

emco group

Designed for your profit



TRAIN WHILE PRODUCING. CONCEPT TURN 460

CNC training with
industrial performance

TURNING
EMCO-WORLD.COM

CONCEPT

1 TOOL TURRET

- 12 stations VDI 30 axial
- Six stations driven upon request
- Milling of polygons
- Synchronized thread cutting

2 WORK AREA

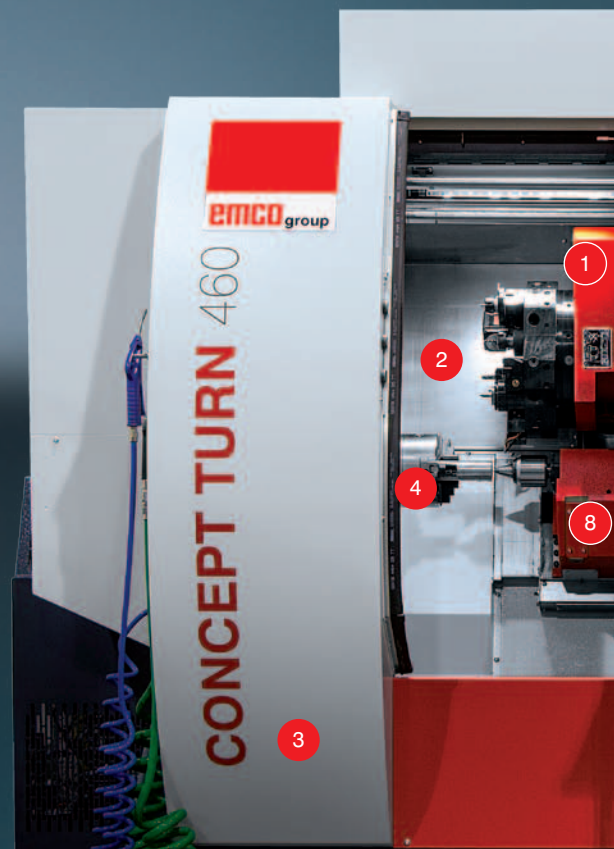
- Best possible ergonomics
- Unobstructed chip fall
- Completely covered guideways

3 MACHINE COVERS

- Comprehensive protection against flying chips
- 100 % cooling medium tight
- Optimal vision in the work area
- Large door safety glass

4 SPINDLE

- High drive power
- Thermo-stable assembly
- Large rotational speed range
- Spindle connection A2-5
- Maximum bar \varnothing 45 mm



Hand wheel
(Stainless steel)



Eccentric bolts
(Stainless steel)

TURN 460

After the Redesign the Concept Turn 460 is equipped with a hydraulically actuated, programmable tailstock – In combination with a C axis, driven tools and digital drive systems, the function and performance of the Concept Turn 460 is in accordance with state-of-the-art industrial machines. Furthermore, with its interchangeable control system WinNC, it is perfectly adapted to the requirements of training situations today.



5 CONTROL UNIT

- Up-to-date digital AC controlling technology
- 21.5" Touchscreen
- MOC: integrated PC
- WinNC concept: all standard NC controls on one machine
- Multifunctional handwheel

6 TRAY

- PC keyboard with PC mouse

7 MACHINE BASE

- Easy to transport
- Large cooling reservoir
- Easy to clean

8 TAILSTOCK

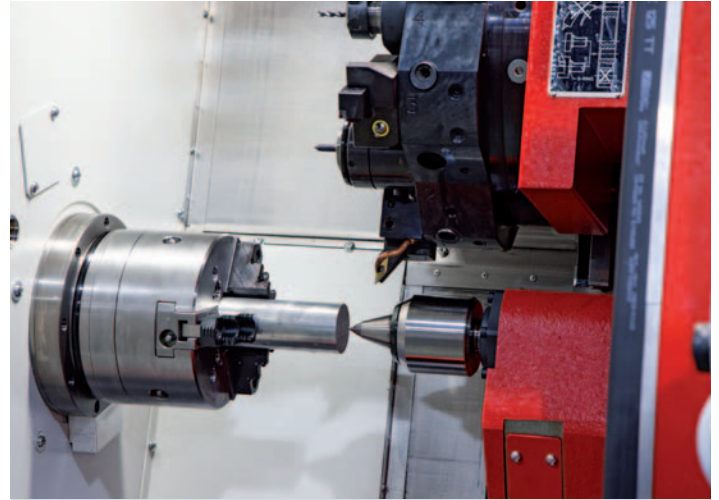
- Hydraulically actuated, programmable tailstock

