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Originalfassung

DE BETRIEBSANLEITUNG STÄNDERBOH

Übersetzung / Translation

EN USER MANUAL

ES MANUAL DE INSTRUCCIONES

FR MODE D'EMPLOI

IT ISTRUZIONI PER L'USO

NL GEBRUIKSAANWIJZING

RO INSTRUCTIUNI DE OPERARE

SE BRUKSANVISNING

STÄNDERBOHRMASCHINE

DRILL PRESS

TALADRO DE COLUMNA

PERCEUSE RADIALE SUR COLONNE

TRAPANO A COLONNA

KOLOMBOORMACHINE

MAȘINĂ DE GĂURIT CU COLOANĂ

STATIVBORRMASKIN







SB 3116RHN / SB 3116RMN

 ϵ

Edition: 10.11.2017 - Revision - 01 - CEC - DE/EN/ES/FR/IT/NL/RO/SE



10 PREFACE (EN)

Dear Customer!

This manual contains information and important instructions for the installation and correct use of the drill press SB 3116RHN / SB 3116RMN.

Following the usual commercial name of the device (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.

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Customer service contact

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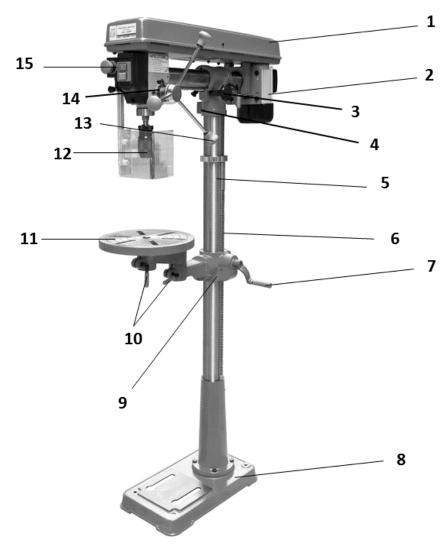
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10.1 Components

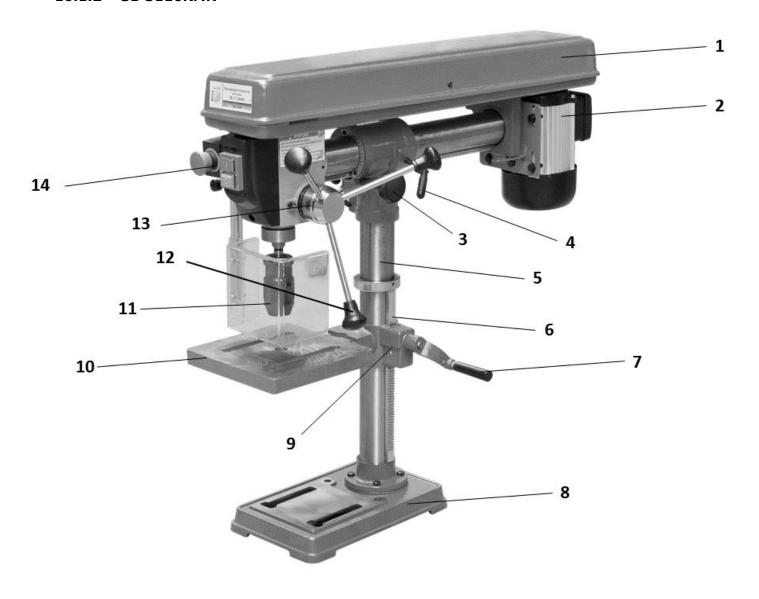
10.1.1 SB 3116RHN



SB 3116RHN				
1	pulley cover	9	table bracket	
2	motor	10	clamping lever	
3	clamping lever for radial adjustment	11	table	
4	clamping lever	12	drill chuck	
5	column	13	feed lever	
6	rack	14	scale ring	
7	handle	15	On-Off- switch and emergency stop	
8	base			



