



Operating Manual

Version 2.1.2

Bench drilling machine

- **OPTI**drill®
B 17Pro
- **OPTI**drill®
B 23Pro
- **OPTI**drill®
B 23Pro Vario



Upright drilling machine

- **OPTI**drill®
B 26Pro
- **OPTI**drill®
B 26Pro Vario
- **OPTI**drill®
B 33Pro
- **OPTI**drill®
B 33Pro Vario





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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 - Pflieger - Str. 26

D-96103 Hallstadt




Mail: info@optimum-maschinen.de

Internet: www.optimum-maschinen.com



1 Safety

Glossary of symbols

	provides further instructions
	calls on you to act
	enumerations

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 labels on the drilling machine.

When installing, operating, maintaining and repairing the drilling machine it is necessary to observe the European standards.

If European standards have not yet been incorporated in the national legislation of the country of destination, the specific applicable regulations of each country must be observed.

If applicable, necessary measures must be taken to comply with the country-specific regulations before commissioning 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





Type plates

<ul style="list-style-type: none"> DE Tischbohrmaschine GB Bench drilling machine ES Taladro de sobremesa FR Perceuse modèle établi IT Trapani da banco CZ Stolní vrtačka DK Table boremaskine FI Penkkiporakone GR ΔΡΑΠΑΝΟ ΠΑΓΚΟΥ HU Asztali fúrógép NL Boormachine tafelmodel PL Wiertarki PT Engenho de Furardé Bancada RO Masina de gaurit SE Bänkbormaskin SK Namizni vrtnali stroj TR Sütunlu Matkap 	<p>OPTIMUM MASCHINEN - GERMANY</p> <p>Optimum Maschinen Germany GmbH Dr.-Robert-Pfleger-Str. 26 D-96103 Hallstadt</p> <p>B 17 Pro</p> <p>NO. 300 3171</p> <p>2520 U/min</p> <p>500 W 230 V ~50 Hz</p> <p>SN J</p> <p>39 kg</p> <p>Year 20</p> <p>optimum-maschinen.de</p> <p>CE</p>
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<ul style="list-style-type: none"> DE Tischbohrmaschine GB Bench drilling machine ES Taladro de sobremesa FR Perceuse modèle établi IT Trapani da banco CZ Stolní vrtačka DK Table boremaskine FI Penkkiporakone GR ΔΡΑΠΑΝΟ ΠΑΓΚΟΥ HU Asztali fúrógép NL Boormachine tafelmodel PL Wiertarki PT Engenho de Furardé Bancada RO Masina de gaurit SE Bänkbormaskin SK Namizni vrtnali stroj TR Sütunlu Matkap 	<p>OPTIMUM MASCHINEN - GERMANY</p> <p>Optimum Maschinen Germany GmbH Dr.-Robert-Pfleger-Str. 26 D-96103 Hallstadt</p> <p>B 23 Pro</p> <p>NO. 300 3231</p> <p>2440 U/min</p> <p>750 W 230 V ~50 Hz</p> <p>SN J</p> <p>66 kg</p> <p>Year 20</p> <p>optimum-maschinen.de</p> <p>CE</p>
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<ul style="list-style-type: none"> DE Tischbohrmaschine GB Bench drilling machine ES Taladro de sobremesa FR Perceuse modèle établi IT Trapani da banco CZ Stolní vrtačka DK Table boremaskine FI Penkkiporakone GR Επιρραπέδιο Αρραπανο HU Asztali fúrógép NL Boormachine tafelmodel PL Wiertarki PT Engenho de Furardé Bancada RO Masina de gaurit SE Bänkbormaskin SK Namizni vrtnali stroj TR Sütunlu Matkap 	<p>OPTIMUM MASCHINEN - GERMANY</p> <p>Optimum Maschinen Germany GmbH Dr.-Robert-Pfleger-Str. 26 D-96103 Hallstadt</p> <p>B 23 Pro Vario</p> <p>NO. 301 1233</p> <p>4940 U/min</p> <p>750 W 400 V ~50 Hz</p> <p>SN J</p> <p>75 kg</p> <p>Year 20</p> <p>optimum-maschinen.de</p> <p>CE</p>
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<ul style="list-style-type: none"> DE Säulenbohrmaschine GB Upright drilling machine ES Taladro FR Perceuse IT Trapano a colonna CZ Sloupová vrtačka DK Søjleboremaskine FI Pylväsporakone GR Επιρραπέδιο Αρραπανο HU Asztali fúrógép NL Boormachine PL Wiertarki PT Máquina de perfuração RU Bormašinā SLO Steberni vrtnali stroj TR Sütunlu Matkap 	<p>OPTIMUM MASCHINEN - GERMANY</p> <p>Optimum Maschinen Germany GmbH Dr.-Robert-Pfleger-Str. 26 D-96103 Hallstadt</p> <p>B 26 Pro</p> <p>NO. 300 3263</p> <p>2440 U/min</p> <p>750 W 400 V ~50 Hz</p> <p>SN J</p> <p>82 kg</p> <p>Year 20</p> <p>optimum-maschinen.de</p> <p>CE</p>
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<ul style="list-style-type: none"> DE Säulenbohrmaschine GB Upright drilling machine ES Taladro FR Perceuse IT Trapano a colonna CZ Sloupová vrtačka DK Søjleboremaskine FI Pylväsporakone GR Επιρραπέδιο Αρραπανο HU Asztali fúrógép NL Boormachine PL Wiertarki PT Máquina de perfuração RU Bormašinā SLO Steberni vrtnali stroj TR Sütunlu Matkap 	<p>OPTIMUM MASCHINEN - GERMANY</p> <p>Optimum Maschinen Germany GmbH Dr.-Robert-Pfleger-Str. 26 D-96103 Hallstadt</p> <p>B 26 Pro Vario</p> <p>NO. 301 1263</p> <p>4000 U/min</p> <p>750 W 400 V ~50 Hz</p> <p>SN J</p> <p>90 kg</p> <p>Year 20</p> <p>optimum-maschinen.de</p> <p>CE</p>
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<ul style="list-style-type: none"> DE Säulenbohrmaschine GB Upright drilling machine ES Taladro FR Perceuse IT Trapano a colonna CZ Sloupová vrtačka DK Søjleboremaskine FI Pylväsporakone GR Επιρραπέδιο Αρραπανο HU Asztali fúrógép NL Boormachine PL Wiertarki PT Máquina de perfuração RU Bormašinā SLO Steberni vrtnali stroj TR Sütunlu Matkap 	<p>OPTIMUM MASCHINEN - GERMANY</p> <p>Optimum Maschinen Germany GmbH Dr.-Robert-Pfleger-Str. 26 D-96103 Hallstadt</p> <p>B 33 Pro</p> <p>NO. 300 3333</p> <p>1810 U/min</p> <p>1,1 kW 400 V ~50 Hz</p> <p>SN</p> <p>135 kg</p> <p>Year 20</p> <p>optimum-maschinen.de</p> <p>CE</p>
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<ul style="list-style-type: none"> DE Säulenbohrmaschine GB Upright drilling machine ES Taladro FR Perceuse IT Trapano a colonna CZ Sloupová vrtačka DK Søjleboremaskine FI Pylväsporakone GR Επιρραπέδιο Αρραπανο HU Asztali fúrógép NL Boormachine PL Wiertarki PT Máquina de perfuração RU Bormašinā SLO Steberni vrtnali stroj TR Sütunlu Matkap 	<p>OPTIMUM MASCHINEN - GERMANY</p> <p>Optimum Maschinen Germany GmbH Dr.-Robert-Pfleger-Str. 26 D-96103 Hallstadt</p> <p>B 33 Pro Vario</p> <p>NO. 301 1333</p> <p>3850 U/min</p> <p>1,5 kW 400 V ~50 Hz</p> <p>SN J</p> <p>140 kg</p> <p>Year 20</p> <p>optimum-maschinen.de</p> <p>CE</p>
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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	Warning alert	Definition / consequence
	DANGER!	Impending danger that will cause serious injury or death to people.
	WARNING!	A danger that can cause serious injury or death.
	CAUTION!	A danger or unsafe procedure that can cause personal injury or damage to property.
	ATTENTION!	Situation that could cause damage to the machine and product and other types of damage. No risk of injury to people.
	INFORMATION	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



1.1.2 Other pictograms



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1.2 Intended use

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 may only be operated with tools whose cutting edge arrangement forms a force couple around the rotational axis in engagement.

A quick-action drill chuck for holding the tools is provided as standard. The drilling machine must only be used with a quick-action drill chuck.

If the drilling machine is used in any way other than described above, modified without the Operations approval of the company Optimum Maschinen Germany GmbH then the drilling machine is not in accordance with intended use!

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

We expressly point out that the guarantee or CE conformity will expire, if any constructive, technical or procedural changes are not performed by the company Optimum Maschinen Germany GmbH.

It is also part of intended use that you

- observe the limits of the drilling machine, ☞ "Technical data" on page 19
- the operating manual is observed,
- the inspection and maintenance instructions are observed.

WARNING!

Extremely severe injuries.

It is forbidden to make any modifications or alternations to the operation values of the drilling machine! They could endanger the personnel and cause damage to the drilling machine.



INFORMATION

The drilling machine B23Pro Vario, B26Pro Vario, B33Pro Vario is built according to the standard EN 61800-3 class C2.



WARNING!

The class C2 (machine tools) is not intended to be used in residential facilities, where the power is supplied via a public low voltage supply system. In these areas it may possibly be difficult to guarantee electromagnetic compatibility due to lead bound as well as emitted interferences.



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 avoid!



1.3 Reasonably foreseeable misuse

Any other use other than that specified under "Intended use" or any use beyond the described use shall be deemed as 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.

INFORMATION

The drilling machine with frequency converter for regulating the speed is built according to the standard EN 61800-3 class C2.



WARNING!

This machine is not intended for use in residential buildings, in which the power supply is provided via a public low voltage supply system. In these areas it may possibly be difficult to guarantee electromagnetic compatibility due to lead bound as well as emitted interferences.



Overview of the EMC categories:

Category C1

- required limit values Class B Group 1 according to EN 55011

Category C2

- Required limit values class A Group 1 according to EN 55011, Installation by EMC experts and warning: "This is a product of category C2 according to EN 61800-3. This product may cause radio interference in a residential area. In this case, it may be necessary for the operator to take appropriate action."

Category C3

- Required limit values class A group 2 according to EN 55011, whereby these limit values are below those of class A group 1, plus warning: „This type is not suitable for connection to a public low-voltage network supplying residential buildings. When connecting to a public low voltage network, radio frequency interference is expected. "

B23Pro Vario B26Pro Vario B33Pro Vario	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Category	C1	C2	C3	C4
Environment	Residential area Business area Industrial area		Industrial area	
Voltage / Current	< 1000 V			> 1000 V
EMC knowledge	no requirement	Installation and commissioning by an EMC expert		

1.3.1 Avoiding misuse

- ➔ Use of suitable cutting tools.
- ➔ Adapting the speed adjustment 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.



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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 machine table.

- 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.
- Correctly adjust the bearing clearance and the guidings.

Recommendations:

- Insert the drill in a way that it is exactly positioned between the three clamping jaws of the quick action 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 gets jammed immediately stop the main motor by pressing the emergency stop button,
- for hard materials, e.g. steel, use commercial cooling / lubricating agents,
- generally always back the spindle out of the workpiece while it is still turning.

1.4 Possible dangers caused by the drilling machine

The drilling machine has undergone a safety inspection (analysis of danger with assessment of risks). It has been designed and built on the basis of this analysis using the latest technological advances.

Nevertheless, there is a residual risk as the drilling machine operates with

- at high speeds,
- rotating parts,
- electrical voltage and currents.

We have used construction resources and safety techniques 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 drilling machine.

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.

Disconnect the drilling machine whenever cleaning or maintenance work is being carried out.

WARNING!

The drilling machine may only be used with functional safety devices.

Disconnect the drilling machine immediately, whenever you detect a failure in the safety devices or when they are not fitted!  "Safety devices" on page 13

All additional devices installed by the operator have to be equipped with the prescribed safety devices.

This is your responsibility being the operating company!





1.5 Qualification of personnel

1.5.1 Target group

This manual is addressed to

- the operating companies,
- the operators,
- the maintenance personnel.

Therefore, the warning notes refer to both, operation and maintenance personnel of the drilling machine.

Determine clearly and explicitly who will be responsible for the different activities on the machine (operation, maintenance and repair).

Unclear responsibilities constitute a safety risk!

Always disconnect plug of the drilling machine from the electrical power supply. This will prevent it from being used by unauthorized persons.



Operator

The operator has been instructed by the operating company regarding the assigned tasks and possible risks in case of improper behaviour. Any tasks which need to be performed beyond the operation in standard mode must only be performed by the operator, if so indicated in these instructions and if the operator has been expressly commissioned by the operating company.

Qualified electrician

With professional training, knowledge and experience as well as knowledge of respective standards and regulations, qualified electricians are able to perform work on the electrical system and recognise and avoid any possible dangers.

Qualified electricians have been specially trained for the working environment, in which they are working and know the relevant standards and regulations.

Qualified personnel

Thanks to professional training, knowledge and experience as well as knowledge of relevant regulations the qualified personnel is able to perform the assigned tasks and to independently recognise and avoid any possible dangers themselves.

Instructed person

Instructed persons were instructed by the operating company regarding the assigned tasks and any possible risks of improper behaviour.

1.5.2 Authorized personnel

WARNING!

Inappropriate operation and maintenance of the drilling machine constitutes a danger for the personnel, objects and the environment.

Only authorized staff may operate the drilling machine!

Persons authorized to operate and maintain should be trained technical personnel and instructed by the ones who are working for the operating company and for the manufacturer.

The operating company must

- train the personnel,



Obligations of the operating company

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- instruct the personnel in regular intervals (at least once a year) on
 - all safety standards that apply to the machine,
 - the operation,
 - generally accepted engineering standards.
- check the personnel's knowledge level,
- document the training/instruction,
- require personnel to confirm participation in training/instructions by means of a signature,
- check whether the personnel is working safety and risk-conscious and observes the operating instructions.

The operator must

- have obtained a training regarding the handling of the drilling machine,
- know the function and mode of action,
- before taking the machine in operation
 - have read and understood the operating manual,
 - be familiar with all safety devices and instructions.

Obligations of the operator

Additional requirements apply for work on the following machine components:

- Electric components or operating materials: Must only be worked on by a qualified electrician or person working under the instructions and supervision of a qualified electrician.

Additional requirements regarding the qualification

Before starting work on electrical parts or operating agents, following measures are to be performed in the following order:

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

1.6 Operator positions

The operator's position is in front of the drilling machine.

INFORMATION

The main switch of the geared drill 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.

Make sure that the generated health hazardous dusts and mist are safely sucked off at the point of origin and is dissipated or filtered from the working area. 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 there is a failure on the safety device or if it is not functioning for any reason.

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 resulting for the 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 parts of components flying off at high speed,
- contact with rotating parts,
- fatal electrocution,



The drilling machine machine includes the following safety devices:

- an EMERGENCY STOP push button,
- a protective cover of the pulleys with positioning switch,
- a drill chuck protection with positioning switch,
- a drilling table with T-slots to fix the workpiece or a vice.

WARNING!

The separating protective equipment which is made available and delivered together with the machine is designed to reduce the risk of workpieces or fractions of them which being expelled, but not to remove them completely. Always work carefully and observe the limits of their machining process.



1.9 EMERGENCY-STOP push button

ATTENTION!

Also after actuating the EMERGENCY-STOP switch, the drilling spindle is turning - depending on the previously selected speed - for a few seconds more.

EMERGENCY-STOP button



Img. 1-1: EMERGENCY-STOP push button

1.10 Separating protective devices

1.10.1 Covering cap of the pulley

A covering cap for the pulleys is mounted on the drilling head.

A switch is integrated in the protective cover which monitors that the closed position.

INFORMATION

Protective cover



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It is not possible to start the machine until the protective cover is closed.

Img. 1-2: Protective cover

1.10.2 Drill chuck protection

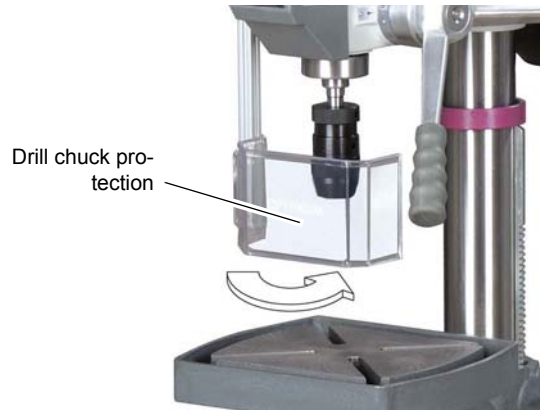
Adjust the protective equipment to the correct height before you start working.

To do so, detach the clamping screw, adjust the required height and re-tighten the clamping screw.

A switch is integrated in the fixture of the spindle protection which monitors that the cover is closed.

INFORMATION

You cannot start the machine if the drill chuck protection is not closed.



Img. 1-3: Drill chuck protection

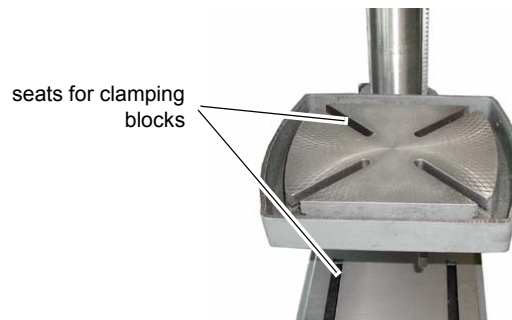


1.11 Drilling table

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

WARNING!

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



Img. 1-4: Drilling table



1.12 Prohibition, warning and mandatory signs

INFORMATION

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

1.13 Safety check

Check the drilling machine 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),
- 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.

INFORMATION

Organise the checks according to the following table;





General check		
Equipment	Check	OK
Protective cover	Mounted and securely tightened	
Signs, Markers	Installed and legible	
Date:	checked by (signature):	

Functional check		
Equipment	Check	OK
EMERGENCY-STOP push button	After actuating an EMERGENCY STOP push button the drilling machine must be switched off.	
Drill chuck protection	Once the emergency stop button is activated, the bench drilling machine should be switched off. The drilling machine may not start if the drill chuck protection is open.	
Position switch V-belt cover	When the V-belt cover is opened, the drill must switch off automatically. The drilling machine may not start if the V-belt cover is open.	
Date:	checked by (signature):	

1.14 Personal protective equipment

For some works you need personnel protective equipment as protective equipment. This includes:

- 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!

Dirty or contaminated personnel protective equipment can cause illness.

Clean your personal protective equipment

- after each use,
- regularly once a week.

Personal protective equipment for special works

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.

Use protective gloves when handling pieces with sharp edges.

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





1.15 Safety during operation

We specifically point out the dangers when describing the work with and on the drilling machine.

WARNING!

Before switching on the drilling machine make sure that there are

- no dangers generated for persons,
- no objects are damaged.



Avoid any unsafe work methods:

- Make sure that your work does not endanger anyone.
- The instructions mentioned in these operating instructions have to 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.
- Observe the accident prevention regulations issued by your Employers Liability Insurance Association or other supervisory authorities responsible for your company.
- Inform the supervisor about all hazards or faults.
- Use the prescribed personnel protective equipment. Make sure to wear a well-fitting work suit and, if necessary, a hairnet.
- Do not use protective gloves when drilling.

1.16 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 behaviour. Any changes must be documented, the operating instructions updated and machine operators instructed accordingly.

Report and document any changes

1.16.1 Disconnecting and securing the drilling machine

Unplug the main switch before starting any maintenance or repair work. All machine components and hazardous voltages and movements must have been disconnected.

Attach a warning sign on the machine.



1.16.2 Using lifting equipment

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 devices

- they have sufficient load carrying,
- and that it is in perfect condition.

Observe the accident prevention regulations issued by your Employers Liability Insurance Association or other supervisory authorities responsible for your company.

Fasten the loads properly.

Never walk under suspended loads!





1.16.3 Mechanical maintenance work

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 if they are working properly!

1.17 Accident report

Inform your supervisors and Optimum Maschinen Germany GmbH immediately in the event of accidents, possible sources of danger and any actions which almost led to an accident (near misses).

There are many possible causes for "near misses".

The sooner they are notified, the quicker the causes can be eliminated.

INFORMATION

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



1.18 Electrical system

☞ "Maintenance" on page 42

Have the machine and/or the electric equipment checked regularly. Check the electrical system according to DIN EN 60204.

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.

