Precision meets Motion

Manual

EWS . Gear hobber BG40

EWS Tool Technologies

EWS . Gear hobber

Manual

1. Identification

Type: EWS . Gear hobber

Description: Milling head for side milling cutters with adjustable angular cutter spindle

Manufacturer:
EWS Weigele GmbH & Co. KG
Maybachstr. 1
73066 Uhingen
Tel. +49 (0)7161 93040-100
www.ews-tools.de

2. Product specification

2.1. Functions and scope of applications

Here we have a driven tool which facilitates an economic production of external teeth on CNC lathes. The milling head which is continuously adjustable and can be pivoted around the shaft axis allows the production of external teeth with different pressure angles as well as the production of slots, slants or grooves with any angle. The angular adjustment is effected through a reduction gear unit. Due to the modular design of the milling head, the spindle unit can be easily exchanged, which allows the use of a number of hob cutter diameters.

2.2. Technical data

Dimensions:	see print (machine-specific)
Max. RPM:	see print
Max. torque on drive:	see print
Driving reduction:	3:1
Direction of driving torque:	universal
Angular adjustment:	continuous 360°
Angular motion gearing:	10:1
Diameter of cutter spindle:	Ø08 to Ø32 (machine-specific)
Types of milling cutters:	Milling, hob or module cutters
Diameter of cutter:	see design (machine-specific)
Lubrication:	permanent lubrication
Coolant supply:	external coolant only

2.3. Machine requirements

Working area:
To avoid collisions with the turret socket or the housing it is important to have sufficient space when rotating the turret with the EWS . Gear hobber . Depending upon the specific machine model, 1-2 adjacent tool stations might not be able to be used.

Torque requirements:
It is essential that the machine has enough torque to run to cutting tool effectively.

2.4. Safety

Any and all OSHA or other applicable governing body laws must be observed while operating the EWS . Gear hobber .

2.5. Secure disposal

The operator has to comply with the regulations of the environmental protection law.

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3. Operating instructions

3.1. Setup

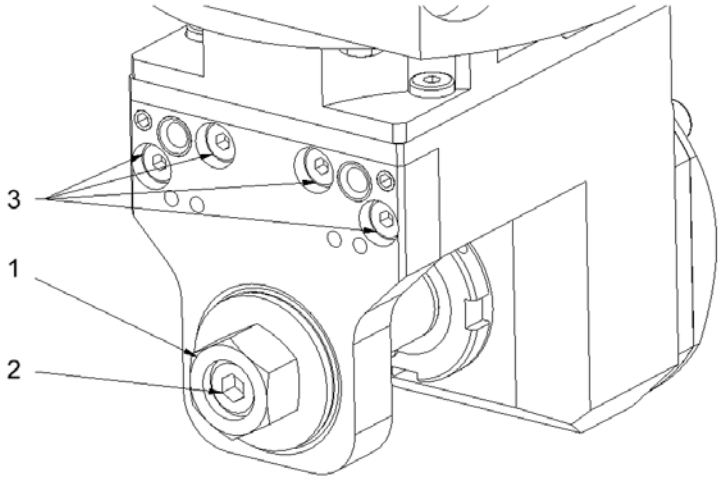
The tool must be mounted on the machine's turret before adjusting the EWS . Gear hobber .
It is important not to damage the O-ring seal at the base of the tool when mounting on the turret.

3.2. How to change milling cutters

The steps for the changing the milling cutter are as follows:

1. Loosen the Nut (Pos.1), prevent the arbor from rotating by holding it steady with the appropriate allen wrench. (Pos.2).

