QUANTUM
MASCHINEN – GERMANY

Operating instructions

Version 1.0

drill

- ◯ **DQ13** 3182000
- ◯ **DQ16** 3182010
- ◯ **DQ20** 3182020

DQ13

DQ16

DQ20

Keep for future use!

1 Security

Conventions of representation

–	provides additional information
–	calls you to action
-	Lists

This part of the operating instructions

- explains the meaning and use of the warnings used in this manual,
- specifies the intended use of the drilling machine,
- draws your attention to dangers that could arise for you and other persons if these instructions are not followed,
- informs you how to avoid dangers.

In addition to the operating instructions, please note

- the applicable laws and regulations, the legal
- provisions for accident prevention,
- the prohibition, warning and mandatory signs as well as the warning notices on the drilling machine.

Always keep the documentation near the drill.

INFORMATION

If you cannot solve problems using this manual, please contact:

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Robert-Pfleger-Str. 26

D-96103 Hallstadt

email: info@stuermer-maschinen.de

1.1 Safety instructions (warnings)

1.1.1 Hazard classification

We divide safety instructions into different levels. The table below provides an overview of the assignment of symbols (pictograms) and signal words to the specific hazard and (possible) consequences.

pictogram	Signal word	Definition/Consequences
	**DANGER!**	Immediate danger that will result in serious injury or death to persons.
	WARNING!	Risk: a hazard could result in serious injury or death to persons.
	CAUTION!	Dangerous or unsafe practice that could result in personal injury or property damage.
	**DANGER!**	Situation that could result in damage to the drill and the product or other damage. No risk of injury to persons.

DQ13_DQ16_DQ20_DE.fm

pictogram	Signal word	Definition/Consequences
	**information**	Application tips and other important/useful information and notes. No dangerous or harmful consequences for persons or property.

We replace the pictogram in case of specific dangers

general danger

through a
Warning about

hand injuries,

more dangerous
electric
Tension,

or

rotating parts.

1.1.2 Other pictograms

Warning: Danger of slipping!

Warning: Danger of tripping!

Warning hot surface!

Warning biological
Danger!

Warning about
automatic start!

Warning: Danger of tipping!

Warning pending
Burdens!

warning
explosive!

Wear hearing protection!

Before commissioning
Read the operating instructions!

Unplug!

Wear protective goggles!

Wear protective gloves!

Wear safety shoes!

Wear protective clothing!

1.2 Intended use

WARNING!

**If not intended use use the drill or at
Failure to comply with the safety regulations or the operating instructions will void the manufacturer's liability for any resulting damage to persons or property and the warranty will be void!**

The drill is designed and built for use in non-explosive environments. The drill is designed and built for drilling holes in cold metal or other non-hazardous or non-flammable materials using a rotating, cutting tool with multiple flutes. The drill is supplied with a drill chuck guard. The drill may only be operated with this drill chuck guard.

If the drilling machine is used in a manner other than that described above or modified without the permission of Stürmer Maschinen GmbH, the drilling machine will no longer be used as intended.

We assume no liability for damages resulting from improper use.

We expressly point out that any design, technical or procedural changes not approved by Stürmer Maschinen GmbH will also void the warranty.

Part of the intended use is that you adhere to the limits of the drill and follow the operating instructions.

DANGER!

**If not intended use use the drill or at
Failure to comply with the safety regulations or the operating instructions will void the manufacturer's liability for any resulting damage to persons or property and the warranty will be void!**

1.3 Reasonably foreseeable misuse

Any use other than that specified in the "Intended Use" or beyond this is considered improper and is prohibited. Any other use requires consultation with the manufacturer.

The drill may only be used with metallic, cold and non-flammable materials.

To avoid misuse, the operating instructions must be read and understood before initial use.

The operating personnel must be qualified!

1.3.1 Avoiding misuse

- Use of suitable processing tools.
- Adjust the speed and feed rate to the material and workpiece. Clamp the workpiece
- securely and vibration-free.

DANGER!

The workpiece must always be secured in a machine vice, clamps or other suitable clamping tools.

WARNING!

Injury caused by flying workpieces.

DQ13_DQ16_DQ20_DE.fm

The table height adjustment must not be used as a drill feed. The table clamp is released. The maximum load capacity of the table height adjustment is not designed for this purpose.

- Clamp the workpiece in the machine vise. Make sure the workpiece is firmly clamped in the machine vise and the machine vise is firmly clamped to the drill table.

- Use of coolants and lubricants to increase tool life and improve surface quality.

- Clamp the machining tools and workpieces on clean clamping surfaces. Lubricate
- the machine sufficiently.

It is recommended:

- Insert the drill bit so that it is positioned exactly between the three jaws of the drill chuck.

When drilling, make sure that

- Depending on the diameter of the drill, the appropriate speed must be set, the
- pressure must only be strong enough to allow the drill to cut without stress,
- Excessive pressure can cause premature wear of the drill bit, possibly even breakage or jamming in the hole. Should jamming occur, immediately stop the main drive motor by pressing the emergency stop button.
- For hard materials, e.g. steel, commercially available coolant/lubricant must be used, and the drill must always be moved out of the workpiece while the spindle is rotating.

- Processing plastics on a drill leads to static charge. The static charge on machine parts caused by processing plastics cannot be safely discharged by the drill.

1.4 Dangers that can cause the drill to fail

The drill is state-of-the-art. However, a residual risk remains, as the drill uses

- high speeds,
- rotating parts,
- electrical voltages and currents.
- We have minimized the risk to people's health posed by these hazards through design and safety technology.

If the drilling machine is operated and maintained by insufficiently qualified personnel, the drilling machine may pose a hazard due to incorrect operation or improper maintenance.

INFORMATION

All persons involved in the assembly, commissioning, operation and maintenance must

- have the necessary qualifications, follow
- these operating instructions carefully.

If used improperly

- may pose a danger to staff,
- the machine and other material assets may be endangered and
- the function of the drilling machine may be impaired.

Always turn off the drill when performing cleaning or maintenance work.

WARNING!

The drill may only be operated with functioning safety devices.

Turn off the drill immediately if you notice that a safety device is faulty or dismantled!

You as the operator are responsible for this!

1.5 Qualification

1.5.1 Target group: private users

The machine is intended for private use. The understanding of private individuals with training in a metalworking profession has been taken into account in these operating instructions. Training or advanced training in a metalworking profession is a prerequisite for safe operation of the machine. It is essential that private users are aware of the hazards associated with using this machine. We recommend attending a training course in the use of power drills. Your specialist dealer can offer this type of training. These courses are also offered at adult education centers in Germany.

1.5.2 Obligations of the user

The user must

- have read and understood the operating instructions,
- Be familiar with all safety devices and safety regulations and be able to
- operate the drill.

1.5.3 Additional qualification requirements

Additional requirements apply to work on electrical components or equipment:

-Only a qualified electrician or management and supervision by a qualified electrician.

Before carrying out any work on electrical components or equipment, the following measures must be carried out in the specified order.

- Switch off all poles.
- Secure against reactivation.
- Check that the voltage is off.

1.6 Operator positions

The operator position is in front of the drilling machine.

INFORMATION

The power plug of the drill must be freely accessible.

1.7 Safety measures during operation

CAUTION!

Danger from inhaling hazardous dust and mists. Depending on the materials being processed and the tools used, dust and mists can be generated that are hazardous to your health. Ensure that the resulting hazardous dust and mists are safely extracted at the source and removed from the work area or filtered. Use a suitable extraction system for this purpose.

CAUTION!

Risk of fire and explosion due to the use of flammable materials or cooling lubricants.

Before processing flammable materials (e.g. aluminum, magnesium) or using combustible auxiliary materials (e.g. spirit), you must take additional precautions to safely avert any health hazard.

1.8 Safety devices

The drill may only be operated with functioning safety devices.

Stop the drill immediately if a safety device is faulty or becomes ineffective.

You are responsible for this!

After a safety device has been triggered or is defective, you may only use the drill again if you

- have eliminated the cause of the fault,
- have satisfied themselves that this does not pose a danger to persons or property.

WARNING!

If you bypass, remove, or otherwise disable a safety device, you endanger yourself and other people working on the bench drill. Possible consequences include:

- Injuries caused by ejected workpieces or workpiece parts, contact with
- rotating parts,
- a fatal electric shock.

The drill has the following safety features:

- an emergency stop switch,
- a drilling table with grooves for fastening the workpiece or a vice, a permanently
- attached protective cover for the pulleys with position switch, a foldable drill chuck
- guard for DQ13 and DQ16
- a chuck guard with microswitch for the DQ20

WARNING!

The guards provided and supplied with the machine are intended to reduce the risk of ejecting workpieces and fragments of tools or workpieces, but not to completely eliminate them. Always work with caution and observe the limits of your machining process.

1.9 Body protection

For some jobs you will need body armor as protective equipment.

Protect your face and eyes. Wear a helmet with face protection when performing any work that may expose your face and eyes to danger.

Wear protective gloves when handling sharp-edged parts.

Wear safety shoes when assembling, disassembling or transporting heavy parts.

Wear hearing protection if the noise level (immission) at your workplace is greater than 80 dB (A).

Before starting work, make sure that the required personal protective equipment is available at the workplace.

CAUTION!

Contaminated or potentially soiled personal protective equipment can cause illness. Clean your personal protective equipment after each use and regularly once a week.

1.10 Security check

Inspect the drill before each restart or at least once per shift. Report any damage, defects, or changes in operating behavior immediately to the responsible supervisor.

Check all safety devices

- at the beginning of each shift (during interrupted
- operation), once a week (during continuous operation),
- after each maintenance and repair.

Check that the prohibition, warning and information signs as well as the markings on the drill

- are legible (clean if necessary), are
- complete (replace if necessary).

INFORMATION

Use the following overview to organize the exams.

General review		
Furnishings	control.	OK
Protective covers	Assembled, firmly screwed and not damaged	
signs, Markings	Installed and readable	
Date:	Examiner (signature):	

Functional test		
Furnishings	control.	OK
only on DQ20 - drill chuck guard	After opening the chuck guard, the DQ20 drill must shut down. The DQ20 drill must not start up when the chuck guard is open.	
Emergency stop switch	After pressing the emergency stop switch, the drill must switch off.	
Position switch protective cover V-belt	The drill must not be switched on if the protective cover of the pulleys is open.	
Date:	Examiner (signature):	

1.11 Emergency stop switch

CAUTION!

Even after the emergency stop switch has been activated, the drill spindle continues to rotate for a few seconds depending on the previously set speed.

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1.11.1 Drilling table

There are holders for T-nuts on the drilling table.

WARNING!

Risk of injury from flying parts. Secure the workpiece securely to the drilling table.

1.12 Separating protective devices

1.12.1 Drill chuck guard

Before starting work, adjust the guard height on the DQ20 to the correct height. To do this, loosen the clamping screw, adjust the required height, and retighten the clamping screws.

1.12.2 Protective cover of the pulleys

A protective cover for the pulleys is attached to the drill head. The protective device includes a switch that monitors the closed position.

INFORMATION

The machine cannot be started until the protective cover is closed.

1.12.3 Prohibition, mandatory and warning signs

INFORMATION

All warning signs must be legible. Check them regularly.

1.13 Body protection

For certain types of work, you will need body armor as protective equipment. These include:

- protective helmet,
- Safety goggles or face shield,
- protective gloves,
- Safety shoes with steel caps, hearing
- protection.

Before starting work, make sure that the required personal protective equipment is available at the workplace.

CAUTION!

Contaminated or potentially soiled personal protective equipment can cause illness. Clean your personal protective equipment after each use and regularly once a week.

