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1 CNC UNIVERSAL CYLINDRICAL GRINDING MACHINE S40cnc No 011.0260.90.044  
(For details see the following pages)

CNC UNIVERSAL CYLINDRICAL GRINDING  
MACHINE S40cnc

Centre height  
2400.776

Fundamental equipment, consisting of:

175 mm / 6 7/8"

Machine base  
2401.601

of Granitan S103

Turret wheelhead U with B axis  
2432.741

incl. drive motor 7,5 kW / 10 hp  
with water cooling. Guard left for  
grinding wheel dia 500 x 63 mm F1  
(80 mm F5) / 20" x 2 1/2" F1 (3 1/4"  
F5). Roller bearing.

Grinding wheel peripheral speed  
2413.864

35 m/s (only with grinding wheel  
dia 400 mm; dia 500 mm 50 m/s)

Workhead  
2409.650

swivelling, for grinding between  
fixed centers and for live spindle  
grinding. Roller bearing. Accuracy  
of roundness 0.0004 mm / .000,016".  
Fitting taper Morse 5.  
Drive: AC-Servomotor with Fanuc.  
AC-motor stepless with other versions  
Integrated pick-up for external and  
internal grinding for  $\phi \Rightarrow 10$  mm and  
for shoulder grinding of shoulder  
height  $\Rightarrow 1$  mm  
(not for centre height 2420.620)

Tailstock with 35 mm stroke  
2410.623

with plain bearing barrel. Dressing  
attachment with fitting taper Morse  
1 shortened and fliese diamond holder.  
Barrel dia. 50 mm. Fitting taper  
Morse 3. Without fine adjustment.  
(not for centre height 2420.620)

Dressing  
2415.654

CNC dressing from the front

Hydraulics  
2403.601

separated from the machine base,  
including pump

Wheelhead slide  
2411.601

fixed, with V and flat guideways

<u>Longitudinal slide</u> 2408.601	with swivelling table for correction of cylindricity. Travel = centre distance + 50 mm / 2"
<u>Fine adjustment</u> 2408.615	for swivelling table
<u>Air cushion</u> 2422.605	for table and workhead, with oilatomizer
<u>Mechanical graduation</u> 2400.658	inch
<u>Wheelhead axis X</u> 2411.626	straight 0 deg
<u>Wheelhead axis X, longitudinal axis Z for centre distance 1000 mm / 40"</u> 2404.741	NC-axis, linear measuring system. Drive by AC-servo motor via recirculating ball screw. <u>X-axis</u> : Travel 275 mm / 10 3/4". Infeed speed 0.001 - 5'000 mm/min. / .00004 - 196 ipm. Resolution 0,0001 mm / .000004". <u>Z-axis</u> : Travel 1050 mm / 42". Speed 0,001 - 10'000 mm/min. / .00004 - 393 ipm. Resolution 0,0001 mm / .000004"
<u>CNC-control Fanuc 16</u> 2404.748	with: - Colour screen activ 9.5" - Usable memory for workpiece programs, set-up and wheel data 80 meter / 260 ft. (32 kByte). From this user memory we need approx. 5 meters (2 kByte) for the Studer operating system - Memory for 125 programs - Integrated SPS-control (Usable memory for Studer workpiece 6.25 meter / 20 ft)
Control panel with english description 1397.011	tions
<u>Input in control</u> 2400.733	metric/inch, selectable
<u>Studer PCU-Terminal</u> 2404.653	Portable operating unit with LCD-indication, keyboard, electronic

	handwheel, override and acceptance key
<u>Interface RS 232 C</u> 2402.615	for input and output units
<u>Sensitron</u> 2217.627	incl. ancillary equipment
<u>Operating voltage</u> 2400.832	380 Volt +/- 10 %
<u>Mains frequency</u> 2400.830	60 Hz +/- 1 Hz
<u>Mains</u> 2400.847	4-wire <u>without</u> neutral wire
<u>Module voltage/control voltage</u> 2838.006	24 Volt DC
<u>Magnetic voltage/valve voltage</u> 2838.005	24 Volt DC
<u>Lighting</u> 2838.021	24 Volt DC
<u>Control cabinet</u> 2402.601	with machine control operating panel and cable channel
<u>Cooling unit</u> 2418.602	for control
<u>Studer operating system Release B for Fanuc 16</u> 1397.000	consisting of: 1. Set-up cycles with operator prompting (only one angle setting per wheel is possible for dressing and grinding) 2. Grinding menus for: - diameters - faces

