

Grinder for Cylinder and Cube Test Samples

according to DIN EN 12390-3, DIN EN 12504-1, DIN EN 445

Powerful grinder
for levelling and plane parallel grinding for cylinders and
cube test samples and for drill core and grout injection mortar samples

*Use in mobile and
stationary areas*

- impresses through efficient grinding output
- compact design with a relatively large grinding area
- simple design and compact construction
- all parts in the wet working area are designed in stainless steel.
- excellent cost-benefit ratio

suitable for:

- Cylinder test samples
Diameter: 40 mm to 160 mm
Length: 40 mm to 320 mm
- Cube test samples
Edge length: 100 mm
Edge length: 150 mm
- Prism shapes:
40 mm x 40 mm x 160 mm
- Special sizes available upon request



THB type grinder

with bottom bed, grit trap container, and digital measuring unit

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WARNING:
ALWAYS read the **ENTIRE** Operating Instructions
BEFORE COMMISSIONING the technical device!

1 General information

These Operating Instructions are for safety-technical work with THB products. The requirements indicated in these Instructions, limit values and safety warnings indicated must always be adhered to, and corresponding safety measures must be taken by the operator. Any other use is not considered intended use. If special operation methods or conditions are required, then advice and permission must be obtained from the manufacturer.

All persons that work on or with THB devices must have read the Operating Instructions before beginning work and noted the information and warnings that are relevant. The Operating Instructions must always be kept complete and in a perfectly legible condition with the device. Attached safety warnings must not be removed.

This description contains the required information for intended use of the products they describe. They are intended for technically qualified personnel¹. Personnel must ensure that neither they themselves nor other people are endangered. Only persons who have been instructed on how to operate the device may operate the device on their own. If the operating safety of the device is impaired by defects or damage, the device should be taken out of operation immediately and should only be used again after all of the sources of danger have been dealt with.

Great care was taken during compilation of texts and figures; however, errors cannot be completely ruled out. Therefore, the publisher and author assume neither legal responsibility nor any liability for incorrect information and its consequences. No guarantee is made that this information will continue to be applicable following technical alterations to the device.

In the event of accidents or injuries and their consequences that result from unintended use of the product, the manufacturer cannot assume any legal responsibility nor any liability. This applies both to operating personnel and to third parties.

Errors that could impair safety must be eliminated immediately. The device must not be used until the damage or defects have been repaired.


The grinder is a technical device that is used for levelling and plane parallel grinding for cylinders and cube test samples and for drill core and grout injection mortar samples in mobile and stationary areas and has been designed and constructed specially for use under laboratory conditions or for research purposes according to the applicable standards. The device is only to be used for intended use and in a technically flawless condition.

Any other use of the device requires the prior written approval of the manufacturer. Any other use is not considered intended use.

These Operating Instructions do not replace existing internal working protection guidelines.

¹ Qualified personnel are persons who, based on their education, experience and instruction as well as their knowledge of relevant standards, provisions, accident prevention regulations and operating conditions have been authorised by those responsible for the safety of the device to execute their respectively required activities and who can recognise and prevent any possible dangers while doing so (definition for specialist personnel according to IEC 364).


2 Safety notices

 <p>WARNING</p>	<p>The person responsible for safety is exclusively the operator</p> <p>The operator is any natural or legal person that uses the technical device or who orders the technical device to be used.</p> <p>The operator and/or the person responsible for safety must ensure:</p> <ul style="list-style-type: none"> - that all relevant regulations, warnings and laws are met. - that only qualified personnel¹ work on and with the technical device. - that the Operating Instructions are available to personnel during all corresponding work. - that non-qualified personnel are prevented from working on and with the technical device.
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2.1 General use

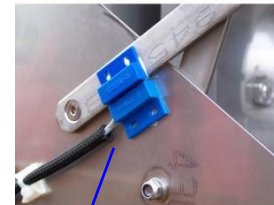
The grinder is built according to the state of the art and according to the applicable standards and is operationally safe when used as intended. However, during use, there is a risk of danger to life and limb for the operator or third parties and/or of impairments or damage to machine technical components or to other material assets.

Unauthorised changes to the device relieve the manufacturer of any liability for damage caused as a result. Errors that could impair safety must be reported to the manufacturer and eliminated immediately.




 <p>WARNING</p>	<p>Please note the following warnings in order to protect yourself and others from possible danger and injuries:</p> <ol style="list-style-type: none"> a. The device may only be used by specialist personnel¹ and as intended. b. Personnel that are entrusted with the assembly, maintenance and operation of the device must always make themselves familiar with manual operation based on the Operating Instructions before commissioning. They must also have understood the Operating Instructions. c. In addition, the local accident prevention regulations and safety provisions must be followed in the working area. d. The cables must be routed such that damage is prevented. e. The operator is responsible for third parties in the working area.
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2.2 Safety warning for handing the grinder

	<p>The machine is equipped with an electric exhaust brake. This stops the rotating grinding wheel within approx. 3 seconds of the machine being switched off with the working switch or if the safety glass is opened.</p> <p>Reaching into the grinder's working area is only required to change the test sample or the grinding wheel. This replacement may only occur if the machine is switched off. Reaching into the workspace when the machine is running is unnecessary and therefore negligent!</p> <p>Warning: The glass shield serves only as protection against spray and splinters. It is not practical to cover the working area.</p> <p>A safety switch is integrated into the opening mechanics of the glass shield. This causes the machine to shut off automatically when the glass shield is opened.</p> <p>Self-actuating start-up of the machine is not possible when the glass shield is closed. Upon restart, the glass shield must be closed and the working switch [on/off] must be pressed.</p>
	<p>Always pay attention to the grinding wheel direction of rotation. <i>see also device assembly and commissioning</i></p>
	<p>The supporting frame is designed for transport on short, level routes or for lifting and positioning on the bottom bed. For longer transport routes, always use a suitable means of transport.</p> <p>Pay attention to the weight of the machine with regard to general working protection guidelines</p> <p>The centre of tipping gravity must always be taken into account during transport.</p>
	<p>Load eye The centre of gravity of the grinder is not at the centre of the load eye.</p>



Safety switch
Glass shield

	<p>ALWAYS NOTE:</p> <p>Cleaning with the water jet or with the rinsing and cleaning hose provided is only permissible in the wet working area (see Description Item 5).</p> <p>For cleaning, maintenance and repair work, the mains plug must always be unplugged.</p> <p>Repairs to electronic parts may only be carried out by the manufacturer or by a specialist authorised by the manufacturer.</p> <p>Use of a RESIDUAL CURRENT CIRCUIT BREAKER with 30 mA rated fault current resolution is recommended.</p>
   <p>NOTE</p>	<p>Wearing personal protective equipment is always recommended² by the manufacturer. In addition, for work on the grinder:</p> <ul style="list-style-type: none"> - Wearing protective glasses as protection against spray and splinters in order to prevent mechanical endangerment of the eyes by foreign bodies such as dust and solids (e.g. chips, splinters, and grains). - Wearing hearing protection while grinding – in connection with background noise. - Wearing work gloves and shoes.

