

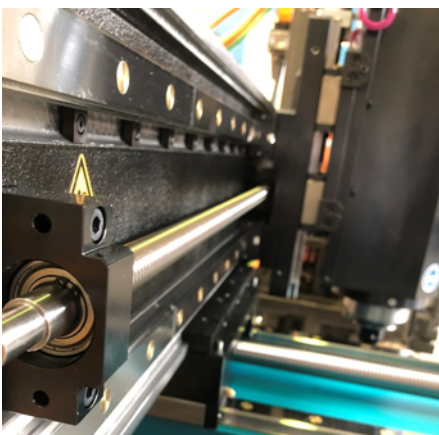
P O R T A B L E 3 - A X I S C N C M I L L I N G M A C H I N E

The new generation of on-site milling equipment with the latest automation technology combined with advanced safety architecture. Safe CNC technology, wherever you need it! Our TFM Series 3500 CNC covers all needs asked for, when a portable 3-axis milling machine is required.

MACHINE BED (X-AXIS)

Our full-material rigid steel bed is heat-treated and fully machined in high accuracy. The integrated pre-loaded guideway systems in combination with heavy-duty ball-screw arrangement provides highest rigidity and smooth machining performance on-site while achieving high machining accuracies. The redundant lead-nut system (master/slave arrangement) allows safe machining performance even in vertical machining position.

A selection of machine bed sizes are available. Please see machine configuration page of this brochure for details.



RAM AND CROSS SLIDE ASSEMBLY (Y-AXIS)

The ram assembly comes as a complete weld design with inner rib-arrangement for highest rigidity and accuracy. The ram and cross slide assembly is also equipped with pre-loaded guideway systems and ball screw arrangement. For achieving highest flexibility for your on-site machining applications, the ram and cross slide assembly is infinitely adjustable (by sliding) on the bed slide. The new «Flip-around-design» allows an even higher grade of flexibility sine it may be mounted to the machine bed from both sides.

A selection of RAM sizes are available. Please see machine configuration page of this brochure for details.

MILLING SPINDLE (C-AXIS) AND VERTICAL SLIDE UNIT (Z-AXIS)

The vertical slide unit is equipped with pre-loaded guideway systems. The ACME leadscrew arrangement (metric version) provides full breaking performance to keep the slide in position. All main components are parallel ground to provide highest accuracy.

MILLING SPINDLE

Our milling spindles are equipped with pre-loaded spindle bearings for providing superb rotating performance even at high RPM without significant temperature influence. No sealing friction due to contactless labyrinth seals. In addition, we have equipped the spindle with an air sealing system, which also allows perfect sealant of the spindle housing when performing grinding operations. The cast iron housing provides ideal damping. Our spindle shafts with ISO #40 tool location are ground to highest accuracy for achieving perfect runout results and long lasting accurate tool adaption. The max. allowed spindle speed is 4000 RPM. For safety reasons our spindles are limited to 1500 RPM max.

As an additional benefit our spindles also allow drilling applications. The max. drilling capacity (drilling into full material) is $\varnothing 37$ mm [2"] (steel 600 N/mm² [87.000 psi]).



REMOTE PENDANT

Our remote pendant comes in a compact design and provides full control of all machine functions. The integrated touchscreen panel in combination with a PLC-control unit (Siemens) provides a maximum of functionality. Of course, we have taken good care of current safety guidelines to ensure a high level of safety for operator, machine and environment. The extensive remote pendant functionality includes functions like:



- Readout of travel (shows exact travel distance of axes)
- Readout and adjustment of feed rate [mm/min]
- Pre-selection of required travel
- Dynamic power consumption display of spindle drive
- Messaging system in German or English language
- Set-up/aligning function with safety hardware button (slow axis movement) etc.

ELECTRICAL INSTALLATION AND DRIVE UNITS

- Siemens Sinumerik ONE.
- Siemens Sinumerik Remote Pendant type HT10 included.
- All servo motors: Siemens 1FK7/1FT7 motors with integrated encoders. All motors come with the latest technology "DriveCliqu" connection.
- Electrical cabinet completely assembled by Siemens Automation, Germany.
- Air Conditioning Unit assembled to the electrical cabinet for machine usage even in high temperature environments (up to 45° C).
- Power- and signal cable assemblies come in a total length of 10 meters.
- Cable connection for HT10 remote pendant comes in a length of 10 meters.
- Quick connection for HT10 (the remote pendant may be connected or disconnected to/from the electrical cabinet by a Siemens connecting plug). This option allows to store the HT10 remote pendant in a separate case for safe transportation (high-durable case with fitted foam inlet for HT10 included in scope of supply).
- Special steel transportation frame for electrical cabinet included. The electrical cabinet is mounted into the steel frame for safe storage and transportation. 4 Lifting eyes (certified RUD lifters) are included for crane transportation. The integrated lifting tubes also allow safe forklift transportation. For a safe and straight positioning of the cabinet on-site, 4 adjustable leveling feet are installed.
- Steel frame powder coated



TECHNICAL DETAILS & INFORMATION

1. MAIN BED OPTIONS:

Bed Travel Length	Bed Length
1100 mm	1480 mm
1660 mm	2040 mm
2460 mm	2840 mm
2640 mm	3000 mm

2. RAM OPTIONS:

RAM Travel Length	RAM Length
600 mm	820 mm
1100 mm	1320 mm
1750 mm	2150 mm

3. MILLING HEAD ASSEMBLY:

ISO 40	Stroke 8 inch (203,2 mm)
ISO 50	Stroke 8 inch (203,2 mm)
ISO 50	Stroke 12 inch (304,8 mm)

Additional Option – SPINDLE MILLING HEAD ASSEMBLY:
Swivel Plate Assembly Z-Axis

4. ELECTRICAL INSTALLATION:

3 Servo Motors with CNC controls

