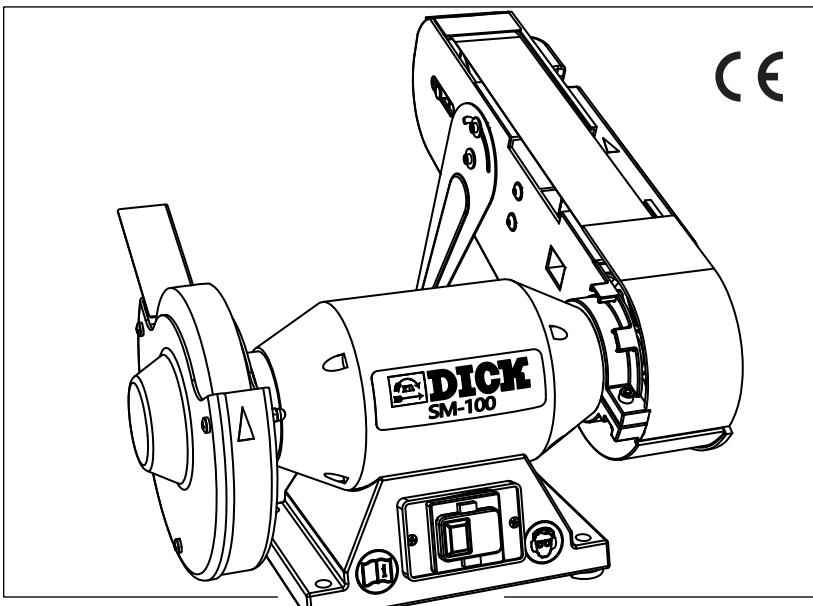




DICK

Traditionsmarke der Profis

Operating Instructions (Translation)



SM-100

1~230 V - 50 Hz
Belt grinder
Art. No. 9 8070 000

Manufacturer and customer service address

Friedr. Dick GmbH & Co. KG

Postfach 1173

73777 Deizisau

GERMANY



Be sure to visit the Friedr. Dick YouTube channel:

<https://www.youtube.com/user/FriedrDick/videos>

The videos demonstrate how to use Friedr. Dick machines.

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1. User Information

1.1 General

These operating instructions are part of the SM-100 belt grinder with the serial number given on the type plate (the type plate is located on the back of the belt grinder).

The operating instructions must be kept close at hand at all times. It contains important information and instructions for safe, proper and economic use of the belt grinder. It must have been read and understood by each person before this person can be entrusted with the following work using the belt grinder:

- putting into operation,
- operating,
- servicing.

The operating instructions must be followed during all work on and with the belt grinder. Following them helps to prevent hazards, to reduce repair costs and to increase the reliability and life of the belt grinder.

The technical information and instructions for use in these operating instructions are up-to-date and correct on delivery of the belt grinder. Friedr. Dick GmbH & Co. KG reserves the right to further develop the design and to make changes without notice.

All directional information is given from the view of the user.

1.2 Symbols and conventions

Instructions

Sequences of actions, which must be carried out in the given order are given as a numbered list. Example:

- 1 Instruction step 1.
- 2 Instruction step 2.

Lists

Lists without a particular order that has to be followed are shown as a list with bullet points or indent markings. Example:

- Property A
 - Detail 1
 - Detail 2
- Property B

1.3 Symbols

Important or particularly useful information is highlighted by way of symbols so that it is readily recognised.

WARNING



This symbol denotes a warning, which must always be noted and followed.

- For more information on the meaning of the warnings, refer to the Safety chapter.

MANDATORY



This symbol indicates instructions, which must be complied with for safety reasons.

NOTE, TIP



This symbol denotes general information, which contains user tips and useful information.

2. Scope of Supply

2.1 Package contents

- Belt grinder
- Operating instructions
- Set of tools
- Polishing paste

2.2 Unpacking the belt grinder

Unpack the belt grinder immediately after purchase and check whether it has any defects or transport damage. Also check the package contents for complete scope of supply.

Report any defects immediately. Complaints made at a later date can no longer be recognised.

Keep the invoice for the entire warranty period as proof of purchase.

In case of complaints, write to Friedr. Dick GmbH & Co. KG, enclose the original invoice and a precise description of the defect(s).

Before returning the product, wait for the manufacturer's reply in order to initiate the necessary steps.

Friedr. Dick GmbH & Co. KG does not pay any transport costs for returns that have not been explicitly approved.

Keep the original box for any necessary returns, in order to prevent transport damage.

DAMAGE TO THE BELT GRINDER DUE TO INCORRECT CONNECTION DATA NOT IN LINE WITH THE SPECIFIED DATA

- Before starting up the belt grinder, compare the belt grinder's electrical data (see "Technical data" on page 13) with the connection data on site.

3. Product Liability

DICK belt grinders are sold with a 12 month guarantee for the owner, starting from the day of delivery (verification by means of invoice).

All abrasives and other wearing parts are excluded from the guarantee.

Changes to the belt grinder require the manufacturer's prior written approval.

Friedr. Dick GmbH & Co. KG does not accept any liability whatsoever for defects or damage caused by incorrect assembly or improper handling.

For further details of the guarantee, please refer to our General Terms and Conditions of Sale, Delivery and Payment.

4. Environmental protection

Used machines, replacement parts and packaging are made of recyclable materials. The owner is obliged to dispose of them properly and in an environmentally friendly way, in accordance with the legal regulations.



5. Safety

5.1 Meaning of the warnings

In these operating instructions, a differentiation is made between warnings depending on the hazard:

DANGER

Imminent risk to life and the health of people.

- Causes serious injuries or death.

WARNING

Possibly imminent risk to the life and health of people.

- Could cause serious injuries or death.

CAUTION

Possibly dangerous situation

- Could cause minor injuries.

5.2 Intended use

The SM-100 belt grinder is solely designed for commercial use.

