# KELLENBERGER VM1000

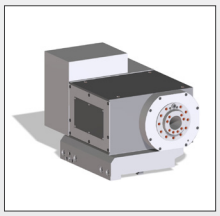
THE INNOVATIVE PLATFORM CONCEPT FOR INTERNAL AND EXTERNAL CYLINDRICAL GRINDING




KELLENBERGER

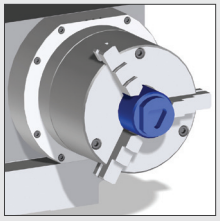
# KELLENBERGER VM1000

THE INNOVATIVE PLATFORM CONCEPT FOR INTERNAL AND EXTERNAL CYLINDRICAL GRINDING



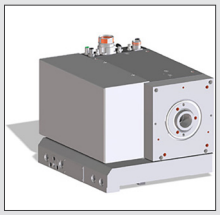
## WORK HEAD WITH DIRECT DRIVE 200

- For high-precision cylindrical grinding
- Rotating speed 1-1,000 rpm
- Roundness accuracy < 0.4 µm
- Lower part with fine adjustment ± 1.5'



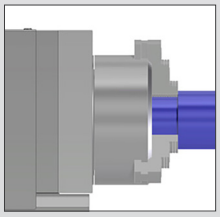
## C-AXIS 100 & 200

- For non-circular workpieces
- For thread grinding



## WORKPIECE HEADSTOCK 100

- For high-precision cylindrical grinding n1-1000 min-1
- Roundness accuracy <0.4 um
- Lower part with fine adjustment +- 1.5`
- Flying load 100 Nm



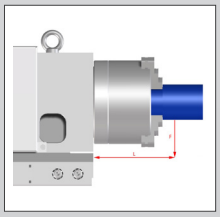
## LOAD WITH CHUCKED WORK

- 320 Nm with direct drive



## WORK HEAD WITH DIRECT DRIVE 50

- For high-precision cylindrical grinding
- Rotating speed 1-3,000 rpm
- Roundness accuracy < 0.4 µm
- Lower part with fine adjustment ± 1.5'



## LOAD WITH CHUCKED WORK

- 100 Nm with direct drive




## ONE-OF-A-KIND KINEMATICS

- Reduction to two highly accurate linear and rotational axes each with positioning in nanoscale
- No auxiliary axes are necessary for dressers or measuring systems
- C-axis for non-cylindrical workpieces and thread grinding
- Simplified set-up and increased accuracy
- A compact machine with a wide range of parts of up to Ø 300 x 600 mm

## HYDROLIN® - HIGH-DYNAMICS HYDROSTATIC LINEAR AXES

- Positioning accuracy in nanoscale
- The wear-free linear motors feature integrated heat dissipation

## BASIS

- FEM-optimized casting bed for high stability and durability
- Mechanical separation of machine and periphery for thermal stability and prevention of vibrations

# THE ULTIMATE INTERPLAY OF PRECISION & PERFORMANCE



## ERGONOMICS

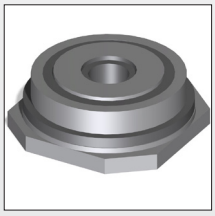
- Optically and ergonomically advanced design
- Good overview of the grinding process
- Centrally arranged and easily accessible interfaces for table constructions
- Swivel- and height-adjustable control panel for optimized usability
- Well thought-out accessibility for inexpensive maintenance and service

## CNC CONTROL 31i-B

- 19” LCD color screen with touch function
- BLUE Solution teach-programming with OBJECT Guide for guided and easy program creation on workpiece
- Windows 10 IoT IPC operating system
- A handheld device with security and setup functions
- Ethernet (RJ45) and USB 2.0 connection

