



# Operating manual

Version 1.0.2

## Drilling machine

**OPTI**drill<sup>®</sup>  
**DP 33**

Part no. 3020640





## Table of contents

<b>1</b>	<b>Safety</b>	
1.1	Safety instructions (warning notes).....	4
1.2	Intended use.....	6
1.3	Reasonably foreseeable misuses.....	6
1.4	Possible dangers posed by the drilling machine.....	7
1.5	Qualification.....	8
1.6	User positions.....	8
1.7	Safety measures during operation.....	8
1.8	Safety devices.....	9
1.9	Personal protective equipment.....	9
1.10	Safety check.....	10
1.11	Emergency-stop switch.....	10
1.12	Separating protective devices.....	11
1.13	Personal protective equipment.....	11
1.14	Safety during operation.....	11
1.15	Safety during maintenance.....	12
1.16	Electronics.....	12
<b>2</b>	<b>Technical specification</b>	
2.1	Emissions.....	13
2.2	Dimensions.....	14
<b>3</b>	<b>Delivery, interdepartmental transport, assembly and commissioning</b>	
3.1	Notes on transport, installation, commissioning.....	15
3.2	Assembly.....	16
3.3	Individual components.....	16
3.4	Installation site.....	18
3.5	First commissioning.....	19
<b>4</b>	<b>Operation</b>	
4.1	Safety.....	20
4.2	Switching on the machine.....	21
4.3	Switching off the machine.....	21
4.4	Resetting an emergency stop situation.....	21
4.5	Power failure, Restoring readiness for operation.....	21
4.6	During work.....	21
4.7	Drill depth stop.....	22
4.8	Table Inclination.....	22
4.9	Speed variation.....	22
4.10	Standard values for speeds with HSS – Eco – twist drills.....	24
4.11	Drill chuck.....	25
4.12	Cooling.....	25
<b>5</b>	<b>Maintenance</b>	
5.1	Safety.....	26
5.2	Inspection and maintenance.....	26
5.3	Repair.....	29
<b>6</b>	<b>Malfunctions</b>	
6.1	Drilling machine malfunctions.....	29
<b>7</b>	<b>Appendix</b>	
7.1	Copyright.....	30
7.2	Liability claims/warranty.....	30
7.3	Advice for disposal / Options of re-use.....	31
7.4	Disposal via municipal collection facilities.....	32
7.5	Change information operating manual.....	32
7.6	Product follow-up.....	32
<b>8</b>	<b>Ersatzteile - Spare parts</b>	
8.1	Ersatzteilbestellung - Ordering spare parts.....	33
8.2	Hotline Ersatzteile - Spare parts Hotline.....	33
8.3	Service Hotline.....	33
8.4	Ersatzteilzeichnungen - Spare part drawings.....	34
8.5	Schaltplan - Wiring diagram - 400V.....	41



## Preface

Dear customer,

Thank you very much for purchasing a product made by OPTIMUM.

OPTIMUM metal working machines offer a maximum of quality, technically optimum solutions and convince by an outstanding price performance ratio. Continuous enhancements and product innovations guarantee state-of-the-art products and safety at any time.

Before commissioning the machine please thoroughly read these operating instructions and get familiar with the machine. Please also make sure that all persons operating the machine have read and understood the operating instructions beforehand.

Keep these operating instructions in a safe place nearby the machine.

### Information

The operating instructions include indications for safety-relevant and proper installation, operation and maintenance of the machine. The continuous observance of all notes included in this manual guarantee the safety of persons and of the machine.

The manual determines the intended use of the machine and includes all necessary information for its economic operation as well as its long service life.

In the paragraph "Maintenance" all maintenance works and functional tests are described which the operator must perform in regular intervals.

The illustration and information included in the present manual can possibly deviate from the current state of construction of your machine. Being the manufacturer we are continuously seeking for improvements and renewal of the products. Therefore, changes might be performed without prior notice. The illustrations of the machine may be different from the illustrations in these instructions with regard to a few details. However, this does not have any influence on the operability of the machine.

Therefore, no claims may be derived from the indications and descriptions. Changes and errors are reserved!

Your suggestion with regard to these operating instructions are an important contribution to optimising our work which we offer to our customers. For any questions or suggestions for improvement, please do not hesitate to contact our service department.

**If you have any further questions after reading these operating instructions and you are not able to solve your problem with a help of these operating instructions, please contact your specialised dealer or directly the company OPTIMUM.**

**Optimum Maschinen Germany GmbH**

**Dr. Robert-Pfleger-Str. 26**

**D-96103 Hallstadt**

**Fax (+49)0951 / 96555 - 888**




**Email: [info@optimum-maschinen.de](mailto:info@optimum-maschinen.de)**

**Internet: [www.optimum-machines.com](http://www.optimum-machines.com)**



## 1 Safety

### Glossary of symbols

	provides further instructions
	calls on you to act
	listings

This part of the operating instructions

- explains the meaning and use of the warning notes included in these operating instructions,
- defines the intended use of the drilling machine,
- points out the dangers that might arise for you or others if these instructions are not observed,
- informs you about how to avoid dangers.

In addition to these operation instructions, please observe

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

**Always keep this documentation close to the drilling machine.**

### INFORMATION

If you are unable to rectify an issue using these operating instructions, please contact us for advice:

Optimum Maschinen Germany GmbH  
Dr. Robert-Pfleger-Str. 26

D-96103 Hallstadt



email: [info@optimum-maschinen.de](mailto:info@optimum-maschinen.de)



### 1.1 Safety instructions (warning notes)

#### 1.1.1 Classification of hazards

We classify the safety warnings into different categories. The table below gives an overview of the classification of symbols (ideogram) and the warning signs for each specific danger and its (possible) consequences.

Symbol	Alarm expression	Definition / consequence
	<b>DANGER!</b>	Impending danger that will cause serious injury or death to people.
	<b>WARNING!</b>	A danger that can cause serious injury or death.
	<b>CAUTION!</b>	A danger or unsafe procedure that can cause personal injury or damage to property.
	<b>ATTENTION!</b>	Situation that could cause damage to the drilling machine and product, as well as other types of damage. No risk of injury to persons.

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Symbol	Alarm expression	Definition / consequence
	<b>Information</b>	Practical tips and other important or useful information and notes. No dangerous or harmful consequences for people or objects.

In case of specific dangers, we replace the pictogram with



general danger



with a warning of



injury to hands,



hazardous electrical voltage,

or



rotating parts.

## 1.1.2 Other pictograms



Warning: danger of slipping!



Warning: risk of stumbling!



Warning: hot surface!



Warning: biological hazard!



Warning: automatic start-up!



Warning: tilting danger!



Warning: suspended loads!



Caution, danger of explosive substances!



Switching on forbidden!



Use ear protection!



Read the operating instructions before commissioning!



Pull out the mains plug!



Wear protective glasses!



Wear protective gloves!



Wear safety shoes!



Wear a protective suit!



## 1.2 Intended use

### WARNING!

**If the drilling machine is not used as intended or if the safety directives or the operating instructions are ignored the liability of the manufacturer for any damages to persons or objects resulting hereof is excluded and the claim under guarantee is becoming null and void!**



The drilling machine is designed and manufactured to be used in a non-explosive environment. The drilling machine is designed and manufactured for holes in cold metals or other non flammable materials or that not constitute a health hazard using a rotating filing-stripping tool that has a number of grooves for collecting the filings. The drilling machine is equipped with a drill chuck protection. The drill may only be operated with this chuck guard.

If the drilling machine is used in any way other than described above, modified without authorization of Optimum Maschinen Germany GmbH, then the geared drill is being used improperly.

We will not be held liable for any damages resulting from any operation which is not in accordance with the intended use.

We explicitly point out that any construction, technical or process engineering changes that have not been approved by Optimum Maschinen Germany GmbH will render the warranty null and void

It is also part of intended use that the maximum values for the drilling machine are complied with and the operating manual is observed.

### ATTENTION!

**If the drilling machine is not used as intended or if the safety directives or the operating instructions are ignored the liability of the manufacturer for any damages to persons or objects resulting hereof is excluded and the claim under guarantee is becoming null and void!**



## 1.3 Reasonably foreseeable misuses

Any use other than that specified under "Intended use" or any use beyond that described will be deemed non-intended use and is not permissible. Any other use has to be discussed with the manufacturer.

It is only allowed to process metal, cold and non-inflammable materials with the drilling machine.

In order to avoid misuse, it is necessary to read and understand the operating instructions before first commissioning.

Operators must be qualified.

### 1.3.1 Avoiding misuse

- Use of suitable cutting tools.
- Adapting the speed setting and feed to the material and workpiece.
- Clamp workpieces firmly and free of vibration.

### ATTENTION!

**The workpiece is always to be fixed by a machine vice, jaw chuck or by another appropriate clamping tool such as for the clamping claws.**



### WARNING!

**Risk of injury caused by flying workpieces.**

- ➔ Clamp the workpiece in the machine vice. Make sure that the workpiece is firmly clamped in the machine vice and that the machine vice is firmly clamped onto the drill table.



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- Use cooling and lubricating agents to increase the durability of the tool and to improve the surface quality.
- Clamp the cutting tools and workpieces on clean clamping surfaces.
- Sufficiently lubricate the machine.
- Set the bearing clearance and guides correctly.

Recommendations:

- Insert the drill in a way that it is positioned exactly between the three clamping jaws of the drill chuck.

When drilling, make sure that

- the suitable speed is set depending on the diameter of the drill,
- the pressure must only be such that the drill can cut without load,
- if there is too much pressure, the drill will wear quickly and may even break or jam in the borehole. If the drill jams, immediately stop the main motor by pressing the emergency stop switch,
- For hard materials, e.g. steel, it is necessary to use commercial cooling/lubricating agents. Basically, always pull out the drill with rotating spindle from the workpiece.
- The processing of plastics on the drilling machine leads to static charging. The static charging of machine parts due to the processing of plastics cannot be safely dissipated by the drilling machine.

## 1.4 Possible dangers posed by the drilling machine

The drilling machine was built using state-of-the-art technology. Nevertheless, there is a residual risk as the drilling machine operates with

- at high speeds,
- with rotating parts,
- electrical voltage and currents.
- We have used design and safety engineering to minimize the health risk to personnel resulting from these hazards.

If the drilling machine is used and maintained by personnel who are not duly qualified, there may be a risk resulting from incorrect or unsuitable maintenance of the geared drill.

### INFORMATION

Everyone involved in the assembly, commissioning, operation and maintenance must

- be duly qualified,
- and strictly follow these operating instructions.

In the event of improper use

- there may be a risk to personnel,
- there may be a risk to the machine and other material values,
- the correct function of the drilling machine may be affected.

Always disconnect the drilling machine when cleaning or maintenance work is being carried out.

### WARNING!

**The drilling machine may only be operated with functional safety devices. Disconnect the drilling machine immediately, whenever you detect a failure in the safety devices or when they are not fitted! This is your responsibility being the operator!**





## 1.5 Qualification

### 1.5.1 Target group private users

The machine can be used in the private domain. The acumen of people in the private sector with training in metal working was taken into consideration for creating this operation manual. Vocational training or further instruction in a metal working profession is a prerequisite for safe operation of the machine. It is essential that the private user is aware of the dangers involved in operating this machine. We recommend attending a training course in the use of drills. Your specialist dealer can offer you an appropriate training course. These courses are also offered at adult education centres in Germany.

### 1.5.2 Obligations of the User

The user must

- have read and understood the operating manual,
- be familiar with all safety devices and regulations,
- be able to operate the drilling machine.

### 1.5.3 Additional requirements regarding the qualification

The following additional requirements apply for work on electrical components or equipment:

- They must only be performed by a qualified electrician or person working under the instructions and supervision of a qualified electrician.

Before starting work on electrical parts or operating agents, the following actions must be taken in the order given:

- ➔ disconnect all poles,
- ➔ secure against restarting,
- ➔ check that there is no voltage.

## 1.6 User positions

The operator position is in front of the drilling machine.