10.1.2 SB 3116RMN



SB 3116RHN				
1	pulley cover	8	base	
2	motor	9	table bracket	
3	clamping lever for radial adjustment	10	table	
4	clamping lever	11	drill chuck	
5	column	12	feed lever	
6	rack	13	scale ring	
7	handle	14	On-Off- switch and emergency stop	



10.2 Technical details

	SB 3116RHN	SB 3116RMN
max. drilling capacity	16mm	16mm
spindle speeds	(5) 500-2500min ⁻¹	(5) 500-2500min ⁻¹
voltage	400V / 230V	400V / 230V
distance spindle to column	130-420mm	130-420mm
spindle holder	MK2 / MT2	MK2 / MT2
max. spindle travel	80mm	80mm
max. distance chuck to table	740mm	355mm
max. distance chuck to base	1185mm	470mm
table dimensions	Ø300mm	220 x 220mm
base	275 x 490mm	310 x 350mm
motor power	S1(100%)/S6 600W/900W	S1(100%)/S6 600W/900W
total height	1640mm	805mm
net weight	58kg	40kg

10.3 Delivery content

10.3.1 SB 3116RHN



10.3.2 SB 3116RMN





11 SAFETY

11.1 Intended Use

The machine must only be used for its intended purpose! Any other use is deemed to be a case of misuse.

To use the machine properly you must also observe and follow all safety regulations, the assembly instructions, operating and maintenance instructions lay down in this manual.

All people who use and service the machine have to be acquainted with this manual and must be informed about the machine's potential hazards.

It is also imperative to observe the accident prevention regulations in force in your area.

The same applies for the general rules of occupational health and safety.

The machine is used for:

Drilling in wood, plastic and metal.

Any manipulation of the machine or its parts is a misuse, in this case HOLZMANN-MASCHINEN and its sales partners cannot be made liable for ANY direct or indirect damage.

Even when the machine is used as prescribed it is still impossible to eliminate certain residual risk factors.



WARNING

- Use only drills allowable for this machine!
- Never use a damaged drill!
- Use the machine never with defective or without mounted guard!
- The removal or modification of the safety components may result in damage to equipment and serious injury!

HIGHEST RISK OF INJURY!

Ambient conditions

The machine may be operated:

humidity max. 70%

temperature $+5^{\circ}\text{C}$ to $+40^{\circ}\text{C}$ ($+41^{\circ}\text{F}$ to $+104^{\circ}\text{F}$)

The machine must not be operated outdoors or in wet or damp areas.

The machine must not be operated in areas exposed to increased fire or explosion hazard.

Prohibited use

- The operation of the machine outside the stated technical limits described in this manual is forbidden.
- Operation of the machine function without emergency stop button or impeller box with open doors is prohibited.
- The use of the machine not according with the required dimensions is forbidden.
- The use of the machine not being suitable for the use of the machine and not being certified is forbidden.
- Any manipulation of the machine and parts is forbidden.
- The use of the machine for any purposes other than described in this user-manual is forbidden.
- The unattended operation on the machine during the working process is forbidden!
- It is not allowed to leave the immediate work area during the work is being performed.



11.2 Security instructions

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

The locally applicable laws and regulations may specify the minimum age of the operator and limit the use of this machine!

To avoid malfunction, machine defects and injuries, read the following security instructions!



NOTICE

In the following machine this guards are in effect:

- Emergency button on the control panel
- Shutdown when opening the motor pulley cover



- Keep your work area dry and tidy! An untidy work area may cause accidents. Avoid slippery floor.
- Make sure the work area is lighted sufficiently
- Make sure that the work area is well ventilated
- Do not overload the machine
- Provide good stability and keep balance all times
- Avoid abnormal working postures! Make sure you stand squarely and keep balance at all times.
- Keep away from the running drill!
- Always stay focused when working. Reduce distortion sources in your working environment. The operation of the machine when being tired, as well as under the influence of alcohol, drugs or concentration influencing medicaments is forbidden.