Geared wheel
(Stainless steel)

[Engineering]

Highlights

- Universal applications
- Digital drive engineering
- Hydraulically actuated, programmable tailstock
- Extraordinary dynamics
- Optimal thermostability
- High processing accuracy
- Compact machine assembly
- Made in the Heart of Europe



Hydraulically actuated, programmable tailstock

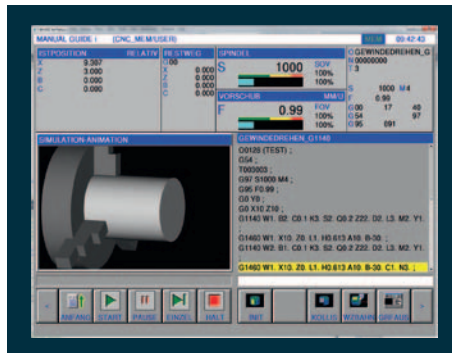
[Interchangeable Controls]

The concept of the interchangeable control unit, which can be fitted to all Concept machines, is unique. It enables the user to be trained on all CNC industry controls that are common on the market needing just one machine.

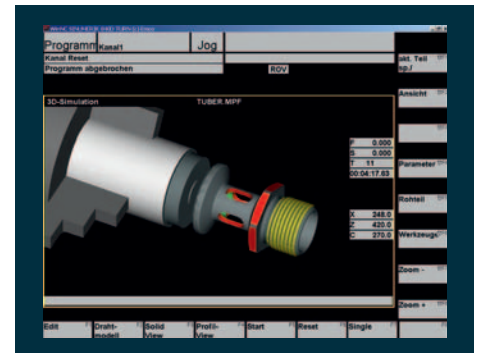
The result: The CNC technicians can be applied more flexibly, which provides a significant competitive advantage for both the company and employees.



The change to a different control system is carried out within a minute by calling up the respective software.



WinNC for Fanuc 31i-B including Manual Guide i as an expansion to the known WinNC controls



Simulation suite for training using Win3D View

[Easy2control: New control concept]

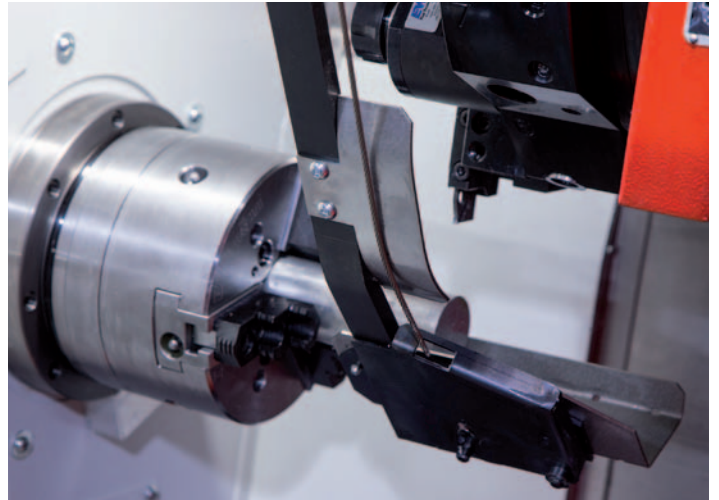
The machine is equipped with the latest software of the interchangeable control, with which control specific and machine keyboards of the WinNC can be displayed on a 16:9 Full-HD screen – Easy2control. The different panels for machine, control and quick access can be switched via tabs. The buttons and rotary knobs can either be operated by using the mouse or directly on the keys and switches on the touchscreen.