2.3 Operator obligation

If the operating safety of the grinder is impaired by defects or damage, it should be taken out of operation immediately and should only be used again after all of the sources of danger have been dealt with.

Repairs to electronic parts and to parts that limit the function of the grinder may only be carried out by the manufacturer or by companies designated by it.

2.4 Intended use

Our grinder is intended for levelling and plane parallel grinding of cylinder and cube test samples made of concrete or similar materials with the respective corresponding clamping equipment. Adhering to the Operating, Maintenance and Repair Conditions as prescribed and following the safety instructions in the Instructions is a part of intended use.

The manufacturer is not responsible for damage resulting from unintended use – **the operator alone bears the risk!**

² BGR 192: Specialist declaration "Personal Protective Equipment" from the BGZ (German Construction Industry Professional Association), Use of Eye and Face Protection dated July 2001, updated reprint May 2011, publisher: The German Central Federation of Industrial Professional Associations

2.5 Improper usage

Do **not** work with the device in **potentially explosive environments** in which flammable liquids, gases or dusts are present.

Warranty for electronics, paint, bearings and all moving parts is not granted if these are cleaned using a **high-pressure cleaner**.

Screw connections that become loose during maintenance and repair work must always be **re-tightened**.

Any unsafe operation is prohibited!

Take measures to ensure that the machine is only operated in a **safe and functional condition**.

If there are functional faults, stop the machine and secure it. Always have faults repaired immediately.

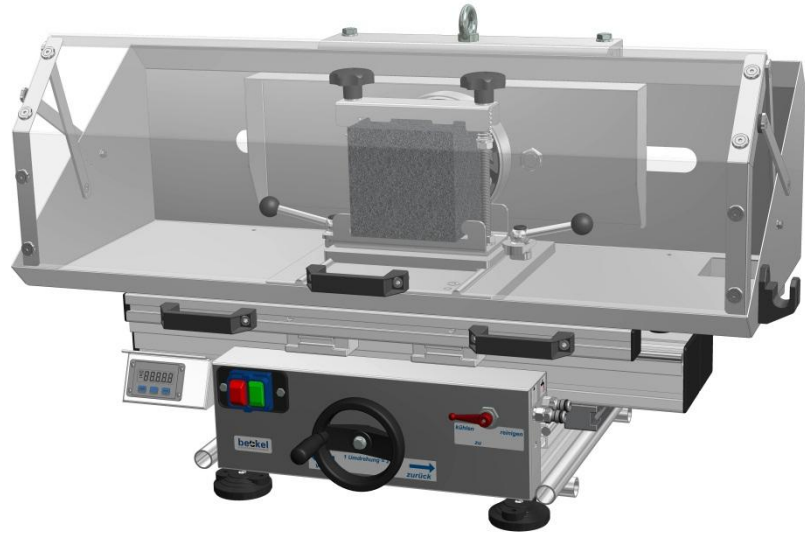
2.6 Residual risks

Even in the case of intended use, there can still be residual risks despite adhering to all relevant safety determinations due to the design being adjusted to the purpose.

- **Dangers from electrical energy**, when using non-intended connection lines
- During **unintended use of the supporting frame**
- **Risks that are caused by a defective grinding wheel**
- Risks that are caused during **work over the wear limit of the grinding wheel** or **during use of a grinding wheel not intended for this machine**.
- **Touching energised parts in the case of open electrical components**
- **Improper cleaning of the machine with water can cause electric shock from energised components or damage to bearings and linear guides. Only use water in the wet working area.**
- **An incorrect clamping device for the test sample, an insufficient or unsecured clamping device** on the machine and/or an **insufficient or unfastened test sample in the clamping device can cause jamming, tilting or projection of parts**. This can result in acute danger to **persons or property**.
- **Clamp test samples such that there is a minimum clearance of 20 mm from the grinding wheel and from the clamping device, even after the grinding process has ended**, so that damage to the grinding wheel can be prevented.
- **In the event of a mains outage, a switch off at the mains plug or removal of the mains plug** during grinding, the exhaust brake will stop working, and this will lead to a **longer overrun of the grinding wheel**. This creates a risk of injury through engagement or early slackening of the clamping device or test sample.
- **In the event of outage or damage to technical components** that are responsible for the proper function of the device, e.g. safety switches, work switches with restart protection, electric exhaust brakes, bearings, guides, fastening elements for rotating components etc.

- **Transporting the grinder with non-suitable transport equipment**
- **Transporting the machine with the supporting frame over longer distances and/or over uneven surfaces, gradients, stairs, obstacles, etc. can cause damage to persons and property.**
- **Damage to persons and property caused by the supporting rods slipping out**

3 Technical Data Sheet



THB grinder
Article No. 20-00242

Alternating current motor

2.2 kW, 2,840 V/min, 400 V, B5, IP 55

When the machine is assembled, there must be a clearance from the wall of 100 mm in order to ensure air circulation for cooling the motor.

On/off switch

IP33

Diamond grinding plate

Ø 180 mm with 24 segments

Grinding area

up to a max. of 180 mm x 180 mm

Grinder dimensions

Depth: approx. 800 mm
 Width: approx. 1,000 mm
 Height: approx. 550 mm
 Weight: 125 kg
 Grinding plate movement range: 1,400 mm
 Adjustment axis (y-axis) approx. 30 mm

Scope of supply:

Grinder Article No.: 20-00242

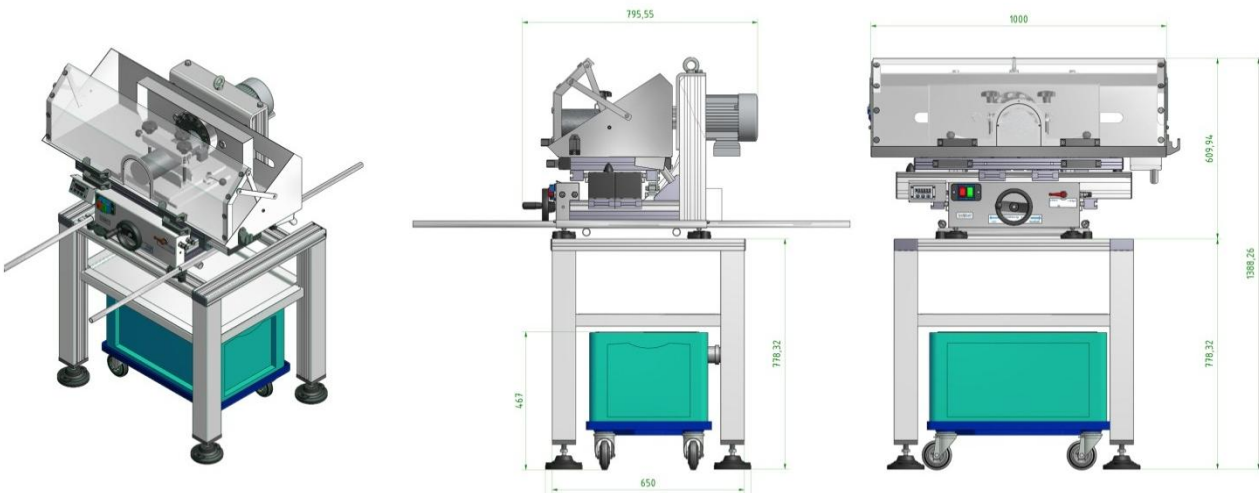
Rinsing and cleaning hose

Article No.: 10-02680

Key for assembling and disassembling the grinding wheel

Operating Instructions

For optional accessories, see item 9 of the Operating Instructions



Dimensional drawing of the grinder with optionally selectable bottom bed, supporting frame and grit trap container

3.1 Safety equipment features

The machine is secured with **reset protection**.

This prevents the machine turning back on on its own during operation after a mains outage or a similar event or upon accidental removal of the mains plug from the socket.

The machine is equipped with an electric **exhaust brake**. This stops the rotating grinding wheel within approx. 3 seconds of the machine being switched off with the working switch or if the safety glass is opened.

Reaching into the grinder's working area is only required to change the test sample or the grinding wheel. This replacement may only occur if the machine is switched off. Reaching in when the machine is running is unnecessary and also negligent!

Warning: The **glass shield** serves only as **protection against spray and splinters**. It is not practical to cover the working area.

A **safety switch** is integrated into the opening mechanics of the glass shield. This causes the machine to shut off automatically when the glass shield is opened.

Self-actuating start-up of the machine is not possible when the glass shield is closed. Upon restart, the glass shield must be closed and the working switch [on/off] must be pressed.



Glass shield safety switch

4 Goods acceptance



NOTE

The shipment delivered must be inspected immediately for its visible exterior condition. If there are no objections or transport damage, then the shipment can be accepted from the forwarding agent (package service or dispatcher).

For this purpose, the grinder is removed from its packaging. The delivery must be inspected according to the delivery certificate for the completeness of the shipment. Device assembly and commissioning are performed as described in the following pages under Item 6.

If transport damage is feared or suspected or is only noticed after receipt has occurred, a report with an exact survey of the degree of damage must be created immediately. Send the report by fax or e-mail to the manufacturer immediately:

Based on the damage documentation, we should be able to determine whether the damage can be remedied

- by supply of replacement parts
- by sending a specialist for assembly, or only
- by returning the device.

Later claims cannot be taken into consideration.

5 Operating the functional elements of the grinder

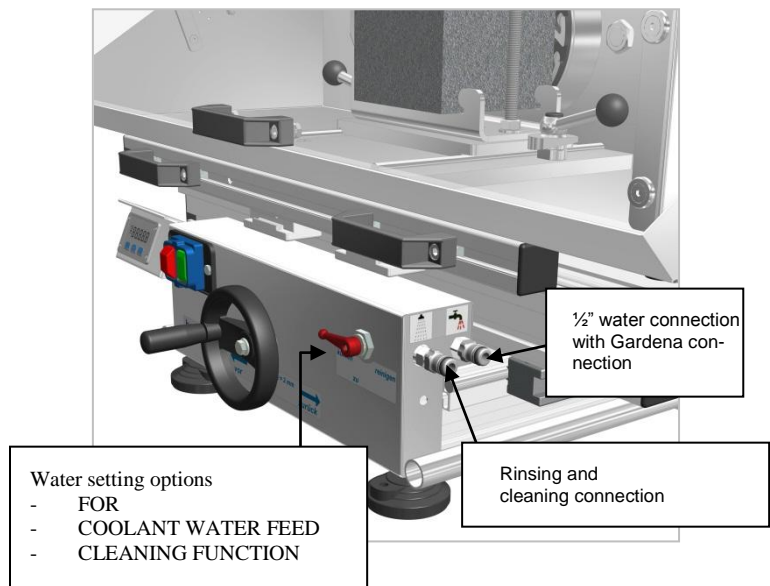
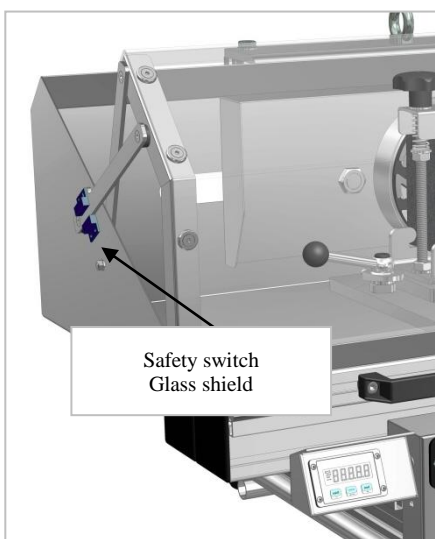
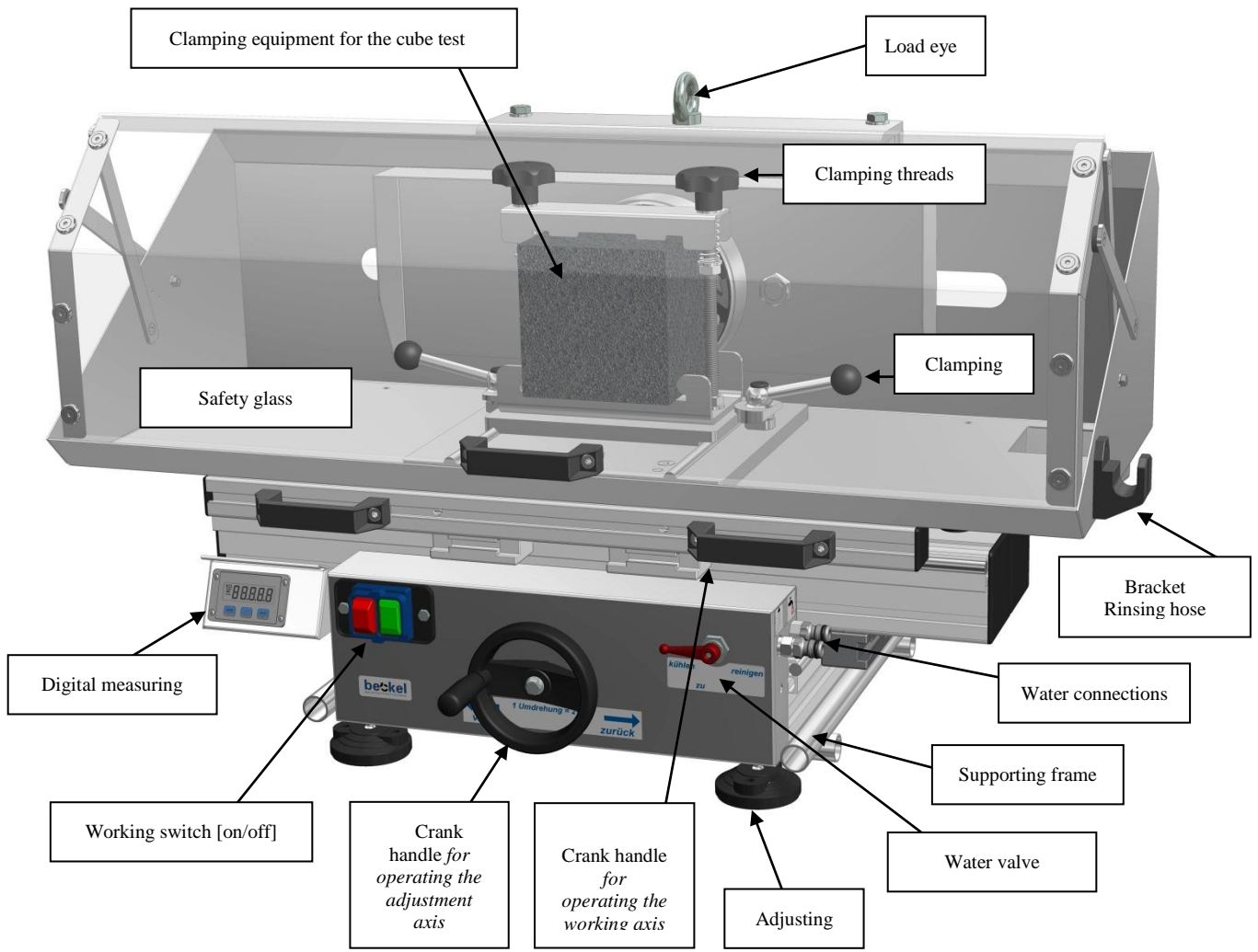