The SM-100 belt grinder can be used for hand-guided dry grinding (sharpening) and polishing of cleaned knives and cutting tools.

Any other or additional use is deemed to be not as intended and therefore misuse.

The grinding of materials which produce harmful or readily ignitable dusts is deemed to be misuse.

These include, for example:

- Aluminium
- Magnesium

The belt grinder may not be switched on or operated in potentially explosive atmospheres and is solely designed for use in dry rooms at temperatures between +3 and +30 °C.

Only original spare parts and accessories of Friedr. Dick GmbH & Co. KG may be used.

The owner is responsible for any damage caused by misuse.

5.3 General safety instructions

WARNING

Risk of injuries due to incorrect handling

Incorrect handling of the belt grinder can cause substantial injuries.

- The belt grinder may only be used by people who have read and understood the operating instructions.
- The belt grinder may only be operated by people who are familiar with the putting into operation/starting up, operation, and servicing of machines and the relevant accident prevention regulations, who are able to recognise the hazards that occur during the grinder's use and who work reliably.
- The belt grinder may not be operated outside the given power ranges (see "Technical data" on page 13).
- Operate the belt grinder only for the approved uses (see "Intended use" on page 8).



**WARNING****Risk of fire in the event of unsuitable environmental influences**

Moisture (humidity) and water can cause a short circuit. Flying sparks can cause flammable liquids and gases to ignite.

- Do not expose the belt grinder to rain or salt water.
- Do not use the belt grinder in a damp or wet environment.
- Ensure good lighting.
- Do not use the belt grinder near flammable liquids or gases.



Before each transport, switch off the belt grinder and remove the mains plug from the socket.

5.4 Information signs on the belt grinder

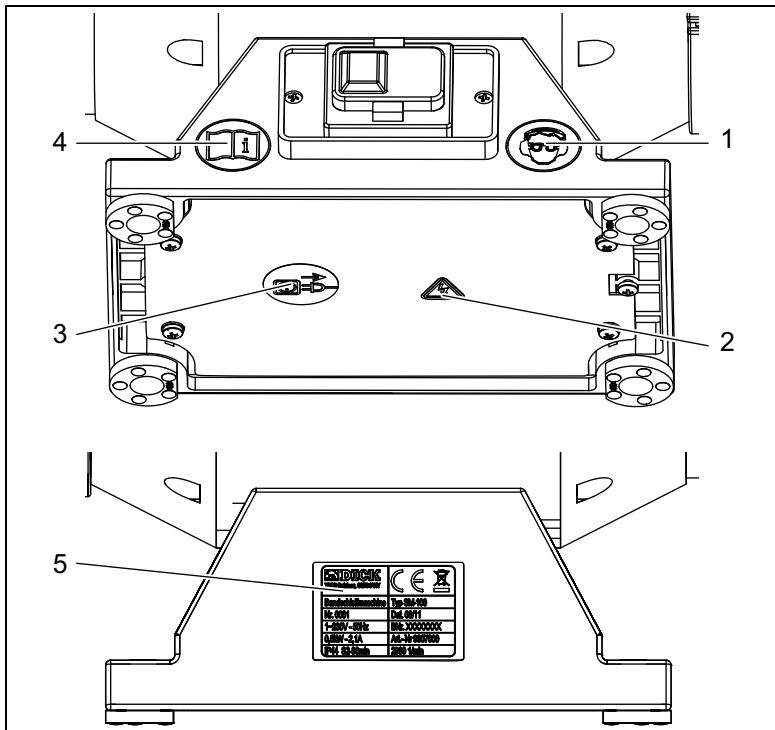


Figure 5.1 – Information on the belt grinder

- [1] Wear hearing protection and safety glasses or goggles when working with the belt grinder
- [2] Danger! Electric shock
- [3] Remove the mains plug from the socket
- [4] Read the operating instructions before starting up
- [5] Type plate

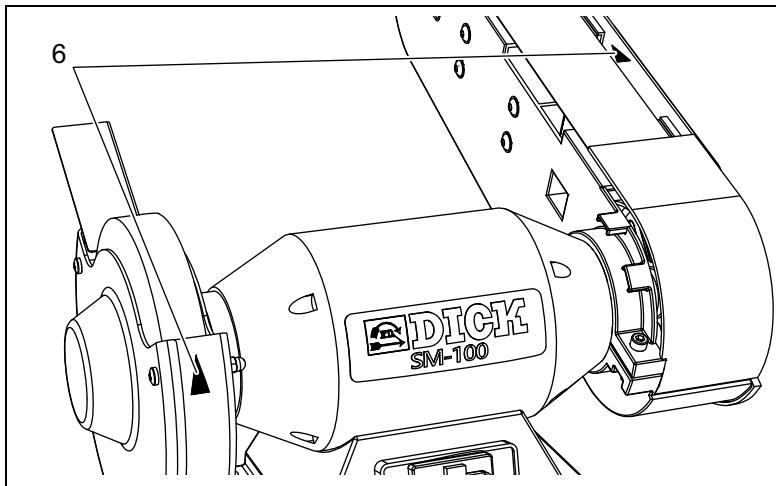


Figure 5.2 – Direction of rotation of the belt grinder

[6] Rotational direction information on the polishing wheel and grinding arm

5.5 Covers

WARNING

Risk of injuries due to missing covers

The belt grinder may not be started up until all covers and guards on the polishing wheel and grinding arm (Figure 6.2 – Structure and Function) are fully functional.



6. Structure and Function

6.1 Technical data

Motor and electrics

Power:	0.5 kW
Voltage:	1~230 V
Current intensity:	2.1 A
Frequency:	50 Hz
Degree of protection:	IP 44
Type of operation:	S2 - 30 min
Connection:	1.8 m cable H05VVF3G0,75 Euro safety plug
Nominal speed:	2980 rpm

Grinding belt

Dimensions:	1020 x 55 mm
Cutting speed:	$V_c = 18.7 \text{ m/s}$

Polishing wheel

Dimensions:	200 x 25 x 16 mm
Cutting speed:	$V_c = 31.2 \text{ m/s}$ with polishing wheel diameter 200 mm

Machine dimensions / weights

Depth:	470 mm
Width:	450 mm
Height:	325 mm
Weight:	13.7 kg

Emissions sound pressure level

Sound emissions to EN 11201 during the grinding of boning knives.

