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1. Identification

Type: Shaping Tool Holder

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2. Product specification

2.1. Functions and scope of application

The Eppinger Shaping Tool Holder is a driven tool for broaching on lathes within a complete machining process adding a new dimension to the economic production of internal and external profiles (e.g. key slots or gears).

2.2. Safe and correct use

The driving direction of the Eppinger Shaping Tool Holder differs according to the application and the gear design. Please observe the notes applied on the tool and the drawing.

2.3. Technical data

Dimensions: See online data base
Stroke length: 35 mm
Effective length: 32 mm
Maximum number of strokes: 1000 1/min (one rotation = 1 stroke)
Maximum torque at drive: 20 Nm
Transmission: 1:1 (1 stroke/rotation)
Maximum feeding: 0,08 mm/stroke (depending on material)
Rising degree with return stroke: Approx. 0,3 mm
Maximum sloth width: 8 mm
Direction of drive rotation: See label on the tool holder

Motion sequence with 1 rotation of the spindle (sequence depending on turret type)
2.4. Machine requirements

Workspace: When swinging the turret using the Eppinger Shaping Tool Holder, sufficient space must be provided to ensure that there will be no collision with the turret socket or the housing.

Drive torque: See torque/cutting force diagram

Starting torque: Minimum 15 Nm

Turret type: Shaping Tool Holder variations for star turret with BMT shank holders are available.

![Torque/Cutting Force Diagram](image)

2.5. Protection of persons

The operator of the Eppinger Shaping Tool Holder has to comply with the provisions of the applicable industrial safety regulations.

2.6. Safe disposal

The Operator has to comply with the provisions of the applicable environment protection regulations.
3. Operating instructions

3.1. Setting up

When mounting the Eppinger Shaping Tool Holder to the turret, insert the straight shank into the location hole of the turret. In doing so take care that the position of the dual flat drive at the tool head is in conformity with the slot of the machine drive.

Furthermore, make sure that the O-Ring at the shank is not damaged.

3.2 Tool change

3.2.1. Clamping the tool

The tool is designed for cutting edges and their carriers made by the Horn Company (see www.phorn.de).

Clean the location hole and the bearing surface at the broaching tool when changing the tool. Place the insert holder into the adaptor ensuring the path of contact of the sliding block into the slot. Furthermore, the insert holder has to fit flat at the bearing surface. Lock the holder with using the clamp screw (tightening torque = 20 Nm).

3.2.2. Removing the tool

After releasing the clamp screw, you can remove the insert holder. In case of a tight insert holder, firstly remove the sliding block, afterwards you can detach the insert holder with rotary motion.

3.3. Handling

Prior to the machining using the Eppinger Shaping Tool Holder, the workpiece must meet the following conditions:

For internal and external machining, an undercut at the end of the tool run-out with a minimum width of 1 mm must be provided. In the case of poor chip removal, an undercut width of 2 mm is even recommended. The size of the undercut diameter must be determined to ensure a run-out of the cutting during the complete machining.

For the internal machining (key slot or gears), an additional pre-drilling or pre-milling operation is required (also see: 4. Manufacturing examples).

The programming parameters for slotting are identical to those for milling. Machining is per-formed during the stroke. The feeding movement occurs continuously during stroke and return stroke through the feed drive of the X-axis. The edge is raised by the integrated raising device.

The stroke length is constantly 35 mm. At the beginning of the stroke an idle movement of 1,5 mm is required and the end of the stroke an idle movement of 1,5 mm is required, resulting in a maximum machining length of 32 mm. Shorter machining lengths will result in longer idle movements (distance to the workpiece).
3.4. Cleaning and maintenance

3.4.1. Cleaning

Cleaning the Shaping Tool Holder by using a cloth or brush is sufficient. Compressed air may be used for cleaning the location hole. It is not permitted to clean the complete shaping tool using compressed air, as this might push particles into the interior of the tool causing damage. Never use petroleum ether or industrial washing machines for cleaning. Furthermore a regularly check after some time of working is necessary, if there is some water in the housing of the Shaping Tool Holder because of the piston effect due to an axial stroke. If applicable the water could be drain off after opening the screw on the Shaping Tool Holder (see following picture).

3.4.2. Care

Whenever the shaping tool is not used, lubricate the bare part of the pusher with oil for protection against corrosion.

3.4.3. Maintenance

An Eppinger Shaping Tool Holder is permanently lubricated and maintenance-free. We recommend performing an annual inspection.

3.5. Guarantee and warranty

The Standard Conditions of Sale and Delivery of the manufacturer apply (see www.eppinger.de).
4. Manufacturing examples

Key slot acc. to DIN 6885

The maximum key slot width of 8mm may not be exceeded.

Internal spline DIN 5480/5482

The maximum size of the profile must be calculated.

External spline acc. to DIN 5480/5482

The maximum size of the profile must be calculated.