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Manual

EWS.millLine

Date 07.2021

EWS Tool Technologies

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1. Identification

Type: EWS.millLine

Designation: Angular head

Manufacturer: EWS Weigele GmbH & Co. KG

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www.ews-tools.de

2. Product specifications

2.1. Scope of applications

EWS.millLine is primarily used wherever the use of milling centres is dismissed due to complex part geometries. This may include complex milling inside parts or simple boring in a missing machining axis.

We offer a wide range of products for most applications and spare no effort in constantly adding special solutions to increase our product range.

2.2. Technical specifications

Dimensions:	see diagram (machine specific)
Max. rotations:	see diagram
Max. torque at the drive:	see diagram
Drive gear reduction:	see diagram
Drive rotation direction:	dual
Lubricant:	Permanent grease lubrication
Coolant supply:	according to interface via shaft, torque supports or external connection.

2.3. Machine requirements

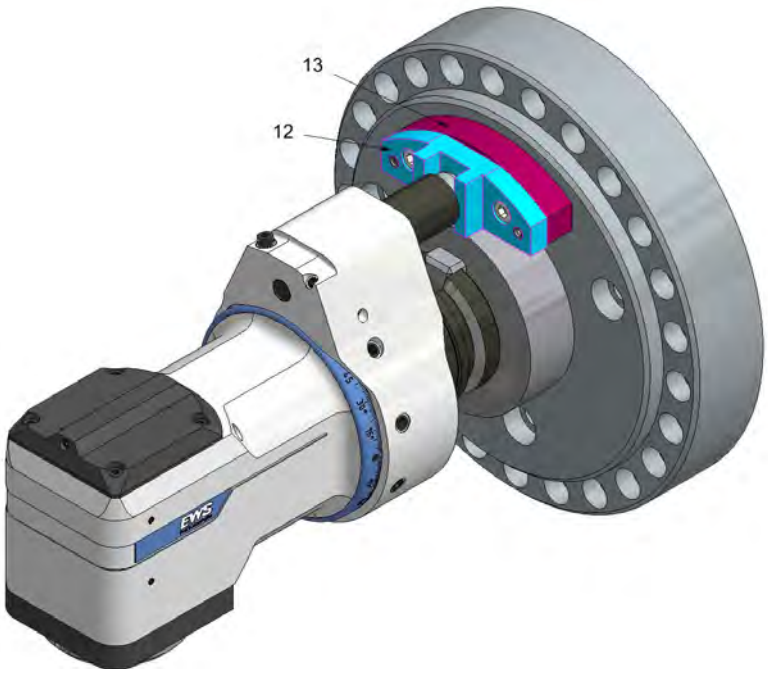
2.3.1. Stop block

The device can only be used on a machining centre in combination with a stop block that has been pre-mounted on the machine (pos. 12).