### INFORMATION

The mains plug of the drilling machine must be freely accessible.



## 1.7 Safety measures during operation

### CAUTION!

**Danger due to inhaling dust and mist that is hazardous to health. Dependent on the material which need to be processed and the used auxiliaries dusts and mist may be caused which might impair you health. Ensure that the harmful dust and mist generated are safely sucked off at the point of origin and routed away from the working area or filtered. To do so, use a suitable extraction unit.**



### CAUTION!

**Risk of fire and explosion by using flammable materials or cooling lubricants.**

**Before processing inflammable materials (e.g. aluminium, magnesium) or using inflammable auxiliary materials (e.g. spirit) it is necessary to take additional preventive measures in order to safely avoid health risks.**







## 1.8 Safety devices

Use the drilling machine only with properly functioning safety devices.

Stop the drilling machine immediately, if a safety device fails or is faulty or becomes ineffective.

It is your responsibility!

If a safety device has been activated or has failed, the drilling machine must only be used if you

- the cause of the fault has been eliminated,
- have verified that there is no danger to personnel or objects.

### WARNING!

**If you bypass, remove or deactivate a safety device in any other way, you are endangering yourself and other personnel working with the drilling machine. The possible consequences are**

- injuries due to components or workpieces flying off at high speed,
- contact with rotating parts and
- fatal electrocution.



The drilling machine features the following safety devices:

- an emergency stop push button,
- a drilling table with grooves for fixing the workpiece or a vice,
- a protective cover for the pulleys with positioning switch,
- an adjustable drill chuck protection with position switch.
- A restart protection that prevents the unit from restarting independently by connecting the power supply.

### WARNING!

**Although the isolating safety devices provided and delivered with the machine are designed to reduce the risks of workpieces being ejected or parts of tools or workpieces breaking off, they cannot eliminate these risks completely. Always work carefully and observe the limits of the machining process.**



## 1.9 Personal protective equipment

For certain work, personal protective equipment is required.

Protect your face and your eyes: Wear a safety helmet with facial protection when performing work where your face and eyes are exposed to hazards.



Wear protective gloves when handling pieces with sharp edges.



Wear safety shoes when you assemble, disassemble or transport heavy components.



Use ear protection if the noise level (emission) in the workplace exceeds 80 dB (A).

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



### CAUTION!

**Soiled personal protection equipment that may be contaminated may cause illness. It must be cleaned after each use and at least once a week.**





## 1.10 Safety check

Check the drilling machine before each start-up or at least once per shift. Inform the person responsible immediately of any damage, defects or changes in the operating function.

Check all safety devices

- at the beginning of each shift (with the machine stopped),
- once a week (with the machine in operation) and
- after all maintenance and repair work.

Check that prohibition, warning and information signs and the labels on the drilling machine

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

### INFORMATION

Organise the checks according to the following table;



General check		
Equipment	check	OK
Guards	Mounted, firmly bolted and not damaged	
Signs, Markers	Installed and legible	
Date:	Checked by (signature):	

Functional check		
Equipment	check	OK
Emergency-stop switch	After the emergency stop button is pressed, the drilling machine must switch off.	
Position switch of protective cover V-belt	The drilling machine must not be switched on, if the protective cover of the V-belts is opened.	
Drill chuck guard position switch	The drilling machine may not switch on, if the drill chuck guard is opened.	
Date:	Checked by (signature):	

## 1.11 Emergency-stop switch

### CAUTION!

The drilling spindle keeps turning for a short time even after actuating the emergency stop switch depending on the preset speed.



### 1.11.1 Drilling table

Seats for T-slots are attached to the clamping table.

### WARNING!

Risk of injury due to workpieces flying off at high speed. Securely fix the workpiece on the drilling table.





## 1.12 Separating protective devices

### 1.12.1 Drill chuck guard

Adjust the guard to the correct height before you start working. To do so, slacken the clamping screw, set the required height and re-tighten the clamping screw. There is a switch integrated in the protective cover which monitors that the cover is closed.

### 1.12.2 Protective cover of the V-belts

A protective cover for the belt pulleys is mounted on the drilling head. There is a switch integrated in the protective cover which monitors that the cover is closed.

#### INFORMATION

**It is not possible to start the machine if the protective covers are not closed.**



### 1.12.3 Prohibition, warning and mandatory signs

#### INFORMATION

All warning signs must be legible. They must be checked regularly.



## 1.13 Personal protective equipment

For some works you need personnel protective equipment as protective equipment. These are

- Safety helmet,
- protective glasses or face guard,
- protective gloves,
- safety shoes with steel toe caps,
- ear protection.

Before starting work make sure that the required personnel protective equipment is available at the work place.

#### CAUTION!

**Soiled personal protection equipment that may be contaminated may cause illness. It must be cleaned after each use and at least once a week.**



#### Personal protective equipment for special works

Protect your face and your eyes: Wear safety glasses for all work where your eyes are at risk.

Wear protective gloves when handling pieces with sharp edges.

Wear safety shoes when you assemble, disassemble or transport heavy components.

## 1.14 Safety during operation

We provide information about the specific dangers when working with and on the drilling machine in the descriptions for these types of work.

#### WARNING!

**Before activating the drilling machine, double-check that make sure that there are no dangers generated for persons, not cause damage to equipment.**



Avoid any unsafe work methods.

- Make sure that your work does not endanger anyone.
- The instructions described in these operating instructions must be strictly observed during assembly, operation, maintenance and repair.
- Do not work on the drilling machine if your concentration is reduced, for example, because you are taking medication.



- Inform the supervisor about all hazards or faults.
- Stay on the drilling machine until the machine completely stopped moving.
- Use the specified personal protective equipment. Ensure you wear close-fitting clothing and, if necessary, a hairnet.
- Do not use protective gloves when drilling.

## 1.15 Safety during maintenance

Inform the operators in good time of any maintenance and repair works.

Report all safety relevant changes and performance details of the drilling machine or their operational behavior. Any changes must be documented, the operating instructions updated and machine operators instructed accordingly.

### 1.15.1 Disconnecting and securing the drilling machine

Disconnect the mains plug before starting maintenance and repairs.

All machine parts as well as all dangerous voltages are switched off. Excepted are only the positions which are marked with the adjoining pictogram.

Attach a warning sign to the machine.

### 1.15.2 Mechanical maintenance

Remove or install protection safety devices before starting or after completing any maintenance work; this include:

- covers,
- safety instructions and warning signs,
- grounding cables.

If you remove protection or safety devices, refit them immediately after completing the work. Check that they are working properly!

## 1.16 Electronics

Have the machine and/or the electrical equipment checked regularly, at least every six months. Immediately eliminate all defects such as loose connections, defective wires, etc.

A second person must be present during work on live components to disconnect the power in the event of an emergency. Disconnect the machine immediately if there is a malfunction in the power supply!

## 2 Technical specification

The following information represents the dimensions and indications of weight and the manufacturer's approved machine data for following stated machines.

Electrical connection	400V ~50 Hz , (~60Hz)
Drive motor power	1.1 kW
Drilling capacity in steel S235JR	Ø 30 mm
Continuous drilling capacity in steel S235JR	Ø 25 mm
Spindle speed ~50Hz	120 - 1810 min <sup>-1</sup>
Spindle seat	MT 4
Drill table T-slot size	14mm diagonally running

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Table size	387 x 387 mm
Spindle stroke	125 mm
Throat depth	☞ Dimensions on page 14
Column diameter	
Distance spindle - drill table	
Distance spindle - base	
Drilling table swivelling / rotating	± 45° / 360°
Dimensions	☞ on page 14
Net weight of the machine	165 kg
Spindle speeds	☞ Speed table on page 24
Speed steps	9
Ambient conditions Temperature	5 ~ 35 °C
Relative humidity	25 - 80 %

## 2.1 Emissions

### CAUTION!

**The operator should wear noise and hearing protection.**

The A-weighted sound pressure level  $L_{pA}$  is 70 to 73 dB.

The A-weighted sound power level  $L_{WA}$  is 80 to 85 dB.



### INFORMATION

This numerical value was measured on a new machine under the operating conditions specified by the manufacturer. The noise behaviour of the machine might change depending on the age and wear of the machine.

Furthermore, the noise emission also depends on production engineering factors, e.g. speed, material and clamping conditions.



### INFORMATION

The specified numerical value represents the emission level and does not necessarily a safe working level. Though there is a dependency between the degree of the noise emission and the degree of the noise disturbance it is not possible to use it reliably to determine if further precaution measures are required or not. The following factors influence the actual degree of the noise exposure of the operator:

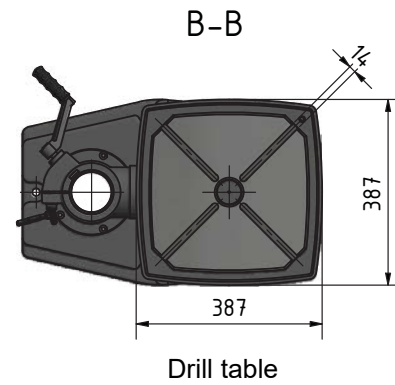
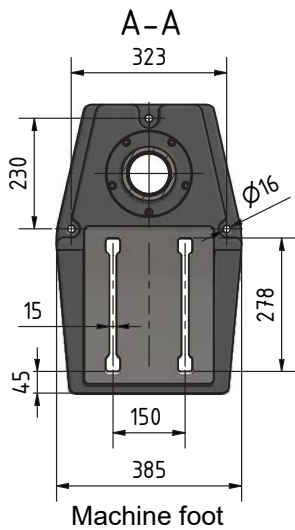
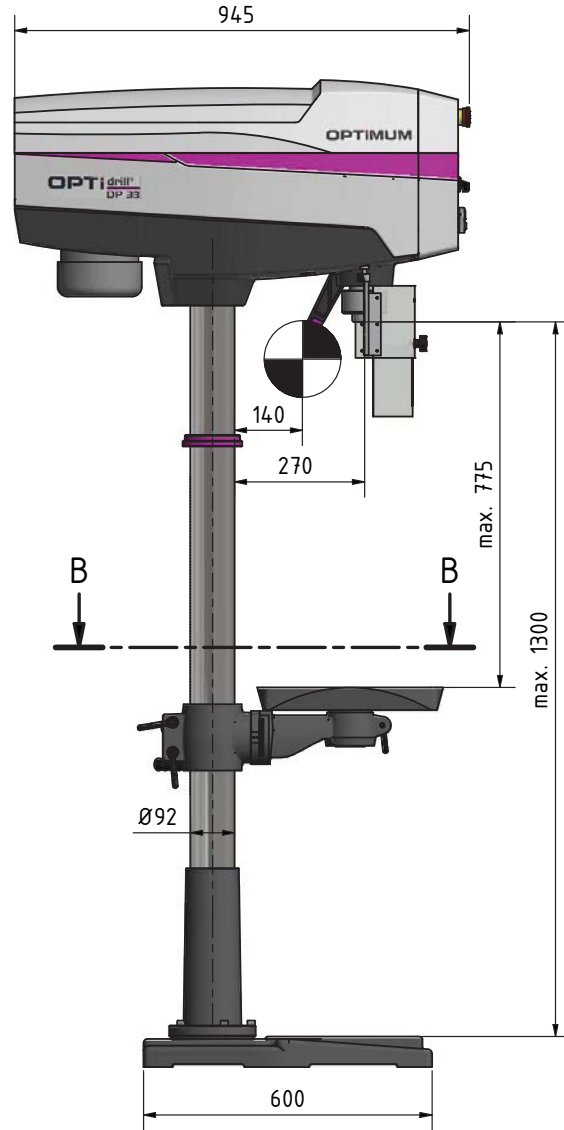
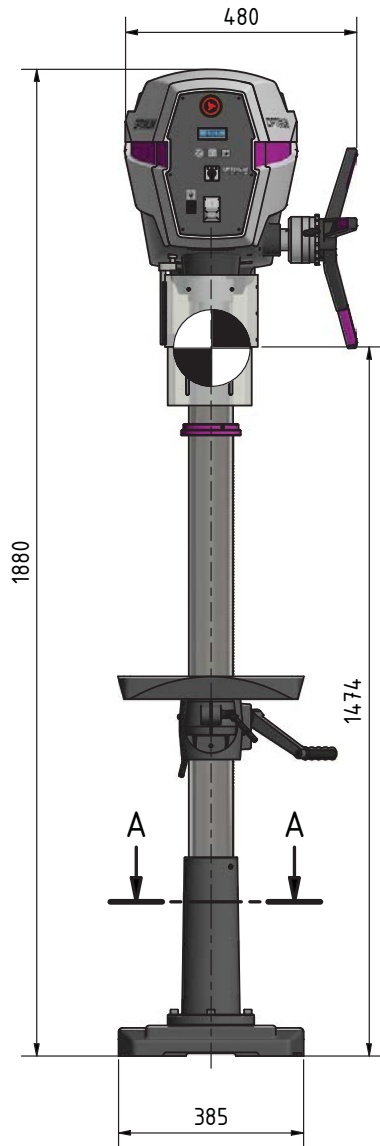
- Characteristics of the working area, e.g. size or damping behaviour,
- other noise sources, e.g. the number of machines,
- other processes taking place in proximity and the period of time, during which the operator is exposed to the noise.

