

TECHNICAL SPECIFICATION

Concept TURN 450

PC-controlled CNC-lathe
with interchangeable control



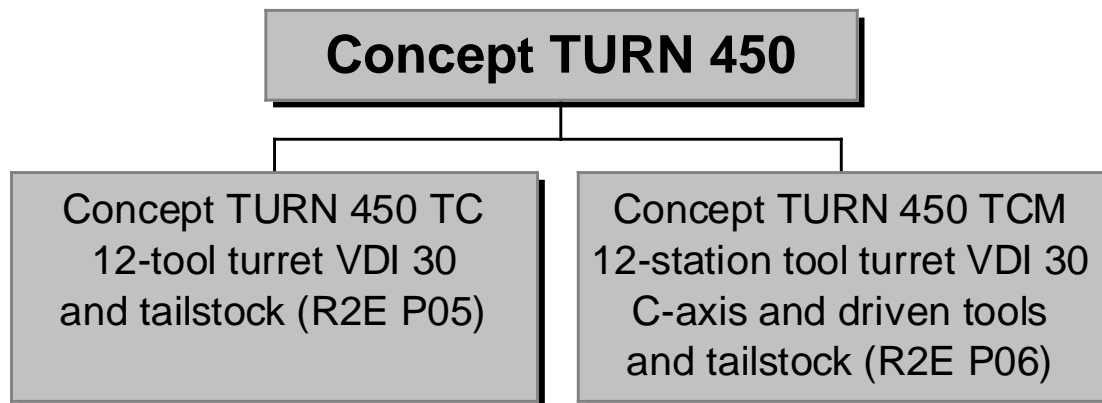
Control software

SINUMERIK OPERATE
SIEMENS 810D/840D
SIEMENS 810/820
GE FANUC Series 21
GE FANUC Series 0
FAGOR 8055 TC
EMCOTRONIC TM02

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Overview of the modular machine concept



Remark:

The control EMCOTRONIC cannot program driven tools and C-axis.

Technical data of the machine:

Working area		
Swing over bed	[mm]	ø430
Swing over cross slide	[mm]	ø210
Distance between centers	[mm]	687
Max.machining diameter	[mm]	ø220
Max.machining length	[mm]	310
Max.bar work diameter	[mm]	ø 45
Travel		
Travel in X-axis	[mm]	160
Travel in Z-axis	[mm]	310
Main spindle		
Speed range	[rpm]	0-6300
Max.torque on spindle	[Nm]	78
Spindle nose accord. DIN 55026		KK 5
Spindle bearing inner diameter	[mm]	ø 80
Draw tube inner diameter / Spindle bore diameter	[mm]	ø 45 / ø 53
C-axis		
Resolution	[°]	0,01°
Rapid speed	[rpm]	100
Torque	[Nm]	78
Main drive		
Main drive power 100/40% duty cycle	[kW]	9/13
Tool turret		
Number of tool stations		12
Tool shank according VDI (DIN 69880)	[mm]	VDI 30
Tool section for square tools	[mm]	20 x 20
Shank diameter for boring bars	[mm]	ø 32
Turret indexing time	[sec]	0,14
Driven tools (coupling DIN5480)		
Speed range	[rpm]	0-5000
Max. torque	[Nm]	16
Max.drive power	[kW]	4
Number of driven stations		6
Coupling	DIN	5480
Feed drives		
Rapid traverse in X / Z	[m/min]	20 / 24
Feed thrust in X-axis	[N]	4000
Feed thrust in Z-axis	[N]	6000
Acceleration time 0 to rapid	[sec]	0,1
Positioning variation P _s accord. VDI 3441 in X/Z	[mm]	0,003/0,005

