

[ That's  
E[M]CONOMY: ]

**emco** industrial  
training

Designed for your profit



**Train while producing.  
CONCEPT TURN 460**

**CNC training with  
industrial performance**

# Concept 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.

## [Tool turret]

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

## [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
- NEW: WinNC for Fanuc 31i-B incl. Manual Guide i

## [Work area]

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



## [Tray]

- PC keyboard with PC mouse

## [Machine base]

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

## [Tailstock]

- Hydraulically actuated, programmable tailstock

## [Spindle]

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

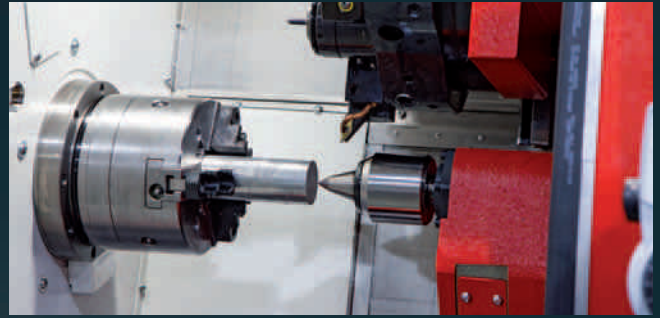
## [Machine covers]

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

# [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



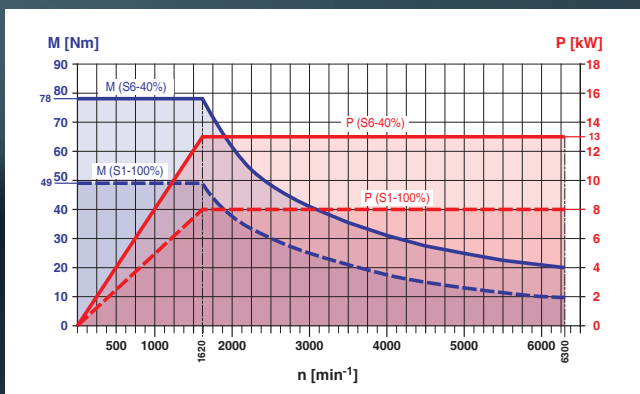
Hydraulically actuated, programmable tailstock

## Versions CONCEPT TURN 460

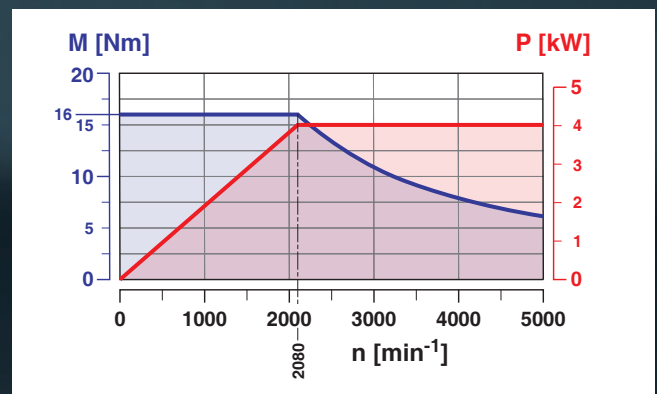
CT 460 TC with tailstock, 12-stations tool turret

CT 460 TCM with tailstock, C axis, 12-stations tool turret, 6 stations driven

## Performance



Power/Torque diagramm of the main spindle



Power/Torque diagramm of the milling drive

## Options

- Bar loader
- 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



### EMCO LM 1200 short bar loader

With the LM1200 EMCO offers the perfect solution for automatic feeding of bar material up to 1100 mm maximum. Besides compactness the loader is also very fast and simple to use. The control is adapted perfectly to the interface of the machine.

# [Easy2control: New control concept]

Optional it is possible to equip the machine 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 in case a Full HD touchscreen is used directly on the keys and switches on the monitor. To operate the software on the Concept machine a license dongle and a small machine control panel – „Easy2operate“ – is required.