Furthermore, it is possible that the admissible exposure level might be different from country to country due to national regulations. This information about the noise emission should, however, allow the operator of the machine to more easily evaluate the hazards and risks.





## 2.2 Dimensions



Schwerpunkt / Centre of gravity



## 3 Delivery, interdepartmental transport, assembly and commissioning

### 3.1 Notes on transport, installation, commissioning

Improper transport, installation and commissioning is liable to accidents and can cause damage or malfunctions to the machine for which we do not assume any liability or guarantee.

Transport the scope of delivery secured against shifting or tilting with a sufficiently dimensioned industrial truck or a crane to the installation site.

#### **WARNING!**

**Severe or fatal injuries may occur if parts of the machine tumble or fall down from the forklift truck or from the transport vehicle. Follow the instructions and information on the transport box.**



**Note the total weight of the machine. The weight of the machine is indicated in the "Technical data" of the machine. When the machine is unpacked, the weight of the machine can also be read on the rating plate.**

**Only use transport devices and load suspension gear that can hold the total weight of the machine.**

#### **WARNING!**

**The use of unstable lifting and load suspension equipment that might break under load can cause severe injuries or even death. Check that the lifting and load suspension gear has sufficient load-bearing capacity and that it is in perfect condition.**



**Observe the accident prevention regulations issued by your Employers Liability Insurance Association or other competent supervisory authority, responsible for your company. Fasten the loads properly.**

#### 3.1.1 General risks during internal transport

##### **WARNING: TILTING DANGER!**

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

**Employees must be outside the danger zone, i.e. the reach of the load.**

**Warn employees and advise them of the hazard.**



Machines may only be transported by authorized and qualified persons. Act responsibly during transport and always consider the consequences. Refrain from daring and risky actions.

Gradients and descents (e.g. driveways, ramps and the like) are particularly dangerous. If such passages are unavoidable, special caution is required.

Before starting the transport check the transport route for possible danger points, unevenness and faults.

Danger points, unevenness and disturbance points must be inspected before transport. The removal of danger spots, disturbances and unevenness at the time of transport by other employees leads to considerable dangers.

Careful planning of interdepartmental transport is therefore essential.



## 3.2 Assembly

### CAUTION!

When mounting components with high weight, the reasonable load of persons can be exceeded.



Recommended threshold values when lifting and carrying loads				
	Reasonable load in kg and frequency of lifting and carrying			
	Occasionally		More frequently	
Age in years	Women	Men	Women	Men
15 - 18	15	35	10	20
19 - 45	15	55	10	30
from 45	15	45	10	25

### CAUTION!

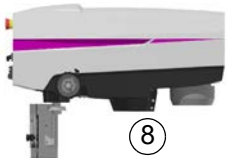
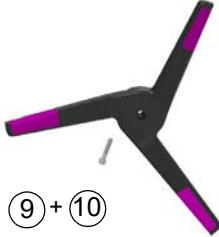





The drilling machine comes disassembled due to packaging reasons.

2 persons are required to assemble the drill.

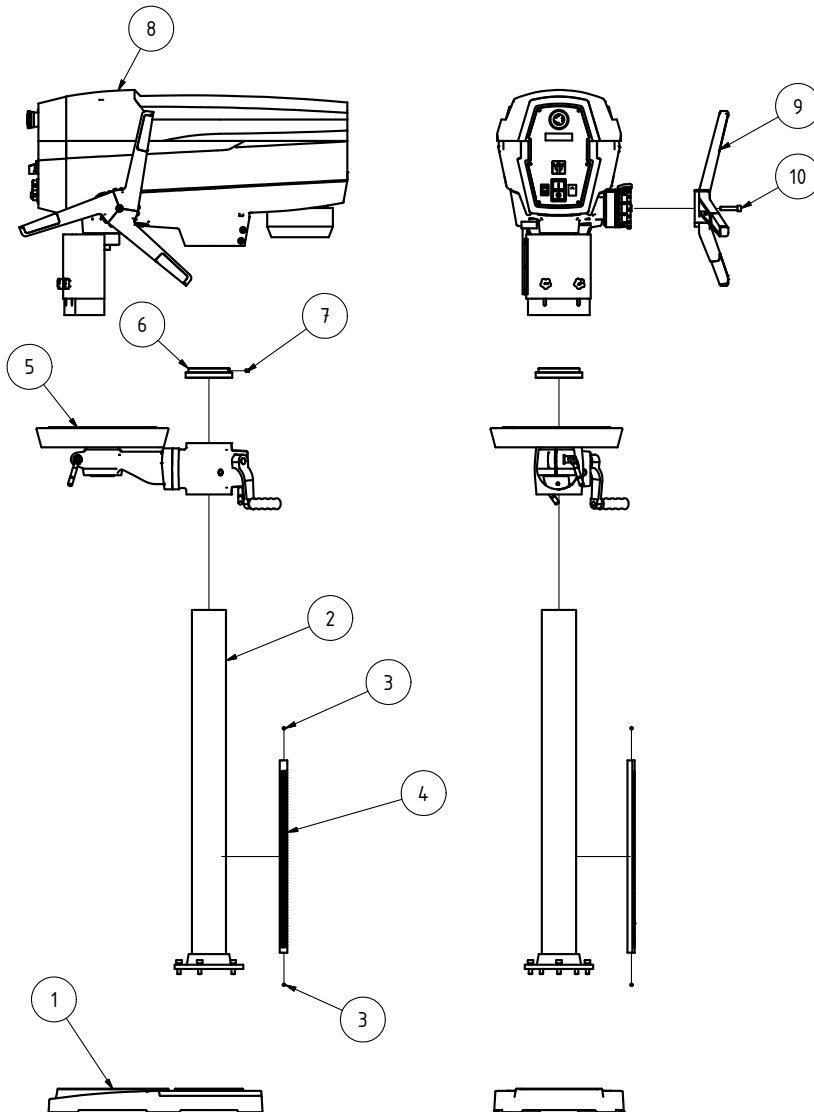
Before commissioning, the drilling machine has to be assembled.



## 3.3 Individual components

Drill head	 ⑧	Spindle sleeve lever with fixing screw	 ⑨ + ⑩
Rack mounting ring with stud bolt	 ⑥ + ⑦	Drilling table	 ⑤
Rack with 2 steel balls	 ③ + ④		
Machine base	 ①		
Drilling column Weight about: 48 kg	 ②		





Place the machine foot on a flat floor and screw the column to the machine foot.



Insert the rack into the drilling table support. Some grease helps to fix the rack in the guide. Pay attention to the helical gearing on the rack. The longer untoothed end of the rack must point upward.





Insert the two steel balls with a little grease into the rack at the top and bottom. Optionally, place the bottom steel ball in the lower guide.

Slide the drilling table support with the gear rack onto the drilling column and clamp firmly.

Check that the bottom steel ball is correctly seated, place the retaining ring on the rack and clamp it tight with the stud bolt.

## CAUTION!

**Danger of tipping. Check the smooth rotation of the drilling table and the movement on the drilling column only when the machine foot is fixed to the floor or table.**

Mount the machine foot on your surface and place the drill head on the column.

Align the drill head with the machine base and tighten the clamping screws.

Attach and fasten the quill lever.



## 3.4 Installation site

Organize the working area around the drilling machine according to the local safety regulations.

### INFORMATION

In order to attain good functionality and a high processing accuracy as well as a long service life of the machine, the place of installation should fulfil certain criteria.



**Please observe the following points:**

- The device must only be installed and operated in a dry and well-ventilated place.
- Avoid places close to machines which cause chips or dust.
- The installation site must be vibration-free, i.e. located away from presses, planing machines, etc.
- The substructure must be suitable for the drilling machine. Also make sure that the floor has sufficient load bearing capacity and is level.
- The ground must be prepared in a way that potential coolants cannot penetrate the floor.
- Any parts sticking out such as stops, handles, etc. have to be secured by measures taken by the customer if necessary in order to avoid endangering persons.
- Provide sufficient space for the personnel preparing and operating the machine and transporting the material.
- Also make sure the machine is accessible for setting and maintenance works.
- Provide for sufficient backlight (Minimum value: 500 Lux, measured at the tool tip). In the event of a lower level of lighting, additional illumination must be provided, e.g. by means of a separate workplace light.



## INFORMATION

The mains plug of the drilling machine must be freely accessible.



### 3.4.1 Fixing

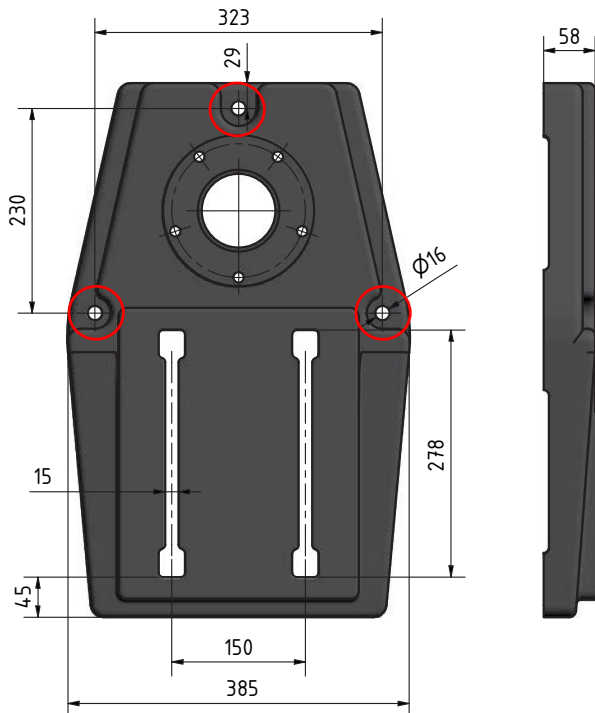
In order to achieve the stability of the drilling machine, the machine should be connected to the subsurface. For this purpose there are through holes at the foot of the drilling machine.

#### ATTENTION!

**Tighten the fixing screws of the drilling machine only as much that it is safely fixed and cannot break away or tilt over.**



If the fixing screws are too tight in particular in connection with an uneven substructure it may result in a broken stand of the machine.



Img.3-1: Fastening

### 3.5 First commissioning

#### WARNING!

There is a danger to persons and equipment, if the first commissioning of the drilling machine is carried out by inexperienced personnel.

We do not accept any liability for damages caused by incorrectly performed commissioning.



#### WARNING!

Risk from using improper workpiece clamping materials or operating the machine at an inadmissible speed.



