	VERTICALE Reduction Screw ST Ø 10.2 ◊ 45 mm, can+fen	
VPS-0250-RF3	VERTICALE Reduction Screw ST Ø 10.2 ◊ 50 mm, can+fen	
VPS-0255-RF3	VERTICALE Reduction Screw ST Ø 10.2 ◊ 55 mm, can+fen	
VPS-0260-RF3	VERTICALE Reduction Screw ST Ø 10.2 ◊ 60 mm, can+fen	

VERTICALE® Implants

Article number	Description	Illustration
VIS-8270-RF2	VERTICALE Iliac Reduction Screw Ø 8.2 ◊ 70 mm, can+fen	
VIS-8280-RF2	VERTICALE Iliac Reduction Screw Ø 8.2 ◊ 80 mm, can+fen	
VIS-8290-RF2	VERTICALE Iliac Reduction Screw Ø 8.2 ◊ 90 mm, can+fen	
VIS-8210-RF2	VERTICALE Iliac Reduction Screw Ø 8.2 ◊ 100 mm, can+fen	
VIS-9270-RF2	VERTICALE Iliac Reduction Screw Ø 9.2 ◊ 70 mm, can+fen	
VIS-9280-RF2	VERTICALE Iliac Reduction Screw Ø 9.2 ◊ 80 mm, can+fen	
VIS-9290-RF2	VERTICALE Iliac Reduction Screw Ø 9.2 ◊ 90 mm, can+fen	
VIS-9210-RF2	VERTICALE Iliac Reduction Screw Ø 9.2 ◊ 100 mm, can+fen	
VIS-0270-RF2	VERTICALE Iliac Reduction Screw Ø 10.2 ◊ 70 mm, can+fen	
VIS-0280-RF2	VERTICALE Iliac Reduction Screw Ø 10.2 ◊ 80 mm, can+fen	
VIS-0290-RF2	VERTICALE Iliac Reduction Screw Ø 10.2 ◊ 90 mm, can+fen	
VIS-0210-RF2	VERTICALE Iliac Reduction Screw Ø 10.2 ◊ 100 mm, can+fen	
VMS-2025	VERTICALE Set Screw Torx 25	

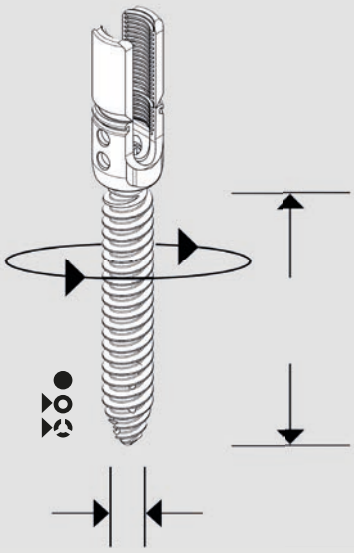
System:
VERTICALE

Implant type:
Iliac screw

Configuration:
Ilium reduction, solid, cannulated and fenestrated shaft

Material:
Ti6Al4V ELI

All articles are also available as a sterile variant.
The article number is then preceded by the prefix S-.



D30008
D30000

VERTICALE® Instruments

Article number	Description	Illustration	Page
VI-1110	VERTICALE Polyaxial Screwdriver		7
VI-1130	VERTICALE Pedicle Screwdriver T25		7
VI-1135	VERTICALE SD Disassembly Tool		see D30030
VI-3010	VERTICALE Cement Delivery Adapter		8, 9, 10, 11
VI-3012	VERTICALE Cement Delivery Adapter		8, 9, 10, 11
VI-3020	VERTICALE Cement Delivery Counter Torque		8, 9, 10, 11
VI-3030	VERTICALE Cement Cleaning Instrument		No image
VI-3050	VERTICALE Centering Tool for the cement delivery adapter		8, 9
VI-3100	VERTICALE Cement Delivery Needle		10
VI-3101	VERTICALE Plunger		11
VI-3300	VERTICALE Cement Applicator, short head		12, 13
VI-3310	VERTICALE Cement Applicator, long head		12, 13
VI-3320	VERTICALE Centering Tool for cement applicator		12, 13

Article number	Description	Illustration	Page
GI-3111	Ratchet T-Handle cannulated		7
GI-3101	T-Handle cannulated		7
GI-3211	Ratchet Handle cannulated		7
GI-3201	Handle cannulated		7
GI-3311	Ratchet Palm Handle cannulated		7
GI-3301	Palm Handle cannulated		7
GI-2111	Ratchet T-Handle, short		7
GI-2101	T-Handle, short		7
GI-2311	Ratchet Palm Handle, short		7
GI-2301	Palm Handle, short		7

VERTICALE® Alphabetical Index

A–Z	Description	Article number	Page
Z	Cement Applicator, short head	VI-3300	12, 13
	Cement Applicator, long head	VI-3310	12
	Cement Cleaning Instrument	VI-3030	No image
	Cement Delivery Adapter	VI-3010	8, 9, 10, 11
	Cement Delivery Adapter	VI-3012	8, 9, 10, 11
	Cement Delivery Counter Torque	VI-3020	8, 9, 10, 11
	Cement Delivery Needle	VI-3100	10
	Centering Tool for cement applicator	VI-3320	8, 9
	Centering Tool for the cement delivery adapter	VI-3050	8, 9
	Handle cannulated	GI-3201	7
P	Palm Handle cannulated	GI-3301	7
	Palm Handle, short	GI-2301	7
	Pedicle Screwdriver T25	VI-1130	7
	Plunger	VI-3101	11
	Polyaxial Screwdriver	VI-1110	7
R	Ratchet Handle cannulated	GI-3211	7
	Ratchet Palm Handle cannulated	GI-3311	7
	Ratchet Palm Handle, short	GI-2311	7
	Ratchet T-Handle cannulated	GI-3111	7
	Ratchet T-Handle, short	GI-2111	7
S	Screwdriver Disassembly Tool	VI-1135	see D30030
T	T-Handle cannulated	GI-3101	7
	T-Handle, short	GI-2101	7

Notes

Notes

www.silony-medical.com

Silony Medical Europe GmbH
Bahnhofstrasse 1
28195 Bremen
Tel. +49-421-246956-0
Fax: +49-421-246956-55

Silony Medical GmbH
Leinfelder Strasse 60
70771 Leinfelden-Echterdingen
Tel +49-711-782525-0
Fax +49-711-782525-11

D30015.d.EN 27.05.2019