Body protection equipment for special work

Protect your face and eyes. Wear safety goggles when performing any work that may endanger your eyes.

Wear protective gloves when handling sharp-edged parts. Wear safety shoes when assembling, disassembling, or transporting heavy parts.

1.14 Safety during operation

We will draw your attention to specific dangers when working with and on the drilling machine in the description of this work.

WARNING!

Before switching on the drill, make sure that it does not pose a danger to people or damage property.

Avoid any working practices that pose a safety risk.

- Make sure that your work does not endanger anyone.
- During assembly, operation, maintenance and repair, it is essential to follow the instructions in this manual.
- Do not work on the drill if your ability to concentrate is impaired for any reason, such as the influence of medication.
- Report any hazards or errors to the supervisor.
- Stay with the drill until all movements have come to a complete stop.

- Use the prescribed body protection. Wear tight-fitting clothing and, if necessary, a hairnet.
- Do not use protective gloves when drilling.

1.15 Safety during maintenance

Inform operating personnel in a timely manner about maintenance and repair work.

Report any safety-relevant changes to the drilling machine or its operating behavior. Document all changes, have the operating instructions updated, and instruct the operating personnel.

1.15.1 Switching off and securing the drilling machine

Unplug the power cord before starting any maintenance or repair work.

All machine parts and all hazardous voltages are switched off. Except for the points marked with the adjacent pictogram.

Attach a warning sign to the machine.

1.15.2 Mechanical maintenance work

Before and after your work, remove or install all protective and safety devices installed for maintenance work, such as:

- covers,
- Safety instructions and warning signs,
- grounding cable.

If you remove any protective or safety devices, reinstall them immediately after completing the work. Check their functionality!

1.16 Electrics

Craft or industrial use

Have the electrical machine/equipment inspected regularly. Have any defects such as loose connections, damaged cables, etc. rectified immediately.

A second person must be present when working on live parts and must switch off the power in an emergency. In the event of a power outage, shut down the milling machine immediately!

The operator of the machine must ensure that the electrical systems and equipment are checked for their proper condition, namely:

- before first commissioning and after modification or repair before recommissioning by a qualified electrician or under the direction and supervision of a qualified electrician

- and at certain intervals.

The deadlines must be set so that any defects that are to be expected can be identified in a timely manner.

The relevant electrical engineering rules must be observed during the test.

2 Technical data

The following data are dimensions and weight specifications and the machine data approved by the manufacturer

	DQ13	DQ16	DQ20
Electrical connection	230V~50Hz (~60Hz)	230V~50Hz (~60Hz)	230V~50Hz (~60Hz) 400V~50Hz (~60Hz)
Motor power spindle drive	350 W	450 W	550 W
Drilling performance in steel (S235JR - ST37)	Ø 13 mm	Ø 15.9 mm	Ø 20 mm
Continuous drilling performance in steel (S235JR - ST37)	Ø 12 mm	Ø 15 mm	Ø 18 mm
Distance spindle - column	105 mm	128 mm	180 mm
Quill stroke [mm]	52	65	85
spindle holder	B16	MK2	MK2
quill diameter	Ø 40 mm	Ø 42 mm	Ø 47 mm
Column diameter	Ø 46 mm	Ø 60 mm	Ø 72 mm
Table size	160 mm x 160 mm	200 mm x 200 mm	290 mm x 290 mm
Size T-slot drilling table	14 mm diagonal	16 mm diagonal	14 mm diagonal
Maximum distance spindle - table	220 mm	410 mm	410 mm
Maximum distance spindle - machine base	300 mm	530 mm	600 mm
Work surface machine base	190 x 290mm	355 x 235mm	460 x 270mm
Packaging dimensions L x W x H]	460 x 340 x 250 mm	665 x 430 x 255 mm	810 x 490 x 270 mm
Net machine weight [kg]	15	28	50
Spindle speeds [1/min] at ~50Hz connection	620 - 2620	250 - 2400	180 - 2770
Number of V-belt stages	5	12	16
Ambient conditions Temperature	5~35 °C		
Environmental conditions relative humidity	25 - 80%		
Operating equipment, rack and oiler Operating equipment, gearing on the spindle	acid-free lubricating oil Assembly grease for loose fits, e.g. Staburag NBU 30 PTM		

2.1 Emissions

CAUTION!

Depending on the overall noise exposure and the underlying limits, the machine operator must wear suitable hearing protection.

We generally recommend that you use sound and hearing protection. The A-weighted emission sound pressure level L_{pA} is 77 to 80 dB. The A-weighted sound power level L_{WA} is 100 to 107 dB.

INFORMATION

This figure was measured on a new machine under normal operating conditions. Depending on the age and wear of the machine, the noise behavior may vary.

In addition, the level of noise emission also depends on manufacturing-related factors, such as speed, material and clamping conditions.

INFORMATION

The following factors influence the actual level of noise exposure to the operator:

- Characteristics of the workspace, e.g. size or damping characteristics,
- other noise sources, e.g. the number of machines,
- other processes taking place nearby and the length of time an operator is exposed to the noise.

In addition, permissible exposure levels may vary from country to country due to national regulations.
However, this information on noise emissions should allow the machine operator to better assess the hazards and risks

3 Delivery, internal transport and unpacking

CAUTION!

Risk of injury from tipping over or parts falling from a forklift, pallet truck, or transport vehicle. Use only transport equipment that can support the total weight and is suitable for this purpose.

3.1 Notes on transport, installation and unpacking

Improper transport of individual machines, or unsecured machines stacked on top of each other or next to each other in their packed or unpacked state, is prone to accidents and can cause damage or malfunctions for which we accept no liability or guarantee.

Transport the scope of delivery to the installation site using a sufficiently dimensioned industrial truck, ensuring that it cannot be moved or tipped over.

3.1.1 General hazards during internal transport

CAUTION: RISK OF TIP-OVER!

The device may be lifted unsecured by a maximum of 2 cm.

Employees must stay out of the danger zone, out of reach of the load. Warn employees and inform them of the hazard if necessary.

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Act responsibly during transport and always consider the consequences. Avoid daring and risky actions.

Particularly dangerous are inclines and declines (e.g., driveways, ramps, etc.). If driving on such sections is unavoidable, special caution is required.

Before starting transport, check the transport route for possible hazards, unevenness and faults as well as for sufficient strength and load-bearing capacity.

Hazardous areas, unevenness, and defects must be inspected before transport. The removal of hazardous areas, defects, and defects by other employees during transport poses significant risks.

Careful planning of internal transport is therefore essential.

3.2 Delivery

Immediately upon receipt of the machine, inspect its condition and immediately report any damage to the last carrier, even if the packaging is intact. To safeguard your claims against the transport company, we recommend that you temporarily leave the machines, equipment, and packaging materials in the same condition as when you discovered the damage, or take photographs of this condition. We ask that you notify us of any other complaints within six days of receipt of the delivery.

3.3 Unpacking

Before unpacking, position the machine near its final location. If the packaging shows signs of possible transport damage, take appropriate precautions to prevent damage to the machine during unpacking. If any damage is discovered, immediately report it to the carrier and/or shipper so that the necessary steps can be taken to file a claim.

Inspect the entire machine carefully and check that all materials such as shipping documents, instructions and accessories have been delivered with the machine.

3.4 Standard scope of delivery

3.4.1 Drilling machine DQ 13

1	Stand	290 mm x 190 mm	1
2	Table and table support	160mm x 160mm	1
3	column	Ø 46mm x 395mm	1
4	headboard	DQ13	1
5	Handle		3
6	feed	J2513-13mm	1
7	Drill chuck key		1
8	Drill chuck guard	Ø 40 mm	1
9	Cylinder head bolts with hexagon socket	M8 x20	3
10	disc	Ø 8	3
10	washer	Ø 8	3
11	Allen key	S3/S4/S6	1 each
12	Instructions	A5	1

3.4.2 Drilling machine DQ 16

1	Stand	355 mm x 235 mm	1
2	Table and table support	200 mm x 200 mm	1
3	Morse taper	MT2-B16	1
4	column	Ø 60mm x 640mm	1
5	rack	460 mm	1
6	headboard	DQ16	1
7	aluminum handle		1
8	Keyless drill chuck	1-16mm	1
9	Drill chuck guard	Ø 40 mm	1
10	Rack and pinion cuff	Ø 60 mm	1
11	crank		1
12	hexagon socket screw	M8 x 25	3
13	hexagon socket screw	M8 x 20	3
14	disc	8	3
15	washer	Ø 8	3
16	Allen key	S3/S4/S6	1 each
17	Driving wedge		1
18	Instructions	A5	1

3.4.3 Drilling machine DQ 20

1	Stand	450 mm x 270 mm	1
2	Table	290 mm x 290 mm	1
3	Morse taper	MT2-B16	1
4	column	Ø72 mm x 750 mm	1
5	rack	520 mm	1
6	headboard	DQ20	1
7	Table arm and drilling table mount		1
8	aluminum handle		1
9	Keyless drill chuck	1-16mm	1
10	Drill chuck guard		1
11	table brace		1
12	Rack and pinion cuff	Ø 72 mm	1
13	crank		1
14	hexagon socket screw	M10 x 25	4
15	KB screw	M8 x 20	3
16	disc	Ø10	4
17	washer	Ø8	3
18	Allen key	S3/S4/S6/S8	1 each
19	Driving wedge		1
20	Instructions	A5	1

3.5 Installation conditions

Design the work area around the machine in accordance with local safety regulations. The working space for operation, maintenance, and repair must not be restricted.

The lighting of the workplace must be designed so that an illuminance of 500 lux is achieved at the tool tip.

If this cannot be ensured with the conventional lighting of the installation location, an optionally available workplace light must be used.

- Observe the prescribed safety areas and escape routes according to VDE 0100 Part 729, as well as the environmental conditions for operating the machine.
- The mains plug or the main switch installed by the operator of the machine must be freely accessible.
- The machine may only be installed and operated in dry, ventilated rooms. Avoid locations
- near machines that generate chips or dust. The installation location must be vibration-
- free, i.e., away from presses, planers, etc.

- Provide sufficient space for setup and operating personnel and material
- transport. Also consider accessibility for adjustment and maintenance work.

3.5.1 Assembly

WARNING!

During assembly, make sure that the drill is disconnected from the power supply.

Carefully remove the contents from the packaging. Choose a firm, flat surface on which to set up the drill.

Machine base and column

- Take the machine base (1) and align the column bracket (2) over the large hole (3).

- Align the holes in the column bracket with those in the machine base and secure them with the screws and washers. Tighten all screws firmly with a wrench (4).

- We recommend mounting the machine base on a stable surface to ensure it stays in place.

- Slide the column into the column holder (5).

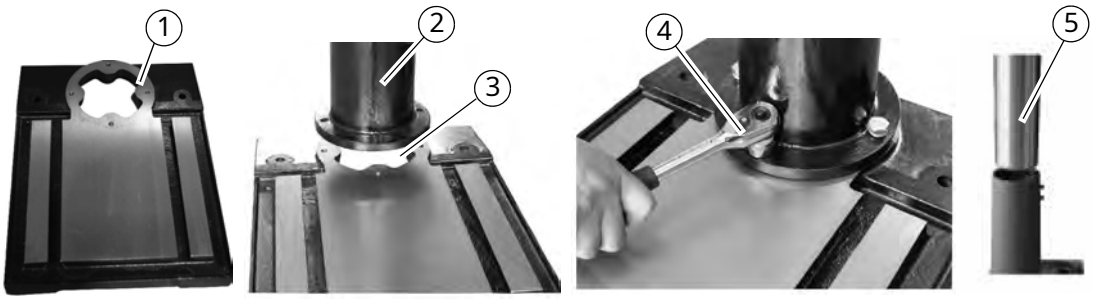

Fig.3-1:

- Fasten with 2 grub screws using the Allen key.

