

*Originalfassung*

**DE BETRIEBSANLEITUNG**

*Übersetzung / Translation*

**EN USER MANUAL**

**RINGBIEGEMASCHINE**

**PROFILE BENDING MACHINE**



**RBM 28M / RBM 28**



## 2 SICHERHEITSZEICHEN / SAFETY SIGNS

DE SICHERHEITSZEICHEN EN SAFETY SIGNS  
BEDEUTUNG DER SYMBOLE DEFINITION OF SYMBOLS



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

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



DE **WARNUNG!** Beachten Sie die Sicherheitssymbole! Die Nichtbeachtung der Vorschriften und Hinweise zum Einsatz der Maschine kann zu schweren Personenschäden und tödliche Gefahren mit sich bringen.

EN **ATTENTION!** Ignoring the safety signs and warnings applied on the machine as well as ignoring the security and operating instructions can cause serious injuries and even lead to death.



DE **ANLEITUNG LESEN!** Lesen Sie die Betriebs- und Wartungsanleitung Ihrer Maschine aufmerksam durch und machen Sie sich mit den Bedienelementen der Maschine gut vertraut um die Maschine ordnungsgemäß zu bedienen und so Schäden an Mensch und Maschine vorzubeugen.

EN **READ THE MANUAL!** Read the user and maintenance manual carefully and get familiar with the controls in order to use the machine correctly and to avoid injuries and machine defects.



DE **Allgemeiner Hinweis**

EN **General note**



DE **Schutzausrüstung tragen!**



EN **Wear protective equipment**



DE Maschine vor Wartung und Pausen ausschalten und Netzstecker ziehen!

EN Stop and pull out the power plug before any break and engine maintenance!



