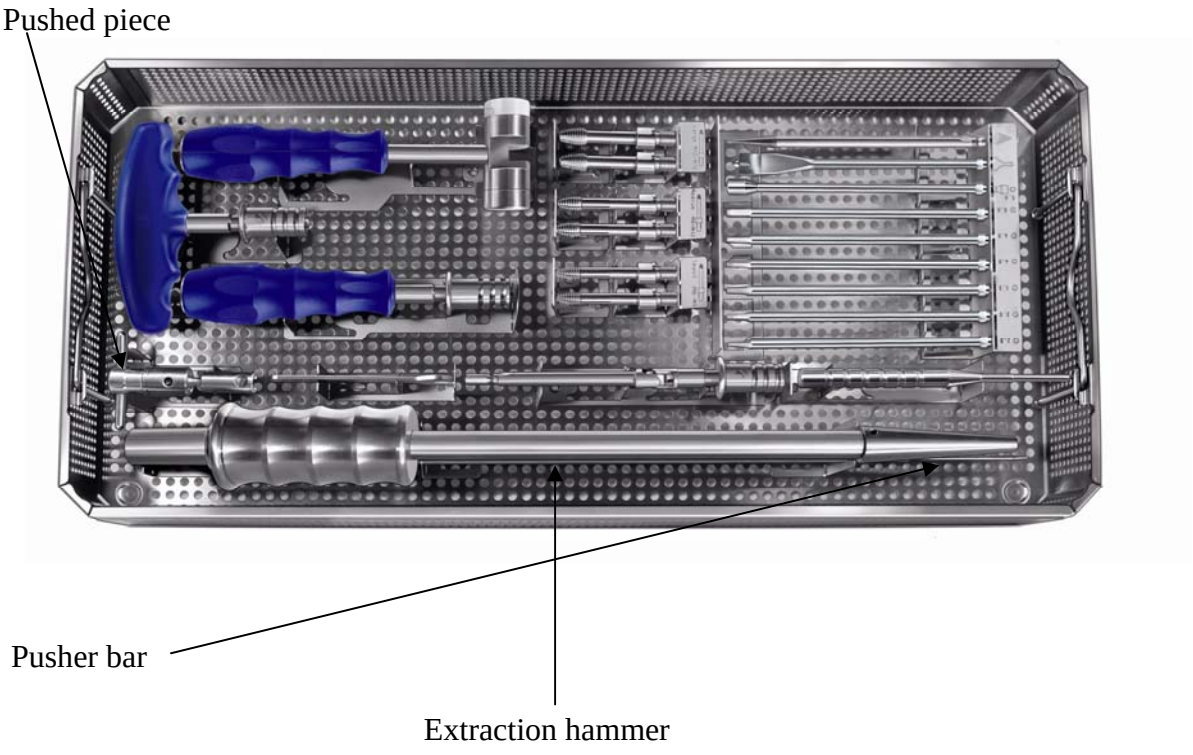
Operating instructions

These operating instructions are important for using the instrument in the most ideal, simple manner. A step-by-step description of how to assemble the instrument, how the type of insert is selected and how it is fixed in the screw and how it is extracted, will follow.

Please read the entire description through and, once you have read it, carry out the steps on the instrument as far as possible.
Please ensure, before you use the instrument on the patient, that you have clearly understood the assembly, selection of the correct insert and fixing.

Assembly:

The main instrument comprises the following parts:



Hold the extraction hammer in your hand. Now insert the pusher bar with the pointed end first through the large opening of the extraction hammer. Leave the upper end of the pusher bar protruding a bit. Now hold the pushed piece in your hand and place it on the pusher bar.

Now bring the two parts together on the extraction hammer and screw the pushed piece in somewhat, in a clockwise direction. Please ensure that the pusher bar does not hang out during the linking-up stage.

With the instrument in a vertical position – the small opening facing downwards –see whether the pusher bar is correctly attached. If the pusher bar almost falls out of the instrument, it hasn't been correctly attached and you have to repeat the aforementioned steps.

Selection of the correct insert:

It is of utmost importance to select the correct size of insert in order to attain the best function of the instrument. An incorrectly-selected size can result in the instrument slipping out of the screw during extraction or that the instrument cannot be attached to the screw.
There are the following ways of selecting the correct size:

- **You know the size of the thread on the screw:**

Then:

Information is written on the inserts. They mean:
GR1 = > for use on M6 to M9 threads
GR2 = > for use on M9 to M12 threads
GR3 = > for use on M12 to M15 threads

Example:

You know that the screw has a thread of M10. The correct insert is thus GR2 (M9 to M12)

- **You don't know the size of the thread on the screw:**

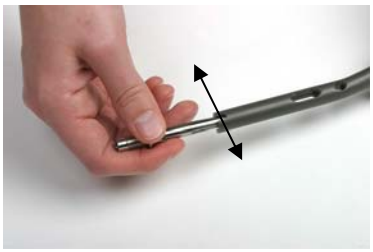
Then :

Hold the GR 3 insert in your hand. Introduce it into the thread of the screw. If you can screw it in, you have the right size.
However, if it cannot be screwed in, take insert GR 2 and carry out as above. If you can screw it in, it fits tightly or has slight play, you have the right size.
If you cannot screw it in, take insert GR 1. This should now be the correct size.