- Do not climb onto the machine!
- · Attach the machine to the underground



- Respectively trained people only and only one person shall operate the machine.
- Do not allow other people, particularly children, to touch the machine or the cable. Keep them away from your work area.
- Make your workshop childproof.
- Make sure there is nobody present in the dangerous area. The minimum safety distance is 2m



- Wear suitable work clothes! Do not wear loose clothing or jewelry as they might be caught and cause severe accidents!
- Wear a hair net if you have long hair.
- Loose objects can become entangled and cause serious injuries!



- Use personal safety equipment: ear protectors and safety goggles when working with the machine.
- Operation with gloves forbidden!







- Never leave the machine running unattended! Before leaving the working area switch the machine off and wait until the machine stops.
- Always disconnect the machine prior to any actions performed at the machine.
- · Avoid unintentional starting
- · Do not use the machine with damaged switch





- The plug of an electrical tool must strictly correspond to the socket. Do not use any adapters together with earthed electric tools
- Each time you work with an electrically operated machine, caution is advised! There is a risk of electric shock, fire, cutting injury;
- Protect the machine from dampness (causing a short circuit)
- Use power tools and machines never in the vicinity of flammable liquids and gases (danger of explosion)
- Check the cable regularly for damage
- When working with the machine outdoors, use extension cables suitable for outdoor use
- Do not use the cable to carry the machine or to fix the work piece
- Protect the cable from heat, oil and sharp edges
- Avoid body contact with earthed



- Before starting the machine remove any adjusting wrenches and screwdrivers
- Use a clip or clamping jaws to secure the workpiece
- · Do not fix the workpiece with your hands
- · Rotating parts can cause severe cut injuries
- Keep the drills sharp and clean, so they get stuck less often and are easier to guide
- Keep any machine that is not being used out of reach of children



NOTICE

Emergency procedure

A first aid kit in accordance with ISO 3864 should always be readily available for a possible accident. Initiate the violation in accordance with the necessary first aid measures. When requesting support, provide the following details:



1. Place of accident

- 2. Type of accident
- 3. Number of injured people
- 4. Injury type(s)



11.3 Remaining risk factors



WARNING

It is important to ensure that each machine has remaining risks. In the execution of all work (even the simplest) greatest attention is required. A safe working depends on you!

Even if the machine is used as required it is still impossible to eliminate certain residual risk factors totally. The following hazards may arise in connection with the machine's construction and design:

Despite of correct and proper use and maintenance there remain some residual risk factors:

Hazard of injury or machine damage due to undetected machine defect
 To minimize this risk, check the machine prior to every operation for loose screws and connections. Check the motor noise, the spindle, the drill chuck, etc. for eventual damage.

Damaged parts have to be replaced immediately, no operation of the machine in the meantime!

Hazard of electric shock

Undetected malfunctions in the power supply and/or the connected wood working machine might result in electric shock when touching the machine. Ensure proper electric installation, and let it check periodically by a trained electrician.

Danger due to unintended machine start-up

Eliminate this risk by disconnecting the machine before you perform any checks or activities on the machine.

Hazard of inhaling toxic dust

Especially wood dust arising from chemically treated wood and/or lacquer/paint are harmful when inhaled. Therefore wear a suitable breathing mask if required.

These risk factors can be minimized through obeying all security and operation instructions, proper machine maintenance, proficient and appropriate operation by persons with technical knowledge and experience.



12 ASSEMBLY

12.1 Delivery content

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 machine receipt and unpacking before putting the machine into operation. Please understand that later claims cannot be accepted anymore.

12.2 Preparatory activities

12.2.1 Workplace requirements

The workplace has to fulfill the requirements.

The ground has to be even, in level and hard. It must be suitable at least to weight it with double weight per square meter than the machines net weight.

The chosen workplace must have access to a suitable electric supply net hat complies with the machines requirements.

12.2.2 Transport

The machine can be transported in package with a forklift.

The machine is very heavy. The machine shall be lifted from crate with a suitable lifting device only that is certified to be able to carry the machines load.



WARNING

The lifting and transportation of the machine must only be carried out by qualified staff and must be carried out with appropriate equipment.