Emissions sound pressure level L_{pA} :	76 dB (A)
Uncertainty KpA:	3 dB (A)
Emissions sound pressure level L_{WA} :	89 dB (A)
Uncertainty KpA:	3 dB (A)

6.2 Structure

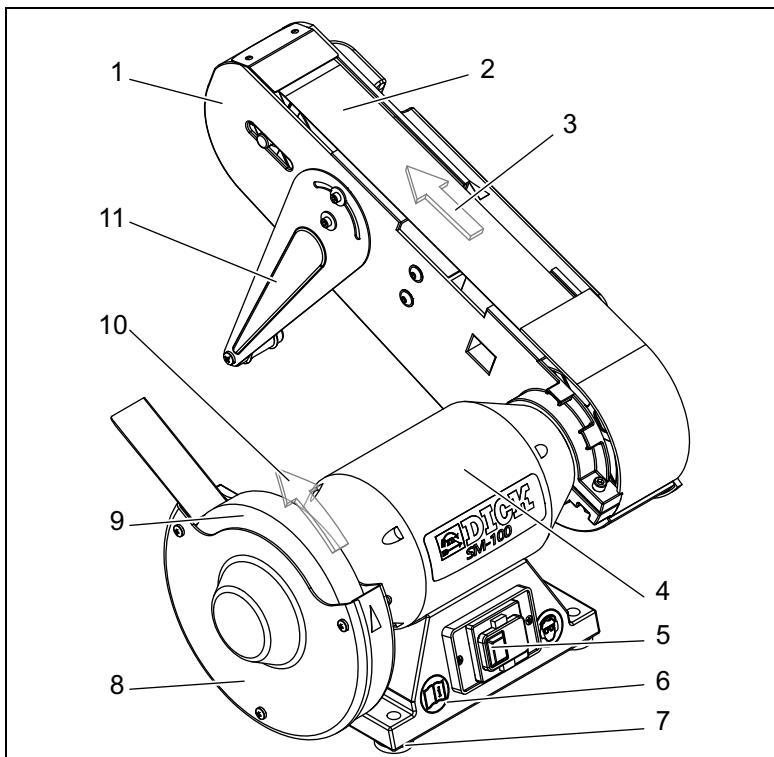


Figure 6.1 – Structure of the belt grinder

- [1] Grinding arm
- [2] Grinding belt
- [3] Direction of rotation of the grinding belt
- [4] Drive motor
- [5] Switch
- [6] Base
- [7] Machine base
- [8] Polishing station
- [9] Polishing wheel
- [10] Direction of rotation of the polishing wheel
- [11] Support foot

6.3 Function

The belt grinder consists of two functional groups: A grinding arm [1] with the grinding belt [2] and a polishing station [8] with the polishing wheel [9]. The polishing station is mounted on the left-hand side of the drive motor [4] and the grinding arm is mounted on its right-hand side and is secured by a support foot [11]. The drive motor sits on a base [6]. The switch [5] and the four machine bases [7] are fixed to the base. The specified direction of rotation for the polishing wheel [10] and the grinding belt [3] is marked on the belt grinder.

6.4 Covers

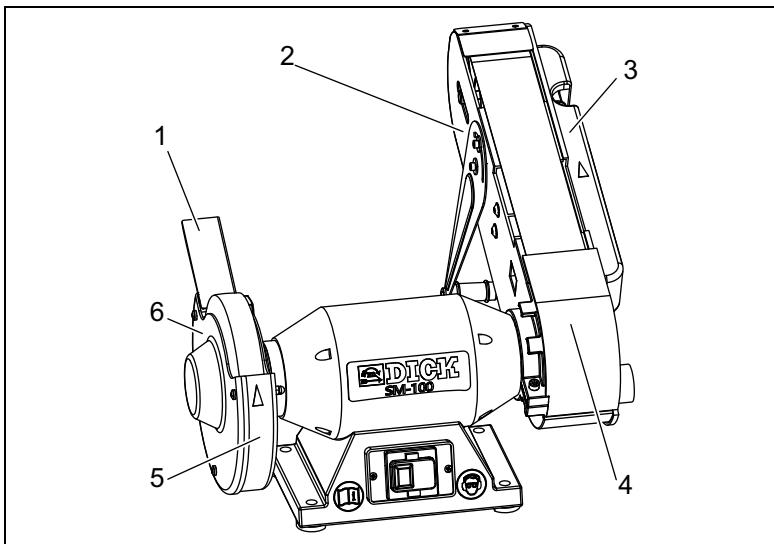


Figure 6.2 – Covering danger zones

- [1] Deflection plate
- [2] Left-hand side panel of the grinding arm
- [3] Right-hand side panel of the grinding arm
- [4] Front cover of the grinding belt
- [5] Left-hand side panel of the polishing wheel
- [6] Cover of the polishing wheel



7. Putting into operation

7.1 Installing the belt grinder

WARNING

Risk of injuries in the event of slipping, falling or tilting belt grinder

- Install the belt grinder on a stable table or other stand or sub-structure which has sufficient stability to carry the weight of the belt grinder.
- The stand must not be mobile or fitted with wheels or castors.
- Install the belt grinder on a flat, slip-proof surface so that the belt grinder does not slip, tilt or otherwise move when used.

WARNING

Risk of injuries in case of a posture in which the user cannot maintain their balance

- Adjust the height of the base unit to the height of the operator so that they work in an upright, stable position, in which they are able to maintain their balance.