Immediately disconnect the drilling machine if there are any anomalies in the power supply!



2 Technical data

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

B17Pro	B23Pro	B23Pro Vario	B26Pro	B26Pro Vario	B33Pro	B33Pro Vario
2.1 Electrical connection						
230V~50 Hz optional ~60Hz	230V~50 Hz or 400V~50 Hz optional ~60Hz	400V~50 Hz optional ~60Hz	400V~50 Hz optional ~60Hz	400V~50 Hz optional ~60Hz	400V~50 Hz optional ~60Hz	400V~50 Hz optional ~60Hz
2.2 Drive motor power						
500 W	750 W	750 W	750 W	750 W	1.1 KW	1.5 KW
2.3 Drilling capacity in steel S235JR						
16mm	25mm	25mm	25mm	25mm	30mm	30mm
2.4 Continuous drilling capacity in steel S235JR						
12mm	20mm	20mm	20mm	20mm	25mm	25mm
2.5 Spindle seat						
MT2	MT2	MT2	MT3	MT3	MT4	MT4
2.6 T-slots - size						
12mm	12mm	12mm	14mm	14mm	14mm	14mm
2.7 Table size						
235 x 220mm	280 x 245mm	280 x 245mm	330 x 290mm	330 x 290mm	475 x 425mm	475 x 425mm
2.8 Spindle stroke						
65mm	80mm	80mm	85mm	85mm	120mm	120mm
2.9 Throat depth						
152mm	180mm	180mm	210mm	210mm	254mm	254mm
2.10 Machine height						
860mm	1012mm	1010mm	1670mm	1670mm	1720mm	1720mm
2.11 Column diameter						
Ø 60mm	Ø 73mm	Ø 73mm	Ø 80mm	Ø 80mm	Ø 92mm	Ø 92mm
2.12 Distance spindle - drill table						
max. 325mm	max. 425mm	max. 425mm	max. 720mm	max. 720mm	max. 695mm	max. 695mm
2.13 Distance spindle - machine base						
max. 530mm	max. 618mm	max. 618mm	max. 1230mm	max. 1230mm	max. 1180mm	max. 1180mm
2.14 Dimension						

B17_B23_B26_B33_GB_2.fm



B17Pro	B23Pro	B23Pro Vario	B26Pro	B26Pro Vario	B33Pro	B33Pro Vario
565 x 275 x 840 mm	615 x 330 x 1015 mm	660 x 320 x 1010 mm	670 x 355 x 1640 mm	710 x 350 x 1670 mm	755 x 440 x 1705 mm	870 x 480 x 1720 mm
2.15 Weight of machine [kg]						
36.5	58 / 63.5	66	85	90	132	140
2.16 Spindle speeds						
👉 "Speed tables" on page 33						
Speed steps						
5	12	12 infinitely variable	12	12 infinitely variable	9	9 infinitely variable
2.17 Environmental conditions temperature						
5 - 35 °C						
Relative humidity						
25 - 80 %						

2.18 Emissions

The generation of noise emitted by the drilling machine is 73 dB(A) at idle. If the drilling machine is installed in an area where various machines are in operation, the noise exposure (immission) on the operator of the drilling machine at the working place may exceed 80 dB(A).



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 machine operator to evaluate the hazards and risks more easily.

CAUTION!

Depending on the total noise exposure and the basic threshold values, machine operators must wear appropriate hearing protection.

We generally recommend the use of noise protection and hearing protection.



B17_B23_B26_B33_GB_2.fm



3 Assembly

INFORMATION

The drilling machine comes disassembled due to packaging reasons. Before commissioning, the drilling machine has to be assembled.



3.1 Scope of delivery

When the machine is delivered, check immediately that the drilling machine has not been damaged during transport and that all components are included. Take all parts off the box and compare them to the following list.

- Drill head
- Drilling table
- Base
- Upright component (table support pre-assembled)
- Quick-action drill chuck
- Clamping lever
- Crank handle
- Levers for spindle sleeve feed
- Operating manual

3.2 Transport

- Centres of gravity
- Load suspension points
(Marking of the positions for the load suspension point
mittel)
- Prescribed transportation position
(Marking of the top surface)
- Means of transport to be used
- Weights



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.



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 capacity and that it is in perfect condition. Observe the accident prevention regulations issued by your Employers Liability Insurance Association or other supervisory authorities responsible for your company.

Fasten the loads properly. Never walk under suspended loads!



3.3 Installation and assembly

3.3.1 Requirements regarding the 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 nearby machines generating chips or dust.
- The installation site must be free from vibrations also at a distance of 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 substructure must be prepared in a way that possibly used coolant cannot penetrate into 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 endangerment of 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). At lower illumination intensities, additional illumination has to be ensured e.g. by means of a separate workplace lamp.

INFORMATION

The main switch of the geared drill must be freely accessible.



3.3.2 Assembly

WARNING!

Danger of crushing when assembling and installing the machine components.

"Qualification of personnel" on page 12



The drilling machine must be installed by at least 2 people, because various elements and individual parts have to be sustained and joined during assembly.

INFORMATION

The following description of the assembly refers to the B26Pro drilling machine. It has been chosen for description of the following operations because of its close similarity with the drilling machines.

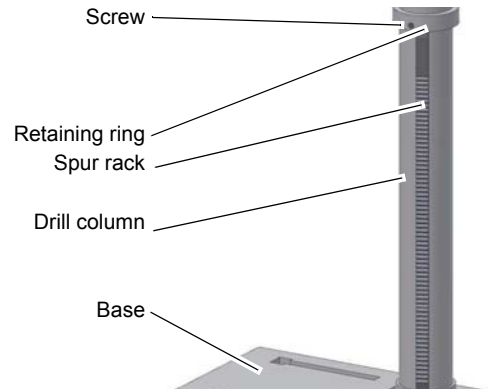


- B17Pro
 - B23Pro
 - B33Pro
- gewählt.



Mounting of base and drill column

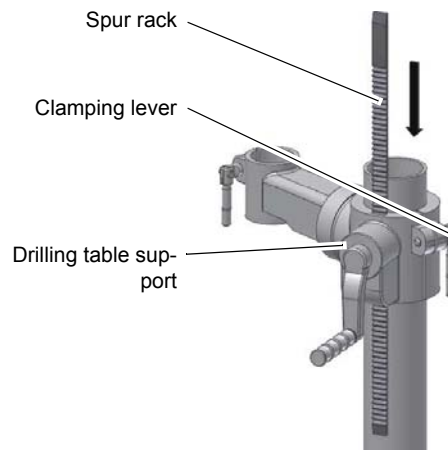
- Position the base on the floor and attach the column to the base. Fastening screws for the drilling pillar have been provided on the base.
- Loosen the screw on the retaining ring and remove the retaining ring and toothed rack.



Img. 3-1: Assembly of the base

Mounting of the drilling table support

- Position the worm gear in the support of the drilling table.
- Adjust the toothed rack within the drilling table support in a way that the teeth of the toothed rack cam into the spiral wheel of the support for the drilling table support.



Img. 3-2: Mounting of the drilling table support

INFORMATION

The longer untoothed end of the rack must point upward.

- Push the drilling table support with the toothed rack on the drill column.
- Push the supporting ring onto the upright and the rack.
- Tighten the screw of the supporting ring slightly. Make sure that the drilling table support still can be easily turned around the upright.
- Attach the clamping lever for drilling table fastening.



Mount the drilling head

- Place the drill head on the drill upright and turn it until it is aligned with the base. Immobilise the drill head with the two headless screws in the drill head over the toothed rack.
- Screw in the 3 levers of the spindle sleeve feed and attach the crank of the table height adjustment.

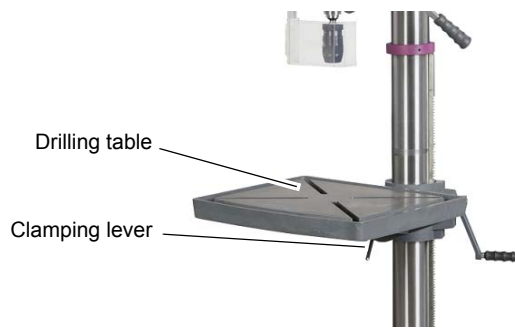


Img. 3-3: B26Pro

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→ Insert the drilling table in the drilling table support and clamp it with the clamping lever.



Img.3-4: B26Pro

Fitting the quick-action drill chuck

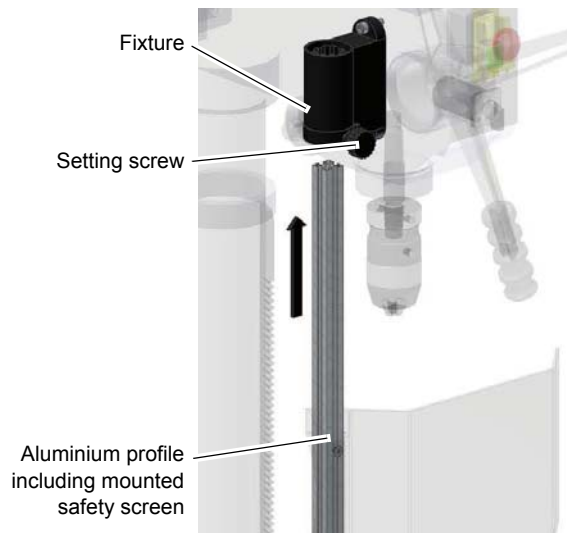
☞ "Assembly quick- action drill chuck" on page 40

Assembly of the drill chuck protection

WARNING!

Never operate drilling machines without drill chuck protection.

1. Shift the aluminium profile including the mounted safety screen (plastic screen) into the fixture which is mounted on the drilling head.
2. After assembly of the aluminium profile screw down the setting screw.



Img.3-5: Assembly 1

3. Screw the hexagon socket screw with the locking washer into the aluminium profile.

WARNING!

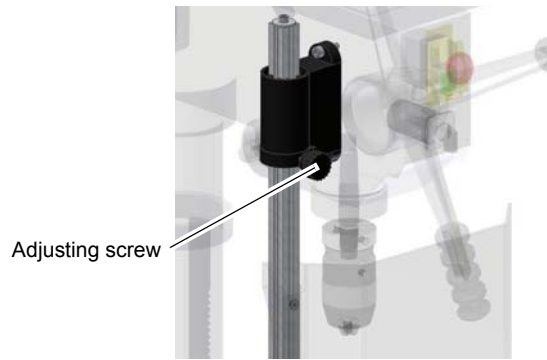
Make sure that the hexagon socket screw and the locking washer are mounted and tightly screwed. Otherwise the aluminium profile would slide out of the fixture when the setting screw is screwed off.



Img.3-6: Assembly 2



4. Make sure that the setting screw shows to the front after assembly and if the drill chuck protection is closed.



Img.3-7: Assembly-3

INFORMATION

A switch is integrated into the fixture of the spindle protection which monitors that the cover is closed. You cannot start the machine if the drill chuck protection is not closed.



3.4 Installation

Check the horizontal orientation of the base of the drilling machine with a spirit level.

Fix the foot of the drilling machine to the substructure with the provided through-holes.

The installation site must be designed in accordance with ergonomic workplace requirements.

ATTENTION!

Tighten the setscrews on the drilling machine only until it is firmly secured and can neither move during operation nor be turned over.

If the setscrews are too tight and the base is uneven, the base plate of the drilling machine may break.



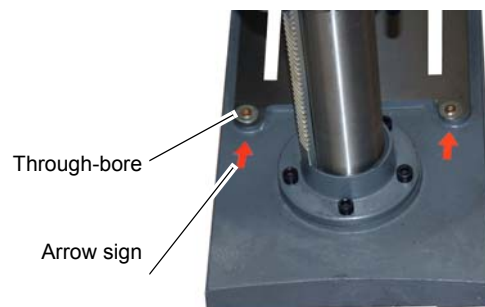
3.4.1 Fixing

In order to provide for the necessary stability of the bench drill machine and the upright drilling machine it is necessary to firmly bolt the base of the machine to the subsurface.

We recommend you to use shear connector cartridges resp. heavy-duty anchors.

- ➔ Fix the foot of the drilling machine to the substructure with the provided through-holes.

The Through-bore are marked with arrows on the machine base.



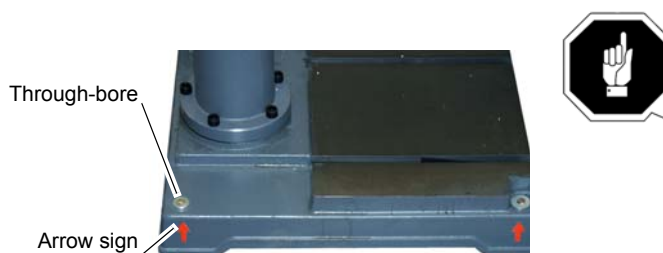
Img.3-8: Marking of the fixing points of the bench drill machines



ATTENTION!

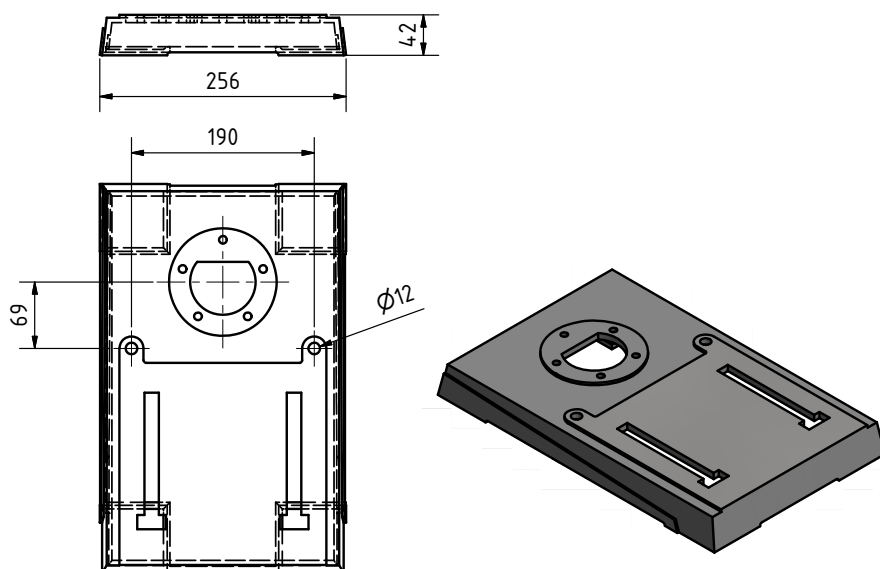
Tighten the fixing screws of the drilling machine only as much that it is safely fixed and cannot break away or tilt over.

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



Img.3-9: Marking of the fixing points of the upright drilling machines

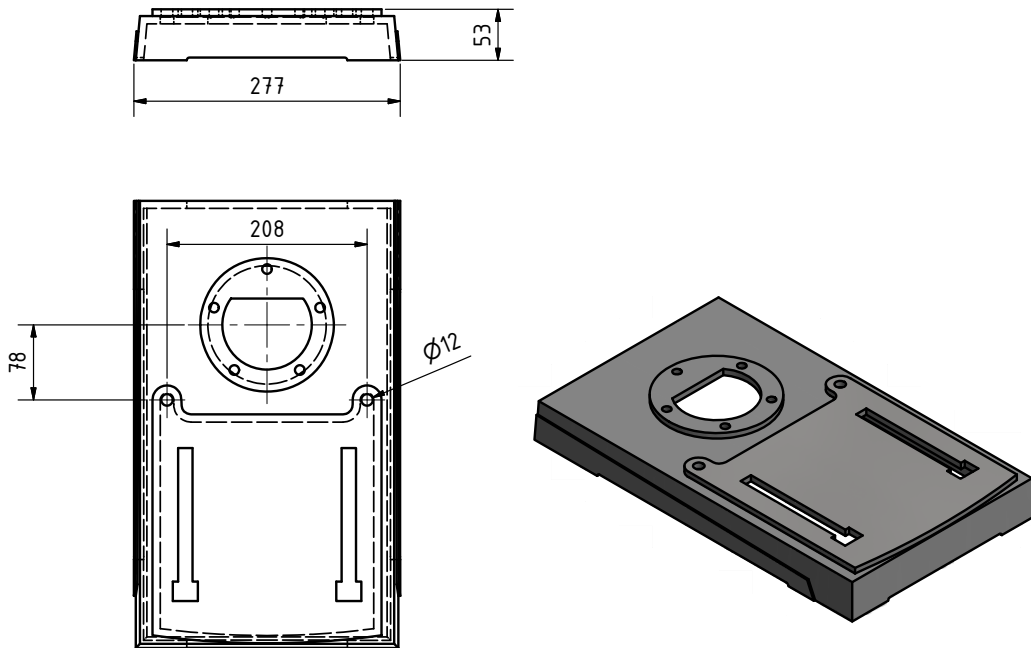
B17Pro



Img.3-10: Fixing of foot B17Pro

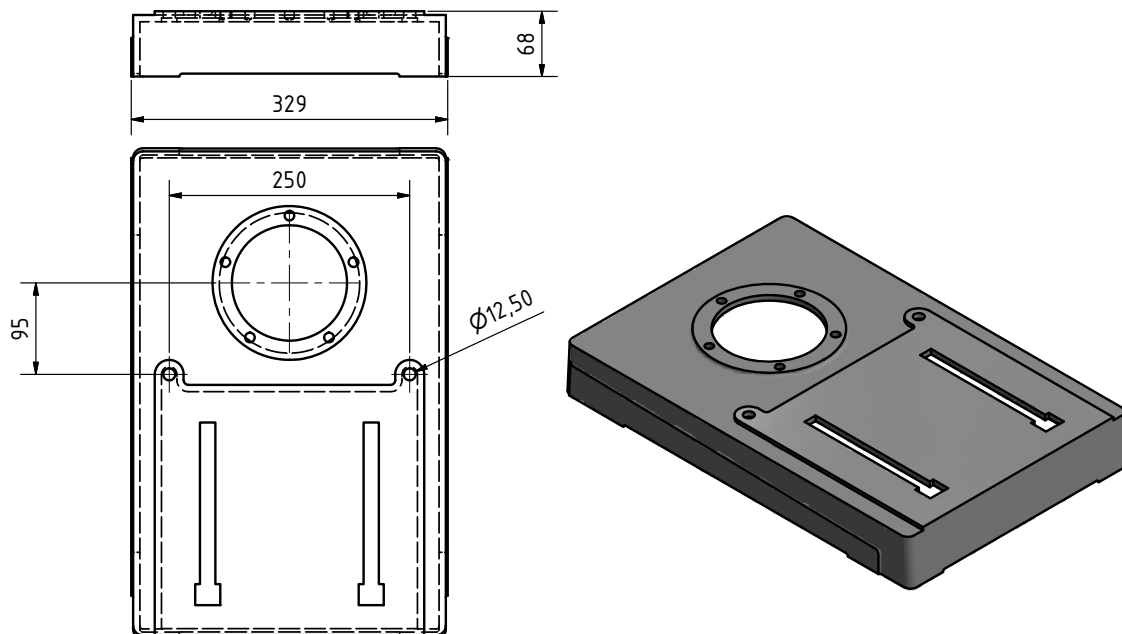


B23Pro, B23Pro Vario



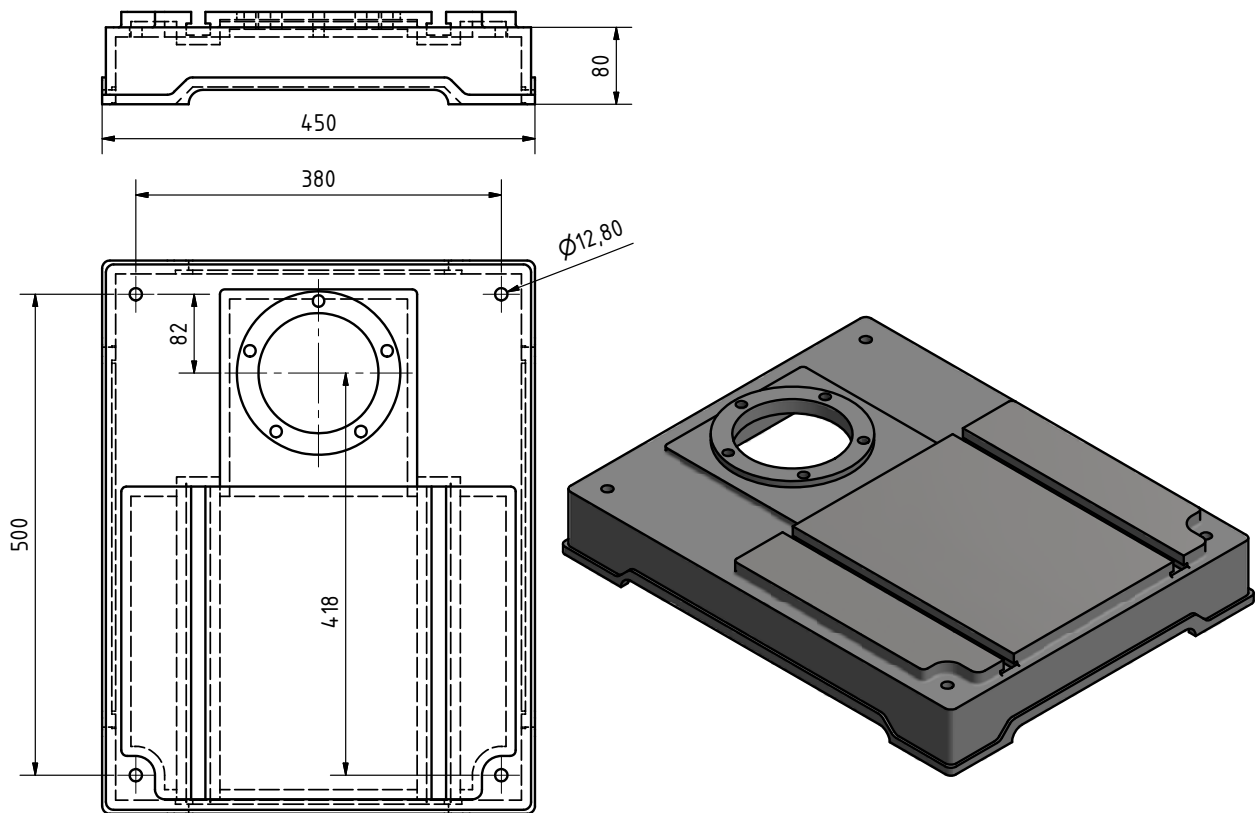
Img.3-11: Fixing of foot B23Pro

B26Pro, B26Pro Vario



Img.3-12: Fixing of foot B26Pro

B17_B23_B26_B33_GB_3.fm



Img.3-13: Fixing of foot B33Pro

3.5 First commissioning

ATTENTION!