Standard tailstock		
Quill stroke	[mm]	120
Quill diameter	[mm]	ø60
Quill bore taper		MT 4
Quill thrust	[N]	5000
Coolant system		
Tank capacity	[l]	230
Coolant pump at 3,5 bar / (Optional 10 bar)	[kW]	0,57 / (2,2)
Coolant delivery 3,5bar/1bar	[l/min]	15/65
Coolant delivery 10bar/5bar (optional)	[l/min]	5/50
Hydraulic system Multi-circuit hydraulic system for power chuck		
Oil tank capacity	[l]	10
Max. pressure for clamping	[bar]	60
Pneumatic unit		
Air pressure required	[bar]	6
Air volume required	[l/min]	5
Compressed air quality		cleanliness class 4 (ISO 8573-1)
Lubrication system		
Guide ways, ball screws		Autom.central oil lubrication
Main spindle, counter spindle		Grease lubrication
Chip conveyor		
10-pin harting plug for mounting the chip conveyor is incl. in basic machine		
Parts-catcher		
Pneumatically operated	[bar]	6
Max. finished part length	[mm]	120
Max. finished part diameter	[mm]	ø 45
Max. finished part weight	[kg]	2,0
Painting		
light gray		RAL Nr. 7035
traffic red		RAL Nr. 3020
graphite gray		RAL Nr. 7024
Power supply		
Voltage	[V]	400 ~3/PE
Max. voltage fluctuations	[%]	+5/-15
Frequency	[Hz]	50/60
Connected load value	[kVA]	17
Main fuse for machine	A-slow]	50
Required short circuit power	[kVA]	1100
Operable temperature range	[°C]	+10 to +35
Dimensions/weight		
Spindle height above floor	[mm]	1152
Total height	[mm]	1940
Floor space WxD (without options)	[mm]	2250x1650
Total weight of machine	[kg]	3300

Sound intensity level		
Average sound emission level	[db(A)]	78
According to the following conditions:		
Measuring method:	enveloping surface accord. DIN 45 635	
Measured point:	1m distance and 1,6m above ground	
Operating mode:	max.spindle speed w/no load	

Technical data of the PC control system

Control system

Separate built-up of the machine operating keyboard and control-specific interchangeable keyboard
Integrated PC (MOC)
Integrated 12" colour flat display

PC-minimum configuration

Multi Operating Controller (MOC)

Description MOC III

Multi Operating Controller

Function

The MOC is an industrial PC with an integrated LCD monitor.
Its special construction protects it from vibration and the harsh conditions in the workshop.
By a free LAN port of the MOC can be easily integrated into an existing network.
Easy data transfer via USB.



PC- Configuration

Technical Parameters:

- Processor
1.6 GHz AMD / dual core
- 1GB RAM
- 4GB Compact Flash
- 1xRS232
- 1 x USB
- 2x LAN
- PS2 Mouse + Keyboard (US)
- TFT 12,1" integrated
- Temperature range 5-50°C
- MS Windows 7 embedded


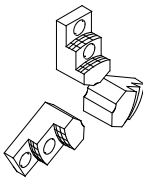
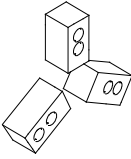


Basic machines Concept TURN 450

	DESCRIPTION	REF.NO.
	<p>Concept TURN 450 TC</p> <p>2-axis CNC lathe with interchangeable control, 13 kW drive power, 0-6300 rpm on main spindle, linear drive system, includes:</p> <ul style="list-style-type: none"> • 12-station VDI 30 tool turret axial with directional logic, only for stationary tools! • Quill-tailstock Quill diameter: 60mm Quill stroke: 120mm Morse taper: MT 4 • Headstock sz. 45 with spindle nose KK5 KK5 (DIN 55026) • Through-hole clamping cylinder incl. draw tube • EMCO standard bar loader-interface • Coolant pump 3bar • Machine lamp for working area • Hydraulic system • Interface for pedal switch and chip conveyor • Integrated PC incl. swing out storage flap • 12" flat display • Mains surpression filter 16kW 	R2E P05
	<p>Concept TURN 450 TCM</p> <p>2-axis CNC lathe with interchangeable control, 13 kW drive power, 0-6300 rpm on main spindle, linear drive system, includes:</p> <ul style="list-style-type: none"> • 12-station VDI 30 tool turret axial with directional logic, for up to 6 driven tools! constant torque 16 Nm, speed range 0-5000 rpm • C-axis • Mechanical spindle brake • Quill-tailstock Quill diameter: 60mm Quill stroke: 120mm Morse taper: MT 4 • Headstock sz. 45 with spindle nose KK5 (DIN 55026) • Through-hole clamping cylinder incl. draw tube • EMCO standard bar loader-interface • Coolant pump 3bar • Machine lamp for working area • Hydraulic system • Interface for pedal switch and chip conveyor • Integrated PC incl. swing out storage flap • 12" flat display • Mains surpression filter 16kW • 6 x Bore Plug VDI 30 included 	R2E P06

