

Machine incl. System Accessories

Basic machine

60019390	1 PC
MFP-51-50.65.65	
Mägerle 5-axis grinding center with integrated tool changer	
60019375	1 PC
X-axis	
- Longitudinal travel 500 mm	
- Travel speed up to 50 m/min	
- Preloaded Monorail roller guide ways	
- Absolute linear measurement system with glass scale	
60019376	1 PC
Z-axis	
- Transverse travel 650 mm	
- Travel speed up to 30 m/min	
- Preloaded Monorail roller guide ways	
- Absolute linear measurement system with glass scale	
60019391	1 PC
Y-axis	
- Vertical travel 650 mm	
- Travel speed up to 30 m/min	
- Preloaded hydrostatic wrap-around guide ways	
- Absolute linear measurement system with glass scale	
60019392	1 PC
Splash guard	
completely closed large cabin, including:	
- LED machine light for working area	
- Automatic door drive	
- Integrated coolant lifting tank with lifting pump and level switches	
- Window on the right side	
60005471	1 PC

Tool set

An example of the items included:

- Set of Allen and Torx keys
- Steel and rubber mallet
- Screw driver set
- Torque wrench 8-40 Nm
- Open-end wrenches etc.

60020279 1 PC

2-axis NC table

make FIBRO, with counter bearing, type NC 1.02 and NC 0.02
integrated in machine control, including preparation for clamping chuck

60005291 1 PC

EROWA universal power chuck UPC 320

mounted on NC table, including control

60005293 1 PC

EROWA alignment pallet UPC 320

for the alignment and gauging of the 2-axis NC table with the basic machine

60005294 1 PC

EROWA pallet UPC 320

to clamp workpieces and gauges

60019393 1 PC

Automatic 68-position tool change magazine

portal magazine with inspection window and electromechanically
interlocked loading station for manual loading of the tools.

Flexible loading possibilities with grinding wheels, dressing rolls,
milling / drilling tools and probes:

- Grinding wheel max. Ø 300 mm
- Dressing rolls max. Ø 130 mm
- Grinding wheel and dressing roll width max. 60 mm
- Max. tool length 250 mm
- HSK-B 80 taper

60010061 1 PC

Renishaw Measuring Probe RMP60

with radio transmission, HSK-B 80 taper

60020240

1 PC

Calibration device

spherical with automatic protecting cap, installed in working area for calibration of a measuring probe including Siemens measuring cycles

60014302

1 PC

Machine colour standard

RAL 9003, signal white (structure paint)

- Machine bed, upper column and lower column
- Hydrostatic- and hydraulic unit
- Machine table
- Splash guard
- Control panel carrier
- Electrical cabinet
- Exhaust equipment
- Magnetic chuck
- Tool changer
- Indexing unit
- Cooling unit
- Coolant filtration system
- Lifting tank
- Fire detection system
- Handling system

RAL 9005, jet black (smooth paint)

- Grinding support
- Compensated waterspout
- Dressing unit(s)

RAL 3001, signal red (structure paint)

- Grinding wheel guard (if available)

Supplier standard colour

- Control panel
- Motors

- Pumps
- Cooling unit (only MFP 51)

60005413

1 PC

Documentation for non-EU countries

Language: English

2 sets of printed editions:

- User's manual
- Safety Instructions and Operating
- Electrical documentation
- Technical documentation

Electronically on data carrier:

- User's manual
- Safety Instructions and Operating
- Electrical documentation
- Technical documentation
- User's documentation
- Supplier documentation

Machine control

60024525

1 PC

C.O.R.E.™ OS

UNITED GRINDING Group Operating System:

- Serves as software infrastructure for Digital Products and C.O.R.E. APPS, such as C.O.R.E.™ HMI
- Enables technology- and control-independent communication between machines of the UNITED GRINDING Group

C.O.R.E.™ IPC

UNITED GRINDING Group Standalone Industrial-PC:

- Windows 10 IOT Enterprise Operating System
- Serves as hardware infrastructure for C.O.R.E.™ OS

C.O.R.E.™ HMI

UNITED GRINDING Group User Interface

- Enables control- and technology-independent operation of

UNITED GRINDING Group machines

- Operator-centric and intuitive HMI with gesture control in combination with a multi-touch display
- Supports user-specific display and arrangement of control elements

C.O.R.E.™ PANEL

UNITED GRINDING Group Control Panel:

- Serves as user interface in connection with C.O.R.E.™ HMI and C.O.R.E.™ OS

Features:

- 24 inch full HD multitouch display
- Ergonomic design
- Integrated electronic key system
- Integrated proximity sensor
- Integrated HD front camera for video telephony with customer care technicians
- Override switch with integrated cycle start button

E-Key Set for C.O.R.E.™ PANEL

UNITED GRINDING Group E-Key Set:

- To detect the active user role on the control panel

Set consisting of:

- E-Key green OPERATOR
- E-Key yellow SETUP
- E-Key blue MAINTENANCE
- E-Key red OPERATOR+

60009213

1 PC

Sinumerik 840D Solution Line

CNC NCU 7x0.3, provides up to 31 axes/spindles and 10 channels

Interface: 3x Ethernet 10/100/1000 Mbit/s (RJ45) / 2x DP / 1x PN / 2x USB 2.0

60009214

1 PC

Handwheel

Siemens handwheel HT2 including display

60005130	1 PC
Display resolution 0.1 µm	
60005131	1 PC
Emergency retract system in case of power loss programmable escape path	
60005134	1 PC
Preselectable pre-start of machine for warm-up cycle, including clock for weekly set-up and indicator light	
60009232	1 PC
Shutdown control of machine for automatic machine shutdown after end of cycle	
60005135	1 PC
Signal post for indication of machine status - Red (Machine malfunction) - Green (Automatic) - Yellow (Machine stop)	
60019396	1 PC
Cooling unit for electrical cabinet air cooled	
60005139	1 PC
Lighting for electrical cabinet including integrated socket-outlet, connected after main switch	
60023184	1 PC
UNITED GRINDING Digital Solutions™ - Remote Mobile Annual license fee Features: App for mobile devices including triggering of a service request with appropriate authorization from the mobile device and real-time display of today's machine status (automatic operation, setup mode, malfunction	

production quantity).

Remote connection via mobile service request by customer's authorized personnel.

Automatic transmission of relevant data such as machine condition, alarm and error log files at the push of a button.

Possibility for qualified remote maintenance by customer care experts.

Certified Peer to Peer Connection.

Periodic software updates included.

Software license for one year from installation.

<https://www.grinding.ch/en/customer-care/dienstleistungen/digital-solutions/>

60005148

1 PC

Standard machining cycles

Cycles are installed according to the machine configuration:

- Dressing cycles
- Grinding cycles
- Grinding cycles with reciprocating mode
- Grinding cycles with hand wheel superimposition
- Miscellaneous cycles (e.g. splash guard door, balancing, etc.)

60004681

1 PC

Cycles for 5-axis machining

- Linear and radial grinding cycles for turbine vanes and blades
- Siemens milling and drilling cycles
- Grinding path-specific corrections

60005152

1 PC

Voltage/frequency Standard

- Voltage 400 V (Mains variation $\pm 10\%$)
- Frequency 50 Hz
- TN network with earthed center

60023447

1 PC

Process monitoring

designed for control SIEMENS, including:

- Sensor system for flow rate, temperature and pressure (up to 25 bar) of the coolant
- Display of the actual parameters on the control panel

- Integration into the control and NC based recording of flow rate, temperature and pressure of the coolant and spindle load into a logfile

Grinding spindle

60019399 1 PC

Main spindle drive

50 kW S1 at 2300 rpm / 87 kW S6-40%
liquid cooled, spindle speed stepless up to 12000 rpm
featuring precision spindle bearings