Note that lifting equipment used (crane, forklift, sling, etc.) must be in perfect condition. To maneuver the machine in the packaging can also a pallet jack or a forklift be used.

12.2.3 Preperation of the surface

Uncoated metal machine parts have been insulated with a greasy layer to inhibit corrosion.

This layer has to be removed. You can use standard solvents that do not damage the machine surface.



NOTICE

Do not use solvents based on nitrite, aggressive solvents like break cleaners or scrubbing agents!

These damage the machine surface.



12.3 Power supply



ATTENTION

When working with non-grounded machines:

Severe injury or even death may arise though electrocution!

Therefore: The machine must be operated at a grounded power socket

The connection of the machine to the electric power supply and the following checks have to be carried out by a respectively trained electrician only.

- 1. The electronic connection of the machine is designated for operation with a grounded power socket!
- 2. The connector plug may not be manipulated.
- 3. The mains supply must be secured with 16A:
- 4. If the connector plug doesn't fit or if it is defect, only qualified electricians may modify or re-new it!
- 5. The grounding wire should be held in green-yellow.
- 6. A damaged cable has to be exchanged immediately!
- 7. Check, whether the feeding voltage and the Hz comply to the required values of the machine. A deviation of feeding voltage of $\pm 5\%$ is allowed (e.g.: a machine with working voltage of 380V can work within a voltage bandwidth of 370 till 400V.
- 8. Make sure that a possible extension cord is in good condition and suitable for the transmission of power. An undersized cord reduces the transmission of power and heats up.
- 9. A damaged cable must be replaced immediately



NOTICE

Operation is only allowed with safety switch against stray current (RCD max. stray current of 30mA)





NOTICE

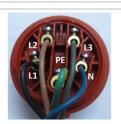
Use only permitted extension cable with cross-section the one in the following table declared.



Voltage	Extension	Cross-section
	<27 m	1,5 mm ²
220 V-240 V	<44 m	2,5 mm ²
50 Hz	<70 m	4,0 mm ²
	<105 m	6,0 mm ²

Plug 400V:	

5-wire: with N-conductor

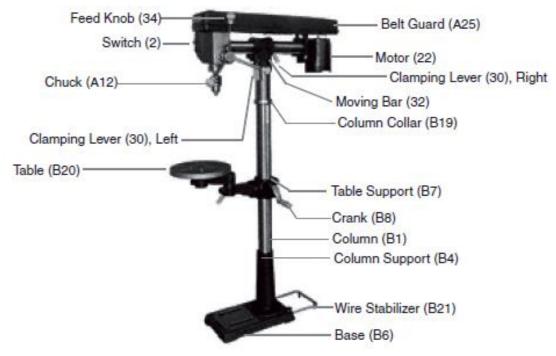


4-wire:
without
N-conductor





12.4 Assembly



To aid in assembly, refer to the upper assembly drawing as well as to the parts drawings at the end of this manual. The machine assembly is shown on basis of the model SB 3116RHN.

- 1. Position the Base (B6) on a level and sturdy floor for mounting. Bolt the Base to the floor using appropriate hardware (not supplied). Base holes will accommodate 7/16 inch bolts. Pull out the Wire Stabilizer (B21) rod from the rear of the Base.
- 2. Place the Column Support (B4) on the Base, aligning the mounting holes.
- 3. Insert four large Hex Screws into the mounting holes and tighten with a wrench.
- 4. Insert the Column (B1) into the Column Support (B4) and secure with Screw.
- 5. Install the Table Support (B7), with attached table Arm, over the Column (B1) and slide it down. Engage the gears onto the Rack. Tighten the Table Clamp.
- 6. Slide the Column Collar (B19) over and down the Column (B1) about 8 inches. Tighten Screw (B11).
- 7. Place the Extend Arm into the Arm, and then the Table (B20) into the opening in the Extend Arm.



WARNING

The next step involves lifting the head assembly onto the Column. The head assembly is heavy. Have someone help you lift this assembly into place!