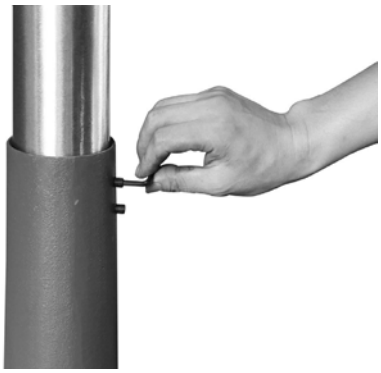

Fig.3-2:

Rack and table

- Install the rack into the drilling table support.

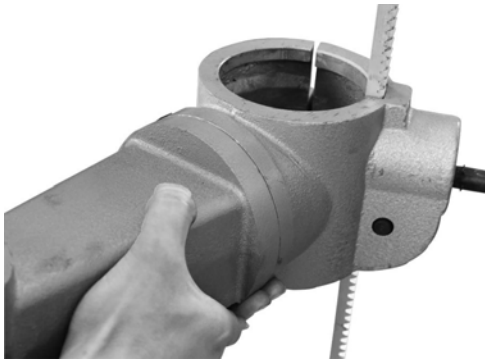

Fig.3-3:

- Mount the drilling table support and the rack onto the column, making sure that the rack is on the right side of the column (when viewing the product from the front).

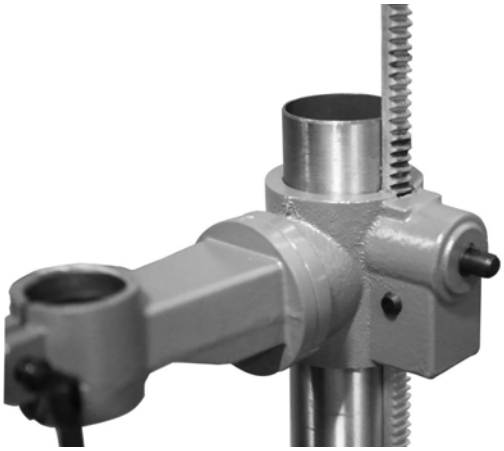

Fig.3-4:

- Push the rack (1) all the way down until it is in the lower column holder (2) engages. Slide the rack collar (3) with the tapered side facing down over the column (4) until it engages the rack. Tighten the grub screw on the upper collar.

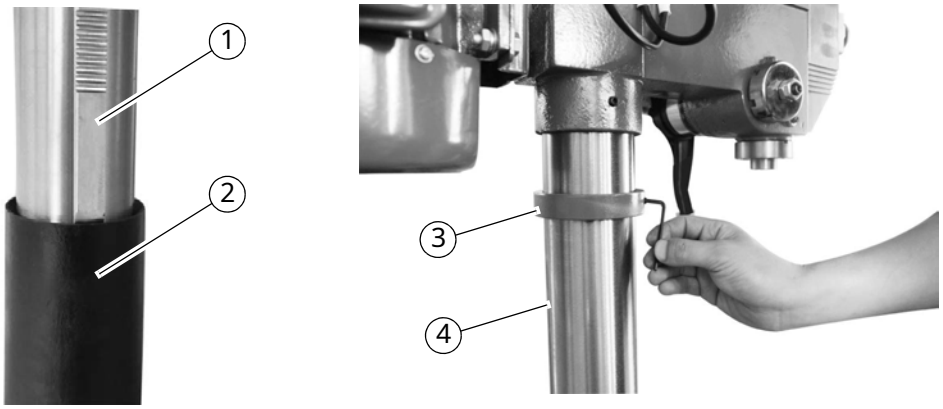

Fig.3-5:

- Attach the table adjustment handle to the bracket.

Fig.3-6:

- Mount the table on the table support and secure it with the table lock.

Fig.3-7:

Main housing

- Lift the main body and slide it down onto the column until it stops. Before attaching the body, ensure the spindle is aligned with the table and base.

Fig.3-8:

- Tighten the grub screws on the left and right sides of the case to secure it.

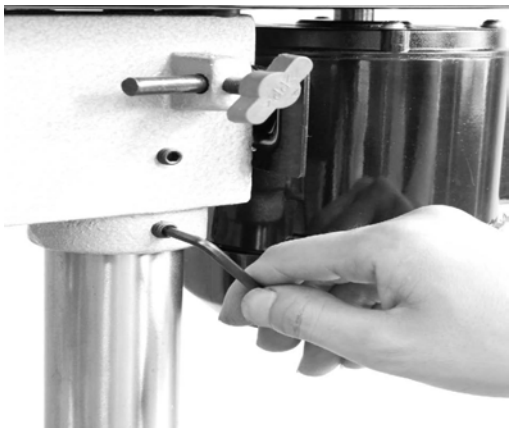

Fig.3-9:

- To assemble, screw the feed handles (1) into the hub (2).

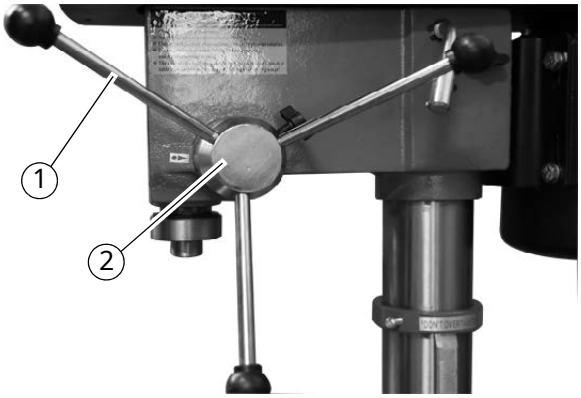

Fig.3-10:

- For some cast iron feed handles, tighten the three set screws on the wheel hub (1). Then attach the plastic housing (2) to the cast iron feed handle.

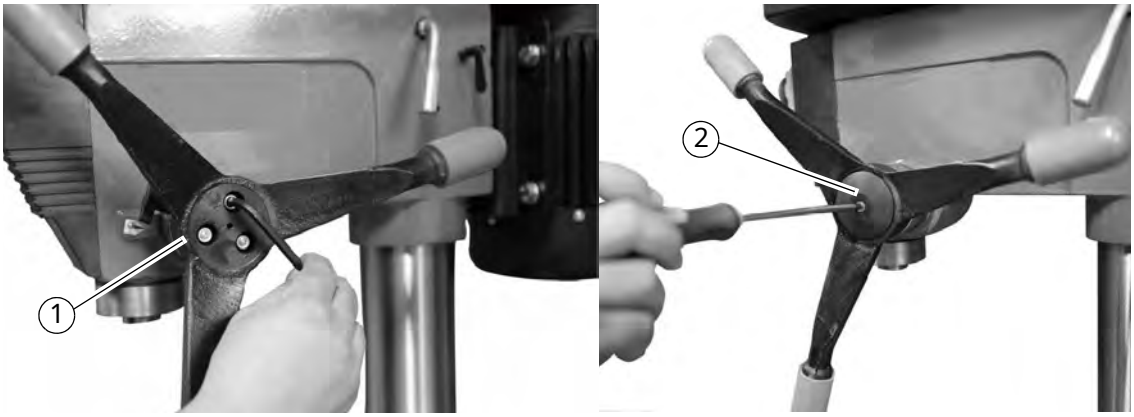

Fig.3-11:

Drill chuck and taper mandrel

- Before assembly, make sure that the clamping jaws are positioned at the very top (inside the chuck) to protect them from to protect against damage.

Fig.3-12:

- Tighten the Phillips screws of the chuck guard on the quill.

Fig.3-13:

- Insert the tapered end of the mandrel into the chuck by hand using appropriate force.

Fig.3-14:

- The mandrel can then be inserted into the quill, rotating the mandrel as it is inserted to guide the tenon into the slot. It should fit without much resistance.

Fig.3-15:

- Once the correct position is found, a firm tap on the bottom of the chuck with a soft hammer is required to secure it. The chuck and arbor are correctly installed when they cannot be pulled out manually.

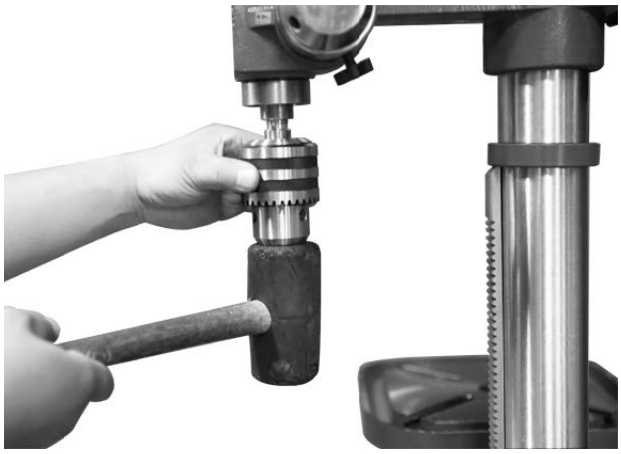

Fig.3-16:

3.5.2 Settings and adjustments

WARNING!

Make sure the drill is unplugged from the power supply during settings and adjustments.

Table height adjustment

- Release the table support lock.

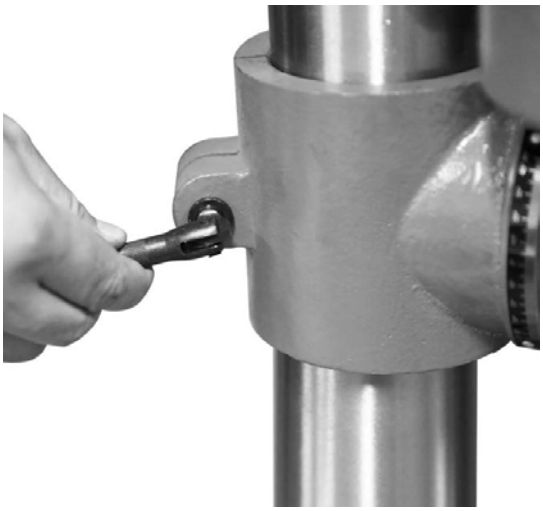

Fig.3-17:

- Turn the table adjustment handle to set the desired table height and tighten the table lock to secure the table in position.

Fig.3-18:

Adjusting the tilt angle of the table

- The angle of the table is adjusted by loosening the screw under the table top with a wrench.

Fig.3-19:

- Once the work table has been tilted into the correct position, tighten the screw again to secure the position.

Fig.3-20:

CAUTION!

If the table is tilted/inclined, make sure the workpiece is clamped to the table.

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3.5.3 Installation of drills with cylindrical shank

- Loosen the jaws of the chuck with the Chuck key by turning counterclockwise.
- Insert the drill into the chuck.

Fig.3-21:

- While holding the drill bit in one hand, turn the top collar of the chuck clockwise. Insert the chuck key into one of the three pivot holes and tighten it until the bit is securely seated.

Fig.3-22:

Morse taper drill

- To use Morse taper drills, remove the chuck and arbor. Rotate the arbor until the tang aligns with the slot in the quill.

Fig.3-23:

- Insert the drift into the slot and tap firmly with a metal hammer until it comes loose. (Make sure that the

  Clamping jaws are turned up to the stop to avoid damage).

