

SV 330 DGH

hydraulic vice

Operating instructions

Before transporting and using the machine,
please read the instructions thoroughly!

Service and information

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rev. 2

BOMAR, spol. s r.o. © – Subject to modifications and amendments.

EC Declaration of Conformity

1) 2) We:

BOMAR, spol. s r.o.
Těžební 1236/1
627 00 Brno, Czech Republic
 Id. No: 48908827
declare herewith

that the following designated device based on its conception and construction as well as the design launched by us meets the relevant basic safety requirements of the decrees of the government.
 This statement applies exclusively to the machine device in conditions in which it was brought to the market. It does not apply to parts subsequently added by the end user or to modifications performed subsequently by the end user.
 In the event of any device modification not approved by us this declaration shall lose its validity

Name: Band Saw
Type : SV330 DGH
Serial number:
Manufacturer BOMAR, spol. s r.o., Těžební 1236/1, 627 00 Brno

Product data

Determination: for cross dividing and cutting of rolled and towed bars and profiles made of steel, stainless steel, non-ferrous metals and plastics
Description: stand, table, cutting unit with the saw band and drive, clamping device, cooling system, el. switch board with control panel.
 Pneumatic NO YES Hydraulic NO YES Control system NO YES
Technical data:
 Cutting rate 32/64 m.min-1
 Cutting angle -60° to 60°
 Total dimensions in mm (l×w×h) 1490×790×2000
 Supply voltage 400 V TN-C-S, 400 V TN-C
 Total power requirement 1,6 kW
 Weight 380 kg

Documentation:

Technical documentation for this machine device was elaborated in compliance with Government regulation no. 176/2008, Annex 7, part A.

The device meets relevant requirements of the given directives: **2006/42/EC**

2004/108/EC


The applied harmonized standards, National standards and technical specifications:

ČSN EN ISO 12100:2011	ČSN EN 13898+A1:2009	ČSN EN ISO 13857:2008
ČSN EN ISO 4413:2011		ČSN EN 60204 -1 ed.2+A1:2009
ČSN EN 55011 ed.3+A1:2011	ČSN EN 61000-6-2 ed.3:2006	ČSN EN 61000-6-4 ed.2+A1:2011

The product is safe on condition of the common and determined usage.

The conformity judging was performed according to §12, par. 3, let. b), of the Law no. 22/1997 Coll. as amended.
 The declaration of conformity was carried out in the cooperation with the ³⁾ TÜV SÜD Czech s.r.o, Novodvorská 994, 142 21 Prague 4 – Czech Republic, Identification number: 63987121 - Inspection body no. 4000

The inspection certificate no **02.676.957** was issued.



Brno, 16.05.2016
 Point of issue, datum

BOMAR, spol. s r.o.
 Těžební 1236/1, 627 00 Brno
 Czech Republic
 IČO: 48908827
 DIČ: CZ48908827

Alfred Pichlmann, Managing Director
 Name and function of the responsible subject,
 signature

- 1) Name, address and identification number of the subject issuing the conformity declaration (producer of importer)
- 2) Person authorized to complete the technical documentation
- 3) The authorized or accredited body co-operating on the conformity judging



If the equipment is installed without safety equipment offered by BOMAR, spol. s ro or its agents and used by the customer (or buyer) then EC declaration loses validity.
 EC Declaration of conformity is valid only if customer (buyer) installed the BOMAR safety equipment with the machine or with some other with equivalent safety device in accordance with current applicable regulations and standards.
 All machine elements and components that were built into the device by BOMAR, spol. s ro have been declared "identical" to a safety device, as offered by BOMAR, spol. s ro or its agents.

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1. **Bezpečnostní pokyny / Safety notes / Sicherheitshinweise**



The operating instructions must be read by any person, who gets in contact with the machine during transportation, installation, using, servicing, repairation, stocking or removal!

