

## CERAMO® GRUMME X Rongeurs

### 1 Disassembly

Figure 1 shows an assembled GRUMME X rongeur. For assembly/disassembly relevant parts are:

- 1: rongeur shaft with fixed handle part
- 2: moving handle part
- 3: slider (connected with rongeur body through jaw hinge)
- 4: hexagon socket screw

Assembly is done as follows:

For disassembly place the rongeur on a solid worktop. Unscrew the hexagon socket screw by turning it clockwise (see fig. 3) using the supplied screwdriver TXW-1X (see fig. 2; alternatively sterilizable screw driver TXW-2X), and remove it from the screw hole (see fig. 3).

Figure 4: With jaw closed, pull the moving handle part downward and separate it from the rongeur body.

Figure 5: With jaw fully open, pull slider towards the handle and thus release the guiding pins of the slider from the guide rail of the shaft.

Figure 6: Fold the slider upward. For reprocessing open the jaw completely and fold up the slider as far as there is no contact between slider and shaft. Figure 6 shows the maximum distance.

**ATTENTION:** The slider is firmly connected to the shaft through the hinge of the jaw. Sliding the slider laterally in open position will result in deformation or breaking of the hinge.



fig. 1

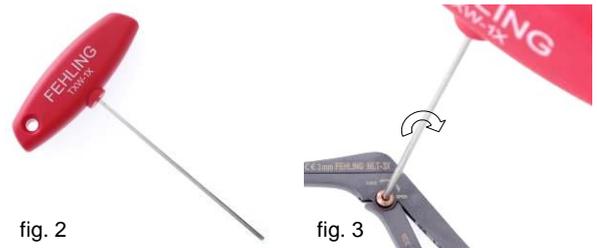


fig. 2

fig. 3



fig. 4



fig. 5

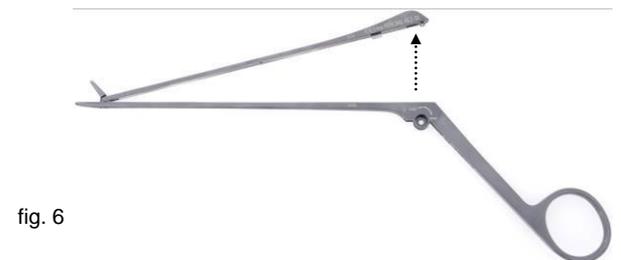


fig. 6

## 2 Assembly

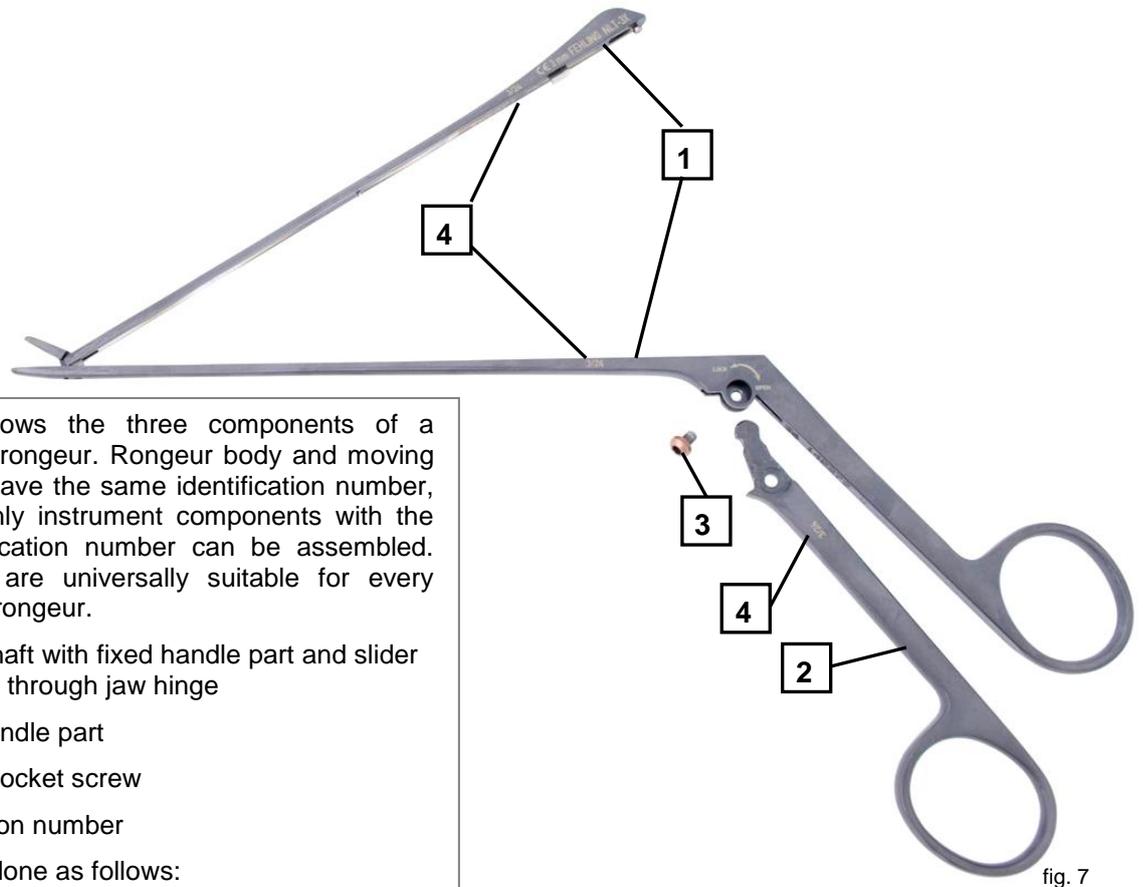


Figure 7 shows the three components of a GRUMME X rongeur. Rongeur body and moving handle part have the same identification number, e.g. 3/24. Only instrument components with the same identification number can be assembled. The screws are universally suitable for every GRUMME X rongeur.

- 1: rongeur shaft with fixed handle part and slider connected through jaw hinge
- 2: moving handle part
- 3. hexagon socket screw
- 4: identification number

Assembly is done as follows:

fig. 7