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



WARNING!

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

Only use the clamping materials (e.g. drill chuck) which had been delivered together with the machine or as optional equipment offered by OPTIMUM.

Only use tool clamping devices in the intended admissible speed range.

Workpiece clamping materials must only be modified according to the recommendations of OPTIMUM or of the clamping material manufacturer.



WARNING!

When first commissioning the drilling machine by inexperienced personnel you endanger people, the machine and the equipment.

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





3.6 Electrical connection

3.6.1 Machines without a frequency converter

- Check the fusing (fuse) of your electrical supply according to the technical instructions regarding the total connected power of the drilling machine.
- Mains fusing 10A to 16A

CAUTION!

Install the connection cable of the machine in such a way that people will not stumble over it.



Three-phase connection

ATTENTION!

Ensure that all 3 phases (L1, L2, L3) and the ground wire are connected correctly. The neutral conductor (N) of its power supply is not connected.

ATTENTION!

Make sure that the direction of rotation of the drive motor is correct. The switch position of the rotation selector switch for right-handed rotation (R) has to turn the drill spindle clockwise. If necessary, exchange two phase connections.



The guarantee will become null and void if the machine is connected incorrectly.

3.6.2 Machines with frequency converter for speed control

- Check the fusing (fuse) of your electrical supply according to the technical instructions regarding the total connected power of the drilling machine.
- Firmly connect the machine.
- Mains fusing 10A to 16A
- If the tolerances - voltage $\pm 5\%$, frequency $\pm 2\%$, waveform, symmetry - are exceeded, more heat will be generated and the electromagnetic compatibility will be influenced.

CAUTION!

Install the connection cable of the machine in such a way that people will not stumble over it.



Due to the design, the leakage current is greater than 3,5 mA. We ask for due attention while executing machine tests within the framework of industrial safety guidelines.

Firmly connect the machine to the terminal box. It is not allowed to connect the machine using a standard 16A CEE plug, since the stray current of the frequency converter is exceeding the admissible value of 3.5mA (refer to EN 50178 / VDE 5.2.11.1).

ATTENTION!

Frequency converters (drive regulators) might trigger the FI circuit breaker of your electrical supply. In order to avoid malfunction, an FI circuit breaker switch sensitive to pulse current or to universal current may be required.





Current in the Protective Earth Ground Wire

CAUTION!

The discharge current to earth (PE) is > 3.5 mA AC or 10 mA DC.



Protective measures:

Implement the measures required in EN 61800-5-1.

- Fixed installation
- PE connection must comply with standards (PE conductor diameter 10 mm^2 (Cu) or PE conductor must be connected twice)

Since a direct current may be caused by the frequency converter in the protective earthing conductor, if an upstream residual current device (ELCB / RCD) is required in the network, the following guidelines must be followed:

There are three common types of FI (ELCB / RCD):

- AC - to detect AC fault currents
- A - to detect AC fault currents and pulsating DC fault currents (provided the DC current reaches zero at least once every half cycle).
- B - to detect AC fault currents, pulsating DC fault currents and smooth DC residual currents.

Type AC should never be used in converters.

Type A can only be used for single-phase converters.

Type B must be used for 3-phase converters.

3.6.3 Warming up the machine

ATTENTION!

If the drilling machine and in particular the drilling spindle is immediately operated at maximum load when it is cold it may result in damages.

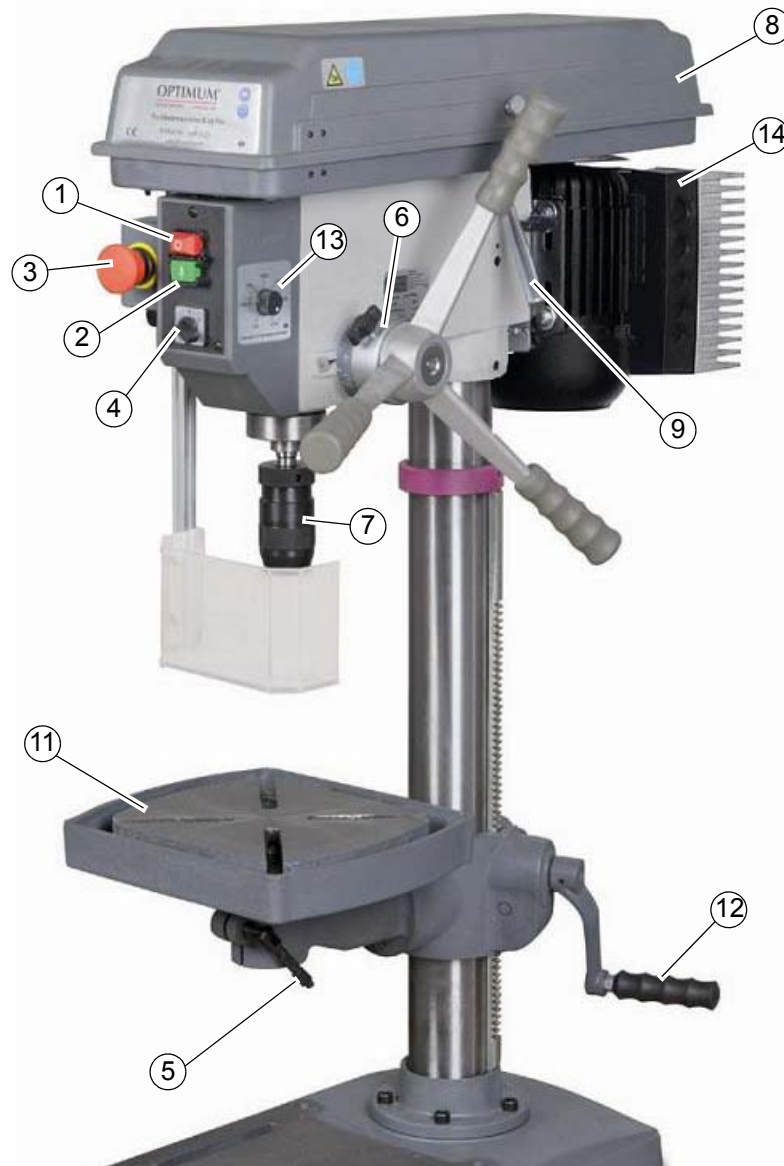


If the machine is cold, e.g. directly after having transported the machine, it should be warmed up at a spindle speed of only 500 1/min for the first 30 minutes.



4 Operation

4.1 Control and indicating elements



Img.4-1: B23Pro Vario

Pos.	Designation	Pos.	Designation
1	Push button "OFF"	2	Push button "ON"
3	EMERGENCY-STOP button	4	Rotation direction switch (only on 400V machines)
5	Clamping lever	6	Scale of drill depth stop
7	Quick-action drill chuck	8	Protective cover of V-belt housing
9	Handle for V-belt tension	10	Lever for spindle sleeve feed
11	Drilling table	12	Table height adjustment
13	Potentiometer for speed regulation (only on Vario machines)	14	Frequency converter (only on Vario machines)

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4.2 Safety

Use the drilling machine only under the following conditions:

- The drilling machine is in proper working order.
- The drilling machine is used as prescribed.
- The operating manual is followed.
- All safety devices are installed and activated.

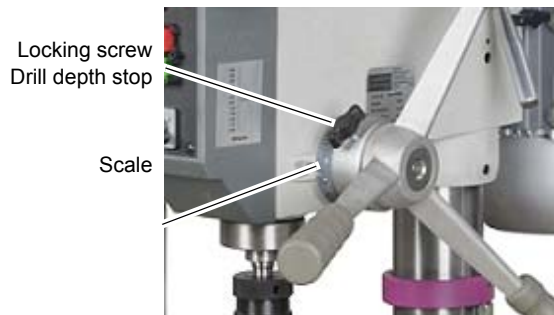


Eliminate or have all malfunctions rectified promptly. Stop the machine immediately in the event of any abnormality in operation and make sure it cannot be started-up accidentally or without authorisation. Notify the person responsible immediately of any modification.

4.2.1 Drill depth stop

When drilling several holes of the same depth you can use the drill depth stop.

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



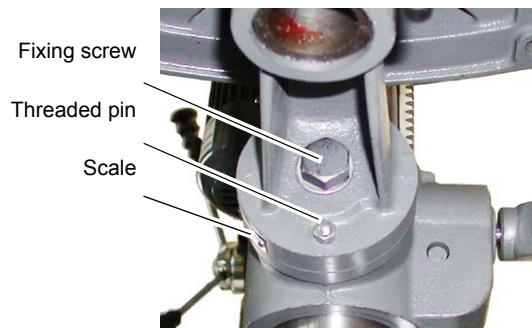
Img.4-2: Scale of drill depth stop

The spindle can now only be lowered to the set depth.

4.2.2 Inclination table

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

- ➔ Loosen the fixing screw.
- ➔ Pull out the threaded pin.



Img.4-3: Fixing screw

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.





4.3 Speed change

Set the required speed within the range of 15 to 225% using the potentiometer (only on Vario machines). If the required speed is not available, you must change the position of the V-belts.

- Disconnect the machine from the electrical supply.
- Remove the screw fittings on the protective cover of the V-belts.



Img.4-4: Belt drive

- Open the protective cover.
- Loosen the sliding rail screws on the right and left side of the drill head and shift the motor towards the quick-action drill chuck using the handle.

WARNING!

Do not open the cover hood until the drilling machine is disconnected from the electrical supply.

Close and screw down the protective cover after any adjustment to the saw belt speed.



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.

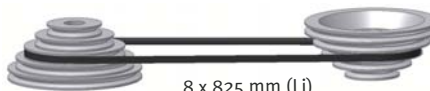


4.3.1 Speed tables


B17Pro

OPTIMUM®
MASCHINEN - GERMANY

OPTi drill®
B 17Pro


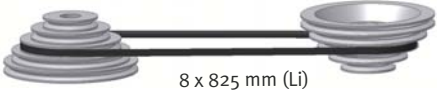


8 x 825 mm (Li)
Item No. 030 0317 1108

		2520	
		1900	
		1400	
		900	
		500	



OPTIMUM®
MASCHINEN - GERMANY
OPTi drill®
B 17Pro


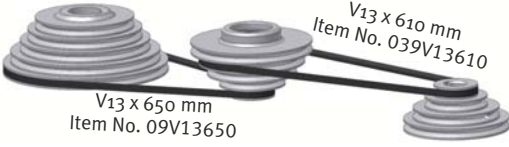



8 x 825 mm (Li)
Item No. 030 0317 1108

3025	
2280	
1680	
1080	
600	60Hz

B23Pro

OPTIMUM®
MASCHINEN - GERMANY
OPTi drill®
B 23Pro

V13 x 650 mm
Item No. 09V13650

V13 x 610 mm
Item No. 039V13610

440		
290		
200		
890		
480		
330		
1480		
1040		
530		
2440		
1770		
1180		



B23Pro ~60Hz

OPTIMUM®
MASCHINEN - GERMANY

OPTi drill®
B 23Pro

V13 x 610 mm
Item No. 039V13610

V13 x 650 mm
Item No. 09V13650

530		
350		
240		
1070		
580		
400		
1780		
1250		
640		
2930		
2150		
1415		
		60Hz

B23Pro Vario ~50Hz ~60Hz

OPTIMUM®
MASCHINEN - GERMANY

OPTi drill®
B 23Pro Vario

V13 x 610 mm
Item No. 039V13610

V13 x 650 mm
Item No. 09V13650

Spindel Spindle	~ 15 %	100 %	~ 225 %	mittlere Keilriemenscheibe centre pulleys	Motor
	140	440	965		
	100	290	695		
	64	200	450		
	313	890	2200		
	160	480	1125		
	105	330	735		
	500	1480	3480		
	362	1040	2520		
	168	530	1174		
	700	2440	4940		
	590	1770	4090		
	415	1180	2880		

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B26Pro

OPTIMUM®
MASCHINEN - GERMANY

OPTi drill®
B 26Pro

	440		
	290		
	200		
	890		
	480		
	330		
	1480		
	1040		
	530		
	2440		
	1770		
	1180		

B26Pro ~60Hz

OPTIMUM®
MASCHINEN - GERMANY


OPTi drill®
B 26Pro

	530		
	350		
	240		
	1070		
	575		
	400		
	1775		
	1250		
	635		
	2925		
	2125		
	1415		
			60Hz


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B26Pro Vario ~50Hz ~60Hz




MASCHINEN - GERMANY



B 26Pro Vario






V13 x 600 mm
Item No. 09V13600


V13 x 735 mm
Item No. 039V13735

Spindel Spindle	~ 15 %	100 %	~ 225 %	mittlere Keilriemenscheibe centre pulleys	Motor
	140	440	965		
	100	290	695		
	64	200	450		
	313	890	1450		
	160	480	1125		
	105	330	735		
	500	1480	3000		
	362	1040	2520		
	168	530	1174		
	700	2440	4000		
	590	1770	3200		
	415	1180	2150		


B33Pro

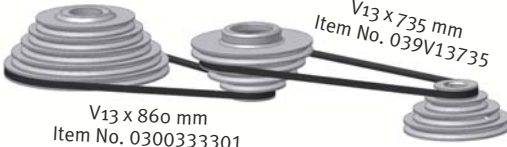


MASCHINEN - GERMANY



B 33Pro





V13 x 735 mm
Item No. 039V13735

V13 x 860 mm
Item No. 030033301

	360		
	250		
	120		
	940		
	440		
	210		
	1810		
	1260		
	400		

B17_B23_B26_B33_GB_4.fm



B33Pro ~60Hz

	430		
	300		
	120		
	145		
	530		
	250		
	2170		
	1510		
	480		60Hz

B33Pro Vario ~50Hz ~60Hz

Spindel Spindle	~ 15 %	100 %	~ 225 %	mittlere Keilriemenscheibe centre pulleys	Motor
	130	360	910		
	85	250	600		
	45	120	300		
	310	940	2150		
	145	440	1020		
	75	210	520		
	550	1810	3850		
	400	1260	2800		
	130	400	930		



4.4 Standard values for speeds with HSS – Eco – twist drilling

Material	Drill diameter										Cooling 3)
		2	3	4	5	6	7	8	9	10	
Steel, unalloyed, up to 600 N/mm ²	n ¹⁾	5600	3550	2800	2240	2000	1600	1400	1250	1120	E
	f ²⁾	0.04	0.063	0.08	0.10	0.125	0.125	0.16	0.16	0.20	
Structural steel, alloyed, quenched and subsequently drawn, up to 900N/mm ²	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	
Structural steel, alloyed, quenched and subsequently drawn, up to 1200 N/mm ²	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 ² 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 r/min											
2): Feed [f] in mm/r											
3): Cooling: E = Emulsion; oil = cutting oil											

- The above mentioned indications are standard values. In some cases it may be advantageous to increase or decrease these values.
- When drilling a cooling or lubricating agent should be used.
- For stainless materials (e.g. VA – or NIRO steel sheets) do not center as the material would compact and the drill bit will become rapidly blunt.
- The workpieces need to be tensed inflexibly and stably (vice, screw clamp).

4.5 Switching on the machine

The drilling machine is switched on in the following order.

- ➔ Turn the change-over switch into the neutral position (0).
- ➔ Push the green push-button, and wait two seconds.
- ➔ Turn the change-over switch into the desired direction of rotation. The rotation of spindle starts.

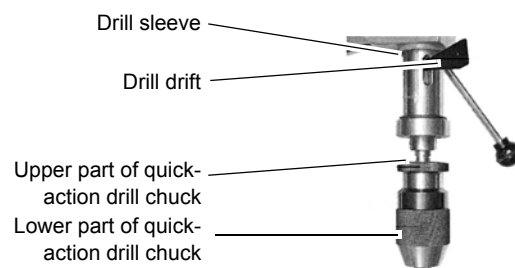
4.6 Switching off the machine

- ➔ Push the red push-button, or turn the change over switch into the neutral position (0).

4.7 Quick-action drill chuck

The bench drilling machine is equipped with a drill chuck.

In order to clamp a drill bit, hold the upper part of the quick-action drill chuck and turn the lower part.



Img.4-5: Quick action - drill chuck

ATTENTION!

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





4.7.1 Disassembly quick- action drill chuck

The quick-action drill chuck and the taper mandrel are released from the drilling spindle with the aid a drill drift.



WARNING!

Do not unfit the quick-action drill chuck until the drilling machine has been disconnected from the power supply.

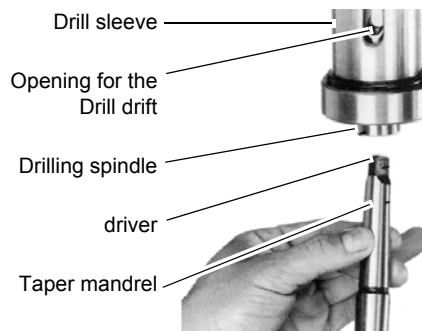


- ➔ Disconnect the drilling machine from electrical power supply.
- ➔ Move the drill sleeve down.
- ➔ Turn the drilling spindle until the openings of the sleeve and of the drilling spindle are super-imposed.
- ➔ Loosen the taper mandrel of the quick-action drill chuck with the help of a drill drift.

4.7.2 Assembly quick- action drill chuck

The quick-action drill chuck is secured through a form-fit union (pulling heel) against twisting in the drilling spindle.

A friction-locking union holds and centres the quick-action drill chuck with the taper mandrel in the drilling spindle.



Img.4-6: Taper mandrel

- ➔ Check and, if necessary, clean the conical seat in the drilling spindle and at the taper mandrel of the tool or the quick-action drill chuck.
- ➔ Press the taper mandrel into the drilling spindle.

4.8 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.

ATTENTION!

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 drilling 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.



4.9 Before starting work

Before starting work, select the desired speed. This will depend on the diameter of the bit being used and the material.



📖 "Speed change" on page 33

WARNING!

For drilling jobs, it is necessary to clamp the workpiece firmly to prevent the bit catching on the pieces. A machine vice or clamping claws is a suitable clamping device.

Put a wooden or plastic board beneath the workpiece to avoid drilling through to the work table, vice, etc.

If necessary, adjust the desired drilling depth with the drill depth stop to obtain a constant result.

When working with wood, make sure to use an adequate dust extraction unit, as sawdust can constitute a health hazard. Wear a suitable dust mask when performing works at which dust is generated.



4.10 During work

The spindle sleeve is advanced by means of the star wheel. Make sure that the feed is constant and not too fast.

The spindle sleeve is returned to its initial position by the return spring.

WARNING!

Seizing of clothes and / or hair.

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



CAUTION!