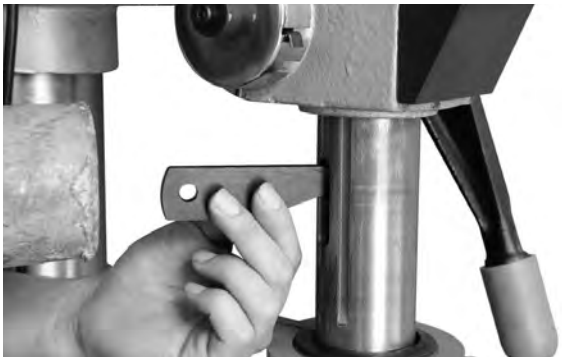

Fig.3-24:

- Insert the taper drill into the spindle bore, turn it and push it

  up until the cone drill is firmly in place.
- Place a wooden block on the table and raise the table until the cone drill is firmly seated in the spindle.

Fig.3-25:

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3.5.4 Presetting the drilling depth

bench drill

To adjust the drilling depth, adjust the depth stop as follows:

With the motor switched off, lower the chuck until the drill touches the workpiece surface and hold it in this position.

Turn the adjusting nut down until the distance between its bottom and the top of the bracket matches the depth of the required hole. Tighten the locknut and lock it against the adjusting nut.

Fig.3-26:

The drill is now set to drill holes to the depth you specify from a specific starting point. This means that if the surface of your workpiece is flat and level, you can drill a series of holes, each to the same depth. The scale and pointer can be used when drilling individual holes. Lower the chuck until the drill touches the workpiece, set the pointer to a point on the scale, and drill to the desired depth using the scale.

pillar drill

To stop the spindle (and drill) at a desired depth:

- Loosen the depth stop lock knob (1) by turning it counterclockwise.
- Turn the depth scale (2) to the desired depth and then tighten the wing screw.

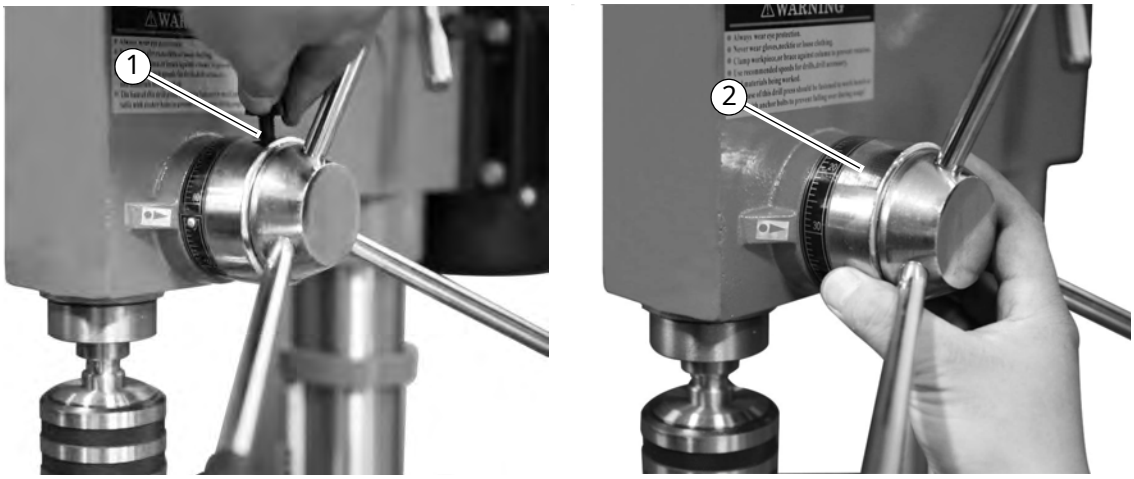

Fig.3-27:

To hold the spindle (and drill) at the desired depth:

- Loosen the depth stop lock knob and turn the feed handle to the lowest point.

- Turn the depth scale to the desired depth and retighten the depth stop knob. This will hold the component at the desired depth.

Fig.3-28:

3.5.5 Change in speed

bench drill

Before changing speeds, make sure the machine is turned off and unplugged from the power supply.

- Open the protective cover of the V-belt pulleys.
- Loosen the belt tension adjustment knob to relieve tension on the drive belt.

- Use the chart on the inside of the pulley cover to position the V-belt in the correct location for the required spindle speed.

Fig.3-29:

- Once the belt is correctly positioned, tension it by prying the motor away from the head. Pry the motor and its bracket away from the head so that the belt is under tension. The tension is correct when the belt deflects approximately 12 mm in the center with appropriate thumb pressure. Lock the motor in this position with the locking knob.

pillar drill

The speed of the drill can be adjusted by adjusting the belt on the pulley system. See the chart inside the pulley cover for speed configurations.

- Loosen the belt tension locking knobs located on both sides of the main body.

Fig.3-30:

- Once the tension is released, the belt tensioning handle can be used to move the motor pulley closer to the
to move the pulley.

Fig.3-31:

- The belt is removed by lifting it over the lip of the pulley while simultaneously turning the pulley.

Fig.3-32:

- After readjusting the belts, use the

  Use the belt tensioning handle to further move the motor pulley away from the idler pulley. Once the desired position is reached, secure the pulleys in place using the locking knobs.

Fig.3-33:

- The correct belt tension is achieved when the measured deflection (by pressing in the middle of the belt) is approximately 5 mm.

Fig.3-34:

4 Operation

- - Avoiding misuse on page 4

4.1 Switch on the machine

INFORMATION

As long as the chuck guard on the DQ20 is not closed, the DQ20 drill cannot be started.

There is no switch in the chuck guard on the DQ13 and DQ16 drills.
As long as the V-belt protective cover is not closed, the drill cannot be started.

- Determine and adjust the V-belt position. Reclose the V-belt cover with the screw plug.
- Adjust the height of the chuck guard and close it.

4.2 Switch off the machine

CAUTION!

The emergency stop switch may only be activated in an emergency. The emergency stop switch may not be used to stop the machine for normal operation.

- Press the “Off” push button.
- If the device is not in use for a long period of time, unplug it.

4.3 Quill feed

CAUTION!

Risk of impact from the spindle levers when the drill feed is stopped. The return spring tensions and releases the stored energy.

- Move the quill down using the quill lever. The quill will return to its original position under spring force.

4.4 Speed setting on DQ20

Example:

To achieve a speed of 580 rpm, the front V-belt must be placed at position 4 and the rear V-belt at position D

Fig.4-1: 50Hz sticker in the protective cover of the V-belts

4.5 Cooling

The rotational movement creates high temperatures at the tool cutting edge due to the frictional heat that occurs.

When drilling, the tool should be cooled. Cooling with a suitable coolant/lubricant will achieve better results and a longer tool life. For example, use a spray gun, similar to the one used for watering flowers, and fill it with a coolant.

INFORMATION

Use a water-soluble, environmentally friendly drilling emulsion as a coolant, which you can purchase from specialist retailers.

Make sure that the coolant is collected again.

Ensure environmentally friendly disposal of used coolants and lubricants. Follow the manufacturer's disposal instructions.

5 maintenance

In this chapter you will find important information about

- Inspection,
- Maintenance,
- Repair.

DANGER!

Regular, properly performed maintenance is an essential prerequisite for

- operational safety, trouble-
- free operation,
- a long service life of the machine and the quality
- of the products you produce.

The facilities and equipment of other manufacturers must also be in perfect condition.

5.1 Security

WARNING!

The consequences of improperly performed maintenance and repair work can be:

- Severe injuries to the machine operator, damage
- to the machine.

Only qualified personnel may maintain and repair the machine.

5.1.1 Preparation

WARNING!

Only carry out maintenance work on the machine when it is disconnected from the electrical supply.

Attach a warning sign to prevent unauthorized switching on.

5.1.2 Recommissioning

Carry out a safety check before restarting.

- - Safety check on page 10

WARNING!

Before starting the machine, make sure that

- no danger to persons arises and
- the machine is not damaged.

5.2 Inspection and maintenance

The type and degree of wear depends largely on the individual application and operating conditions. Therefore, all specified intervals apply only to the respective approved conditions.

interval	Where ?	What?	How ?
Start of shift after each Maintenance or repair work	drill	Check for external damage. - - Security check on page 8 If the power cord is damaged in any way, it must be replaced immediately.	
weekly	clamping screws	Relaxation	- Check whether the V-belt tension clamping screws on the left and right sides of the drill head are firmly tightened. - Check that the V-belts are properly tensioned. Check the tension of the V-belts.

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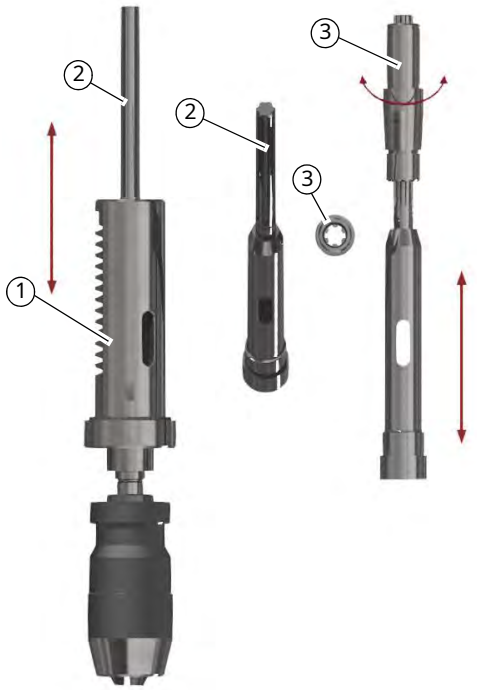
interval	Where ?	What?	How ?
			- Lubricate the spindle and rack from time to time with oil as needed. Apply a thin layer Apply wax paste or oil to the table and column to lubricate them and prevent corrosion.  
semi-annually	**V-belt on the drill head**	**Visual inspection**	- Check the V-belts in the drill head for porosity and wear.

interval	Where ?	What?	How ?
if necessary	el		Unusual rattling noises can be eliminated by regreasing. During drilling, the spindle sleeve (1) moves up or down with the toothed spindle (2) in the stationary, driven sleeve (3). The noise is caused by the necessary play between the two gears of the sleeve and spindle. The grease present in the spindle sleeve upon delivery may be used up.  Fig.5-1: Regreasing is performed from above via the spindle drive. Apply the grease to the visible toothed area of the spindle. We recommend a grease that can remain permanently within the toothing. We recommend the "Staburag NBU 30 PTM" grease from Klüber, which has proven itself as an assembly grease for loose fits.
according to operator Experience, at least every 6 months	**Electrics**	**Electrical testing**	- - Electrics on page 10

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INFORMATION

The spindle bearings are permanently lubricated. No relubrication is required.

5.3 Repair

5.3.1 Customer service technician

For all repairs, please request an authorized service technician. Contact your dealer if you do not know the customer service department, or contact Stürmer Maschinen GmbH in Germany, who can provide you with the name of a specialist dealer. Optionally,

Stürmer Maschinen GmbH Dr.

Robert-Pfleger-Str. 26 96103

Hallstadt

You can request a service technician, however, the service technician can only be requested through your authorized dealer. If your qualified technician performs the repairs, they must follow the instructions in this manual.

Stürmer Maschinen GmbH assumes no liability and provides no guarantee for damages or malfunctions resulting from non-compliance with these operating instructions.

Use for repairs

- flawless and suitable tools,
- only original spare parts or series parts expressly approved by Stürmer Maschinen GmbH.