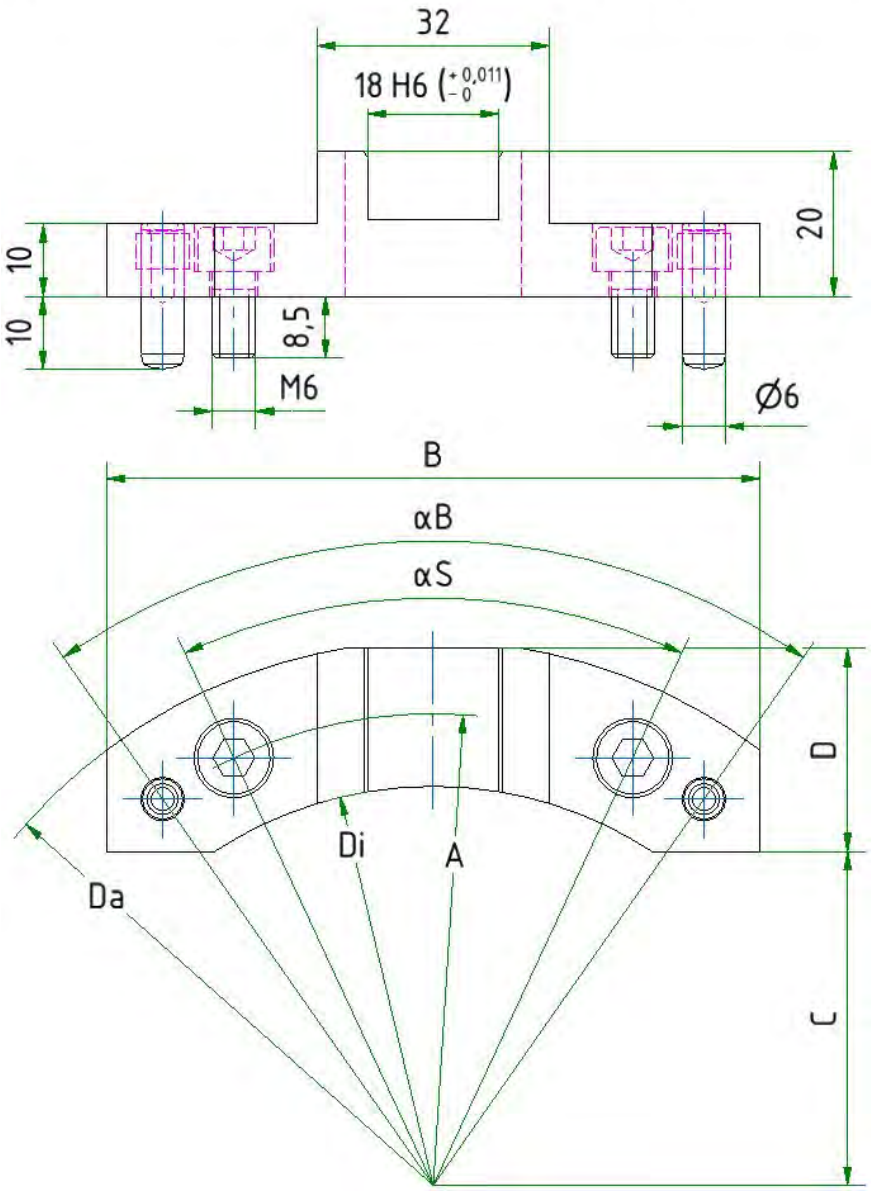
The stop block prevents the entire tool holder from turning while simultaneously defining the precise position of the angle.

If you do not have a stop block, please contact your machine manufacturer to discuss the possibilities of having one retrofitted to your machine.

One such possibility would include the user itself retrofitting an EWS stop block (pos. 12) to the machine. We offer a variety of stop blocks (see right) with various hole arrangements especially for this purpose. In most cases, a suitable distance block (pos. 13) is also required to bridge the specific length between the machine and the EWS stop block.



Variety of stop blocks								
Article	A	B	C	D	Ra	Ri	αB	αS
BG-SB-A065-002	65	90	46	28	R75	R55	70	50
BG-SB-A080-003	80	110	55	34	R90	R70	70	50
BG-SB-A110-002	110	130	88	31	R120	R100	60	40