Danger of bumps from the levers on the star wheel. Do not release the star wheel when repositioning the drilling spindle sleeve.

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.



CAUTION!

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





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,
- long durability of the drilling machine 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:

- Very serious injury to personnel working on the drilling machine,
- Damage to the drilling machine.

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



5.1.1 Preparation

WARNING!

Only carry out work on the drilling machine if it has been disconnected from the mains power supply.

☞ "Disconnecting and securing the drilling machine" on page 17

Attach a warning sign.



5.1.2 Restarting

Before restarting, run a safety check.

☞ "Safety check" on page 15

WARNING!

Before activating the drilling machine, double check that this will not

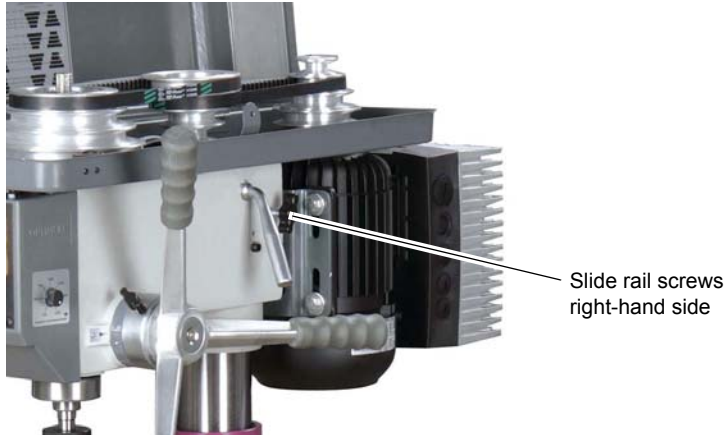
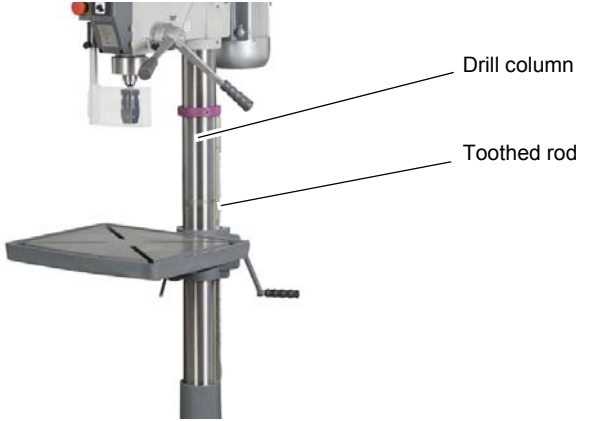
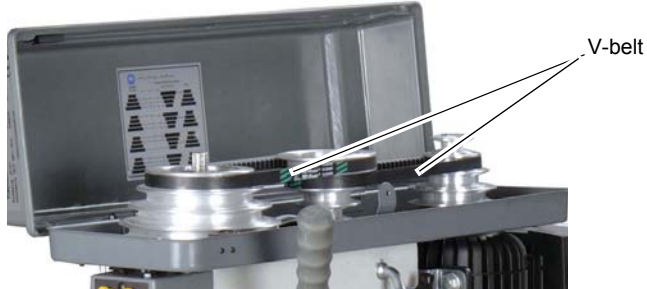
- no dangers generated for persons,
- the drilling machine is not damaged.



5.2 Inspection and Maintenance

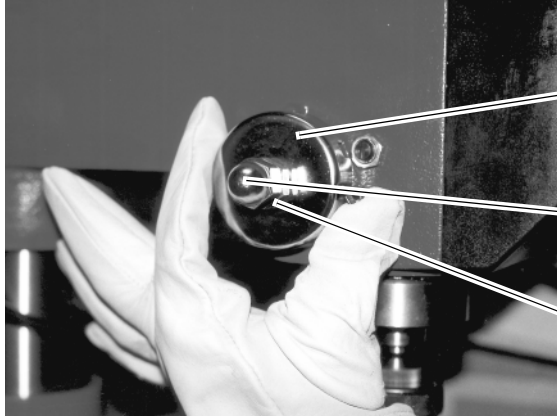
The type and level of wear depends to a large extent on the individual usage and operating conditions.



Interval	Where?	What?	How?
Start of shift after every maintenance or repair work	Drilling machine		☞ "Safety check" on page 15
Weekly	Slide rail screws	Loosening	<ul style="list-style-type: none"> → Check if the slide rail screws for the V-belt tension on the left and right side of the drilling head are well fastened. → Check if the V-belts are well tightened. Checking the tension of V-belts, ☞ "Speed change" on page 33.  <p>Slide rail screws right-hand side</p>
Every month	Drill column and toothed rack	Lubricate	<ul style="list-style-type: none"> → Lubricate the drill column regularly with commercial oil. → Lubricate the rack regularly with commercial grease (e.g. friction bearing grease).  <p>Drill column Toothed rod</p>
every six months	V-belts at the drill head	Visual inspection	<ul style="list-style-type: none"> → Check whether the V-belts have become porous and worn.  <p>V-belt</p> <p>Abb.5-1: V-belt housing</p>

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Interval	Where?	What?	How?
every six months	Electronics	Testing	<p>Check the electrical equipment / parts of the drilling machine.</p> <p>☞ "Qualification of personnel" on page 12</p>
As required	Drill depth stop	Spindle return spring	<ul style="list-style-type: none"> ➔ Loosen both nuts on the spring housing, approximately 1/4 counter-clockwise rotation. Under no circumstances must the nuts be completely removed from the screw thread! ➔ Hold the spring housing with one hand, while using the other hand to slowly remove the housing. ➔ Rotate the spring housing about its own axis until the pin snaps into the next notch. <div style="text-align: right; margin-top: 10px;">  <p>Spring housing</p> <p>Cover nut</p> <p>Nut</p> </div> <p>Abb.5-2: Spindle return spring</p> <p>INFORMATION</p> <p>i If the tension has increased, rotate the housing clockwise and if the tension has decreased rotate the housing counter-clockwise.</p> <p>Ensure that the notch is always snapped into the spring housing properly and subsequently tighten the nut.</p> <p>The second nut secures the first nut (capped nut).</p> <p>When the nuts have been tightened they should not touch the return spring housing.</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

Stürmer Maschinen GmbH

Dr.-Robert-Pfleger-Str. 26

D- 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,
- original parts or parts from series expressly authorised by Optimum Maschinen Germany GmbH.



6 Determining the cutting speed and the speed

6.1 Table cutting speeds / infeed

Material table	Recommended infeed f in mm/revolution					
Material to be processed	Recommended cutting speed Vc in m/min	Drill bit diameter d in mm				
		2...3	>3...6	>6...12	>12...25	>25...50
		Unalloyed construction steels < 700 N/mm²	30 - 35	0.05	0.10	0.15
Alloyed construction steels > 700 N/mm²	20 - 25	0.04	0.08	0.10	0.15	0.20
Alloyed steels < 1000 N/mm²	20 - 25	0.04	0.08	0.10	0.15	0.20
Steels, low stability < 800 N/mm²	40	0.05	0.10	0.15	0.25	0.35
Steel, high stability > 800 N/mm²	20	0.04	0.08	0.10	0.15	0.20
non-rust steels > 800 N/mm²	12	0.03	0.06	0.08	0.12	0.18
Cast iron < 250 N/mm²	15 - 25	0.10	0.20	0.30	0.40	0.60
Cast iron > 250 N/mm²	10 - 20	0.05	0.15	0.25	0.35	0.55
CuZn alloy brittle	60 - 100	0.10	0.15	0.30	0.40	0.60
CuZn alloy ductile	35 - 60	0.05	0.10	0.25	0.35	0.55
Aluminum alloy up to 11% Si	30 - 50	0.10	0.20	0.30	0.40	0.60
Thermoplastics	20 - 40	0.05	0.10	0.20	0.30	0.40
Thermosetting materials with organic filling	15 - 35	0.05	0.10	0.20	0.30	0.40
Thermosetting materials with anorganic filling	15 - 25	0.05	0.10	0.20	0.30	0.40

6.2 Speed table

Vc in m/min	4	6	8	10	12	15	18	20	25	30	35	40	50	60	80	100
Drill bit Ø in mm	Speed n in rpm															
1,0	1274	1911	2548	3185	3822	4777	5732	6369	7962	9554	11146	12739	15924	19108	25478	31847
1,5	849	1274	1699	2123	2548	3185	3822	4246	5308	6369	7431	8493	10616	12739	16985	21231
2,0	637	955	1274	1592	1911	2389	2866	3185	3981	4777	5573	6369	7962	9554	12739	15924
2,5	510	764	1019	1274	1529	1911	2293	2548	3185	3822	4459	5096	6369	7643	10191	12739
3,0	425	637	849	1062	1274	1592	1911	2123	2654	3185	3715	4246	5308	6369	8493	10616
3,5	364	546	728	910	1092	1365	1638	1820	2275	2730	3185	3640	4550	5460	7279	9099
4,0	318	478	637	796	955	1194	1433	1592	1990	2389	2787	3185	3981	4777	6369	7962
Vc in m/min	4	6	8	10	12	15	18	20	25	30	35	40	50	60	80	100

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Drill bit Ø in mm	Speed n in rpm															
	283	425	566	708	849	1062	1274	1415	1769	2123	2477	2831	3539	4246	5662	7077
4,5	283	425	566	708	849	1062	1274	1415	1769	2123	2477	2831	3539	4246	5662	7077
5,0	255	382	510	637	764	955	1146	1274	1592	1911	2229	2548	3185	3822	5096	6369
5,5	232	347	463	579	695	869	1042	1158	1448	1737	2027	2316	2895	3474	4632	5790
6,0	212	318	425	531	637	796	955	1062	1327	1592	1858	2123	2654	3185	4246	5308
6,5	196	294	392	490	588	735	882	980	1225	1470	1715	1960	2450	2940	3920	4900
7,0	182	273	364	455	546	682	819	910	1137	1365	1592	1820	2275	2730	3640	4550
7,5	170	255	340	425	510	637	764	849	1062	1274	1486	1699	2123	2548	3397	4246
8,0	159	239	318	398	478	597	717	796	995	1194	1393	1592	1990	2389	3185	3981
8,5	150	225	300	375	450	562	674	749	937	1124	1311	1499	1873	2248	2997	3747
9,0	142	212	283	354	425	531	637	708	885	1062	1238	1415	1769	2123	2831	3539
9,5	134	201	268	335	402	503	603	670	838	1006	1173	1341	1676	2011	2682	3352
10,0	127	191	255	318	382	478	573	637	796	955	1115	1274	1592	1911	2548	3185
11,0	116	174	232	290	347	434	521	579	724	869	1013	1158	1448	1737	2316	2895
12,0	106	159	212	265	318	398	478	531	663	796	929	1062	1327	1592	2123	2654
13,0	98	147	196	245	294	367	441	490	612	735	857	980	1225	1470	1960	2450
14,0	91	136	182	227	273	341	409	455	569	682	796	910	1137	1365	1820	2275
15,0	85	127	170	212	255	318	382	425	531	637	743	849	1062	1274	1699	2123
16,0	80	119	159	199	239	299	358	398	498	597	697	796	995	1194	1592	1990
17,0	75	112	150	187	225	281	337	375	468	562	656	749	937	1124	1499	1873
18,0	71	106	142	177	212	265	318	354	442	531	619	708	885	1062	1415	1769
19,0	67	101	134	168	201	251	302	335	419	503	587	670	838	1006	1341	1676
20,0	64	96	127	159	191	239	287	318	398	478	557	637	796	955	1274	1592
21,0	61	91	121	152	182	227	273	303	379	455	531	607	758	910	1213	1517
22,0	58	87	116	145	174	217	261	290	362	434	507	579	724	869	1158	1448
23,0	55	83	111	138	166	208	249	277	346	415	485	554	692	831	1108	1385
24,0	53	80	106	133	159	199	239	265	332	398	464	531	663	796	1062	1327
25,0	51	76	102	127	153	191	229	255	318	382	446	510	637	764	1019	1274
26,0	49	73	98	122	147	184	220	245	306	367	429	490	612	735	980	1225
27,0	47	71	94	118	142	177	212	236	295	354	413	472	590	708	944	1180
28,0	45	68	91	114	136	171	205	227	284	341	398	455	569	682	910	1137
29,0	44	66	88	110	132	165	198	220	275	329	384	439	549	659	879	1098
30,0	42	64	85	106	127	159	191	212	265	318	372	425	531	637	849	1062
31,0	41	62	82	103	123	154	185	205	257	308	360	411	514	616	822	1027
32,0	40	60	80	100	119	149	179	199	249	299	348	398	498	597	796	995
33,0	39	58	77	97	116	145	174	193	241	290	338	386	483	579	772	965
34,0	37	56	75	94	112	141	169	187	234	281	328	375	468	562	749	937
35,0	36	55	73	91	109	136	164	182	227	273	318	364	455	546	728	910
36,0	35	53	71	88	106	133	159	177	221	265	310	354	442	531	708	885
37,0	34	52	69	86	103	129	155	172	215	258	301	344	430	516	689	861
38,0	34	50	67	84	101	126	151	168	210	251	293	335	419	503	670	838
Vc in m/min	4	6	8	10	12	15	18	20	25	30	35	40	50	60	80	100

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Drill bit Ø in mm	Speed n in rpm															
	33	49	65	82	98	122	147	163	204	245	286	327	408	490	653	817
39,0	32	48	64	80	96	119	143	159	199	239	279	318	398	478	637	796
40,0	31	47	62	78	93	117	140	155	194	233	272	311	388	466	621	777
41,0	30	45	61	76	91	114	136	152	190	227	265	303	379	455	607	758
42,0	30	44	59	74	89	111	133	148	185	222	259	296	370	444	593	741
43,0	29	43	58	72	87	109	130	145	181	217	253	290	362	434	579	724
44,0	28	42	57	71	85	106	127	142	177	212	248	283	354	425	566	708
45,0	28	42	55	69	83	104	125	138	173	208	242	277	346	415	554	692
46,0	27	41	54	68	81	102	122	136	169	203	237	271	339	407	542	678
47,0	27	40	53	66	80	100	119	133	166	199	232	265	332	398	531	663
48,0	26	39	52	65	78	97	117	130	162	195	227	260	325	390	520	650
49,0	25	38	51	64	76	96	115	127	159	191	223	255	318	382	510	637
50,0																

6.3 Examples to calculatory determine the required speed for your drilling machine

The necessary speed is depending on the diameter of the drill bit, on the material which is being machined as well as on the cutting material of the drill bit.

Material which needs to be drilled: St37

Cutting material (drill bit): HSS spiral bit

Set point of the cutting speed [V_c] according to the table: 40 meters per minute

Diameter [d] of your drill bit: 30 mm = 0,03 m [meters]

Selected infeed [f] according to the table: about 0.35 mm/rev

$$\text{Speed } n = \frac{v_c}{\pi \times d} = \frac{40 \text{ m}}{\text{min} \times 3,14 \times 0,03 \text{ m}} = 425(\text{rpm})$$

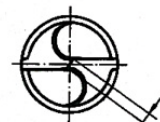
Set a speed on your drilling machine which is less than the determined speed.

INFORMATION

In order to facilitate the production of larger drill holes they need to be pre-drilled. This way, you reduce the cutting forces and improve the guiding of the drill bit.

The pre-drilling diameter is depending on the length of the chisel edge. The chisel edge does not cut, but it squeezes the material. The chisel edge is positioned at an angle of 55° to the major cutting edge.

As a general rule of thumb it applies: The pre-drilling diameter is depending on the length of the chisel edge.



Chisel edge length 10% of the drill bit - Ø



Recommended working steps for a drilling diameter of 30 mm

Example:

1st working step: Pre-drilling with Ø 5 mm.

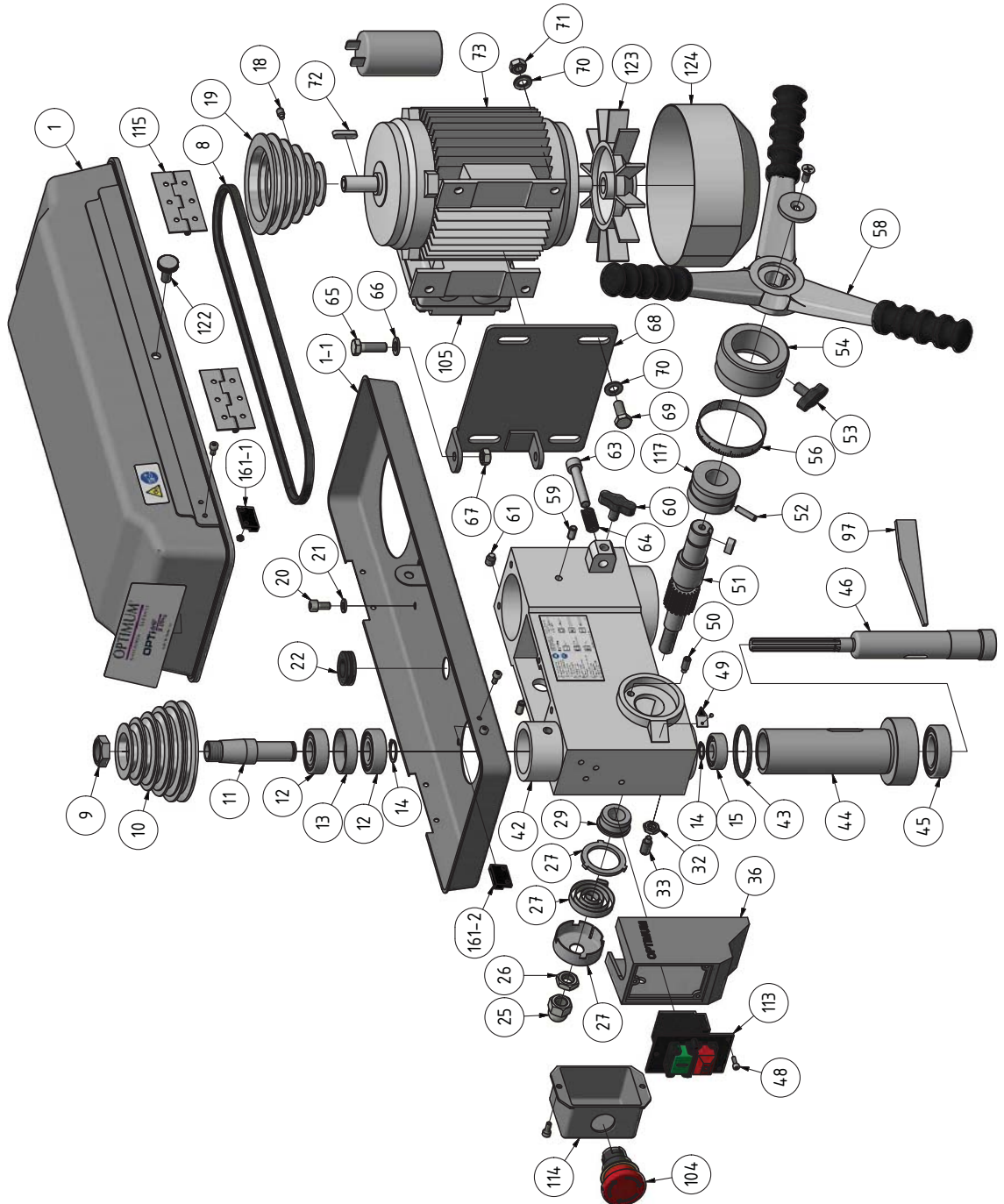
2nd working step: Pre-drilling with Ø 15 mm.

3rd working step: Drilling with Ø 30 mm.