Figure 8: Move the slider down on the shaft. In so doing the slider is pulled towards the handle thus the jaw opens fully. This is necessary to enable that the guiding pins of the slider meet the guiding rail of the shaft in the correct position (see fig. 9). Note: The proximal guiding pin needs to be attached at the very end of the guiding rail.

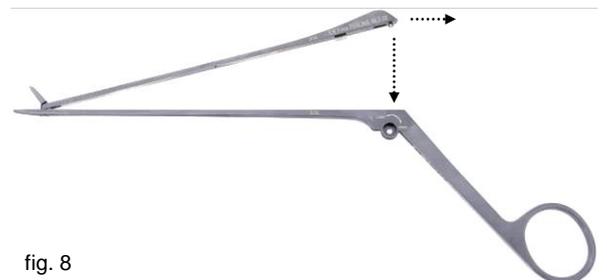


fig. 8



fig. 9

Figure 10: Push the slider down on the shaft and up against towards the jaw (jaw is fully closed).



fig. 10

Figure 11: With jaw still closed, hold the slider and the shaft in this position and slide the movable handle part into the rongeur body. Take care that the holes of the handle part and the shaft are precisely one above the other (see fig. 11a).



fig. 11 a

fig. 11

Figure 12: Then place the screw in the hole and use the screwdriver to turn it counterclockwise without using any force.



fig. 12

Finally check that the rongeur can be moved as intended. If this is the case, the assembly is terminated. Before sterilizing the rongeur, please moisten the proximal and distal hinge parts as well as the friction surfaces of shaft and slider with an approved and appropriate instrument oil to ensure easy movement of the rongeur.

### 3 Warning

Please observe the following to avoid damage to the hexagon socket screws:

The screws have a left-handed thread. So please absolutely observe the direction of rotation when screwing the screws in and out.

Do not use force when screwing the screws in and out. This is absolutely not necessary. Turning the screws by force damages the hexagon socket profile.

Please replace the screw or the screwdriver or have it replaced by the manufacturer immediately, when damage to the hexagon socket profile or the screwdriver profile are visible.

The screwdrivers TXW-1X can be cleaned using cold water and a mild cleaner. They are not suitable for cleaning in hot water and vapor sterilization at 134°C. Sterilizable screwdrivers for use in the operation theatre are available upon request.