- 8. Lift the Head Assembly and insert the Column Guide (18) over the Column (B1).
- Slide it down on the Column Tube as far as it will go. Align it so that it faces straight forward, in line with the Base.
- 9. Insert one Locking Shoe (15) into place inside the bottom of the Column Guide (18), and the other on the outside of the Column Guide. Tighten the Clamping Lever (30) into the Locking Shoe at the base of the Column Guide.
- 10. Locate the Feed Knobs (34) and Feed Rods and screw into the Hub.
- 11. Install the Chuck (A12). Thoroughly clean the tapered hole in the Chuck and the Spindle (A15) shaft of all dirt, grease, oil, and protective coatings (paint thinner may be necessary). Slide the Chuck onto the Spindle shaft. Turn the Chuck sleeve clockwise and open the jaws completely. Tap the nose of the Chuck lightly with a piece of wood to securely set the Chuck.



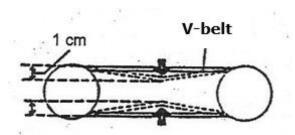




12. Verify that the Table is square (90 degrees) to the Head Assembly and drill bit.



- 13. Adjust V-Belt tension or change speeds.
- Open the Belt Guard (A25) to expose the V-Belt.
- Loosen the Thumb Nut (28) to relieve the V-Belt tension.
- Push the Motor backward, tightening the Belt on the pulleys, and hold in place.
- Turn the Thumb Nut (28) clockwise to tighten the V-Belt in place.
- Refer to the chart inside the Guard lid to select speed and belt locations.





WARNUNG

Overtightening the belts can cause the motor to bind and not start. It can also damage motor bearings!



12.5 Assembly spindle protection











13 OPERATION

Device to be operated in a perfect state only. Inspect the device visually every time it is to be used. Check in particular the safety equipment, electrical controls, electric cables and screwed connection for damage and if tightened properly. Replace any damaged parts before operating the device.

13.1 Operation instructions



WARNING







ATTENTION

Do not attempt to drill material with the surface other than flat unless a suitable support is available!

Never switch the machine on while pressing the drill bit against the material!



NOTICE

- Before switching the machine on, make sure that the tableclamping lever is firmly tightened
- Make sure that the bit is firmly clamped in the chuck
- Due to the height of its own weight is the fixation of the drill press to the ground requirement for less-vibration work.
- Before switching the machine on, make sure that the chuck key is removed
- Use a clip or clamping jaws to secure the piece to be drilled on the table
- Set the drill to speed answering a specific job
- Check the V-belts and tighten if necessary
- In advanced wear of, replace V-belt
- V-belts and pulleys may not come into contact with grease, oil or other lubricants
- Loosen the V-belt for a long break

After drilling movement the sleeve up to the highest position to turn back by hand. Not simply leaving out the rotating lever. In order to protect the return spring and a long life. You can modify the tension of the return spring by removing the cover and move the spiral spring. The coil spring is located on the rotary lever, on the opposite side of the machine.



13.2 Operation

With the ON/OFF / EMERGENCY unit, the machine is switched on and off. For this, the EMERGENCY-STOP-cap must be unlocked. Note: Press the switch only after you have chosen the direction of rotation and spindle speed.

13.2.1 Spindle speed

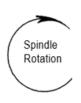
The exact cutting speeds are given in the specifications of the drill manufacturers. Basically the following rule of thumb applies:

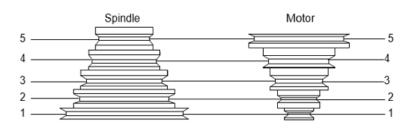


NOTICE

As smaller the hole, as higher the rotation speed. To achieve a good result is also:

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





5-5: 2500 min⁻¹ 4-4: 1900 min⁻¹ 3-3: 1300 min⁻¹ 2-2: 800 min⁻¹

1-1: 500 min⁻¹

- 1. Lift the PULLEY COVER.
- 2. Loosen the Thumb Nut. The BELT TENSION should release.
- 3. Move the V-belt to the desired level (speed) on the pulleys.
- 4. Push the Motor backward and hold. Retighten the Thumb Nut.
- 5. Close the Belt PULLEY COVER.