7.2 Assembling the belt grinder

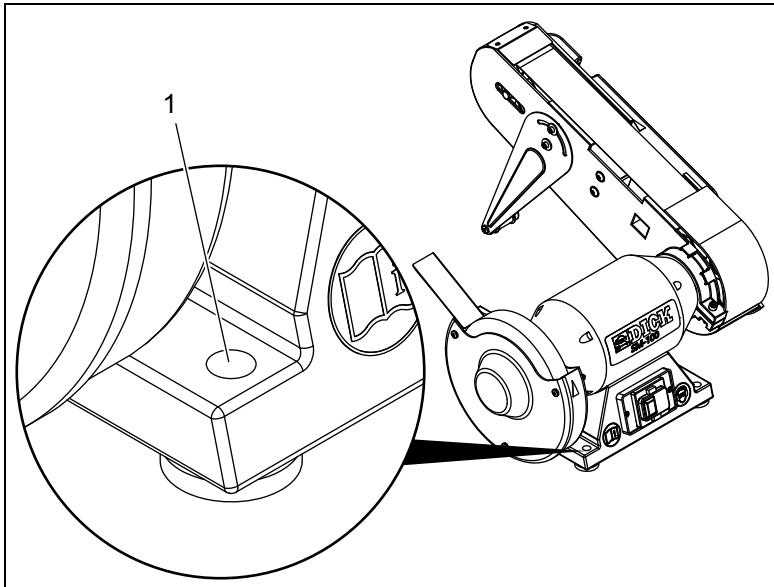


Figure 7.1 – Installation

[1] Mounting holes

The belt grinder is fixed onto the stand using the mounting holes **[1]**.

7.3 Adjust belt grinder

IMPORTANT

Risk of injuries due to rotating machine parts

- Remove the plug from the socket before carrying out any adjustment work.





Adjusting the deflector plate

WARNING

Risk of injuries due to rotating machine parts

- The distance between the deflection plate and polishing wheel (Adjusting the deflection plate) must be checked each time before starting work using the belt grinder and, if necessary, readjusted.

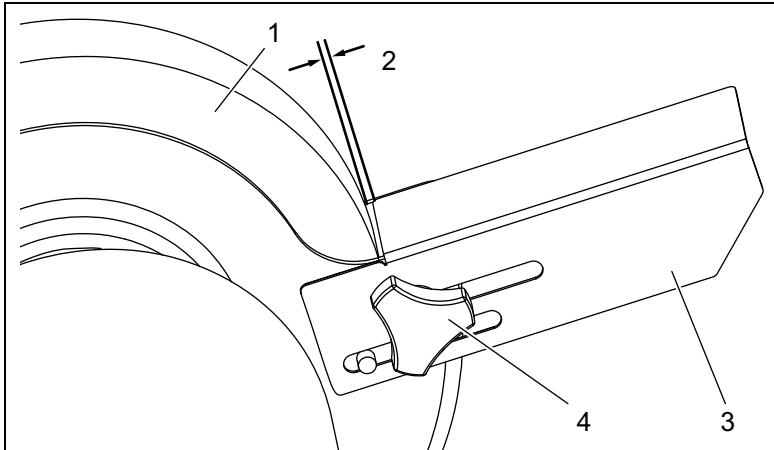


Figure 7.2 – Adjusting the deflection plate

- [1] Polishing wheel
- [2] Distance (2 mm)
- [3] Deflection plate
- [4] Star knob

Adjust the distance [2] between the deflection plate [3] and the polishing wheel [1] to 2 mm.

- Adjust the distance using the star knob [4].

Adjusting the grinding arm angle

The angle of the grinding arm can be adjusted before working with the belt grinder. Adjust the angle as follows:

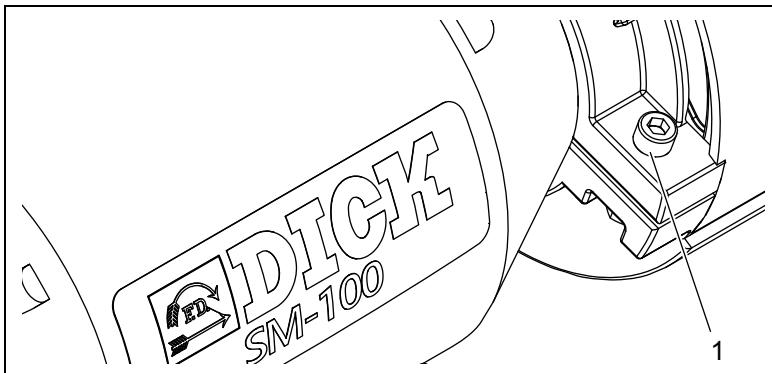


Figure 7.3 – Adjusting the grinding arm angle

[1] Adjusting screw

- 1 Undo the adjusting screw [1],
- 2 Move the grinding arm into the required position,
- 3 Tighten the adjusting screw [1].

7.4 Install support foot

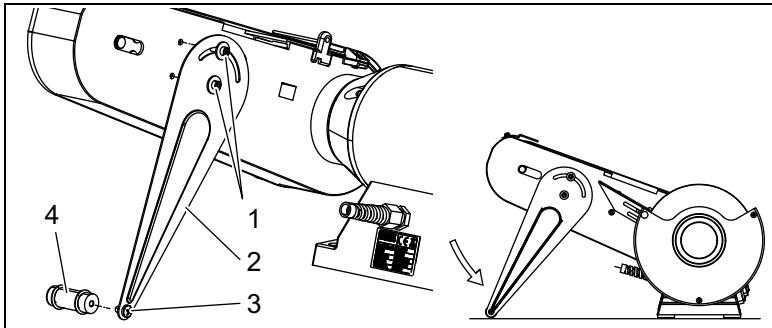


Figure 7.4 – Installing the support foot

- [1]** Screws
- [2]** Support foot
- [3]** Screw
- [4]** Retainer

- 1 Screw retainer [4] onto support foot [2] using screw [3] and spring washer.
- 2 Undo screws [1],
- 3 Use the screws [1] to fasten the support foot onto the grinding arm,
- 4 Swing support foot downwards (see arrow), until it sits on the surface,
- 5 Tighten screws [1].

