

# A world first from OTEC: DF-6 Automation



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# DF-6



DF-6 AUTOMATION

## Areas of application and benefits of the new DF-6 Automation

The DF-6 Automation is a fully automatic drag finishing machine for the deburring, edge-rounding and polishing of chip cutting tools. The workpieces are loaded and unloaded by means of a 6-axis Fanuc robot with a reach of 890 mm.

Changeover time is considerably reduced by storing 36 workpieces in a temporary storage area. In addition, the storage area incorporates predefined workpiece positions, for example for clamping thread-cutting taps along the whole length of the shaft.

A sensor monitors the changeover process in order to prevent malfunctions caused for example by incorrectly mounted chucks. The main functions are monitored and any faults that occur are indicated in the display.



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## The machine

### Standard equipment

- ▶ 10" colour touch screen
- ▶ Workpiece monitoring during changeover (e.g. to prevent faults caused by incorrect choice of chuck)
- ▶ Process container on a trolley for faster media changeover
- ▶ Electrical lift unit, speed approx. 40 mm/s
- ▶ Automatic sliding door between DF and robot unit
- ▶ Servo-assisted drives for positioning and processing the workpieces
- ▶ Siemens S7/300 control unit
- ▶ Professional data bus for communication with robot unit
- ▶ Base frame in welded steel
- ▶ Automatic opening/closing of chuck

### Options

Level monitoring, dosing of contact oil, immersion depth control for length monitoring, air purge.

## The robot unit

### Standard equipment

- ▶ 6-axis Fanuc robot, max payload 5 kg, reach 890 mm
- ▶ Room for up to 3 workpiece pallets measuring e.g. 250 x 500 mm
- ▶ Pallets delivered to the machine manually
- ▶ Yellow, red and green indicator lights:  
red = fault, yellow = e.g. load workpieces
- ▶ Temporary storage for 36 workpieces for predefined workpiece positions and fast workpiece insertion
- ▶ A gripper with prism-shaped jaws and large clamping range for removing workpieces from the palette and depositing them in the temporary storage area
- ▶ To insert the workpieces into the disc finishing machine, a dual gripper with a cylindrical profile grasps the workpieces below the shaft so that they can be clamped along the entire shaft. Because of the precise positioning required, these gripper jaws have only a very small clamping range
- ▶ Pallets can also be delivered to the unit by means of crane systems

### Options

Interfaces for workpiece feed and discharge, e.g. by means of conveyor belts, etc.



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## Technical specifications

- ▶ *Clamping range:* 2,5 – 18 mm
- ▶ *Changeover time/ workpiece:* approx. 6 – 8 seconds
- ▶ *Number of holders:* 6
- ▶ *Number of workpieces:* max. 36
- ▶ *Clamping range, 6-way holder:* 2,5 – 18 mm
- ▶ *Max. workpiece length with dual gripper:* 120 mm
- ▶ *Max. workpiece length with single gripper:* 250 mm
- ▶ *Number of palette positions:* 3, of which one empty
- ▶ *Size of palettes:* e.g. 500 x 250
- ▶ *Motor output:* 6 kW
- ▶ *Speed range of rotor:* 5 – 55 m/min
- ▶ *Rotary speed range of holder:* 0 – 110 U/min