13.2.2 Table

- 1. Loosen the Support Clamp.
- 2. Turn the Crank to move the Table to the desired height.
- 3. Tighten the Support Clamp.
- 4. To tilt the Table, loosen Hex Bolt and turn the Table. The scale can be used to approximate the angle. Tighten the Hex Bolt.





13.2.3 Adjusting head angle

- 1. To adjust the Head angle to other than 90 degrees, loosen the right Clamping Lever.
- 2. Pull out the Guide Pin and turn it 90 degrees so that it's cross pin rests on top of the outlet.
- 3. Align the mark on the Column Guide with the Scale.
- 4. Once the Head is tilted to the desired angle, retighten the Clamping Lever.
- 5. To return the Head to the 90 degree position, do these procedures in reverse.

13.2.4 Adjusting head horizontally

- 1. Loosen the right-side Clamping Lever.
- 2. Turn the Moving Bar clockwise or counterclockwise until the desired position is reached.
- 3. Tighten the right-side Clamping Lever.

13.2.5 Adjusting specified drill depht

- 1. Secure the workpiece to the Table.
- 2. Mark the desired whole depth on the side of the workpiece. Also view the depth indicator on the Depth Stop Ring.
- 3. Loosen the Depth Lock Screw.
- 4. Turn the scale on the Depth Stop Ring to the desired depth and retighten the Depth Lock Screw
- 5. Pull the Feed Knob (34) counterclockwise until it drills the hole and stops at the set depth.







14 MAINTENANCE



ATTENTION

Don't clean or do maintenance on the machine while it is still connected to the power supply:



Therefore: Switch the machine off and disconnect it from the power supply be-fore any maintenance works or cleaning is carried out

The machine does not require extensive maintenance. If malfunctions and defects occur, let it be serviced by trained persons only.

Before first operation as well as later on every 100 operation hours you should lubricate all connecting parts (if required, remove beforehand with a brush all swarfs and dust).

Check regularly the condition of the security stickers. Replace them if required.

Check regularly the condition of the saw band and the saw band guide.

The good condition and perfect adjustment of the guiding rollers is essential for a smooth band guidance and a clean cut.

Store the machine in a closed, dry location.

NOTICE

Clean your machine regularly after every usage – it prolongs the machines lifespan and is a pre-requisite for a safe working environment.

Repair jobs shall be performed by respectively trained professionals only!

14.1 Maintenance plan

After each workshift:

- Apply a thin layer of oil on the column and the table
- Remove drill cuttings and metal chips from the device

After 50 hours of operation

• Apply some fat on the angle drift

14.2 Cleaning

After each workshift the machine has to be cleaned. Remove chips etc. with a suitable tool. Do not remove them by hand (cutting injury!). Remove dust as well.



NOTICE

The usage of certain solutions containing ingredients damaging metal surfaces as well as the use of scrubbing agents will damage the machine surface!

Clean the machine surface with a wet cloth soaked in a mild solution

14.3 Disposal

Do not dispose the machine in residual waste. Contact your local authorities for information regarding the available disposal options. When you buy at your local dealer for a replacement unit, the latter is obliged to exchange your old.





15 TROUBLE SHOOTING

BEFORE YOU START WORKING FOR THE ELIMINATION OF DEFECTS, DISCONNECT THE MACHINE FROM THE POWER SUPPLY.

Fehler	Mögliche Ursache	Behebung
Motor does not run	Incorrect power supply	Let it be checked by a trained person
	Switch defect	Change
	Motor defect	Change
	Safety switch activated	Check the cover of motor pulley (open?).
Loud noice when running	Incorrect belt tension	Adjust belt tension (1cm rule)
Drill runs erratically	Drill chuck not assembled correctly to arbour or one of them is dirty	Check and adjust.
	Drill chuck jaws worn or damaged	Change drill chucj
	Spindle or boring is worn	Check and replace if nesessary
Drill is hot and smokes	Too fast speed for material being drilled	Reduce speed use lubricants
Motor runs but no rotation or weak drilling power	Belt tension too lowPulley belt diry, slippery	Tighten Clean

MANY POTENTIAL SOURCES OF ERROR CAN BE CLEARED BY THE EXPERTLY CONNECTION TO THE ELECTRICITY GRID.