Easy2control with Easy2operate

# [Interchangeable Controls]

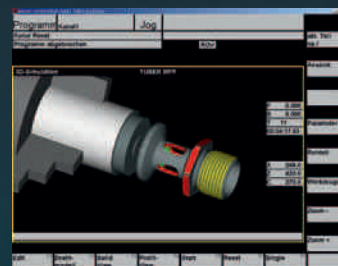
The concept of the interchangeable control unit, which can be fitted to all Concept machines, is unique. It enables the user to be trained on all CNC industry controls that are common on the market needing just one machine. The result: The CNC technicians can be applied more flexibly, which provides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

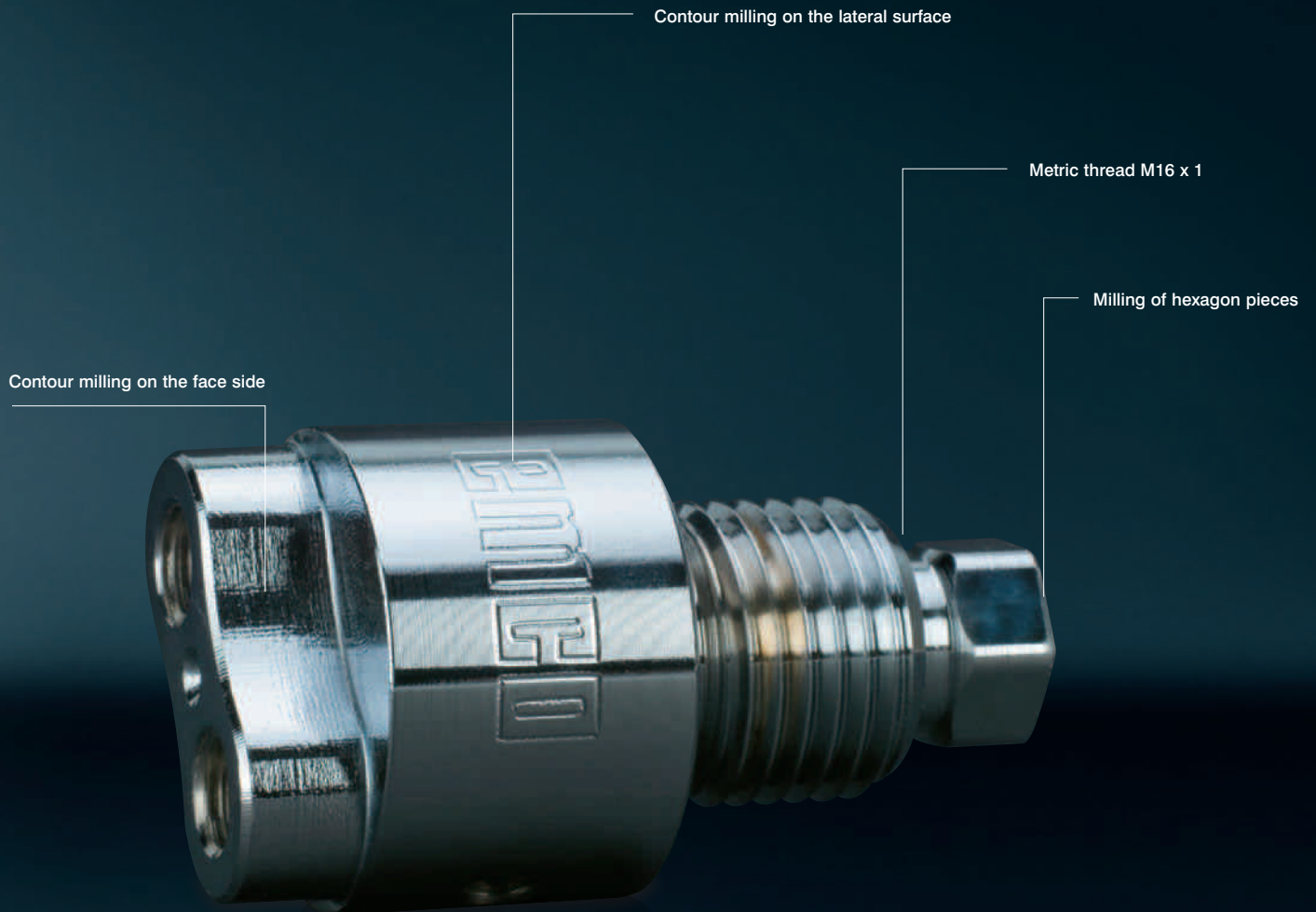


WinNC for Fanuc 31i-B including Manual Guide i as an expansion to the known WinNC controls



Simulation suitable for training using Win3D View

# [Workpieces]



Hand wheel  
(Stainless steel)