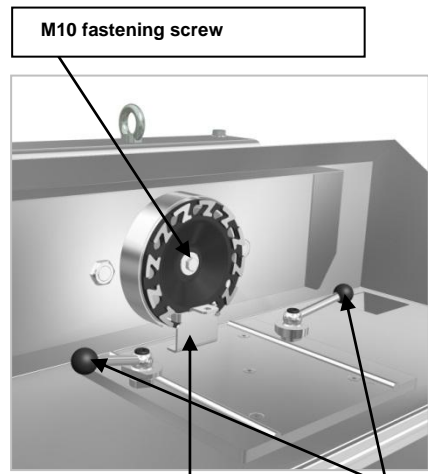


Image above:
Grinder sitting on the bottom bed, with supporting frame and grit trap container

Image below:
Grinder with supporting frame with the wet working area marked



	<p>Note: The blue area shown in the above image marks the wet working area of the grinder.</p> <p>Cleaning with the water jet or with the rinsing and cleaning hose provided is only permissible in this working area.</p>
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Blank holder
For use when changing the grinding wheel

Clamping lock
For fastening the clamping device

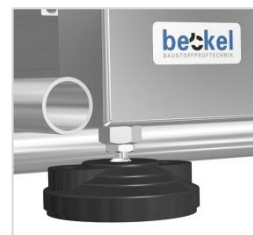



Image above: M 12 locknut on the grinder for adjusting and fixing

Image below: M 16 locknut on the supporting frame for adjusting and fixing



6 Device assembly and commissioning

 <p>NOTE</p>	<p>Before commissioning:</p> <ul style="list-style-type: none"> • Ensure that there is a water supply • Ensure that there is a disposal option for grinding residue • Observe procedures for proper disposal! Do not route the grinding residues through the drainage system! • Alternating current source 400 volts, 16 A plug • Protection from moisture, rain, condensation and spray water must be ensured.
	<p>The generally applicable working protection guidelines with regard to transport of the device to the assembly location must always be followed during assembly (device weight, centre of gravity of the machine, tripping danger, etc.)</p> <p>The assembly location must be selected such that it corresponds to the grinder's working area (see the Technical Data Sheet).</p> <p>When assembling the machine, sufficient clearance to the movement range of the grinding table (approx. 1,400 mm) must be ensured.</p> <p><i>Space requirements recommended by the manufacturer of the machine: 1,600 mm width, 100 mm clearance between the wall and the rear side of the motor.</i></p>

- **Place the grinder on a secure and level foundation** upon which there is as ergonomic a working height as possible and corresponding to the centre of gravity of the device and on which the machine weight ensures static stability.

Manufacturer's recommendation:

Use of the optionally selectable bottom bed for the grinder

- Place the bottom bed on the assembly location and align the adjusting feet such that tipping over can be excluded. Secure with locknuts. Readjust after the test run as needed.