The operating instructions include relevant information. **The operator must familiarize himself with the installation and operation, safety notes and machine servicing**, to reach maximum reliability and lifespan. The operating instructions serve to avoid risks, which are linked with work on the machine. **Before transporting and using the machine, please read the instructions thoroughly!**

Attention!
The operating instructions must be available at the machine! Keep the operating instructions in a good condition!

1.1. Machine determination

The band saw **SV 330 DGH** is determined for cutting and shortening of rolled bars, drawn bars and profiles from steels, stainless steels, non-ferrous metals and plastics **with changeable cutting angle from -60° to 60°**.

Combustible materials are excluded from cutting! Any other usage and operation outside this range are unauthorized and the manufacturer/supplier does not accept any responsibility for any damages resulting from such misuse. **The operator has full responsibility!**

The machine is equipped with safety and protective measures for both the operator and the machine to be protected. Nevertheless, these measures cannot prevent all injuries. All personnel must read this chapter and understand it, before they start to work on the machine. **Always follow the safety instructions!** The personnel must take into account other aspects of the risk, which include the conditions of the working place and the material.

Attention!
Mind the safety signs on the machine. Do not remove or damage them! Keep these labels always readable!

1.2. Protective clothing and personal safety

Wear fitting clothes! Loosely fitting clothes may be caught in moving machine parts and cause serious injuries.

Wear protective gloves! Material cuts and saw band have sharp edges and may cause injuries.

Attention!
Gloves can be worn only when manipulating with material or replacing parts! The machine and its accessories must be inactive!
If the machine is running, you must not wear gloves!
There is a higher risk of getting caught in moving machinery!

Wear protective shoes with antiskid soles! Unsuitable shoes may cause loss of balance and following injury. Dropped blank cuts may cause injuries too.

Wear protective goggles! Flung chips and cooling liquid may damage your eyes.

Always wear ear protection! Most of the machines generate acoustic pressure up to 80 dB and may damage your unprotected hearing.

Do not wear jewellery and always tie back long hair! Moving machine parts can catch jewellery or loose hair and may cause serious injuries.

Operate the machine only when you are fit enough for work. Illnesses or injuries diminish concentration.

Avoid machine work, which may jeopardize the safety of you and your colleagues!

1.3. Safety instructions for machine operator

Attention!

Machine can only be operated by a person older than 18 years!

Machine can be operated only by a person physically and mentally fit for this activity.

Machine can only be operated only by one person at a time. Machine operator is responsible for other people present near the machine.

The person who is operating the machine using the control elements (control panel and other) must not either alone or with help of other workers move the cut or otherwise machined material at the same time.

Follow the instructions and directives for work safety!

Read the operating instructions before you start to work on the machine! Keep the operating instructions in good condition!

Close covers before starting the machine and check, if the covers are not damaged. Damaged covers must be repaired or replaced immediately. Do not start the machine, if any cover is removed!

Attention!

Do not connect the machine to electricity if the door or any covers are removed. Do not touch the high voltage electrical equipment (transformers, motors, terminals or

Check, if the electric cables are not damaged.

Do not hold or manipulate the material during clamping or cutting!

Do not operate the buttons and switches on the control panel wearing gloves! You may press a wrong button.

Make sure, that there is nobody in the working area of the machine (the working area of the vice, the saw band, the saw arm etc.) during a working cycle and when starting the machine.

Under no circumstances touch any rotating elements.

Use the machine only when it is in a good condition!

Check at least once in a shift, if the machine is not visibly damaged. If you discover any such damage, you must bring the machine to a halt and inform your superior!

Keep your working area and machine clean and uncluttered! Ensure sufficient lighting in the working area.

Take off any spilt water or oil from the floor and dry it immediately to avoid a possibility of injury.

Do not touch the cooling liquid with bare hands!

Do not adjust the cooling liquid nozzle if the machine is running.

Do not remove the chips from the working area of the machine, when the machine is running!

Do not use compressed air for machine cleaning or for chip removal!

Use protective gear for chip removal

1.4. Safety notes for the servicing and repairs

Attention!