DE **Gefährliche elektrische Spannung!**

EN **High voltage!**



DE **Warnung vor rotierenden Teilen!**

EN **Warning of rotating parts!**

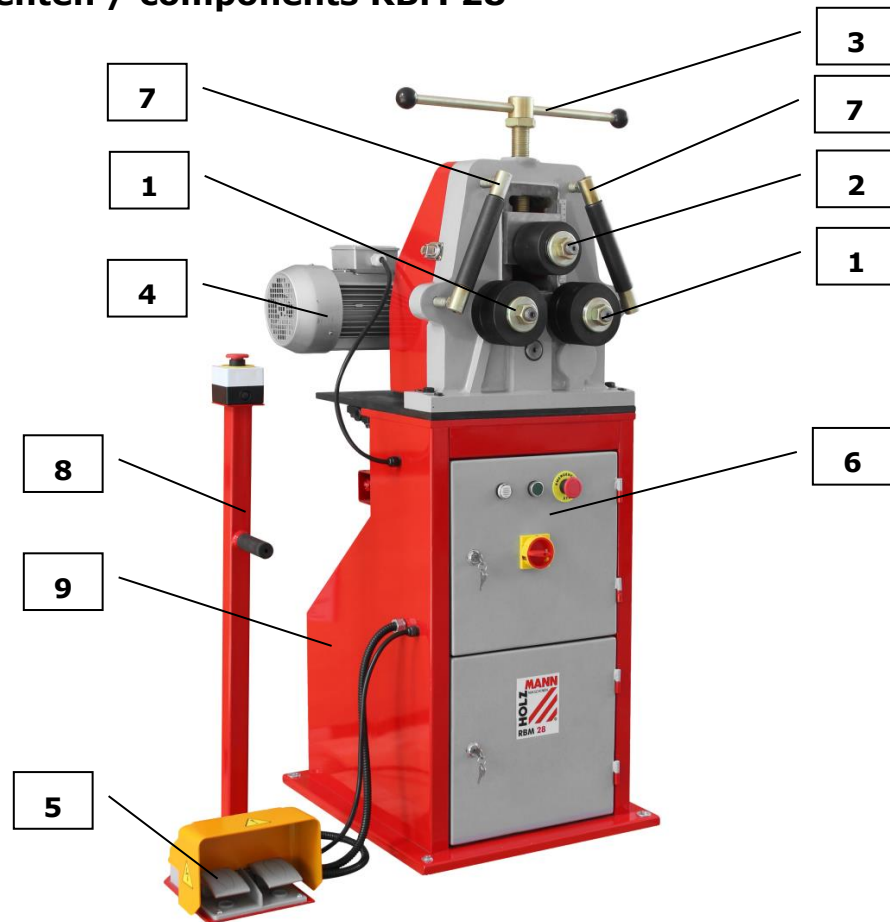
### 3 TECHNIK / TECHNICS

#### 3.1 Komponenten / components RBM 28M



Nr	RBM 28M
1	Angetriebene Tragewalzen / powered supporting rolls
2	Verstellbare Biegewalze / adjustable bending roll
3	Kurbel zur Höheneinstellung / crank lever for height adjustment
4	Antriebskurbel / driving crank lever
5	Führungsrollen / guide rolls
6	Unterbau / stand

### 3.2 Komponenten / components RBM 28



Nr	RBM 28
1	Angetriebene Tragewalzen / powered supporting rolls
2	Verstellbare Biegewalze / adjustable bending roll
3	Kurbel zur Höheneinstellung / crank lever for height adjustment
4	Antriebsmotor / drive motor
5	Fußpedal / foot pedal
6	Steuereinheit / control unit
7	Führungsrollen / guide rolls
8	Not-Aus Ständer / emergency stop stand
9	Unterbau / stand








### 3.3 Lieferumfang / delivery content

RBM 28M	RBM 28
Box 1: 500x480x680	Box 1: 700x700x1480
Maschine / machine	Maschine / machine
Standard Walzen / standard rolls	Standard Walzen / standard rolls
Führungsrollen / guide rolls	Führungsrollen / guide rolls
Box 2: 770x340x870	Unterbau + Schlüssel / stand + key
Unterbau + Schlüssel / stand + key	Not-Aus Ständer / emergency stop stand

### 3.4 Technische Daten / technical details

		RBM 28M	RBM 28
Max. Profilabmessungen rund / viereckig / Max. profile dimensions round / square	mm	16 / 30x10	16 / 30x10
Max. Abmessungen Vollmaterial rund / viereckig / Max. dimensions solid material round / square	mm	30 / 20x20	30 / 20x20
Gewicht / weight	kg	165	230
Verpackungsmaße / packaging dimensions	mm	500x480x680 770x340x870	700x700x1480
Abmessungen / machine dimensions	mm	620x560x1440	680x680x1450
Motor / motor	kW		1,1
Spannung / voltage	V/Hz		400 V / 50 Hz
Antriebswalzendrehzahl / driving roll speed	min <sup>-1</sup>		8

#### Biegemöglichkeiten mit Standard-Biegewalzen / bending opportunities with standard rolls

	Max. Größe / max. size (mm)	Min. Biege $\phi$ / min. bending $\phi$ (mm)
	20 x 20 10 x 10	500 160
	30 x 10 20 x 5	500 190
	50 x 10 40 x 5	400 160
	35 x 4.5 30 x 4	600 400
	35 x 4.5 30 x 4	600 400
	35 x 4.5 30 x 4	600 400
	U40 x 20 U30	700 500

## 10 PREFACE (EN)

### Dear Customer!

This manual contains information and important instructions for the installation and correct use of the profile bending machine RBM 28M / RBM 28.

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.**

### Copyright

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Court of jurisdiction is the Landesgericht Linz or the competent court for 4170 Haslach, Austria!

### Customer service contact

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4170 Haslach, Marktplatz 4  
AUSTRIA

Tel +43 7289 71562 - 0

Fax +43 7289 71562 - 4

**info@holzmann-maschinen.at**



## 11 SAFETY

### 11.1 Intended Use

Use the machine only in technically perfect condition in accordance with, safety and danger! Interference, which could affect safety, must be rectified immediately!