- Lifting the grinder into the corresponding positioning equipment of the bottom bed

Manufacturer's recommendation:

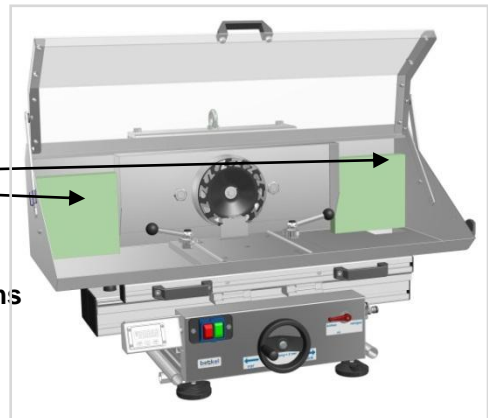
Use of the optionally selectable bottom bed for the grinder

- Adjust M 8 adjusting screws with the corresponding tool as needed

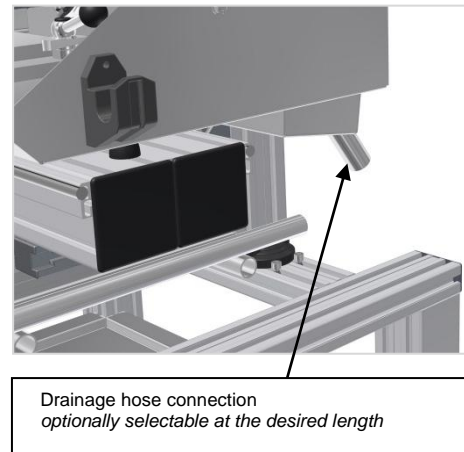
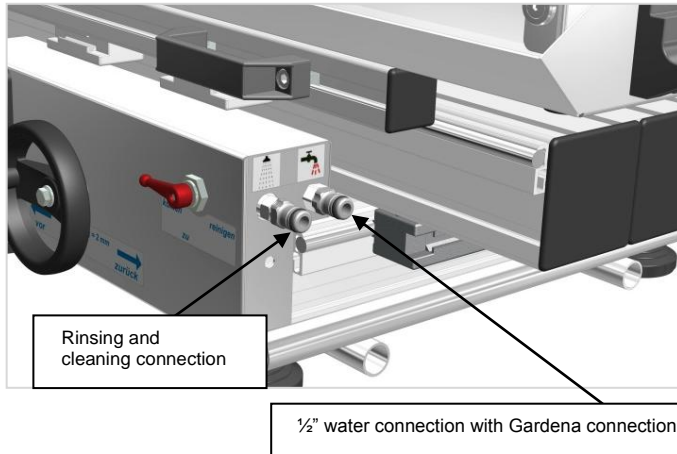


- **Align the grinder on the adjusting feet such that tipping over on the bottom bed is excluded** and secure with locknuts. **Readjust after the test run as needed.**

- **Remove the transport safety devices** (hard foam boards)



- **Connect the machine to the water and drainage systems**



Note: After connecting and routing the drainage hose, unrestricted movement of the grinder table must be ensured in the working direction (x-axis).

- **Connect the machine to the alternating current network:** 16 A plug, alternating current source 400 volts
- **Ensure that the machine can be switched on for the test run without danger in the working range.**
- Close the glass shield
- Switch the machine on at the **working switch**

Warning: Pay attention to the direction of rotation: LEFT-HAND ROTATION [Image 1]

The machine only functions in the correct direction of rotation of the grinding wheel (left rotation). If the setting is incorrect, the grinding wheel can loosen when the machine is turned on! Use a mains plug with a phase changing switch where appropriate.

(Place a screwdriver in the plug opening provided and turn with slight pressure to the left or right (by 180°) to set the correct direction of rotation.)



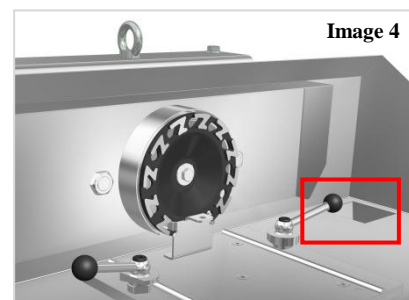
- **Readjusting the water stream** [Image 2]
When the device is switched on, set the water valve to "cool".
- The **throttle valve** [Image 3] located on the rear side of the grinder (to the right of the motor) regulates the water quantity flow on the grinding wheel to cool the wheel and bond to the grinding dust.

Set the **throttle valve** such that an **optimum amount of coolant water** is ensured for the respective grinding task.



- **Collection of coolant water in the wet working area** [Image 4] in this connection, it is recommended that the adjusting feet of the machine are set in such a way that an optimal flow of water into the drainage collector is ensured.

- **End the test run by switch-off**
- After the test run has finished, the grinder is ready for use.



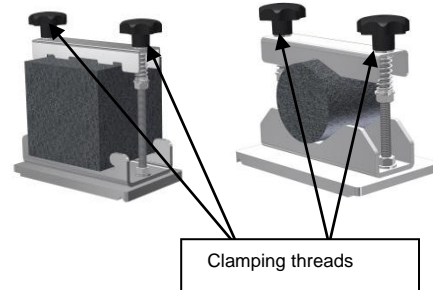
7 Operating the grinder

7.1 Preparing and performing a grinding procedure

After the device has been assembled properly and after the test run, the grinding performed as follows

:

1. Position the test sample in the respective clamping device symmetrically and clamp it securely and uniformly with the **clamping thread**.



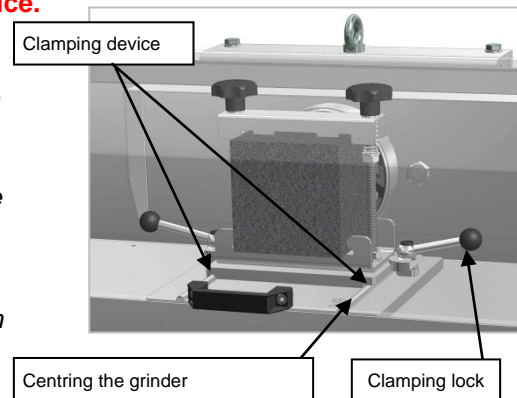
Important: For clamping devices for test cubes, attach the test sample on one side of the two positioning bolts!

*Note: The **adjustment axis (y-axis)** is approx. 30 mm. This must be set with the hand crank before grinding begins until it is against the stop across from the grinding equipment and then turned back approx. 2 to 3 turns in the grinding direction.*

Warning: Danger of accidents in the event of improper clamping of the test sample and the clamping device.

2. Place the clamping device in the corresponding centring device of the grinder and position it in the following manner:

- The clamping device with test piece (with the surface to be ground) must be slid back to the grinding wheel and then pulled back again approx. 3 to 5 mm until it is ensured that the machine can run freely.
- Now clamp the clamping device down on both clamping locks.