#### ATTENTION!

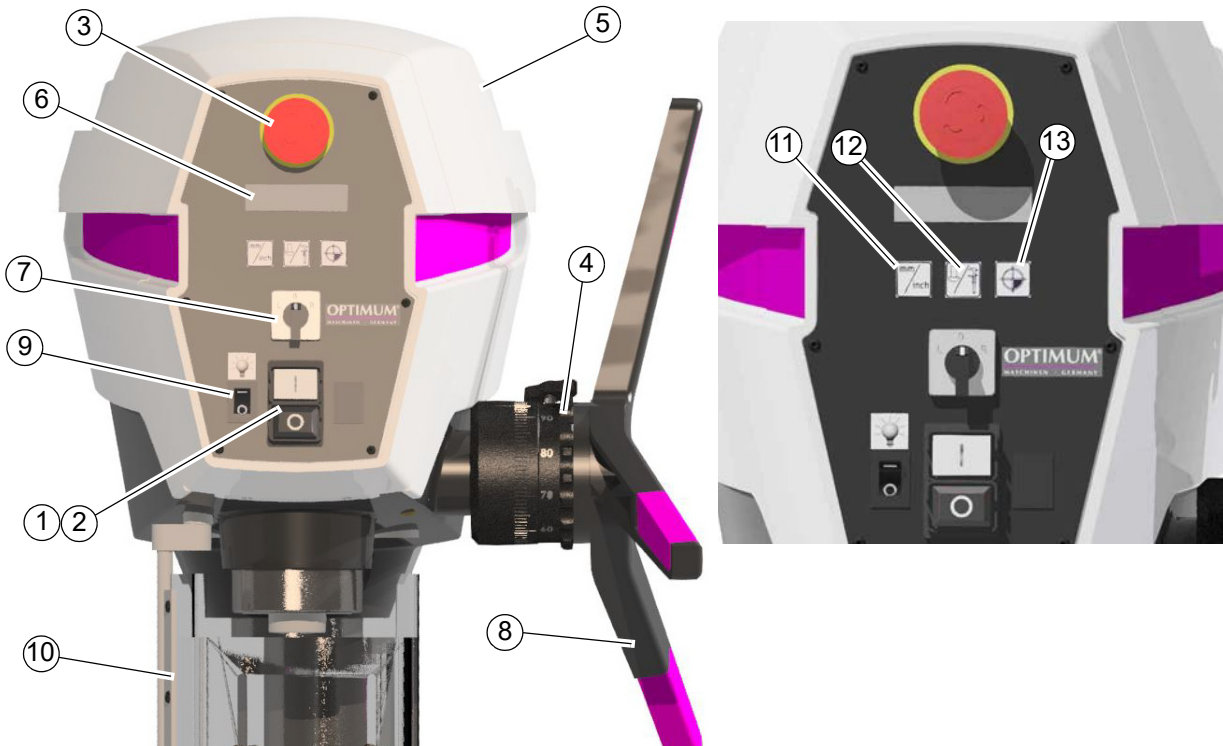
**Before initially operating the machine, check all screws, fixtures and/or safety devices and tighten up the screws if necessary!**



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## 4 Operation



Pos.	Designation	Pos.	Designation
1	Push button "Off"	2	Push button "On"
3	Emergency-stop switch	4	Drill depth stop
5	Protective cover of V-belt housing	6	Digital readout
7	Direction of rotation switch, only on 400V machines	8	Lever for spindle sleeve feed
9	Machine illumination	10	Drill chuck guard
11	Switchover of the digital drilling depth display ○ mm ○ inches	12	Digital display switching ○ Speed ○ Drill depth
13	Setting the zero point for the digital drilling depth		

### 4.1 Safety

Only put the drill into operation under the following conditions:

- The technical condition of the drilling machine is perfect.
- The drilling machine is used as intended.
- The operating instructions are observed.
- All safety devices are installed and activated.



Eliminate or have all malfunctions rectified promptly. Stop the machine immediately in the event of any abnormality in operation and make sure it cannot be started up accidentally or without authorisation. Notify the person responsible immediately of any modification.



## 4.2 Switching on the machine

- Check that the emergency stop switch is not pressed or unlocked. Turn the emergency stop switch to the right to unlock.
- The protective cover of the V-belts must be closed.
- Set all actuators to the neutral position and close the drill chuck protection.
- Select the direction of rotation on 400V drills.
- Press the "On" button.

## 4.3 Switching off the machine

### CAUTION!

**Only press the emergency-stop button in a genuine emergency. You should not use the emergency stop button to stop the machine during normal operation.**

- Press the "Off" button.
- Disconnect the power plug if the unit is not used for a longer period of time.



## 4.4 Resetting an emergency stop situation

- Set on 400V machines the direction of rotation switch to the neutral position.
- Unlock the emergency stop switch again.

## 4.5 Power failure, Restoring readiness for operation

- Set on 400V machines the direction of rotation switch to the neutral position.
- Actuate the push button "ON".

## 4.6 During work

### WARNING!

**Seizing of clothes and / or hair.**

- Make sure to wear well-fitting work during drilling work.
- Do not use gloves.
- If necessary, use a hairnet.



### CAUTION!

**Risk of impact by the spindle sleeve lever. Do not release the spindle sleeve lever when repositioning the drilling spindle sleeve.**



### CAUTION!

**Danger of crushing. Do not place your hand between the drilling head and the spindle sleeve.**



The spindle sleeve feed is done via the spindle sleeve lever. Make sure that the feed is constant and not too fast. The spindle sleeve is returned to its initial position by the return spring.

The smaller the bit the more easily it may break. In the case of deep drilling, remove the bit from time to time to remove filings from the drill. Add a few drops of oil to reduce friction and prolong the service life of the bit.



## 4.7 Drill depth stop

When drilling several holes with the same depth, the digital drilling depth display or the mechanical drilling depth stop can be used.

- Loosen the locking screw and turn the graduated collar until the required drilling depth matches with the indicator.
- Re-tighten the locking screw.

The spindle sleeve can only be lowered to the set value.

## 4.8 Table Inclination

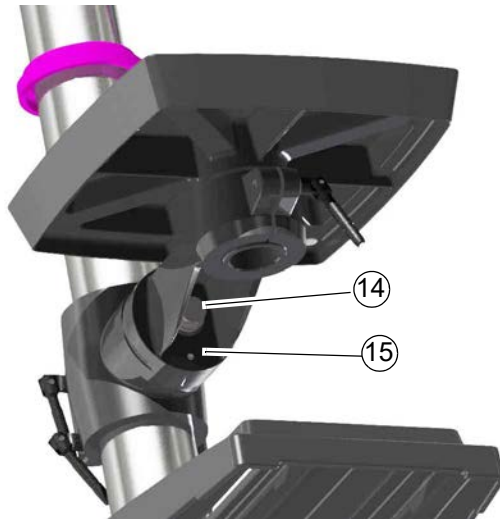
The drilling table can be inclined to the right or to the left.

- Loosen the fixing screw ( 14 ).
- Pull out the threaded pin ( 15 ).

### INFORMATION

If you can not pull out the threaded pin, so the seat can be solved by turning at the nut clockwise.

- Set the desired angle using the scale.
- Re-tighten the fixing screw again.



### INFORMATION

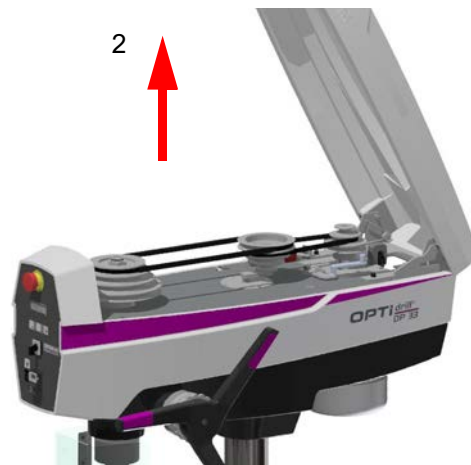
The threaded pin is only provided for correct positioning of a horizontal level of the drilling table.

## 4.9 Speed variation

### ATTENTION!

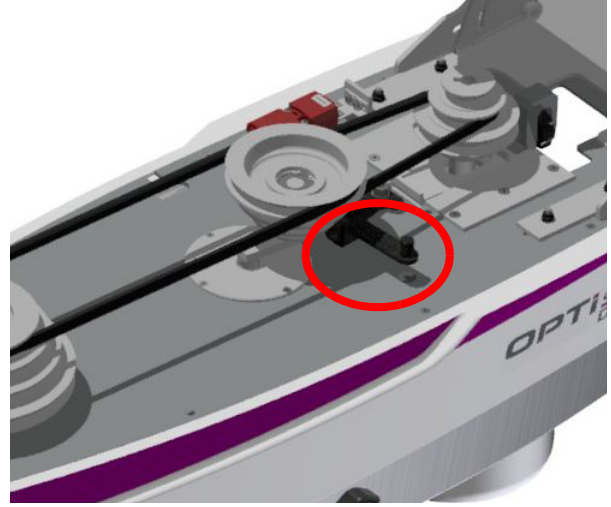
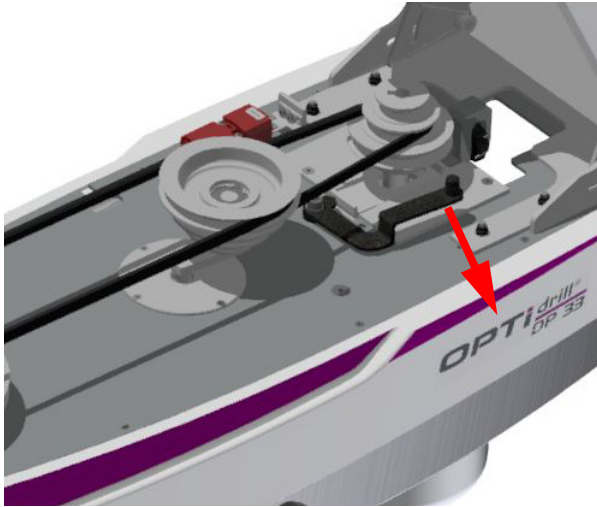
Excessive stress when opening with the wrong order to open the lid may damage the hinge and the locking switch.

- Switch the machine off.
- First push the cover of the V-belts backwards, and only then fold it upwards. Sliding the cover backwards first releases the locking switch.





→ Release the tension of the V-belts with the clamping lever.



→ Insert the V-belts at the desired speed position and retighten the V-belts with the lever. If necessary, also adjust the tension of the V-belt on the motor.



### ATTENTION!

Watch for the proper tension of V-belts.

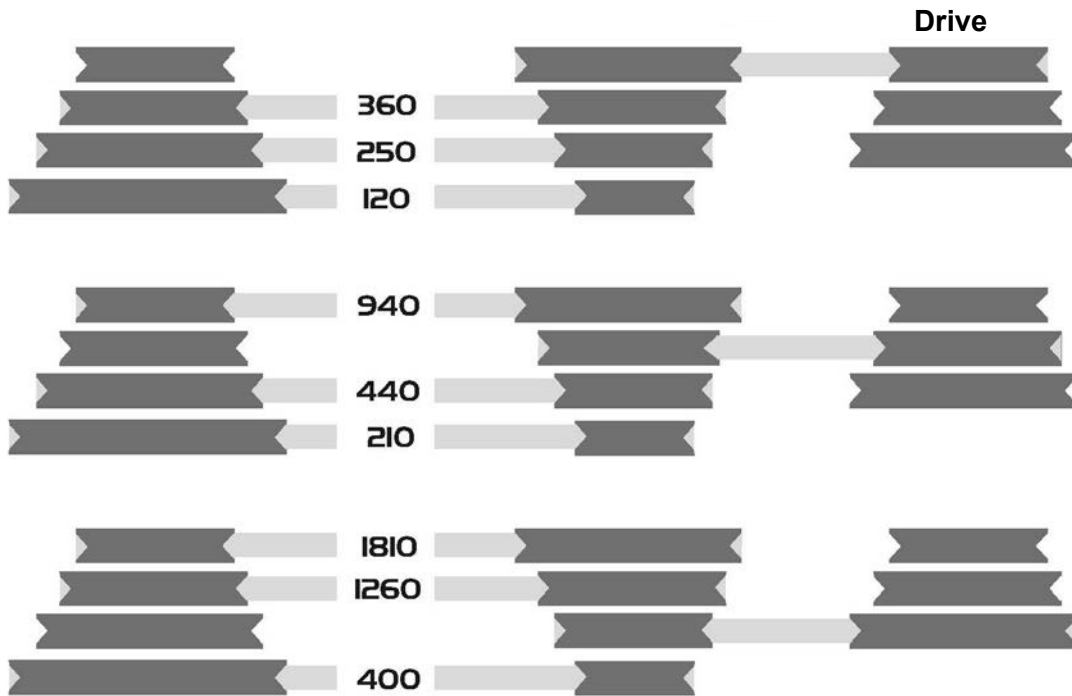
Too heavy or too low tension of the belt can cause damage. The belts are correctly tensioned, when it can be by pressing with the fingers for about 1 cm.