2.4. Safety

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

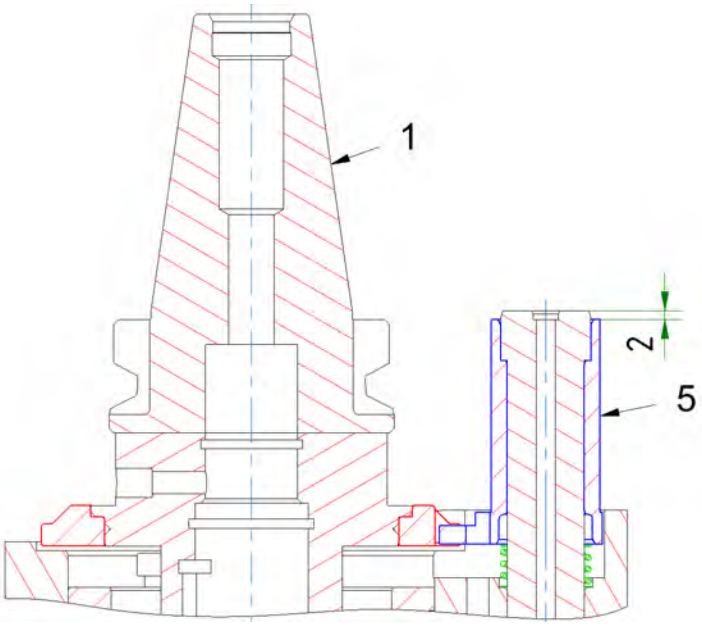
2.5. Secure disposal

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

3. Operation and function

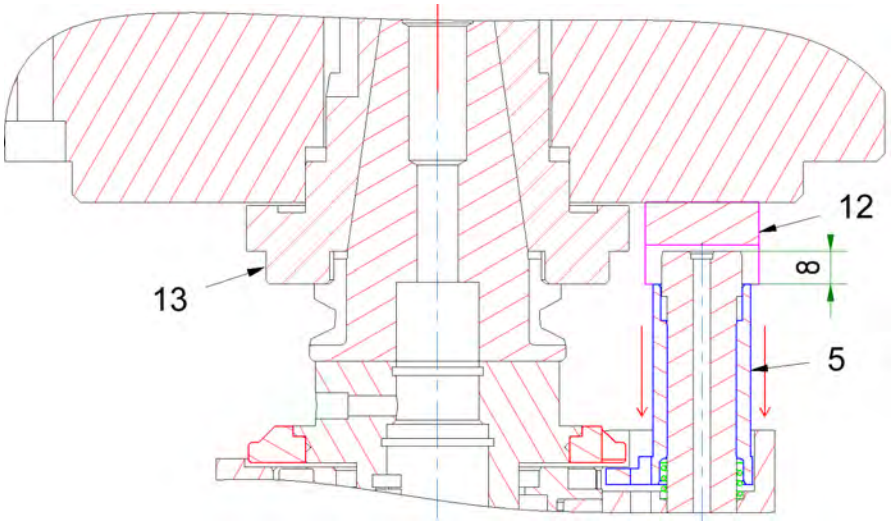
3.1. Drive

The angular heads are positioned and driven in the drive shaft (pos. 1). We offer virtually all tool interfaces available on the market. The light and compact design enables the machine to automatically change the angular heads via the gripper grooves.



3.2. Drive shaft lock

As standard, EWS.millLine features a lock function which fixes the drive shaft (pos. 1) in a specific position outside the machining area. During automatic tool changes in the milling spindle (pos. 13), the sprung lock (pos. 5) is pressed downwards by the stop block (pos. 12). This releases the drive shaft (pos. 1) fixing, and can be driven by the machine.



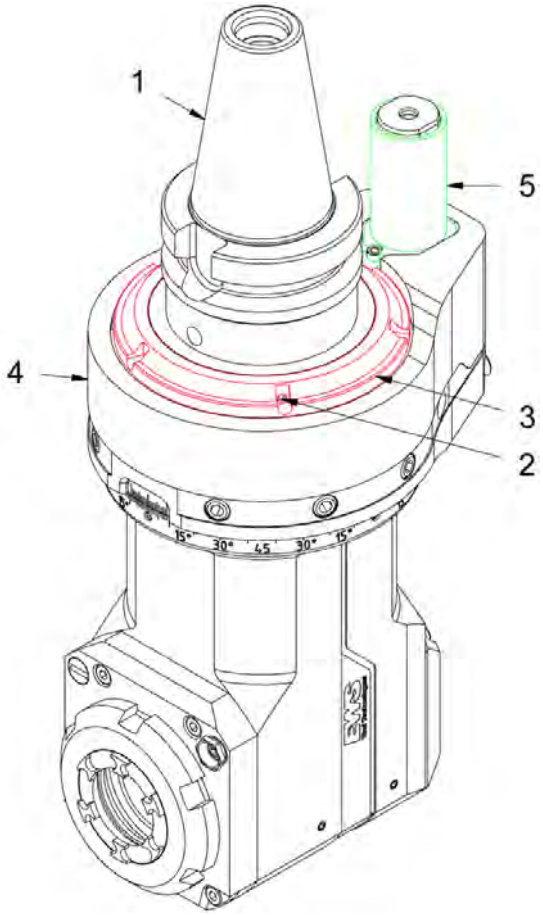
3.3. Adjusting the angle of the drive shaft (pos. 1)

After the five threaded rods (pos. 2) on the group of components have been released, the drive shaft (pos. 1) opposite the locking disk (pos. 3) can be continuously rotated.

The locking disk (pos. 3) defines the angle from the drive shaft (pos. 1) to the torque supports (pos. 4) and the lock (pos. 5). In this way, during automatic tool changes, it is ensured that the position of the drive shaft (pos. 1) always remains in the correct angle above the lock.

Once the adjustment has been made, the five threaded rods (pos. 2) must be tightened up again.

The correct position of the angle depends on the machine and must be adjusted by the customer.

