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Originalfassung

DE BETRIEBSANLEITUNG **STÄNDERBOHRMASCHINE**

Übersetzung / Translation

EN USER MANUAL **DRILL PRESS**

SB 163VH

Edition: 20.03.2020 – Revision - 00 – RaR - DE/EN

2 SICHERHEITSZEICHEN / SAFETY SIGNS

DE	SICHERHEITSZEICHEN BEDEUTUNG DER SYMBOLE	**EN**	SAFETY SIGNS DEFINITION OF SYMBOLS

DE **CE-KONFORM!** - Dieses Produkt entspricht den EG-Richtlinien.

EN **CE-Conformal!** - This product complies with the EC-directives.

DE Anleitung beachten!

EN Follow the instructions!

DE Benutzen von Handschuhen verboten!

EN Do not use gloves!

DE Maschine vor Wartung und Pausen ausschalten und Netzstecker ziehen

EN Switch off the machine before maintenance and breaks and pull out the mains plug.

DE Persönliche Schutzausrüstung tragen!

EN Wear personal protective equipment!

DE Gefährliche elektrische Spannung

EN Dangerous electrical voltage

DE Warnung vor Schnittverletzungen

EN Warning of cutting injuries

DE Warnung vor wegschleudernden Teilen!

EN Warning against thrown-off items!

DE **Vor Nässe schützen!**

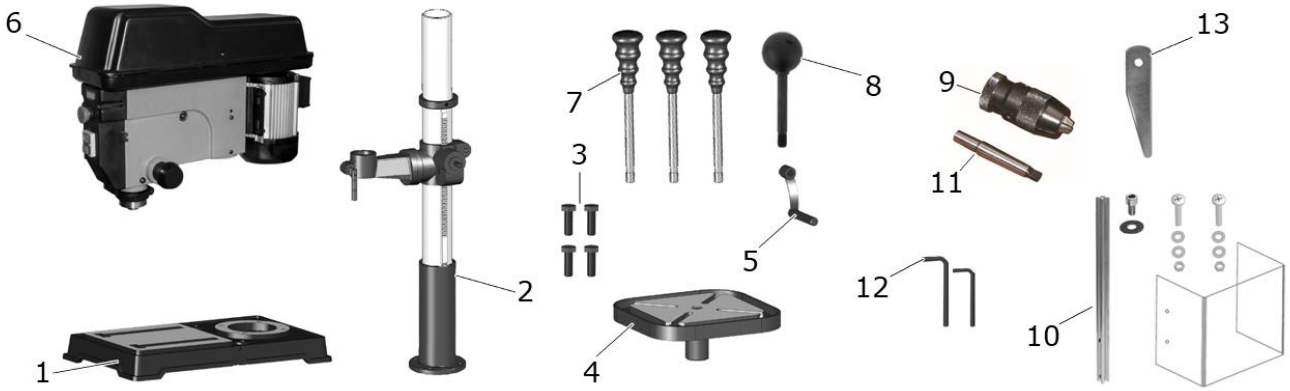
EN **Protect from moisture!**

DE **Warnschilder und/oder Aufkleber an der Maschine, die unleserlich sind oder die entfernt wurden, sind umgehend zu erneuern!**

EN **Missing or non-readable security stickers have to be replaced immediately!**

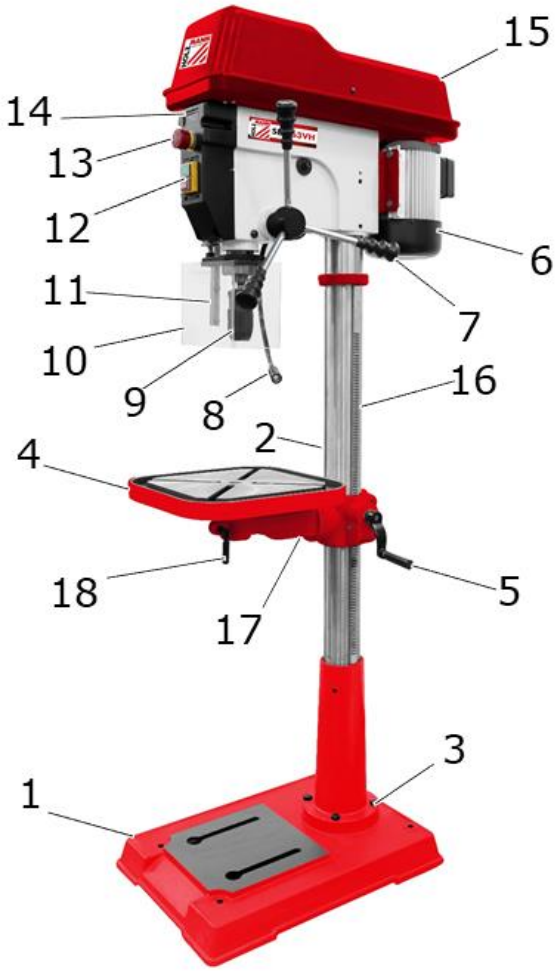
3 TECHNIK / TECHNICS

3.1 Lieferumfang / Delivery Content



SB 163VH			
1	Grundplatte / base plate	**8**	Hebel zum Einstellen der Spindeldrehzahl / lever for setting the drilling spindle speed
2	Säule mit Bohrtisch-Halterung/ column with drilling table holder	**9**	Schnellspannbohrfutter / quick release chuck
3	Schrauben / screws	**10**	Bohrfutterschutz mit Schrauben und Halterung / drill chuck protection with screws and holder
4	Bohrtisch / drilling table	**11**	Bohrfutterdorn / drill chuck arbor
5	Handkurbel zur Bohrtisch-Höhenverstellung / crank handle for height adjustment	**12**	Inbusschlüssel / allen wrenches
6	Maschinenkopf / machine head	**13**	Austreibkeil / drift key
7	Drehhebel / feed lever		

