

# SWISS+TOOLS

## Operating instructions

### Fine boring head $\varnothing 3-88$ with digital display



## 1. Basic safety information



**Before first use, please read the operating instructions carefully. These provide important safety information and information concerning use and maintenance of the tool.**

This precision boring tool is designed for finishing bores in metallic materials. Specific information on the machining of individual metallic materials is not the subject of these operating instructions. No other application is permitted and could be dangerous. The manufacturer cannot be held responsible for damage or injury caused by improper use. A damaged tool could endanger your safety! Decommission the tool immediately and contact your suppliers. This tool complies with the prescribed safety regulations. Repairs must be undertaken only by trained personnel. Improper repairs can represent a considerable risk for the user. Keep the Operating instructions for use in a safe place for future use.

## 2. Application and operation

The precision boring tools are designed for precision holes from diameter  $\varnothing$  3 – 88.1 mm. For this diameter range Swiss Tools supplies different equipment

$\varnothing$  3 – 19mm boring bars with carbide tips       $\varnothing$  6 – 40mm carbide boring bars  
 $\varnothing$  10 – 88mm steel boring bars       $\varnothing$  30 – 88mm adjustable boring bars  
 $\varnothing$  5.3 – 48.6 pin turning adapter

If the boring depth is increased by reducers, a smaller external reducer diameter must be selected than the machining or interference circle diameter.

## 3. Tool features

- manufactured from hardened and ground alloyed case-hardening steel
- as monobloc- or modular tool available
- for boring bars with shank diameter 16mm and fine boring bridges
- resolution of the digital display 0.001mm (0.002mm in diameter)
- direct measuring system +/- adjustment on a  $\mu$ -basis
- switch on with a magnetic switch (waterproof and wear resistant)
- automatic switch off (battery save mode)
- with inner coolant supply
- boring bar go through the head
- to reach the diameter range there is original SWISSTOOLS equipment necessary

Maximal speed rpm (unbalanced)

a.) validly for the adjustment concentric up to 1 mm in the diameter with SWISSTOOLS equipment.

diameter	max. rpm
3 – 20mm	16.000
20 – 48mm	12.000
48 – 88mm	8.000

b.) validly for the adjustment concentric up to 5 mm in the diameter with SWISSTOOLS equipment.

diameter	max. rpm
3 – 20mm	6.000
20 – 48mm	4.000
48 – 88mm	2.000

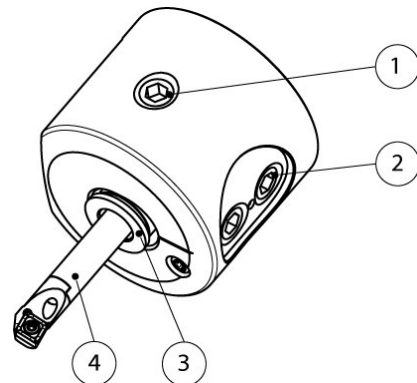
## 4. Balancing

The main body of this series is balanced. The unbalance, which normally occurs when adjusting the boring bar, is reduced to a minimum. For fine balancing is a balancing ring available. No additional balancing surfaces or holes must be added to this boring tool! Max. permitted residual imbalance of the machine manufacturer has to be observed (if necessary complete tools have to be balanced).

## 5. Operation


### Assembling of the boring bar

The boring bar need a shank diameter of 16mm otherwise a reduction sleeve (3) is needed. The boring bars are adjustable in the length. The boring bars have to be clamped with the fastening screws (2). The tightening torques of the fastening screws (2) sees technical data.




### Clamping

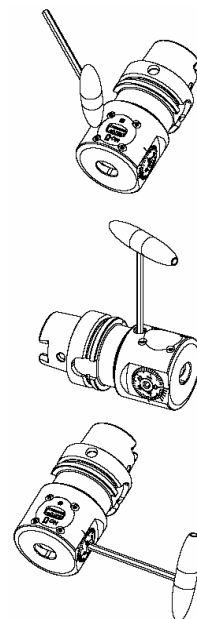
To clamp the adjustment and slider tighten the clamping screw (1). For machining the clamping screw has to be clamped. Before every adjustment of the diameter the screw has to be released. The size of the wrench for the adjustment and clamping is the same.

 To avoid damage to parts of the adjustment mechanism, do not make any diameter adjustments in the clamped state.

Fine adjustment mechanism: The coated scale screw allows a accurate adjustment. The adjustable range is blocked in both directions.

 To avoid damage to parts, never use force when carry out adjustment.

This up-to-date boring head with digital display is provided with a direct measuring system which ensures maximum manufacturing precision. Switch on the measuring system by passing over the magnet / ON symbol with the magnetic end of the hexagonal key handle. In order to operate the boring head optimally and with maximum precision, switch on the measuring system before removing the clamping screw. In this manner you will also include measurement variations which result from the reduction of torque on the clamping mechanism. Now set the desired measurement. The display shows the adjustment of the boring tool on diameter and in millimetres. In order to avoid measurement variations during clamping, turn the scale back by approx. 1/2 of a division. After this the clamping screw has to be tightened again. The measuring system switches off automatically 30 seconds after the last change in setting. When the display shows ,batt', the batteries should be replaced (See 'Changing the batteries in the boring head').



## 6. Service

It's not necessary to grease the tool. Tthe teeth profile has to be cleaned before assembling. Service and repairs will be done in our company.

## 7. Technical Data

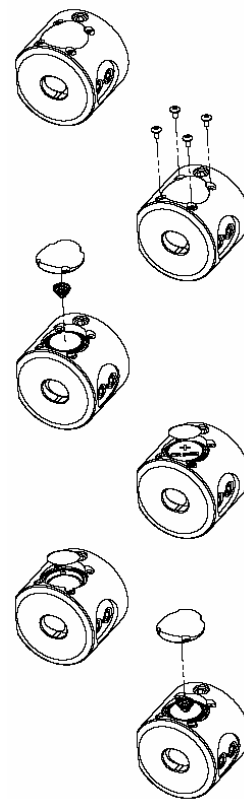
### Diameter adjustment:

- 1 division on the scale:0.01 mm in dia.
- 1 revolution at the dial:0.5 mm in dia.

Position	Description	Tightening torque
1	Clamping screw	8 Nm
2	Fastening screw	10 Nm

## 8. Changing the batteries of the boring head

1. Prepare an SW 2 hexagonal key and two new CR 2430 batteries.
2. Press your thumb on the golden cover and remove all four screws.
3. Release the cover so that it slides up vertically.
4. Put the cover and the spring to one side.
5. Turn the boring head around; light tapping of the tool will release the batteries.
6. After turning the boring head back again please make sure that the white plastic ring and the O-ring have not tilted outwards and that the contact sheet metal is positioned in the centre.
7. Insert the new batteries in such a way that the + sign always is on the upper side.
8. Press the upper contact sheet metal back and place the spring with the smaller end downwards in the centre.
9. Place the battery cover vertically from above onto the spring which must remain in the centre of the cover. Make sure the recesses for the screws are aligned correctly in relation to each other.
10. While holding the cover, insert the four screws tightening them carefully diagonally opposite.



### further information

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SWISSTOOLS tools are subject to constant further technical development. You can obtain up-to-date information from our product catalogue as well as on our website.

We reserve the right to technical changes.

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