	DESCRIPTION	REF.NO.
	<p>Software (32bit and 64bit)</p> <p>WinNC – control software, machine license</p> <p>In case of order please indicate required control:</p> <p>SINUMERIK OPERATE SIEMENS 810/820 SIEMENS 810D/840D GE FANUC Series 0 GE FANUC Series 21 EMCOTRONIC M02 FAGOR 8055 TC</p>	<p>X3Y 400 X5A C00 X3Y 200 X5A C50 X3Y 300 X5A E00 X3A 300</p>
	<p>EMCO Win 3D-View, Turning (32bit and 64bit)</p> <p>3D-graphic simulation Option for WinNC</p> <p>EMCO Win 3D-View, turning, machine license</p>	<p>X5A 250</p>
	<p>Control keyboard</p> <p>SINUMERIK OPERATE SIEMENS 810 SIEMENS 820 SIEMENS 810D/840D GE FANUC Series 0 GE FANUC Series 21 EMCOTRONIC TM02 FAGOR 8055 TC</p>	<p>X9Z 060 X9Z 010N X9Z 020N X9Z 040N X9Z 110N X9Z 130N X9Z 210N X9Z 050N</p>

Clamping devices for workpieces

	DESCRIPTION	REF.NO.
	<u>3-jaw chuck KFD-HE ø170 mm</u> RÖHM power-chuck KFD-HE 170, hydraulic operated, with through hole (ø43), incl. set of soft jaws with a serration of 1/16"x 90° and draw tube adapt for Concept Turn 450 , for spindle nose size A2-5 (n _{max.} 6300rpm)	574 700
	<u>3-jaw chuck KFD-HS ø160 mm</u> RÖHM power clamping chuck KFD-HSø160/3 hydraulic operation, for very high spindle speeds and with large passage (ø46), incl. set of ground, hard reversible top jaws with a serration of 1/16"x 90°, for mounting on spindle nose KK5.	574 670
	<u>Set of hard jaws (3 pcs.)</u> Set of hard reversible top jaws for # 574670 and 574 700 with a serration of 1/16"x 90°.	574 675
	<u>Set of soft jaws (3 pcs.)</u> Set of soft jaws for # 574670 and 574 700 with a serration of 1/16"x 90	R3Y 230
	<u>Power collet chuck 173E</u> RÖHM dead length collet chuck ø4-42, for collets 173E to mount on spindle nose KK5, For more information of collets please refer to the EMCO collet catalogue.	575 001
	<u>Chuck grease (100gr - tube)</u> To lubricate the moving parts within the chuck.	574 661

	DESCRIPTION	REF.NO.
	<p>Collets 173E – ROUND DIN 6343 (FM 1148) – (48-R42) clamping area: ø2-42mm D: ø60mm d: ø48mm L: 94mm clamping tol: +/-0,05mm</p> <p>Ø 5mm Ø 10mm Ø 15mm Ø 20mm Ø 30mm Ø 42mm other diameters from Ø 5 to Ø 42mm collets 173E – Hexagonal collets 173E – Square</p>	<p>575 050 575 100 575 150 575 200 575 300 575 420 575 020 - 420 on demand on demand</p>

Spindle-reduction

	DESCRIPTION	REF.NO.
	<p>Reduction sleeve size 45 Spindle reduction sleeve of plastic to be machined by customer, (10 pc.required).</p>	<p>R6Z 220</p>
	<p>Life center MT4 Type 640-20 for high-speed triple bearing, nose angle 60°.</p>	<p>573 310</p>

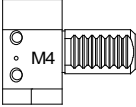
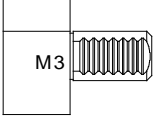
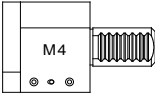
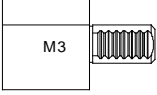
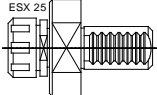
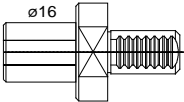
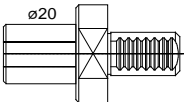
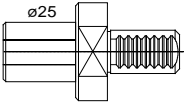
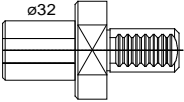
Tool packages

