



VENUS[®]

Augmentation



Universal cement application






The HumanTech cement application consists of the Bone Filler, that due to the standardized Luer lock connection, can be filled with the Luer lock syringes that are most commonly used in kyphoplasty and vertebroplasty. Furthermore, the system for cement application consists of the Cementadapter CPS, the Cementadapter Inserter, the Cementadapter Extractor and the bone cement BonOs® Inject.

The cement application available in the open VENUS system and in the percutaneous systems VENUS®mini and VENUS®mini 2.0 is used in conjunction with the following pedicle screw types:

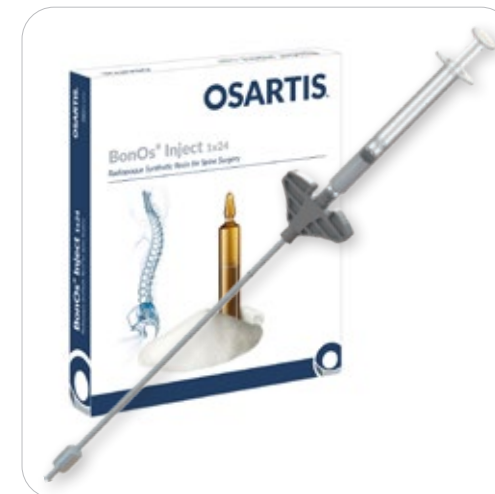
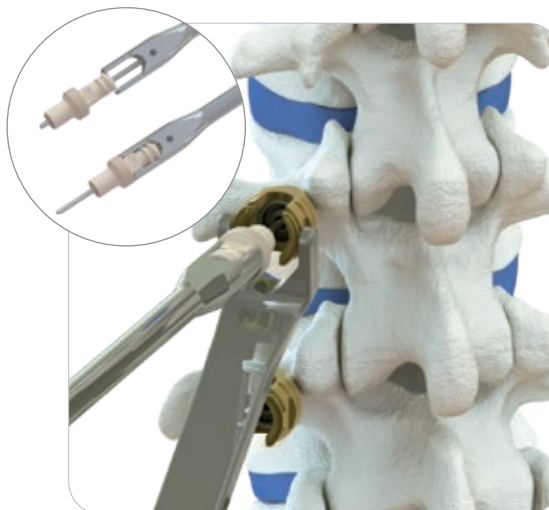
- augmentable Polyaxial Screws with one-start screw thread
- augmentable Polyaxial Screws with double-start screw thread
- augmentable 6T Polyaxial Screws
- augmentable Revision Screws with double-start screw thread
- Revision Screws 6T Screws
- augmentable Monoaxial Screw with double-start screw thread

The special cement adapters ensure problem-free connection of the Bone Filler to the augmentable pedicle screws and injection of the cement.

The ideal complement is the BonOs® Inject bone cement, which has the optimum consistency for use with the Bone Filler and, through the addition of zirconium dioxide (ZrO₂), achieves the optimum displayability in the X-ray image for safe use.

Item no.	Name	Image
1006020600	Cementadapter CPS	
1006020603	Bone Filler	
1006020601	Cementadapter Inserter	
1006020602	Cementadapter Extractor	
3100000500	BonOs® Inject 24g	

Surgical Technique - Cement Applications using the example of VENUS®



Inserting the Cementadapter

Push the Cementadapter in over the guide wire on the Cementadapter Inserter and lock it into the instrument holder. Insert the equipped Cementadapter Inserter into the cannula of the pedicle screw via the guide wire. Turn the inserter half a turn to the left and then screw the Cementadapter fully into the polyaxial head as far as the end position. If the polyaxial head cannot move freely, use the Monoaxial Screw Driver and make turning motions to allow the polyaxial head to be aligned with the screw.

Note:

Never use the Cementadapter Inserter for the alignment of the screw head because, in this case, the guide wire may bend and the Cementadapter cannot be positioned correctly!

Filling the Bone Filler

Mix the bone cement as per the manufacturer's instructions for use and fill the Bone Filler using a syringe.