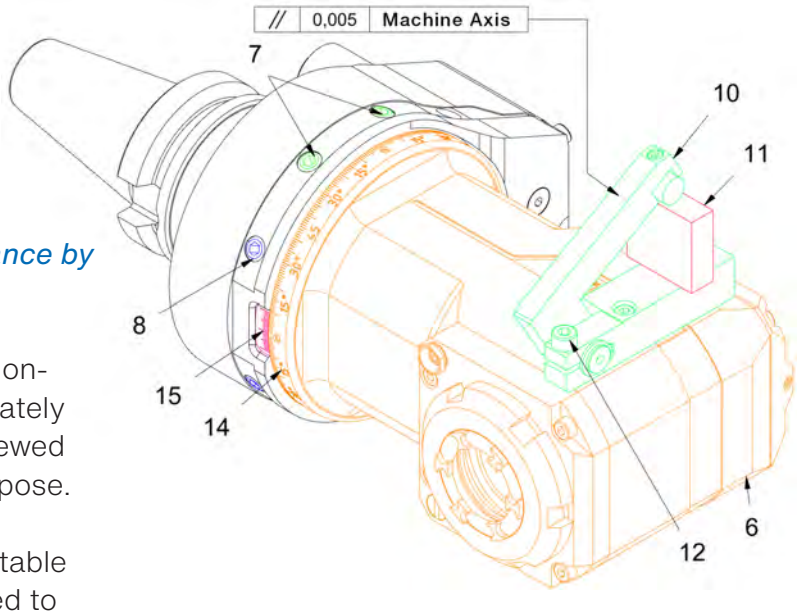


3.4. Adjusting the angle of the tool head (pos. 6)

The machining direction of the tool head (pos. 6) can be continuously adjusted after the eight threaded rods (pos. 7 and pos. 8) have been released around the torque support (pos. 4).

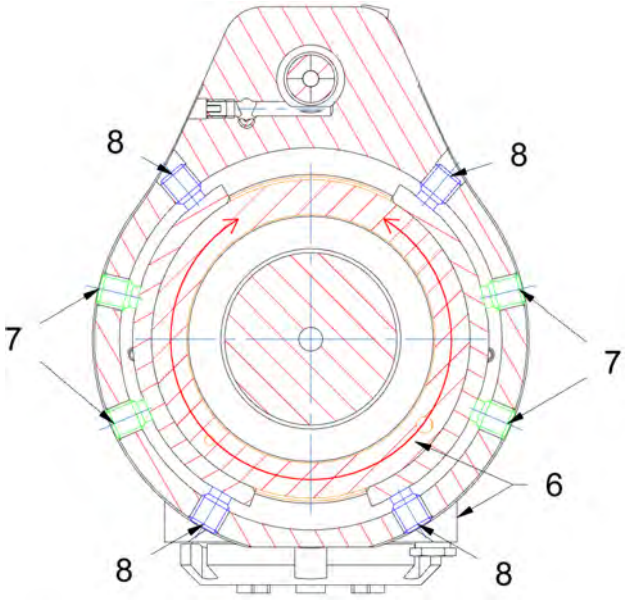
The scale ring (pos. 14) and Vernier scale (pos. 15) can be used to help adjust the angle.

** The scale ring must be adjusted in advance by the operator -> see section 3.5*



For more precise angular adjustment on non-axially parallel applications, use the separately available sine bar * (pos. 10), which is screwed to the threaded bore provided for this purpose. The required angle is defined using the corresponding gauge block (pos. 11) (see table supplied). The sine bar (pos. 10) is clamped to the gauge block (pos. 11) via the cylinder screw (pos. 12). The tool head is then rotated until the test surface of the sine bar profile is parallel to one of the machine axes.