Only a qualified professional can carry out the servicing and repairs of the electrical equipment! Take special care during the work with electrical equipment. High voltage shock can have fatal consequences! Always follow the work safety instructions! Otherwise, there is possibility of heavy injury!

Switch off the main switch and lock it, before you start service work! This way you eliminate a possibility of starting the machine accidentally.

Take care when manipulating the frequency converter. It is still energized for 20 minutes after machine shutdown.

Always adhere to the safety instructions!

Only an authorized professional can carry out the servicing and repairs.

For parts replacement, use only those, which are identical with the originals. Otherwise, there is possibility of health hazard.

Use only recommended types of hydraulic oils, oils and lubricants!

Do not remove or lock the limit switches or any other safety equipment!

Any use of the saw, accessories or machine parts other than that intended by BOMAR, spol. s r.o. company is not permitted. The guarantee on this product will be lost afterward and BOMAR, spol. s r.o. takes no responsibility for damage caused.

Do not turn the machine on if all covers are not in place.

1.5. Safety notes for the servicing and repairs of the hydraulic unit

Compliance with the principles of cleanliness is a basic requirement for trouble-free operation of hydraulic equipment. Hydraulic components are high precision products, and any contamination leads to a reduced lifetime or even malfunction. The consequences are very difficult and expensive to remove.

Always use clean tools. Parts and fasteners, which are a part of hydraulic circuit, are never to be put on a dirty surface. The best cleaning agent is crepe paper, because fibers from a cleaning cloth can cause malfunction.

Protective caps on threaded chambers are to be removed just before the assembly of the unit.

Flush hoses and pipes with gasoline or other cleaning agent and blow through with compressed air before mounting.

Bolting must be properly tightened. However, do not use brute force.

1.6. Safety accessories of the machine

The machine is equipped with safety accessories. They protect the operator from injuries and the machine from damage. The safety accessories include blocking accessories, emergency switches and covers. Check the function of safety accessories regularly once a week. If the safety accessories are not fulfilling their function, interrupt your work and repair or replace the faulty accessory.

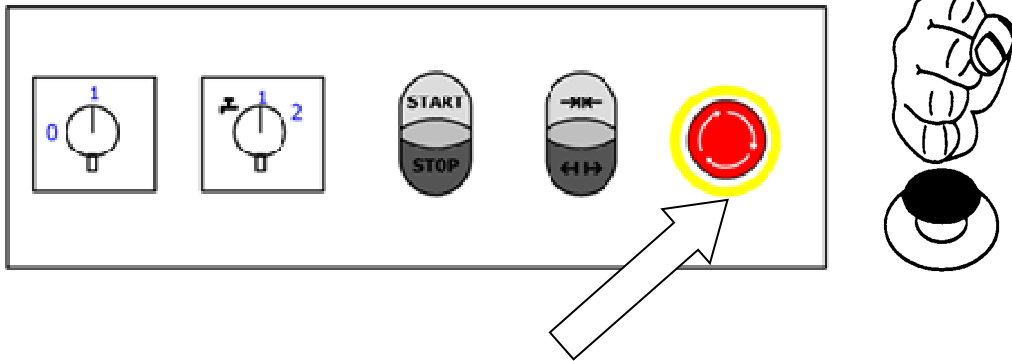
Enhanced risk!
Do not come into or intervene in the cutting area.
Otherwise, there is a danger of injury, cutting or squeezing.

1.6.1. Total Stop

TOTAL STOP button is used for emergency switching – off of the machine in a case of defect or health hazard. By pressing the **TOTAL STOP** button the supply of electrical power is interrupted.

If any faults or states of emergency appear, immediately press the TOTAL STOP button! Release of pressed button is possible by twisting the upper part of the button.

The TOTAL STOP button is placed on the control panel of the machine.