7.5 Adjusting the belt alignment and running



DAMAGE TO THE BELT GRINDER DUE TO SKEW RUNNING GRINDING BELT!

A misaligned, skew-running belt damages the housing.

- Before switching on the belt grinder, check the running of the grinding belt, to ensure it is straight.

Adjust the angle as follows:

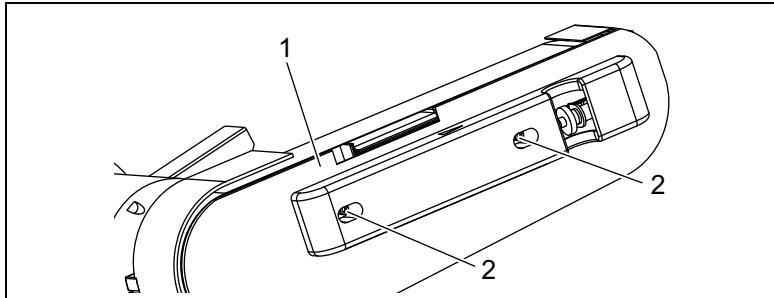


Figure 7.5 – Grinding arm

- [1] Right-hand side panel
- [2] Fastening screws

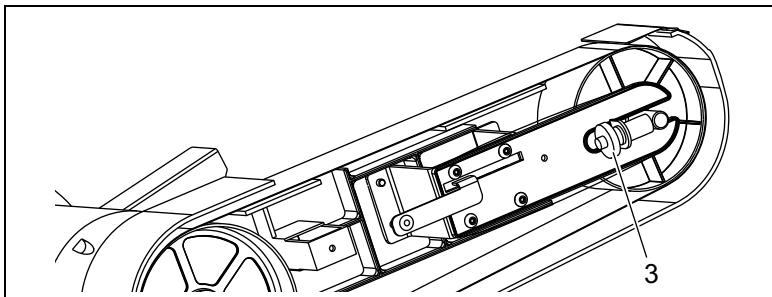


Figure 7.6 – Belt alignment and running

[3] Adjusting screw

- 1 Undo the fastening screws **[2]** of the right-hand side panel **[1]**,
- 2 push the right-hand side wall **[1]** to the rear and remove,
- 3 turn the grinding belt by hand, at the same time checking whether it drifts to the side,
- 4 if necessary, use the adjusting screw **[3]** so that the belt runs in the middle of the deflection pulley.
- 5 Screw the side panel back on tight.
- 6 If necessary, readjust while the motor is running.

7.6 Controls on the belt grinder

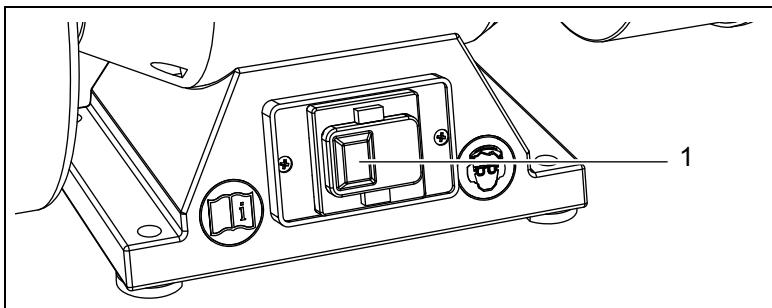


Figure 7.7 – Switches

- [1]** Switch for switching off (red, 0)
- [2]** Switch for switching on (green, I)



7.7 Switching on the belt grinder

WARNING

Risk of injury due to damaged or incorrectly mounted machine parts

Using the belt grinder with damaged electric parts or power cables can cause injuries due to electric shocks or malfunctions. Damaged grinding belts can be partly spun off the machine.

- Missing or damaged covers expose rotating parts and can cause injuries due to crushing and drawing in. Check the belt grinder for damage before each use, in particular:
 - the grinding belt,
 - the polishing wheel,
 - the power cable,
 - correct assembly and covering function of all covers and the housing,
 - the function of the switches.
- Replace damaged parts before using the belt grinder again.



CAUTION

Risk of injuries due to poor health of the operator

Lack of concentration, over-tiredness, illness, drunkenness or leg or arm disabilities, as well as mental disabilities, cause a high risk of injuries.

- People who work at the belt grinder must be healthy and capable of concentrating.
- Before starting work at the belt grinder, ensure you are in a stable position in which you can maintain your balance without any effort.
- When grinding and polishing, do not look away from the belt grinder and workpiece.

CAUTION**Risk of injuries on touching the belt grinder**

Touching the grinding belt or polishing wheel while the belt grinder is switched on causes injuries.

- Do not touch any abrasives while the belt grinder is switched on.
- Do not use any objects to brake rotating abrasives.
- The switched on belt grinder must be inaccessible to persons not working at the belt grinder, especially to children.
- Before leaving the work area, switch off the belt grinder and remove the mains plug from the socket.



WEAR SUITABLE PROTECTIVE CLOTHING

Rotating machine parts can catch unsuitable clothing or long hair. Abrasive particles spun off the machine or loud machine noises can damage eyes and ears.



Sharp and hot workpieces can cause injuries to hands.

Rotating abrasives can pull off pieces of clothing.

- Ensure good lighting is available,
- wear tight-fitting clothing,
- do not wear jewellery,
- wear a hair net on long hair,
- wear safety glasses or goggles,
- wear hearing protection,
- wear suitable protective gloves,
- do not touch rotating machine parts with parts of the body covered with fabric.

Switch on the belt grinder as follows:

- 1 Insert the plug into the socket.
- 2 Check the alignment of the belt running (see "Adjusting the grinding arm angle" on page 18).
- 3 Press the green button (switch) at the switch.
- 4 Check the direction of rotation when starting up the belt grinder.
 - The direction of rotation is given by arrows on the covers.