	- tapers - contours (X/Z)
	3. Autom. dressing incl. free wheel shapes
	4. Fonction for start-up timer
	5. Programmable robot cycle (=robot cycle to maintain machine thermo-stability)
<u>Studer software Pictogramming</u> 1397.008	for Studer operating system Release B (=program-support through Pictogramme)
<u>Dialog language English</u> 2404.666	for Studer and Fanuc operating system
<u>Enclosure</u> 2407.626	Coolant collector tray and complete enclosure height 1900 mm / 74", incl. 2 sliding doors. Fluorescent light
<u>Operating door and service door</u> 2400.765	with interlock. When door open: energies cut off and lamp signal authorizing access; pushbutton for intentional release of setting up movements
<u>Colour</u> 2400.646	Machine incl. superstructures and accessories white RAL 9002 with stripe design bordeaux-red RAL 3003. Fine texture finish for machine and control cabinet as well as gloss finish for slides, workhead, wheel-head, splash guards etc.
<u>Valve</u> 2413.622	for coolant equipment
<u>Other equipment</u> 2400.645	1 set of mounting pads 1 set of tools 2 instruction manuals 1 set of electrical diagram 1 Studer Grinding Data, pocket file
<u>1 Balancing arbor</u> 2400.797	for grinding wheels
<u>2 test certificates</u> 2400.798	of machine geometry

<u>MACHINE ACCORDING TO DESCRIPTION</u>			
2400.859		<u>S40cnc</u> Centre distance 1000 mm / 40"	SFr. 241,830.--
		<u>OPTIONS</u> (optional, factory installation only. To be defined with order)	
9995.777-K	1	Preparation for C-Axis consisting of pre-wiring for workhead 2409.657 incl. cables and plugs for Alpha 22 brake motor	3,360.00
		<u>Wheelhead</u>	
		<u>Wheelheads with B-axis</u>	
2432.760	1	<u>Wheelhead swivel axis</u> electromotive (ACS) movement into work-position, resolution 1 deg via Hirth serration	0.00
		<u>Control</u>	
1952.851	1	<u>Special electrics</u> USA-norms: Main switch with fuses and cabinet door locking	950.00
		<u>Tailstock</u>	
2410.753	1	<u>Fine adjustment</u> Tailstock taper fine adjustment manual	2,170.00
		<u>Internal grinding accessories</u>	
2421.619	1	Frequency converter 15 kVA for inter- nal grinding (without service unit)	13,350.00
2421.609	1	Oil mist lubricating unit for 2 in- ternal grinding spindles incl. oil level and pressure monitoring (for high frequency motor spindles)	1,240.00

Dressing and profiling unit

Dressing and profiling unit

- 9994.566-K 1 Dressing disc dia. 120 mm (4,8"),  
bore 40 mm (1,6"), R = 1 mm (0,04")  
for dressing ceramic grinding wheels  
with dressing turbine 9994.565
- 9994.565-K 1 Dressing turbine, table mounted con-  
sisting of:  
- Fischer turbine AES 72 x 230/1  
- Frequency converter Mitsubishi  
FR2 024, 0,75 kW  
- Spindle holder, horizontal non-  
swivelling  
- Adaptor for dressing disc, ID 40  
mm, without dressing disc
- 2415.660 1 Swivelling dressing unit for internal  
grinding, hydraulic hinged, fixed  
adaptor bore MT 1 shortened, with  
magnetic valve (indispensable with  
B1-axis for conical internal grinding  
or cylindrical internal grinding)  
(not for centre height 2420.620)
- 9994.063-K 1 Additional extended baseplate for the  
dressing unit for dressing ID grin-  
ding wheels

Dressing tools for dressing and  
profiling unit

- 2813.077 3 Single point diamond 0.1 carat

SPECIAL ACCESSORIES AND ACCESSORIES  
(optional, subsequent supply)