Recommendation:

Use a moderate to high viscose bone cement with a quick curing time. We recommend the use of BonOs® Inject bone cement, which has the optimum consistency for use with the Bone Filler and, through the addition of zirconium dioxide (ZrO₂), achieves the optimum displayability in the X-ray image for safe use.

Note:

It is recommended to fill the bone filler as soon as possible after mixing the cement.

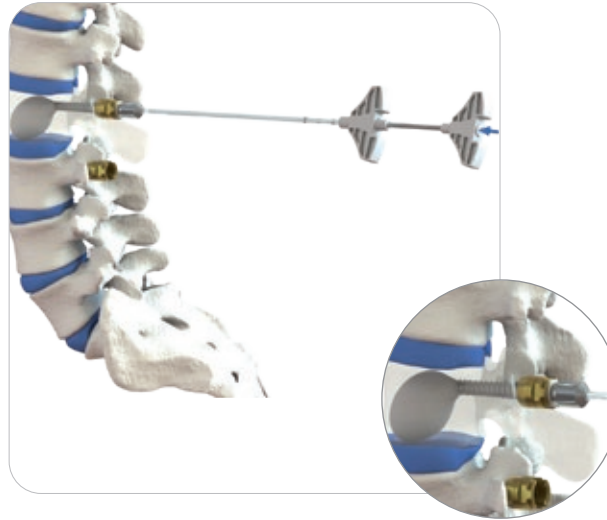


Applying the Bone Filler

Screw the Bone Filler onto the Cementadapter.

Note:

The Bone Filler applied to the Cementadapter must not be used for subsequent correction of the screwing depth of the pedicle screw as this may adversely affect the connection between the instrument and the implant.



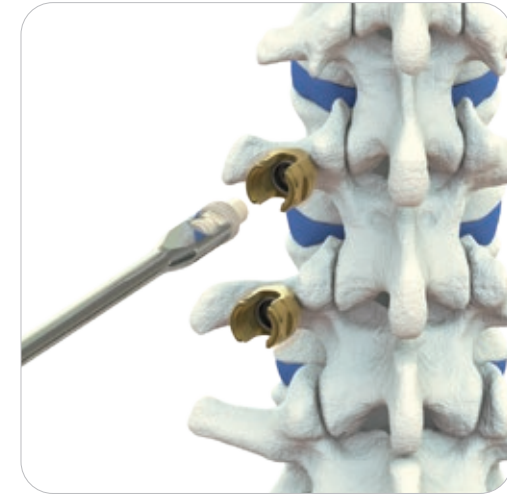
Cement injection

When injecting the cement using the Bone Filler, a predefined amount (1.5 ml) is applied. While doing so, make sure that the injection is carried out evenly and not with too high pressure, to prevent the cement from flowing back.

Only one Bone Filler may be used for each Cementadapter and screw. Premature removal of the Bone Filler or screwing it into the Cementadapter a second time and/or screwing the Cementadapter onto the screw a second time can result in unwanted cement discharge in the region of the polyaxial head.

Note:

Once the cement has been applied, an X-ray control is required to monitor the volume of injected cement.