7.8 Switching off the belt grinder

- 1 Press the red switch (switch, Item [1]).
- 2 Wait until the grinding belt and the polishing wheel stop.

DANGER



Risk of electric shock

If the plug is removed from the socket by pulling the power cable, the connection between the plug and cable can be damaged and is therefore a substantial source of danger.

- When disconnecting the power connection, hold onto the plug and pull it out of the socket.

- 3 Pull the mains plug out of the socket.
- 4 Cleaning the belt grinder.

WARNING

Risk of injuries after thoughtless switching on of the belt grinder

If the belt grinder is left unattended after grinding work, there is a risk of the belt grinder being switched on by unauthorised or thoughtless persons.

- After carrying out grinding work, never leave the belt grinder unsupervised unless the mains plug has been disconnected.
- Store the belt grinder in a safe place, to which unauthorised persons do not have access.



8. Machining workpieces

8.1 Grinding workpieces

Grinding zones

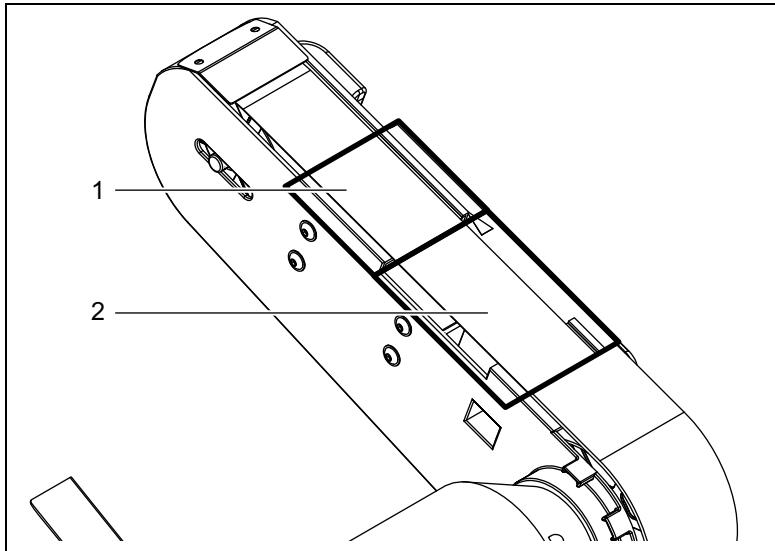


Figure 8.1 – Grinding zones

- [1] Grinding with underlay for straight grinding
- [2] Grinding on the free belt for convex grinding (also called crowned grinding)

NOTE

Dirty knives can irreparably damage the grinding belt and polishing wheel. The surfaces can heat with long-term use.

- Only machine clean knives.
- Switch off the belt grinder after 30 minutes at the latest.



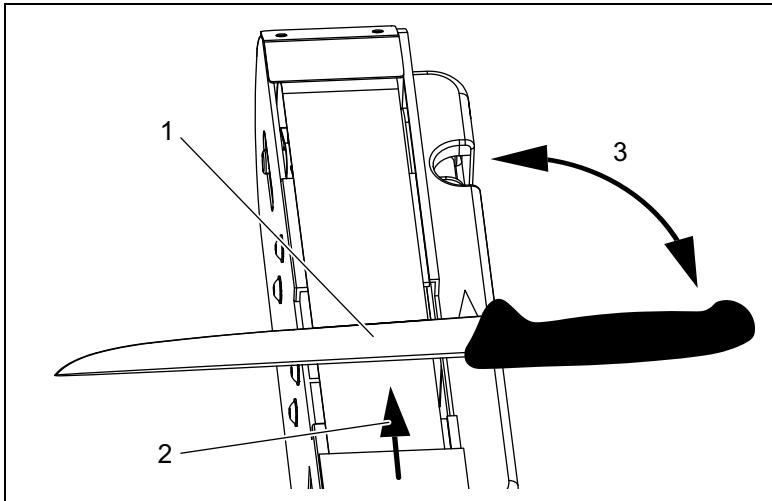


Figure 8.2 – Grinding (sharpening) knives

- [1] Knife edge
- [2] Direction of rotation of the abrasive
- [3] Knife positioned at right-angles to the grinding belt

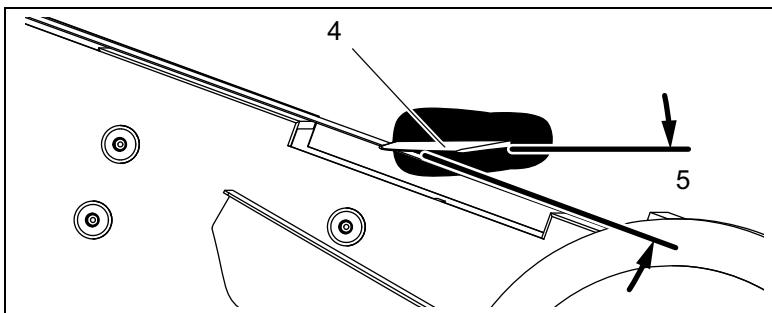


Figure 8.2 – Grinding (sharpening) knives

- [4] Knife blade
- [5] Positioning angle for the knife blade (15°)

- 1 Position the knife at the belt grinder so that the knife edge [1] points in the direction of rotation of the grinding belt [2] or the polishing wheel [2].
- 2 Align the workpieces horizontally so that they are positioned roughly perpendicular [3] to the grinding belt.
- 3 Position the knife blade [4] on the grinding belt at an angle of approx. 15 degrees [5].
- 4 When grinding, grind the sides of the workpiece alternately, until a burr has formed over the entire area.

NOTE**Workpieces heat during grinding**

An over-heated blade can anneal (loss of hardness) and stress cracks can form in it.

- After several grinding passes, cool the workpiece in a water bath.