6 Disturbances

Disturbance	Cause/ possible effects	remedy
Noise when working under load.	• Incorrect belt tension • Dry spindle (toothed spindle) • Tool is blunt or incorrectly clamped. • Spindle bearing defective • The pulley on the motor has come loose.	• Adjust voltage • Remove and lubricate the spindle and quill. • Use new tool and check tension (tightness of drill, chuck and taper mandrel). • Have permanently lubricated spindle bearings replaced by qualified personnel. • Check the fastening of the pulley, tighten the fastening nut.
Drill “burns”.	• Incorrect speed • Chips do not come out of the drill hole. • Blunt drill bit. • Working without cooling.	• Select a different speed, feed rate too high. • Pull the drill bit back more often when drilling. • Sharpen the drill bit or insert a new drill bit. • Use coolant.
Drill tip runs away, drilled hole is not round.	• Hard workpiece or length of the cutting spirals/or angle on the drill uneven. • Bent drill bit.	• Use a new drill bit.

Disturbance	Cause/ possible effects	remedy
Drill runs unevenly or wobbles.	• Bent drill bit. • Drill not clamped correctly. • Drill chuck defective.	• Replace the drill • Clamp the drill correctly. • Replace the drill chuck.
The drill chuck or the Morse taper MK2 / B16 cannot be inserted or does not hold in the taper by itself.	• Dirt, grease or oil on the conical inside of the drill chuck or on the conical surface of the spindle	• Clean the surfaces carefully • Keep surfaces free of grease.
Engine does not run	• On DQ20, drill chuck guard not closed • V-belt protective cover not closed	• Close the chuck guard on the DQ20 • Close the V-belt protective cover
The motor only runs when the "On" push button is pressed continuously.	• Restart protection relay defective.	• Have the on/off switch KJD17B replaced by qualified personnel.
Engine overheats and no power	• Motor overloaded • Mains voltage too low • Motor incorrectly connected (DQ20 400V three-phase current)	• Switch off immediately and have it checked by qualified personnel
Deficient Work accuracy	• Unbalanced heavy or strained workpiece • Inaccurate horizontal position of the workpiece holder	• Workpiece mass-balanced and tension-free clamping • Align workpiece holder
Drill spindle does not retract	• Spindle return spring	• Determine the cause and replace if necessary. Spindle return spring.

7 Attachment

7.1 Copyright

Technical changes reserved at any time.

7.2 Terminology/Glossary

Expression	Explanation
ejector	Tool for removing the drill or chuck from the spindle.
drill chuck	Drill chuck
Drill head	Upper part of the drill
Drill quill	Fixed hollow shaft in which the spindle runs.
Drill spindle	Shaft driven by the motor

Expression	Explanation
drilling table	Support surface, clamping surface
cone mandrel	Cone of the drill or drill chuck
Feed cross	Manual operation for the drill feed
Keyless drill chuck	manually clampable drill chuck
workpiece	part to be drilled, part to be machined
Tool	Drills, countersinks, etc.

7.3 Claims for defects / Guarantee

In addition to the statutory warranty claims of the buyer against the seller, the manufacturer of the product, Stürmer Maschinen GmbH, Dr. Robert-Pfleger-Straße 26, D-96103 Hallstadt, grants you no further warranties unless they are listed here or agreed upon within the framework of an individual contractual provision.

- Liability or warranty claims will be handled at Stürmer Maschinen GmbH's discretion either directly with Stürmer Maschinen GmbH or through one of its dealers.

  Defective products or their components will either be repaired or replaced with non-defective ones. Replaced products or components become our property.

- A prerequisite for liability or warranty claims is the submission of an original, machine-generated purchase receipt, which must show the date of purchase, the machine type and, if applicable, the serial number. Without the
  No services can be provided without the original purchase receipt.
- Defects caused by the following circumstances are excluded from liability or warranty claims:
  - Use of the product beyond its technical capabilities and intended use, particularly in the case of excessive use of the device
  - Self-fault due to incorrect operation or disregard of our operating instructions
  - negligent or incorrect handling and use of unsuitable equipment
  - unauthorized modifications and repairs
  - insufficient setup and protection of the machine
  - Failure to comply with installation requirements and terms of use
  - atmospheric discharges, overvoltages and lightning strikes as well as chemical influences

- The following items are also not subject to liability or warranty:
  - Wear parts and parts subject to normal and intended wear, such as V-belts, ball bearings, lamps, filters, seals, etc.

  - non-reproducible software errors
- Services provided by Stürmer Maschinen GmbH or one of its vicarious agents to fulfill an additional warranty constitute neither an acknowledgement of a defect nor an acknowledgement of liability. These services do not inhibit and/or interrupt the warranty period.
- The place of jurisdiction for merchants is Bamberg.
- Should any of the above provisions be invalid and/or void in whole or in part, the provision which comes closest to the intention of the guarantor and remains within the scope of the liability and guarantee limits stipulated in this contract shall be deemed to have been agreed.

7.4 Storage

DANGER!

If stored incorrectly or improperly, electrical and mechanical machine components can be damaged or destroyed.

Store the packaged or already unpacked parts only under the intended environmental conditions.

Please follow the instructions and information on the transport box.

- fragile goods (goods require careful handling)

-Protect from moisture and humid environments

- Prescribed position of the packing crate (marking of the ceiling area - arrows pointing upwards)

- maximum stack height
  Maximum stacking height Example: not stackable - no further packing boxes may be stacked above the first one.

Please contact Stürmer Maschinen GmbH if the machine and accessories need to be stored for longer than three months and under environmental conditions other than those specified.

7.5 Disposal instructions / recycling options:

Please dispose of your device in an environmentally friendly manner by disposing of waste properly and not in the environment.

Please do not simply throw away the packaging or the old device, but dispose of both according to the guidelines established by your city/municipal administration or the responsible waste disposal company.

7.5.1 Decommissioning

CAUTION!

Used equipment must be properly decommissioned to avoid subsequent misuse and danger to the environment or people.

- Unplug the power cord. Cut the power
- cable.
- Remove all environmentally hazardous operating materials from the old device.
- Remove any batteries and rechargeable batteries, if present.
- If necessary, dismantle the machine into manageable and reusable assemblies and components.
- Dispose of the machine components and operating materials in the designated disposal routes.

7.5.2 Disposal of new device packaging

All packaging materials and packaging aids used in the machine are recyclable and must be recycled.

The packaging wood can be disposed of or recycled.

Cardboard packaging components can be shredded and put into the waste paper collection.

The films are made of polyethylene (PE), and the padding is made of polystyrene (PS). These materials can be reused after processing if they are handed over to a recycling center or to your local waste disposal company.

Only pass on packaging material in a sorted form so that it can be recycled directly.

7.5.3 Disposal of the old device

INFORMATION

In your own interest and in the interest of the environment, please ensure that all components of the machine are disposed of only via the designated and approved methods.

Please note that electrical devices contain a variety of recyclable materials as well as environmentally harmful components. Please help ensure that these components are separated and disposed of properly. If in doubt, contact your local waste disposal company. If necessary, you may need to seek the assistance of a specialized waste disposal company for processing.

7.5.4 Disposal of electrical and electronic components

Please ensure that electrical components are disposed of properly and in accordance with legal regulations.

This device contains electrical and electronic components and must not be disposed of as household waste. According to the European Directive on Waste Electrical and Electronic Equipment and the implementation of national legislation, used power tools and electrical machines must be collected separately and taken to an environmentally friendly recycling center.

As an operator, you should obtain information about the authorized collection or disposal system that applies to you.

Please ensure that batteries and/or rechargeable batteries are disposed of properly and in accordance with legal regulations. Please only dispose of discharged batteries in the collection boxes provided by retailers or municipal waste disposal companies.

7.6 Disposal via municipal collection points

Disposal of used electrical and electronic equipment.
(Applicable in the countries of the European Union and other European countries with a separate collection system for these devices).

The symbol on the product or its packaging indicates that this product shall not be treated as normal household waste. Instead, it shall be taken to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help protect the environment and the health of others. Incorrect disposal of this product endangers both the environment and human health. Recycling of materials helps to reduce the consumption of raw materials. For more information about recycling of this product, please contact your local council, your household waste disposal service, or the shop where you purchased the product.

7.7 Product monitoring

We are obligated to monitor our products even after delivery. Please let us know anything that might be of interest to us:

- Changed setting data
- Experiences with the drill that are important for other users. Recurring
- malfunctions

Stürmer Maschinen GmbH Dr.
Robert-Pfleger-Str. 26
D-96103 Hallstadt
email: info@stuermer-maschinen.de

8 Spare parts

8.1 Ordering spare parts - *Ordering spare parts*

Please provide the following - *Please indicate the following:*

- Serial number - *Serial No.* Machine
- designation - *Machine name* Date of
- manufacture - *Date of manufacture* Article
- number - *Article no.*

The article number can be found in the spare parts list. *The article no. is located in the spare parts list.* The serial number is located on the type plate. *The serial number is on the rating plate.*