7 Ersatzteile - Spare parts - B17Pro, B23Pro, B26Pro, B33Pro - (Vario)

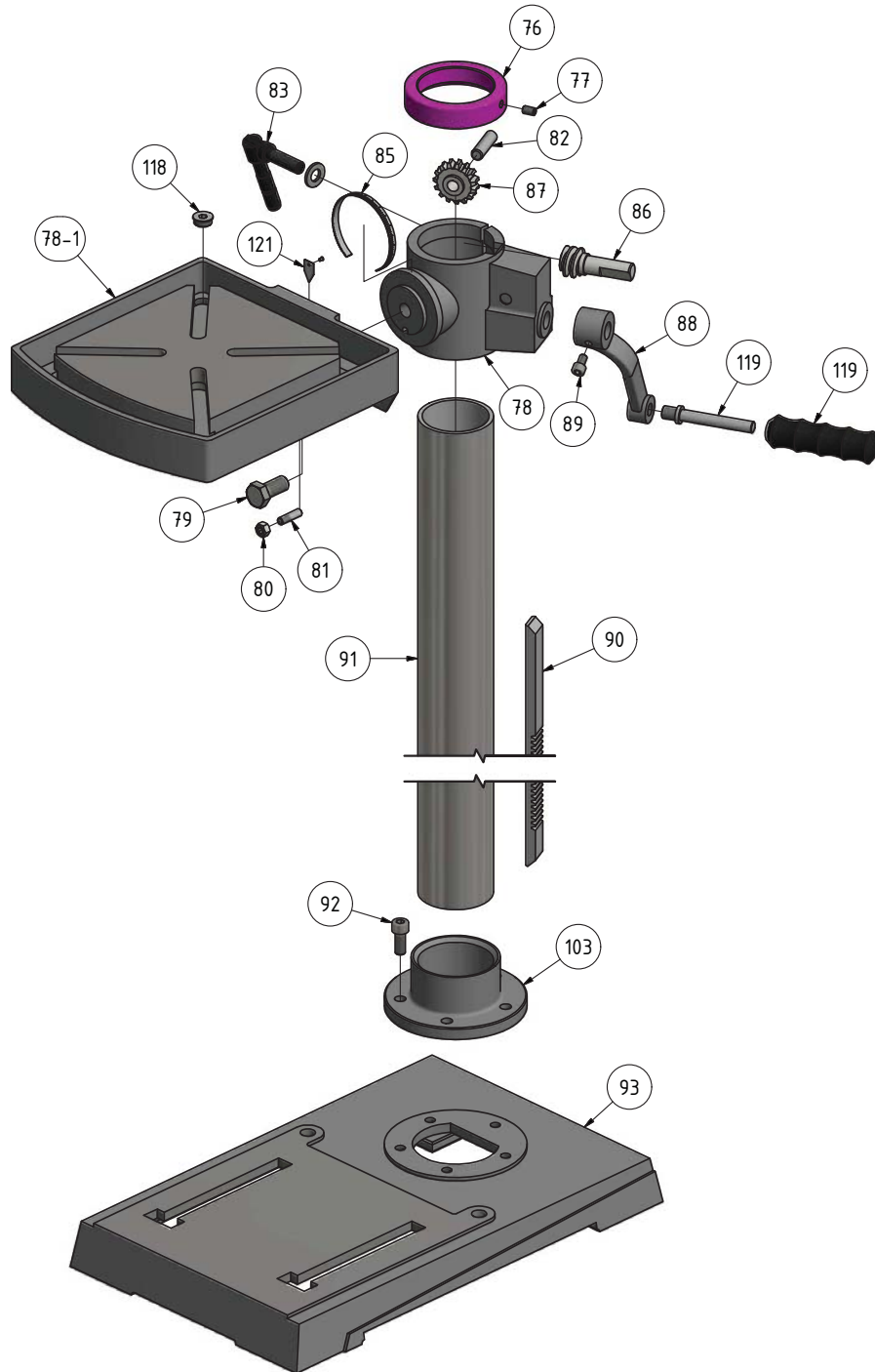
7.1 OPTI B17Pro 1 - 2



7-1: B17Pro

B17_B23_B26_B33_parts.fm

7.2 OPTI B17Pro 2 - 2



7-2: B17Pro

B17_B23_B26_B33_parts.fm



Ersatzteilliste - Spare parts list - B17Pro

Pos.	Bezeichnung	Designation	Menge	Grösse	Artikelnummer
			Qty.	Size	Item no.
1	Deckel	Cover	1		0300317101D
1-1	Unterteil	Base part	1		0300317101U
8	Keilriemen	V-belt	1	8 x 825	03003171108
9	Spindelmutter	Spindle nut	1		0300317109
10	Riemenscheibe Spindel	Spindle Pulley	1		0300317110
11	Mitnehmer	Driving pin	1		0300317111
12	Kugellager	Ball bearing	2	6203.2R	0406203R
13	Distanzscheibe	Spacing screw	1		0300317113
14	Seegering	Circlip	1		042SR17W
15	Kugellager	Ball bearing	1	6201.2RS	0406201R
18	Schraube	Screw	1	M6 x 10	
19	Riemenscheibe Motor	Motor Pulley	1		0300317119
20	Schraube	Screw	4	M6 x 12	
21	Unterlegscheibe	Washer	4		
22	Zugentlastung	Strain relief	2		
25	Hutmutter	Capped nut	1	1/2"-20	0300317125
26	Mutter	Nut	1	1/2"-20	0300317126
27	Rückholfeder mit Gehäuse	Turbination spring with cover	1		0300317127
29	Rückholfedersitz	Return spring seat	1		0300317129
32	Mutter	Nut	1	M8	
33	Schraube	Screw	1	M8 x 18	
36	Schaltergehäuse	Switch housing	1		0300317136
42	Bohrkopfgehäuse	Boring head housing	1		0300317142
43	Gummiring	Rubber ring	1		0300317143
44	Pinole	Pinole	1		0300317144
45	Kugellager	Ball bearing	1	6005.2RS	0406005R
46	Spindel	Spindle	1		0300317146
48	Schraube	Screw	1	5mm	0300317148
49	Anzeige	Display	1		
50	Stop-Stift	Stop-pin	1		
51	Schafritzel mit Nabe	Shaft pinion with hub	1	alt / old type	0300317151
51	Schafritzel mit Nabe	Shaft pinion with hub	1	neu / new type	0300317151A
52	Stift	Pin	1	5x16	
53	Schraube	Screw	1	M8 x 17	0300813118
54	Skalenring	Dial	1		0300317154
55	Schraube	Screw	1	5mm	
56	Skala	Scale	1		0300317156
56	Skala	Scale	1		03003171561
57	Griff	Handle	3	old / old type	0300317157
58	Hebel	Lever	3	alt / old type	0300317158
58	Aludruckgussgriff	Aluminium casting lever	1	neu / new type	03003171102

B17_B23_B26_B33_parts.fm

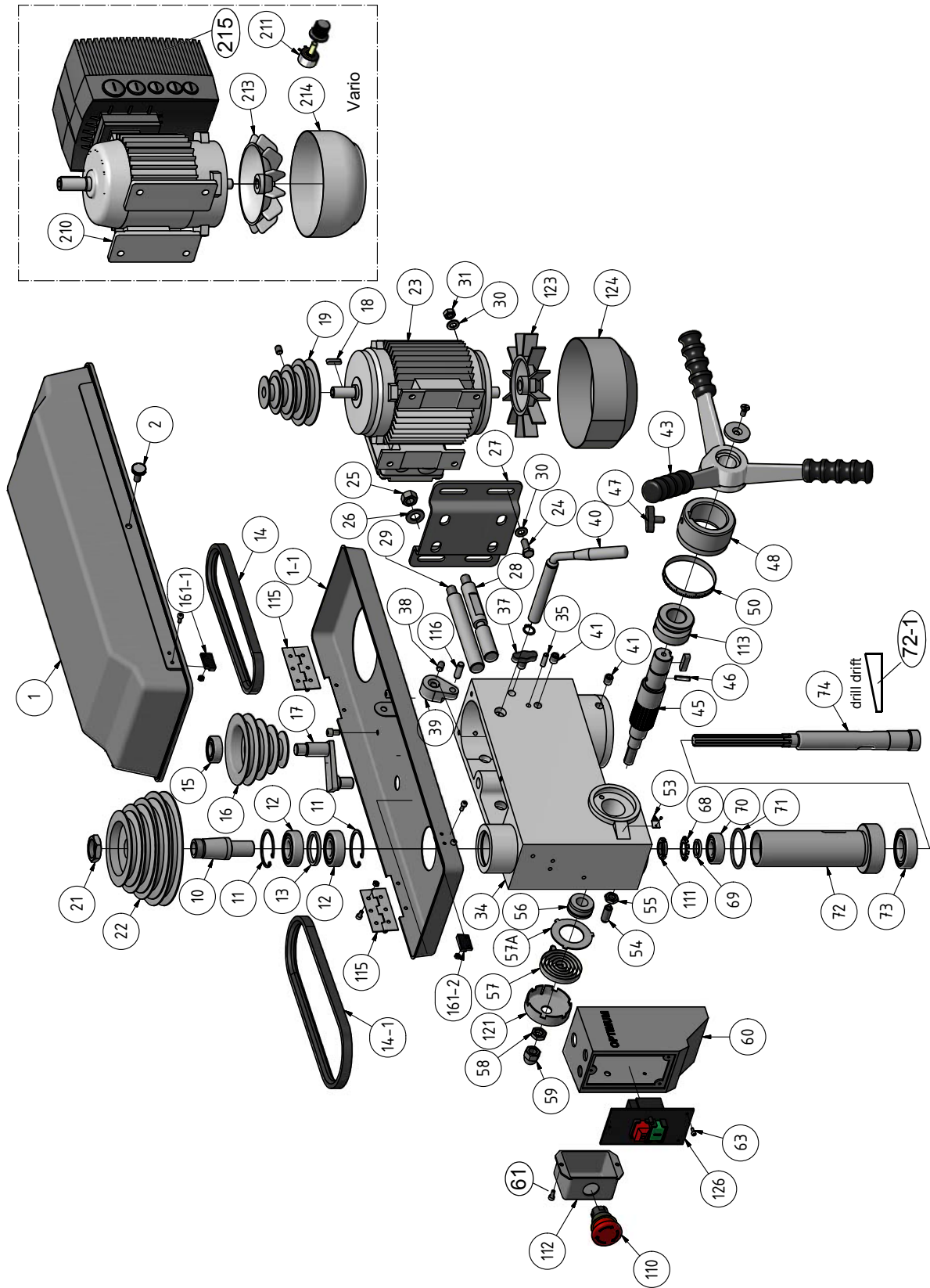


58	Passfeder Alugriff	Key aluminum handle	1	neu / new type	042P6614
58	Schraube Alugriff	Screw aluminium handle	1	neu / new type	030031231103
58	Scheibe Alugriff	Washer aluminium handle	1	neu / new type	03003231104
59	Stift	Pin	2	6 x 10	
60	Klemmschraube	Clamping screw	1	M8 x 17	0300813118
61	Schraube	Screw	1	M8 x 8	
63	Gleitstange	Slide rod	1		0300317163
64	Feder	Spring	1		0300317164
65	Schraube	Screw	2	M8 x 30	
66	Unterlegscheibe	Washer	2	8	
67	Mutter	Nut	2	M8	
68	Motorhalteplatte	Motor plate	1		0300317168
69	Schraube	Screw	4	M8 x 30	
70	Unterlegscheibe	Washer	8	8	
71	Mutter	Nut	4	M8	
72	Paßfeder	Key	1	5x5x20	042P5520
73	Motor	Motor	1		0300317173
75	Kabel	Cable	1		0460916186
76	Säulenring	Column ring	1		0300317176
77	Schraube	Screw	1	M6 x 10	
78	Bohrtisch	Drilling table	1		0300317178
78	Bohrtischhalter	Support	1		
78-1	Bohrtisch	Drilling table	1		
79	Schraube	Screw	1	1/2"-12	0300317179
80	Mutter	Nut	1	1/4"-20	
81	Kegelstift	Taper pin	1		
82	Stift	Pin	1		0300317182
83	Klemmhebel	Clamping lever	1		0300317183
85	Skala für Neigung	Scale for inclination	1		
86	Antriebsschnecke	Worm drive	1		0300317186
87	Zahnrad	Gear	1		0300317187
88	Kurbel	Crank	1	ab 2004	0300820110
88	Kurbel	Crank	1	vor 2004	0300317188
89	Schraube	Screw	1	M6 x 10	
90	Zahnstange	Rack	1		0300317190
91	Säule	Column	1		03003171103
92	Schraube	Screw	5	M8 x 20	
93	Maschinenfuss <5 Loch>	Machine base	1		0300317193
97	Austreiber	Drill Drift	1		0300317197
103	Säulenhalterung	Column flange	1		03003171109
105	Klemmkasten Motor	Motor terminal box	1		03003171105
104	Not-Aus-Schalter	Emergency Stop switch	1		0460058
113	Ein-Aus-Taster	On-off button	1	ab /from 2012/ 230V/ KJD12	03003171113
113	Ein-Aus-Taster	On-off button	1	bis/till 2012/ 230V	0300317140
114	Klemmkasten	Terminal box	1		03003171114



115	Scharnier	Hinge	2		
116	Abdeckung	Cover	1		
117	Buchse	Bushing	1		
118	Verschluss	Plug	1	3/8"	03334400108
119	Welle mit Griff	Shaft with grip	1		0300317188
121	Zeiger	Indikator	1		
122	Rändelschraube	Knurled screw	1		
123	Lüfter	Fan	1		03003171123
124	Motordeckel	Motor cover	1		03003171124
161-1	Reed Kontakt Keilriemendeckel	Reed contact belt cover	1	SQ2 (PS-3150)	0302024192
161-2	Reed Kontakt Keilriemendeckel	Reed contact belt cover	1	PS-3150	0302024192
Komplett-Sätze - Complete sets					
CPL	Pinole komplett	Pinole complete	1		0300317144CPL
CPL	Bohrfutterschutz komplett mit Schalter	Drill chuck guard complete with micro switch	1	24V	03003171125
CPL	Säule + Halterung	Column + Column flange	1		03003171103
CPL	Bohrtisch komplett	Drilling table complete	1		0300317178CPL
CPL	Bohrfutterschutz Halter	Drilling chuck guard holder complete	1		03008131201CPL
Teile ohne Abbildung - Parts without illustration					
0	Kondensator	Capacitor	1	12,5 µF	03003171101
0	Steuerplatine	Control board	1		03003171111

7.3 B23Pro, B23Pro Vario 1 - 2

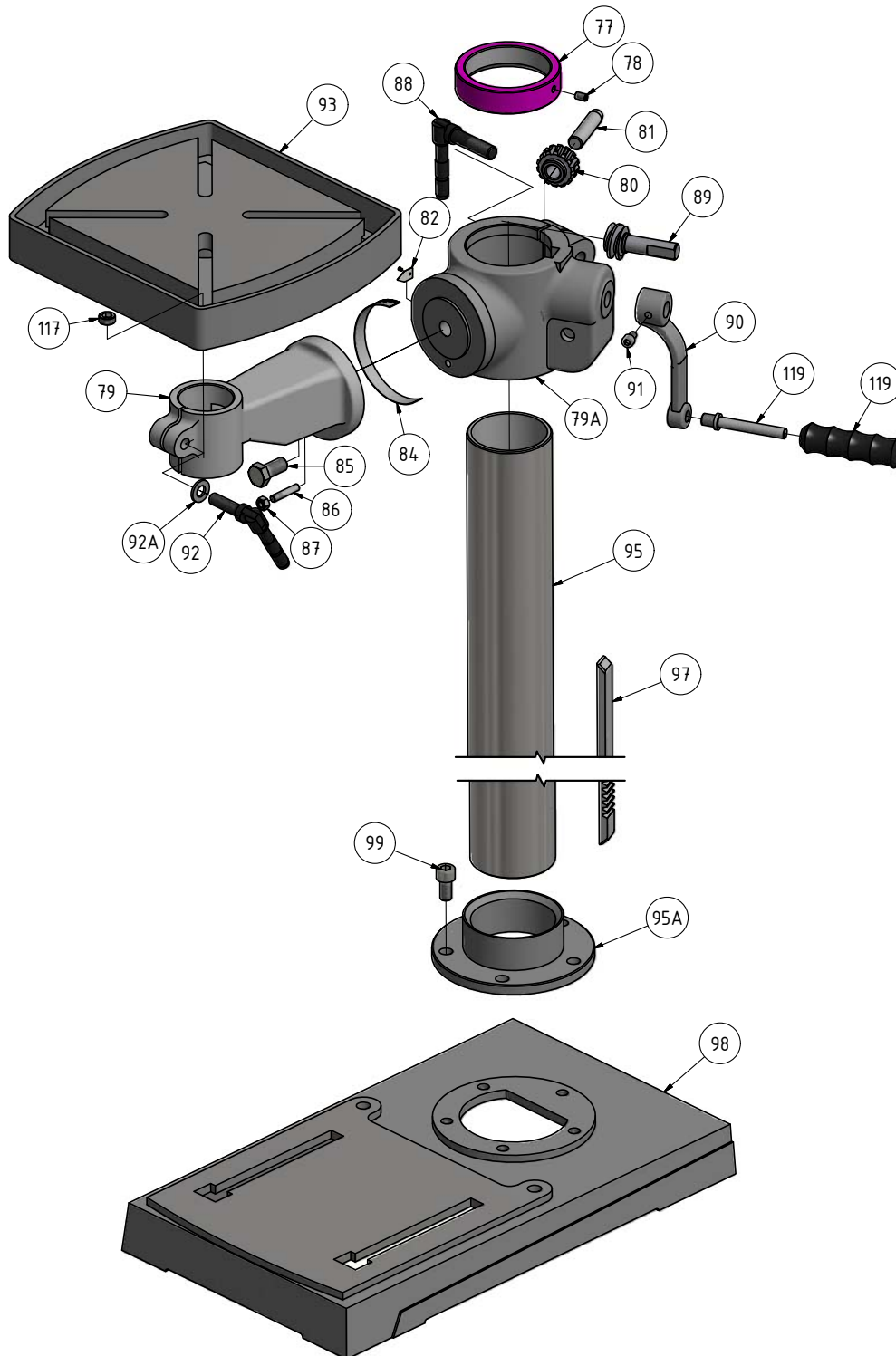


7-3: B23Pro, B23Pro Vario

B17_B23_B26_B33_parts.fm



7.4 B23Pro, B23Pro Vario 2- 2



7-4: B23Pro, B23Pro Vario

B17_B23_B26_B33_parts.fm



Ersatzteilliste - Spare parts list - B23Pro, B23Pro Vario					
Pos.	Bezeichnung	Designation	Menge	Grösse	Artikelnummer
			Qty.	Size	Item no.
1	Deckel	Cover	1		0300323101D
1-1	Unterteil	Base part	1		0300323101U
2	Rändelschraube	Knurled screw	1		03003171208
3	Schraube	Screw	1		
10	Mitnehmer	Driving pin	1		0300323110
11	Seegering	Circlip	2		0300323111
12	Kugellager	Ball bearing	2	6204.2R	0406204R
13	Ring	Ring	1		0300323113
14	Keilriemen Motor	V-belt motor	1	13 x 650	039V13650
14-1	Keilriemen Spindel	V-belt spindle	1	13 x 610	039V13610
15	Kugellager	Ball bearing	1	62202.2R	04062202R
16	Riemenscheibe Mitte	Middle Pulley	1		0300323116
17	Zentriervorrichtung	Centring device	1		0300323117
18	Paßfeder	Key	1		
19	Riemenscheibe Motor	Motor Pulley	1		0300323119
19	Riemenscheibe Motor	Motor Pulley	1	VARIO	0313143
20	Schraube	Screw	1	M8 x 12	
21	Spindelmutter	Spindle nut	1		0300323121
22	Riemenscheibe Spindel	Spindle Pulley	1		0300323122
23	Motor	Motor	1	230 V	0300323123
23	Motor	Motor	1	400 V	0300323323
24	Schraube	Screw	1	M8 x 30	
25	Mutter	Nut	4	M12	
26	Unterlegscheibe	Washer	2	12	
27	Motorplatte	Motor plate	1		0300323127
28	Gleitstange rechts	Sliding rod right	1		0300323128
29	Gleitstange links	Sliding rod left	1		0300323129
30	Unterlegscheibe	Washer	1	8	
31	Mutter	Nut	4	M8	
34	Bohrkopf	Head	1		0300323134
35	Stift	Pin	1		
37	Klemmschraube	Clamping screw	1	M10x25	0300323137
38	Schraube	Screw	2	M8 x 16	0300323138
39	Exzenter	Eccentric bolt	1		0300323139
40	Griff Riemenspannung	Grip belt tension	1		0300323140
41	Schraube	Screw	1	M10 x 12	
43	Hebel	Lever	3	alt / old type	
43	Aludruckgussgriff	Aluminium casting lever	1	neu / new type	03003231102
43	Passfeder Alugriff	Key aluminum lever	1	neu / new type	03003231105
43	Schraube Alugriff	Screw aluminium lever	1	neu / new type	03003231104
43	Scheibe Alugriff	Washer aluminium lever	1	neu / new type	03003231103
45	Schaftritzel mit Nabe	Shaft pinion with hub	1	alt / old type	0300323145
45	Schaftritzel mit Nabe	Shaft pinion with hub	1	neu / new type	0300323145A
46	Spannstift	Dowel pin	1	Ø 5x20	0300323146
47	Klemmschraube	Clamping screw	1	M8 x 17	0300813118
48	Skalenring	Scale ring	1		0300323148
50	Skala	Scale	2		0300326350
51	Stop-Stift	Stop-pin	1		0300323151
53	Anzeiger	Pointer	1		
54	Gewindestift	Grub screw	1	M10x30	0340182
55	Mutter	Nut	1	M10	
56	Rückholfedersitz	Spring seat	1		0300323156
57	Rückholfeder m. Abdeckung	Turbination spring with cover	1		0300323157
58	Mutter	Nut	1		0300317126
59	Hutmutter	Capped nut	1	1/2"-20	0300317125
60	Schaltergehäuse	Switch housing	1		0300323160
61	Schraube	Screw	1		0300323161
63	Schraube	Screw	3	M4,2 x 12	0300323163
68	Sicherungsblech	Safety plate	1		0300323168
69	Zwischenring	Ring	1		0300323169
70	Kugellager	Ball bearing	1	6203.2R	0406203R