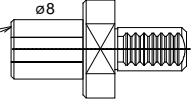
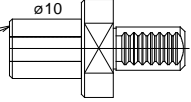
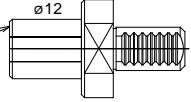
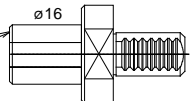
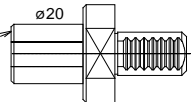
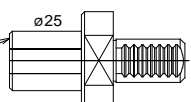
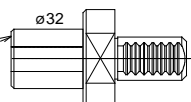
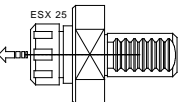
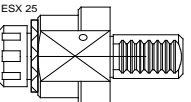
	<p><u>Tool Package "Basic"</u> <u>with</u></p> <p>3 # R3Z 350W Radial Tool Holder M4 1 # R3Z 360 Radial Tool Holder M3 1 # R3Z 420 Indexable Drill Holder D 20mm 1 # R3Z 300W Boring Bar Holder D 16mm 1 # SBN 2020-26-K Holder Parting Off 1 # SCFC L 2020 K12 Holder Roughing 1 # SDJC L 2020 K11 Holder Finishing 55° 1 # AL 20-3 R Holder Thread Right 1 # XLCON 2603J03 Inserts for Parting Off 1 # SC16L-0036SP-08 Shark Cut D16mm, 2,25x 1 # A 16 M SDUC L07 Boring Bar D 16mm 1 # CCMT 120408EN Insert For Roughing -AM AP2035 1 # DCMT 11T304EN Insert For Steel -AM AP2030 1 # DCGT 11T304FN Insert For Alu -ALU PVD2 1 # 16E R-T-AG60 Insert For Threading AK20 Right 1 # LOMR 160302 SN Insert For Parting Off AR27C 1 # LPNT 080304 EN Insert For Shark Cut AM35C 1 # DCMT 070204EN Insert 55° -AM AP2030</p>	<p>R2Z 910</p>
	<p><u>Tool Package "Extended"</u> <u>with</u></p> <p>6 # R3Z 350W Radial Tool Holder M4 1 # R3Z 360 Radial Tool Holder M3 Indexable Drill Holder D 1 # R3Z 420 20mm 2 # R3Z 300W Boring Bar Holder D 16mm 1 # W1Z 480 Collet Holder 1 # 225 000 Set Of Collets 1 # 225 100 Collet D 10mm 1 # R3Z 310 Boring Bar Holder D 20mm 1 # 271 180 ID-Threading Tool Right 1 # 771 010 NC-Start Drill 1 # 781 310 Set Of 6 Screw Taps M3-M10 1 # 271 230 Twist Drills For Core Holes 6 pcs. 1 # 271 180 ID-Threading Tool Right 1 # 781 280 Twist Drills 25 pcs.</p>	<p>R2Z 920</p>

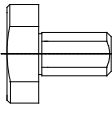
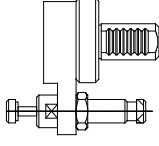
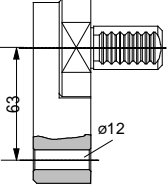
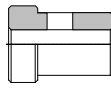
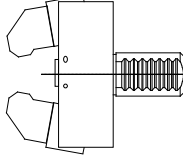
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1 #	SBN 2020 -26-K	Holder Parting Off	
1 #	SCFC L 2020 K12	Holder Roughing	
1 #	SDJC L 2020 K11	Holder Finishing 55°	
1 #	AL 20-3 R	Holder Thread Right	
1 #	XLCON 2603J03	Inserts for Parting Off	
1 #	SC16L-0036SP -08	Shark Cut D16mm, 2,25xD	
1 #	A 16 M SDUC L07 CCMT 120408EN-AM	Boring Bar D 16mm	
1 #	AP2035 DCMT 11T304EN-AM	Insert For Roughing	
1 #	AP2030 DCGT 11T304FN-	Insert For Steel	
1 #	ALU PVD2	Insert For Alu	
1 #	16E R-T-AG60 AK20	Insert For Threading Right	
1 #	LOMR 160302 SN AR27C	Insert For Parting Off	
1 #	LPNT 080304 EN AM35C	Insert For Shark Cut	
2 #	DCMT 070204EN-AM AP2030	Insert 55°	
1 #	SDNC N 2020 K11	Holder Finishing 55° Neutral	
1 #	SDJC R 2020 K11	Holder Finishing 55° Right	
1 #	AL 20-3 L	Holder Thread Left	
1 #	72020 L	Grooving Tool	
1 #	10208L	U-Plate	
1 #	KAM 2 L	Fixer	
1 #	A 20 Q SDQC L07	Boring Bar D 20mm	
1 #	16 E L-T-AG60 AK20	Insert For Threading Left	
1 #	21201-12 AM35C	Insert For Grooving	