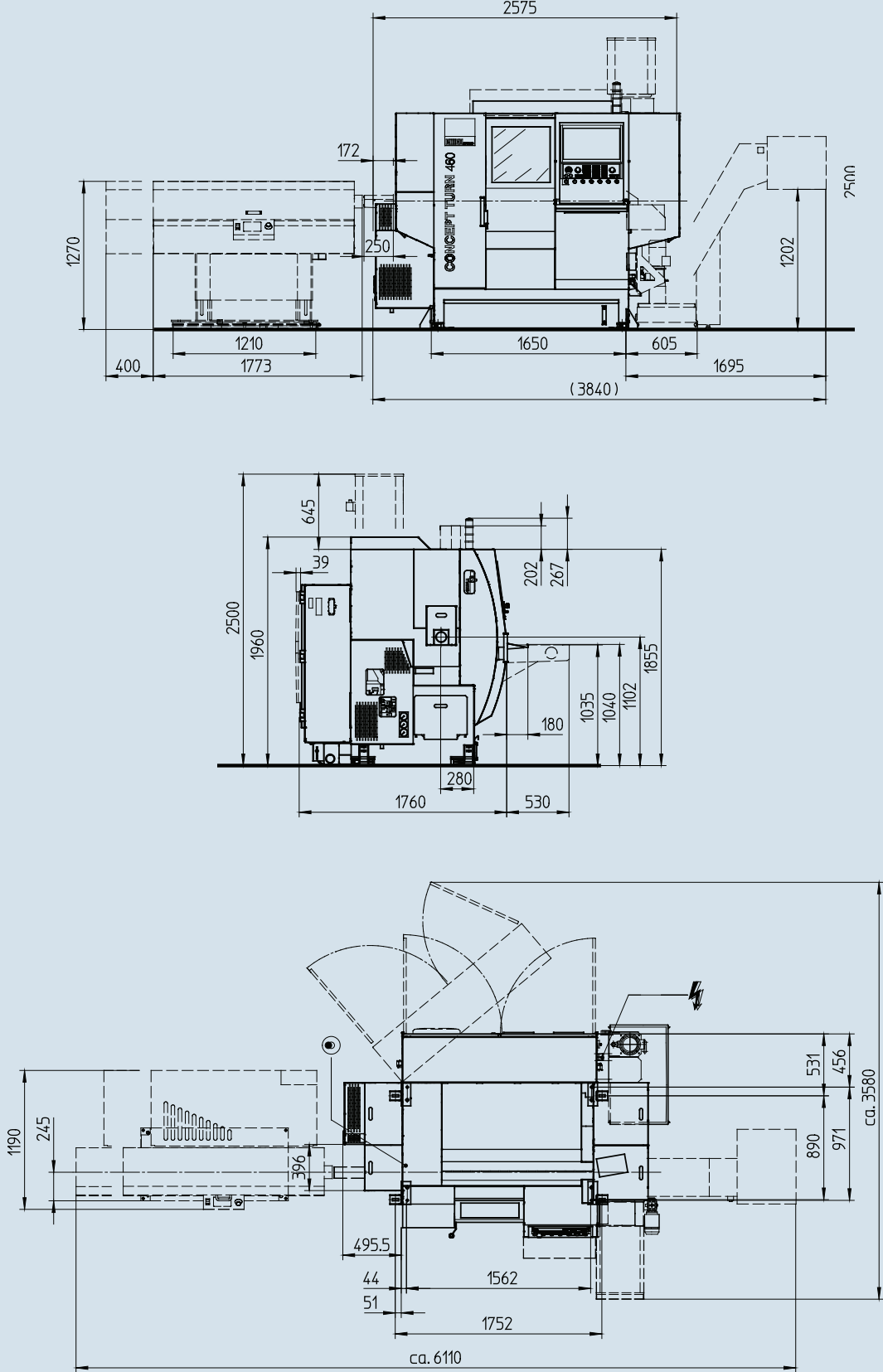


Eccentric bolts  
(Stainless steel)