It is generally prohibited to modify safety equipment of the machine or to make ineffective!

The profile bending machine RBM 28M / RBM 28 is intended exclusively for bending solid material and profiles which consist of construction steel.

**For another, or use beyond that and resulting damage or injuries accepts HOLZMANN MASCHINEN no responsibility or warranty.**

#### 11.1.1 Working conditions

The machine is designed for the work under the following conditions:

humidity	max. 70%
temperature	+5°C to +40°C +41°F to +104°F

The machine is not intended for outdoor use.

The machine is not intended for use in potentially hazardous conditions

### 11.2 Prohibited use

- The operation of the machine under conditions outside of the limits, given in these instructions is not permitted.
- The operation of the machine without the safety devices provided is inadmissible
- The removal or turning off the protection devices is prohibited
- It is not permitted the use of tools that are not suitable for the machine
- The operation of the machine on a way or for any purpose that does not comply with the instructions of this manual to 100%, is prohibited.
- Do not leave the machine unattended, especially when children are not around. DO NOT LEAVE the workplace!

**For a different or additional use and resulting property damage or injury takes HOLZMANN-MASCHINEN no responsibility or warranty.**

### 11.3 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!

- **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**
- **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 bending rolls!**
- **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!**

- **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.**

- **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: safety boots, safety gloves, safety goggles, ... when working with the machine.**
- **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**



## 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. Type of injuries |

## 11.4 Remaining risk factors

Also in compliance with all safety regulations and when used properly, the following residual risks must be observed:

- Risk of injury to the hands / fingers by the rotating rollers during operation.
- Risk of injury due to sharp edges of the workpiece.
- Risk of injury due to contact with live electrical components.

These risks can be minimized if all safety rules are applied, the machine is properly maintained and serviced the machine as intended and is serviced by a trained service professional.



## 12 ASSEMBLY

### 12.1 Preparatory activities

#### 12.1.1 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.

#### 12.1.2 Workplace requirements

Select a suitable place for the machine.

Observe the safety requirements of Chapter **11** and the dimensions of the machine in the technical details.

The place chosen must guarantee a suitable connection to the electrical grid (only RBM 28).

#### 12.1.3 Preparation of the surface



#### NOTE

The use of paint thinners, gasoline, corrosive chemicals or abrasive cleaners will result in damage to the surface!

**Therefore:** When cleaning, use only mild detergent

#### 12.1.4 Transport / unloading the machine

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.



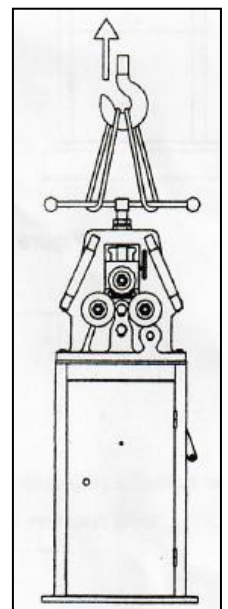
#### WARNING

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

Note: Lifting equipment used (crane, forklift, sling, etc.) must be in perfect condition.

While lifting take care of these points:

- Always lift and carry the machine from the handles.
- The lifting devices must be able to carry at least 165 kg (RBM 28M) or 230 kg (RBM 28).
- Check if the load is properly balanced
- Lift the machine with care, without sudden accelerations or quick changes of directions.




## 12.2 Fixing the machine on the floor

The stand of the machine has four 14 mm holes, for fixing the machine on the floor.





