

Quotation: 0142269-04 / 17. Dez 2010

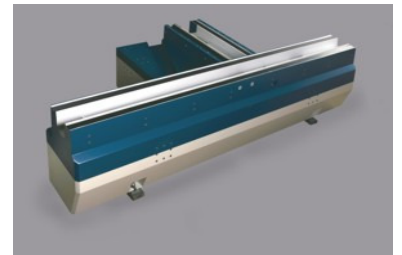
Customer: W-Technology

Product: S33

Serie: 133

Int.Ref.: 15/11/007/000 - 0-1

Mat.-No.	Description	Price	Quantity	Value EUR
Machine				
CNC universal cylindrical grinding machine				
S33				
Basic machine				
	Basic equipment		1	74'680.00
A2400635-VG	Center distance 650mm / 25.59" Released for series: 1 - ... -- Center distance will be reduced, with the universal workhead ISO50, by 50mm / 1.97" to max. 200mm / 7.87", depending on the workpiece table swivel angle and equipment (power chucking cylinder, gauging system)		1 --	
A2400776-B	Center height 175mm / 6.89"		1 --	
A2901603-B	Machine base of Granitan S103 incl. vibration reducing mounting pads. Synthetic-based surfacing material S200 with oil circulating lubrication. Wheelhead and longitudinal slides with V and flat guideways. Longitudinal table with auxiliary scale for adjusting table mountings		1 --	
A2901607-B	Workpiece table swivelling range +8.5 deg with fine adjustment and pneumatic lift of for swiveling (incl. support for radial dial indicator)		1 --	
A2400657-VG	Mechanical graduation metric		1 --	



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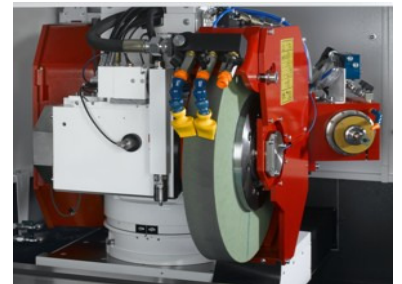
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Mat.-No.	Description	Price	Quantity	Value EUR
Wheelhead axis X and longitudinal axis Z				
60003110-B	Wheelhead axis X (NC-axis) 0 deg. Drive by AC-Servo motor via recirculating ball screw. Travel 285mm / 11.22". Programmable infeed speed 0.001-10'000mm/min / .000,04-394ipm		1 --	
60003111-B	Longitudinal axis Z (NC-axis). Drive by AC servo motor via recirculating ball screw. Travel 800mm/31.5". Programmable infeed speed 0.001-20,000mm/min / .000,04-786ipm		1 --	
A2723657-V	Direct measuring system for X-axis resolution 0.0001mm / 0.000,004" (linear, absolute measuring system, doesn't require reference point approaching) Released for series: 42 - ...		1 --	2'841.00
A2723658-V	Direct measuring system of Z-axis resolution 0.0001mm / 0.000,004" (linear, absolute measuring system, doesn't require reference point approaching) Released for series: 42 - ...		1 --	4'547.00
A1397052-S	Glass scale interface for direct measuring systems		1 --	2'252.00

Wheelhead H1

A2912730-B	Wheelhead		1 --	
A3112778-V	Wheelhead swivel axis automatic (B-axis) with Hirth serration 1 deg. Released for series: 121 - ...		1 --	22'131.00



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Mat.-No.	Description	Price	Quantity	Value EUR
60003698-V	Swiveling range of B-axis -15° to +225° Released for series: 121 - ...		1 --	
General note on wheelhead swivel axis: Only 1 grinding angle can be set up per workpiece position if the machine is not equipped with Studer Quick-Set				
General notes on the tool positions of wheelhead with swivel axis (B-axis): -- Grinding length of right grinding wheel(s) T2/T4 is reduced by 75mm / 2.95" in wheelhead swivel position 30deg. -- For a complete machining with T2 and T4 grinding wheels in swivel position 0deg. and 30deg. respectively the grinding length is reduced by 125mm / 4.92" -- For equipped tool positions T3 (inclined at -65deg.) and T4, machining with grinding wheel T4 not suitable due to limited geometries in the wheelhead swivel position 0deg. -- For internal grinding T3 with equipped wheel guard in T2 there are geometrical restrictions for grinding wheel widths of 80mm/3.15" F5 and workpiece diameters greater than 150mm/5.91" or 110mm/4.33" F5 and workpiece diameters greater than 100mm/3.94". Workpiece-related technical clarification in advance is recommended				
A2912681-B	Guard in tool position 2 right dia. 500mm / 19.69" for external grinding wheels dia. 500x63mm / 19.69x2.48" form1 (80mm / 3.15" form5)		1 --	3'519.00
60005873-E	Internal grinding attachment for high-frequency spindles dia. 120mm / 4.72" in tool position 3 (inclined at -65°) including ancillary equipment to connect internal grinding spindles dia. 120mm / 4.72" according to the following Studer specifications: -- Pluggable lubrication connections for hose dia. 4mm / 0.16" -- Pluggable coolant connections for flow and reflow with hose dia. 10mm / 0.39" (spindle and hose coupling included in the scope of delivery of the spindle) -- With electrical connections according to connection diagram internal grinding spindle coding 1330348A Released for series: 121 - ...		1 --	2'308.00