3.2 Komponenten / Components



SB 163VH			
1	Standfuß / ground plate	**10**	Bohrfutterschutz / spindle guard
2	Säule / column	**11**	Bohrfutterschutz-Halterung / spindle guard holder
3	Schrauben / screws	**12**	EIN-AUS-Schalter / ON-OFF-switch
4	Bohrtisch / drilling table	**13**	NOT-AUS-Schalter / emergency stop switch
5	Handkurbel f. Bohrtisch-Höhenverstellung / crank handle for height adjustment	**14**	Drehzahldisplay / speed display
6	Motor / motor	**15**	Keilriemenabdeckung / V-belt cover
7	Handgriff für Vorschubspindel /handle for feed spindle	**16**	Zahnstange / gear rack
8	LED Lampe / LED light	**17**	Bohrtisch-Halterung / drilling table holder
9	Schnellspannbohrfutter / quick release-chuck	**18**	Spannhebel Bohrtisch / drilling table clamping lever

3.3 Technische Daten / Technical Data

Parameter / parameters	Wert / value
Spannung / Voltage	230 V/ 1 /50 Hz
Motorleistung / Motor power S1 (100%)	1,1 kW
Spindel Drehzahl / spindle speed	(I): 180-600 min^{-1} (II): 580-2000 min^{-1}
Max. Bohrleistung (Stahl) / max. drilling capacity (steel)	ø16 mm
Spindelaufnahme / spindle taper	MK3/MT3
Bohrfutter / chuck	1-16 mm
Spindelhub / spindle travel	150 mm
Ausladung / distance spindle to column	430 mm
Säulendurchmesser / column diameter	80 mm
Tischgröße / table size	356 x 356 mm
Bodenplattengröße / base-plate dimension	580 x 420 mm
max. Abstand Spindel zu Tisch / max. distance spindle to table	645 mm
Max. Abstand Spindel zu Bodenplatte / max. distance spindle to base	1150 mm
Schutzklasse / protection class	I
Schutzart / Protection mode	IP22
Maschinendimension (L x B x H) / machine dimensions (L x W x H)	740 x 470 x 1710 mm
Verpackungsmaße (L x B x H) / packaging dimensions (L x W x H)	1530 x 700 x 280 mm
Schalldruckpegel L_{PA} / Sound pressure level L_{PA}	73,1 dB(A) k: 3dB(A)
Schallleistungspegel L_{WA} / sound power level L_{WA}	88,5 dB(A) k: 3dB(A)
Nettogewicht / net Weight	88,5kg
Bruttogewicht / gross-weight	98,5kg

(DE) Hinweis Geräuschangaben: Die angegebenen Werte sind Emissionswerte und müssen damit nicht zugleich auch sichere Arbeitsplatzwerte darstellen. Obwohl es eine Korrelation zwischen Emissions- und Immissionspegeln gibt, kann daraus nicht zuverlässig abgeleitet werden, ob zusätzliche Vorsichtsmaßnahmen notwendig sind oder nicht. Faktoren, welche den am Arbeitsplatz tatsächlich vorhandenen Immissionspegel beeinflussen, beinhalten die Eigenart des Arbeitsraumes und andere Geräuschquellen, d. h. die Zahl der Maschinen und anderer benachbarter Arbeitsvorgänge. Die zulässigen Arbeitsplatzwerte können ebenso von Land zu Land variieren. Diese Information soll jedoch den Anwender befähigen, eine bessere Abschätzung von Gefährdung und Risiko vorzunehmen.

(EN) Notice noise emission: The values given are emission values and therefore do not have to represent safe workplace values at the same time. Although there is a correlation between emission and immission levels, it cannot be reliably deduced whether additional precautions are necessary or not. Factors influencing the actual immission level at the workplace include the nature of the workspace and other noise sources, i.e. the number of machines and other adjacent operations. The permissible workplace values may also vary from country to country. However, this information should enable the user to make a better assessment of hazard and risk.

11 PREFACE (EN)

Dear Customer!

This manual contains information and important instructions for the installation and correct use of the drill press SB 163VH
Following the usual commercial name of the machine (see cover) is substituted in this manual with the name "machine".
This manual is part of the product and shall not be stored separately from the product. Save it for later reference and if you let other people use the product, add this instruction manual to the product.

Please read and obey the security instructions!
Before first use read this manual carefully. It eases the correct use of the product and prevents misunderstanding and damages of product and the user's health.

Due to constant advancements in product design, construction pictures and content may diverse slightly. However, if you discover any errors, inform us please.
Technical specifications are subject to changes!

Please check the product contents immediately after receipt for any eventual transport damage or missing parts.

Claims from transport damage or missing parts must be placed immediately after initial product receipt and unpacking before putting the product into operation.

Please understand that later claims cannot be accepted anymore.

Copyright

Customer Service Contact

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12 SAFETY

This section contains information and important notes for safe commissioning and handling of the SB163VH box column drill.

For your safety, please read these operating instructions carefully before commissioning. This will enable you to handle the machine safely and prevent misunderstandings as well as personal injury and damage to property. In addition, observe the symbols and pictograms used on the machine as well as the safety and danger information!