## 12.3 POWER SUPPLY



	<b>ATTENTION</b>
	<b>When working with non-grounded machines:</b>
	<b>Severe injury or even death may arise though electrocution!</b>

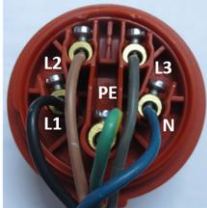
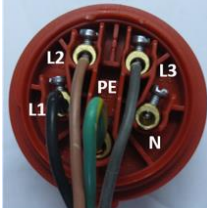
**Therefore:** The machine must be operated at a grounded power socket

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 main 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 with 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 under sized cord reduces the transmission of power and heats up.
9. A damaged cable must be replaced immediately

	<b>NOTICE</b>	
	<b>Operation is only allowed with safety switch against stray current (RCD max. stray current of 30mA)</b>	

	<b>NOTICE</b>			
	<b>Use only permitted extension cable with cross-section the one in the following table declared.</b>			
	<b>Voltage</b>	<b>Extension</b>		<b>Cross-section</b>
	<b>220 V-240 V 50 Hz</b>	<27 m		1,5 mm <sup>2</sup>
		<44 m		2,5 mm <sup>2</sup>
<70 m		4,0 mm <sup>2</sup>		
<105 m		6,0 mm <sup>2</sup>		

<b>Plug 400V:</b>	5-wire: <b>with</b> N-conductor		4-wire: <b>without</b> N-conductor	
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## 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. Operation instructions

	<p style="text-align: center;"><b>WARNING</b></p> <p><b>Perform all machine settings with the machine being disconnected from the power supply!</b></p>	
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### 13.1 Workpiece

- The workpiece must be clean of oil or other residues.
- The workpiece should have a smooth surface so it processes correctly and easily.
- The workpiece dimensions must be regular and match the max. allowed dimensions
- The chemical structure of the material must be homogenous and the hardness value must always be the same throughout the material

### 13.2 Control unit (RBM 28)

Turn the main switch (A) to supply the machine with power.

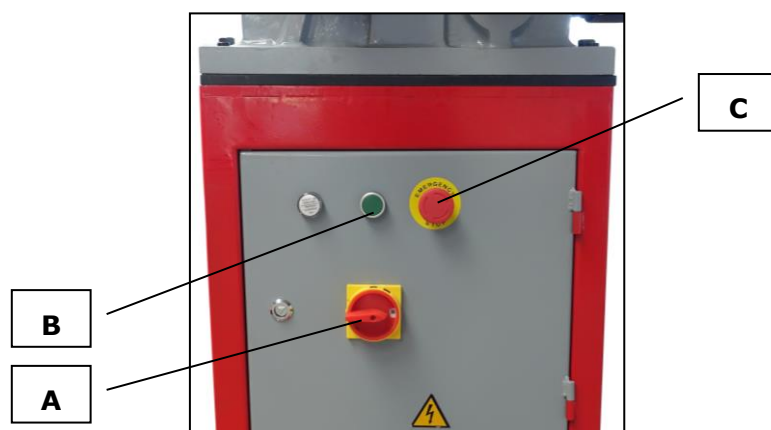
Start the machine with the green button (B)

Press the foot pedal to start the rotation of the lower rolls.

Depending on which pedal you are pressing the rolls can rotate either in the left or right direction.

Press the emergency stop button (C) to stop the machine.

After pressing, turn the emergency stop button in the direction of the arrow in order to unlock the button.



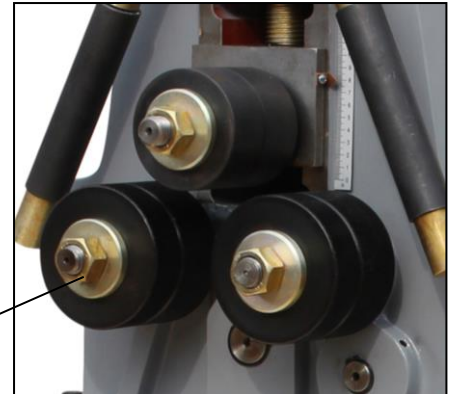
### 13.3 Drive mechanism (RBM 28M)

In order to start the rotation of the lower rolls you have to turn the hand lever on the backside of the machine. It is possible to rotate the lower rolls in two directions with the hand lever.