2. Loosen and remove the four cap screws (Pos.3).



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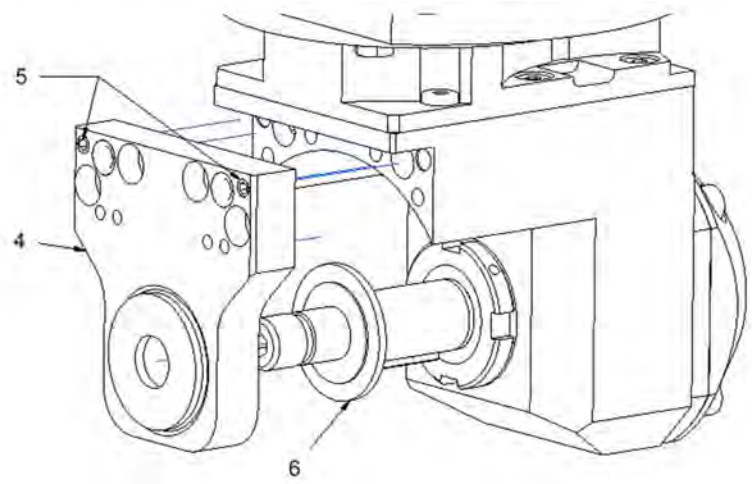
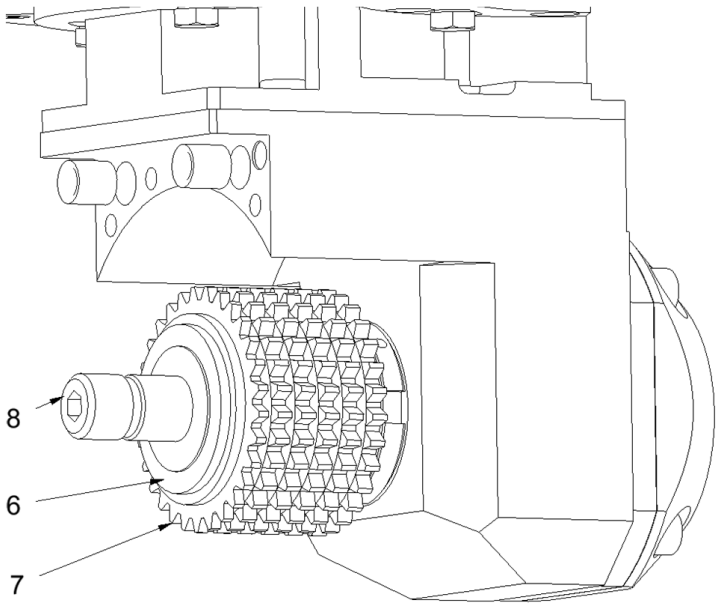
3. Remove the support plate (Pos.4) together with the grooved ball bearing and cutter spindle rings (Pos.6). The 2 set screws (Pos.5) should be used to evenly separate the support plate from the tool body.