## 4.9.1 Speed table

~ 50Hz connection



## 4.10 Standard values for speeds with HSS – Eco – twist drills

Material	Drill diameter										Cooling 3)
		2	3	4	5	6	7	8	9	10	
Steel, unalloyed, up to 600 N/mm <sup>2</sup>	n <sup>1)</sup>	5600	3550	2800	2240	2000	1600	1400	1250	1120	E
	f <sup>2)</sup>	0.04	0.063	0.08	0.10	0.125	0.125	0.16	0.16	0.20	
Mild steel, alloyed, tempered, up to 900N/mm <sup>2</sup>	n	3150	2000	1600	1250	1000	900	800	710	630	E/oil
	f	0.032	0.05	0.063	0.08	0.10	0.10	0.125	0.125	0.16	
Mild steel, alloyed, tempered, up to 1200 N/mm <sup>2</sup>	n	2500	1600	1250	1000	800	710	630	560	500	Oil
	f	0.032	0.04	0.05	0.063	0.08	0.10	0.10	0.125	0.125	
Stainless steels up to 900 N/ mm <sup>2</sup> e.g. X5CrNi18 10	n	2000	1250	1000	800	630	500	500	400	400	Oil
	f	0.032	0.05	0.063	0.08	0.10	0.10	0.125	0.125	0.16	
1): Speed [n] in rpm											
2): Feed [f] in mm/rev											
3): Cooling: E = Emulsion; oil = cutting oil											

- The above data are standard values. In some cases it may be advantageous to increase or decrease these values.
- A cooling or lubricating agent should be used when drilling.
- For stainless materials (e.g. VA – or NIRO steel sheets) do not centre, as this will result in the material compacting and the drill bit rapidly becoming blunt.
- The workpieces need to be tensed inflexibly and stably (vice, screw clamp).





## 4.11 Drill chuck

### ATTENTION!

Make sure that the clamped tool is firmly and correctly fitted.



### 4.11.1 Unfitting the drill chuck

The drill chuck and the taper mandrel are loosened from the drill spindle by means of a drill drift.

#### PRECAUTIONARY MEASURE

Only disassemble the drill chuck if the drilling machine is disconnected from the electrical supply.

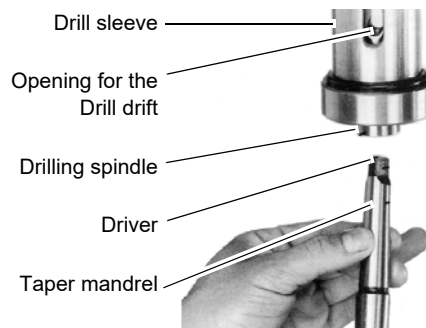
- Disconnect the machine from the electrical supply.
- Move the drill sleeve down.
- Turn the drilling spindle until the openings of the sleeve and of the drilling spindle are superimposed.
- Loosen the taper mandrel of the drill chuck with the help of a drill drift.



### 4.11.2 Fitting the drill chuck

The drill chuck is secured in the drill spindle against turning over by means of a form-locking connection (driver).

A frictionally engaged connection keeps and centres the drill chuck or the drill in the drill spindle.



Img.4-1: Taper mandrel

- Check and clean the conical seat in the drill spindle and on the taper mandrel of the tool or drill chuck.
- Press the taper mandrel into the drill spindle.

## 4.12 Cooling

The friction generated during rotation can cause the edge of the tool to become very hot.

The tool should be cooled during the drilling process. Cooling the tool with a suitable cooling lubricant ensures better working results and a longer edge life of the tools. This is best realised by a separate cooling equipment. If there is no cooling equipment included in the delivery volume, you can cool by means of a spray gun or a washing bottle.

### CAUTION!

Danger of injury due to brushes getting caught or pulled in. Use a spray gun or a washing bottle for cooling.





## INFORMATION

Use a water-soluble and non-pollutant emulsion as a cooling agent. This can be acquired from authorised distributors.

Make sure that the cooling agent is being collected.

Respect the environment when disposing of lubricants and coolants.

Follow the manufacturer's disposal instructions.



## 5 Maintenance

In this chapter you will find important information about

- Inspection
- Maintenance
- Repair

of the drilling machine.

### ATTENTION!

Properly performed regular maintenance is an essential prerequisite for

- operational safety,
- failure-free operation,
- a long service life of the drill and
- the quality of the products which you manufacture.

Installations and equipment from other manufacturers must also be in good order and condition.



### 5.1 Safety

#### WARNING!

The consequences of incorrect maintenance and repair work may include:

- Extremely serious injuries to those working on the drill and
- damage to the drill.

Only qualified personnel should carry out maintenance and repair work on the drill.



#### 5.1.1 Preparation

##### WARNING!

Only work on the drill if it has been disconnected from the power supply.



#### 5.1.2 Restarting

Before restarting, run a safety check.

##### WARNING!

Before starting the drill you must be sure that

- no dangers generated for persons,
- the drill is not damaged.



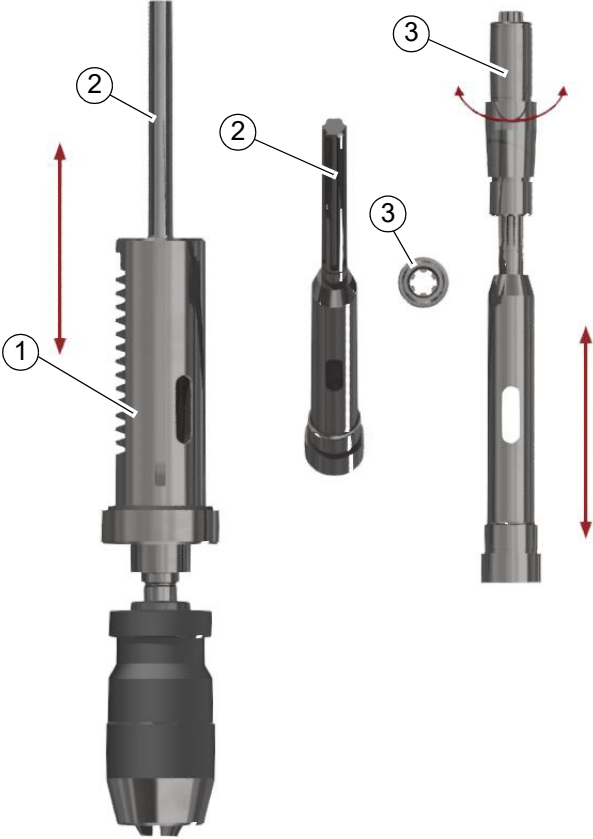
### 5.2 Inspection and maintenance

The type and level of wear depends to a large extent on the individual usage and operating conditions.



Interval	Where?	What?	How?
Start of work	Drilling machine	☞ Safety check on page 10	
Every month	Drilling column and toothed rod	Oiling	<ul style="list-style-type: none"> <li>➔ Lubricate the drill column regularly with commercial oil.</li> <li>➔ Lubricate the toothed rod regularly with commercial grease (e.g. friction bearing grease).</li> </ul>
Every 6 months	V-belt on drill head	Visual inspection	➔ Check the V-belts in the drill head for porosity and wear.



Interval	Where?	What?	How?
in case of need	Toothing of the spindle	Lubrication	<p>Any unusual rattling noises can be eliminated by <b>regreasing</b>. The sleeve (1) moves downwards or upwards with the toothed spindle (2) in the fixed driven sleeve (3) during drill feed. The noises are caused by the necessary clearance between the two toothings of the sleeve and spindle. The grease in the delivery condition may have been used up.</p>  <p>Img. 5-1: Regreasing is carried out from above via the spindle drive. Apply grease at the visible toothed area of the spindle. It is recommended to use a grease which can remain permanently inside the tothing. The grease "Staburag NBU 30 PTM" from Klüber is recommended and has proved to be a successful assembly grease for clearance fits.</p>
Every 6 months	Electronics	Testing	<p>Check the electrical equipment / parts of the drilling machine.</p> <p>👉 Qualification on page 8</p>



## 5.3 Repair

### 5.3.1 Customer service technician

For any repair work request the assistance of an authorised customer service technician. Contact your specialist dealer if you do not have customer service's information or contact Stürmer Maschinen GmbH in Germany who can provide you with a specialist dealer's contact information. Optionally, the company Stürmer Maschinen GmbH; Dr.-Robert-Pfleger-Str. 26

96103 Hallstadt; can provide a customer service technician, however, the request for a customer service technician can only be made via your specialist dealer.

If the repairs are carried out by qualified technical personnel, they must follow the indications given in these operating instructions.

Optimum Maschinen Germany GmbH accepts no liability nor does it guarantee against damage and operating malfunctions resulting from failure to observe these operating instructions.

For repairs, only use

- faultless and suitable tools only,
- original parts or parts from series expressly authorised by Optimum Maschinen Germany GmbH.

## 6 Malfunctions

### 6.1 Drilling machine malfunctions

Malfunction	Cause/ possible effects	Solution
Noise during work.	<ul style="list-style-type: none"> <li>• Spindle runs dry.</li> <li>• Tool blunt or incorrectly clamped.</li> <li>• Pulley on the motor has come loose.</li> </ul>	<ul style="list-style-type: none"> <li>• Grease spindle</li> <li>• Use new tool and check tension (fixed setting of the bit, drill chuck and taper mandril).</li> <li>• Check the fastening of the pulley, tighten the fastening nut.</li> </ul>
Bit „burnt“	<ul style="list-style-type: none"> <li>• Incorrect speed</li> <li>• Chips are not coming out of the drilled hole.</li> <li>• Blunt drill bit.</li> <li>• Operating without cooling agent.</li> </ul>	<ul style="list-style-type: none"> <li>• Choose a different speed, excessive feed.</li> <li>• Retract the drill bit from the bore hole more often.</li> <li>• Sharpen the drill bit or insert new drill bit.</li> <li>• Use coolant.</li> </ul>
Drill point runs off, drilled hole is not circular.	<ul style="list-style-type: none"> <li>• Hard fiber in the wood or length of the cutting spirals and/or angle on the drill unequal.</li> <li>• Drill bit is bent.</li> </ul>	<ul style="list-style-type: none"> <li>• Use a new drill bit.</li> </ul>
Drill bit defective.	<ul style="list-style-type: none"> <li>• No base / support used.</li> </ul>	<ul style="list-style-type: none"> <li>• Place a piece of wood underneath the workpiece and fasten this to the workpiece.</li> </ul>
Drill is running non-round or shaking	<ul style="list-style-type: none"> <li>• Drill bit is bent.</li> <li>• Bearings worn down in the spindle head.</li> <li>• Drill is not correctly clamped.</li> <li>• Drill chuck defective</li> </ul>	<ul style="list-style-type: none"> <li>• Replace drill bit</li> <li>• Have the bearings in the spindle head replaced.</li> <li>• Clamp the drill bit properly.</li> <li>• Replace the drill bit chuck.</li> </ul>

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Malfunction	Cause/ possible effects	Solution
The drill chuck or the taper mandrel cannot be inserted.	<ul style="list-style-type: none"> <li>Dirt, grease or oil on the taper inside of the drill chuck or on the taper surface of the drill spindle</li> </ul>	<ul style="list-style-type: none"> <li>Clean surfaces well.</li> <li>Keep surfaces free from grease.</li> </ul>
Motor does not start.	<ul style="list-style-type: none"> <li>Motor defective, possibly starting capacitor defective</li> <li>The operator's main fuse has been triggered.</li> </ul>	<ul style="list-style-type: none"> <li>Have it checked by qualified personnel.</li> </ul>
Precision of the work deficient	<ul style="list-style-type: none"> <li>Heavy and unbalanced or deformed work-piece.</li> <li>Inexact horizontal position of the work-piece holder.</li> </ul>	<ul style="list-style-type: none"> <li>Balance the piece statically and secure without straining</li> <li>Adjust workpiece-holder</li> </ul>
Drilling spindle sleeve does not return to its initial position	<ul style="list-style-type: none"> <li>Broken spindle return spring</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> </ul>

## 7 Appendix

### 7.1 Copyright

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### 7.2 Liability claims/warranty

Besides the legal liability claims for defects of the customer towards the seller, the manufacturer of the product, OPTIMUM GmbH, Robert-Pfleger-Straße 26, D-96103 Hallstadt, does not grant any further warranties unless they are listed below or were promised as part of a single contractual provision.