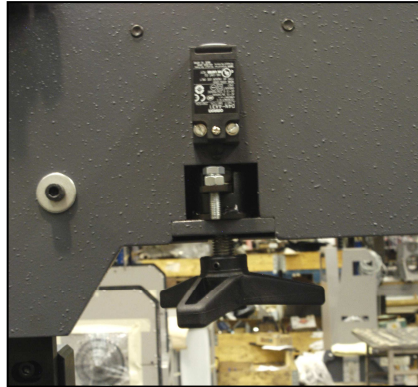
1.6.2. Saw arm cover

If the cover is opened during operation, the limit switch is opened and the band saw is stopped. The band saw can be first started, when the cover is closed!



1.6.3. Saw band stretching and rupture inspection

This device checks the saw band tension and causes immediate machine halt if the band accidentally ruptures.



The device includes a limit switch. Its adjustment is described in chapter „Maintenance“. Check the switch carefully and periodically – adjust it if necessary

1.6.4. Saw band cover

This protective cover envelops the saw band stretching from the guiding cube to the arm.



Never switch on the saw if this cover is not mounted!

1.7. Safety instructions for cooling system

Attention!

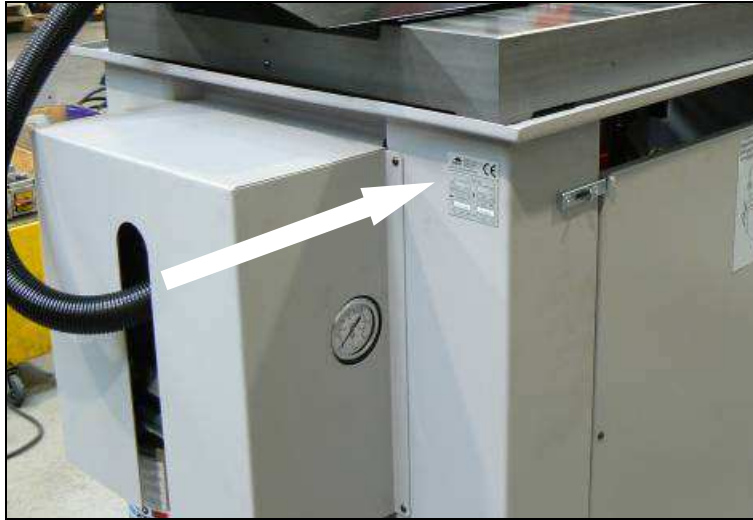
- *When handling the coolant always keep to the work safety directives and instructions of the manufacturer.*
- *When handling cooling agents always wear safety fluid-proof gloves!*
- *Wear protective goggles!*
- *Cooling liquid can get in contact with your eyes and may cause severe injuries*

1.7.1. Instructions for first aid

1. Pull off and safely remove polluted, soaked clothing.
2. If inhaled, go outside on fresh air or look for first aid treatment.
3. Wash with water and eventually treat with crème any points of contact with the skin.
4. Rinse your eyes with water and seek out a doctor.

5. If swallowed, drink a lot of water and induce vomiting. Look for medical help


**1.8. Umístění štítku stroje /
Maschinenschild position /
Position of machine label**

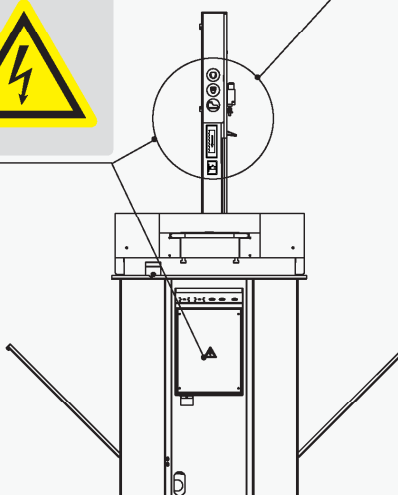


Machine label is placed on the base of the saw near the hydraulic aggregate.