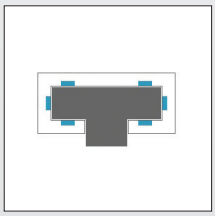
## HYDROSTATIC B-AXIS

- Fully-fledged NC axis
- Pre-stressed hydrostatic guidance
- Direct drive



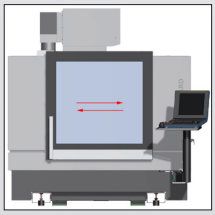
## HYDROSTATIC X- / Z-AXIS

- Pre-stressed hydrostatic guidance
- No stick-slip, no wear
- The finest correction possibilities
- High form accuracy
- Direct drive



## AUTOMATIC SLIDING DOOR

- Relief for the operator
- Faster workpiece changeover times



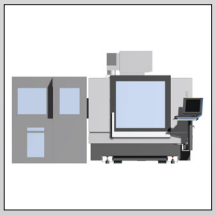
## TRANSPORT

- Efficient commissioning due to different lifting options

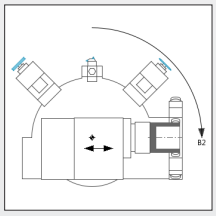


## AUTOMATION

- Profinet interface
- Loading cell with high autonomy
- Project-specific solutions on request

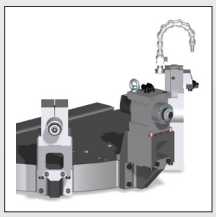


# WORKPIECE HOLDER WITH DRESSING TUR-



### WORKPIECE CARRIER

- Work head
- Max. 3 dressers
- Steady rests
- Power clamping device
- B2-axis



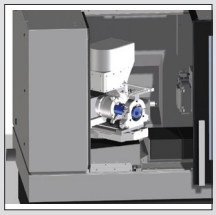
### DRESSING UNITS

- Max. 3 dressers
- Up to 2 rotating dressers
- Firm dressing diamonds
- Form and profile rolls



### STEADY RESTS

- Hydraulic steady rests
- 3-jaw steady rests



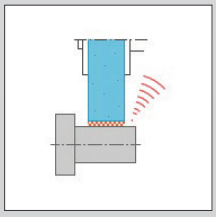
### B2-AXIS

- Easy workpiece changeover
- Minimized dresser collision problematics
- Collision-free measuring position



### INTEGRATED LIFTING SYSTEM

- Ergonomic Lifting system for table constructions

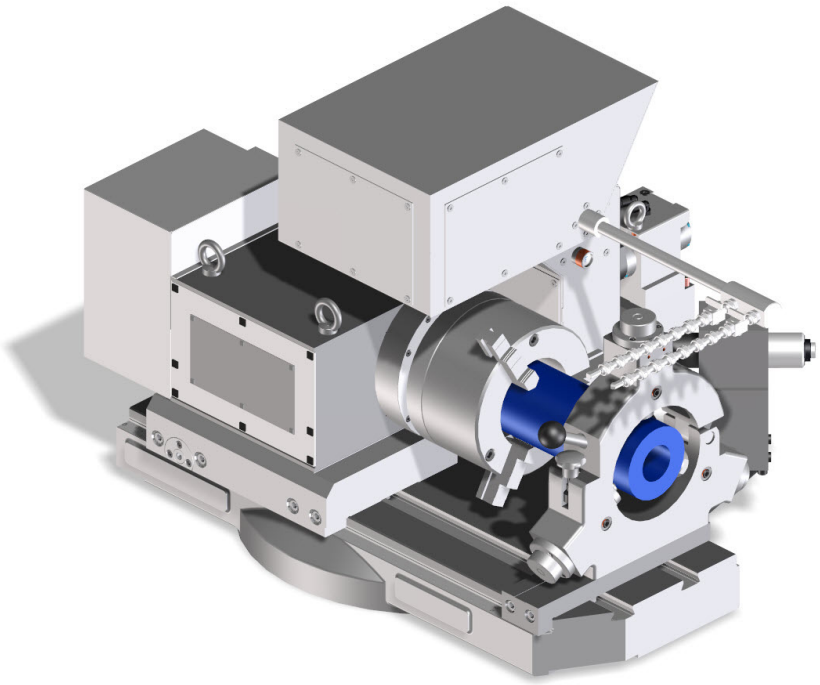


### CONTACT SENSORING

- Gap control with up to 4 sensors
- Operation and display integrated into the controller

### WORKPIECE CARRIER

Various steady rests can be installed on the workpiece carrier, such as tracking hydraulic grinding steady rests. The integrated lifting system can be used for lifting table constructions. This saves the crane of the machine.