- Liability or warranty claims are processed at OPTIMUM GmbH's discretion either directly or through one of its dealers.  
Any defective products or components of such products will either be repaired or replaced by components which are free from defects. Ownership of replaced products or components is transferred to OPTIMUM Maschinen Germany GmbH.
- The automatically generated original proof of purchase which shows the date of purchase, the type of machine and the serial number, if applicable, is the precondition in order to assert liability or warranty claims. If the original proof of purchase is not presented, we are not able to perform any services.
- Defects resulting from the following circumstances are excluded from liability and warranty claims:
  - Using the product beyond the technical options and proper use, in particular due to overstraining of the machine.
  - Any defects arising by one's own fault due to faulty operations or if the operating manual is disregarded.
  - Inattentive or incorrect handling and use of improper equipment
  - Unauthorized modifications and repairs
  - Insufficient installation and safeguarding of the machine
  - Disregarding the installation requirements and conditions of use
  - atmospheric discharges, overvoltage and lightning strokes as well as chemical influences
- Neither are the following items covered by liability or warranty claims:
  - Wearing parts and components which are subject to normal and intended wear, such as



V-belts, ball bearings, lighting, filters, seals, etc.  
 - Non reproducible software errors

- Any services, which OPTIMUM GmbH or one of its agents performs in order to fulfil any additional warranty are neither an acceptance of the defects nor an acceptance of its obligation to compensate. Such services neither delay nor interrupt the warranty period.
- The court of jurisdiction for legal disputes between businessmen is Bamberg.
- If any of the aforementioned agreements is totally or partially inoperative and/or invalid, a provision which nearest approaches the intent of the guarantor and remains within the framework of the limits of liability and warranty which are specified by this contract is deemed agreed.

### 7.3 Advice for disposal / Options of re-use

Please dispose of your equipment in an environmentally friendly manner, by not placing waste in the environment but in a professional manner.

Please do not simply throw away the packaging and later the disused machine, but dispose of both in accordance with the guidelines laid down by your city council/local authority or by an authorised disposal company.

#### 7.3.1 Decommissioning

##### CAUTION!

**Immediately decommission used machines in order to avoid later misuse and endangering of the environment or of persons.**



- **Unplug the power cord.**
- **Cut the connection cable.**
- **Remove all operating materials from the used device which are harmful to the environment.**
- **If applicable remove batteries and accumulators.**
- **Disassemble the machine if required into easy-to-handle and reusable assemblies and component parts.**
- **Dispose of machine components and operating fluids using the intended disposal methods.**

#### 7.3.2 Disposal of new device packaging

All used packaging materials and packaging aids from the machine are recyclable and generally need to be supplied to the material reuse.

The packaging wood can be supplied to the disposal or the reuse.

Any packaging components made of cardboard box can be chopped up and supplied to the waste paper collection.

The films are made of polyethylene (PE) and the cushion parts are made of polystyrene (PS). These materials can be reused after reconditioning if they are passed to a collection station or to the appropriate waste management enterprise.

Only forward the packaging materials correctly sorted to allow direct reuse.

#### 7.3.3 Disposal of the old device

##### INFORMATION

Please take care in your interest and in the interest of the environment that all component parts of the machine are only disposed of in the intended and admitted way.



Please note that the electrical devices comprise a variety of reusable materials as well as environmentally hazardous components. Please ensure that these components are disposed of separately and professionally. In case of doubt, please contact your municipal waste



management. If appropriate, call on the help of a specialist waste disposal company for the treatment of the material.

### 7.3.4 Disposal of electrical and electronic components

Please make sure that the electrical components are disposed of professionally and according to the statutory provisions.

The device is composed of electrical and electronic components and must not be disposed of as household waste. According to the European Directive regarding electrical and electronic used devices and the implementation of national legislation, used power tools and electrical machines need to be collected separately and supplied to an environmentally friendly recycling centre.



As the machine operator, you should obtain information regarding the authorised collection or disposal system which applies for your company.

Please make sure that the electrical components are disposed of professionally and according to the legal regulations. Please only throw depleted batteries in the collection boxes in shops or at municipal waste management companies.

### 7.4 Disposal via municipal collection facilities

Disposal of used electrical and electronic components

(Applicable in the countries of the European Union and other European countries with a separate collecting system for those devices).



The sign on the product or on its packing indicates that the product must not be handled as common household waste, but that it needs to be disposed of at a central collection point for recycling. Your contribution to the correct disposal of this product will protect the environment and the public health. Incorrect disposal constitutes a risk to the environment and public health. Recycling of material will help reduce the consumption of raw materials. For further information about the recycling of this product, please consult your District Office, municipal waste collection station or the shop where you have purchased the product.

### 7.5 Change information operating manual

Chapter	Short summary	new version number
3 ; 5.2	Interdepartmental transport Toothing of the spindle, Maintenance	1.0.1
8	Position of the anti-rotation lock of the sleeve	1.0.2

### 7.6 Product follow-up

We are required to perform a follow-up service for our products which extends beyond shipment.

We would be grateful if you could inform us of the following:

- Modified settings
- Any experiences with the geared drill which might be important for other users
- Recurring malfunctions.



## 8 Ersatzteile - Spare parts

### 8.1 Ersatzteilbestellung - Ordering spare parts

Bitte geben Sie folgendes an - Please indicate the following :

- Seriennummer - Serial No.
- Maschinenbezeichnung - Machines name
- Herstellungsdatum - Date of manufacture
- Artikelnummer - Article no.

Die Artikelnummer befindet sich in der Ersatzteilliste. *The article no. is located in the spare parts list.* Die Seriennummer befindet sich am Typschild. *The serial no. is on the rating plate.*

### 8.2 Hotline Ersatzteile - 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 Ersatzteilzeichnungen - Spare part drawings

