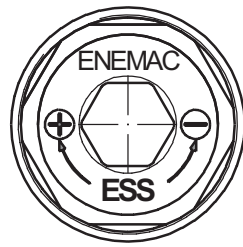


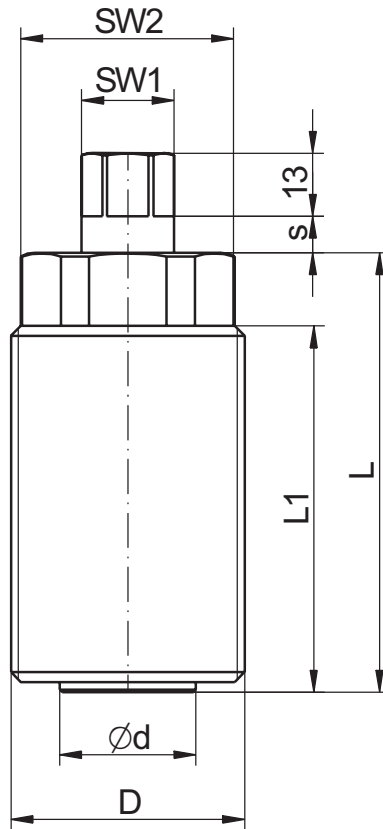
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## 1. Assembly drawing



ESS from above; see the operating hexagon, and the marking for force setting.



## 2. Construction and function

### 2.1 Construction

The clamping screws of type ESS are equipped with a wedge clamping system as force amplifier. The housing of the ESS is made of hardened tempered steel and is already provided with the thread requested by customer. The clamping screw is operated by a centered mounted controls hexagon.

The clamping screws are mainly used in presses, punching machines and machine tools, as well as in fixture and in the equipment design.

### 2.2 Function

The wedge clamping system of the ESS clamping screw is self-locking due to its geometry in each clamping position and provides a clamping stroke of up to 3 mm. Thus, depending on the tightening torque, arbitrarily high clamping forces can be achieved up to the nominal par. Force diagrams are available on request.

Tension-force diagrams are available on request.

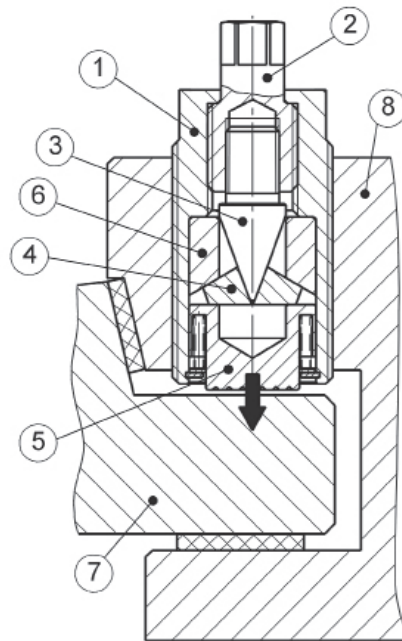
### 3. Usage

#### 3.1 Tightening

The infeed of the clamping screw down to a solid contact with the part to be clamped (7) is the first step, done by manually turning the housing (1) clockwise. Only then the hexagon of actuation spindle (2) should be turned clockwise, thus moving the forces-in key (3) in axial direction and pressing the slide gores (4) in radial direction. The latter motion results in the axial stroke of the thrust piec (5) against the part to be clamped (7). The gripping power is lead over the gore bedding (6) through the housing (1) into the yoke of the clamping devise (8).

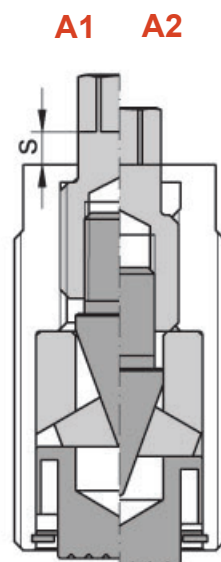
After approximately two turns of the actuation hexagon the travel of the thrust piece will be blocked by an internal positive stop and the torque wrench will disengage although the required clamping force has not been generated; the clamping operation has to be repeated. The clamping travel ,s' is indicated as optional clamping motion control.

**The maximal clamping position is reached when the lower cylindrical portion of the acutation hexagon is plane with the top of the housing (picture A2).**



#### 3.2 Releasing

The release process takes place in reverse order. By turning the operating hexagon to the left until it reaches a rear fixed stop (Fig. A1), the wedge gate retracts and the clamping mechanism is relieved. Helical springs press the thrust piece and the wedge pieces back into the initial position.



A1=Released position    A2=Clamping position

## 4. Maintenance

The clamping screws are permanently lubricated and maintenance-free under normal operating conditions.

## 5. Important note!

**In order to ensure the required clamping force and reliably protect the drive and clamping mechanism against damage from excessive tightening torques, we recommend to use a torque wrench!**  
**->!!The operation of the clamping screw should be carried out exclusively at room temperature!!<-**

## 6. Supplements

### 6.1 Warranty

The warranty period is 12 months starting with date of delivery when used in the intended one-shift operation, or max. 10,000 tensions. The warranty does not cover damage caused by improper operation.

### 6.2 Safety regulations

Regardless of the instructions listed in this manual, the German statutory safety and accident prevention regulations are valid. Any person who is responsible for the operation, maintenance and repair of the clamping screw must have read and understood the operating instructions before commissioning. Repairer of the clamping screw are basically responsible for workplace safety. Following all valid safety and regulatory instructions is a requirement to prevent damages to persons and the product during maintenance and repair work. Proper repair of ENEMAC GmbH products assumes accordingly trained staff. The duty of training is up to the operator or repairer. It is to ensure that the operator and future repairer are properly trained for the product.

### 6.3 Copy right

This operating instructions manual is copyrighted property of ENEMAC GmbH. It is only delivered to our customers and users of our products and is supplied with the clamping screw. Without our explicit approval these documents mustn't be reproduced nor made available to third persons in particular competitive companies.

### 6.4 Spare Parts

Only spare parts, which correspond to the requirements specified by ENEMAC GmbH or supplier are allowed. This is always guaranteed with original spare parts. Improper repairs, as well as incorrect spare parts lead to the exclusion of product liability or warranty. When ordering spare parts it is essential to specify type, size and the identification number of the clamping screw to avoid incorrect deliveries.

### 6.5 Proviso

We reserve the right for technical changes. Changes, errors and misprints shall not justify any titles of indemnity.