12.1 Intended Use of the Machine

The machine is intended exclusively for the following activities: For drilling of metal, wood or plastic with the drilling tool suitable for the respective material.

HOLZMANN MASCHINEN accepts no responsibility or warranty for any other use or use beyond this and for any damage to property or injury resulting therefrom.

12.1.1 Technical Restrictions

The machine is intended for use under the following ambient conditions:

Rel. Humidity:	max. 65 %
Temperature (Operation)	+5° C to +40° C
Temperature (Storage, Transport)	-20° C to +55° C

12.1.2 Prohibited Applications / Hazardous Misapplications

- Operating the machine without adequate physical and mental aptitude
- Operating the machine without knowledge of the operating instructions
- Changes in the design of the machine
- Operating the machine in a potentially explosive environment (machine can generate ignition sparks during operation)
- Operating the machine outside the limits specified in this manual
- Removing the safety markings attached to the machine.
- Modifying, circumventing or disabling the safety devices of the machine.

The improper use or disregard of the versions and instructions described in this manual will result in the voiding of all warranty and compensation claims against Holzmann Maschinen GmbH.

12.2 User Requirements

The physical and mental suitability as well as knowledge and understanding of the operating instructions are prerequisites for operating the machine. Persons who, because of their physical, sensory or mental abilities or their inexperience or ignorance, are unable to operate the machinery safely must not use it without the supervision or instruction of a responsible person.

Please note that local laws and regulations may determine the minimum age of the operator and restrict the use of this machine!

Put on your personal protective equipment before working on the machine.

Work on electrical components or equipment may only be carried out by a qualified electrician or under the instruction and supervision of a qualified electrician.

12.3 Safety Devices

The machine is equipped with the following safety devices:

 Symbol pic	• Self-locking EMERGENCY STOP button to stop dangerous movements at any time.

	• Fold-out DRILL CHUCK PROTECTION, which covers the drill chuck used and the clamped tool in its rest position at the front and on both sides, and which prevents the machine from being started up when the protection is open.
	• A guard protecting access to the motor / belt drive.

12.4 General Safety Instructions

To avoid malfunctions, damage and health hazards when working with the machine, in addition to the general rules for safe working, the following points must be observed:

- Before start-up, check the machine for completeness and function. Only use the machine if the guards and other non-parting guards required for machining have been fitted, are in good operating condition and have been properly maintained.
- Choose a level, vibration-free, non-slip surface for the installation location.
- Ensure sufficient space around the machine!
- Ensure a clean working environment and sufficient lighting conditions at the workplace!
- Remove all adjustment tools or spanners before switching on the machine.
- Only use perfect tools that are free of cracks and other defects (e.g. deformations).
- Make sure that the on/off switch is in the "off" position before switching on the machine.
- Keep the area around the machine free of obstacles (e.g. dust, chips, cut workpiece parts etc.).
- Check the strength of the machine connections before each use.
- Never leave the running machine unattended. If necessary, stop the machine before leaving.
- Do not reach past the running spindle, but only clean the machine when the drilling spindle is at a standstill.
- The machine may only be operated, serviced or repaired by persons who are familiar with it and who have been informed of the dangers arising during this work.
- Ensure that unauthorized persons maintain a safe distance from the machine and keep children away from the machine.
- Wear suitable protective equipment (eye protection, ear protection, safety shoes) and close-fitting protective clothing, but never loose clothing, ties, jewellery, etc. - danger of being drawn in!
- Hide long hair under a hair protector.
- Always work with caution and do not use excessive force.
- Do not overload the machine!
- Do not work on the machine if you are tired, lacking concentration or under the influence of medication, alcohol or drugs!
- Do not use the machine in areas where vapours from paints, solvents or flammable liquids represent a potential danger (danger of fire or explosion!).

12.5 Electrical Safety

- Make sure that the ON/OFF switch is in the OFF position before connecting the machine to the power supply.
- Ensure that the unit is earthed.
- Only use suitable extension cords.
- Always shut down the machine before carrying out any conversion, adjustment, measuring, cleaning, servicing or maintenance work and always disconnect it from the power source for servicing or maintenance work. Before starting any work on the machine, wait until all tools or machine parts have come to a complete standstill and secure the machine against unintentional/unauthorized reconnection.
- Proper plugs and suitable sockets reduce the risk of electric shock!
- A damaged or tangled cable increases the risk of electric shock. Handle the cable carefully. Never use the cable to carry, pull or disconnect the power tool. Keep the cable away from heat, oil, sharp edges or moving parts.
- Use of the power tool in a humid environment is only permitted if the power source is protected by a residual current circuit breaker.
- Do not use the power tool if it cannot be switched on and off with the ON/OFF switch..

12.6 Special Safety Instructions

- Work with gloves on rotating parts is not permitted!
- Secure the workpiece to be machined against entrainment by the drill. Use a machine vice or clamping claws for clamping.

12.7 Hazard Warnings

Despite their intended use, certain residual risks remain. Due to the design and construction of the machine, hazardous situations may occur when handling the machines, which are identified as follows in these operating instructions:

DANGER	
	A safety instruction designed in this way indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING	
	Such a safety instruction indicates a potentially hazardous situation which, if not avoided, may result in serious injury or even death.

CAUTION	
	A safety instruction designed in this way indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTE	
	A safety notice designed in this way indicates a potentially hazardous situation which, if not avoided, may result in property damage.