### 13.4 Changing the rolls

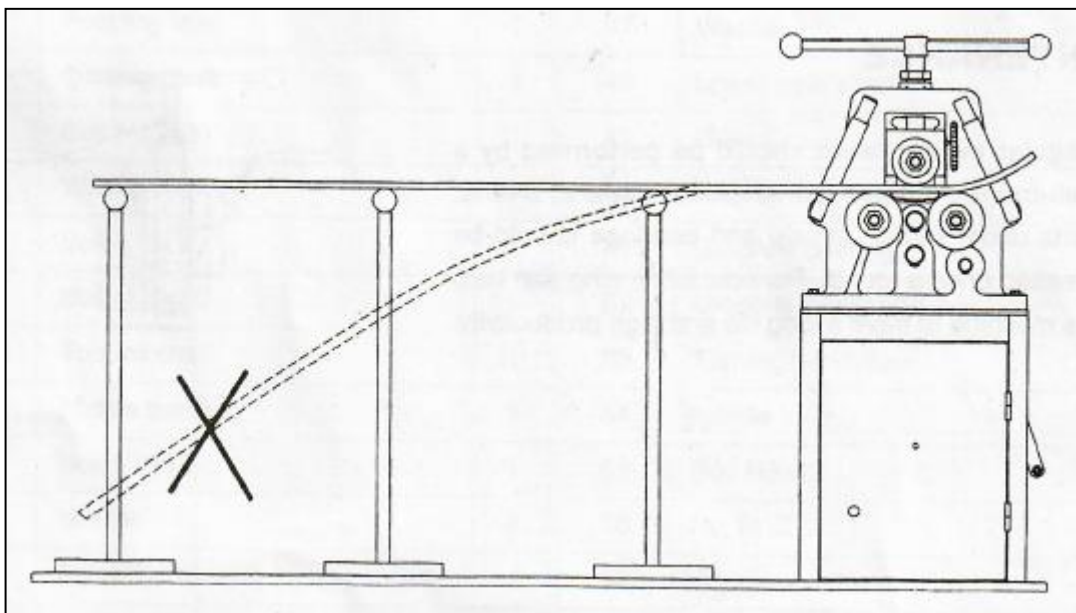
Untighten the nut (A) with a 34 mm wrench in order to demount the roll.  
Make sure to tighten the nut again after changing the rolls.  
The lower rolls are connected to the shaft by a feather key.

**A**



### 13.5 Bending long workpieces

In case of bending long workpieces. It is advised to use a material feeder in order to keep the workpiece parallel to the floor.



### 13.6 Possible applications of the standard rolls

The standard rolls can be used for bending various profiles.  
The profiles which can be processed with the standard rolls are listed in the technical details or in chapter 13.7 choosing the relevant roll.