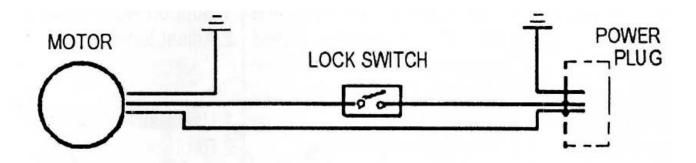


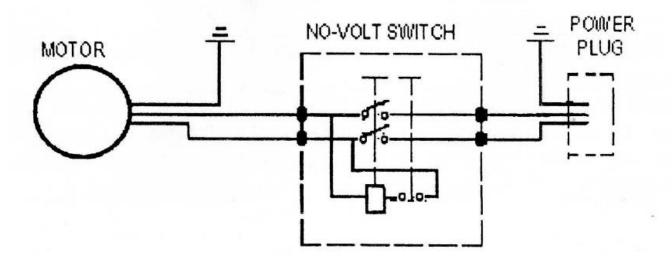
NOTICE

Should you in necessary repairs not able to properly to perform or you have not the prescribed training for it always attract a workshop to fix the problem.



56 SCHALTPLAN / WIRING DIAGRAM







57 ERSATZTEILE / SPARE PARTS

57.1 Ersatzteilbestellung / spare parts order

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.

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 formular you can find in the last chapter of this manual. Always take a note of the machine type, spare parts number and partname. 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.

Para máquinas Holzmann utilice siempre repuestos originales para reparar la máquina. El ajuste óptimo de las piezas reduce el tiempo de instalación y preserva la vida de la máquina.

AVISO

ila instalacion de piezas no originales anulara la garantia de la maquina!

Por lo tanto: Para el intercambio de componentes y piezas de recambio use originales.

Para cualquier consulta contáctenos en las direcciones arriba mencionadas o en su distribuidor.

Pour les machines Holzmann utiliser toujours des pièces de rechange pour réparer la machine. Le réglage optimal de pièces réduit le temps d'installation et préserve la vie de la machine.

AVIS

En cas d'utilisation de pièces autres que celles autorisées par HOLZMANN et sans notre permis par écrit, la garantie sera annulée.

Par conséquent: Pour l'échange de composants et l'utilisation des pièces détachées originales.

Pour toute question nous contacter à l'adresse ci-dessus ou votre revendeur.

Použitím originálních dílů od společnosti Holzmann používáte díly, které spolu dokonale sedí a jejich montáž je časově méně náročná. Originální náhradní díly zaručují delší životnost stroje.

UPOZORNĚNÍ

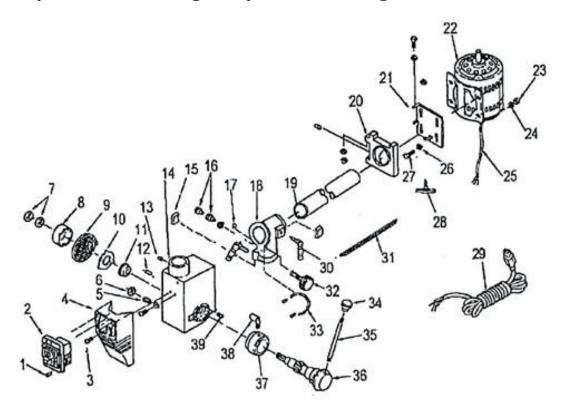
Použití jiných než originálních náhradních dílů má za následek ztrátu záruky!

Platí: Při výměně komponent/dílů používejte pouze originální náhradní díly.

Adresu pro objednání dílů naleznete v kontaktech na zákaznický servis v předmluvě této dokumentace.