Adaptors

2412.888 6 Wheel adaptor dia 500 mm / 20".  
Width 32 - 80 mm / 1 1/4" - 3 1/4",  
bore 203.2 mm / 8".  
Balancing segments on both sides

Workhead

-----K 1 Futterflansch inkl. Einsatz für  
Magnetfutter  $\phi$  10"  
Magnetic chuck flange (art.3569.324A)

Centres for workhead and tailstock

0709.017 1 Full centre short dia 26 mm / 1.02"  
MT 3

0710.021 1 Half centre short dia 26/4 mm /  
1.02/.157" MT 3

0710.020 1 Full centre long dia 26 mm / 1.02"  
MT 3

0710.045 1 Half centre long dia 26/2 mm /  
1.02/.08" MT 3

0709.058 1 Blunt centre dia 28 mm / 1.1" MT 3

0709.059 1 Blunt centre dia 38 mm / 1.5" MT 3

0709.044 1 Blunt centre dia 48 mm / 1.89" MT 3

Steadies

5530.118 1 Dial indicator, graduation .0001"

Software



- 1397.002 1 Studer Software-Option "Quick-Set" for Studer operating system release B Software-support for simplified setting up and resetting the machine. Depending on the wheelhead configuration and workpiece, it shortens the setting up or resetting time, between 30 - 90%.  
Enables:  
- to use a registered grinding wheel without new setting up for grinding, to be used at any grinding angle, i.e. one dressing angle, any number of grinding angles.  
- with registered grinding wheel to set up a new workpiece with the active positioning feeler or to set up only one grinding wheel.  
(necessitates switching measuring feeler for positioning active)

Internal grinding unit

- 2417.854 1 Internal grinding unit for high frequency spindles. Assembling from front. Bore  $\phi$  120 mm  
(only with turret wheelhead 2413.628/.629/.630/.636/2432.740/.741/.744;  
oil mist lubricating unit 2421.604 or /.609 or /.611 necessary)
- 2417.856 1 Internal grinding unit for high frequency spindles. Assembling from side. Bore  $\phi$  120 mm (only with turret wheelhead 2413.868/.869/.872/.874/2432.740/.741/.744/.747/2417.638;  
oil mist lubricating unit 2421.604 or .609 or .611 necessary)

Internal grinding spindles

- 5552.070 1 High frequency motor spindle for internal grinding type MFV 1245/6,  $\phi$  120 mm with oil mist lubricating. Drive: 6 kW/45'000 rpm.
- 5552.072 1 High frequency motor spindle for internal grinding type MFV 1224/8,

φ 120 mm with oil mist lubricating.  
Drive: 8 kW/24'000 rpm.

5552.304	1	Grinding arbor dia 12 x 20 mm
5552.306	1	Grinding arbor dia 12 x 50 mm
5552.307	1	Grinding arbor dia 16 x 25 mm
5552.308	1	Grinding arbor dia 16 x 45 mm
5552.309	1	Grinding arbor dia 16 x 65 mm
5552.310	1	Grinding arbor dia 20 x 30 mm
5552.311	1	Grinding arbor dia 20 x 60 mm
5552.312	1	Grinding arbor dia 20 x 90 mm
5552.210	1	Chuck + 2 collets dia 3 + 6 mm
5552.326	1	Grinding arbor dia 16 x 45 mm
5552.327	1	Grinding arbor dia 16 x 65 mm
5552.329	1	Grinding arbor dia 20 x 60 mm
5552.330	1	Grinding arbor dia 20 x 90 mm
5552.333	1	Grinding arbor dia 25 x 115 mm

Size control units

2429.614	1	MARPOSS size control unit for active positioning and diameters with interrupted and not interrupted surfaces, consisting of: <ul style="list-style-type: none"><li>- Integrated measuring and control amplifier E80</li><li>- External measuring head Minialsar with el. lift-off and hydraulic retraction. Measuring range dia 2 - 95 mm</li><li>- Positioning measuring head T25G active</li><li>- Without ancillary equipment</li></ul>
2429.620	1	Ancillary equipment only for MARPOSS size control unit order-no