Always ensure: it must always be possible to screw in the insert and it may not have too much play in the thread:

Here is an example:

Insert is too big. It cannot be attached



Insert is too small. It wobbles.

Insert is correct. It can be screwed in and only wobbles slightly

Screwing the correct insert

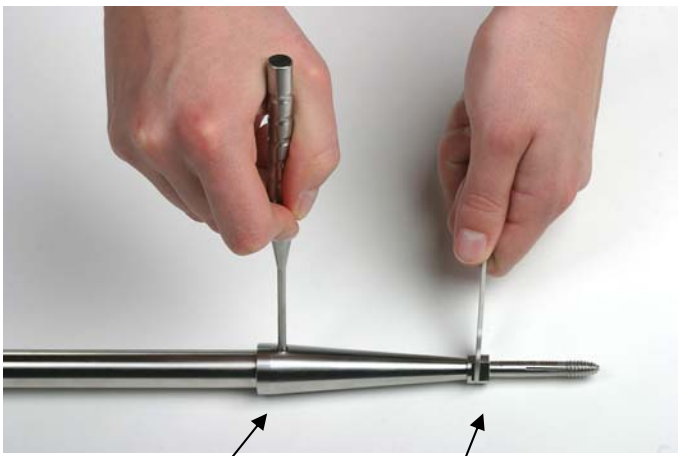
Once the correct insert has been selected, it is screwed into the extraction hammer.
To do this, place the insert with the boring side onto the pusher bar and bring it up to the extraction hammer. Unscrew it as far as possible by turning to the right.

Using the spanner and hemosat included in the set, tighten it slightly. To do this, put the hemosat into the boring supplied for this purpose, and put the spanner on the spanner surfaces of the insert. Now, by turning to the right, you prevent this from it inadvertently coming off.

Tools required:

Hemosat

Wrench



Boring for hemosat

Wrench area

Extracting the screw

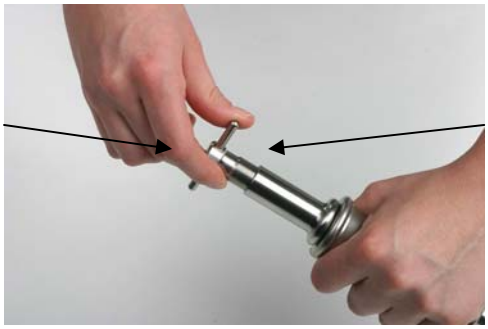
Now attach the extraction hammer to the screw. Due to the elliptic shape of the insert, it is not necessary to align the extraction hammer precisely. By turning to the right of the entire

instrument, screw it into the screw. This should be carried out until the entire threaded portion disappears into the threaded portion of the screw.

The entire threaded portion is in the threaded portion of the screw

Now tighten the insert by turning the pushed piece to the right. The further in you screw it, the stronger the resistance. Please keep on turning it by hand as far as you can.
When one part of the thread is visible on the pushed piece, the extraction hammer is ready to use and well tightened.
If the thread is no longer visible and the instrument moves in the screw, you have to select the next-biggest insert (see above).

Tighten by turning the right



Threaded portion still visible

Once the extraction hammer is fixed tightly and well tightened in the screw, begin with the extraction. First of all, tap lightly about three times against the end of the instrument. A post-tensioning mechanism in the extraction hammer prevents it loosens during any “post-sliding”. As a precaution, however, following the three taps, retighten the insert by turning the pushed piece if possible.
Before you extract the screw entirely, please protect any neighbouring body parts from possible injury which could be caused by the screw sliding out and its edges.
Start with gentle taps and gradually increase the power. As soon as you notice that the screw has loosened, reduce the power so that the entire unit slowly slides out of the body part.

Once the screw has been completely removed, remove it from the extraction hammer as follows:
Unscrew the pushed part in an anti-clockwise direction until it has come out completely, including the pusher bar. Now hold the screw tight and turn the extraction hammer out of the screw by turning it in an anti-clockwise direction.

Then please screw the insert out of the instrument. To do this, carry out the stages for unscrewing but in the reverse order (see chapter above).

Further accessories included in the set:

Removing the closing cap of the screw:

In order for the closing cap frequently found on screws to be easily removed, the set includes special Allen keys and a slit hammer.
Proceed as follows:

- select the correct Allen key for the closing cap
- attach it to the closing cap

- gently tap with the slit hammer on the end of the Allen key. Due to the conical structure, it now sticks in the hexagon socket

- attach the standard or the T-handle to the Allen key
- screw the closing cap out by turning in an anti-clockwise direction

- using the slit of the slit hammer, you can then loosen the closing cap from the Allen key.

T–handle, standard handle, hexagonal bits and cardan extension

In various sizes

With the aid of the various hexagonal bits included in the set, you can also remove the attachment screws. The bits can be simply attached to the handles. Insert the desired bit and release the cover. Now turn the bit in the handle until you can hear it locking into place.
By means of the cardan extension, you can extend the screwdriver: it also enables you to use the screwdriver at a slight angle.

Please note:

Only use the instruments as described here. Please do not misuse any of the various parts for other tasks which could damage the instruments. Please, when using the instrument, take care not to damage the surrounding body parts such as ligaments, tendons, veins or, for example, the patella.

Further informations at:

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