

Industry 4.0 in CNC training

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CONCEPT TURN 260

PC-controlled CNC turning machine for industrial applications
with a 6-axis industry robot RV-4FL

Concept TURN 260

As a systematic advancement of the CT 250, the CT 260 will be presented at the AMB trade show in an Industry 4.0 automation scenario with a Mitsubishi robot and RFID (radio-frequency identification) component recognition. The Concept Turn 260 has the latest Siemens drive technology – Sinamics and the enhanced EMCO axis controller AC^{PN}. This provides the user with integrated safety technology in the drive system ("Safety Integrated"), the use of absolute encoders (referencing no longer necessary), as well as fieldbus integration with Profinet (flexible, adaptable communication of components).

[Work area]

- Straight chip drop
- Excellent ergonomics
- All-round protection against chips
- Large safety glass window in door

[Tool turret]

- 12 stations VDI16 axial
- 6 stations driven on request for milling work
- Synchronized thread cutting

[Main spindle]

- High drive performance
- Thermoresistant construction
- Large speed range
- Bar capacity Ø 25 mm
- Hollow clamping device

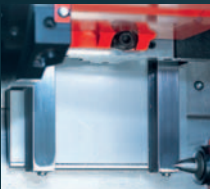


[Control]

- Latest digital AC control technology
- 21.5" touchscreen
- MOC: integrated PC
- WinNC concept: all standard NC controls on one machine
- Multifunctional handwheel
- NEW: WinNC for Fancu 31i-B including Manual Guide i

[Roller guides]

- In X and Z axes
- no backlash
- No wear
- High speed



[Machine base]

- Small installation area
- Large coolant reservoir
- Easy to clean



[Engineering]

Highlights

- PC-controlled CNC turning machine for industrial applications with a 6-axis industry robot RV-4FL
- Siemens S7 control
- Turck RFID read head
- Cellular frame according to the Machinery Directive with safety housing
- Cells are mobile and fixable thanks to screw feet
- Feed-in/out of parts
- Communication with CNC via robotics interface DNC, Ethernet
- MES4 – Software for dispatching orders, program selection, key figures, work schedules

[Easy2Control: New control concept]

Another highlight within Industry 4.0 is the Concept Turn 260 with a new, optimised machine control panel, including a 16:9 Industry-Touchscreen with a 21.5" screen and Easy2control user interface.



The various keyboard variants make Easy2control an exciting and highly flexible addition to EMCO's modular training concept. The interchangeable control is displayed on the on-screen keyboard. This makes it so much easier and quicker to switch between the various control systems.

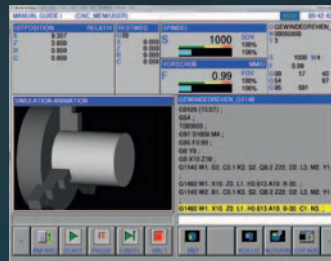
[Interchangeable controls]

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.

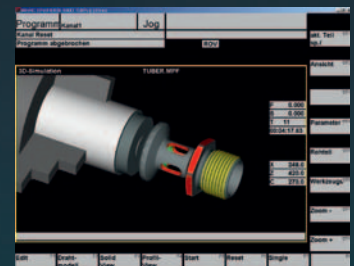
The result: The CNC technicians can be applied more flexibly, which provides a significant competitive advantage for both the company and employees.



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

[Technical data]

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CONCEPT TURN 260

Work area	
Swing over bed	Ø 250 mm (9.8")
Swing over cross-slide	Ø 85 mm (3.3")
Distance between centres	405 mm (16.0")
Maximum turning diameter	Ø 85 mm (3.3")
Max. part length	255 mm (10.0")
Maximum bar diameter	Ø 25.5 mm (1.0")
Travel	
Travel in X	100 mm (4.0")
Travel in Z	300 mm (11.8")
Main spindle	
Speed range	60 – 6300 rpm
Spindle torque	35 Nm (25.8 ft/lbs)
Spindle nose	Ø 70 h5
Spindle bore	Ø 30 mm (1.1")
C axis (Option)	
Circular axis resolution	0.01°
Rapid speed	1000 rpm
Main motor	
Drive performance	5.5 kW (7.4 hp)
Tool turret	
Number of tool positions	12
VDI shaft (DIN 69880)	16
Tool cross section	12 x 12 mm (0.4 x 0.4")
Shank diameter for boring bars	Ø 16 mm (0.6")
Turret indexing time	1.0 sec.
Driven tools (option)	
Number of tool stations	0 or 6
Power	1.2 kW (1.6 hp)
Torque	4 Nm (3.0 ft/lbs)
Speed range	200 – 6000 rpm
Feed drives	
Rapid speed X / Z	15 / 24 m/min
Feed force in the X / Z axis	3000 / 3500 N
Acceleration time	0.1 sec.
Position variation Ps (according to VDI 3441) X / Z	0.003 / 0.004 mm (0.00011811 / 0.00015748")

Tailstock	
Quill stroke	120 mm (4.7")
Quill diameter (with integrated live centre)	Ø 35 mm (1.3")
Quill thrust	2500 N
Coolant system	
Tank volume	140 litres
Pump performance	0.57 kW (00.8 hp)
Dimensions	
Height of centres above floor	1131 mm (44.5")
Machine height	1820 mm (71.6")
Machine installation area (W x D)	1700 x 1270 mm (67.0 x 50.0")
Total weight	1100 kg (2425.1 lb)

EMCO WinNC controls

Sinumerik 810D / 840D	FANUC Series 21
Sinumerik 810	FANUC Series 0
Sinumerik 820	FANUC Series 31i
Sinumerik Operate	Fagor 8055
EMCOTRONIC T02	

EMCO short bar loader LM800

Bar length	100 – 600 mm (3.9 – 23.6")
Bar diameter	6 – 25 mm (0.2 – 1.0")
Material storage	23 bars of 25 mm (1.0") diameter
Length	1200 mm (47.2")
Width	1150 mm (45.3")
Weight	approx. 190 kg (418.9 lb)



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