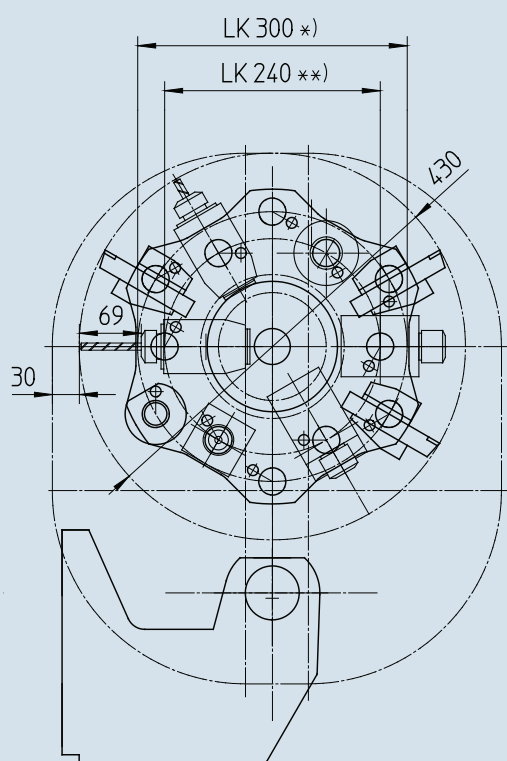
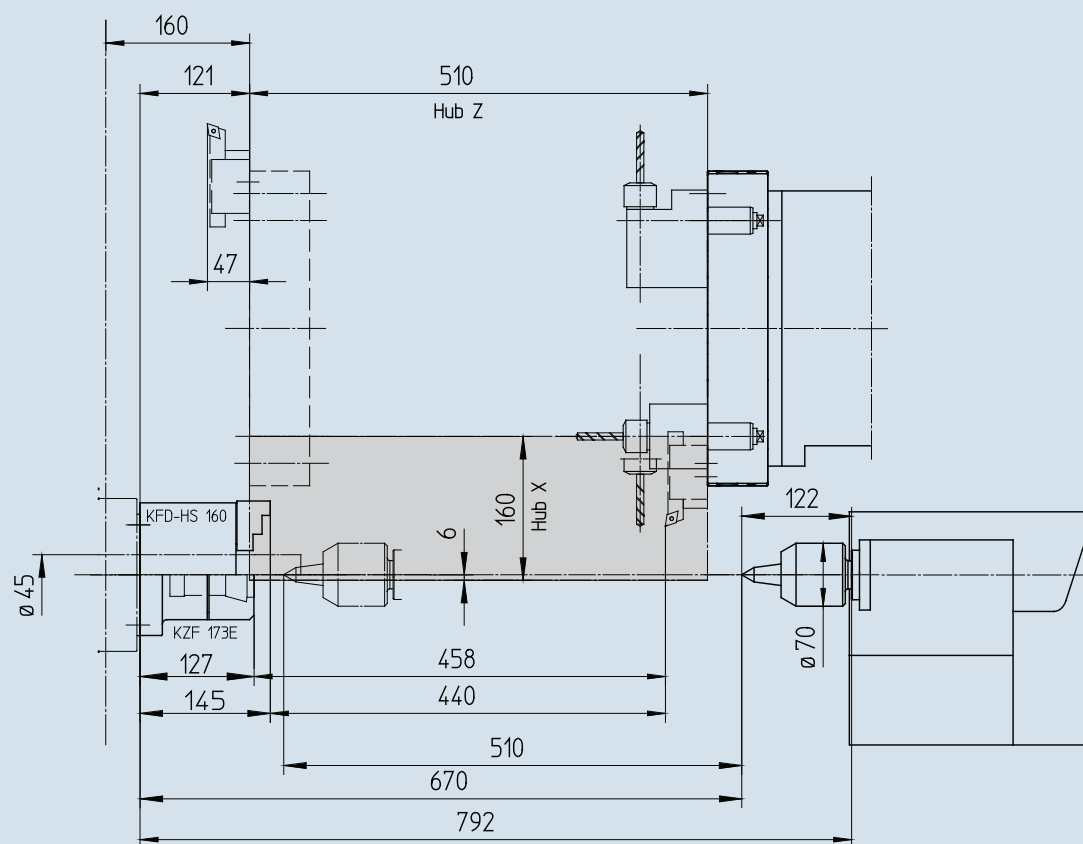


Geared wheel  
(Stainless steel)

# Machine layout



## Work area



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

### Details in millimeters

# [Technical Data]



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## CONCEPT TURN 460

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	1000 rpm
Speed	78 Nm (57.5 ft/lbs)
Main motor	
Drive power	13 kW (17.4 hp)
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 drives	
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")
Standard tailstock	
Tailstock thrust	6000 N
Speed	20 m/min (787.4)
Taper	MK 4
Cooling agent 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
SIEMENS 810D/840D
FANUC Series 31i
FAGOR 8055 TC

### EMCO LM1200

Bar length	100 – 1100 mm (3.9 – 31.5")
Bar diameter	8 – 45 mm (0.24 – 1.77")
Material supply	E.g. 10 bars with Ø 45 mm (1.8")
Length	1700 mm (66.9")
Width	1100 mm (43.3")
Weight Approx.	535 kg (1179.5 lb)



[www.emco-world.com](http://www.emco-world.com)