### B2-AXIS ROTATING PART

An additional B2-axis can be added optionally on the workpiece carrier side. This offers the following advantages:

- Collision-free dressing
- Improved accessibility while measuring
- Easy workpiece changeover
- 3 dressing positions
- Automation of the loader system

The high-precision direct drive rotation axis can alternate between the grinding and dressing positions in < 2 seconds. The B2-axis has a system resolution of 0.00001° and a repeatability of <0.5“.

### C-AXIS

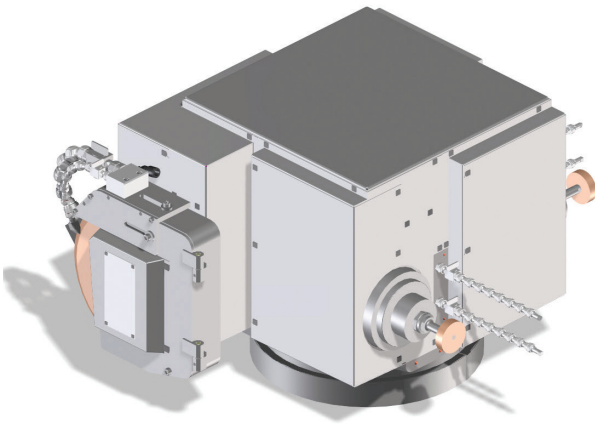
With the possibility of X- and C-axis interpolation, KELLENBERGER VM1000 allows grinding of non-cylindrical forms such as polygons, free contours and eccentrics. The rotary encoder with resolution of 0.0001°degree is installed directly on the work head. The non-circular motion is superimposed onto the grinding motions, so that the grinding machine can fall back on any grinding cycle including handwheel release for the X-axis.

# EXTERNAL & INTERNAL GRINDING

## ROTATING PARTS / EQUIPMENT

### WHEEL HEAD

The modular construction of the turret wheel head allows the 4 grinding spindle positions to be specified individually. The Internal grinding wheels measure up to max. Ø 150 x 40 mm. The external grinding wheels up to Ø 300 x 40 mm. Thanks to the flexible equipment, inside and outside diameters can be ground as well as flat surfaces.



### B1-AXIS ROTATING PART

A high-precision rotating axis is installed for faster positioning of the wheel head. Workpiece changeover lasts < 2.5 seconds. The B1-axis with direct drive Has a system resolution of 0.00001° and a repeatability of <0.5".

With the B1-axis, up to 4 grinding spindle positions can be swiveled to the grinding position. Additionally, a fixed tactile measuring probe attached to the base body can be used for measurement tasks. The tactile measuring probe can measure internal and external diameters, shoulder positions and shoulder distances.

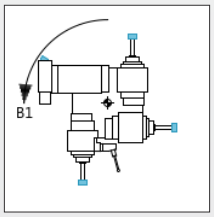
### WORKPIECE MEASUREMENT SYSTEM

Automatic grinding wheel measurement. When swiveling the wheel head into the desired angular positions, the positions of the grinding wheel edges are automatically calculated. This offers the following advantages for the user:

- Programming with the effective masses according to the workpiece drawing and regardless of the swivel angle of the wheel head
- Renewed calibration of the swiveled grinding wheel in not required
- Simple and quick recording of the grinding wheel data when re-equipping the machine
- Workpiece management for external, surface and internal grinding is already integrated