8.2 Spare parts hotline

+ 49 (0) 951-96555 -118

ersatzteile@stuermer-maschinen.de

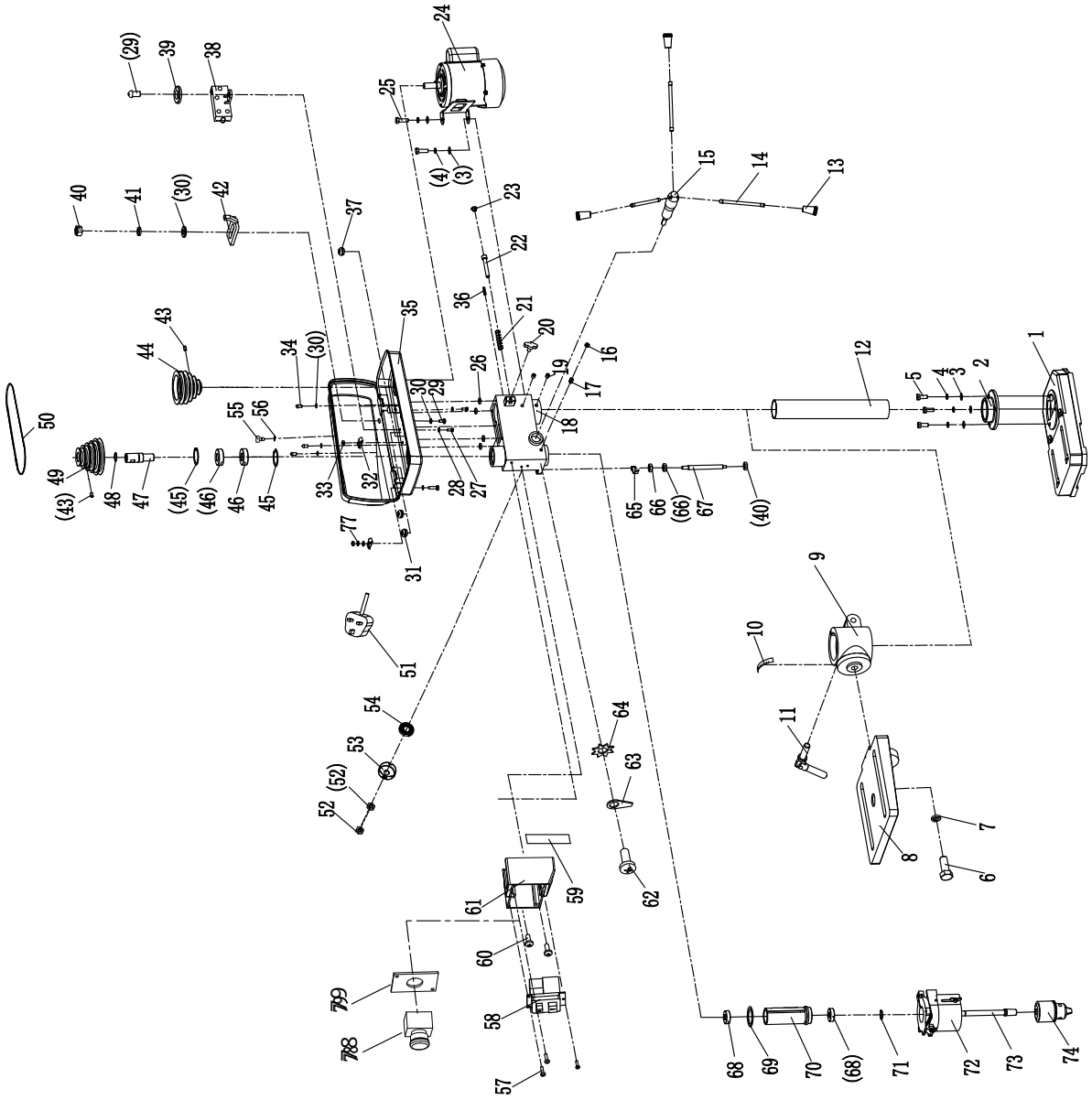
8.3 Service Hotline

+ 49 (0) 951-96555 -100

service@stuermer-maschinen.de

8.4 Spare part drawings

8.4.1 DQ13



DQ13 - Spare parts list					
Pos.	Designation	Description	Crowd Qty.	Size Size	Article number Item no.
1	Basic body	base	1		0318200001
2	Column flange	Column Flange	1		0318200002
3	Flat disc	Flat Washer	5	8	
4	spring washer	Spring Washer	5	8	
5	hexagon screw	Hexagon bolt	3	M8 x 20	
6	hexagon screw	Hexagon bolt	1	M12 x 30	
7	spring washer	Spring Washer	1	12	
8	work table	Working Table	1		0318200008
9	Table Support	Table Support	1		0318200009
10	Angle label	Angle Label	1		0318200010
11	clamp handle	Locking Handle	1		0318200011

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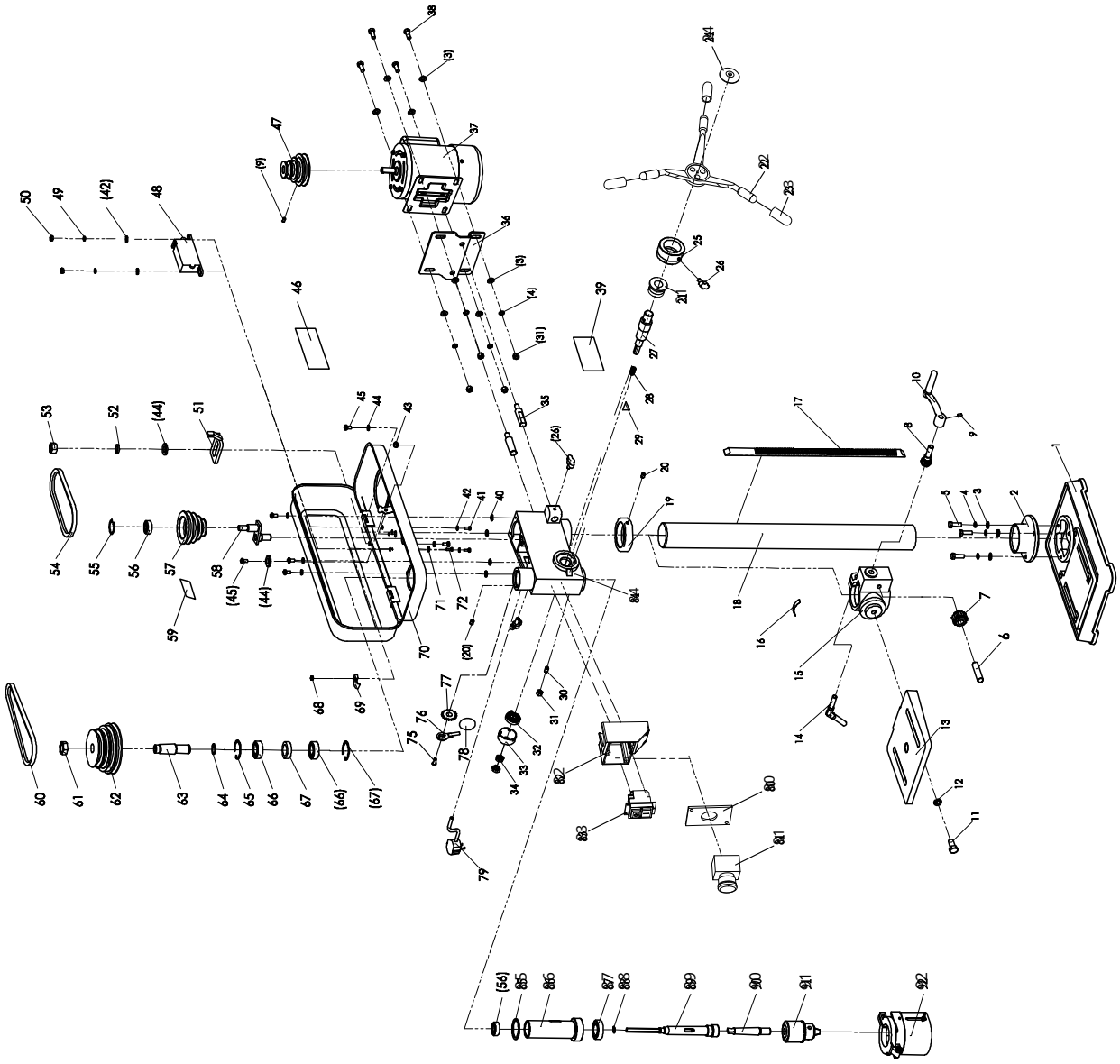
DQ13 - Spare parts list					
Pos.	**Designation**	**Description**	**Crowd Qty.**	**Size Size**	**Article number Item no.**
12	column	Column	1		0318200012
13	Handle tip	Handle Tip	3		0318200013
14	Handle	Handle	3		0318200014
15	gear shaft	Gear Shaft	1		0318200015
16	Mother	Groove	3	M8	
17	hexagon socket screw	Hexagon socket screw	1	M8 x 12	
18	Housing	Housing	1		0318200018
19	hexagon socket screw	Hexagon socket screw	2	M8 x 8	
20	wing button	Wing Knob	1		0318200020
21	Engine spring	Motor Spring	1		0318200021
22	Motor push rod	Engine push rod	1		0318200022
23	washer	Washer	1		0318200023
24	Motor	Motor	1		0318200024
25	hexagon screw	Hexagon bolt	2	M8 x 25	
26	Damping disc	Damping Washer	4		0318200026
27	Phillips screw with lens head	Cross Recessed Pan Head Screw	3	M5 x 16	
28	Flat disc	Flat Washer	3	5	
29	Phillips screw with lens head	Cross Recessed Pan Head Screw	1	M6 x 16	
30	Flat disc	Flat Washer	6	6	
31	protective ring	Protector Ring	2	22	0318200031
32	cable clamp	Cord Clamp	3		
33	Mother	Groove	3	M5	
34	Phillips screw with lens head	Cross Recessed Pan Head Screw	4	M6 x 10	
35	pulley cover module	Pulley Cover Assembly	1		0318200035
36	roll pin	Roll Pin	1	6 x 18	0318200036
37	protective ring	Protector Ring	1	9	0318200037
38	microswitch	Micro Switch	1		0318200038
39	Flat disc	Flat Washer	1	6	
40	Mother	Groove	1	M6	
41	spring washer	Spring Washer	1	6	
42	Microswitch trigger claw	Micro Switch Pressing Claw	1		0318200042
43	hexagon socket screw	Hexagon socket screw	2	M6x10	
44	Engine pulley	Motor Pulley	1		0318200044
45	Retaining ring for bore	Circle For Hole	2	40	0318200045
46	warehouse	Bearing	2	6203	0406203ZZ
47	Keyway spindle	Keyway Spindle	1		0318200047
48	Retaining ring for bearing	Circlip for bearing	1	22	0318200048
49	V-belt pulley spindle	Spindle Pulley	1		0318200049
50	V-belt	Belt	1	K-630	0318200050
51	Plug with cable	Plug with cable	1		0318200051
52	Mother	Groove	2	M10	
53	spring cover	Spring Cover	1		0318200053
54	Feather	Spring	1		0318200054
55	screw	Screw	1		0318200055
56	Retaining ring for bearing	Circlip for bearing	1	6	0318200056
57	Phillips self-tapping screw	Cross Recess Head Tapping Screw	3	ST 2.9 x12	
58	Switch	Switch	1		0318200058
59	Calibration label	Calibration Label	1		0318200059
60	Phillips screw with lens head	Cross Recessed Pan Head Screw	2	M4x10	0318200060
61	switch box	Switch Box	1		0318200061
62	Phillips screw with lens head	Cross Recessed Pan Head Screw	2	M4x6	0318200062
63	Grounded parts	Grounded Parts	2		
64	spring washer	Tooth Lock Washer	2		0318200064
65	Advertisement	Indicator	1		0318200065
66	Mother	Groove	2	M10x1	0318200066
67	Limit screw	Limited Bolt	1		0318200067
68	warehouse	Bearing	2	6201	0406201ZZ
69	washer	Washer	1		0318200069
70	Spindle bushing	Spindle Socket	1		0318200070
71	Retaining ring for bearing	Circlip for bearing	1	12	0318200071
72	Feed protection	Chuck Guard	1		0318200072
73	Main spindle	Main Spindle	1		0318200073
74	Drill chuck	Drill chuck	1		0318200074
77	spring washer	Spring Washer	3	5	
78	Emergency stop switch	Emergency Switch	1		0318200078
79	switch cover	Switch Panel	1		0318200079