Toolholders

	DESCRIPTION	REF.NO.
	<p><u>Tool holder package – stationary tools</u></p> <p>Tool holder package consisting of:</p> <ul style="list-style-type: none"> -RADIAL tool holder M4 -2x -RADIAL tool holder M3 -1x -Collet holder ESX 25 -2x -Carbide insert drill holder ø25 -1x -Boring bar holder ø16 -1x 	R6Z 850Z
	<p><u>Tool holder package – stationary and driven tools</u></p> <p>Tool holder package consisting of:</p> <ul style="list-style-type: none"> -RADIAL tool holder M4 -2x -RADIAL tool holder M3 -1x -Collet holder ESX 25 -2x -Carbide insert drill holder ø25 -1x -Boring bar holder ø16 -1x -Angular milling holder – 90° -1x -Milling holder straight -1x 	R6Z 860Z

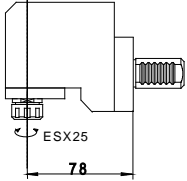
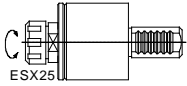
	DESCRIPTION	REF.NO.
	Radial toolholder M4 VDI 30 toolholder for outside machining tools 20x20, spindle direction M4.	R3Z 350
	Radial toolholder M3 VDI 30 toolholder for outside machining tools 20x20, spindle direction M3.	R3Z 360
	Axial toolholder M4 VDI 30 toolholder for face machining 20x20, spindle direction M4.	R3Z 370
	Axial toolholder M3 VDI 30 toolholder for face machining 20x20, spindle direction M3.	R3Z 380
	Collet holder ESX 25 VDI 30 toolholder for collets ESX 25, with internal coolant supply Clamping range \varnothing 2-16mm	W1Z 480
	Indexable drill holder \varnothing16 VDI 30 toolholder for indexable drills with a shank- \varnothing 16mm and internal coolant supply.	R3Z 480
	Indexable drill holder \varnothing20 VDI 30 toolholder for indexable drills with a shank- \varnothing 20mm and internal coolant supply.	R3Z 420
	Indexable drill holder \varnothing25 VDI 30 toolholder for indexable drills with a shank- \varnothing 25mm and internal coolant supply.	R3Z 430
	Indexable drill holder \varnothing32 VDI 30 toolholder for indexable drills with a shank- \varnothing 32mm and internal coolant supply.	R3Z 440

	DESCRIPTION	REF.NO.
	<u>Boring bar holder ø8</u> VDI 30 toolholder for boring bars with a shank- ø8mm and external coolant nozzle.	R3Z 270
	<u>Boring bar holder ø10</u> VDI 30 toolholder for boring bars with a shank- ø10mm and external coolant nozzle.	R3Z 280
	<u>Boring bar holder ø12</u> VDI 30 toolholder for boring bars with a shank- ø12mm and external coolant nozzle.	R3Z 290
	<u>Boring bar holder ø16</u> VDI 30 toolholder for boring bars with a shank- ø16mm and external coolant nozzle.	R3Z 300
	<u>Boring bar holder ø20</u> VDI 30 toolholder for boring bars with a shank- ø20mm and external coolant nozzle.	R3Z 310
	<u>Boring bar holder ø25</u> VDI 30 toolholder for boring bars with a shank- ø25mm and external coolant nozzle.	R3Z 320
	<u>Boring bar holder ø32</u> VDI 30 toolholder for boring bars with a shank- ø32mm and external coolant nozzle.	R3Z 340
	<u>Tapping holder ESX 25</u> VDI 30 toolholder with length compensation for collets ESX 25. Tap size: M4-M20	573 896
	<u>Floating reamer holder</u> VDI 30 toolholder for reaming operation with adjustable axially parallel compensation for collets ESX 25.	573 877