4. Mount the milling cutter (Pos.7) with the corresponding cutter spindle ring (Pos.6) onto the mandrel (Pos.8).



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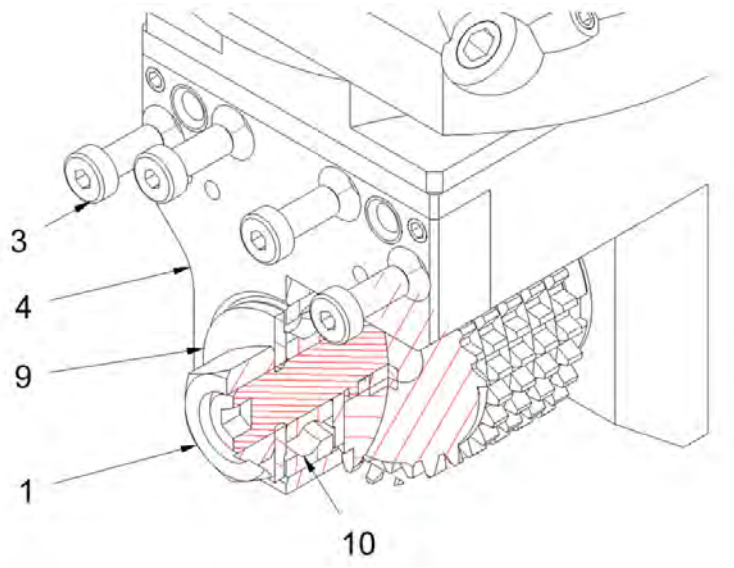
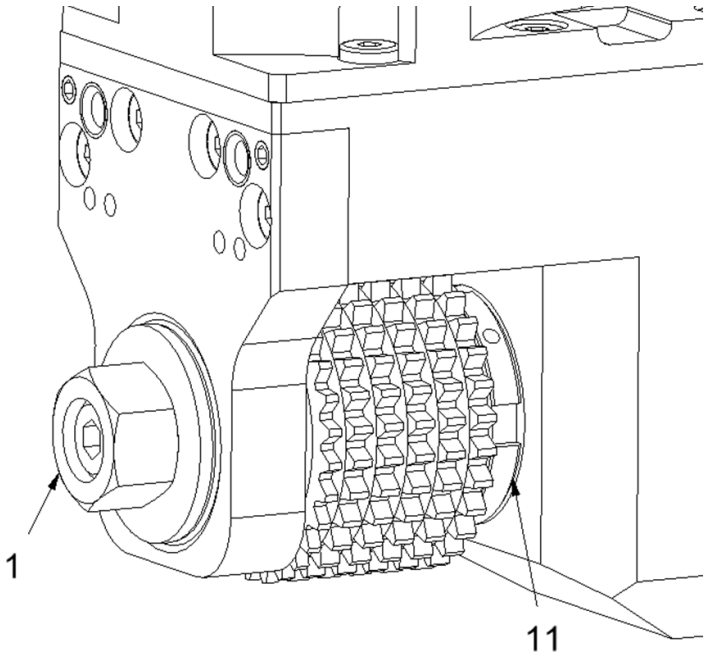
5. After the milling cutter set has been mounted, the support plate (Pos.4) with the disc (Pos. 9) and the grooved ball bearing (Pos.10) has to be installed. The support plate gets tightened by four cap screws (Pos.3). The nut (Pos.1) must be installed finger-tight at this point.



6. Now follows the fine adjustment of the finger-tight nut (Pos.1). This is conducted by adjusting the spanner nut (Pos.11) until the milling cutter has reached the required position. Finally the entire milling cutter set is tightened by the nut (Pos.1) and the spanner nut (Pos.11) is secured by the radial lock screws.



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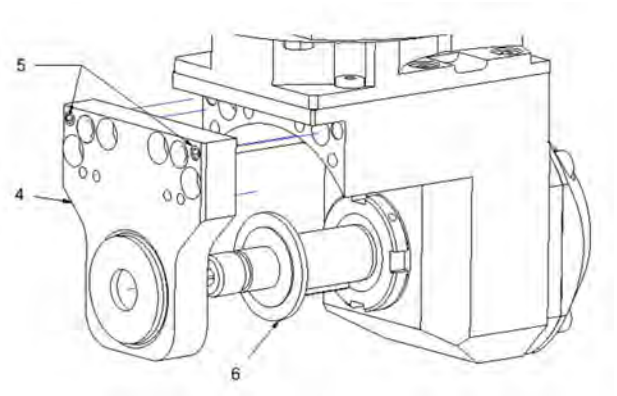
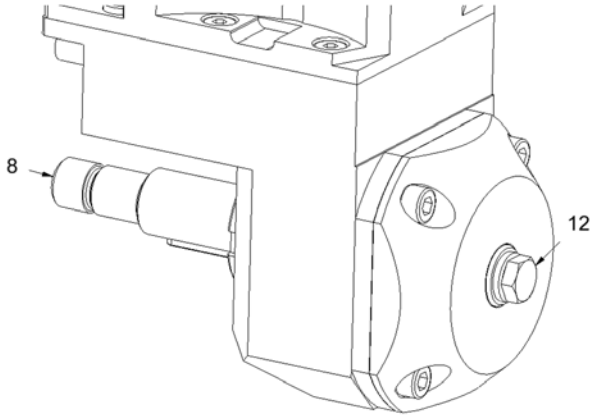
3.3. How to change the cutter arbor

The modular EWS . Gear hobber has interchangeable cutter arbors with different diameters. Use the following procedure to change the arbors:

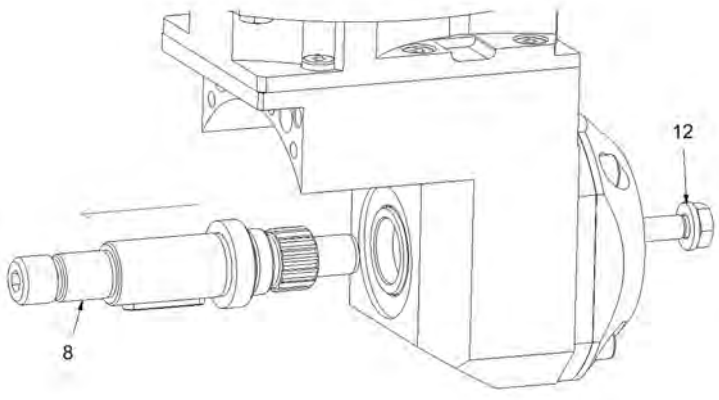
1. Remove the support plate (Pos.4) together with the grooved ball bearing and cutter spindle rings (Pos.6). This operation is similar to changing the milling cutter. (see 0 How to change milling cutters).



2. Loosen the hex screw (Pos.12) on the opposite side of the support plate by retaining the arbor with the appropriate allen wrench at the end of it (Pos. 8).



3. After the removal of the hex screw (Pos.12), pull the milling arbor forward (Pos.8) and replace it with the arbor that you want to use.



4. The reassembly must be conducted in reverse order Steps 3-1.

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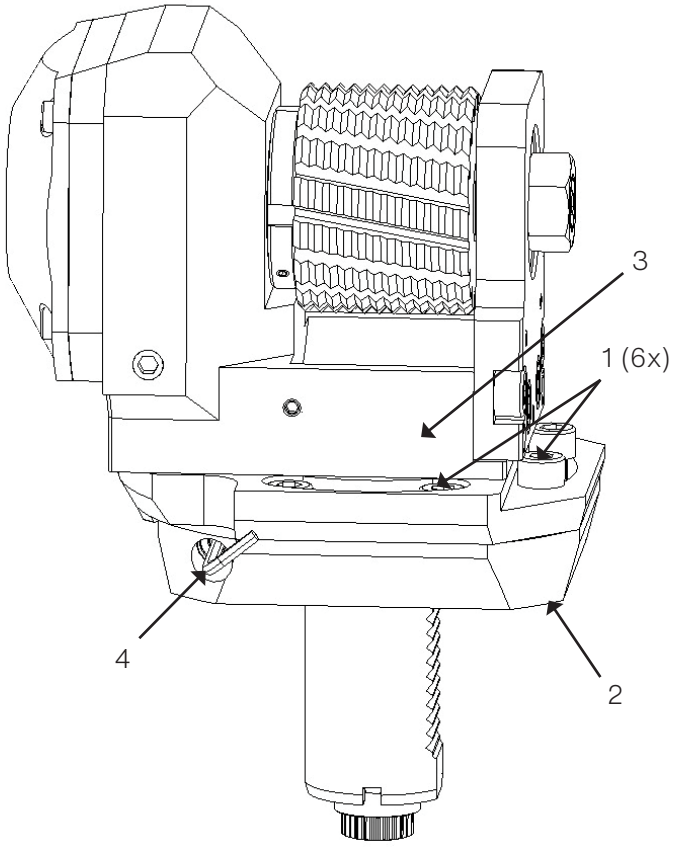
3.4. Adjustment of swivel head

To ensure an optimal hobbing it is necessary to adjust the swivel head corresponding to the pressure angle of the cutter. The following steps must be followed:

1. Loosen the 6 hex screws (Pos.1) that connect the adapter head (Pos.3) with the holder (Pos.2).

2. The torsion angle of the adapter head (Pos.3) can be changed with an allen wrench (Pos.4) at the control gear. For a precise adjustment it is recommended to conduct this on an assembly block or a measuring machine.