8.4.2 DQ16



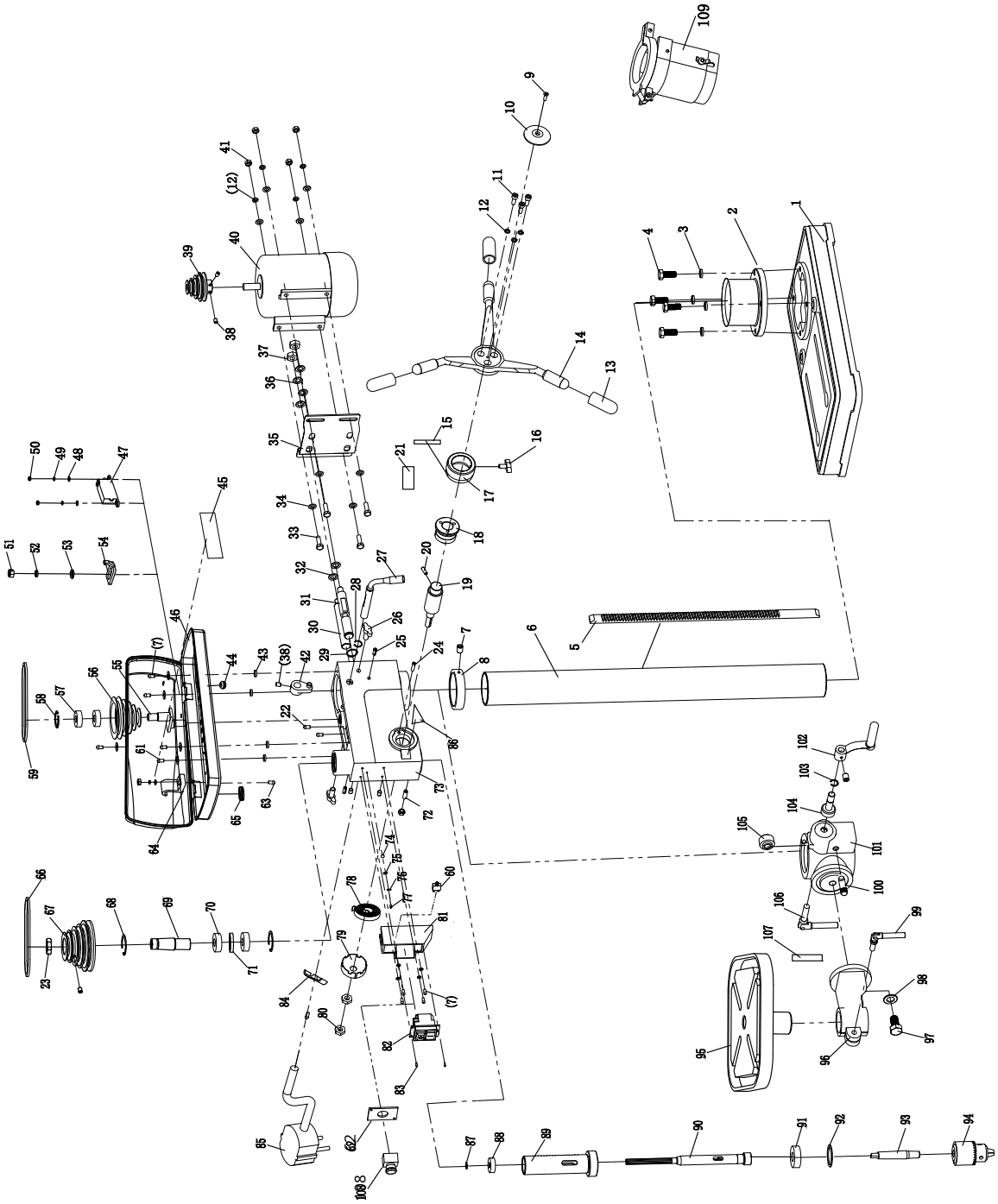
DQ16 - Spare parts list					
Pos.	**Designation**	**Description**	**Crowd Qty.**	**Size Size**	**Article number Item no.**
1	Basic body	base	1		0318201001
2	Column flange	Column Flange	1		0318201002
3	Flat disc	Flat Washer	7	8	
4	spring washer	Spring Washer	11	8	
5	hexagon screw	Hexagon bolt	3	M8 x 25	
6	snail pen	Worm Pin	1		0318201006
7	Worm gear	Worm Gear	1		0318201007
8	Snail	Worm	1		0318201008
9	hexagon socket screw	Hexagon socket screw	2	M6 x 10	
10	crank	Crank	1		0318201010
11	hexagon screw	Hexagon bolt	1	M12 x 25	
12	spring washer	Spring Washer	1	12	0318201012
13	work table	Working Table	1		0318201013
14	handle knob	Handle Knob	1		0318201014
15	Table Support	Table Support	1		0318201015
16	Angle label	Angle Label	1		0318201016
17	rack	Rack	1		0318201017

DQ13_DQ16_DQ20_parts.fm

DQ16 - Spare parts list					
Pos.	**Designation**	**Description**	**Crowd Qty.**	**Size Size**	**Article number Item no.**
18	column	Column	1		0318201018
19	collar frame	Collar Rack	1		0318201019
20	hexagon socket screw	Hexagon socket screw	3	M8 x 10	
21	connecting ring	Connecting ring	1		0318201021
22	Handle	Handle	3		0318201022
23	Handle tip	Handle Tip	3		0318201023
24	Handle seat	Handle Seat	1		0318201024
25	Dial scale	Dial Scale	1		0318201025
26	handle knob	Handle Knob	3		0318201026
27	gear shaft	Gear Shaft	1		0318201027
28	Threaded pin with slot	Thread Pin With Slot	1	M6 x 20	
29	Advertisement	Indicator	1		0318201029
30	hexagon socket screw	Hexagon socket screw	1		0318201030
31	Mother	Groove	5	M8	
32	Feather	Spring	1		0318201032
33	spring cover	Spring Cover	1		0318201033
34	Mother	Groove	2	M12	
35	Motor push rod	Engine push rod	2		0318201035
36	Motor mounting plate	Motor Connection Plate	1		0318201036
37	Motor	Motor	1		0318201037
38	hexagon screw	Outside Hex Bolt	4	M8 x 20	
39	Warning	Warning Label	1		0318201039
40	Damping disc	Damping Washer	4		0318201040
41	Phillips Pan HD screw	Cross Recess Pan HD Screw	2	M5 x 16	
42	Flat disc	Flat Washer	4	5	0318201042
43	protective ring	Protector Ring	1		0318201043
44	Flat disc	Flat Washer	7	6	0318201044
45	Phillips Pan HD screw	Cross Recess Pan HD Screw	6	M6 x 12	
46	Speed label	Speed Label	1		0318201046
47	Engine pulley	Motor Pulley	1		0318201047
48	microswitch	Microswitch	1		0318201048
49	spring washer	Spring Washer	2	5	
50	Mother	Groove	2	M5	
51	Microswitch pressure claw	Microswitch pressure claw	1		0318201051
52	spring washer	Spring Washer	1	6	
53	Mother	Groove	1	M6	
54	V-belt	Belt	1	O-480	0318201054
55	Retaining ring for bore	Circle For Hole	1	32	0318201055
56	warehouse	Bearing	2	6201	0406201ZZ
57	Middle pulley	Middle Pulley	1		0318201057
58	Eccentric shaft	Eccentric Shaft	1		0318201058
59	Warning	Warning Label	1		0318201059
60	V-belt	Belt	1	0-500	0318201060
61	Mother	Groove	1	M20	0318201061
62	V-belt pulley spindle	Spindle Pulley	1		0318201062
63	Keyway spindle	Keyway Spindle	1		0318201063
64	Retaining ring for bearing	Circlip for bearing	1	20	0318201064
65	Retaining ring for bore	Circle For Hole	2	42	0318201065
66	warehouse	Bearing	2	6004	0406004ZZ
67	washer	Washer	1		0318201067
68	Mother	Groove	1	M4	
69	cable clamp	Cord Clamp	1		0318201069
70	pulley cover	Pulley Cover	1		0318201070
71	Flat disc	Flat Washer	1	4	0318201071
72	Phillips screw with lens head	Cross Recessed Pan Head Screw	1	M4 x16	
75	Phillips screw with lens head	Cross Recessed Pan Head Screw	2	M4 x10	
76	spring washer	Tooth Lock Washer	2		0318201076
77	Grounded parts	Grounded Parts	2		0318201077
78	Label for grounded parts	Grounded Parts Label	1		
79	Plug with cable	Plug with cable	1		
80	switch cover	Switch Panel	1		0318201080
81	Emergency stop switch	Emergency Switch	1		0318201081
82	switch housing	Switch Box	1		0318201082
83	Switch	Switch	1		0318201083
84	Housing	Housing	1		0318201084
85	washer	Washer	1		0318201085
86	Spindle bushing	Spindle Socket	1		0406005ZZ
87	warehouse	Bearing	1	6005	0318201087
88	Retaining ring for bearing	Circlip for bearing	1	12	0318201088
89	Main spindle	Main Spindle	1		0318201089
90	taper spindle	Taper Spindle	1		0318201090

DQ16 - Spare parts list					
Pos.	**Designation**	**Description**	**Crowd Qty.**	**Size Size**	**Article number Item no.**
91	feed	Chuck	1		0318201091
92	Feed protection	Chuck Guard	1	4	0318201092

8.4.3 DQ20

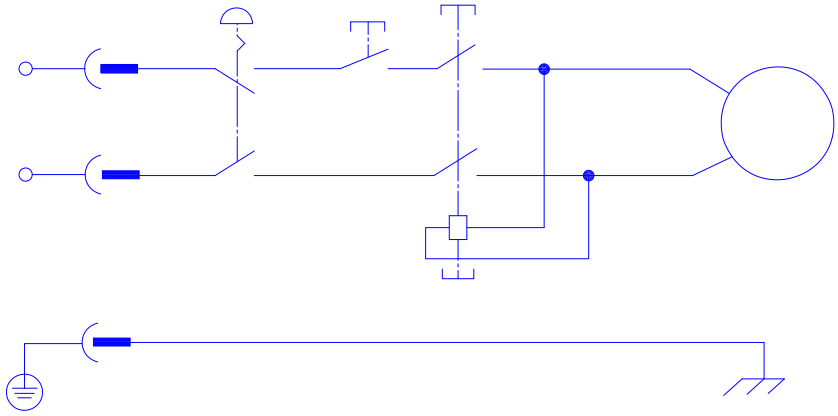


DQ13_DQ16_DQ20_parts.fm

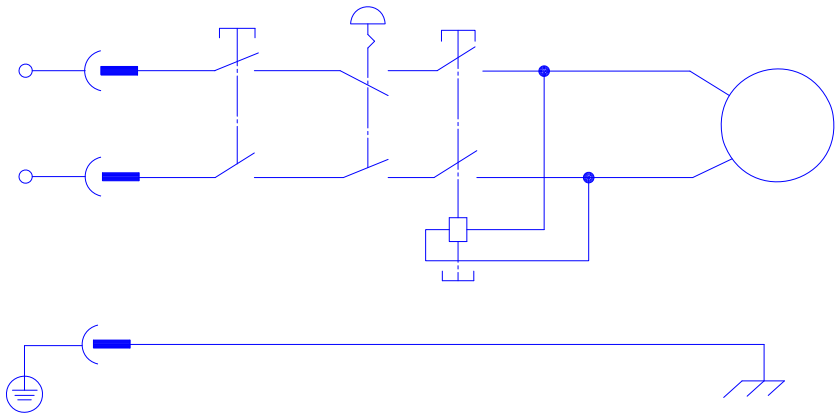
DQ20 - Spare parts list					
Pos.	**Designation**	**Description**	**Crowd Qty.**	**Size Size**	**Article number Item no.**
1	Basic body	base	1		0318202001
2	Column flange	Column Flange	1		0318202002
3	spring washer	Spring Washer	4	10	
4	hexagon screw	Hexagon bolt	4	M10x25	
5	rack	Rack	1		0318202005
6	column	Column	1		0318202006
7	hexagon socket screw	Hexagon socket screw	2	M6x10	
8	collar frame	Collar Rack	1		0318202008
9	Countersunk screw with Phillips	Cross Recess Countersunk Hd Screw	1	M6x16	
10	Cap handle	Cap Handle	1		0318202010
11	Soc HD Cap Screw	Hex. Soc Hd Cap Screw	3	M8x20	
12	spring washer	Spring Washer	3	8	
13	Handle sheath	Handle Sheath	3		0318202013
14	Handle	Handle	1		0318202014
15	Calibration label	Calibration Label	1		0318202015
16	wing button	Wing Knob	1	M8x18	0318202016
17	Dial scale	Dial Scale	1		0318202017
18	Connection loop	Connection Loop	1		0318202018
19	gear shaft	Gear Shaft	1		0318202019
20	roll pin	Roll Pin	1	5x16	0318202020
21	Warning	Warning Label	1		0318202021
22	Phillips screw with lens head	Cross Recessed Pan Head Screw	3	M5x10	
23	Mother	Groove	1	M24 x1.5	0318202023
24	roll pin	Roll Pin	1	Ø 5 x 25	0318202024
25	roll pin	Roll Pin	2	6 x 18	0318202025
26	Socket clamp handle	Locking Handle Knob	2	M10 x 25	0318202026
27	Handle belt tension	Handle Belt Tension	1		0318202027
28	Retaining ring for bearing	Circlip for bearing	1	15	0318202028
29	Retaining ring for bearing	Circlip for bearing	1	19	0318202029
30	Slide wave	Slip Shaft	1		0318202030
31	Adjusting shaft	Adjusting Shaft	1		0318202031
32	Flat disc	Flat Washer	4	12	
33	hexagon screw	Hexagon bolt	4	M8 x 25	
34	Flat disc	Flat Washer	8	8	
35	Motor mounting plate	Motor Connection Plate	1		0318202035
36	spring washer	Spring Washer	2	12	
37	Mother	Groove	2	M12	
38	hexagon socket screw	Hexagon socket screw	6	M8 x 10	
39	Engine pulley	Motor Pulley	1		0318202039
40	Motor	Motor	1		0318202040
41	Mother	Groove	6	M8	
42	Cam group	Cam Assembly	1		0318202042
43	Damping disc	Damping Washer	4		0318202043
44	protective ring	Protector Ring	2	Ø10	0318202044
45	Speed label	Speed Label	1		0318202045
46	pulley cover	Pulley Cover	1		0318202046
47	microswitch	Microswitch	1		0318202047
48	Flat disc	Flat Washer	9	5	
49	spring washer	Spring Washer	9	5	
50	Mother	Groove	10	M5	
51	Mother	Groove	1	M6	
52	spring washer	Spring Washer	1	6	
53	Flat disc	Flat Washer	9	6	
54	Microswitch trigger claw	Micro Switch Pressing Claw	1		0318202054
55	Eccentric shaft	Eccentric Shaft	1		0318202055
56	Middle V-belt pulley	Middle Pulley	1		0318202056
57	warehouse	Bearing	2	6202	0406202ZZ
58	Retaining ring for bore	Circle For Hole	1	35	0318202058
59	V-belt	Belt	1	A-550	0318202059
60	light switch	Light Switch	1		0318202060
61	Phillips screw with lens head	Cross Recessed Pan Head Screw	5	M6 x 12	
62	switch cover	Switch Panel	1		0318202062
63	Phillips screw with lens head	Cross Recessed Pan Head Screw	10	M5x16	
64	cable clamp	Cord Clamp	5		
65	protective ring	Protector Ring	1	Ø22	0318202065
66	V-belt	Belt	1	A-620	0318202066
67	V-belt pulley spindle	Spindle Pulley	1		0318202067
68	Retaining ring for bore	Circle For Hole	2	40	0318202068