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Mat.-No.	Description	Price	Quantity	Value EUR
A2912798-S	Guard in tool position 4 right dia. 500mm / 19.69" for external grinding for wheels dia. 500x63mm / 19.69x22.48" form 1 (80mm / 3.15" form 5) Released for series: 121 - ...		1 --	3'519.00
General note on the assignment of the wheel guards to the external grinding spindles: -- Guard right in tool position 2 for spindle 1				
A2912633-E	Automatic grinding wheel contact protection, for guard in tool position 2 right		1 --	3'625.00
A2912794-E	Automatic grinding wheel contact protection for guard in tool position 4 right Released for series: 121 - ...		1 --	3'625.00
60004406-S	Motor spindle 1 incl. frequency converter Driving power 7.5kW/10.2hp / 1400 - 11kW/14.96hp / 3200min-1 (1400min-1 corresponds to $v = 37\text{m/s}/7283\text{ sfpm}$ based on grinding wheel dia. 500mm (19.685"). -- Solid shaft with 1 conical shaft end, taper ratio 1:10, nominal dia. 63mm (2.480"). -- Motor spindle internal cooling Released for series: 121 - ...		1 --	15'866.00
A2912644-S	Cutting speed of motor spindle 1 programmable up to max. 50m/s / 9840sfpm Released for series: 121 - ... Note: With motor spindles with $n_{\text{max.}} = 3200\text{min-1}$, 50m/s/9840sfpm are only possible with grinding wheel diameter >300mm/11.81"		1 --	
60004407-S	Motor spindle 2 incl. frequency converter Driving power 7.5kW/10.2hp / 1400 - 11kW/14.96hp / 3200min-1 (1400min-1 corresponds to $v = 37\text{m/s}/7283\text{ sfpm}$ based on grinding wheel dia. 500mm (19.685"). -- Solid shaft with 1 conical shaft end, taper ratio 1:10 nominal dia. 63mm (2.480"). -- Motor spindle internal cooling Released for series: 121 - ...		1 --	15'866.00

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Mat.-No.	Description	Price	Quantity	Value EUR
A2912769-S	Cutting speed of motor spindle 2 programmable up to max. 50m/s / 9840sfpm Released for series: 121 - ... Note: With motor spindles with nmax. = 3200min-1, 50m/s/9840sfpm are only possible with grinding wheel diameter >300mm/11.81"		1 --	
A2917623-E	HF frequency converter 15kW for programmable cutting speed for high frequency internal grinding motor spindles. (The possible cutting speed depends on the max. number of revolutions of the motor spindle and the grinding wheel resp. the grinding quill)		1 --	13'146.00
A2654632	HF internal grinding equipment for Fischer spindles with oil-air lubrication General notes on high frequency spindle manufacturer: -- For each machine, different spindle makes with oil-air lubrication may not be used. -- The quantity of lubrication connections has to comply with the spindles from the accessories. -- Spindles with different numbers of lubrication connections cannot be used on the same tool position.		1 --	
A2917633-E	Maintenance unit for oil-air lubrication (4 lubrication connections) for internal grinding spindles. Incl. dosing and mixing unit with lubri- cation impulse surveillance, pneumatic lubrication pump, oil tank 3 liters/0.75 US-Gallon with level surveillance, pneumatic lubrication pressure surveil- lance. Lubrication amount can be programmed in the CNC control according to the spindle in use		1 --	4'185.00
A2654637-E	Sealing air supply to HF grinding spindles when machine energies ON (from pneumatic-main valve) Note: Required for Fischer high frequency spindles with max. 4 lubrication points		1 --	210.00

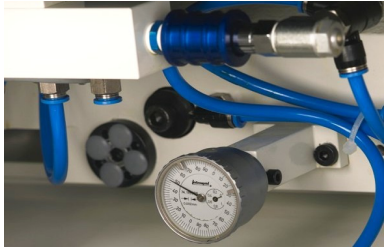
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Mat.-No.	Description	Price	Quantity	Value EUR
Workhead				
A2439612-V	Universal workhead with roller bearings Fitting taper ISO50, external cylindrical spindle nose to accept chucks dia. 110mm (4.330"), spindle bore dia. 50mm (1.968"). Manual spindle blocking without surveillance. Mounting option for ring sensor		1 --	17'482.00
	General note for Universal workhead: For live spindle grinding or external grinding alternatively with fixed center or live center General note for workhead: Incl. interface for dressing tool holder			
A2909617-VG	Manual correction of cylindricity for workhead		1 --	
				
A2909801-M	Dial indicator incl. support for workhead cylindricity setting		1 --	622.00
A2909607-V	Accuracy of roundness when live spindle grinding 0.0004mm / .000,016"		1 --	
A2909623-V	Standard C-axis for cylindrical grinding for creepfeed grinding or thread grinding. Indirect measuring system, resolution 0.0001 deg. AC servo motor with safety brake		1 --	10'161.00
A2909873-V	Workpiece drive 4kW / 5.44hp with AC servo motor		1 --	
A2909621-V	Speeds 1-1000min-1, Inching speed 1-50rpm		1 --	

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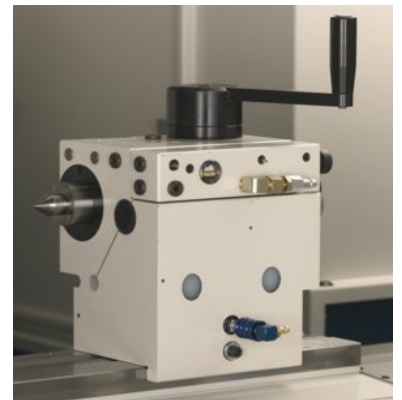
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Mat.-No.	Description	Price	Quantity	Value EUR
A2909795-B	Pneumatic lifting with hand valve for moving of workhead Load moment on live spindle grinding with: -- Universal workhead MT4 max. 70Nm / 51.66ftlbs -- Universal workhead MT5 max. 70Nm / 51.66ftlbs -- Universal workhead with ISO50 max. 180Nm / 132.84ftlbs -- Chuck workhead with ISO50 max. 250Nm / 184.50ft lbs Moment of inertia of the masses with standard C-axes if: -- Universal workhead with MT4 max. 1.0kgm² / 2.2lb -- Universal workhead with MT5 max. 1.0kgm² / 2.2lb -- Universal workhead with ISO50 max. 1.0kgm² / 2.2lb -- Chuck workhead with MT4 max. 1.0kgm² / 2.2lb -- Chuck workhead with ISO50 max. 1.5kgm² / 3.3lb Workpiece weight between the points: -- with center distance 650mm / 25.59" - or universal workhead max. 80kg / 176lb -- with center distance 1000mm / 39.37" max. 120kg / 264lb		1 --	
A2909914-E	Pneumatic control and clamping force monitoringincl. adjustment unit for a chuck with automaticactuation with an intrinsic clamping cylinder. Selection between constant pressure control and pressure control until clamping force is reached can be defined on the control system at setup Released for series: 19 - ...		1 --	1'925.00