	DESCRIPTION	REF.NO.
	<u>VDI 30 Bore plug</u> VDI 30 bore plug to protect unused stations on the turret	ZDK400 030
	<u>Bar Stop (dampened)</u> Dampened bar stop $\varnothing 20\text{mm}$ incl. VDI 30 basic holder (Note: important to use with „short bar loaders“)	R3Z 890
	<u>Offset drill holder</u> VDI 30 toolholder for drills with reduction sleeves $\varnothing 12\text{mm}$ (# 579 250), 63mm offset to reach center with positioned tailstock.	R3Z 220
	<u>Set of reduction sleeves (9 pcs.)</u> 9 pcs. reduction sleeves ($\varnothing 12\text{mm}$) from $\varnothing 2$ to $\varnothing 10\text{mm}$.	R3Z 250
	<u>2 jaw bar puller</u> Spring loaded 2-jaw bar-puller VDI 30 to work from bar stock without a bar-feeder. For bar diameters $\varnothing 5\text{-}45\text{mm}$	574 401

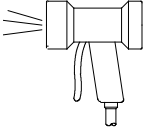


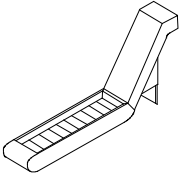
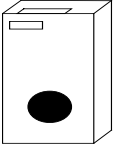
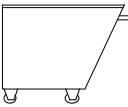

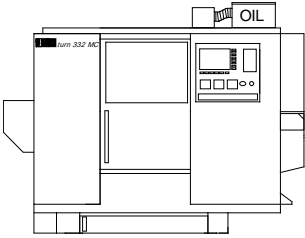
	DESCRIPTION	REF.NO.
	<p><u>Set of collets ESX 25</u></p> <p>Set of 14 collets diameter 2-14 mm</p>	225 000
	<p><u>Collets ESX 25 (individual)</u></p> <p> ø 2 mm ø 2,5 mm ø 3 mm ø 4 mm ø 5 mm ø 6 mm ø 7 mm ø 8 mm ø 9 mm ø 10 mm ø 11 mm ø 12 mm ø 13 mm ø 14 mm ø 15 mm ø 16 mm </p>	225 020 225 025 225 030 225 040 225 050 225 060 225 070 225 080 225 090 225 100 225 110 225 120 225 130 225 140 225 150 225 160

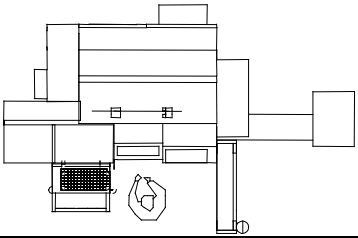
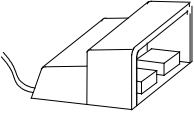
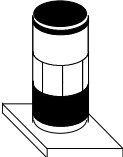

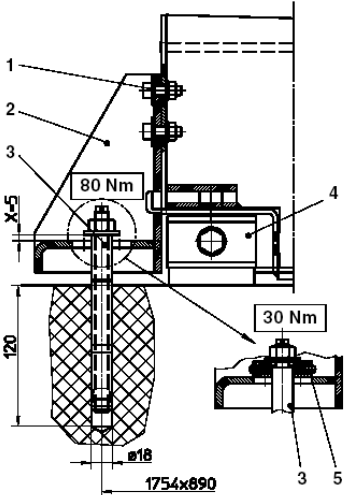

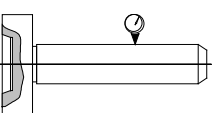
Driven toolholders

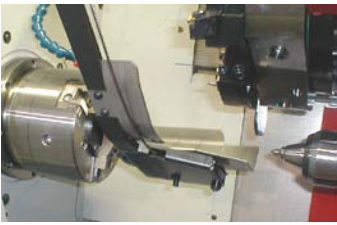
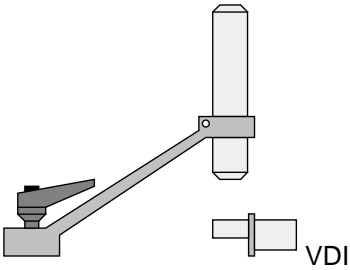

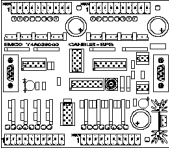


	DESCRIPTION	REF.NO.
	<p><u>Radial milling holder</u></p> <p>Used for drilling, milling and synchronous thread cutting on main spindle, ESX 25 collets, clamping range ø2-16mm, length 78mm, i=1:1 - VDI 30. Coupling DIN5480</p>	R2Z 780
	<p><u>Axial milling holder</u></p> <p>Used for drilling, milling and synchronous thread cutting on main spindle, ESX 25 collets, clamping range ø2-16mm, i=1:1 - VDI 30 Coupling DIN5480</p>	440 440

ADDITIONAL TOOLHOLDERS UPON REQUEST !