### A Bohrkopf - Drilling head

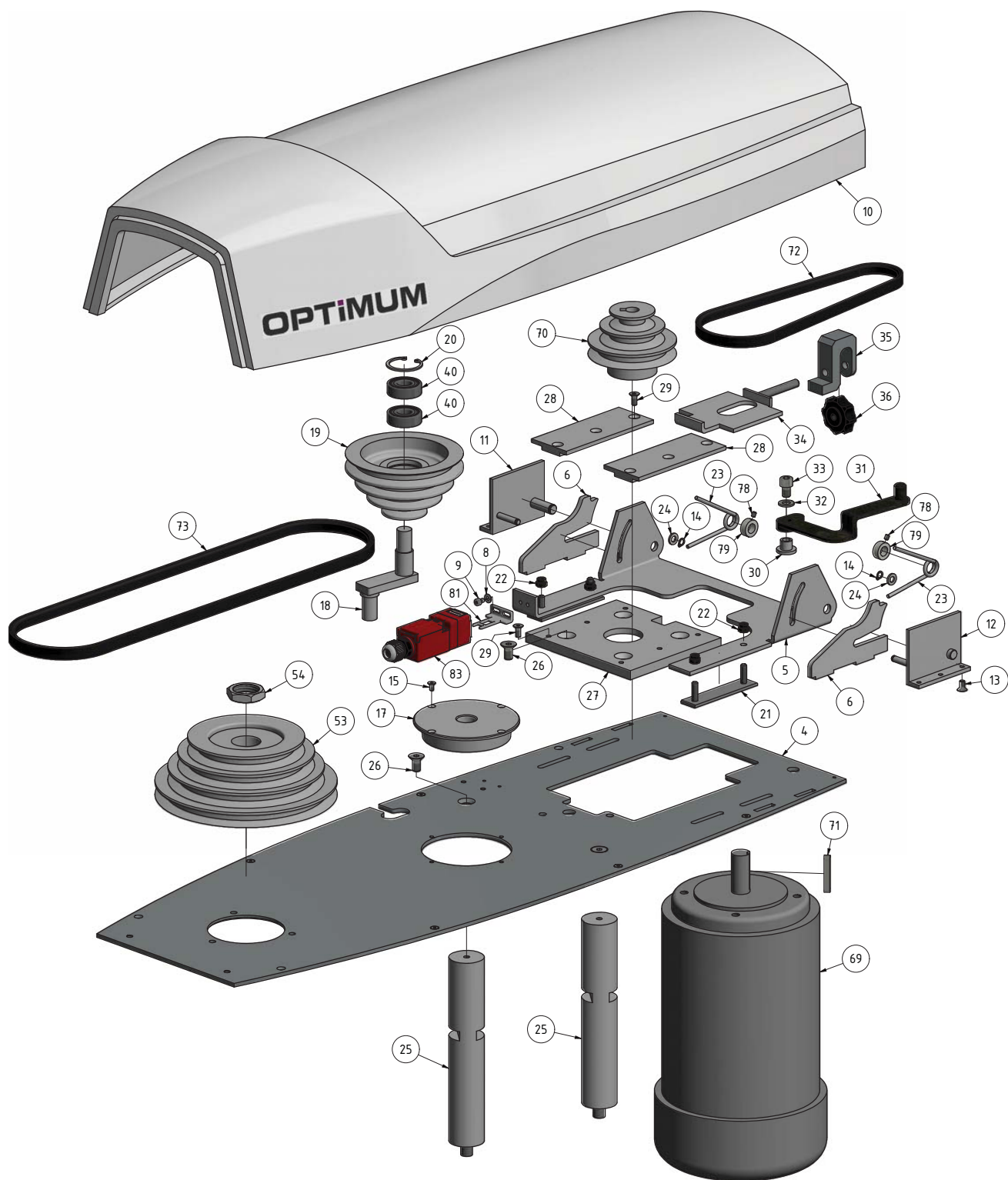


Abb.8-1: Bohrkopf - Drilling head

**B Bohrkopf - Drilling head**

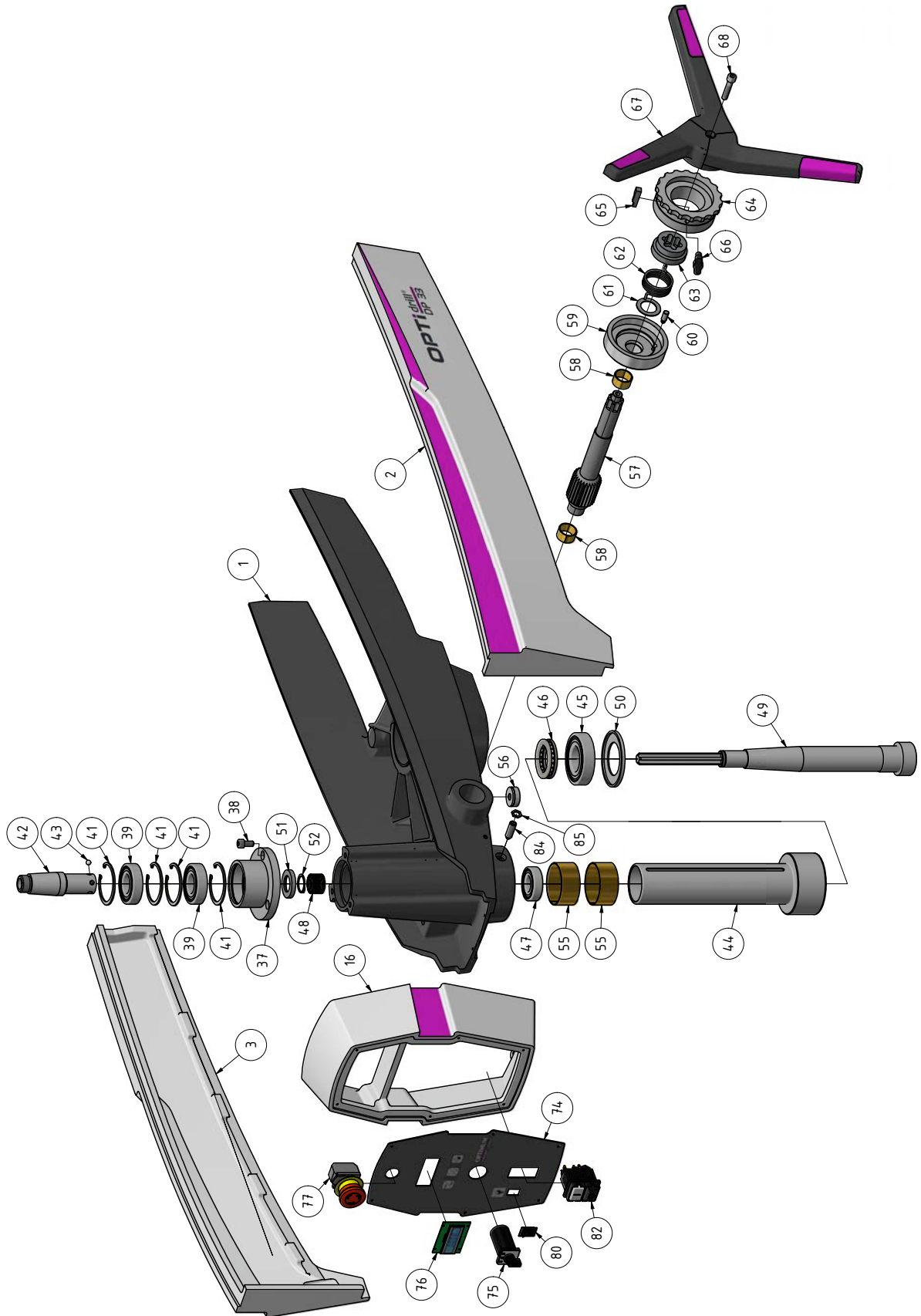


Abb. 8-2: Bohrkopf - Drilling head

Ersatzteilliste Bohrkopf - Spare part list drill head					
Pos.	Bezeichnung	Description	Menge Qty.	Grösse Size	Artikelnummer Item no.
1	Gehäuse	Housings	1		03020640101
2	Abdeckung	Cover	1		03020640102
3	Abdeckung	Cover	1		03020640103
4	Platte	Plate	1		03020640104
5	Führung	Guide	1		03020640105
6	Platte	Plate	2		03020640106
7	Innensechskantschraube	Hexagon socket screw	2	ISO 4762 - M4 x 25	
8	Scheibe	Washer	2	DIN 125 - A 4,3	
9	Innensechskantschraube	Hexagon socket screw	2	ISO 4762 - M4 x 6	
10	Abdeckung	Cover	1		03020640110
11	Halter	Holder	1		03020640111
12	Halter	Holder	1		03020640112
13	Schraube	Screw	6	DIN 7991 - M5x10	
14	Sicherungsring	Retaining ring	2	DIN 471 - 6x0,7	
15	Senkschraube	Screw	12	DIN 7991 - M4x8	
16	Gehäuse	Housings	1		03020640116
17	Flansch	Flange	1		03020640117
18	Exzenter	Eccentric	1		03020640118
19	Riemenscheibe	Pulley	1		03020640119
20	Sicherungsring	Retaining ring	1	DIN 472 - 35 x 1,5	
21	Platte	Plate	2		03020640121
22	Sechskantmutter	Hexagon nut	4	ISO 7040 - M6	
23	Feder	Spring	2		03020640123
24	Scheibe	Washer	2	6	03020640124
25	Bolzen	bolts	2		03020640125
26	Schraube	Screw	6	DIN 7991 - M8x16	
27	Motorplatte	Motor plate	1		03020640127
28	Führung	Guide	2		03020640128
29	Senkschraube	Screw	6	DIN 7991 - M5x12	
30	Buchse	Bushing	1		03020640130
31	Spannhebel	Tension lever	1		03020640131
32	Scheibe	Washer	1	DIN 125 - A 8,4	
33	Schraube	Screw	1	ISO 4762 - M8 x 12	
34	Platte	Plate	1		03020640134
35	Halter	Holder	1		03020640135
36	Spannrad	Tension wheel	1	M8	
37	Flansch	Flange	1		03020640137
38	Innensechskantschraube	Hexagon socket screw	3	ISO 4762 - M8 x 16	
39	Kugellager	Ball bearing	2	6206	0406206
40	Kugellager	Ball bearing	2	6202	0406202
41	Sicherungsring	Retaining ring	4	DIN 472 - 62 x 2	
42	Mitnehmer	Towing arm	1		03020640142
43	Stahlkugel	Steel ball	5		03020640143
44	Pinole	Quill	1		03020640144
45	Kugellager	Ball bearing	1	6208	0406208
46	Axiallager	Axial bearing	1	51108	04051108
47	Kugellager	Ball bearing	1	6205	0406205
48	Feder	Spring	1		03020640148
49	Bohrspindel	Drilling spindle	1		03020640149
50	Scheibe	Washer	1		03020640150
51	Scheibe	Washer	1		03020640151
52	Sicherungsring	Retaining ring	1	DIN 471 - 25x1,2	03020640152
53	Riemenscheibe	Pulley	1		03020640153
54	Sechskantmutter	Hexagon nut	1		03020640154
55	Gleitlager	Plain bearing	2		03020640155
56	LED Lampe	LED Lamp	2		03020640156
57	Welle	Shaft	1		03020640157
58	Gleitlager	Plain bearing	2	25x28x15	03020640158
59	Gehäuse	Housings	1		03020640159
60	Bolzen	bolts	1		03020640160
61	Ring	Ring	1		03020640161
62	Feder	Spring	1		03020640162
63	Buchse	Bushing	1		03020640163
64	Ring	Ring	1		03020640164
65	Passfeder	Fitting key	1		03020640165
66	Klemmschraube	Clamping screw	1		03020640166
67	Vorschubhebel	Feed lever	1		03020640167
68	Screw	Screw	1	ISO 4762 - M8 x 40	
69	Motor	Motor	1		03020640169
70	Riemenscheibe	Pulley	1		03020640170
71	Passfeder	Fitting key	1	DIN 6885 - A 6 x 6 x 40	
72	Keilriemen	V-belts	1		03020640172

Ersatzteilliste Bohrkopf - Spare part list drill head					
Pos.	Bezeichnung	Description	Menge Qty.	Grösse Size	Artikelnummer Item no.
73	Keilriemen	V-belts	1		03020640173
74	Frontblende	Front panel	1		03020640174
75	Drehrichtungsschalter	Direction-of-rotation switch	1		03020640175
76	Drehzahlanzeige	Speed indicator	1		03020640176
77	Not-Halt-Schalter	Emergency stop button	1		03020640177
78	Gewindestift	Threaded pin	2	DIN 913 - M4 x 5	
79	Buchse	Bushing	2		03020640179
80	Schalter Maschinenlicht	Machine light switch	1		03020640180
81	Zuhaltung Deckel	Cover guard locking	1		03020640181
82	Ein-Aus-Taster	On-off button	1		03020640182
83	Schalter Riemenabdeckung	Belt cover switch	1	QKS8	03020640183
84	Gewindestift	Grub screw	1	DIN 915 - M10 x 35	03020640184
85	Mutter	Hexagon Nut	1	ISO 4036 - M10	03020640185

## C Säule und Bohrtisch - Column and drilling table

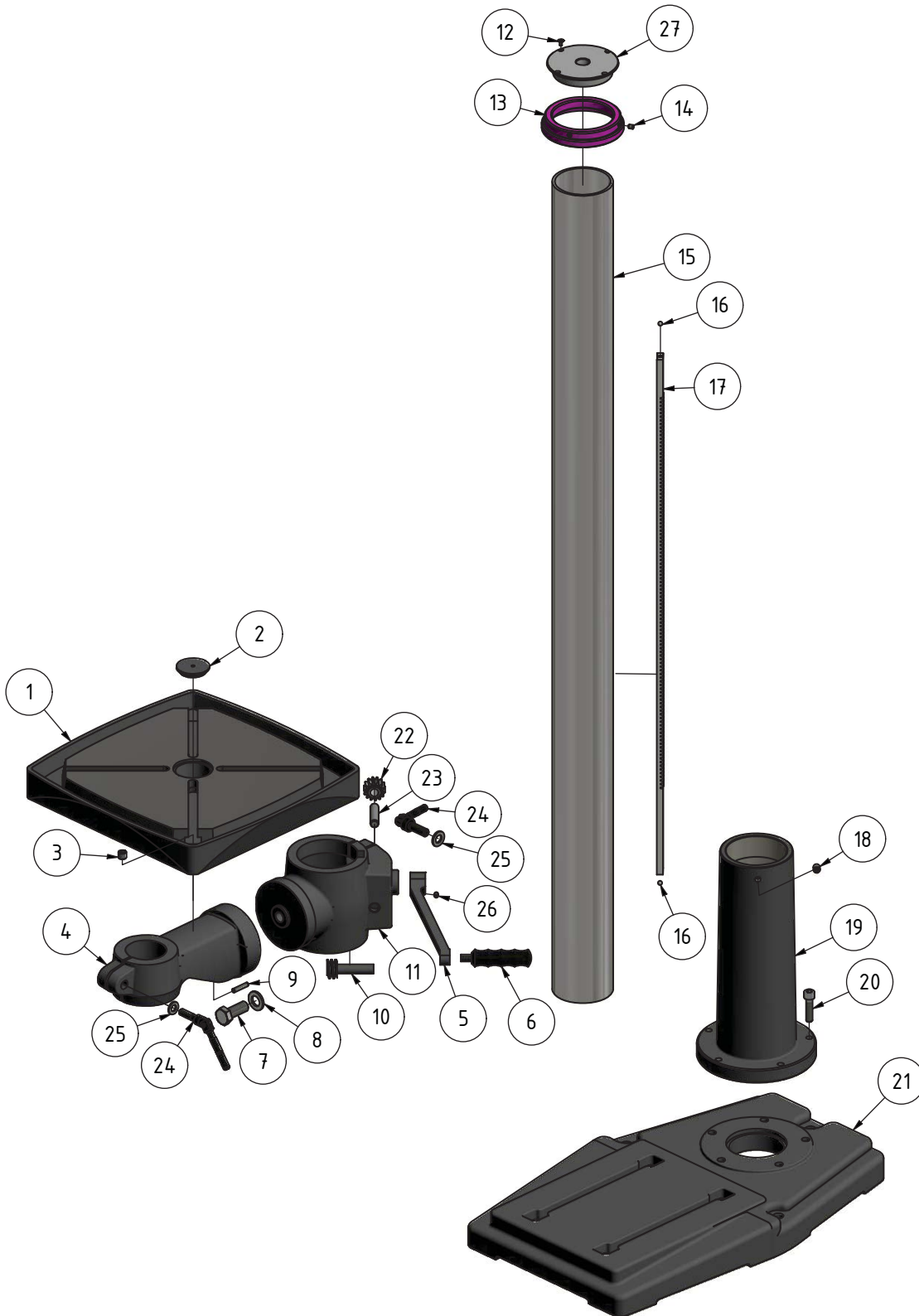


Abb.8-3: Säule, Bohrtisch - Column, drilling table

Ersatzteilliste Säule, Bohrtisch - Spare part list column, drilling table					
Pos.	Bezeichnung	Description	Menge Qty.	Grösse Size	Artikelnummer Item no.
1	Bohrtisch	Drilling table	1		03020640201
2	Verschluss	Lock	1		03020640202
3	Verschlusschraube	Locking screw	1		03020640203
4	Halter	Holder	1		03020640204
5	Kurbel	Crank	1		03020640205
6	Handgriff	Handle	1		03020640206
7	Sechskantschraube	Hexagon bolt	1	M16x40	
8	Scheibe	Washer	1	17	
9	Zylinderstift	Cylindrical pin	1	6x30	
10	Welle	Shaft	1		03020640210
11	Führung	Guide	1		03020640211
12	Schraube	Screw	4	M4x8	
13	Ring	Ring	1		03020640213
14	Gewindestift	Grub screw	2	M6x8	
15	Säule	Column	1		03020640215
16	Stahlkugel	Steel ball	2	6	03020640216
17	Zahnstange	Rack	1		03020640217
18	Gewindestift	Grub screw	1	M10x12	
19	Flansch	Flange	1		03020640219
20	Schraube	Screw	5	M10x40	
21	Maschin Fuss	Machine foot	1		03020640221
22	Zahnrad	Gear	1		03020640222
23	Welle	Shaft	1		03020640223
24	Spannhebel	Torsion lever	3		03020640224
25	Scheibe	Washer	3	13	
26	Gewindestift	Grub screw	1	M6x8	
27	Flansch	Flange	1		03020640227