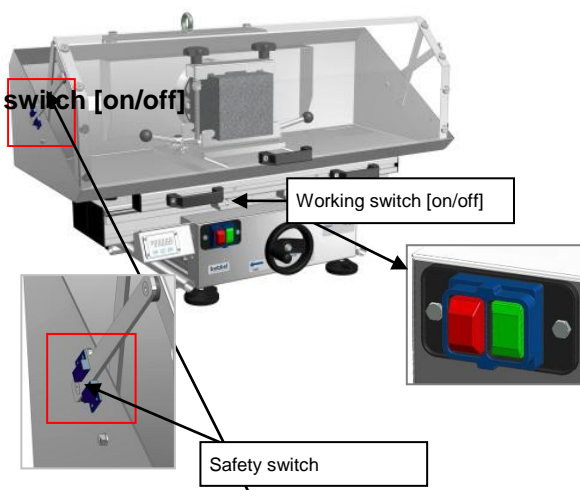
Warning: The grinding wheel must be able to run freely when the grinder is switched on. The machine is not allowed to start when under load.

3. Close the glass shield and turn the machine on using the **working switch [on/off]**

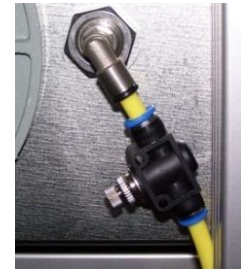
A **safety switch** is integrated on the left of the glass shield. It causes the machine to shut off automatically when the cover is opened. Self-actuating start-up of the machine is not possible.

The safety switch must be pressed to restart.

Switch the machine on [green]



4. **Set the water valve to “cool”.**
 (Coolant water will flow through the grinding disc)
Note: Adjust upon initial use (see Section Commissioning: Water quantity on the throttle valve (rear right from the motor) and as needed.



to

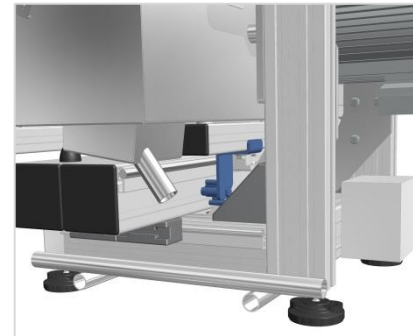
5. **Set the test sample with the hand grips on the grinding table (x-axis) in front of the rotating grinding wheel and use the hand crank adjust the test sample in the grinding direction (y-axis) until it touches the grinding wheel.**

6. On the **hand grips** (located on the grinding table), slide the test sample past the grinding wheel by moving it back and forth in the grinding direction (**x-axis**) until the desired grinding result is achieved.

In doing so, **an automatic adjustment** in the y-axis (material levelling of the test sample) of approx. 0.13 mm is achieved when the grinding table is directed to the left end stop.

Note: The y-axis can also be adjusted using the hand crank (one rotation is approx. 2 mm). This can possibly lead to higher wear or damage to the grinding wheel or the grinder in the event of larger adjustments.

7. During the grinding procedure, the **y-axis** is adjusted automatically. This can be set with the regulator on the rear side (see Image: blue marking) as needed: 1 tooth = 0.13 mm, 2 teeth = 0.26 mm (maximum adjustment).



Note: The individual grinding segments of the grinding wheel vary in strength when in new condition. After a few grinding procedures, however, this will optimise the grinding result.

- After the grinding procedure, shut off the supply of coolant water on the valve and switch the machine off on the working switch [red]. Open the glass shield and loosen the clamping device.

8. **To grind the test sample for plane parallelism:**

- Remove the clamping device with the test sample and turn by 180 degrees.
- Repeat the clamping and grinding process as described under Item 7.1.2.

After the grinding process, cleaning with the rinsing and cleaning hose is recommended.



Set the water valve to [“clean”] to do so.

Only use water for cleaning in the wet working area (marked in blue in the image) and

rinse grinding residues into the drainage collector (red marking).



Recommendation: To prevent soiling of the Plexiglas surfaces, polishing with a dry cloth is recommended. Residues not removed from the safety glass can cause visibility limitations over time.



When the device is not being used, move the mains switch [2] into the “Off” position and remove the mains plug.

Only use the grinder for the work listed under “Intended use”.



DANGER

Always pull the mains plug before:

- **Moving and transport**
- **Cleaning, maintenance and repair work**
- **Opening the drive and control unit**

8 Cleaning and maintenance



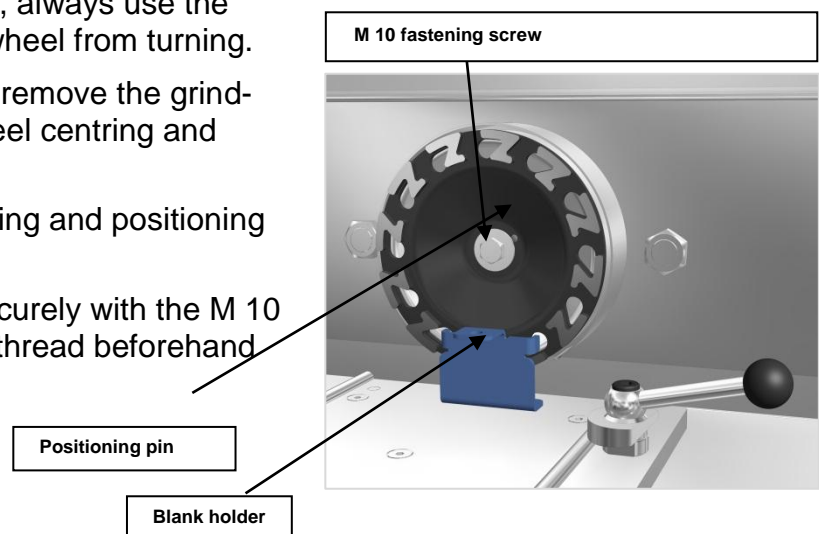
For cleaning, maintenance and repair work, the mains plug must always be unplugged.

Cleaning with the water jet or with the rinsing and cleaning hose provided is only permissible in the wet working area (see Description Item 5).

Carry out regular visual and functional inspections, particularly on parts that are relevant to safety. Defects found must be fixed immediately.

Always pay attention to the ease of movement of the working axis (x-axis) and the adjusting axis (y-axis). The bearing for both axes should always be free of backlash.