NOTE

If the blade has become thicker as a result of frequent grinding, the blade thickness can be reduced again by grinding the flat sides.

8.2 Polishing workpieces

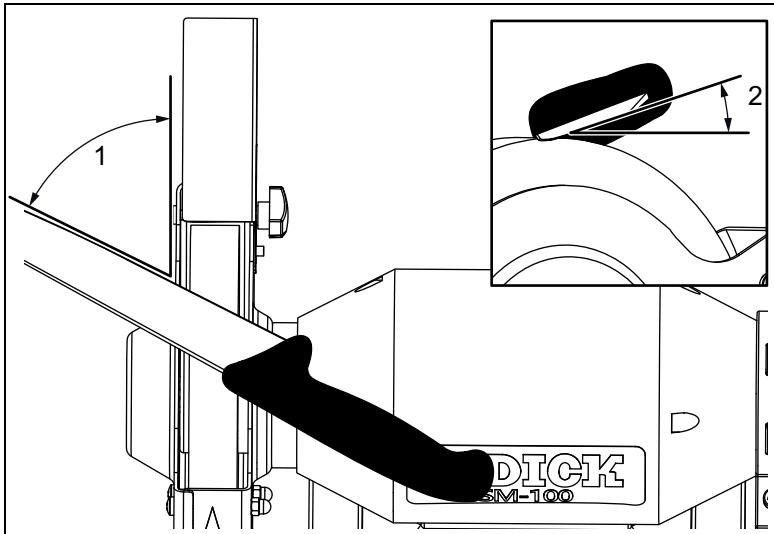


Figure 8.3 – Polishing knives

- [1] Positioning angle slanted relative to the running direction (forming an angle of approx. 30° - 60°)
- [2] Positioning angle relative to the polishing wheel (approx. 20°)

- 1 Hold the polishing paste against the polishing wheel while it is running,
- 2 Position the knife slanted relative to the running direction,
- 3 Position the knife at the polishing wheel at a more obtuse angle than for grinding,
- 4 Grind the knife until the burr has been completely removed and the surface has the required polish.
- 5 Polish both sides of the blade alternately.

9. Servicing and Maintenance

WARNING

Risk of injuries due to unauthorised or thoughtless switching on or wrong spare parts

- Always disconnect the mains plug before carrying out any maintenance or repair work on the belt grinder.
- Only use original spare parts of Friedr. Dick GmbH & Co. KG.

WARNING

Risk of injuries due to improper repair work

- Any repair work on electric components may only be carried out by qualified electricians.

9.1 Cleaning the belt grinder

The belt grinder must be cleaned after each work session.

- 1 Remove covers (Figure 6.2 – Structure and Function),
- 2 Remove residual abraded material from the machine, e.g. using a brush.
- 3 Tightly screw the covers back on.

9.2 Changing the grinding belt

Change the grinding belt if it has become blunt. (Interval: approx. 30 - 50 grinding operations).

Replace the polishing wheel as follows:

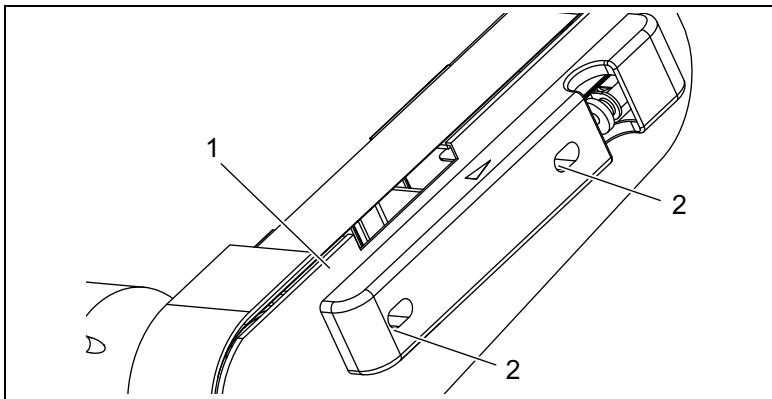


Figure 9.1 – Grinding arm

- [1] Right-hand side panel
- [2] Fastening screws

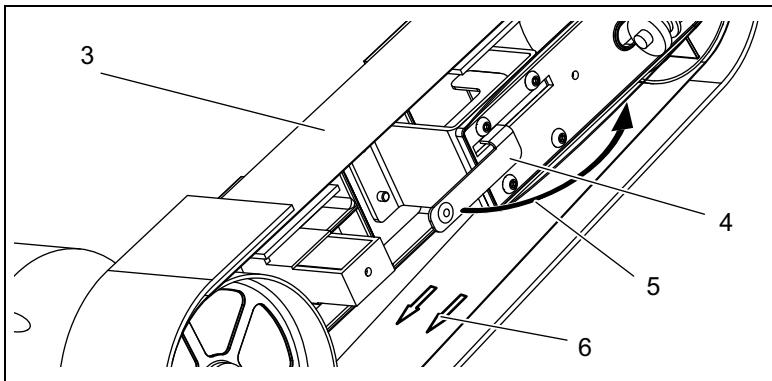


Figure 9.1 – Grinding arm

- [3] Grinding belt
- [4] Tensioning lever
- [5] Direction: Relax the tensioning lever
- [6] Direction of rotation indication on the grinding belt

- 1 Undo the fastening screws [2] of the right-hand side panel [1],
- 2 push the side panel [1] to the rear and remove,
- 3 push the tensioning lever [4] in the direction of the arrow [5] to relax it,
- 4 remove the grinding belt [3],
- 5 put on the new grinding belt so that the direction of rotation indication on the grinding belt [6] matches the direction of rotation of the belt grinder,
- 6 Install the individual parts in the reverse order.

9.3 Changing the polishing wheel

The polishing wheel must be changed if it is worn to below the working area.

