# Product flyer
# ZSH

## semi-automatic
## center hole grinding machine

ZAMAG

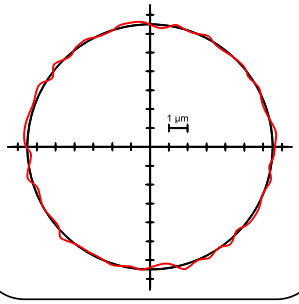
***ZSH-M6-1000-SP180***
***semi-automatic***
***center hole grinding machine***
***with precision chuck ø180mm***

***swiss technology***

# Center hole grinding machine ZSH

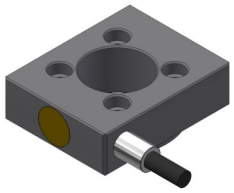
**The characteristics of the semi-automatic center hole grinding machine ZSH:**

**Highest precision:**
The machine achieves a concentricity accuracy of 0.001mm




**Ideal for individual parts and small series:**
When grinding with the manual center hole grinding machine ZSM, most of the steps are carried out by hand. With the ZSH, the operator only clamps the workpiece, aligns it and moves the stroke slide to the correct grinding height. After starting the stroke movement, the ZSH does the rest automatically.

**Sound sensor:**
With the help of the sound sensor, the ZSH is able to move independently to the center hole that needs to be ground. The sensor also recognizes when the center hole has been ground clean all around and ends the grinding process automatically.



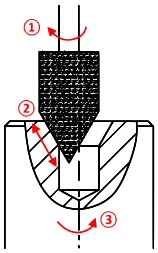
**Manual or controlled:**
The ZSH has the same functions as the manual machine ZSM. Individual parts can therefore completely be ground manually.
In addition, the ZSH has a small PLC control for semi-automatic grinding. The grinding parameters are entered via a 7" touch panel.

**Precision chuck:**
Thanks to our chuck even parts with inaccurate surface can be clamped and aligned.

**With a lot of experience to the optimal result:**

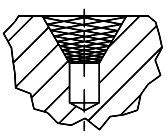
Grinding principle:

1. rotary movement of the grinding wheel
2. stroke movement of the grinding wheel
3. rotating workpiece




Result:

A cross hatch pattern with oil pockets that provides optimum oil retention in the center holes