Tailstock

A2910610-EG	Tailstock with fitting taper MT3 and 35mm / 1.38" stroke. Barrel dia. 50mm / 1.97" with plain bearing. Mechanically adjustable barrel travel control. Mounting of a dressing tool holder adjustable in height possible		1 --	5'446.00
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Mat.-No.	Description	Price	Quantity	Value EUR
A2910604-EG	Manual tailstock fine adjustment for cylindricity corrections +/-0.04mm / .0016" (in diameter)		1 --	1'445.00
				
A2910611-EG	Pneumatic lifting unit to facilitate the moving of the tailstock during set-up		1 --	
A2910628-E	Park position for tailstock within the machine, for removing the tailstock from the workpiece table Note(s): -- Recommended when the machine is connected with internal grinding unit		1 --	511.00

Dressing

A2915614-E	Hydraulic hinged dressing attachment, mounted on workpiece table. Usable for external and internal grinding without the need of resetting		1 --	7'755.00
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**Control systems**

A2902611-B	Operating panel and electrical cabinet permanently fixed to the machine		1 --	
A2902644-E	Air conditioning for control cabinet		1 --	2'720.00

General note on cooling of electrical cabinet:

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Mat.-No.	Description	Price	Quantity	Value EUR
A2400826-B	AC voltage 400 Volt +/-10%		1 --	
A2400828-V	Mains frequency 50Hz +/-1Hz		1 --	
A2400653-B	Mains 4-wire (L1, L2, L3 / PE) or 5-wire (L1, L2, L3 / N / PE)		1 --	
A1397036-B	Control voltage 24 Volt DC		1 --	
60003487-B	CNC control Fanuc 0i-TD with: -- inclusive interface to screen with integr. PC -- Integrated SPS controls -- Usable memory 256kByte, memory for 400 programs. From the user memory approx 2kByte are used for the Studer operating system. (The memory requirements for the Studer sample part are approx. 2.5kByte) Released for series: 121 - ...		1 --	
60003574-B	Flat 15" screen (standard) with touch function and integrated personal computer with USB interface outside of and within the operating panel. Note: When connecting an additional PC keyboard is the US keyboard layout (american) predefined. Released for series: 121 - ...		1 --	
A2404810-B	Portable operating unit Studer PCU terminal II with graphics TFT color monitor, keyboard electronic handwheel, override and acceptance button Released for series: 121 - ...		1 --	
A2217631-B	Working hour meter, range 0-99,999h		1 --	
A2404809-B	Dual Check Safety for Fanuc CNC drives and automatic switch-off (energy switch-off) with open doors for the remaining actuators with access lamp and acceptance button for set-up. Lockable safety switch for maintenance work Released for series: 121 - ...		1 --	

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Mat.-No.	Description	Price	Quantity	Value EUR
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Contact detection

A2404798-E

1 --

2'605.00

Electronic contact detection with Dittel S6000 consisting of:

- Display and control via StuderWIN
- 2 inputs for contact detection with active or passive sensors, whereby only one sensor can be used simultaneously
- Manual selection of frequency band for each sensor
- Studer software for air gap elimination on the basis of contact detection with selection of sensor-input and programmable sensitivity

Released for series: 121 - ...

General notes for contact detection:

- Requires sensors
- Sensor have to be ordered separate
- Requires installation of sensor-inputs for the connection of sensors. (Only one sensor can be simultaneously connected to a sensor-input)

Possible contact detection according to the contact sensor:**Contact sensor with magnetic base in the area of the longitudinal table:**

- As set-up assistance
- for contact detection in connection with external grinding between centers (with restrictions in case of large workpiece centers, except not possible with rotating tailstock center or synchronous tailstock).
- for contact detection on non rotating dressing tools.
Corresponding sensor must be ordered under Accessories in chapter Control Systems

Ring sensor for workhead with an appropriate connecting facility

(consisting of ring sensor (transmitter) and receiver ring):

- for contact detection on external and internal grinding with live clamping devices (chucks).
Corresponding cut-in ring sensor (ring sensor (transmitter) and receiver ring) must be ordered as accessory under chapter workhead.
Note: Only for clamping devices with interface for extension of a contact ring sensor

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Mat.-No.	Description	Price	Quantity	Value EUR
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Ring sensor for external grinding spindle:

- For contact detection on external grinding between fixed and rotating centers
- For contact detection on external grinding with live clamping devices (chucks, collets).
- Corresponding sensor must be ordered as accessory under chapter wheelhead
- Note: for external grinding spindles with 2 wheel guards, a contact sensor is required for each tool position

General notes for contact sensors:

- Ring sensors on the wheelhead or contact sensors integrated on the wheelhead or in the grinding spindle require each a connection installation (sockets) of a sensor-input on the wheelhead. All other sensors require the installation of a corresponding connection (sockets) on workhead.
- Socket and connector must have the same number of poles

Installation of connection (sockets) for contact detection inputs:

A2404811-E	1 --	
Input 1 (5-pole) on workhead		
Released for series: 121 - ...		
A2404812-E	1 --	
Input 2 (5-pole) on workhead		
Released for series: 121 - ...		