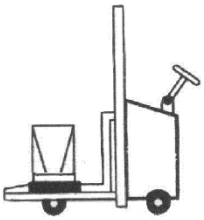
Irrespective of all safety regulations, your common sense and appropriate technical suitability/training are and will remain the most important safety factor for error-free operation of the machine. **Safe working depends primarily on you!**

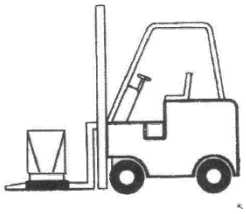
13 TRANSPORT

WARNING

The drill is heavy! At least two people are required to carry it. For longer transports, disassemble the drill and transport it in its original packaging!

To ensure proper transport, observe the instructions and information on the transport packaging regarding centre of gravity, attachment points, weight, means of transport to be used etc. as well as existing transport rules.





If possible, use a lift truck or stacker to transport the delivered product to the desired location before unpacking.

The drill press is heavy. There are at least two people required to carry it. When carrying the drill, grasp it once under the base plate and hold it by the drill column, but do not carry the drill by the motor unit!

If you transport the drill with a vehicle, make sure that the load is properly secured!

14 ASSEMBLY

14.1 Preparatory Activities

14.1.1 Checking the Delivery Content

Check the machine immediately after receipt of delivery or after unpacking for transport damage or missing or damaged parts.

Note any visible transport damage immediately on the delivery note and report any damage to the machine or missing parts immediately to your retailer or freight forwarder.

14.1.2 Working place

The floor at the installation site must be able to support the weight of the machine. The minimum space required for the machine is determined by the dimensions of the machine plus a safety area of approx. 80 cm around the machine.

Choose an even, load-bearing subfloor with the appropriate amount of space as the installation location. The installation site must also meet the ergonomic requirements of a workplace.

14.1.3 Electrical Connection

WARNING

Working on an unearthed machine can result in serious injury or even death. Ground the machine and operate it only from a grounded outlet! Operation is only permitted with a residual current protective device (RCD with maximum residual current of 30 mA). Only use suitable extension cables with the appropriate stranded wire cross-section (see table below).!

NOTE

Check the running direction of the motor immediately after making the electrical connection!

Voltage	Extension	Strand Cross-Section
220 V – 240 V 50 -60 Hz	<27 m	1,5 mm^2
	<44 m	2,5 mm^2
	<70 m	4,0 mm^2
	<105 m	6,0 mm^2

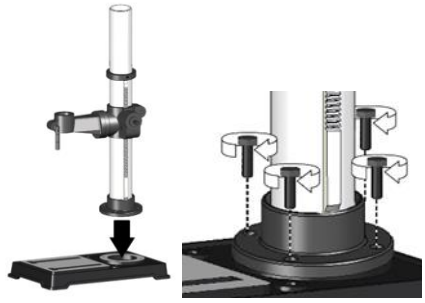
Please note that work on electrical components or equipment may only be carried out by a qualified electrician or under the direction and supervision of a qualified electrician!

The following also applies in connection with the electrical connection:

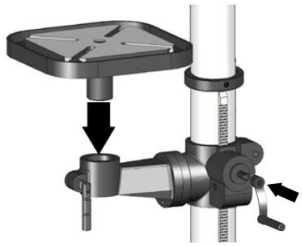
- The connector plug, if present, must not be tampered with.
- The earthing conductor is yellow-green.
- The power supply mains must be fused with 16 Ampere.
- Check whether the mains voltage corresponds to the requirements of the machine.
- After the electrical connection, check the correct running direction (3 phases).
- Make sure that any extension cable is in good condition and suitable for power transmission. An undersized cable reduces power transmission and heats up considerably.
- Replace damaged cables immediately!

14.2 Assembling the machine

The machine has been dismantled for transport purposes. For assembly please observe the following assembly instructions:

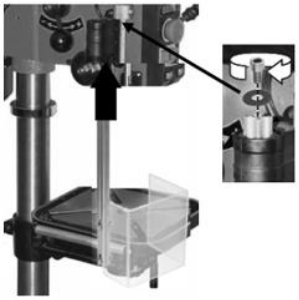
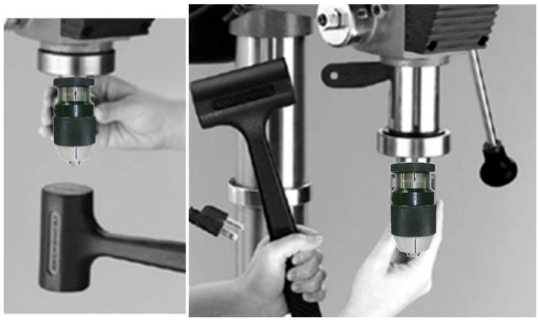


1. Mounting the column
2. Place the column on the base plate so that the holes match the threaded holes.
3. Fasten the column with screws.



4. Mounting drilling table and crank handle
   - Mount the drilling table and height adjustment crank (as shown in the illustration on the left).

5. Mounting machine head and spindle stroke lever
   Place the machine head on the column and fix it with hexagon socket screws (a).
   Mount the spindle lift lever.

 1	6. Mounting the lever for setting the drilling spindle speed. Tighten the lever for setting the drilling spindle speed.
	7. Mounting the spindle guard • Fasten the spindle guard cover with two screws to the bracket. • Push the spindle protection holder through the switch housing. • Fix with hexagon socket screw and spacer washer.
	8. Mounting/removing the drill chuck • Degrease all parts. • Use a rubber hammer to fix the drill chuck with a careful blow (1st picture far left). • To remove the drill chuck again, extend the spindle and turn it until you can attach the drift wedge. • Remove drill chuck with a careful blow (2nd picture left).