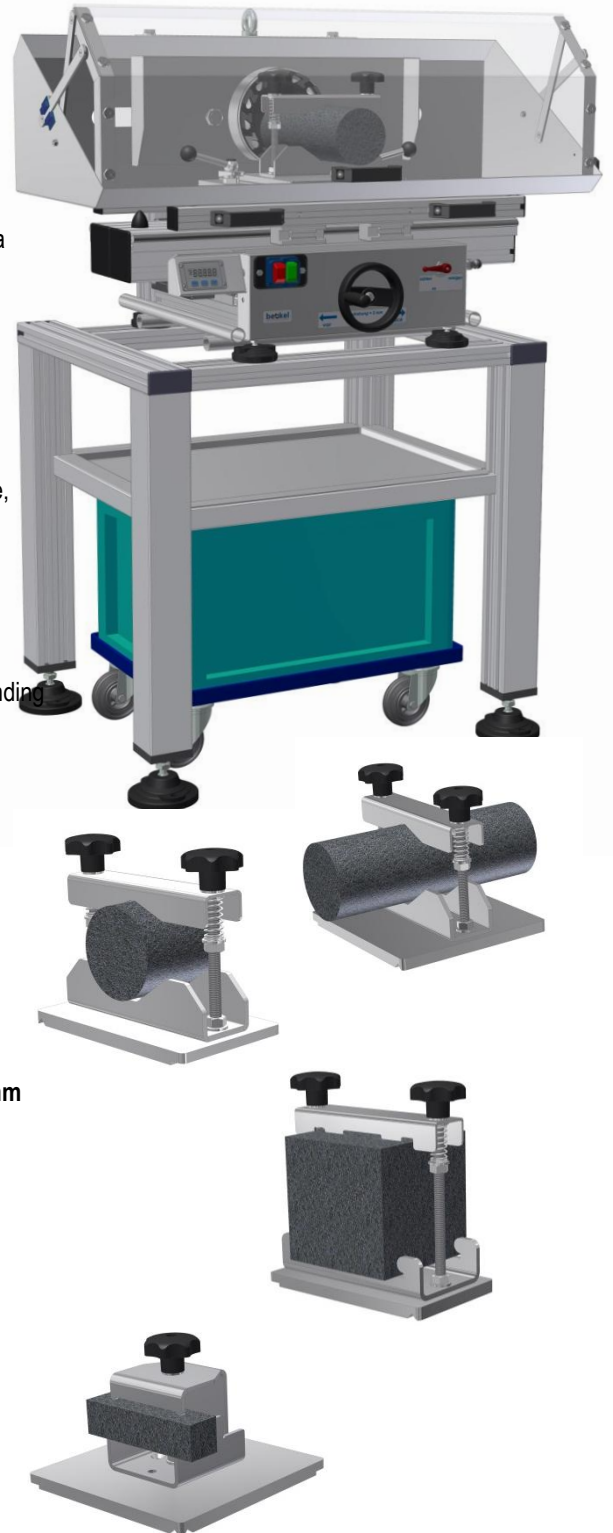
- All moving parts and bearings are greased at the factory and require regular inspections for ease of movement.
- If needed, contact the manufacturer or your sales partner with regard to grease type, greasing spots and bearing spots.
- Always keep the wet working area clean.
- Clean the safety glass with a descaler that is suitable for plastic surfaces.
- If there is limited visibility, replacement of the safety glass is recommended.
- Changing the grinder wheel is required when:
There is wear and tear on the grinding segments, imbalance, damage or similar.
- To change the grinder wheel, always use the blank holder to prevent the wheel from turning.
- Loosen the fastening screw, remove the grinding wheel, and clean the wheel centring and grease it slightly as needed
- Place the wheel on the centring and positioning pin
- Attach the grinding wheel securely with the M 10 fastening screw; grease the thread beforehand as needed



9 Optional accessories and replacement parts

9.1 Optional accessories and replacement parts

Article No.	Designation
20-00446	Grinder bottom bed Ensures ergonomic working conditions and increased mobility of the machine
20-00445	Supporting frame Supporting arms enable flexible changing of the grinder from the stationary into the mobile application area
20-00241	Grit trap container 600 mm x 400 mm x 320 mm
20-00239	Grit trap container 600 mm x 400 mm x 420 mm Enables collection of wastewater and grinding residues Three-chamber settling tank to connect the drainage line, including odour trap from the reservoir to the drainage line, removable stainless steel partitions, simple cleaning, stable PVC container; 75 kg ballast available Integrated trolley simplifies emptying
20-00487	Digital measuring system A display attached to the side provides information on grinding removal with 0.1 mm accuracy
20-00526	Drainage hose for grinder high-quality transparent plastic hose with steel spiral, Ø25 mm x 4 mm Length as required
20-00537	Safety glass with frontal opening for overlong test samples
20-00243	Clamping device cylinder Ø50 mm x 50 mm
20-00244	Clamping device cylinder Ø100 mm x 100 mm 200 mm
20-00497	Clamping device cylinder Ø100 mm x 300 mm
20-00245	Clamping device cylinder Ø150 mm x 300 mm
20-00518	Clamping device cube 100 mm x 100 mm x 100 mm
20-00246	Clamping device cube 150 mm x 150 mm x 150 mm
20-00248	Clamping device prism 160 mm x 40 mm x 40 mm
70-00029	Grinder transport box



9.2 Replacement parts list

Article No.:	30-01112	Alternating current motor
Article No.:	10-02678	Hand crank
Article No.:	30-01116	Diamond grinding wheel, 180 mm
Article No.:	20-00537	Safety glass with frontal opening for overlong test samples
Article No.:	10-02679	Protective safety glass
Article No.:	10-02680	Rinsing and cleaning hose
Article No.:	10-02681	¼" Gardena plug connection
Article No.:	10-02682	Clamping thread, complete for 3 sets of equipment
Article No.:	10-02683	Star-shaped handle
Article No.:	10-02684	Threaded rod for clamping device
Article No.:	30-00346	Throttle valve
Article No.:	20-00241	Grit trap container, 600 mm x 400 mm x 320 mm
Article No.:	20-00239	Grit trap container, 600 mm x 400 mm x 420 mm

10 Legal determinations

10.1 Liability

The information, data and warnings given in these Instructions were the most up to date at the time of printing. No claims for the modification of already delivered THB products can be made based on the data, diagrams and descriptions in this manual.

The procedural warnings shown in these Instructions are suggestions; their transferability to the respective application must be checked. THB Technischer Handel Beckel assumes no responsibility for the suitability of the method indicated.

The information in these Instructions describe the properties of the products without guaranteeing them.

No liability is assumed for damage and operational interruptions that are caused by:

- Incorrectly following these Operating Instructions
- Unauthorised changes to the product
- Operating errors
- Improper work on and with the product

10.2 Warranty

Warranty conditions: See the Sales and Delivery conditions from Technischer Handel Beckel

The manufacturer guarantees that these Operating Instructions have been drafted in conformity with the technical and functional parameters of the supplied grinder.

The manufacturer reserves the right to add supplemental information to these Operating Instructions.