Interface(s)

A1397239-E	1 --	751.00
Interface for manual balancing on tool head / wheelhead H1 to connect a portable MPM BMT100 or BMT2xx balancing unit outside the machine enclosure consisting of:		
-- Interface with sockets outside the machine enclosure for:		
- 24 Volt power supply for balancing unit		
- rpm signal of rpm sensor (one connection for each external grinding spindle without balancing head for automatic balancing)		
- balancing signal from balancing sensor(s) (one connection for each balancing plane)		
-- Socket on the wheelhead for the required balancing sensor(s) per balancing plane		
-- Holder for balancing unit		
Released for series: 121 - ...		

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Mat.-No.	Description	Price	Quantity	Value EUR
A1397100-E	Connection installation for Ethernet interface (active interface) of the integrated PC for: -- rapid data exchange with an external PC -- remote diagnosis: facilitates speedy and low-cost maintenance support from the Studer company by means of online access to the data of the CNC machine controls via internet connection. Access permission only with log-in and password of the customer via a defined meeting point on the internet. Released for series: 121 - ...		1 --	125.00

Software**Additional grinding cycles**

A1397060-E	Thread grinding cycles for Studer operating system off Release B for grinding of threads with vertical wheel (parallel), i.e. vertical to Z-axis. Enables ISO thread pitches up to 6 deg. on external threads and up to 4 deg. on internal threads. Cycles for: Plunging, traverse grinding or traverse grinding with constant removal capacity. Notes: -- Requires special dressing device and dressing tools (fixed or rotative) for thread grinding -- For grinding between centers, a zero backlash driving system (see accessories chapter workhead) is recommendable -- For aligning a pre-machined thread the machine must be equipped with a touch probe. With pre-machined ISO threads the standard touch probe (ball diameter 2mm / 0.079") may be used for the positioning of pitches equal to or greater than 2.5mm / 0.098". For smaller pitches up to 1.5mm / 0.059" a touch probe ball diameter of 1mm / 0.039" is required. Even smaller pitches require the use of a special touch probe (cone point). -- StuderThread integrated recommended		1 --	3'902.00
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Software options**A1397135-B**

1 --

Program Check with Handwheel for Studer operating system Release C or higher. Option allows to control infeed speed in an automatic program cycle through the handwheel.

E.g. for testing a new workpiece program when approaching the workpiece or the dressing tool or when approaching a bore

Released for series: 11 - ...

A1397002-E

1 --

6'379.00

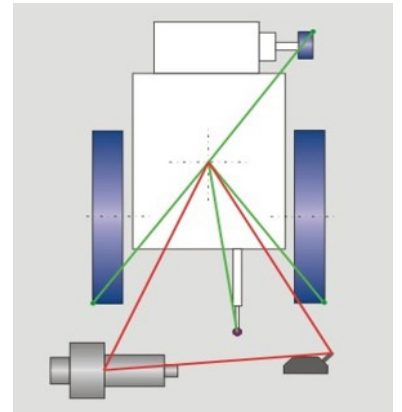
Quick-Set, incl. registering tripod with touching and measuring area.

Enables:

-- To use a registered wheel without new setting-up, for grinding with free

swivel angle, i.e. 1 dressing angle, free number of grinding angles

-- To set-up a new workpiece with the active probe or with only one wheel

**A2404800-VG**

1 --

Control system user interface with metric measurement units

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Mat.-No.	Description	Price	Quantity	Value EUR
60005746-E	StuderThread integrated for generating contour dressing programs with corresponding compensation of the contouring error for dressing of thread grinding wheels. Dressing programs for single and multi profile wheels can be created, whereby different dressing strategies can be selected. Feasibility studies about compensation of the profile distortion through axially parallel thread grinding are possible by means of analysis functions and are displayed in graphical and tabular form. Distortion compensation for asymmetrical thread profiles (e.g. buttress thread) can be made with swiveled B axis. The most common thread profiles can be programmed by means of parameterized "standard macros" and are included in the scope of supply. Customer-specific macros can be ordered at Studer. Distortion compensation can be kept constant with decreasing grinding wheel diameter (e.g. ball screw nuts). Function limitations: The axially parallel thread grinding procedure enables to machine only threads up to a critical pitch, above this mark, the profile distortion becomes too high. This angle mainly depends on the thread profile, the thread diameter and the thread pitch. Notes: -- Machine is to be equipped with thread grinding cycles -- Free-form thread profiles in DXF file format can be created with the Vector CAD program. -- Compatibility can only be guaranteed for DXF formats from the "Vector" CAD program. -- User interface and integrated operating instructions with online help system: German, English, French, Italian (switchable) Released for series: 121 - ...		1 --	6'342.00

Dialog language

A1397244-V	Dialog language Czech for StuderWIN Released for series: 121 - ...		1 --	2'587.00
60003502-B	Supplementary dialog language German for StuderWIN Released for series: 121 - ...		1 --	
60003503-B	Supplementary dialog language English for StuderWIN Released for series: 121 - ...		1 --	
60003504-B	Supplementary dialog language French for StuderWIN Released for series: 121 - ...		1 --	

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Mat.-No.	Description	Price	Quantity	Value EUR
60003505-B	Supplementary dialog language Italian for StuderWIN Released for series: 121 - ... General note on dialog languages for StuderWIN: -- The dialog language for StuderWIN is selected when the machines are dispatched -- Additional dialog languages supplied for StuderWIN can be selected by the customer		1 --	
60006128-B	Language English for Microsoft operating system (only for administrative purposes) Released for series: 121 - ...		1 --	