Easy2control

Options

- Chip conveyor
- 3 jaw chuck - 170 mm
- Collet chuck 173E
- Automatic door
- Integration into FMS or CIM systems
- Attractive tool package
- Part collecting device
- Driven tools



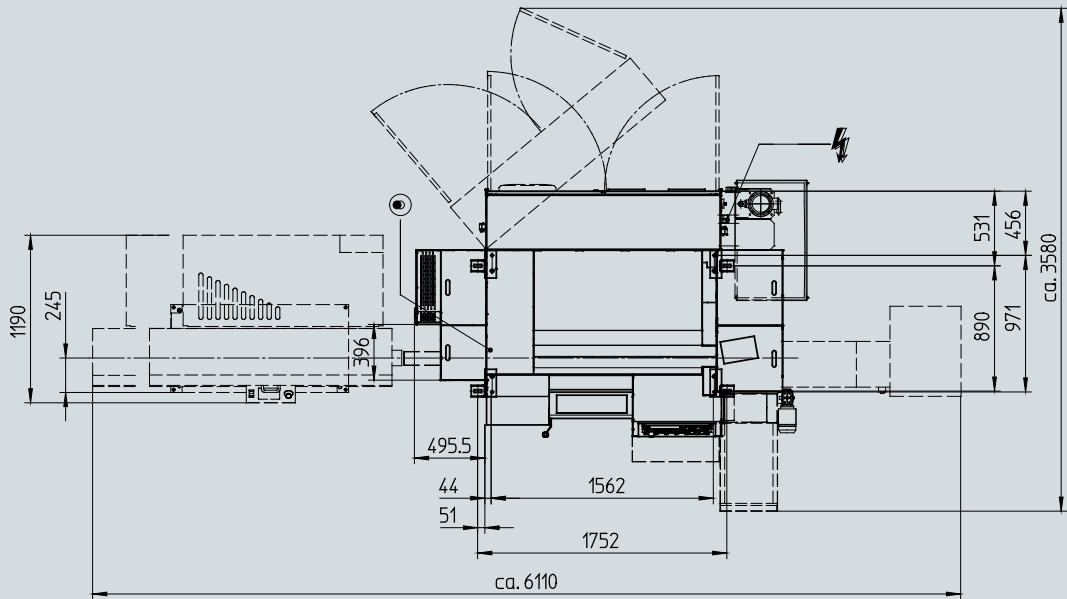
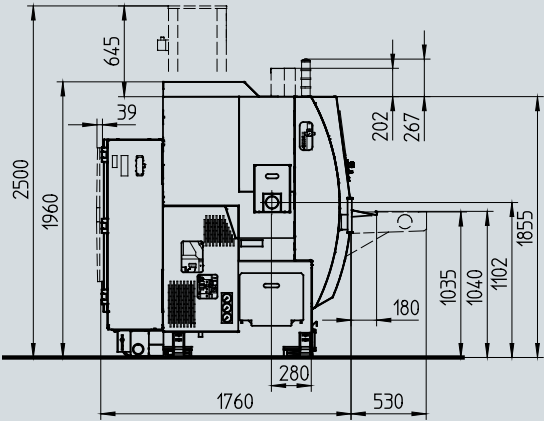
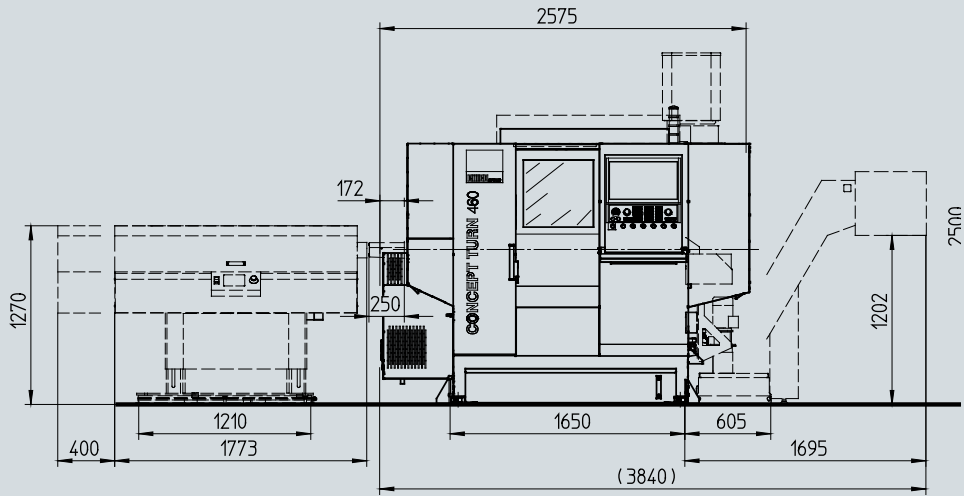
Part collecting device (Options)