*** The sine bar profile is available as an option under the designation BG-WA-02 (item 129302).*

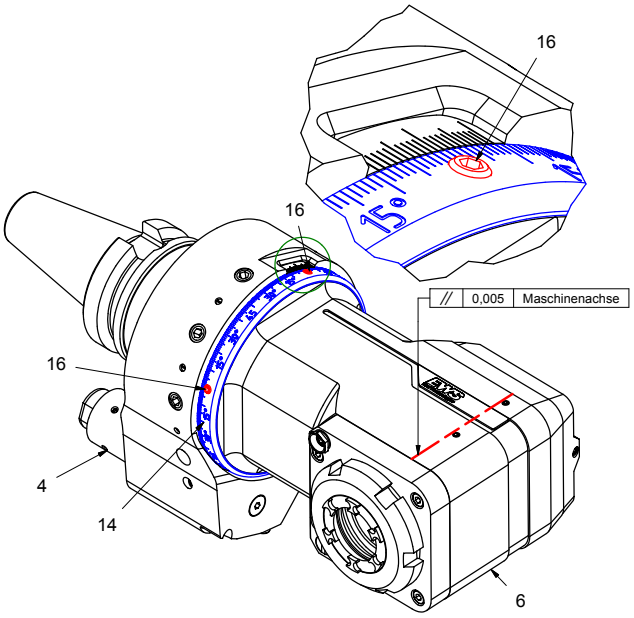


Once the adjustment has been made, the eight threaded rods (pos. 7 and pos. 8) must be tightened back up in the following order. First, loosely clamp the four threaded rods (pos. 7) so that the clamping centres itself. Then, do the same to the four other threaded rods (pos. 8). Finally, correctly tighten all eight threaded rods (pos. 7 and pos. 8) using the torque wrench supplied (5.7 Nm)

The correct angle position depends on the tool and machine, and must be adjusted by the operator.

3.5. Adjusting the scale ring (pos. 14)

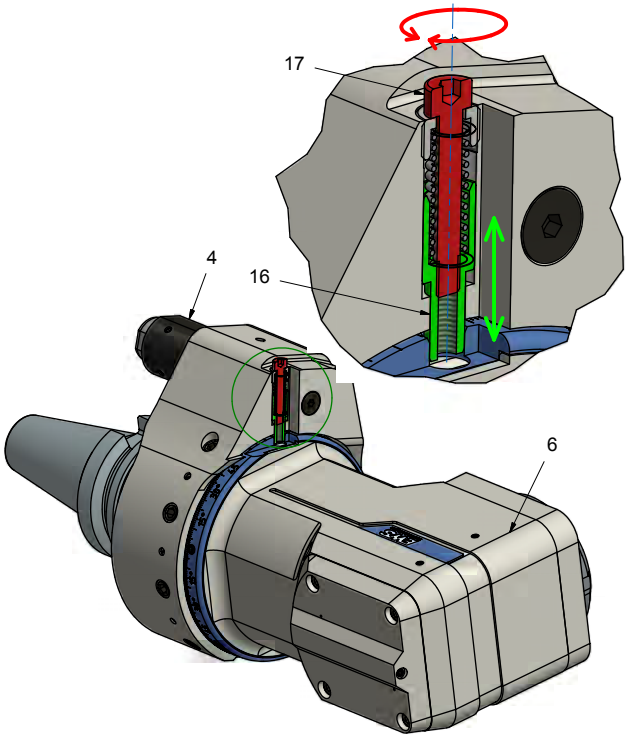
As the angular position between the torque support (pos. 4) and the tool head (pos. 6) varies according to the machine, the operator must first adjust the scale ring (pos. 14) to the machine. The scale ring (pos. 14) can be adjusted as required after loosening the four threaded rods (pos. 16). In general, the scale ring (pos. 14) is adjusted by aligning the tool head (pos. 6) parallel with the machine axis and then turning the scale ring (pos. 14) to 0°. After tightening the four threaded rods (pos. 16), the tool head (as described in point 3.4) can be aligned with the required angle.



3.6. Adjusting the tool head (pos. 6)

The tool head (pos. 6) can be snapped into place in the 0° position and fixed in relation to the torque support (pos. 4) via a spring-mounted locking bolt (pos. 16). This can be used, for example, to relocate the starting position after frequent angular adjustments, or to prevent displacement during processing.

In the delivered status, the locking bolt (pos. 16) is withdrawn (unlocked). If necessary, it can be locked by pulling out the cylinder screw (pos. 17). To cancel the fixing, tighten the cylinder screw (pos. 17) until the tool head (pos. 6) can be turned again.



Cylinder screw (pos. 17) direction of rotation

↻ unlock tool head ↺ lock tool head

4. Cleaning and maintenance

4.1. Cleaning

Cleaning with a cloth or brush is sufficient.

Important: Cleaning with air pressure is not permitted because particles can be forced inside the tool and damage the drive and bearing. Do not use cleaning benzine or industrial cleaning machines for cleaning!

4.2. Care

It is recommended that the metal components are oiled lightly after using the EWS.millLine.

4.3. Maintenance

An annual inspection is recommended.
The EWS.millLine is permanently lubricated and maintenance-free.

5. Guarantee and warrenty

The manufacturer's standard conditions of sale and delivery apply (see www.ews-tolds.de).

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