1.9. Umístění bezpečnostních značek / Verteilung der Sicherheitszeichen / Position of safety symbols

NE
Nebezpečí úrazu
elektrickým proudem
Verletzungsfahr vom
elektrischen Strom
Electrical hazard







PO:
Noste pevnou pracovní obuv
Tragen Sie Sicherheitsschuhe
Wear fixed protective shoes

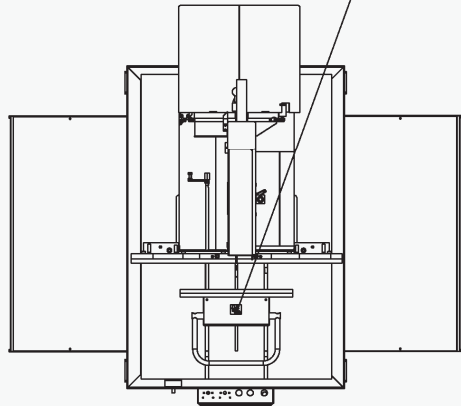


CZ:
Přečíst návod k použití
Bedienungsanleitung lesen
Read the operating instructions

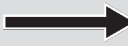


OBS:
Noste ochranné brýle a sluchátka
Tragen Sie eine Schutzbrille und
Gehörschutz
Wear protective goggles
and headphones