[Workpieces]

- 1 CONTOUR MILLING ON THE FACE SIDE
- 2 CONTOUR MILLING ON THE LATERAL SURFACE
- 3 METRIC THREAD M16 X 1
- 4 MILLING OF HEXAGON PIECES

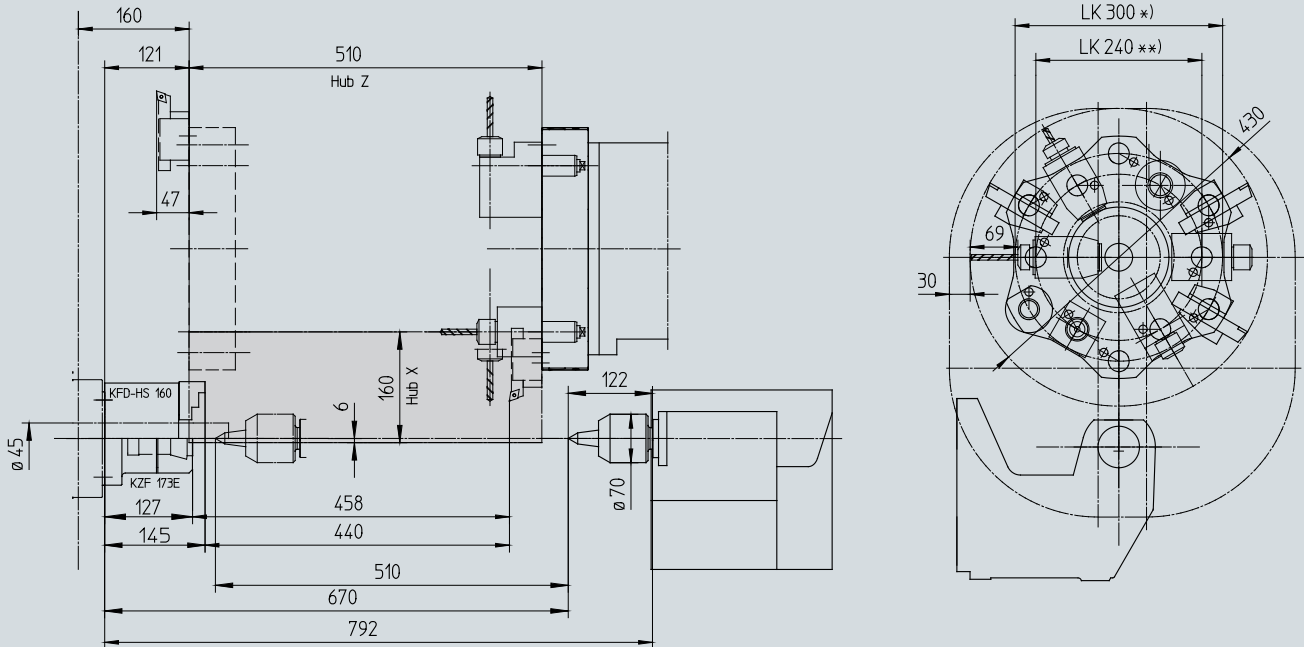


Machine layout



Details in millimeters

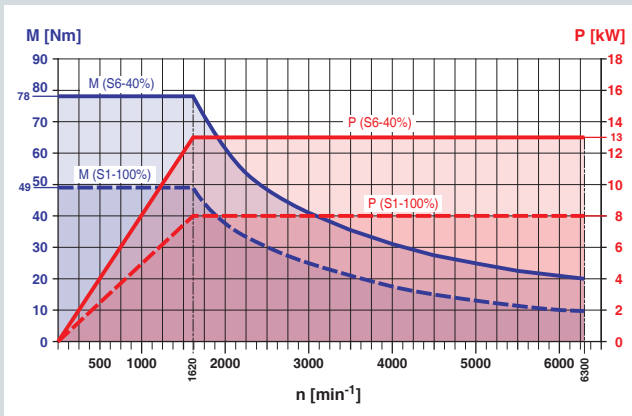
Work area



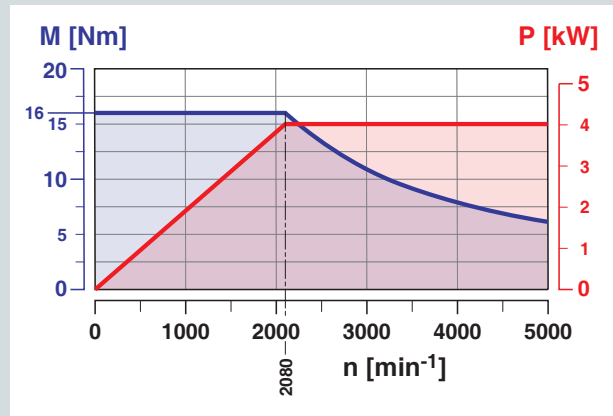
*) without driven tools - version TC
 **) with driven tools - version TCM

Details in millimeters

Performance



Power/Torque diagram of the main spindle



Power/Torque diagram of the milling drive

CONCEPT TURN 460

Technical Data

Work area

Swing over bed	Ø 430 mm (16.9")
Swing over cross slides	300 mm (11.8")
Distance between centres (Spindle nose – tailstock centre tip)	670 mm (26.3")
Maximum turning diameter	Ø 220 mm (8.7")
Maximum turning length	510 mm (20.08")
Maximum bar diameter	45 mm (1.77")

Travel

Travel in X	160 mm (6.3")
Travel in Z	510 mm (20.08")

Main spindle

Speed range	0 – 6300 rpm
Spindle torque	78 Nm (57.5 ft/lbs)
Spindle connection DIN 55026	KK 5 (A2-5)
Spindle bearing (inside diameter)	Ø 80 mm (3.1")
Spindle bore	Ø45 / Ø 53 mm (1.77 / 2.1")

C axis

Resolution of the round axis	0,01°
Rapid motion speed	250 rpm