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Mat.-No.	Description	Price	Quantity	Value EUR
In-process gauging				
60005752-E	Swiveling touch probe 1 (switching) in tool position T2, angled to the machining surface for measuring tip with thread M3 and software for compensation. For example for active positioning on shoulders Released for series: 121 - ...		1 --	4'881.00
60006051-M	Measuring tip with ball dia. 2mm (0.079"), length 21mm (0.827") for touch probe with M3 thread Released for series: 121 - ...		1 ST	54.00
Hydraulics and pneumatics				
A2904710-B	2-circuit hydraulics nominal pressure 20 bar with filter 10µm for hydraulics, nominal pressure 0.8 bar with filter 6µm and electric filter-pollution, monitoring for lubrication of the X- and Z-axis, with common tank, oil volume 16 liters, hydraulic unit attached to the electric cabinet		1 --	
A2904622-B	Pneumatic basic unit with compressed air processing (filter, water separator with automatic drain), electr. main valve, circuit pressure surveillance		1 --	
Coolant appliances				
A2918679-B	Coolant equipment for emulsion Note: The machine is suitable only for the use of mineral emulsion (not synthetic). Flammable coolants (e.g. grinding oils) cannot be used		1 --	
A2918721-B	Coolant interface for connection of a coolant supply system according to electr. interface description SDE0096402B. (Power consumption >10A, requires coolant device with own supply). The required coolant volume and the mechanical interface are shown in the space assignment plan of the machine		1 --	

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Mat.-No.	Description	Price	Quantity	Value EUR
A2918758-E	Paper band filter 375 liters (99 US.liq.gal.) for grindingoil or emulsion with automatic filter fleece feeding (filter fleece width 1000mm (39.370")). With run-in plate as flame shield. Note: Corresponding filter fleece has to be ordered separately		1 --	5'853.00
A2918759-E	Coolant supply pump 40lmin at 3bar, 100lmin at 2.5bar for paper band filter		1 --	1'591.00
A2918689-E	Water cooling circuit (passive refrigerator unit) for motor spindles with separate cooling-water tank 100 liters. Water must contain 5% anticorrosive and 0.15% fungicide. For first filling, 1 can anticorrosive of 5 liters and 1 can fungicide of 0.15 liter are supplied Released for series: 1 - 87 , 121 - ...		1 --	5'530.00
A2918619-E	Coolant cycle valve 2 for process cooling on grinding wheel in tool holding fixture position 2		1 --	932.00
A2918620-E	Coolant cycle valve 3 for process cooling on grinding wheel in tool holding fixture position 3		1 --	521.00
A2918724-E	Coolant cycle valve 4 for process cooling on the grindig wheel in tool holding fixture position 4		1 --	521.00
A2422671	Connection to a grinding mist extraction unit on the customer side. Installation by customer		1 --	
A2918647-E	Interface for grinding mist extraction unit duct adapter dia. 198mm (7.795") on enclosure for tube connection of the grinding mist extraction unit. Electrical interface according to SDE0096403A. Mechanical arrangement of the duct adapter and necessary suction power are shown on the arrangement plan of the machine		1 --	396.00

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Mat.-No.	Description	Price	Quantity	Value EUR
Enclosure				
A2905685-B	Partial enclosure (1575mm from the ground) with cover over Z-axis with access and maintenance doors, with integrated coolant collector tray over the machine base		1 --	
A2905686-E	Upgrading of partial enclosure to full enclosure (= additional hood to partial enclosure) Released for series: 1 - ...		1 --	1'274.00
A2905609-E	Machine lighting with cold light lamp 24 Volt, 36 Watt Note: Required if machine has full enclosure		1 --	521.00
A2905610-B	Door monitoring with electrical locking mechanism Studer standard execution in conformity with EC (in case of power loss the doors are not hold)		1 --	

Color

A2420684-VG	1 --
Standard machine color	
-- Machine color (texture finish):	
Upper part signal white (RAL 9003),	
Lower part iron gray (RAL 7011)	
-- Color of the ancillary equipment and control	
cabinet outside: light gray RAL 7035	
(texture finish)	
-- Color of the machine fixtures and accessories	
inside the housing signal white RAL 9003	
(smooth finish)	
-- Color of wheel guards / spindle holders signal	
red RAL 3001, depending on machine design	
(smooth finish)	
Released for series: 42 - ...	

General note on stripe on lower part:

Only possible if color of lower part of the machine is the same
as that of the upper part

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Mat.-No.	Description	Price	Quantity	Value EUR
A2420690-VG	Color control cabinet inside light-grey RAL 7035 Released for series: 35 - ...		1 --	

Machine documents

A2400798-B	Test certificates of machine geometry		2 --	
A2420700-E	Electrical test certificate according to EN 60204-1 Protective conductor continuity test		1 --	
A2420609-S	Declaration of EC-conformity for EC-compliant safety equipment		1 --	
A2900962-V	Operating and programming instructions Czech General note on the operating and programming instructions: includes accompanying CD with operating and programming instructions in pdf format		1 --	
A2900677-V	Fanuc operator's manual English		1 ST	
A2900688-V	Fanuc maintenance manual English		1 ST	
A2900816-B	Equipment manual with documentation of external equipment (English/German) for maintenance. By the majority as a PDF file on CD Released for series: 37 - ...		1 --	
A2900618-B	Studer controlling documentation (English/German) put in the control cabinet, consisting of: -- Electrical schematics machine control (incl. setting parameters) -- Hydraulic schematics -- Pneumatic schematics -- Coolant schematics -- Log book		1 --	