SP:
Směr pohybu
Bewegungsrichtung
Direction of motion

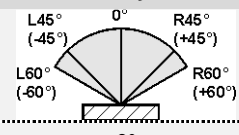






NS
Nebezpečí stlačení
Pressungsfahr
Crushing hazard

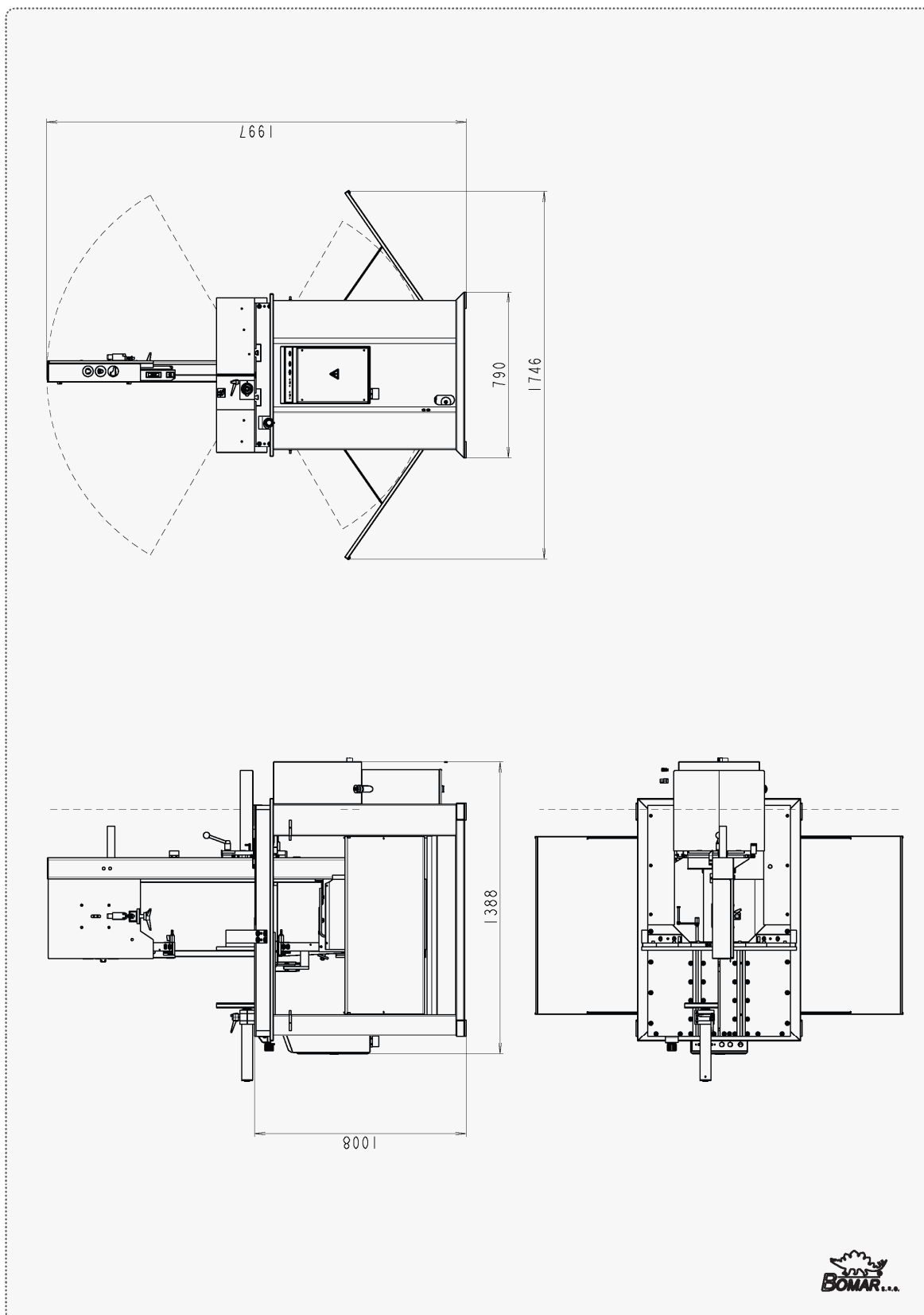


2. Dokumentace stroje / Machine documentation / Dokumentation der Maschine

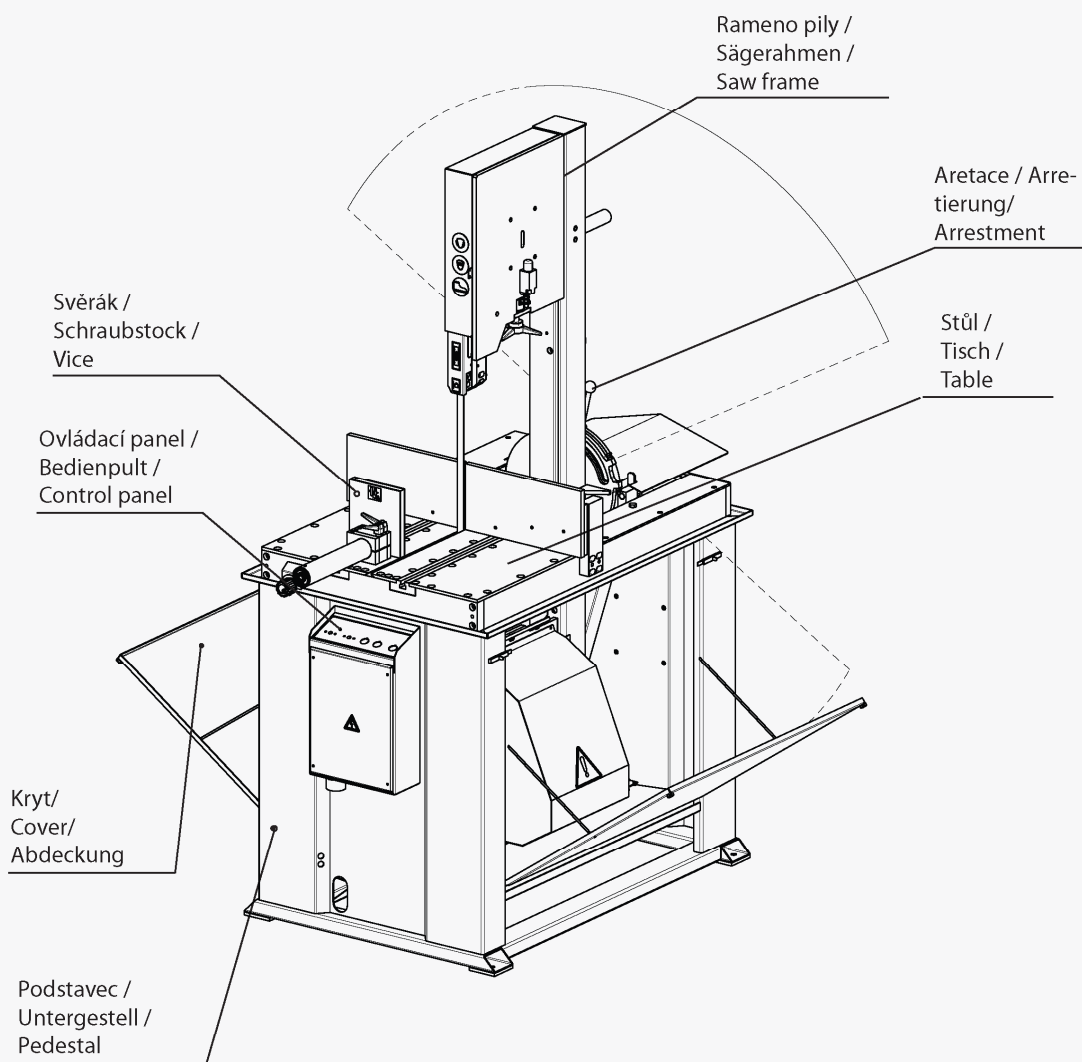
2.1. Technická data / Technische Daten / Technical data