Notify Technischer Handel Beckel of warranty claims immediately after the damage or the error has been ascertained. The warranty is void in all cases where no liability claims can also be asserted.

The manufacturer guarantees a warranty of 12 months from the date of the issuing of the invoice to the customer. The original invoice is considered proof of the warranty period. THB, according to the applicable warranty conditions, provides a warranty to remedy defects on the grinder if it can be proven within the warranty period that these defects are based on material or processing errors. Wear parts are excluded from this warranty.

The manufacturer is not responsible for damage which results from improper use of the technical device or not following the specifications and rules of conduct given in these Operating Instructions.

Warranty claims to the manufacturer are excluded if the technical device was subject to unauthorised changes without the written agreement of the manufacturer in design or in its functional design.

All transport costs associated with a warranty claim are not a part of the warranty service and are paid at the own expense and the own risk of the purchaser.

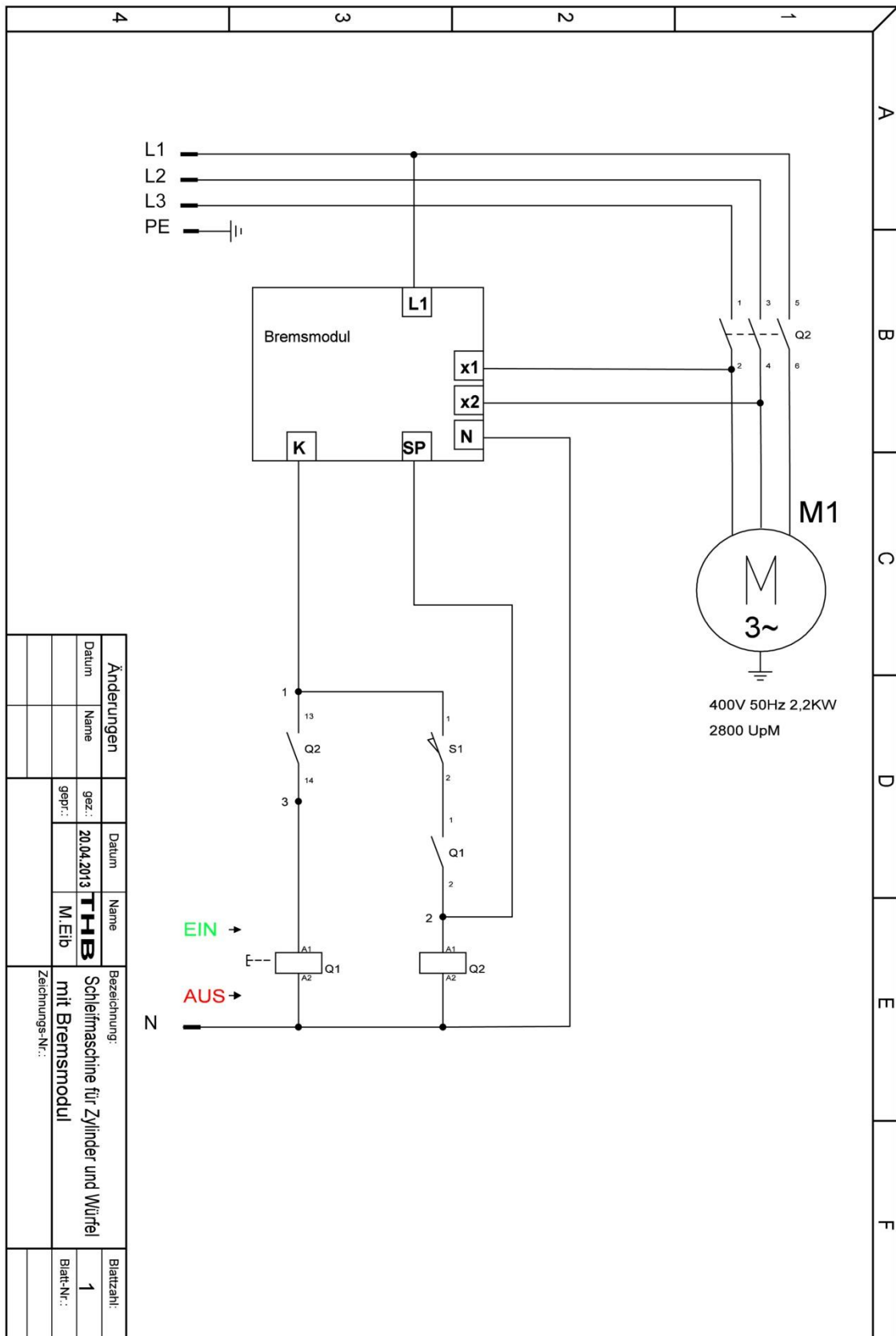
10.3 Copyright

These Operating Instructions are intended only for the operator and his/her personnel. It contains specifications and instructions that may not be

- replicated,
- distributed or communicated by other means.

Infringements are punishable under criminal law.

11 Wiring diagram



12 Annex | Declaration of Compliance with the Machine Guideline Annex II 1A

Manufacturer: *Technischer Handel Beckel
Schwarzbacher Allee 3
98590 Schwallungen
Federal Republic of Germany*

**Representative
for the creation
of the technical documents:** *Thomas Beckel
Proprietor
Technischer Handel Beckel
Schwarzbacher Allee 3
98590 Schwallungen
Germany*

Designation of the machine *Grinder*
Machine type |Type designation: *THB type grinder /20-00242*

Serial number *continuous*

We hereby declare that the above-named product complies with all relevant provisions due to its design and construction and is distributed by us in accordance with the relevant essential health and safety requirements of Machinery Directive 2006/42/EC. In the event of an alteration to the machine to which we have not agreed, this declaration is void.

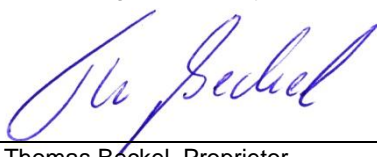
The above-named products meet the requirements of the following applicable directives:

- EC Machine Directive 2006/42/EC
- EC Low Voltage Directive 2006/95/EC EN 55014

The following harmonised standards have been applied:

- EN ISO 12100-1:2003/A1:2009, Safety of Machines - Basic Concepts, General Principles for Design – Part 1: Basic Terminology, Methodology
- EN ISO 12100-1:2003/A1:2009, Safety of Machines - Basic Concepts, General Principles for Design – Part 2: Technical Principles
- according to DIN EN 12390-3, DIN EN 12504-1, DIN EN 445

Schwallungen, Germany, 24. February 2015



Thomas Beckel, Proprietor