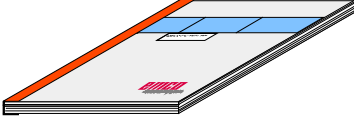
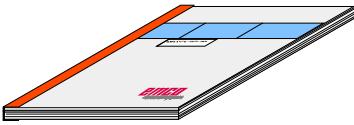
Machine accessories

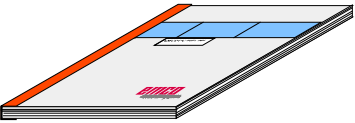
	DESCRIPTION	REF.NO.
	<p><u>Cleaning pistol</u></p> <p>To clean the clamping devices, coverings and the total machining area with coolant. (Note: never use air to clean the machine!) Retrofit able through EMCO technician !</p>	R6Z 140
	<p><u>High-pressure coolant pump 50Hz</u></p> <p>High-pressure pump 10 bar including interface and software (50Hz). Factory installed only !!</p>	R2Z 080
	<p><u>High-pressure coolant pump 60Hz (USA)</u></p> <p>High pressure pump 10 bar including interface and software (60Hz). Factory installed only !!</p>	R2Z 090
	<p><u>Chip conveyor CT450 1200mm</u></p> <p>Chain feeding system with a dump-height of 1200mm, suitable for:</p> <ul style="list-style-type: none"> • long steel shavings • snarl chips • wool chips <p>Dry and wet machining</p>	433 005
	<p><u>Electrical cabinet air-conditioning unit</u></p> <p>Is recommended in dusty and oily environment and for high ambient temperature. Advantage: no air exchange between inside and outside. Retrofit able through EMCO technician !</p>	R2Z 160
	<p><u>Chip cart</u></p> <p>Filling volume approx. 300 liter.</p>	573 312
	<p><u>Automatic door</u></p> <p>Automatic machine door specially for the manual loading of workpieces (according directives UVVA). Factory installed only !!</p>	R2Z 740
	<p><u>Oil mist separator</u></p> <p>Electrostatic oil mist separator, especially for manual loaded machines or heavy cutting operation, separates oil mist and smoke particle to ensure better working environment. Air throughput: 800-1000m³/h Wattage: 300 Watt Retrofit able through EMCO technician !</p>	R2Z 010

	DESCRIPTION	REF.NO.
	<p><u>Finished part conveyor - right</u></p> <p>Conveyor belt to transfer the finished parts out of the machine. (includes coolant tray). Can be installed instead of the finished part bin on the right side of the machine. This ensures a save transfer of the parts.</p> <p>Retrofit able through EMCO technician !</p>	R2Y 670
	<p><u>Pedal switch</u></p> <p>To actuate chuck or tailstock</p> <p>Retrofit able through EMCO technician !</p>	R3Z 580
	<p><u>Machine status lamp</u></p> <p>Triple colour machine lamp (red, green and white)</p> <p>Retrofit able through EMCO technician !</p>	R7Z 030
	<p><u>Levelling element</u></p> <p>1 Piece, 4 pieces necessary</p>	881 500
	<p><u>Machine installation kit</u></p> <p>Consisting of:</p> <ul style="list-style-type: none"> • 4x vibration absorbing, height adjustable levelling elements • 4x angle plates to fasten the machine to the floor • 4x anchor bolts to lag the machine to the floor <p>Necessary by using bar loader!</p>	S6Z 460
	<p><u>Test mandrel VDI 30 axial</u></p> <p>To check alignment of tool turret and reference point of the machine.</p>	R2Z 660
	<p><u>Test mandrel for main spindle KK5</u></p> <p>Test mandrel (long) to check spindle alignment KK5 accord. DIN 55026.</p>	R2Z 670