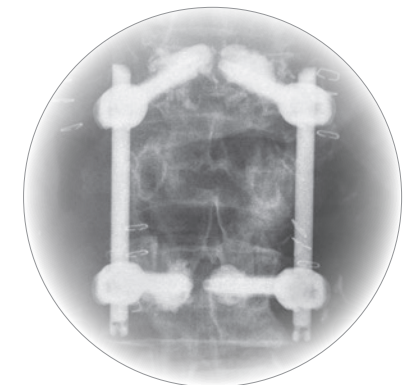


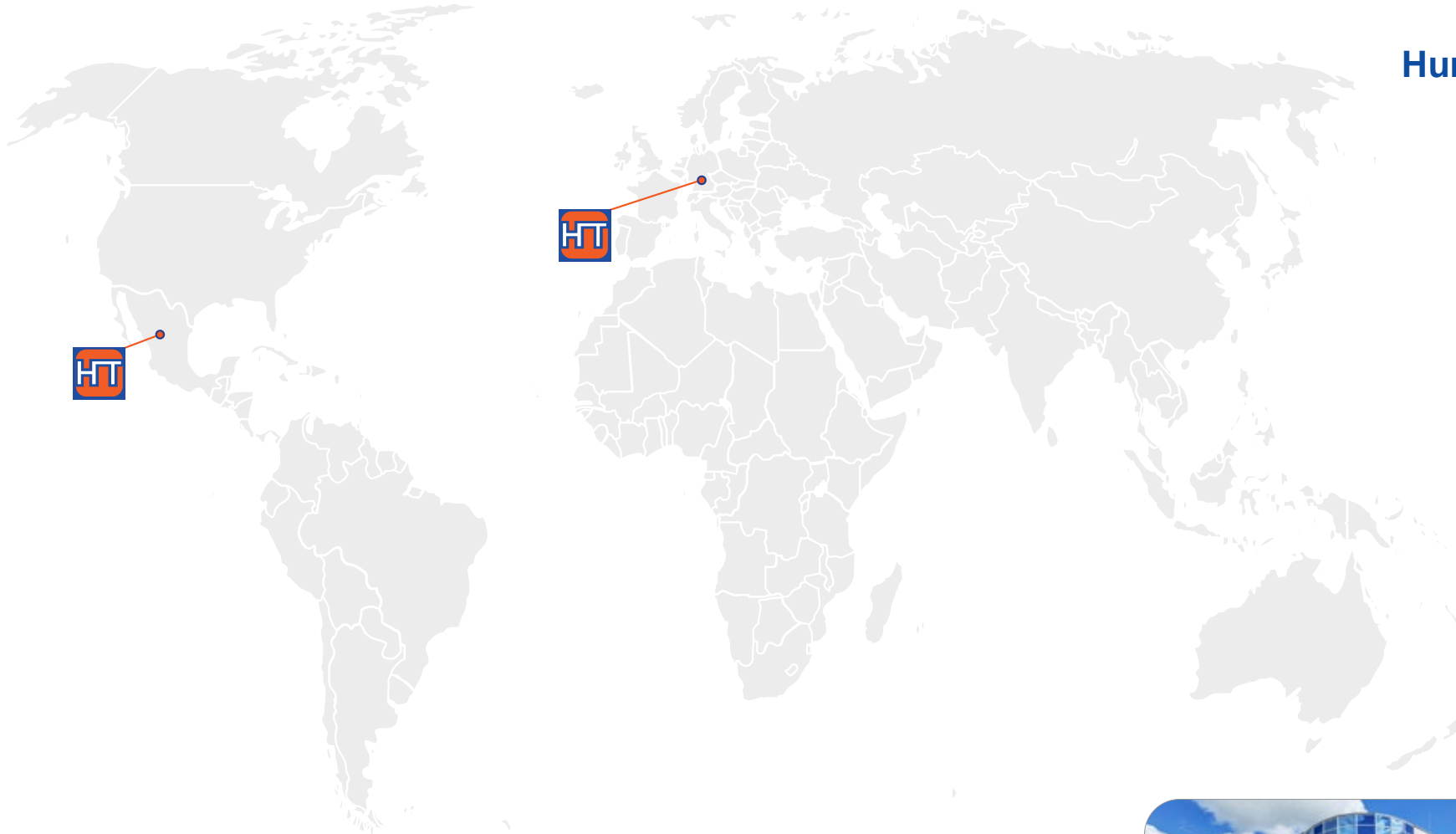
Removing the Cementadapter

Remove the Bone Filler and unscrew the Cementadapter using the Cementadapter Extractor immediately after applying the cement. To prevent the polyaxial head from turning as well, a Rocker from the VENUS® system can be used as a counter-holder.

Note:

The Cementadapter is only intended for single use.





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