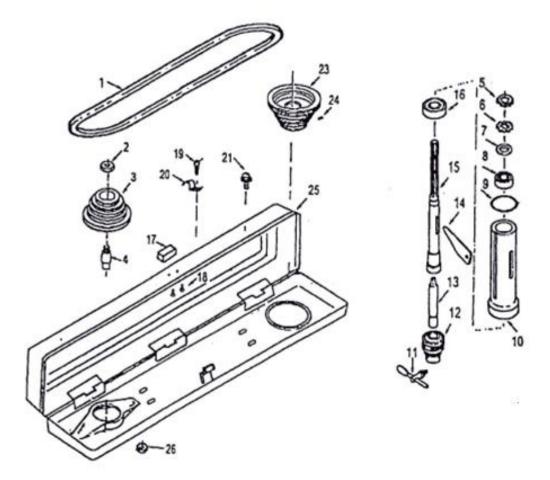
57.2 Explosionszeichnung / explosion drawing



Item #	Description
1	Self-tapping Screw, 4.2
2	No-Volt Switch
3	Screw, Pan Hd., M5x12
4	Switch Box
5	Screw Set, Special
6	Nut, Hex
7	Nut, Hex, M12
8	Cap Spring
9	Spring, Torsion
10	Retainer Spring
11	Seat Spring
12	Roll Pin
13	Screw, Socket Hd.
14	Head
15	Locking Shoe
16	Guide Pin
17	Retaining Ring
18	Column Guide
19	Horizontal Tube
20	Cover Mount

Item #	Description
21	Motor Mount
22	Motor
23	Nut, Hex, M8
24	Washer, 8
25	Cord, Motor
26	Washer, 8
27	Screw, Hex, M8x20
28	Nut, Thumb
29	Cord, Power
30	Clamping Lever
31	Horizontal Rack
32	Moving Bar
33	Scale
34	Feed Knob
35	Feed Rod
36	Hub
37	Ring, Depth Stop
38	Depth Lock Screw
39	Pin Stop



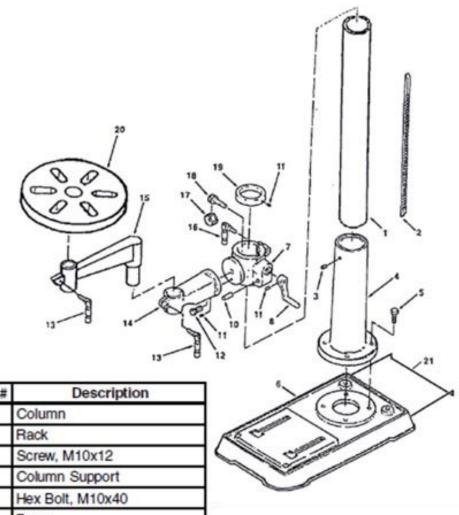


Item #	Description
A1	V-belt, M58
A2	Pulley Nut
A3	Spindle Pulley
A4	Insert Pulley
A5	Retaining Ring
A6	Locking Ring
A7	Washer
A8	Ball Bearing, 60203
A9	Washer, Rubber
A10	Quill Tube
A11	Chuck Key
A12	Chuck
A13	Arbor

Item #	Description
A14	Drift Key
A15	Spindle
A16	Ball Bearing, 60204
A17	Knob
A18	Screw, M5x12
A19	Screw, M5x12
A20	Clamp Cord
A21	Screw, M6x12
A23	Motor Pulley
A24	Screw, M6x10
A25	Belt Guard
A26	Form Washer



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Item #	Description
B1	Column
B2	Rack
B3	Screw, M10x12
B4	Column Support
B5	Hex Bolt, M10x40
B6	Base
B7	Table Support
B8	Crank
B10	Pin Gear
B11	Screw, M6x10
B12	Hex Bolt, M16x35
B13	Table Clamp
B14	Arm
B15	Extend Arm
B16	Support Clamp
B17	Gear, Helical
B18	Worm, Elevation
B19	Column Collar
B20	Table
B21	Wire Stabilizer



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