	DESCRIPTION	REF.NO.
	<p><u>PARTS CATCHER</u></p> <p>Standard parts catcher system to unload the components from the main or counter spindle into a standard part box or to the conveyor belt R2Y 670 (optional). Pneumatically operated 6 bar, Max. finished part length 120 mm, Max. finished part diameter 45 mm</p> <p>Factory installed only !!</p>	R2Z 720
	<p><u>Optical tool presetting device</u></p> <p>Including setting gauge for VDI 30. Including spindle stock attachments.</p> <p>To record all tool datas in X and Z direction.</p> <p>Retrofit able through EMCO technician!</p>	R2Z 510
	<p><u>Electronic handwheel</u></p> <p>For moving the machine's axes manually to proceed zero point- and tool offsets</p> <p>Retrofit able through EMCO technician!</p>	Q1Z 340
	<p><u>Robotik-Interface Hardware</u></p> <p>Is required for the FMS/CIM – operation. (X1A 000 required)</p> <p>Retrofit able through EMCO technician!</p>	R2Z 530
	<p><u>Robotik-Interface Software</u></p> <p>Is required for the FMS/CIM – operation. (R2Z 530 required)</p>	X1A 000
	<p><u>DNC-Interface</u></p> <p>Enables the tele-operation of the control (WinNC) via a software protocol. The communication is done via a RS 232 interface</p> <p>Not available for FAGOR 8055 TC !</p>	X5A 050

Manuals

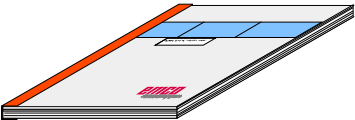
	DESCRIPTION	REF.NO.
	<u>Manual Concept TURN 450</u> English German Spanish Dutch Spanish Italian	EN1450 DE1450 FR 1450 HL 1450 SP1450 TA 1450
	<u>Operating manual</u> WinNC for SINUMERIK OPERATE WinNC SIEMENS 810/820-T WinNC SIEMENS 810D/840D-T WinNC GE FANUC Series 0-T WinNC GE FANUC Series 21-T WinNC EMCOTRONIC T 02 WinNC FAGOR 8055 TC	 DE 1849 EN 1849 DE 1804 EN 1804 FR 1804 SP 1804 TA 1804 HL 1804 DE 1815 EN 1815 FR 1815 SP 1815 TA 1815 HL 1815 DE 1802 EN 1802 FR 1802 SP 1802 HL 1802 TA 1802 DE 1902 EN 1902 FR 1902 SP 1902 HL 1902 TA 1902 DE 1805 EN 1805 FR 1805 HL 1805 SP 1805 TA 1805 DE 1819 EN 1819 FR 1819 SP 1819 HL 1819 TA 1819

	<u>Operating manual Win3D-View</u> EMCO Win3D-View - turning	DE 1827 EN 1827 FR 1827 HL 1827 SP 1827 TA 1827
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Courseware

	DESCRIPTION	REF.NO.
	<p><u>E[MCO] Campus</u></p> <p>E-Learning 2.0 for machining. Multimedia teaching and learning materials for CNC training.</p> <p><i>E[MCO] Campus -</i></p> <p>is a multimedia training program that teaches all the basics of modern CNC technology. The cleverly-designed teaching format makes even complex concepts easy to grasp and learn. Interactive dialog features allow students to progress at their own pace. Views are displayed using attractive 2 and 3D graphics, animations, and videos, sustainably improving the success of the learning process.</p> <p><u>Languages:</u> German English Czech Spanish Chinese</p> <p>Single-user license Multi-user license 20 Multi-user license 50 Multi-user license 100</p> <p>The Software is working without any time restriction, a renewal of the version is not necessary. A Software Maintenance Contract (SMC) is not available right now.</p>	<p>X2Y 400 X2Y 410 X2Y 420 X2Y 430</p>

Catalogues

	DESCRIPTION	REF.NO.
	<u>EMCONOMY moves</u>	DE 2801 EN 2801 FR 2801 SP 2801 RU 2801 CZ 2801
	<u>CONCEPT TURN 450</u>	DE 4545 EN 4545 TA 4545 SP 4545
	<u>EMCO Industrial Training</u>	DE 1837 EN 1837 TA 1837 SP 1837

Packing

	DESCRIPTION	REF.NO.
	<u>European packing</u> Pallet 274x215x24 cm with_rolamit cover	ZVZ 342 740
	<u>Climate packing</u> Pallet with Alu-bandage, various accessories	ZVP 547 274
	<u>Seaworthy packing</u> (as option to European- and Climate packing) Wooden box 284x225x205 cm	ZVP 302 741
	<u>WOODEN BOX F. CHIP CONV.</u> Wooden box for chip conveyor (433005) as additional protection for critical transportation.	ZVP 303 130
	<u>SEAWORTHY PACKING LM800</u> The loader (344 870) is packed with aluminium bandage, for transportation over-seas.	433 875