# Differences and advantages of ZSH

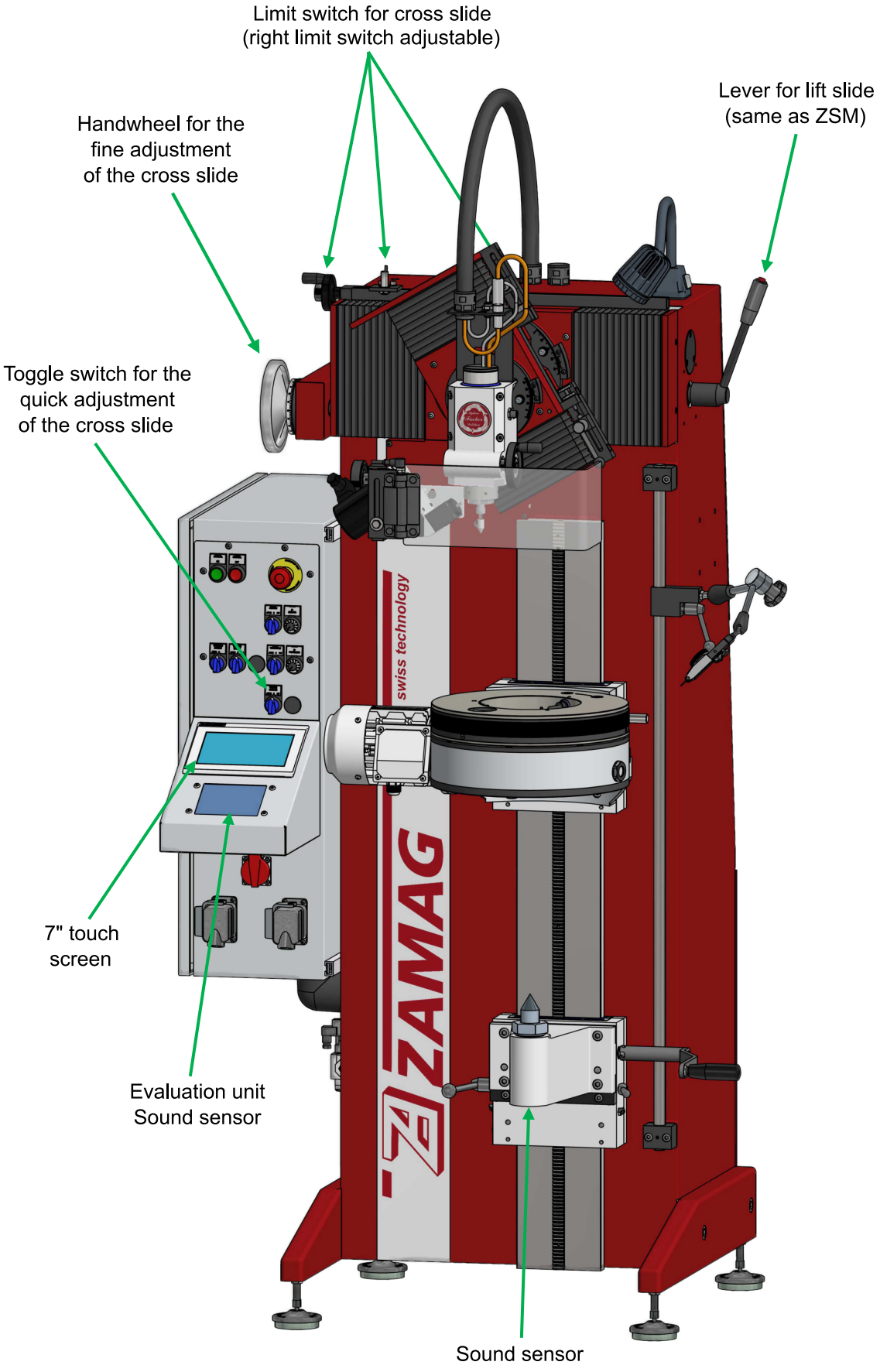
**Differences between ZSH and ZSM:**

(ZSH: semi-automatic center hole grinding machine / ZSM: manual center hole grinding machine)

- The ZSH has a control panel with a small control system.
- In addition to the mechanical cross adjustment (with the handwheel), the cross slide can also be moved by motor (with a toggle switch).
- The machine is equipped with a fixed and an adjustable limit switch to limit the cross axis so that the grinding position can be approached again.
- The actual grinding process runs automatically. A servomotor is used for the infeed. The approach to the grinding edge (automatically by means of a sound sensor), the infeed during grinding, the sparking out and moving away can be programmed via the 7" touchscreen.
- A sound sensor system monitors the contact of the grinding pin with the workpiece and sends a signal to the control system as soon as the center hole has been ground all around.

**Advantages:**

- The ZSH can be used for completely manual or semi-automatic grinding:
  -> manual (like ZSM): for individual parts
  -> semi-automatic: for small to large series
- Thanks to the sound sensor system, the operator can carry out other works during the grinding process (e.g. preparing the next shaft or grinding on another machine).
- The sound sensor system reduces the grinding time.
- Ideal for series production: Thanks to the adjustable limit switch of the cross slide and the mechanical stop of the stroke slide, it is easy to return to the correct grinding position and start the automatic grinding process.
- Every ZSM equipment variant can be configured as a ZSH.


Limit switch for cross slide
(right limit switch adjustable)
Lever for lift slide
(same as ZSM)
Handwheel for the
fine adjustment
of the cross slide
Toggle switch for the
quick adjustment
of the cross slide
swiss technology
ZAMAG
7" touch
screen
Evaluation unit
Sound sensor
Sound sensor

# Function comparison ZSM-ZSH-ZSA

| | ZSM | ZSH | ZSA |
|---|---|---|---|
| | Version **Manual** | Version **semi-automatic** | Version **automatic** |
| Application | Single parts | Single parts<br>Smaller series | Bigger series |
| Control panel with touch screen | x | 7" | 12" |
| Motorized cross adjustment | only with option B | ✓ | ✓ |
| GAP sound sensor | x | ✓ | ✓ |
| Workpiece height measurement with laser | x | x | ✓ |
| Dressing | manual | manual | automatic |
| Setting up new grinding pin | manual | manual | Process guided via control panel |
| Set up 1st workpiece of a new series | manual | manual | Process guided via control panel |
| Data input<br>1. workpiece of a new series<br>(in control panel) | x | Selection of grinding process | Workpiece data input<br>Grinding data input<br>Selection of grinding process |
| Grinding process: | manual | semi-automatic | automatic |
| Approach to workpiece (cross slide) | manual | manual | automatic |
| Moving into workpiece (stroke slide) | manual | manual | automatic |
| Touch workpiece (center hole) | manual | automatic | automatic |
| Grinding | manual | automatic | automatic |
| Grinding out | manual | automatic | automatic |
| Lifting grinding pin after grinding | manual | automatic | automatic |
| Move back stroke slide | manual | semi-automatic | automatic |

## Contact us!

We are happy to advise you competently,
help you to find a solution for your task
and equip a center hole grinding machine for you -
according to your needs and your workpieces.

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