15 OPERATION

WARNING

- Always disconnect the machine from the power source and secure it against unintentional reconnection before carrying out any conversion or adjustment work!

CAUTION

- When drilling workpieces with uneven surfaces, use suitable support pads!
- Never start the drilling machine with the drill pressed down!

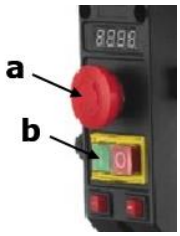
NOTE

- Before each use, check that the safety devices are in perfect condition.
- Check the screw connections for tightness at least once a week.
- Regularly check that the warning and safety labels on the machine are in perfect and legible condition.

15.1.1 Starting the Machine

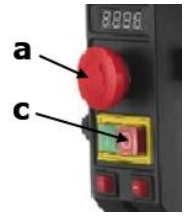
NOTE

For the machine to be started, the EMERGENCY STOP switch (a) must be unlocked and the belt cover and spindle guard must be closed!



- Press the ON key (b).

15.1.2 Stopping the Machine



Normal stop:

- Press the OFF button (c).

In an emergency:

- - Switch off by pressing the EMERGENCY STOP switch (a).

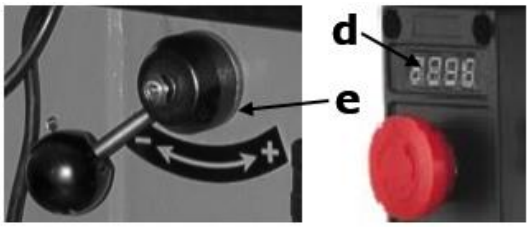
15.1.3 Setting the Speed

Select correct V-belt position I or II

I: for speed range 180-600 min-1

II: for speed range 580-2000 min-1

- Then set the desired speed in the selected range with speed lever (e) ONLY WHEN THE MACHINE IS RUNNING!
- Read the speed on the speed display.

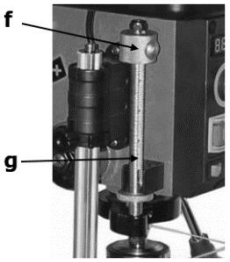


The smaller the bore, the higher the rotational speed.

To achieve a good result also applies:

- Soft material =>high speed
- Hard material => low speed

15.1.4 Setting the Drilling Depth

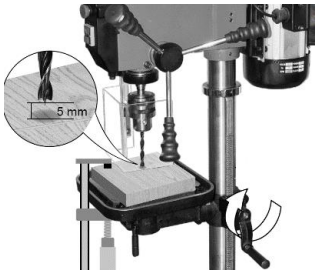


- Bring the drill depth stop (f) into the desired position.
- Read off the drilling depth on the drilling depth scale (g).

15.1.5 Clamping the workpiece

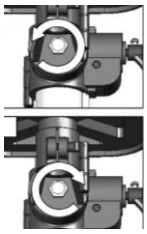
- Do not attempt to secure the workpiece to be machined by hand against entrainment by the drill. Secure the workpiece to be machined by clamping it. Use a machine vice or clamping claws to clamp the workpiece.

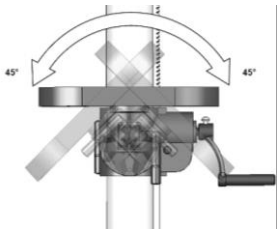
15.1.6 Adjusting the Height of the Worktable



- Adjust the height of the drilling table so that the distance between the drill tip and the surface of the workpiece to be machined does not exceed 5 mm.

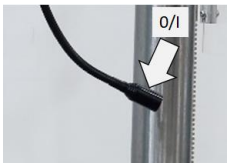
15.1.7 Adjusting the Inclination of the Worktable





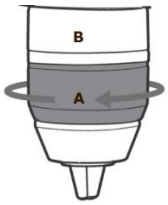
- The drilling table can be tilted both to the left and to the right by 45 ° each. To adjust, loosen the nut below the drilling table with a wrench, adjust the desired angle and retighten the nut (see picture on the right).

15.1.8 LED Light



- Switch OFF or ON the working light, as required

15.1.9 Replacing the Drill Bit



- Open the drill chuck by turning it counter to direction A until the drill can be inserted. Hold ring B in place.
- Insert the drill bit.
- Turn the sleeve of the drill chuck tightly by hand in the direction of rotation A. Hold ring B in place.
- This automatically locks the drill chuck.

16 CLEANING, MAINTENANCE, STORGAE AND DISPOSAL

16.1 Cleaning

NOTE

Wrong cleaning agents can attack the varnish of the machine. Do not use solvents, nitro thinners, or other cleaning agents that could damage the machine's paint. Observe the information and instructions of the cleaning agent manufacturer!

Lubricate the machine before initial operation and oil the bare machine parts with an acid-free lubricating oil. Regular cleaning is a prerequisite for the safe operation of the machine and its long service life. Therefore, clean the machine after each use, at least once a week. Use a brush, a hand brush or a vacuum cleaner to remove the chips and drilling dust.

16.2 Maintenance

WARNING

Danger due to electrical voltage! Handling the machine with the power supply up can lead to serious injuries or even death. Always disconnect the machine from the power supply before servicing or maintenance work and secure it against unintentional or unauthorized reconnection!

The machine is low-maintenance and only a few parts have to be serviced. Nevertheless, malfunctions or defects which could impair the safety of the user must be rectified immediately!