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Mat.-No.	Description	Price	Quantity	Value EUR
A2900619-B	Software documentation/Data backup CD-Rom with option programmes and parameters		1 --	
Miscellaneous				
A2900613-B	Operating tools		1 SA	
Warranty				
A9904227-B	The warranty period is 12 months from the date of start-up at the factory of the customer, but max. 18 months after delivery or max. 4000 operating hours		1 --	
Notes to necessary accessories				
Cut-in sensor(s) depending on the contact detection requirements				
Grinding wheels/grinding wheel adaptors.				
Internal grinding spindle and internal grinding tools.				
Extractor tool for dismantling the grinding wheel.				
Dressing tool holder and dressing tools.				
Filter fleece for paper band filter.				
Total Machine				265'152.00

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Mat.-No.	Description	Price	Quantity	Value EUR
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Accessories

Wheelhead

External grinding

Wheel adaptor, nominal dia. 63mm (2.480")

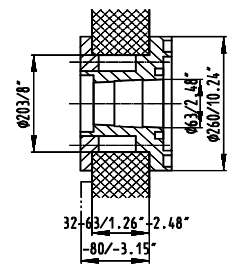
A2432795A-Z

1'094.00

3 ST

3'282.00

Wheel adaptor dia. 500mm (19.685") with bore 203.2mm (8").
Width 32-63mm (1.259 - 2.480") form1 (80mm (3.149") form5)
for tapered shaft ends 1:10 nominal dia. 63mm (2.480").
Incl. balancing segments and graduation



Intermediate ring

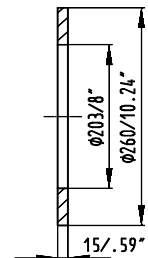
A2012243B-Z

148.00

2 ST

296.00

Spacer ring 15mm (0.590") with bore 203.2mm (8")



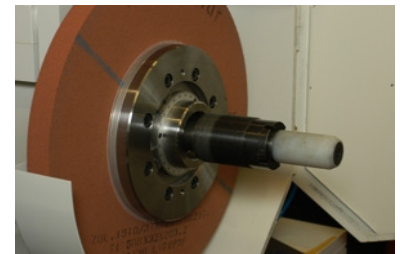
Grinding wheel changing unit

A2237731A-Z

1 ST

248.00

Locating pin (length 220mm (8.661")) for more ergonomic grinding wheel change, for shaft end with nominal dia. 63mm (2.480"), including extractor nut (instead of the extraction tool)



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Static balancing

A2812119-Z

1 ST

223.00

Balancing arbor for grinding wheels with nominal dia. 63mm (2.480") length 285mm (11.220"), for balancing equipment dia. 400mm (15.748") or dia. 600mm (23.622")



Internal grinding

Internal grinding unit

30005687-Z

1 ST

16.00

Adhesive for mounting of internal grinding wheels on threaded bolts
Araldite Rapid 2-component adhesive (double-syringe with 12ml each)

HF internal grinding motor spindles with 4 lubrication connections

General notes for HF internal grinding motor spindles:

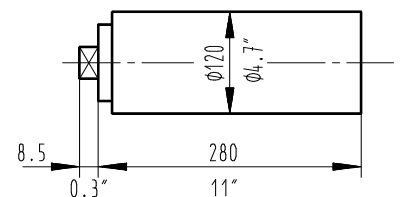
- Incl. testing and initial lubrication, if spindle is ordered together with the machine
- Machine is to be equipped with internal grinding attachment for HF spindles
- Reduction sleeves required depending on the diameter of the internal grinding attachment and the motor spindles

A2667655A-Z

1 ST

11'978.00

Internal grinding motor spindle Fischer MFM 1242/60
42000-60000min-1 / 10 kW), multi-range spindle dia. 120mm (4.724") according to Studer specification 1330348A with tool holding fixture HJND 28.
Oil-air lubrication with 4 lubrication connections and water cooling.
Note: Machine is to be equipped with oil-air lubrication for 4 lubrication connections



Internal grinding quills HJND 28

A5551500A-Z

1 ST

237.00

Internal grinding quill HJND 28-528 dia. 5x28mm (0.196x1.102")

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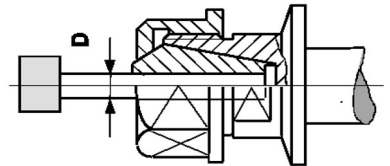
Serie: 133

Int.Ref.: 15/11/007/000 - 0-1

Mat.-No.	Description	Price	Quantity	Value EUR
A5552315A-Z	Internal grinding quill HJND 28-1250 dia. 12x50mm (0.472x1.968")		1 ST	236.00
A5552320A-Z	Internal grinding quill HJND 28-2060 dia. 20x60mm (0.787x2.362")		1 ST	236.00

Chuck HJNZ

A5552211A-Z	Chuck HJNZ 28 +2 collets ER20 dia. 3+6mm		1 ST	804.00
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**Internal grinding wheels****General application of abrasives****11C Silicon Carbides for:**

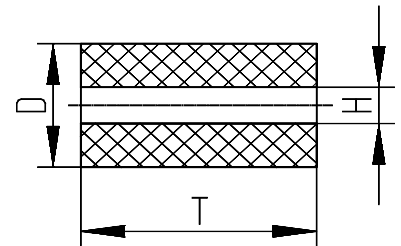
Cast iron / tungsten carbide / glass / plastics / non-ferrous metals / ceramics / stainless, acid and heat resistant steel / hardened steel 63 HRC and higher / nitriding steel.

54A Pure aluminium oxide for:

Non-alloyed, alloyed, unhardened and hardened steel up to 63 HRC (carbon content up to 0.5% / stainless, acid and heat resistant steel / nitriding steel (untreated) / cast steel nodular cast iron / tool steel / hard-chrome plated steel.