## D Bohrfutterschutz - Drill chuck guard

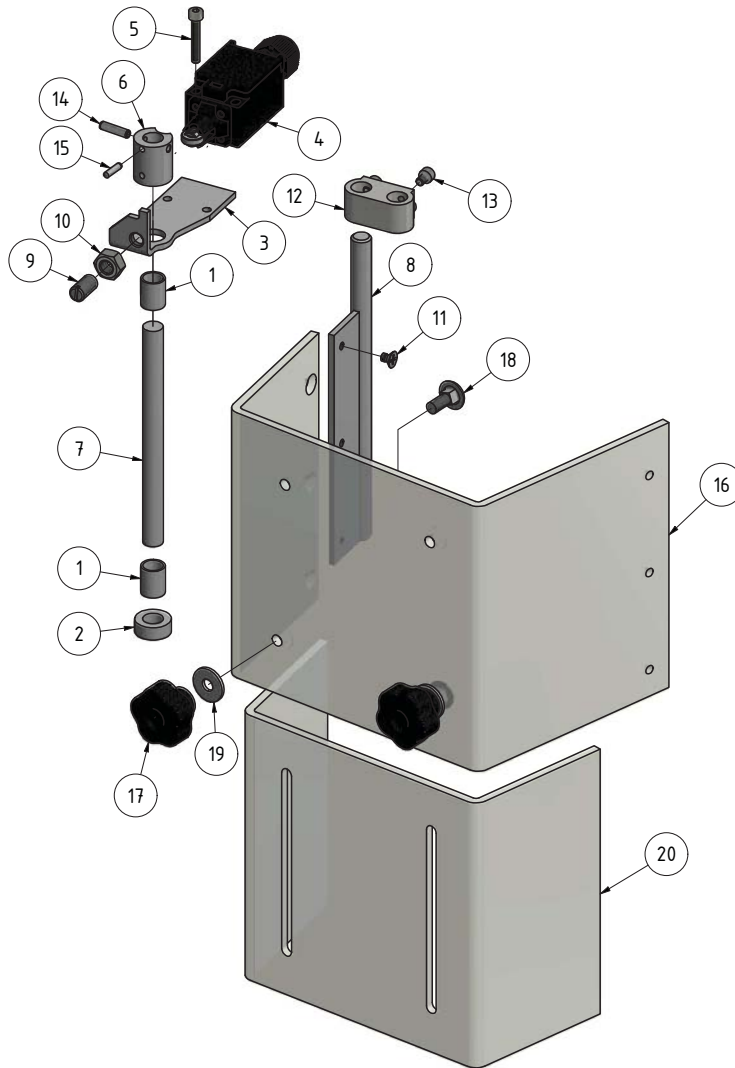


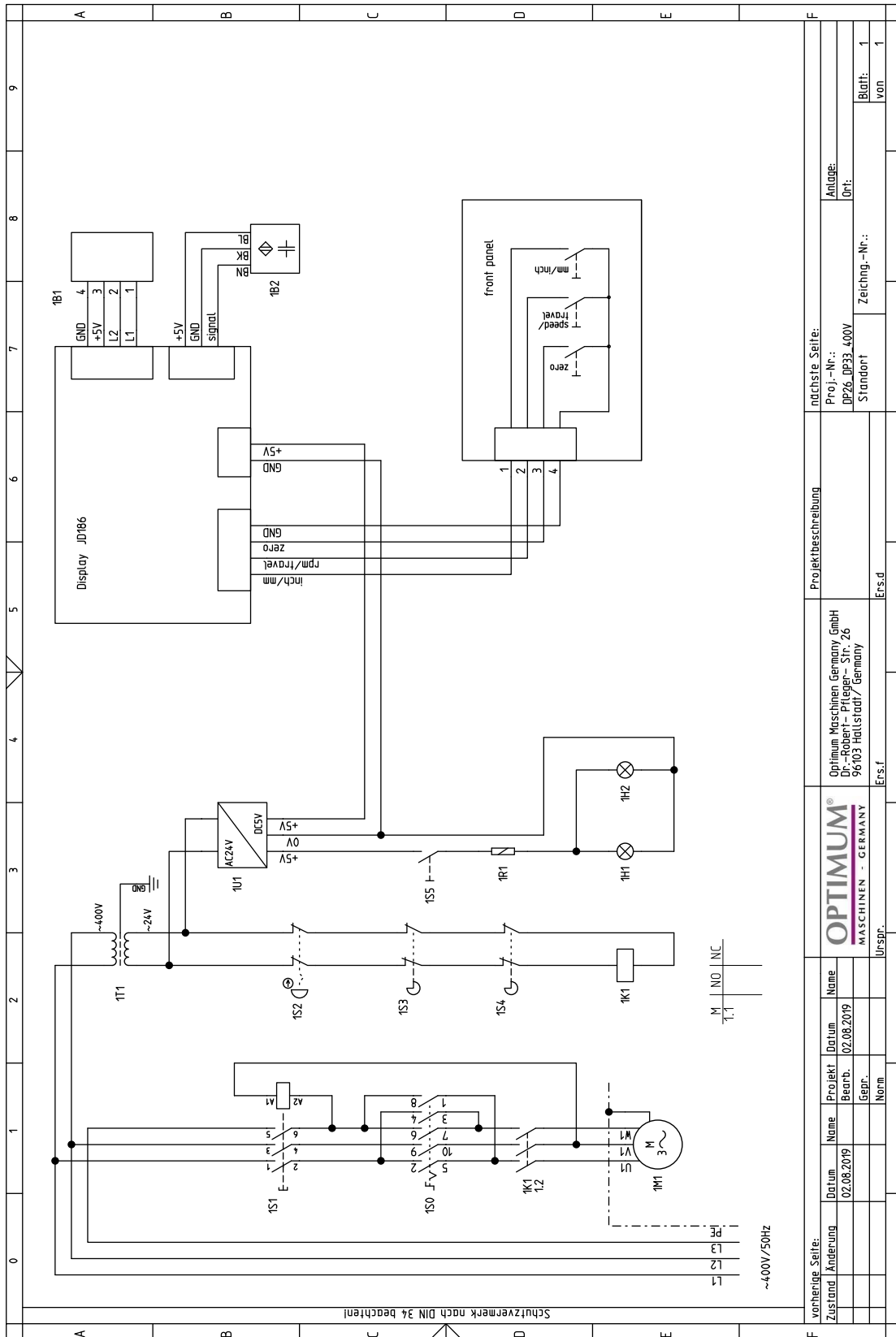
Abb.8-4: Bohrfutterschutz - Drill chuck guard

Pos.	Bezeichnung	Description	Menge Qty.	Grösse Size	Artikelnummer Item no.
1	Buchse	Bushing	2		03020640301
2	Buchse	Bushing	1		03020640302
3	Halter	Holder	1		03020640303
4	Endschalter	End switch	1	QKS7	03020640304
5	Innensechskantschraube	Socket head screw	2	ISO 4762 - M4 x 25	
6	Schaltnocke	Switch cam	1		03020640306
7	Welle	Shaft	1		03020640307
8	Halter	Holder	1		03020640308
9	Gewindestift	Grub screw	1		03020640309
10	Sechskantmutter	Hexagon nut	1	ISO 4032 - M8	
11	Schraube	Screw	3	M4 x 6	
12	Halter	Holder	1		03020640312
13	Innensechskantschraube	Socket head screw	4	ISO 4762 - M4 x 6	
14	Spannstift	Grub screw	1	ISO 8752 - 4 x 16	
15	Zylinderstift	Cylindrical pin	1	3x12	
16	Bohrfutterschutz	Drill chuck cover	1		03020640316
17	Klemmschraube	Clamping screw	2	M6	
18	Schraube	Screw	2	M6x16	
19	Scheibe	Washer	2	6	
20	Bohrfutterschutz	Drill chuck cover	1		03020640320



### 8.5 Schaltplan - Wiring diagram - 400V

E



DP33\_parts.fm

<b>Pos.</b>	<b>Bezeichnung</b>	<b>Description</b>	<b>Menge Qty.</b>	<b>Grösse Size</b>	<b>Artikelnummer Item no.</b>
1S0	Drehrichtungsschalter	Direction-of-rotation switch			03020640175
1M1	Motor	Motor			03020640169
1S1	Ein-Aus-Taster	On-Off button			03020640182
1K1	Motorschütz	Motor contactor			030206401K1
1T1	Transformator	Transformer			030206401T1
1S3	Schalter Riemenabdeckung	Belt cover switch		QKS8	03020640183
1S4	Schalter Bohrfutterschutz	Drill chuck protection switch		QKS7	03020640304
1S2	Not-Aus-Schlagschalter	Emergency-stop button			03020640177
1S5	Schalter Maschinenlicht	Machine light switch			03020640180
1H1	Maschinenlicht	Machine light			030206401H1
1R1	Widerstand	Resistor			030206401R1
1U1	Netzteil	Power supply			030206401U1
1H2	Maschinenlicht	Machine light			030206401H2
1B1	Verfahrssensor	Travel sensor			030206401B1
1B2	Drehzahlsensor	Speed sensor			030206401B2



## EC Declaration of Conformity

according to Machinery Regulation 2023/1230 Annex V Part A

**The manufacturer / distributor** Optimum Maschinen Germany GmbH  
Dr.-Robert-Pfleger-Str. 26  
D96103 Hallstadt

hereby declares that the following product

**Product designation:** Drilling machine

**Type designation:** DP33 - column drill

fulfils all the relevant provisions of the Machinery Regulation specified above and the additionally applied directives (in the following) - including the changes which applied at the time of the declaration.

**Description:**

**Hand-controlled drilling machine**

**The following other EU Directives have been 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 Machine tools - Safety - Drilling machines

EN 60204-1: 2019-06 Safety of machinery - Electrical equipment of machines - Part 1: General requirements

EN 55014-1: 2022-12 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission

EN 55014-2: 2022-10 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity

EN 61000-3-2: 2023-10 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase)

EN 61000-3-3: 2023-02 Electromagnetic compatibility (EMC) - Part 3-3: Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current  $\leq 16$  A per phase and not subject to conditional connection

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 file:

Kilian Stürmer, phone: +49 (0) 951 96555 - 800

Kilian Stürmer (CEO, General Manager)  
Hallstadt, 2023-11-08