16.2.1 Maintenance Plan

The type and degree of machine wear depend to a large extent on the operating conditions. The following intervals apply when the machine is used within the specified limits:

Interval	Components	Measure
Before start-up	Safety devices V-belts	Sicherheitseinrichtungen prüfen Keilriemen kontrollieren und ggfs. spannen
After start-up	machine; column and drilluing table	Clean the machine of chips and drilling dust; Lubricate the column and drilling table with a thin layer of oil.
After approx. every 50 operating hours	Taper mandrel	Grease taper mandrel

16.3 Storage

NOTE

Improper storage can damage and destroy important machine parts. Store packed or unpacked parts only under the intended ambient conditions!

In the event of a prolonged interruption of operation or shutdown, clean the machine thoroughly and store it in a dry environment protected from frost and other weather conditions!

16.4 Disposal

Observe the national waste disposal regulations. Never dispose of the machine, machine components or equipment in residual waste. If necessary, contact your local authorities for information on the disposal options available.If you buy a new machine or an equivalent device from your specialist dealer, he is obliged in certain countries to dispose of your old machine properly.

17 TROUBLESHOOTING

WARNING

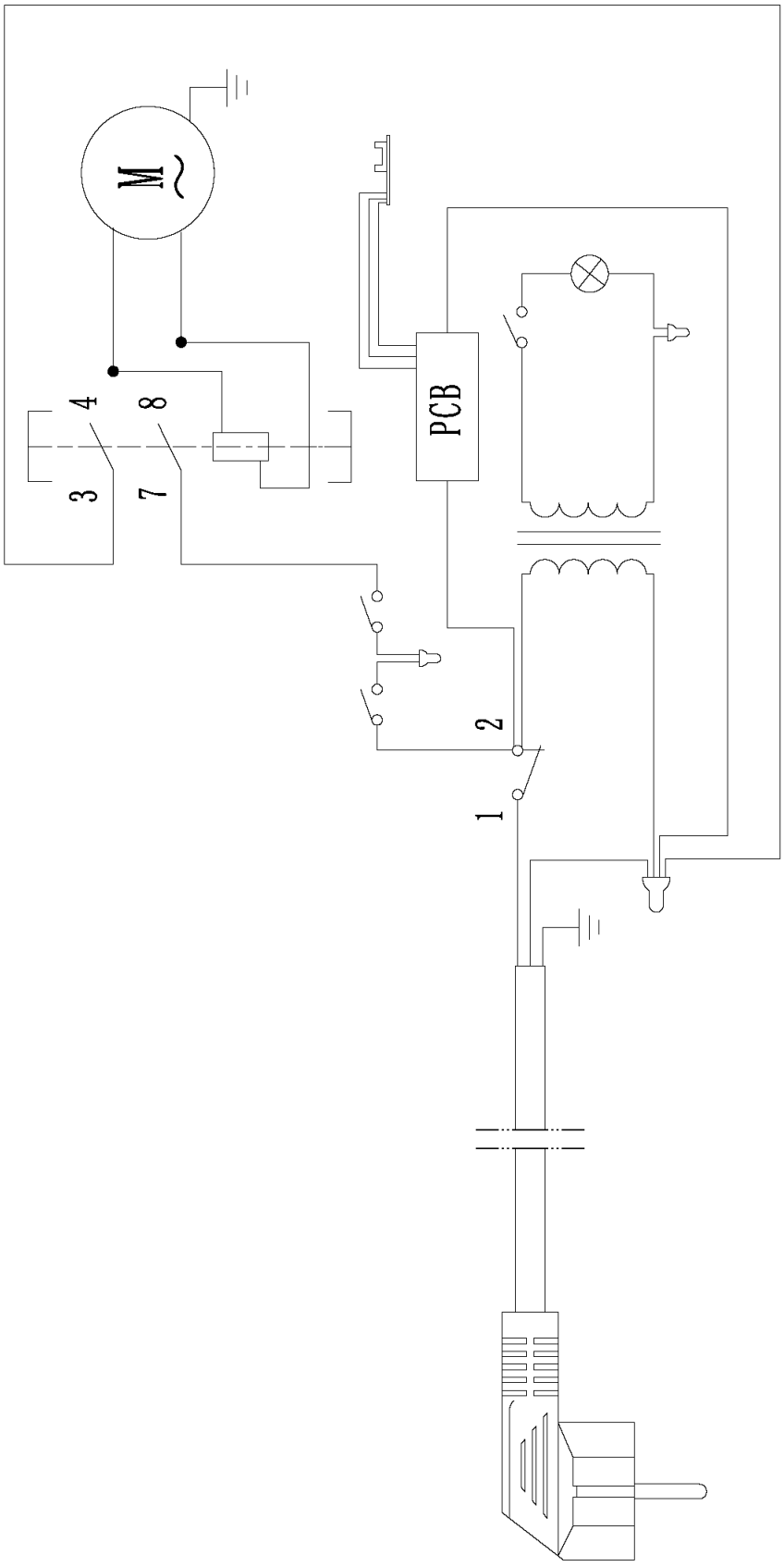
Danger due to electrical voltage! Handling the machine with the power supply up can lead to serious injuries or even death. Always disconnect the machine from the power supply and secure it against unintentional or unauthorized reconnection before carrying out any troubleshooting measures.

Many potential sources of error can be excluded in advance if the machine is connected properly to the mains supply.

If you are unable to carry out necessary repairs properly or do not have the required training, always consult a specialist workshop to rectify the problem.