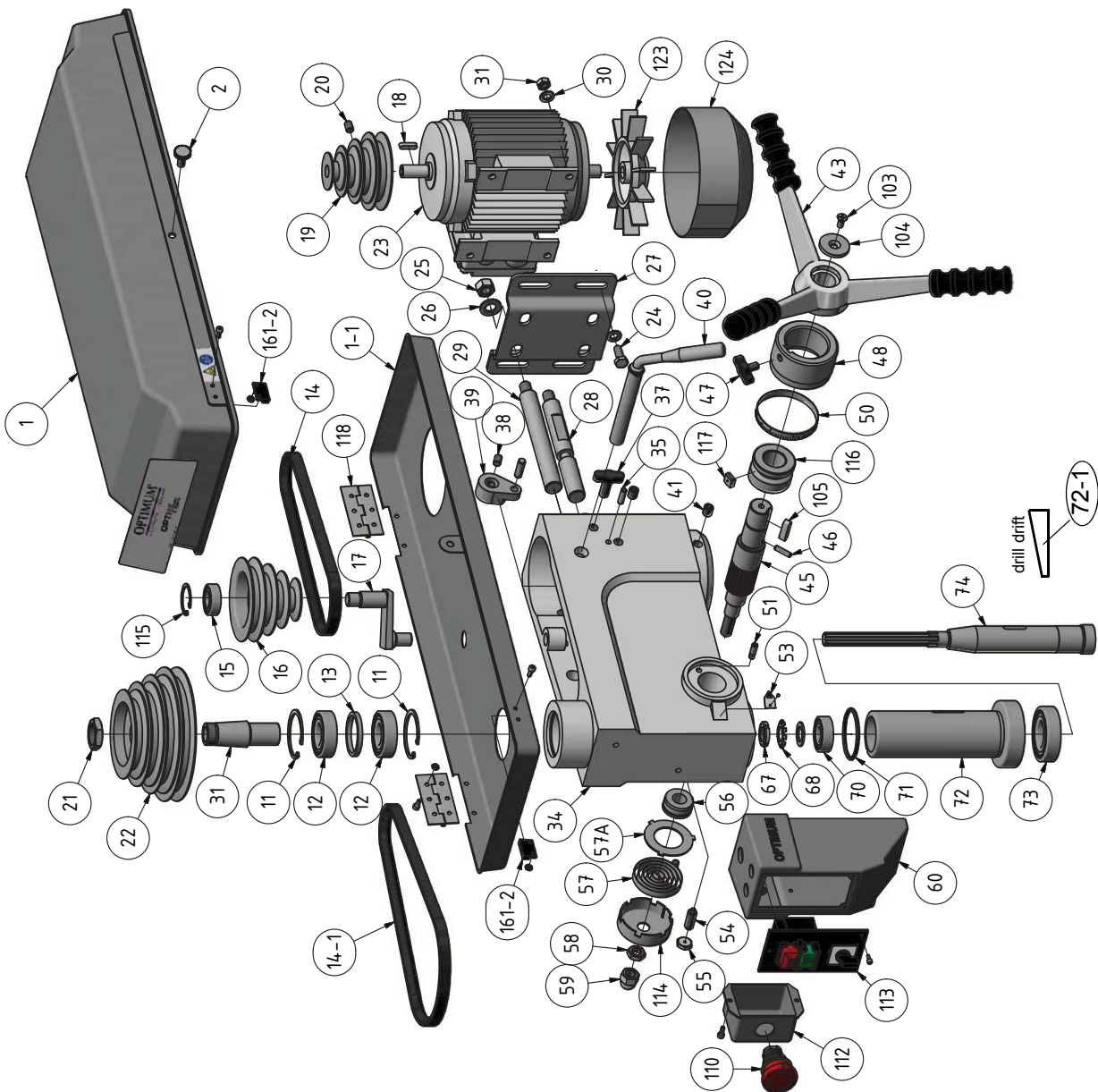
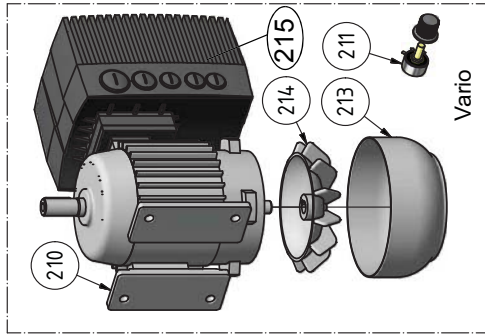
B17_B23_B26_B33_parts.fm



71	O-Ring	O-ring	1		0300323171
72	Pinole	Pinole	1		0300323172
72-1	Austreiber	Drill drift	1		0300317197
73	Kugellager	Ball bearing	1	6205.2R	0406205R
74	Spindel	Spindle	1		0300323174
77	Säulenring	Column ring	1		0300323177
78	Schraube	Screw	1	M6 x 8	
79	Bohrtschträger	Support	1		0300323179
80	Zahnrad	Gear	1		0300333392
81	Bolzen	Bolt	1		0300323181
82	0-Anzeige für Neigungsskala	0-display for scale of inclination	1		03003333100
84	Neigungsskala	Scale of inclination	4		0300323184
85	Schraube	Screw	1	5/8"-11	0300323185
86	Kegelstift	Taper pin	1		0300323186
87	Mutter	Nut	1	1/4"-20	
88	Klemmhebel	Clamping lever	1		0300323188
89	Antriebsschnecke	Worm drive	1		0300323189
90	Kurbel	Crank	1		0300317188
91	Schraube	Screw	1	M6 x 10	
92	Klemmhebel	Clamping lever	1		0300317183
92A	Unterlegscheibe	Washer	1		
93	Bohrtisch	Drilling table	1		0300323193
95	Säule mit Halterung	Column with holder	1		0300323195
96	Schraube	Screw	1	M10x12	
97	Zahnstange	Rack	1		0300323197
98	Maschinenfuss	machine base	1		0300323198
99	Schraube	Screw	5	M10x13	
110	Not-Aus-Schalter	Emergency Stop switch	1		0460058
111	Nutmutter	Grooved nut	1		0300323167
112	Klemmkasten	Terminal box	1		03003171114
113	Buchse	Buching	1		03003231113
114	Klemmstück	Clamping piece	1		
115	Scharnier	Hinge	2		
116	Zylinderstift	Cilindrical pin	1	8x24	
117	Verschluss	Plug	1		
118	Sicherungsring	Retaining ring	2	DIN 472-34x1,5	042SR34W
119	Welle	Shaft	1		0300317188
121	Abdeckung	Cover	1		
123	Lüfter	Fan	1	Ø130x15	03003231123
123	Lüfter	Fan	1	Ø137x16	03003231123A
124	Motordeckel	Motor cover	1		
126	Schalter 230V	Switch 230V	1	KJD18 230V	0300323162
126	Schaltereinheit 400V	Switch unit 400V	1	KJD18 400V	0300326362
161-1	Reed Kontakt Keilriemendeckel	Reed contact belt cover	1	SQ2 (PS-3150)	0302024192
161-2	Reed Kontakt Keilriemendeckel	Reed contact belt cover	1	PS-3150	0302024192
210	Motor mit Frequenzumrichter	Motor with frequency converter	1	400V	0313114
211	Potentiometer	Potentiometer	1		0313199
213	Abdeckung	Cover	1		
214	Lüfter	Fan	1		
0	Frequenzumrichter	Frequency converter	1	E84DGV/B7514 2PS	0313114FU
0	Steuerplatine	Control board	1		03003233111
Komplett-Sätze - Complete sets					
CPL	Pinole kplt.	Pinole cpl.	1		0300323172CPL
CPL	Riemscheibe Mitte kpl.	Middle pulley with centring device	1		0300323116CPL
CPL	Bohrfutterschutz komplett mit Schalter	Drill chuck guard complete with micro switch	1	24V	03003231125
CPL	Halter Bohrfutterschutz	Holder Drill chuck guard complete	1		03008131201CPL

B17_B23_B26_B33_parts.fm

7.5 OPTI B26Pro, B26Pro Vario 1 - 2

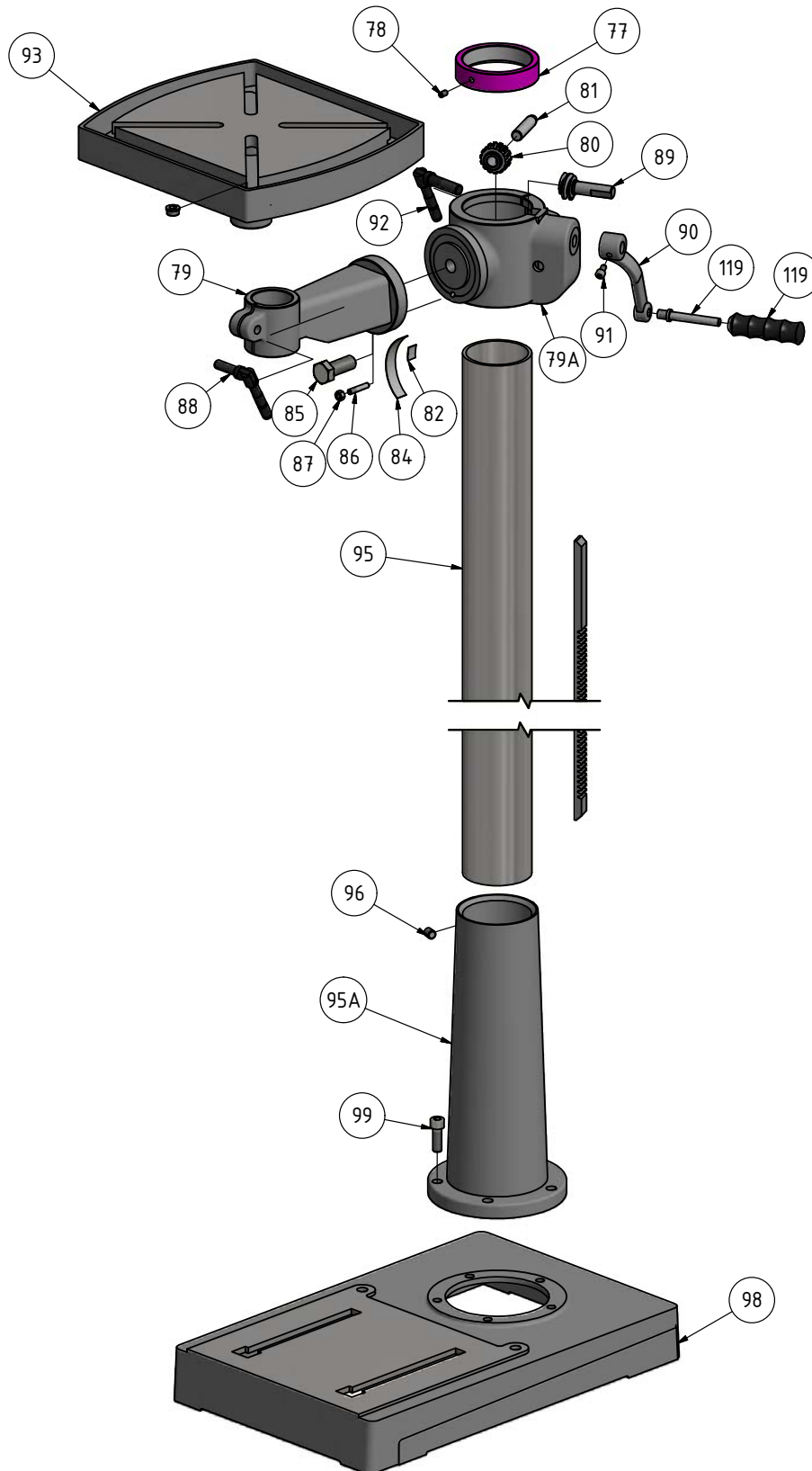


7-5: OPTI B26 PRO

B17_B23_B26_B33_parts.fm



7.6 OPTI B26Pro, B26Pro Vario 2- 2



7-6: OPTI B26 PRO

B17_B23_B26_B33_parts.fm



Ersatzteilliste - Spare parts list - B26Pro, B26Pro Vario					
Pos.	Bezeichnung	Designation	Menge	Grösse	Artikelnummer
			Qty.	Size	Item no.
1	Deckel	Cover	1		0300326301D
1-1	Unterteil	Base part	1		0300326301U
2	Rändelschraube	Knurled screw	1		03003171208
11	Seegering	Circlip	2		0300326311
12	Kugellager	Ball bearing	2	6205.2R	0406205R
13	Ring	Ring			0300326313
14	Keilriemen Motor	V-belt motor	1	13 x 600	039V13600
14-1	Keilriemen Spindel	V-belt spindle	1	13 x 735	039V13735
15	Kugellager	Ball bearing	1	62202-ZZ	04062202R
16	Riemenscheibe Mitte	Middle Pulley	1		0300323116
17	Zentriervorrichtung	Centring device	1		0300323117
18	Paßfeder	Key	1		
19	Riemenscheibe Motor	Motor Pulley	1		0300323119
20	Schraube	Scre	1	M8x12	
21	Mutter	Nut	1		0300323121
22	Riemenscheibe Spindel	Spindle Pulley	1		0300323122
23	Motor	Motor	1	230V	0300323123
23	Motor	Motor	1	400 V	0300323323
24	Schraube	Screw	4	M8 x 30	
25	Mutter	Nut	2	M12	
26	Unterlegscheibe	Washer	2	12	
27	Motorplatte	Motor plate	1		0300323127
28	Gleitstange rechts	Sliding rod right	1		0300323128
29	Gleitstange links	Sliding rod left	1		0300323129
30	Unterlegscheibe	Washer	4	8	
31	Mutter	Nut	4	M8	
34	Bohrkopf	Boring head	1		0300326334
35	Stift	Pin	2		
37	Klemmschraube	Clamping screw	2	M10x30	
38	Schraube	Screw	1	M8 x 16	
39	Exzenter	Eccentric bolt	1		0300323139
40	Griff Riemenstannung	Grip belt tension	1		0300326340
41	Schraube	Screw	2	M10 x 12	
43	Aludruckgussgriff	Aluminium casting lever	1	neu / new type	03003231102
45	Schaftritzel neu	Shaft pinion	1		0300326345
46	Spannstift	Dowel pin	1	5 x 20	0300323146
47	Klemmschraube	Clamping screw	1	M8 x 16	0300813118
48	Skalenring	Scale ring	1		0300323148
50	Skala	Scale	1		0300326350
51	Stop-Stift	Stop-pin	1		0300323151
53	Anzeiger	Pointer	1		
54	Schraube	Screw	1		
55	Mutter	Nut	1	M10	
56	Rückholfedersitz	Spring seat	1		0300323156
57	Rückholfeder mit Abdeckung	Turbination spring with cover	1		0300323157
58	Mutter	Nut	1		0300317126
59	Hutmutter	Capped nut	1	1/2"-20	0300317125
60	Schaltergehäuse	Switch housing	1		0300326360
67	Spindelmutter	Spindle nut	1		0300326367
68	Sicherungsblech	Safety plate	1		0300323168
69	Zwischenring	Intermediate ring	1		0300323169
70	Kugellager	Ball bearing	1	6203.2R	0406203R
71	O-Ring	O-ring	1		0300326371
72	Pinole	Pinole	1		0300326372
72a	Austreiber	Drill drift	1		0300326372-1
73	Kugellager	Ball bearing	1	6206.2R	0406206R
74	Spindel	Spindle	1		0300326374
77	Säulenring	Column ring	1		0300326377
78	Schraube	Screw	1	M6x8	
79	Bohrtrischträger	Support	1		0300326379CPL

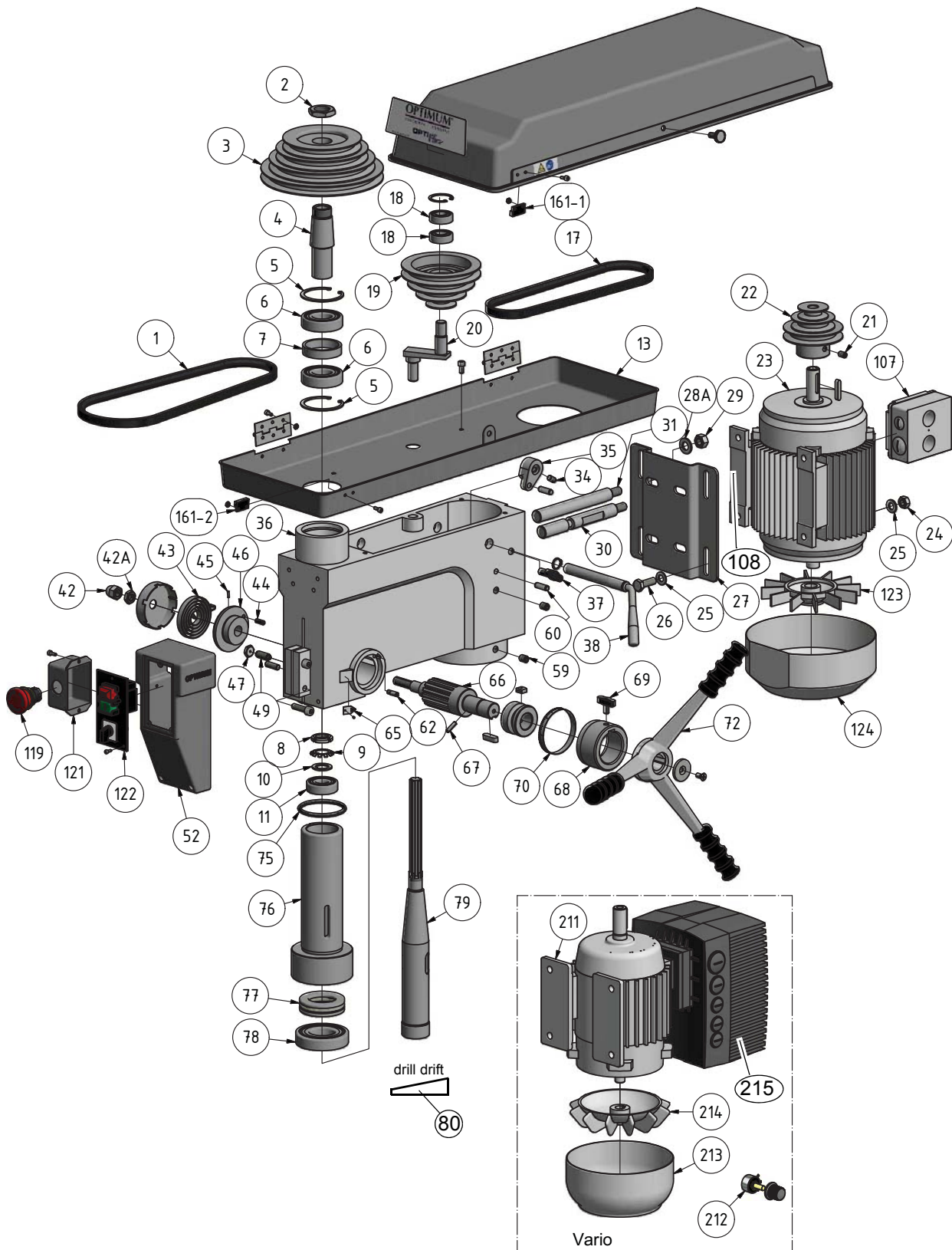
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80	Zahnrad	Gear	1		0300333392
81	Zahnradwelle	Gear axle	1		0300323181
82	O-Anzeige für Neigungsskala	O-display for scale of inclination	1		03003333100
84	Neigungsskala	Scale of inclination	1		0300323184
85	Schraube	Screw	1	5/8"-11	0300323185
86	Kegelstift	Taper pin	1		0300323186
87	Mutter	Nut	1	1/4"-20	
88	Klemmhebel	Clamping lever	1		0300323188
89	Antriebsschnecke	Worm driver	1		0300323189
90	Kurbel	Crank	1		0300317188
91	Schraube	Screw	1		
92	Klemmhebel	Clamping lever	1		
92A	Unterlegscheibe	Washer	1		
93	Bohrtisch	Drilling table	1		0300326393
95	Säule	Column	1	M10 x 12	0300326395CPL
95A	Säulenhalterung	Column flange	1		0300326395
96	Schraube	Screw	1	M10 x 12	
97	Zahnstange	Rack	1		0300326397
98	Maschinenfuß	Machine base	1		0300326398
99	Schraube	Screw	5	M 10 x 30	
103	Senkkopfschraube	Counter sunk screw	1	M6x13	03003231103
104	Scheibe	Washer	1	6	03003231104
105	Passfeder	Fitting key	1	8x7x24	03003231105
110	Not-Aus-Schalter	Emergency Stop switch	1		0460058
112	Klemmkasten	Terminal box	1		03003171114
113	Schalteinheit 400V	Switch unit 400V	1	bis Bj. 2012 / KJD18	0300323162
113	Schalteinheit 400V	Switch unit 400V	1	ab Bj. 2012 / KJD18	03003233126
114	Deckel	Abdeckung	1		
115	Sicherungsring	Retaining ring	1	DIN 472-34x1,5	
116	Buchse	Bushing	1		
117	Klemmstück	Clamping piece	1		
118	Scharnier	Hinge	2		
119	Welle	Shaft	1		0300317188
123	Lüfter	Fan	1	Ø130x15	03003231123
123	Lüfter	Fan	1	Ø137x16	03003231123A
124	Motordeckel	Motor cover	1		
161-1	Reed Kontakt Keilriemendeckel	Reed contact belt cover	1	PS-3150	0302024192
161-2	Reed Kontakt Keilriemendeckel	Reed contact belt cover	1	PS-3150	0302024192
210	Motor mit Frequenzumrichter	Motor with frequenci converter	1	400V	0313114
211	Potentiometer	Potentiometer	1		0313199
213	Abdeckung	Cover	1		
214	Lüfter	Fan	1		
215	Frequenzumrichter	Frequency converter	1		0313114FU
Teile ohne Abbildung - Parts without illustration					
0	Motorlüfterdeckel	Motor fan cover			03003231101
0	Trafo 24V	Transformer 24V	1	24V	03003171SL-220V
0	Relais	Relais	1	KM-TV-5	0302024192
0	Steuerplatine	Control board	1		03003233111
Komplett-Sätze - Complete sets					
0	Pinole kpl.	Spindle sleeve complete			0300326372CPL
0	Säule kpl.	Column complete			0300326395CPL
0	Bohrtrischträger komplett	Drilling table holder complete			0300326379CPL
0	Halter Bohrfutterschutz	Holder Drill Chuck guard			0302024149CPL
0	Riemenscheibe Mitte kpl.	Middle Pulley complete			0300323116CPL
0	Werkzeugsatz in einer Box	Tool box			03003231110
0	Bohrfutterschutz komplett mit Schalter	Drill chuck guard complete with micro switch	1	24V	03003231125