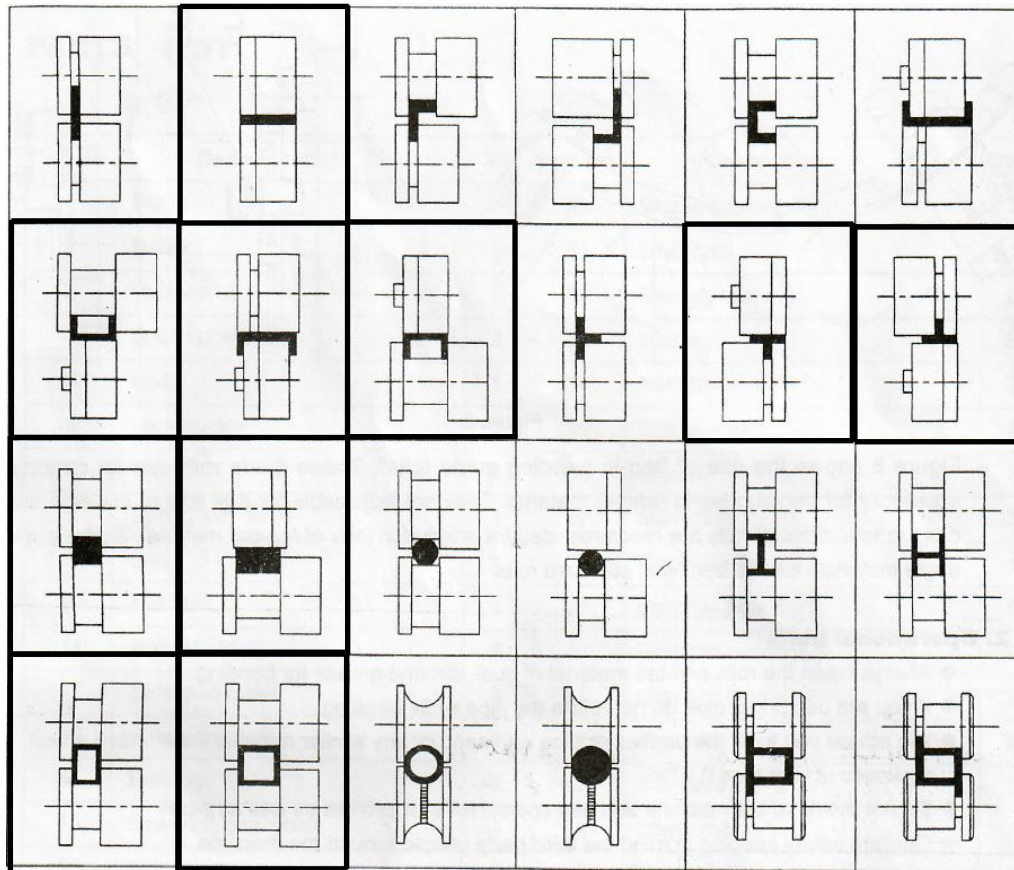
### 13.7 Choosing the relevant roll

Depending on the form of the workpiece the correct rolls have to be equipped.

Remark:

Not all of the following profiles can be bend with the standard rolls.

The profiles which can be processed with the standard rolls are marked in the chart below.



## 13.8 Operation

Select and equip the relevant roll depending on the workpiece form.

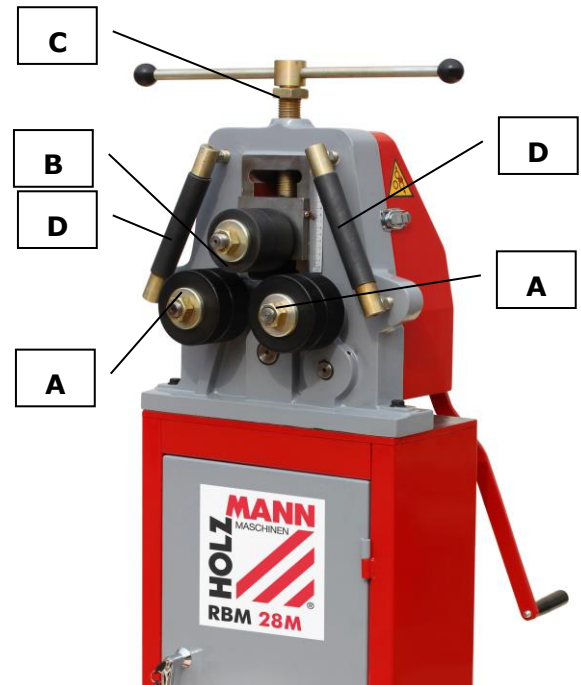
Place the workpiece on the two lower rolls (A).

Move the upper roll (B) down, by rotating the hand lever (C) which is placed at the top of the machine, until the upper roll has contact to the workpiece.

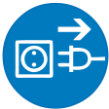

Begin rotating the lower rolls. It is possible to rotate the lower rolls in two directions.

The bending diameter is adjusted by positioning the upper roll at the desired level.

It is likely that the workpiece will tend to bend right or left. To prevent this, you must adjust the guide rolls (D).