93A Ceramic aluminium oxide (30%) for:

Difficult-to-grind steel and alloys (tool steel, high speed steel) from soft state to 64 HRC / cast steel / cast iron



A5583045A-Z	Wheel dia. 10x10x4mm 54A 80 H 8 V604W, cutting speed 50m/s / 9840sfpm. (1 set = 10 pieces)		1 SA	102.00
A5583045A-Z	Wheel dia. 10x10x4mm 54A 80 H 8 V604W, cutting speed 50m/s / 9840sfpm. (1 set = 10 pieces)		1 SA	102.00
A5583077A-Z	Wheel dia. 20x20x6mm 54A 120 H 15 VPMF604W. Cutting speed 50m/s / 9840sfpm. (1 set = 10 pieces)		1 SA	132.00

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Product: S33

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Mat.-No.	Description	Price	Quantity	Value EUR
A5583077A-Z	Wheel dia. 20x20x6mm 54A 120 H 15 VPMF604W. Cutting speed 50m/s / 9840sfpm. (1 set = 10 pieces)		1 SA	132.00
A5583081A-Z	Wheel dia. 32x32x10mm 54A 120 H 15 VPMF604W, cutting speed 50m/s / 9840sfpm. (1 set = 5 pieces)		1 SA	93.00
A5583081A-Z	Wheel dia. 32x32x10mm 54A 120 H 15 VPMF604W, cutting speed 50m/s / 9840sfpm. (1 set = 5 pieces)		1 SA	93.00
A5583601A-Z	Wheel SARUBIN 60M dia 6x8mm (0.236x0.315""), dia shaft 3mm (0.118") (1 set = 10 pieces)		1 SA	48.00
A5583601A-Z	Wheel SARUBIN 60M dia 6x8mm (0.236x0.315""), dia shaft 3mm (0.118") (1 set = 10 pieces)		1 SA	48.00

Workhead

A2439671A-Z	Cut-in ring sensor passive (transmitter ring) for mounting on the clamping device for live spindle grinding or its adaptors with correspondent interface for use on workheads with fitting taper ISO50. Note: Requires correspondent sensor receiver ring on the workhead		1 ST	1'490.00
10013647-Z	Receiver ring to cut-in ring sensor passive for universal workhead with fitting taper ISO50, incl. 2-pole connection cable suitable for connection at both ends and 5-pole connector (cable length 6m) Note: For the use of centers, the receiver ring has to be detached Released for series: 121 - ...		1 ST	2'179.00



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Mat.-No.	Description	Price	Quantity	Value EUR
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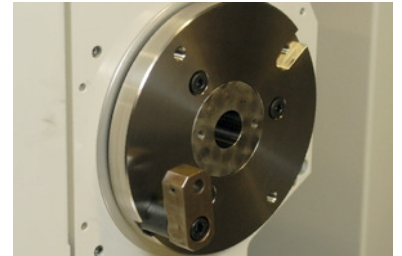
Adaptors for centres

A2439704A-Z

1 ST

656.00

Insert for centers MT3 for universal workhead ISO50
incl. locking plate and driver (driver pin dia. 10mm)

**Carrier**

A1809617A-Z

1 SA

85.00

Carriers for dia. 10-50mm / .39-1.97", set consisting
of ever 1 pieces for workpiece diameter up to max.
dia. 10mm / 0.39", dia. 16mm / 0.63", dia. 25mm /
0.98", dia. 40mm / 1.57", dia. 50mm / 1.97"

**Flange blank (Adaptor for chuck)**

Note: Finishing of flange blanks requires a construction
order with previous technical clarification

A2439342A-Z

1 ST

461.00

Flange blank dia. 185mm / 7.28" for spindle nose
dia. 110mm / 4.33" (with interface for cut-in
ring sensor). Clamping device interface is unworked,
suitable for holding a chuck up to dia. 200mm / 7.87"

Notes:

- Finishing must be carried out for each clamping
device through a CO
- Only chucks fastened from the front with screws
can be used as clamping devices



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Product: S33

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Mat.-No.	Description	Price	Quantity	Value EUR
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Centres for workhead and tailstock

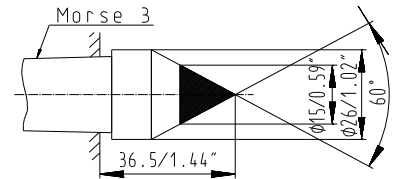
Centres with adaptor MT3

A0709017A-Z

Full centre short dia. 26mm (1.023") MT3

1 ST

181.00

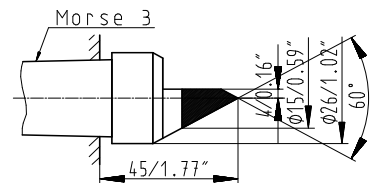


A0710021A-Z

Half centre short dia. 26/4mm (1.023/0.157") MT3

1 ST

195.00



Dressing

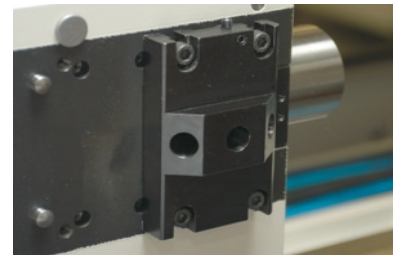
Dressing tool holder for workhead or tailstock

A2915701A-Z

Dressing tool holder vertically adjustable for workhead or tailstock.
With 3 fitting tapers Morse1 shortened for 2 dressing tools

1 ST

312.00



Dressing tool holder for dressing attachment

A2915706A-Z

Dressing tool holder vertically adjustable for dressing device on workpiece table, with 2 connecting bores oblique MT1 shortened (clamping length 19mm / 0.75") for 2 dressing tools