B17_B23_B26_B33_parts.fm

7.7 B33Pro, B33Pro Vario 1 - 2

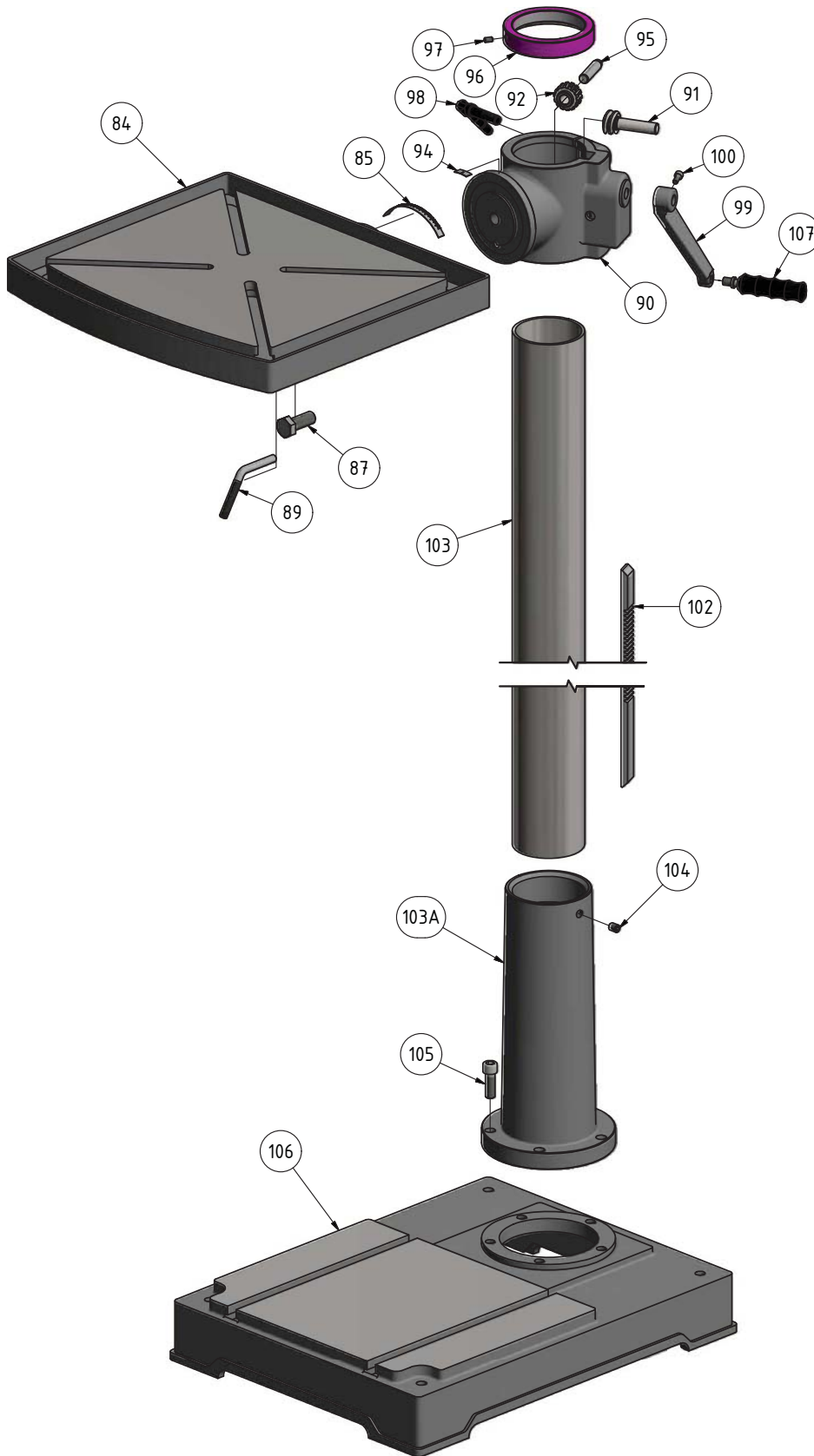


7-7: B33Pro, B33Pro Vario

B17_B23_B26_B33_parts.fm



7.8 B33Pro, B33Pro Vario 2-2



7-8: B33Pro, B33Pro Vario

B17_B23_B26_B33_parts.fm



Ersatzteilliste - Spare parts list - B33Pro, B33Pro Vario					
Pos.	Bezeichnung	Designation	Menge	Grösse	Artikelnummer
			Qty.	Size	Item no.
1	Keilriemen Spindel	V-belt spindle	1	13 x 735	039V13735
2	Mutter	Nut	1		0300333302
3	Riemenscheibe Spindel	Spindle pulley	1		0300333303
4	Mitnehmer	Driving pin	1		0300333304
5	Sicherungsring	Safety ring	2	65mm	0300333305
6	Kugellager	Ball bearing	2	6206-2R	0406206ZZ
7	Distanzbuchse	Bushing	1		0300333307
8	Mutter	Nut	1		0300333308
9	Zahnscheibe	Serrated disc	1		0300333309
10	Unterlegscheibe	Washer	1		
11	Kugellager	Ball bearing	1	6204.2R	0406204R
17	Keilriemen Motor	V-belt motor	1	13 x 860	0300333301
18	Kugellager	Ball bearing	1	6202.2R	0406202R
19	Riemenscheibe Mitte	Middle Pulley	1		0300333319
20	Zentrierstück	Centring piece	1		0300333320
21	Schraube	Screw	1	M 8x12	
22	Riemenscheibe Motor	Motor Pulley	1		0300333322
23	Motor	Motor	1	400V	0300333323
24	Mutter	Nut	4	M 10	
25	Beilegscheibe	Washer	8	10	
26	Schraube	Screw	4	M 10x30	
27	Motorhalteplatte	Motor plate	1		0300333327
28	Unterlegscheibe	Washer	2	12	
29	Mutter	Nut	2	M12	
30	Gleitstange rechts	Sliding rod right	1		0300333330
31	Gleitstange links	Sliding rod left	1		0300333331
34	Schraube	Screw	1	M8x16	
35	Exzenter	Eccentric bolt	1		0300323139
36	Bohrkopf	Drilling head	1		0300333336
37	Klemmschraube	Clamping screw	2	M10x30	0300333337
38	Hebel	Lever	1		0300333338
42A	Mutter	Nut	1		0300317126
42	Hutmutter	Capped Nut	1		0300317125
43	Rückholfeder mit Gehäuse	Return spring with housing	1		0300333343
44	Stift	Pin	1	6x16	0300333344
45	Stift	Pin	1	25 x 10	0300333345
46	Federsitz	Spring seat	1		0300333346
47	Mutter	Nut	1	M 10	
49	Schraube	Screw	1	M 10x27	0340182
52	Schaltergehäuse	Switch housing	1		0300333352
59	Schraube	Screw	2	M10x12	
60	Stift	Pin	2	8x25	
62	Stop-Stift	Stop-pin	1		0300333362
65	Zeiger	Pointer	1		
66	Schaftritzel	Shaft pinion	1	neu / new type	0300333366
67	Stift	Pin	1	5x20	0300333367
68	Skalenring	Scale ring	1		0300333368
69	Klemmschraube	Clamping screw	1		0300813118
70	Bohrtiefenskala	Scale - drilling depth	1		0300333370
72	Hebel	Lever	3	alt / old type	0300333372
72	Aludruckgussgriff	Aluminium casting lever	1	neu / new type	03003333104
72	Passfeder Alugriff	Key aluminium handle	1	neu / new type	03003231105
72	Schraube Alugriff	Screw aluminium handle	1	neu / new type	03003231103
72	Scheibe Alugriff	Washer aluminium handle	1	neu / new type	03003231104
75	Gummiring	Rubber ring	1		0300333375
76	Pinole	Pinole	1		0300333376CPL
77	Kugellager	Ball bearing	1		04051208
78	Kugellager	Ball bearing	1	6208.2R	0406208R

B17_B23_B26_B33_parts.fm

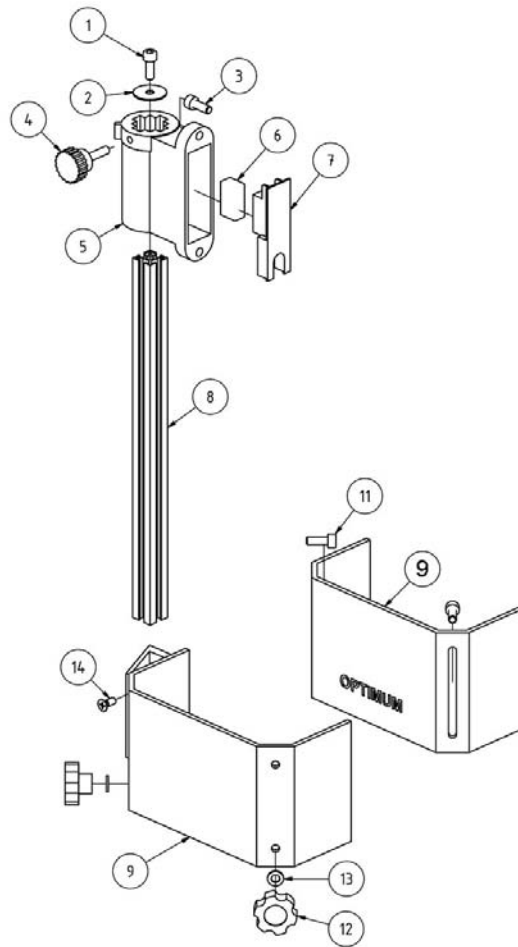


79	Spindel	Spindle	1		0300333379
80	Austreiber	Drill drive	1		0300317197
84	Bohrtisch	Drilling table	1		0300333384
85	Neigungsskala	Scale of inclination	1		0300333385
87	Schraube	Screw	1		0300333387
89	Klemmhebel	Clamping lever	1		0300333389
90	Bohrtischhalter	Support	1		0300333390
91	Antriebsschnecke	Worm drive	1		0300333391
92	Zahnrad	Gear-wheel	1		0300333392
94	0-Skala	0-scale	1		03003333100
95	Stift	Pin	1		0300333395
96	Säulenring	Column ring	1		0300333396
97	Schraube	Screw	1	M6x10	
98	Klemmhebel	Clamping lever	1		0300323188
99	Kurbel	Crank	1		0300333399
100	Schraube	Screw	1	M 6x10	
101	Griff+Welle	Grip+Shaft	1		03003333101
102	Zahnstange	Rack	1		03003333102
103	Säule	Column	1		03003333108
103A	Säulenhalterung	Column flange	1		
104	Schraube	Screw	1		03003333104
105	Schraube	Screw	4	M12x45	03003333105
105	Inbusschraube	Socket head wrench	1	M12x45	03003333105-1
106	Maschinenfuss	Machine base	1		03003333106
107	Klemmkasten Motor 400V	Terminal box motor 400V	1		03003333107
108	Griff	Grip	1		
119	Not-Aus-Schalter	Emergency Stop switch	1		0460058
120	Ein-Aus-Taster	On-off button	1	400V	03003233126
121	Klemmkasten	Terminal box	1		03003171114
122	Schaltereinheit 400V	Switch unit 400V	1	KJD18 400V	0300326362
123	Lüfter	Fan	1		03003333123
124	Motordeckel	Motor cover	1		03003333124
161-1	Reed Kontakt Keilriemendeckel	Reed contact belt cover	1	PS-3150	0302024192
161-2	Reed Kontakt Keilriemendeckel	Reed contact belt cover	1	PS-3150	0302024192
211	Motor mit Frequenzumrichter	Motor with frequency converter	1	400V	0313115
212	Potentiometer	Potentiometer	1		0313199
213	Abdeckung	Cover	1		
214	Lüfter	Fan	1		
215	Frequenzumrichter	Frequency converter	1		0313115FU
Teile ohne Abbildung - Parts without illustration					
0	Motorlüfterdeckel	Motor fan cover	1		
0	Trafo 24V	Transformer 24V	1	24V	
0	Relais	Relais	1	KM-TV-5	
0	Mikroschalter	Microswitch	1	SQ1-HY50	030031712018
0	Reed Kontakt Keilriemendeckel	Reed contact belt cover	1	PS-3150	0302024192
0	Steuerplatine	Control board	1		03003233111
0	Klemmkasten	Motor connection box	1		03003333107
Komplett-Sätze - Complete sets					
CPL	Pinole kpl.	Pinole complete			0300333376CPL
CPL	Säule kpl.	Column complete			03003333103CPL
CPL	Bohrkopf kpl.	Drilling head cpl			0300333336CPL
CPL	Werkzeugsatz in einer Box	Tool box			03003333110
CPL	Halter Bohrfutterschutz	Holder Drill chuck guard			03008131201CPL
CPL	Bohrfutterschutz mit Schalter komplett	Drill chuck guard with micro switch complete		24V	03003333125

B17_B23_B26_B33_parts.fm



7.8.1 Bohrfutterschutz neuer Typ - Drill chuck protection new type



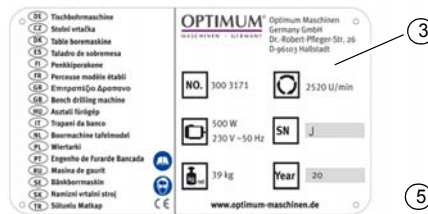
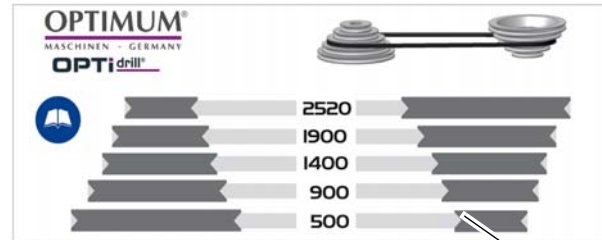
B17Pro, B23Pro, B26Pro, B33Pro - Bohrfutterschutz neuer Typ - Drill chuck protection new type					
Pos.	Bezeichnung	Designation	Menge	Größe	Artikelnummer
			Qty.	Size	Item no.
1	Innensechskantschraube	Socket head screw	1	GB 70-85 - M6 x 10	
2	Scheibe	Washer	1		
3	Innensechskantschraube	Socket head screw	2	GB 70-85 - M6 x 16	
4	Rändelschraube	Knurled screw	1		030031712014
5	Halterung	Fixture	1		
6	Mikroschalter	Microswitch	1		030031712018
7	Platte	Plate	1		030031712019
8	Alu- Profil	Aluminium profile	1		03011233209
9	Bohrfutterschutz A	Drilling chuck safety A	1		03003171207
11	Innensechskantschraube	Socket head screw	2	GB 70-85 - M6 x 16	
12	Rändelschraube	Knurled screw	2		03003171212
13	Scheibe	Washer	2	6	
14	Schraube	Screw	2	M6x16	
Komplette-Sätze / Complete Sets					
0	Halterung kpl.	Holder cpl.	1	B17Pro - B33Pro	03008131201CPL
0	Bohrfutterschutz	Drill Chuck Guard		B17Pro	03003171125

B17_B23_B26_B33_parts.fm



0	Bohrfutterschutz	Drill Chuck Guard		B23Pro, B26Pro	03003231125
0	Bohrfutterschutz	Drill Chuck Guard		B33-Pro	03003333125

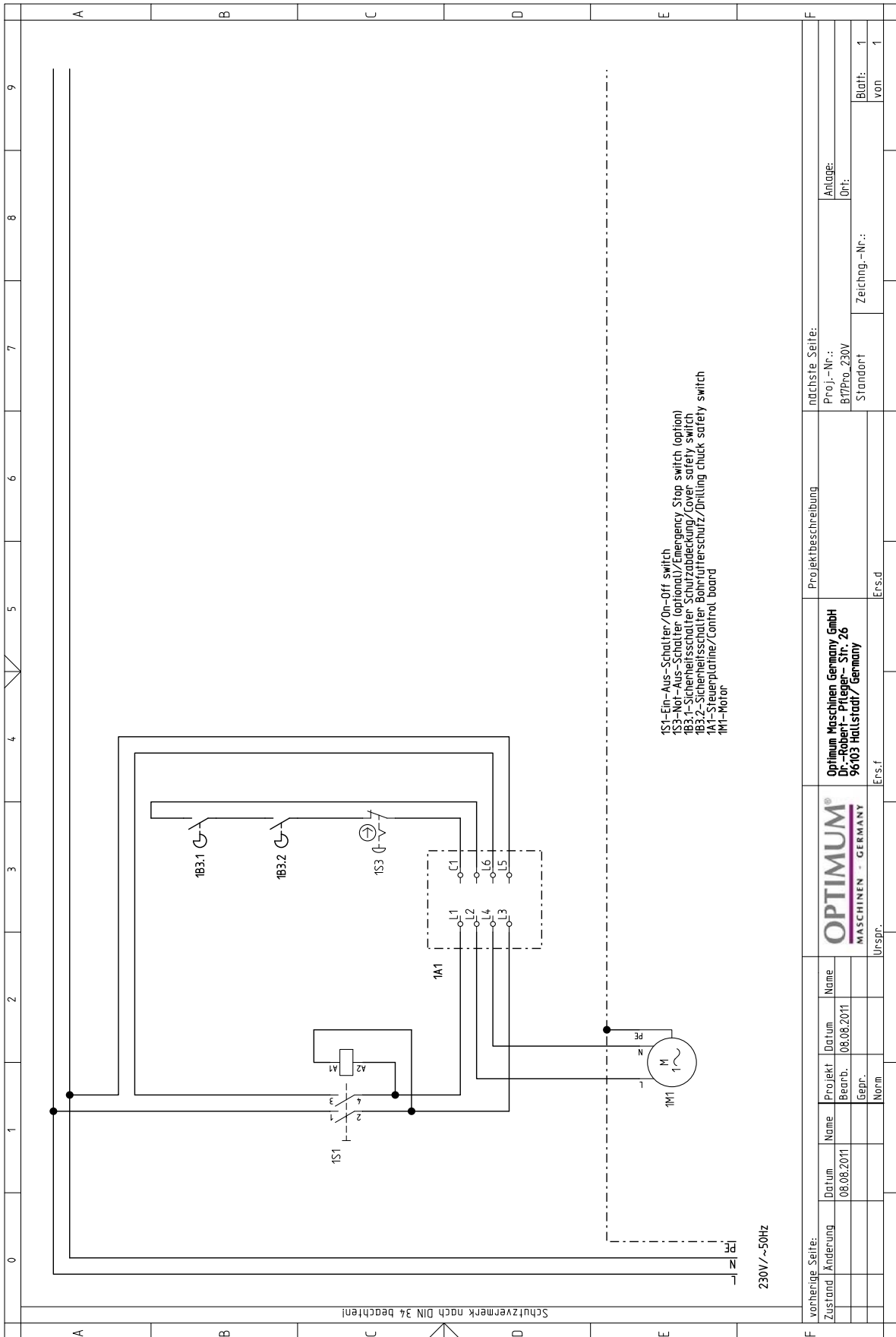
7.9 Maschinenschilder - Machine labels



Maschinenschilder - Machine labels							
Pos.	Bezeichnung	Designation	Menge	B17Pro	B23Pro	B26Pro	B33Pro
			Qty.				
1	Drehzahltafel	Speed table	1	03003171L01			
2	Frontlabel	Front lable	1				
3	Maschinenlabel	Machine lable	1				
4	Motorlabel	Motor lable	1				
5	Infolabel	Information lable	1				
6	Sicherheitslabel	Safety lable	1				
7	Sicherheitslabel	Safety lable	1				