60019402 1 PC

Grinding spindle standard

with HSK-B 80 taper

Coolant supply

60019404 1 PC

Standard 2-axis coolant nozzle

automatic compensated in X- and Y-axis

60004694 1 PC

Coolant nozzle width 60 mm

60010934 1 PC

Coolant gun

including hose

Dressing systems

60019407 1 PC

Automatic overhead dressing system with HSK

integrated into grinding head, to hold roll arbor for profile dressing rolls

- Roll taper HSK-B 80
- Inclusive 1 dummy flange
- Measuring system with absolute encoder of servo drive
- Roll drive with servo drive
- Dressing amounts, rapid infeed and retraction amounts

roll speed up to 6000 rpm, clockwise or counter clockwise
are programmable via CNC parameters
- Roll diameter max. 130 mm
- Roll length max. 60 mm

Tool holders

60004688 12 PC

Standard grinding wheel flange

for grinding wheel diameter 300 mm, width 60 mm, bore 76.2 mm, HSK-B 80 taper

60005633 1 PC

Set of distance rings for grinding wheel diameter 300 mm

with bore 76.2 mm, consisting of width 2.5, 5, 7.5, 10, 20, 30 and 45 mm

60019408 12 PC

Roll arbour with HSK-B 80 expanding mandrel

ground, for overhead dressing system

- Roll length max. 60 mm
- Roll shaft diameter 52 mm

Auxiliary units

60019409 1 PC

Hydrostatic-/hydraulic unit

designed as combination unit

60019420 1 PC

Oil for combination unit

60019421 1 PC

Central lubrication

60019422 1 PC

Integrated 1-cycle compressor cooling unit

inside protective cover of machine air cooled, for main spindle drive
and aggregates
cooling capacity 6.8 kW

60005279	1 PC
SARA UC1 oil mist and emulsion separator	
self contained X-cyclone separation system, volume flow 200 to 1000 m ³ /h, power 0.50 kW, including connecting parts and return hose	
60020231	1 PC
Spare part and wearing part kit MFP 51	
Bearings for dresser, sensors and valves for coolant lubrication, switches and sensors for working area, wear parts for drives, sealing elements for working area, cam rollers, safety switches	
60005369	1 PC
Laser measurement including spindle pitch error compensation	
of geometrical axes according to ISO 230-2 at Mägerle, including protocol	

Coolant Filtration System

60005316	1 PC
Vacuum filter, type VL 1500/6000 DOS (endless belt)	
filter capacity max. 700 l/min, short chips	
- Clean coolant tank 6000 l	
- Lifting pump	
- Sedimentation carriage	
- Electric control cabinet	
- Cellulose dispensing system to produce filter cake	
60006503	1 PC
Endless belt	
for VL 1500	
60006507	20 PC
Cellulose	
bag of 5 kg	
60005321	1 PC
Clean coolant pump, 100 l/min at 2.2 bar, 1.5 kW (flushing)	
type TG30-44/15533	
60005323	1 PC
Clean coolant pump, 100 l/min at 8 bar, 3 kW (dressing)	
type MTR 5-18/18	
60005332	1 PC
Clean coolant pump, 380 l/min at 19 bar, 18.5 kW (grinding)	
type MTR 20-17/17	
60005340	1 PC
Immersion-type refrigeration unit, type GAMMA 52	
air-cooled, including control	
- Chiller capacity 42.3 kW at 20° C	
- Ambient temperature max. 42° C	
60005344	1 PC

Additional price for 2nd cooling cycle

for main spindle drive

- 20 l/min at 2.5 bar

60005351

1 PC

Coolant concentrate

for initial filling of coolant filtration system, including anti foam concentrate

60016242

1 PC

Jet Mix

mixing device for preparing homogeneous and finely dispersed emulsions
of cutting-fluid concentrate into water