## 14 MAINTENANCE

	<p style="text-align: center;"><b>ATTENTION</b></p> <p><b>Perform all maintenance machine settings with the machine being disconnected from the power supply!</b></p> <p><b>Serious injury due to unintentional or automatic activation of the machine!</b></p>	
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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 machine.

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.

<p style="text-align: center;"><b>NOTICE</b></p> <p>Clean your machine regularly after every usage – it prolongs the machines lifespan and is a pre-requisite for a safe working environment.</p> <p><b>Repair jobs shall be performed by respectively trained professionals only!</b></p>
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## 14.1 Lubricating

Regular maintenance should be performed by a well-trained mechanical engineer. Gears, shafts, parts under friction stress and bearings should be greased once a month. To grease the gear, the gear cover has to be removed.

To remove the gear cover of the RBM 28M the hand lever on the backside on the machine has to be removed first. The lever is fix with a worm screw. Remove the worm screw in order to remove the lever.

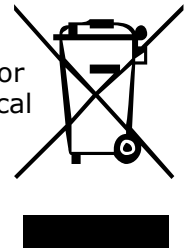
## 14.2 Cleaning

After each workshift the machine has to be cleaned.

	NOTICE
	<p><b>The usage of certain solutions containing ingredients damaging metal surfaces as well as the use of scrubbing agents will damage the machine surface!</b></p> <p>Clean the machine surface with a wet cloth soaked in a mild solution</p>

## 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



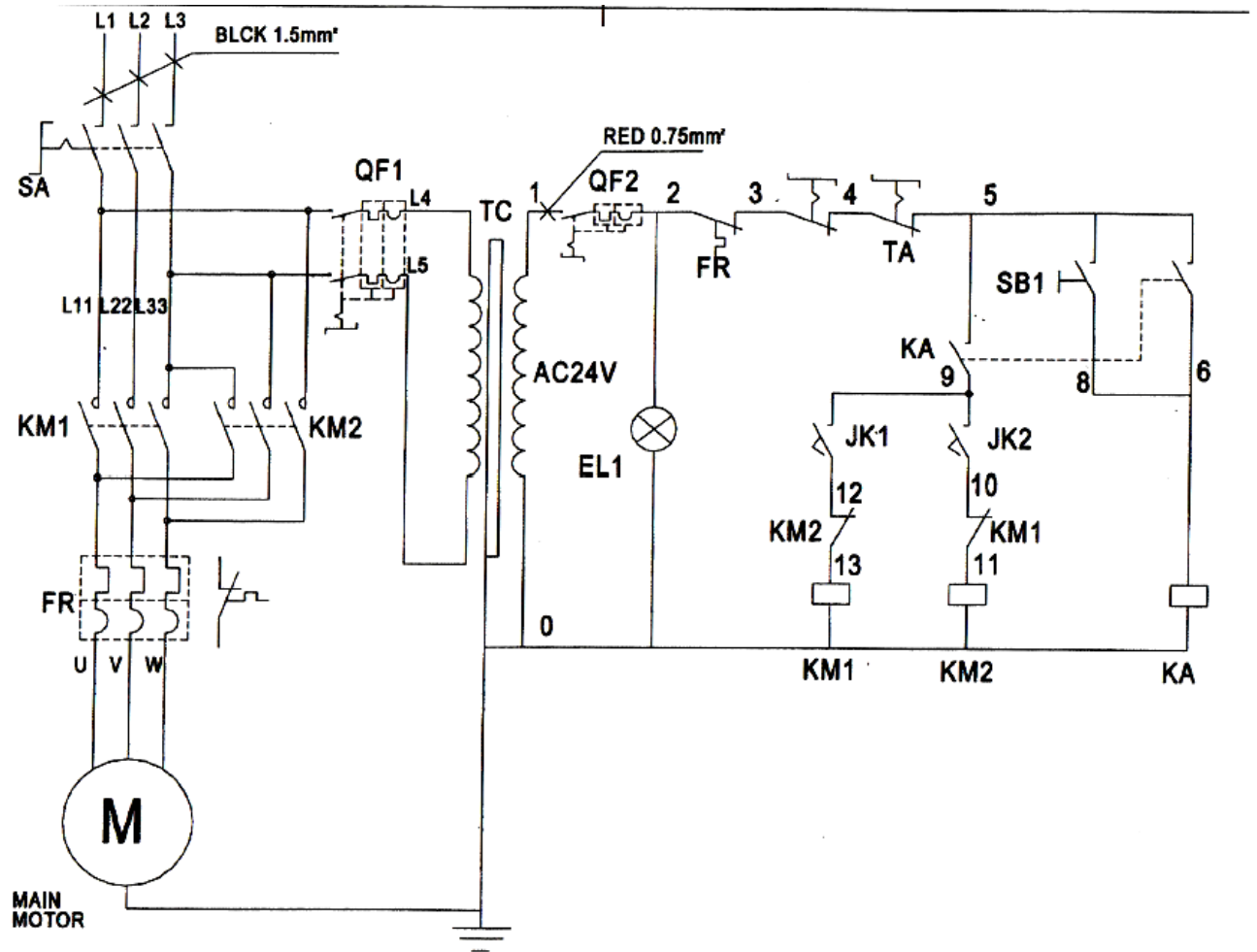
**Disconnect the machine from the power supply prior to any checks performed at the machine itself!**