B17_B23_B26_B33_parts.fm

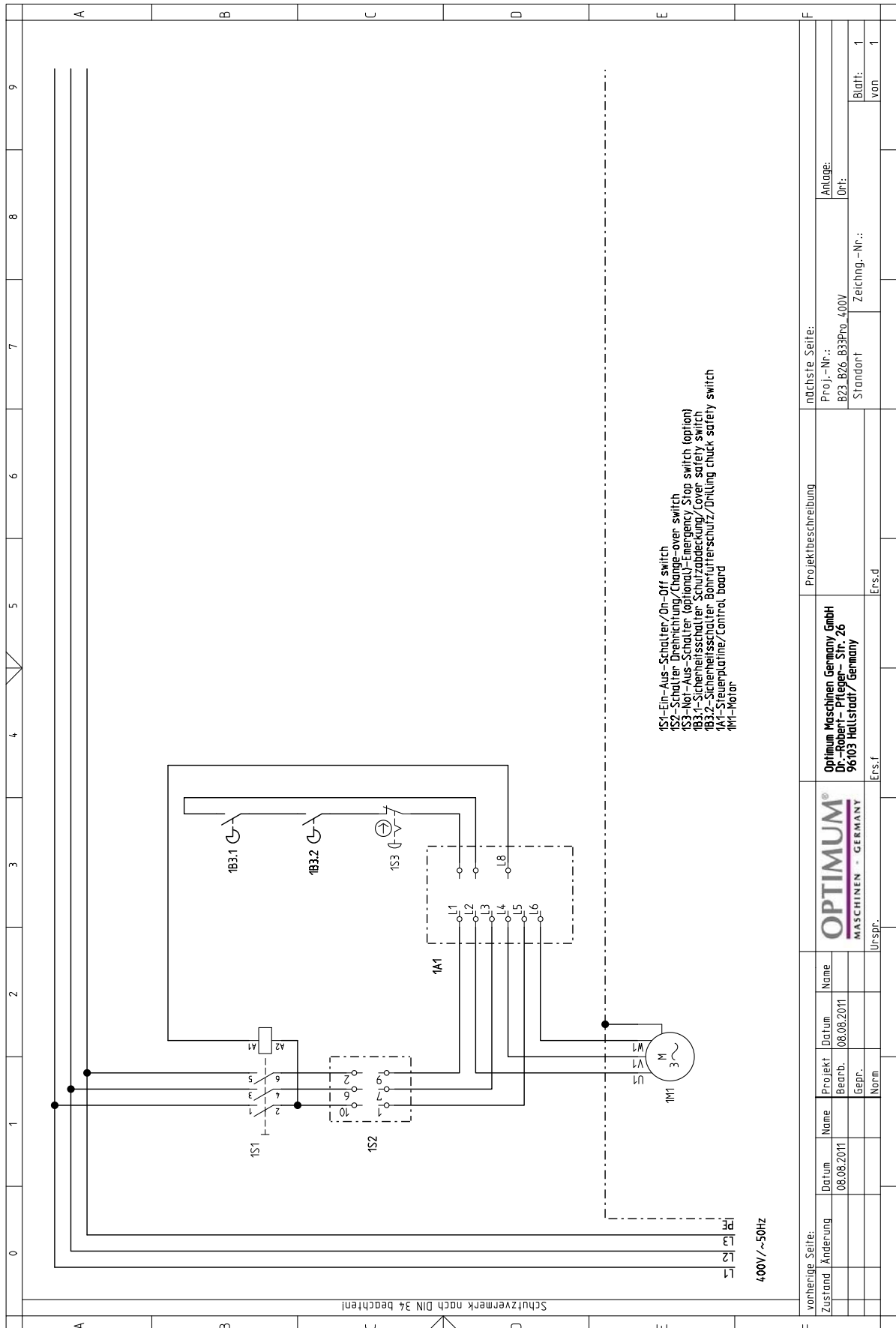
7.10 Schaltplan - Wiring diagram - B17Pro, B23Pro - 230V



B17_B23_B26_B33_parts.fm



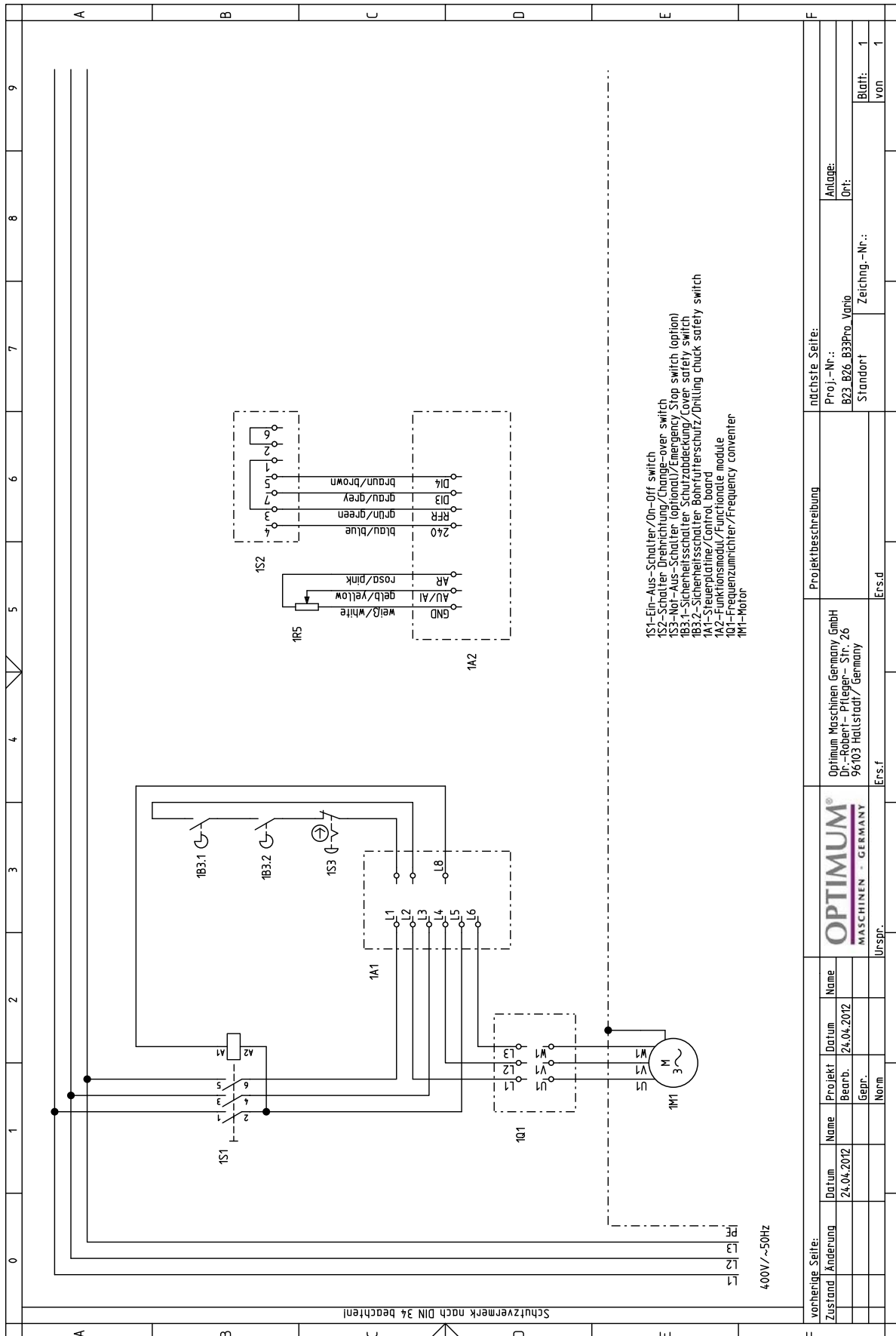
7.11 Schaltplan - Wiring diagram - B23Pro, B26Pro, B33Pro - 400 V



vorherige Seite:		nächste Seite:	
Zustand	Änderung	Projekt-Nr.:	Anlage:
		B23_B26_B33Pro_400V	B23_B26_B33Pro_400V
Datum	Name	Standort	Zeichn.-Nr.:
08.08.2011			
Bearb.	Gepr.	Blatt:	von
		1	1
Urspr.		Ers.d	

B17_B23_B26_B33_parts.fm

7.12 Schaltplan - Wiring diagram - B23Pro Vario, B26Pro Vario, B33Pro Vario



B17_B23_B26_B33_parts.fm



8 Malfunctions

8.1 Malfunctions on the drilling machine

Malfunction	Cause/ possible effects	Solution
Release of the FI protected switch	<ul style="list-style-type: none"> an unusual FI protective switch is being used 	<ul style="list-style-type: none"> "Electrical connection" on page 29
Noise during work.	<ul style="list-style-type: none"> Spindle turning dry Tool blunt or incorrectly secured 	<ul style="list-style-type: none"> Grease spindle Use new tool and check securing (fixed setting of the bit, bit holder and chuck).
Drill bit "burnt"	<ul style="list-style-type: none"> Incorrect speed Chips do not come out of the bore hole. Blunt drill bit. Operating without cooling agent. 	<ul style="list-style-type: none"> Select another rate, feed too high. Retract the drill bit from the bore hole more often. Sharpen the drill bit or insert new drill bit. Use cooling agent
Drill point runs off, drilled hole is not circular.	<ul style="list-style-type: none"> Hard fibre in wood or length of the cutting twist or the drill bit is uneven. Drill bit is bent. 	<ul style="list-style-type: none"> Use a new drill bit.
Drill bit defective.	<ul style="list-style-type: none"> No base / support used. 	<ul style="list-style-type: none"> Place a piece of wood underneath the workpiece and fasten this to the workpiece.
Drill bit runs unround or wobbles.	<ul style="list-style-type: none"> Drill bit is bent. Worn bearing on boring head. Drill is not correctly clamped. Drill chuck defective 	<ul style="list-style-type: none"> Replace drill bit Have the bearing on the boring head replaced. Set the correct tension to the drill bit. Exchange the drill chuck.
The drill chuck or the taper mandril cannot be inserted.	<ul style="list-style-type: none"> Dirt, grease or oil on the taper inside of the drill chuck or on the taper surface of the drill spindle 	<ul style="list-style-type: none"> Clean the surfaces accurately Keep surfaces free of grease
Motor does not start	<ul style="list-style-type: none"> Motor is wrongly connected Defective fuse 	<ul style="list-style-type: none"> Have it checked by authorised personnel.
Motor is overheating and there is no power	<ul style="list-style-type: none"> Motor overloaded Too low mains voltage Motor is wrongly connected 	<ul style="list-style-type: none"> Disconnect immediately and have the equipment checked by a trained specialist
Precision of the work deficient	<ul style="list-style-type: none"> Heavy and unbalanced or deformed work-piece Inexact horizontal position of the work-piece holder 	<ul style="list-style-type: none"> Balance the piece statically and secure without straining Adjust workpiece-holder
Drilling spindle sleeve does not return to its initial position	<ul style="list-style-type: none"> Spindle return spring 	<ul style="list-style-type: none"> "Spindle return spring" on page 44



9 Appendix

9.1 Copyright

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Subject to technical changes without notice.

9.2 Terminology/Glossary

Term	Explanation
Drill sleeve	Fixed hollow shaft in which the drilling spindle turns
Drilling spindle	Shaft activated by the motor
Quick-action drill chuck	Drill chuck can be fixed by hand.
Drill chuck	Drill bit adapter
Drill drift	Tool to release the bit or the drill chuck from the drill spindle
Taper mandrel	Cone of the drill or of the drill chuck
Tool	Milling cutter, drill bit, countersink, etc.
Workpiece	Piece to be drilled or machined.
Drilling table	Supporting surface, clamping surface
Drill head	upper part of the drilling machine
Star wheel	Manual operation for the drill feed

9.3 Change information operating manual

Chapter	Short summary	new version number
EC declaration	changed standard	1.2.9
all	Merging of standard + Vario	2.0
3	Figure of spindle protection switch	2.0.1
1 + 4	Type plates + speed table added	2.0.2
3	Electrical connection, Advanced information on frequency converters.	2.1.0
4	Updated speed tables	2.1.0
7	updated spare parts drawings	2.1.0
CE + 3.1 + 4.7	CE declaration + Rohm + drill chuck	2.1.1
1, 4, parts	EMC categories, Updating the spare parts list (09 / 2018), ~60Hz speed tables	2.1.2



9.4 Liability claims for defects / warranty

Beside 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 in the framework of a single contractual provision.

- The processing of the liability claims or of the warranty is performed as chosen by OPTIMUM GmbH 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
- The following items are also not subject to liability or warranty claims:
 - Wearing parts and components which are subject to a standard wear as intended such as e.g. V-belts, ball bearings, illuminants, filters, sealings, 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.
- Place of jurisdiction for legal disputes between businessmen is Bamberg.
- If one of the aforementioned agreements is totally or partially inoperative and/or invalid, a provision closest to the intent of the warrantor is considered agreed upon, which remains within the framework of the limits of liability and warranty which are specified by this contract.



9.5 Storage

ATTENTION!

Incorrect and improper storage might result in damage or destruction of electrical and mechanical machine components.

Store packed and unpacked parts only under the intended environmental conditions.

Follow the instructions and information on the transport box:



- Fragile goods
(Goods require careful handling)



- Protect against moisture and humid environment
☞ "Environmental conditions temperature" on page 20



- Prescribed position of the packing case
(Marking the top surface - arrows pointing up)



- Maximum stacking height
Example: not stackable - do not stack further packing case on top of the first one.



Consult Optimum Maschinen Germany GmbH if the machine and accessories are stored for more than three months or are stored under different environmental conditions than those specified here .

9.6 Advice for disposal / Options of re-use

Please dispose of your machine in an environmentally friendly way, not by disposing of the waste not in the environment, but by acting in a professional way.

Please neither throw away the packaging nor the used machine later on, but dispose of them according to the guidelines established by your city council/municipality or by the corresponding waste management enterprise.



9.6.1 Decommissioning

CAUTION!

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



- Pull off the main plug.
- Cut the connection cable.
- Remove all environmentally hazardous operating fluids from the used device.
- 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.

9.6.2 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.

9.6.3 Disposing 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.



9.6.4 Disposal of electrical and electronic components

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

The machine is composed of electrical and electronic components and must not be disposed of as household waste. According to the European Directive 2011/65/EU 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.



9.6.5 Disposal of lubricants and coolants

ATTENTION!

Please imperatively make sure to dispose of the used coolant and lubricants in an environmentally compatible manner. Observe the disposal instructions of your municipal waste management companies.



INFORMATION

Used coolant emulsions and oils should not be mixed since it is only possible to reuse oils without pre-treatment when they have not been mixed.

The disposal instructions for used lubricants are made available by the manufacturer of the lubricants. If necessary, request the product-specific data sheets.



9.7 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, the municipal waste collection station or the shop where you have bought the product.



9.8 RoHS, 2011/65/EU

The symbol on the product or on its packing indicates that this product complies with the European directive 2011/65/EU.



9.9 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 send us the following information:

- Modified settings
- experiences with the bench drill and upright drill, which could be important for other users
- Recurring failures

Optimum Maschinen Germany GmbH

Dr.-Robert-Pfleger-Str. 26

D-96103 Hallstadt

Fax +49 (0) 951 - 96 555 - 888

email: info@optimum-maschinen.de



EC - Declaration of Conformity



according to Machinery directive 2006/42/EC, Annex II 1.A

The manufacturer / distributor Optimum Maschinen Germany GmbH
Dr.-Robert-Pfleger-Str. 26
D - 96103 Hallstadt, Germany

hereby declares that the following product

Product designation: Drilling machine
Type designation: B17 Pro ; B23 Pro ; B26 Pro ; B33 Pro
Year of manufacture: 20__

fulfills all the relevant provisions of the directive 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 additional EU directives have been applied:

EMC Directive 2014/30/EU

The following harmonized standards were applied:

EN 12717: 2001 - Machine tools - Safety - Drilling machines
EN 60204-1 - Safety of machinery - Electrical equipment of machines - Part 1: General requirements
EN 13849-1:2015 - Safety of machinery - Safety related parts of controls - Part 1: General design principles
EN 13849-2:2012 - Safety of machinery - Safety related parts of controls - Part 2: Validation
EN ISO 12100:2013 - 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, 2017-07-12



EC - Declaration of Conformity

according to Machinery directive 2006/42/EC, Annex II 1.A

The manufacturer / distributor Optimum Maschinen Germany GmbH
Dr.-Robert-Pfleger-Str. 26
D - 96103 Hallstadt, Germany

hereby declares that the following product

Product designation: Drilling machine

Type designation: B23 Pro Vario
B26 Pro Vario
B33 Pro Vario

Year of manufacture: 20__

fulfills all the relevant provisions of the directive 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 additional EU directives have been applied:

EMC Directive 2014/30/EU

The following harmonized standards were applied:

EN 12717: 2001 - Machine tools - Safety - Drilling machines

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

EN 1837:1999+A1:2009 - Safety of machinery - Integral lighting of machines

EN 13849-1:2015 - Safety of machinery - Safety related parts of controls - Part 1: General design principles

EN 13849-2:2012 - Safety of machinery - Safety related parts of controls - Part 2: Validation

EN ISO 12100:2013 - Safety of machinery - General principles for design - Risk assessment and risk reduction

EN 50370-2 - Electromagnetic compatibility (EMC) - Product family standard for machine tools - Part 2: Immunity

EN 55011 (CISPR 11) - Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement - class A

EN 61000-6-3:-2 - Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

EN 61000-6-3:-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 ≤ 16 A per phase and not subject to conditional connection

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, 2018-02-26



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Quellenverzeichnis von Ihrem Fachhändler Metallbau Mehner

Optimum Bohrmaschinen:

- OPTIdrill B 17Pro
 - OPTIdrill B 17Pro Ersatzteile
 - OPTIdrill B 17Pro Zubehör
- OPTIdrill B 23Pro
 - OPTIdrill B 23Pro Ersatzteile
 - OPTIdrill B 23Pro Zubehör
- OPTIdrill B 23Pro Vario
 - OPTIdrill B 23Pro Vario Ersatzteile
 - OPTIdrill B 23Pro Vario Zubehör
- OPTIdrill B 26Pro
 - OPTIdrill B 26Pro Ersatzteile
 - OPTIdrill B 26Pro Zubehör
- OPTIdrill B 26Pro Vario
 - OPTIdrill B 26Pro Vario Ersatzteile
 - OPTIdrill B 26Pro Vario Zubehör
- OPTIdrill B 33Pro
 - OPTIdrill B 33Pro Ersatzteile
 - OPTIdrill B 33Pro Zubehör
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