Fault	Possible Cause	Trouble Shooting
motor does not run	• incorrect mains connection	• have checked by a specialist
	• switch defective	• exchange
	• motor defective	• exchange
	• safety devices are active	• check EMERGENCY OFF switch and switches in the V-belt cover / spindle guard (open?)
unusual operating noise	• incorrect V-belt tension	• adjust the V-belt to the correct tension. Pressure test with finger (1cm play)
drill is decentered/running unbalanced/wobbles	• drill chuck eiert	• tap the drill chuck with a wooden or rubber hammer.
	• spindle is worn out	• replace spindle or ball bearing
	• clamping jaws are defective	• replace drill chuck
drill smokes	• excessive friction Drill material • ratio speed/material	• use lubricant • too high a speed, reduce!
motor running, but no rotation or weak drilling performance	• lack of power transmission from V pulleys to V belts: • belts too loose • belt contaminated with lubricant	• check belt when worn: replace. Otherwise tighten the belt. • clean and dry belts

18 SCHALTPLAN / WIRING DIAGRAM



19 ERSATZTEILE / SPARE PARTS

19.1 Ersatzteilbestellung / Spare Parts Order

(DE) Mit HOLZMANN-Ersatzteilen verwenden Sie Ersatzteile, die ideal aufeinander abgestimmt sind. Die optimale Passgenauigkeit der Teile verkürzen die Einbauzeiten und erhöhen die Lebensdauer.

HINWEIS

Der Einbau von anderen als Originalersatzteilen führt zum Verlust der Garantie!

Daher gilt: Beim Tausch von Komponenten/Teilen nur Originalersatzteile verwenden

Beim Bestellen von Ersatzteilen verwenden Sie bitte das Serviceformular, das Sie am Ende dieser Anleitung finden. Geben Sie stets Maschinentype, Ersatzteilnummer sowie Bezeichnung an. Um Missverständnissen vorzubeugen, empfehlen wir mit der Ersatzteilbestellung eine Kopie der Ersatzteilzeichnung beizulegen, auf der die benötigten Ersatzteile eindeutig markiert sind.

Bestelladresse sehen Sie unter Kundendienstadressen im Vorwort dieser Dokumentation.

(EN) With original HOLZMANN spare parts you use parts that are attuned to each other shorten the installation time and elongate your products lifespan.

IMPORTANT

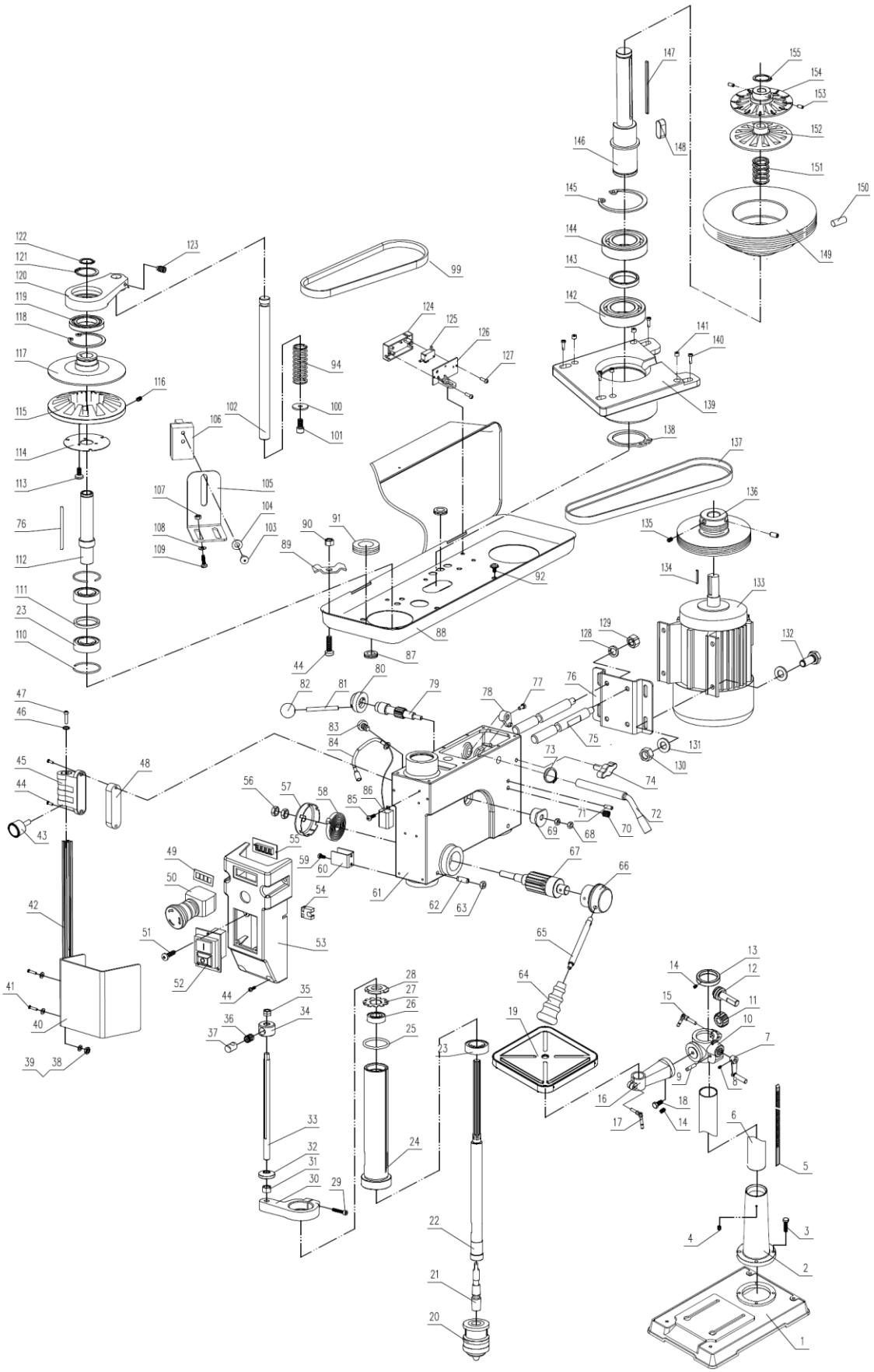
The installation of other than original spare parts voids the warranty!