Speed	78 Nm (57.5 ft/lbs)

Main motor

Drive power	13 kW (17.4 hp)
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Tool turret

Number of tool positions	12
Tool holding shaft according the VDI (DIN 69880)	30
Tool cross-section for square tools	20 x 20 mm (0.78 x 0.78")
Shank diameter for boring bars	Ø 32 mm (1.3")
Turret indexing time	0.14 sec.

Driven tools DIN 5480

Number of stations	6
Power	4.0 kW (5.4 hp)
Torque	16 Nm (11.8 ft/lbs)
Speed range	0 – 5000 rpm

Feed drives

Rapid speed X / Z	24 / 30 m/min (944.9 / 1181.1 ipm)
Feed force in the X / Z axis	4000 / 6000 N (899.2 / 1348.8 lbs)
Acceleration time	0.1 sec.
Position variation Ps (according to VDI 3441) X / Z	0.003 / 0.003 mm (0.00014 / 0.00014")

Tailstock

Tailstock thrust	6000 N
Speed	20 m/min (787.4)
Taper	MK 4

Cooling equipment

Tank volume	250 liter (60.8 Gal)
Pump performance at 3.5 (optional 10 bar)	0.57 (2.2) kW (0.77 hp)

Abmessungen

Rotary axis height above the floor	1100 mm (43.3")
Machine height	1958 mm (77.1")
Machine setting up area (B X T)	2275 x 1958 mm (89.6 x 77.1")
Total weight	3300 kg (7260 lb)

EMCO WinNC-Steuerungen

SIEMENS Operate 840D sl / 828D
FANUC Series 31i
FAGOR 8055 TC