1 ST

339.00



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A2915647A-Z

1 ST

531.00

Dressing tool holder height adjustable for dressing device on the workpiece table, with 1 connecting bore straight dia. 9.52mm / .37" for dressing while thread grinding with 1 cylindrical dressing tool and 1 connecting bore straight MT1 shortened (clamping length 19mm / 0.75") for 1 dressing tool



Dressing tools

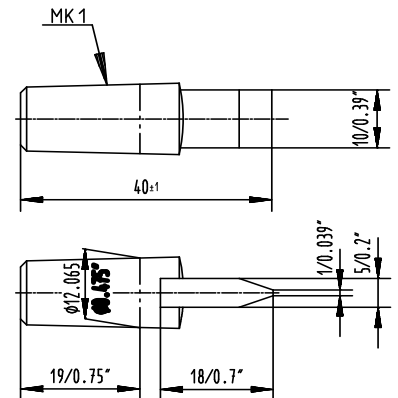
Dressing tools with fitting taper MT1 shortened (clamping length 19mm / 0.75")

A5560512A-Z

1 ST

254.00

Needle fliese type CVD-3-0640 DV/10, height 10mm / .39" length 18mm / .71" with fitting taper MT1 shortened (clamping length 19mm / 0.75")



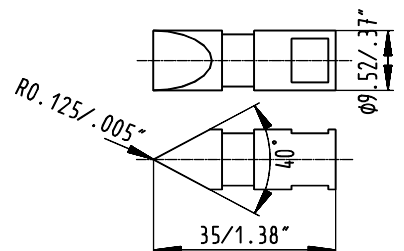
Dressing tools with cylindrical shaft dia 9.52x35mm

A5560206A-Z

1 ST

476.00

Profile diamond R 0.125, 40°, MKD (cylindrical shaft dia. 9.52x35mm / .37x1.38")



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Control**Contact detection**

10013746-Z			1 ST	916.00
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Cut-in sensor passive with magnetic base and pluggable 2-pole connection cable with 5-pole connector (length 6m)

Released for series: 121 - ...

Dynamic balancing

A5549233A-Z			1 ST	3'663.00
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Portable MPM 3.BMT230-2.M.24 2-plane balancing unit with 24V DC operating voltage, display unit (with freely selectable manual adjustment of the balancing plane) for manual adjustment of the balancing segments on 2 grinding wheel flanges (one-sided with 2 grinding wheels on a single spindle, or two-sided in connection with a wide grinding wheel) after dynamic unbalancing check (including transport case).

Notes:

-- 1 device can be used for several machines which are equipped with an interface for manual balancing MPM and the necessary balancing sensor MPM.



A2912655A-Z	945.00	2 ST	1'890.00
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Inbalance sensor MPM with magnetic base dia. 25mm / 1" for manual balancing with balancing unit MPM BMT100 or BMT2xx

Released for series: 75 - ...



A2912897A-Z		1 ST	374.00
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Set of connection cable for portable balancing unit MPM BMT2xx-2 with 24VDC voltage. 1 cable for 24VDC voltage and revolution sensor and 2 cables for balancing sensor (cable length 1.4m)



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Coolant systems and filter units

Filter paper

A5490115A-Z

1 OL

155.00

Filter fleece, fine OL 50, recommended for emulsion,
roll of 150m, width 1000mm



Coolant

30006110-Z

1 AN

225.00

Coolant concentrate CASTROL Hysol RD
Mixing proportion approx. 4% (= 1can to 500litres water)
(Can of 20 Liters)

Corrosion protection agents

A5601403A-Z

1 FL

21.00

Anticorrosive Motorex Coolant F for water cooling circuit for internally
cooled drives.
(May not bemixed with other anticorrosive)
(1 bottle of 1 litre)
Released for series: 88 - ...



A5601867A-Z

1 FL

10.00

Fungicide Motorex Antisept
for water cooling circuit for internally cooled drives.
(1 bottle of 0.15 litre)



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A5601423A-Z

1 AN

21.00

Cleaner Motorex Swisscare SC
for water cooling circuit for internally cooled drives.
(1 bottle of 1 litre)

**Miscellaneous****For longitudinal table:** Dial gauging radial

For steady rest: Dial gauging radial

A5530018A-Z

1 ST

297.00

Radial dial gauge, metric (division 0.002mm)

**Total Accessories****33'037.00**

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Mat.-No.	Description	Price	Quantity	Value EUR
Customer-specific accessories				
A9701901-KA	Customer-specific accessory 1 Thread grinding wheel Ø500 x 40 F1 42A150/180 M10V300W		1 ST	380.00
A9701902-KA	Customer-specific accessory 2 TA No. Order specific description: Grinding wheel form 1N dia. 500x25x203.2mm, (19.685x1.574x8") V=60° X=3mm (0.118"), (for grinding wheel positions 30deg.) 54A120 H15VPMF904W, 50m/s (9840sfpm)		1 ST	400.00
A9701903-KA	Customer-specific accessory 3 TA No. Order specific description: Grinding wheel form 1 dia. 500x25x203.2mm, (19.685x1.574x8") 54A80 H8V904W, 50m/s (9840sfpm)		1 ST	400.00
Total Customer-specific accessoires				1'180.00

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Mat.-No.	Description	Price	Quantity	Value EUR
Services				
<u>Commissioning in customer's factory</u>				
A9904314	10 days commissioning and introduction of CNC machines in Europe by an European service technician in the customer's factory. Total 10 days/8 hours (= working time and travelling time), including travelling expenses, accommodation and meals		1 --	15'904.00
Total Services				15'904.00