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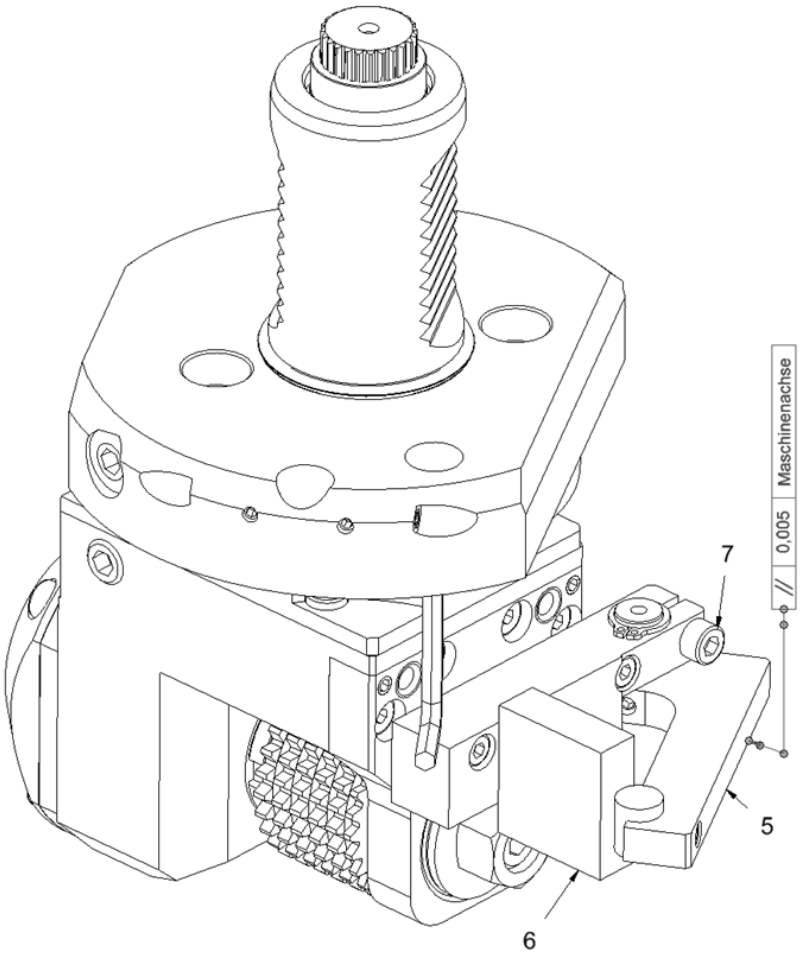
3. The included sine bar (Pos.5) serves as an angle adjustment aid. Definition of the requested angle is determined by the height of the gage block used to set the sine bar (Pos.6) (please refer to the Excel spreadsheet that came with the tool to determine what size of gage block to use for the appropriate angle). Clamp the sine bar (Pos.5) with the gage block (Pos.6) via the cap screw (Pos.7). Finally turn the adapter head until the test surface of the sine bar is parallel to one of the axes of the machine.



4. Tighten the hex screws (Pos.1) after reaching the requested angle. Remove the sine bar (Pos.5) before operating the machine.

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3.5. Max. tightening torque for nut pos. 1

Thread size	Tightening torque max. [Nm]
M8	23
M10	45
M12	80
M16	180
M20	300

→ For tightening torques for screws, see the operating instructions for "driven and static tools"

4. Cleaning and maintenance

4.1. Cleaning

Cleaning with a cloth or a brush is sufficient.

Important: Cleaning with compressed air is not allowed as particles can be blown into the seal surfaces on the tool and cause damage to the gears and bearings. Do not use benzene or in-dustrial washing machines!

4.2. Care

After operating the EWS . Gear hobber it is recommended to lubricate the metallic parts to prevent corrosion.

4.3. Maintenance

An annual inspection is recommended.
The EWS . Gear hobber is permanently lubricated and maintenance free.

5. Guarantee and warranty

The General Terms of Sales and Delivery of the manufacturer apply (see www.ews-tools.de).

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Tooling Systems and Turrets

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