Trouble	Possible cause	Solution
<b>Machine does not start</b>	<ul style="list-style-type: none"> <li>Electricity connection is incorrect</li> <li>Switch or a phase is broken</li> </ul>	<ul style="list-style-type: none"> <li>Checked by an expert</li> <li>Repair the defective circuit or the faulty phase</li> </ul>
<b>Motor has shut down</b>	<ul style="list-style-type: none"> <li>Thermal contact that triggered itself</li> <li>Overload protection of the motor</li> </ul>	<ul style="list-style-type: none"> <li>Allow motor to cool</li> <li>Restart</li> </ul>

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

	NOTICE
	<p><b>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.</b></p>

## 16 SCHALTPLAN / WIRING DIAGRAM



## ERSATZTEILE / SPARE PARTS

### 16.1 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.](#)

**17 EG-KONFORMITÄTSERKLÄRUNG/CE-CERTIFICATE OF CONFORMITY**

	<b>Inverkehrbringer / Distributor</b> HOLZMANN MASCHINEN® GmbH 4170 Haslach, Marktplatz 4, AUSTRIA Tel.: +43/7289/71562-0; Fax.: +43/7289/71562-4 www.holzmann-maschinen.at
<b>Bezeichnung / name</b>	
<b>RINGBIEGEMASCHINE / PROFILE BENDING MACHINE</b>	
<b>Typ / model</b>	
<b>RBM 28M / RBM 28</b>	
<b>EG-Richtlinien / EC-directives</b>	
2006/42/EG,	
<b>Angewandte Normen / applicable Standards</b>	

Hiermit erklären wir, dass die oben genannten Maschinen aufgrund ihrer Bauart in der von uns in Verkehr gebrachten Version den grundlegenden Sicherheits- und Gesundheitsanforderungen der angeführten EG-Richtlinien entsprechen. Diese Erklärung verliert ihre Gültigkeit, wenn Veränderungen an der Maschine vorgenommen werden, die nicht mit uns abgestimmt wurden.

Hereby we declare that the above mentioned machines meet the essential safety and health requirements of the above stated EC directives. Any manipulation or change of the machine not being explicitly authorized by us in advance renders this document null and void.

Technische Dokumentation  
 HOLZMANN-MASCHINEN GmbH  
 4170 Haslach, Marktplatz 4

Haslach, 16.08.2018  
 Ort / Datum place/date



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DI (FH) Daniel Schörgenhuber  
 Geschäftsführer / Director