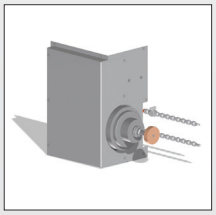
### TURRET WHEEL HEAD

- Individually configurable
- Compact
- 4 spindle positions
- FEM optimization
- Aluminum cooling-line



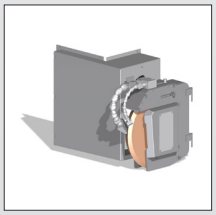

### INTERNAL GRINDING EQUIPMENT

- Oil-air lubricated HF internal grinding spindle of max. 120,000 rpm (depending on the spindle)
- Powerful and universal
- With or without process coolant through internal grinding spindle
- Grinding wheel measurements up to Ø 150 x 40 mm



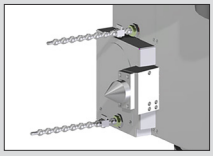
### EXTERNAL GRINDING EQUIPMENT

- External grinding with water-cooled motor spindles and 12.7 kW performance
- Oil-air lubrication guarantees long durability
- Grinding wheel measurements up to Ø 300 x 40 mm



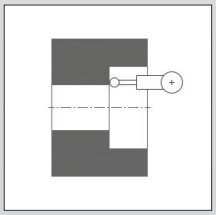
### SET-UP POINT INTERFACE

- For attaching a set-up point to set up steady rest components.



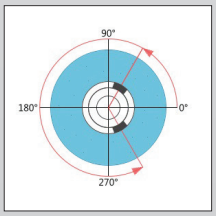
### TACTILE MEASURING HEAD

- Mounted on the wheel head
- Orientation of the workpiece position in X-, Z- and C-position
- Active measurement of the diameter and length