DQ20 - Spare parts list					
Pos.	**Designation**	**Description**	**Crowd Qty.**	**Size Size**	**Article number Item no.**
69	Keyway spindle	Keyway Spindle	1		0318202069
70	warehouse	Bearing	3	6005	0406005ZZ
71	bearing ring	Bearing Ring	1		0318202071
72	hexagon socket screw	Hexagon socket screw	1	M8 x 25	
73	Housing	Housing	1		0318202073
74	Label	Label	1		0318202074
75	spring washer	Tooth Lock Washer	1	5	
76	Grounded parts	Grounded Parts	1		
77	countersunk head screw	Cross Recess Head Screw	1	M5 x 6	
78	Feather	Spring	1		0318202078
79	spring cover	Spring Cover	1		0318202079
80	Thin mother	Thin Nut	2	M12	0318202080
81	switch box	Switch Box	1		0318202081
82	Switch	Switch	1		0318202082
83	Phillips self-tapping screw	Cross Recess Head Tapping Screw	2	M3x10	
84	cable clamp	Cord Clamp	1		
85	Plug with cable	Plug with cable	1	BS	
86	Advertisement	Indicator	1		0318202086
87	Retaining ring for bearing	Circlip for bearing	1	12	0318202087
88	warehouse	Bearing	1	6203	0406203ZZ
89	Spindle bushing	Spindle Socket	1		0318202089
90	Main spindle	Main Spindle	1		0318202090
91	warehouse	Bearing	1	6006	0406006R
92	washer	Washer	1	Ø47	0318202092
93	taper spindle	Taper Spindle	1		0318202093
94	feed	Chuck	1		0318202094
95	work table	Working Table	1	290x290	0318202095
96	Table arm	Table Arm	1		0318202096
97	hexagon screw	Hexagon bolt	1	M16 x 30	
98	spring washer	Spring Washer	1	16	
99	clamp handle	Locking Handle	1	M10 x 32	0318202099
100	snail pen	Worm Pin	1		03182020100
101	Table Support	Table Support	1		03182020101
102	crank	Crank	1		03182020102
103	Retaining ring for bearing	Circlip for bearing	1	14	03182020103
104	Snail	Worm	1		03182020104
105	Worm gear	Worm Gear	1		03182020105
106	clamp handle	Locking Handle	1	M12 x 45	03182020106
107	Angle label	Angle Label	1		03182020107
108	Emergency stop switch	Emergency Switch	1		03182020108
109	Feed protection	Chuck guard	1		03182020109

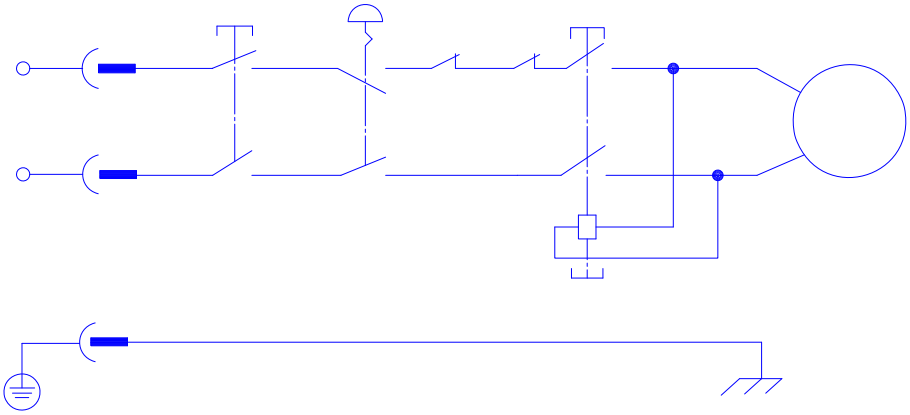
8.5 DQ13 230V - Wiring diagram



8.6 DQ16 230V - Wiring diagram

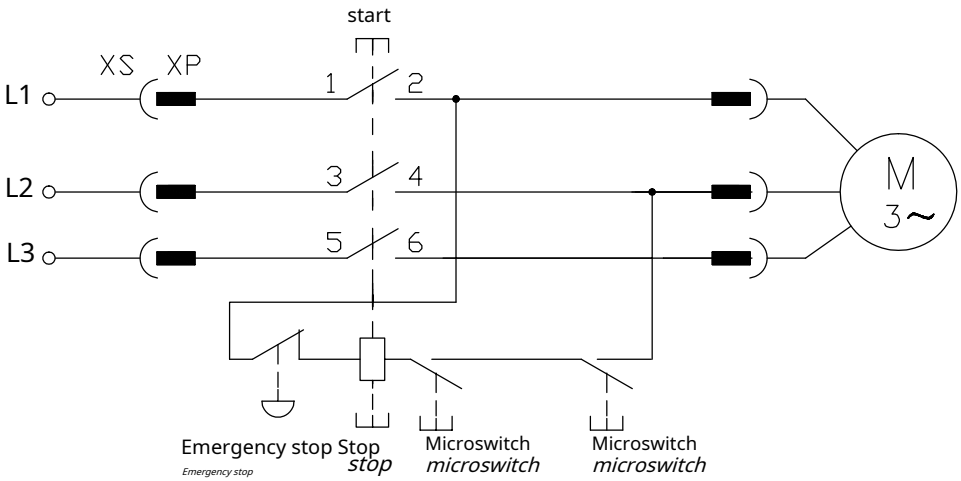


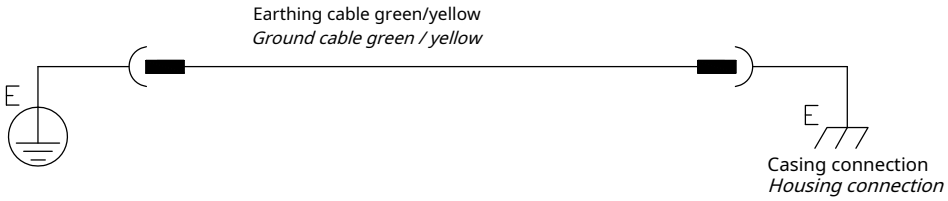
8.7 DQ20 230V - Wiring diagram



DQ13_DQ16_DQ20_parts.fm

8.8 DQ20 400V - Wiring diagram





QUANTUM
MASCHINEN – GERMANY

EC Declaration of Conformity

according to Machinery Regulation 2023/1230 Annex V Part A

The manufacturer / distributor:	Stürmer Maschinen GmbH Dr. Robert-Pfleger-Str. 26 D96103 Hallstadt

hereby declares that the following product

Product name:	drill
Type designation:	DQ13 | DQ16

complies with all relevant provisions of the above-mentioned Directive and the other applicable Directives (hereinafter) - including any amendments thereto in force at the time of the declaration.

Description:

Hand-controlled drill

The following additional EU directives were applied:

EMC Directive 2014/30/EU; Restriction of the use of certain hazardous substances in electrical and electronic equipment 2015/863/EU

The following harmonized standards were applied:

EN 62841-1:2015 Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 1: General requirements

EN 62841-3-13:2017: Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 3-13: Particular requirements for transportable drills

EN IEC 55014-1:2017/A11 2020 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar equipment - Part 1: Emitted disturbances

EN IEC 55014-2:2015 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar equipment - Part 2: Immunity

EN 61000-3-2:2014 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <= 16 A per phase)

EN 61000-3-3:2013/A1 2019 Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with a rated current <= 16 A per phase and not subject to special connection conditions

EN ISO 12100:2011-03 Safety of machinery - General principles for design - Risk assessment and risk reduction

Name and address of the person authorized to compile the technical documentation: Kilian Stürmer,

Tel.: +49 (0) 951 96555 - 150

Kilian Stürmer (Managing Director)

Hallstadt, 2024-07-25

QUANTUM
MASCHINEN – GERMANY

EC Declaration of Conformity

according to Machinery Regulation 2023/1230 Annex V Part A

The manufacturer / distributor:	Stürmer Maschinen GmbH Dr. Robert-Pfleger-Str. 26 D96103 Hallstadt

hereby declares that the following product

Product name:	drill
Type designation:	DQ20

complies with all relevant provisions of the above-mentioned Directive and the other applicable Directives (hereinafter) - including any amendments thereto in force at the time of the declaration.

Description:

Hand-controlled drill

The following additional EU directives were applied:

EMC Directive 2014/30/EU; Restriction of the use of certain hazardous substances in electrical and electronic equipment 2015/863/EU

The following harmonized standards were applied:

EN 12717:2009-07 Safety of machine tools – Drilling machines

EN 60204-1:2018 Safety of machinery - Electrical equipment of machines - Part 1: General requirements

EN IEC 55014-1:2017 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar equipment - Part 1: Emission

EN IEC 55014-2:2015 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar equipment - Part 2: Immunity

EN 61000-3-2:2014 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <= 16 A per phase)

EN 61000-3-3:2013 Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with a rated current <= 16 A per phase and not subject to special connection conditions

EN ISO 12100:2011-03 Safety of machinery - General principles for design - Risk assessment and risk reduction

Name and address of the person authorized to compile the technical documentation: Kilian Stürmer,

Tel.: +49 (0) 951 96555 - 150

Kilian Stürmer (Managing Director)

Hallstadt, 2024-07-25