So you always have to use original spare parts

When you place a spare parts order please use the service form you can find in the last chapter of this manual. Always take a note of the machine type, spare parts number and part name. We recommend to copy the spare parts diagram and mark the spare part you need.

You find the order address in the preface of this operation manual.

19.2 Explosionszeichnung / Exploded View



19.3 Ersatzteilliste / Spare Parts List

#	Part	Qty	#	Part	Qty	#	Part	Qty
1	Base	1	51	Cross tapping screws	3	106	Digital RPM reader	1
2	Column seat	1	52	Magnetic switch	1	107	Nut	2
3	Hex bolt M10x40	4	53	Switch box	1	108	Washer	4
4	Socket head cap screw M10x12 1	1	54	Key seat	1	109	Cross recessed pan head screws M4x8	2
5	Rack	1	55	Digital display assembly	1	110	Circlip ring	1
6	Tube Column	1	56	Nut for spring cap	2	111	Spacer ring	2
7	Crank	1	57	Spring cap	1	112	spline housing	1
8	Socket head cap screw M6x10	2	58	Spring	1	113	Cross recessed pan head screws M4x5	3
9	Pin gear	1	59	Cross recessed pan head screws M5x12	2	114	RPM Disc	1
10	Support table with indicator	1	60	Depth stop plate	1	115	Fixed spindle pulley	1
11	Gear-helical	1	61	Case	1	116	Soket head cap screw M6x16	1
12	Worm-elevation	1	62	Screw-set special	1	117	Activity spindle pulley	1
13	Collar rack	1	63	Nut	1	118	Circlip ring	1
14	Socket head cap screw M6x10	2	64	Knob	3	119	Bearing	1
15	Locking handle assembly	1	65	Handle lever	3	120	Belt pulley-adjustment mount	1
16	Arm table with scale	1	66	Handle seat	1	121	Circlip ring	1
17	Table Locking handle assembly	1	67	Gear Shaft	1	122	Circlip ring	1
18	Bolt M16x35	1	68	Nut	2	123	Soket head cap screw M8x12	2
19	Table	1	69	Shaft Sleeve	1	124	Plate-Micro Switch	1
20	Chuck	1	70	Soket head cap screw M10x12	2	125	Micro Switch	1
21	Arbor	1	71	Roll pin	2	126	Cover-Micro Switch	1
22	Spindle	1	72	Tensioner	8	127	Self tapping screw	2
23	Bearing 6205	3	73	Circlip ring	1	128	washer	2
24	Tube-quill	1	74	knocking knob	1	129	Hex Nut M12	2
25	Spacer-bearing	1	75	Rod	2	130	Nut	4
26	Bearing 6203	1	76	Junction plate	1	131	washer M8	8
27	Washer	1	77	screws	4	132	Hex bolt M8x20	4
28	Jam Nut	1	78	lever adjusting	4	133	Motor	1
29	Hex cap screw M6x30	1	79	Speed control gear	1	134	Flat key	1
30	Depth connecting base	1	80	handle seat	1	135	Hex socket set screw M6x8	2
31	Hex Nut	1	81	handle lever	1	136	Belt pulley	1
32	Depth Motion block	1	82	Knob	1	137	Belt	1
33	Depth threaded rod	1	83	Contrsunk head screw M3x10	3	138	Circlip ring	1
34	Depth threaded set	1	84	LED light	1	139	Bearing block	
35	Nut	2	85	Cross recessed pan head screws M4x8	2	140	Hex socket set screw M8x12	4
36	Depth adjust spring	1	86	voltage transformer	1	141	Hex socket button screw M6x20	4
37	Depth adjust button	1	87	Protecting Bushing	1	142	Bearing	1
38	Screw M5	1	88	Guard	1	143	Bearing inner spacer	1
39	washer M5	1	89	Plate for cable	3	144	Bearing	1
40	Chuck guard	1	90	Nut	3	145	Circlip ring	1
41	Bolt M5	1	91	Rubber Bushing	2	146	Shaft	1
42	Guard rod	1	92	Screw	6	147	Flat key	1
43	Locking Button	1	94	Governing Spring	1	148	Flat key	1
44	Cross recessed pan head screws M5x16	2	99	Belt	1	149	Roll pin	1
45	Micro switch assembly	1	100	Washer	1	150	Hex socket set screw M6x8	1
46	Washer	1	101	Hex cap screw M10x20	1	151	Spring	1
47	Hex cap screw M6x8	1	102	Speed rack	1	152	Activity motor pulley	1
48	Cushion block	1	103	Self tapping screw	2	153	Hex socket set screw M5x10	2
49	Plate for digital display	1	104	Washer	2	154	Fixed motor pulley	1
50	Emergency stop switch	1	105	Mounting bracket	1	155	Circlip ring	1