### BALANCING

- Mounted on the wheel head

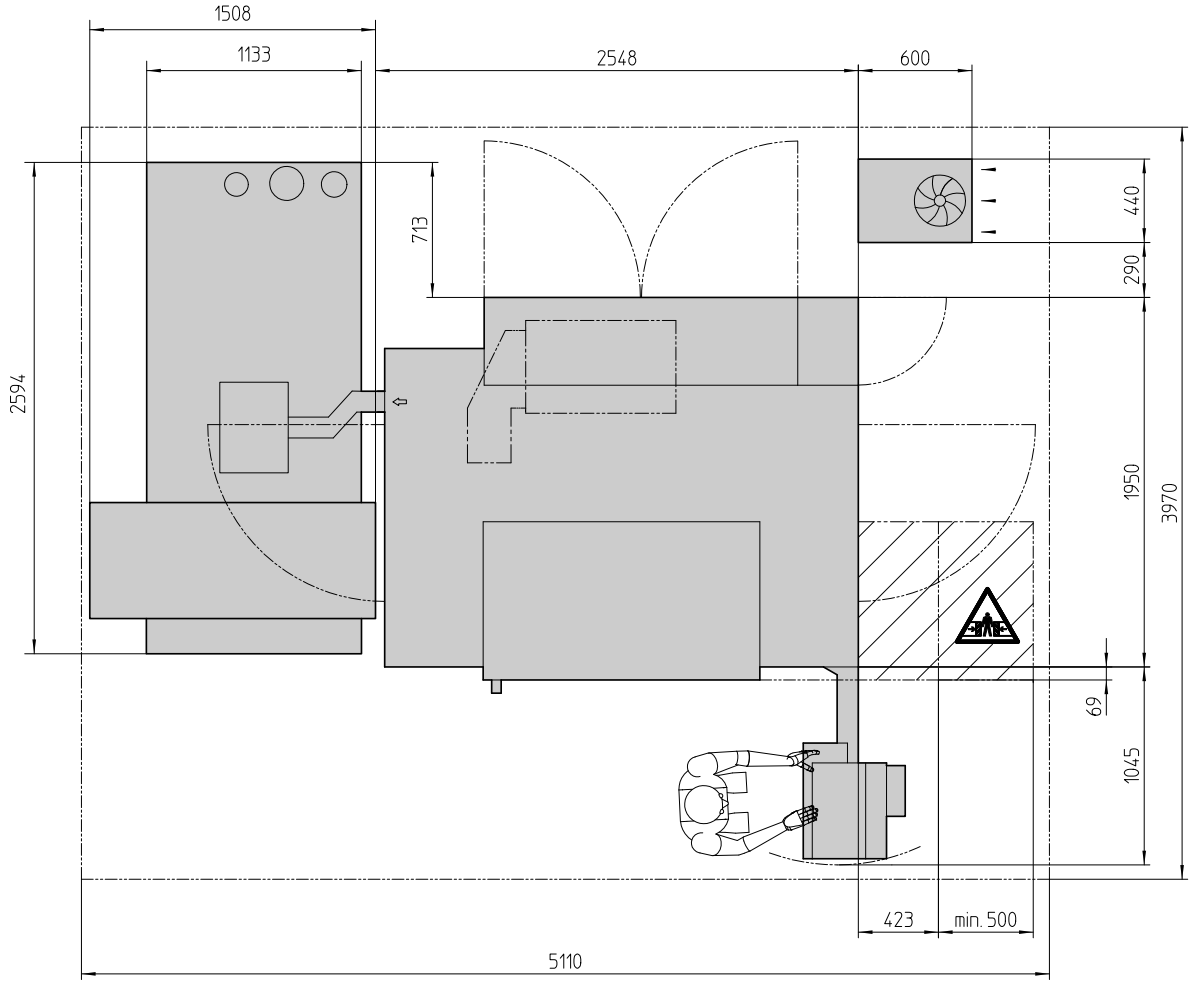


# TECHNICAL DATA

| Characteristics | | | | |
|---|---|---|---|---|
| Max. workpiece length | 600 | | | mm |
| Swing diameter | <300 | | | mm |
| Max. workpiece diameter | <150 / <300 | | | mm |
| Supply voltage | 400 / 460 | | | V |
| Power consumption | 35 - 80 | | | A |
| Atmospheric pressure | 5.5 | | | bar |
| Total weight | 5'800 | | | kg |
| Floor loading | 8'100 | | | $N/m^2$ |
| X- / Z-axis | | | | |
| Travel | 450 | | | mm |
| Speed | <20 | | | m/min |
| Resolution | $2.5 \times 10^{-6}$ | | | mm |
| B axis | | | | |
| Instrument swivel range | 330 | | | Grad |
| Workpiece swivel range | 225 | | | Grad |
| System Resolution | 0.00001° / <0.5" | | | Grad |
| Turret wheel head | | | | |
| Rotational speed range (depending on the spindle) | <120'000 | | | u/min[1] |
| Max. number of spindles | 4 | | | - |
| Peripheral speed | 50 | | | m/s |
| Internal grinding wheel | max. 150x40 | | | mm |
| Max. internal grinding length | 250 | | | mm |
| Mounting hole of the internal grinding spindle | 150 | | | mm |
| External grinding wheel | 300x40 | | | mm |
| Max. external grinding length | 150 | | | mm |
| Workhead | Workhead 50 | Workhead 100 | Workhead 200 | |
| Rotational speed range | 1-1500 / 1-3000 | 1-1000 | 1-1000 | u/min[1] |
| Mounting cone | MK4 | MK5 | MK5 | - |
| External short taper adapter | ISO 702-1: Gr. 3 | ISO 702-1: Gr. 5 | ISO 702-1: Gr. 5 | - |
| Workpiece weight | <50 / < 20 | < 100 | < 200 | kg |
| Load on chucked work | < 100 | < 100 | < 320 | Nm |
| System Resolution | - | - | 0.0001° | Grad |
| CNC controller | | | | |
| FANUC | FANUC 31i-B | | | - |

Information on dimensions, weight and construction is subject to changes

# SETUP PLAN


1508
1133
2548
600
713
440
290
2594
1950
3970
69
1045
423
min. 500
5110

All prices and details are subject to change without notice. 1/2026

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