Replace the polishing wheel as follows:

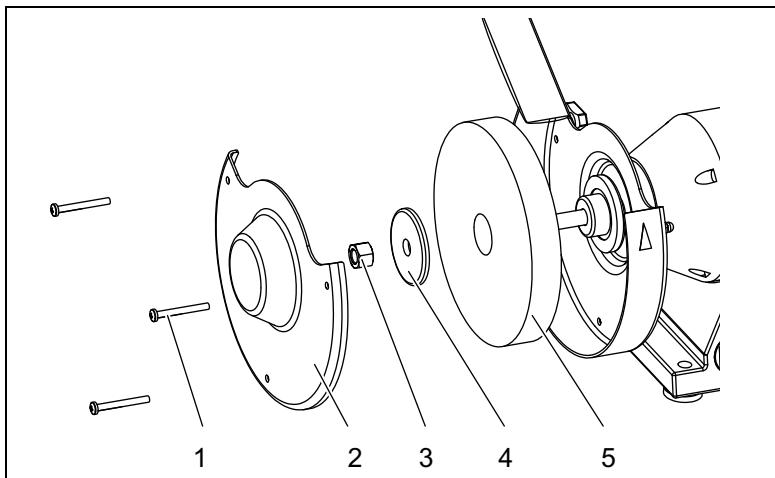


Figure 9.2 – Polishing wheel

- [1] Fastening screws for cover
- [2] Cover
- [3] Fastening nut
- [4] Flange cover
- [5] Polishing wheel

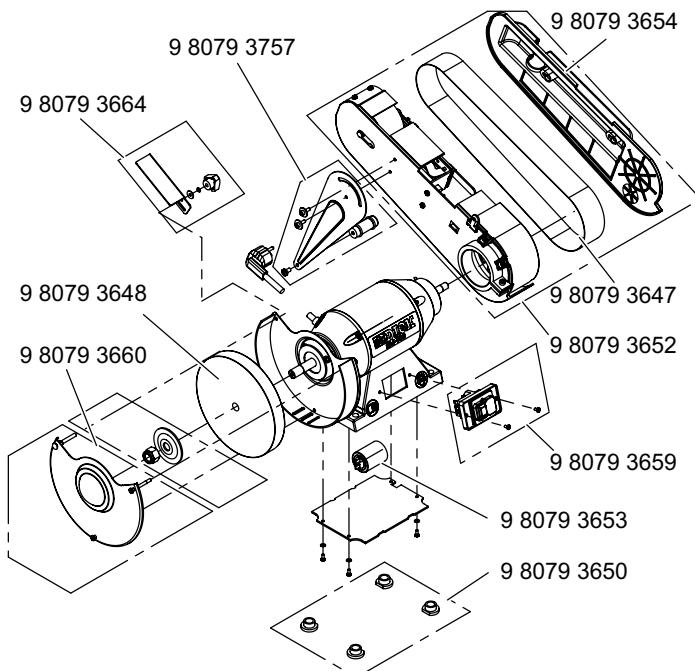
- 1** Undo the fastening screws **[1]** of the cover **[2]**,
- 2** Remove the cover **[2]**,
- 3** Undo the fastening nuts **[3]** of the flange cover **[4]**,
- 4** Remove the flange cover **[4]**,
- 5** Replace the polishing wheel **[5]**,
- 6** Install the individual parts in the reverse order.

After finishing all repairs and servicing work, check that all dismantled parts have been completely and correctly installed, especially the covers.



10. Spare Parts

10.1 Spare parts drawing



Order number	Quantity	Name	Dimensions
9 8079 3654	1 set	Side panel, right	
9 8079 3653	1 no.	Capacitor	10µF
9 8079 3652	1 no.	Grinding arm, complete	
9 8079 3651	1 no.	Operating instructions	SM-100 - 230V D/GB/F/I/E/RUS
9 8079 3649	1 no.	Polishing paste	
9 8079 3648	1 no.	Polishing wheel	ø200
9 8079 3647	10 no.	Set of grinding belts K120	1020 x 55
9 8079 3659	1 set	Switch, complete	
9 8079 3660	1 set	Cover, complete	
9 8079 3664	1 set	Deflection plate, complete	
9 8079 3650	4 no.	Machine base	
9 8079 3757	1 set	Support foot	

10.2 Ordering spare parts

CAUTION

Risk of accidents due to wrong spare parts

Using parts which are not matched to the belt grinder constitutes an unassessable risk.



- Use DICK original spare parts only.

Please order spare parts as follows:

Choose the parts to be replaced from the spare parts drawing, with order number and name.

Your spare part order must include the following details:

- 1 Required quantities
- 2 Order number
- 3 Name
- 4 Machine type, machine article number, serial number, year of manufacture (see type plate on back of machine).

Please send your order for spare parts to your specialist dealer or to:

Friedr. Dick GmbH & Co. KG

Postfach 1173

73777 Deizisau

GERMANY

Tel.: (49) (0)7153 817-0

Fax: (+49) (0)7153 817-218 or -219

E-mail: mail@dick.de

Web: www.dick.de

11. EC Declaration of Conformity

Manufacturer

Friedr. Dick GmbH & Co. KG
Esslinger Str. 4-10
73779 Deizisau
GERMANY

We declare with sole responsibility that the product:

Type SM-100 Belt Grinder

with the serial number given on the belt grinder's type plate, conforms to the listed EC Directives:

- EC Machinery Directive (2006/42/EC),
- EC EMC Directive (2004/108/EC),
- RoHS Directive (2011/65/EU).

European standards applied:

- EN ISO 12100:2010,
- EN 60204-1:2006,
- EN 61029-1:2009+A11:2010,
- EN 61000-3-2:2006+A1:2009+A2:2009,
- EN 61000-3-3:2013,
- EN 50581:2012,
- EN 55014-1:2006+A1:2009+A2:2011,
- EN 55014-2:1997+A1:2001+A2:2008+AC:1997.

The person authorized to compile technical documentation at Friedr. Dick GmbH & Co. KG is Mr. Wilhelm Leuze, Managing Director.