Hmotnost stroje / Maschinengewicht / Machine weight:					
• Hmotnost / Gewicht / Weight	380 kg				
Rozměry stroje / Maschinengröße / Machine size :					
• Délka / Länge / Length	1490 mm				
• Šířka / Breite / Width	790 mm				
• Výška / Höhe / Height	2000 mm				
Elektrické vybavení / Elektrische Ausrüstung / Electrical equipment:					
• Napájení / Versorgungsspannung / Supply voltage	~3x400 V, 50 Hz, TN-C-S				
• Příkon / Gesamtschlusswert / Total Input	1,6 kW				
• Max.jištění / Max. Vorschaltssicherung / Max. Fuse	16 A				
• Krytí / Schutzart / Protection	IP 54				
Akustický tlak / Schalldruckpegel / Acoustic pressure:					
• PR1247 SV 330 DGH	$L_{Aeqv} = 73$ dB				
Pohon / Atrieb / Drive:					
• Napájení / Versorgungsspannung / Supply voltage	~ 3x400 V, 50 Hz				
• Výkon / Leistung / Output	1,5/1,1 kW				
• Jmenovité otáčky / Motornendrehzahl / Nominal speed	2800/1420 m.min ⁻¹				
Hydraulické zařízení / Hydraulik / Hydraulic equipment:					
• Výkon / Leistung / Output	0,12 kW				
• Tlak / Druck / Pressure	2 MPa				
Chladicí zařízení / Kühlung / Cooling equipment:					
• Typ / Typ / Type	2COP1-12H-P1				
• Výkon / Leistung / Output	0,06 kW				
• Obsah nádrže / Volumen vom Kühlmittel / Capacity	40 dm ³				
Rozměr pásu / Sägebandedimension / Band size:					
3725x25 (27)x0,9 mm					
Řezná rychlost / Schnittgeschwindigkeit / Cutting speed:					
32/64 m/min					
Řezné rozsahy / Schnittbereiche / Cutting size:					
					
0°	Ø330 mm	320x330 mm	320x330 mm	320x320 mm	
R 45°	Ø265 mm	320x265 mm	320x265 mm	265x265 mm	
L 45°	Ø265 mm	320x265 mm	320x265 mm	265x265 mm	
R 60°	Ø150 mm	320x150 mm	320x150 mm	150x150 mm	
L 60°	Ø180 mm	320x180 mm	320x180 mm	180x180 mm	
Level of acoustic pressure:					
The equivalent level of the acoustic pressure A (noise) at the position of the operator is $L_{Aeqv} = 73$ dB. The values are indicating the emission levels and may not represent safe working levels. Among factors, which influence real values of the operator's exposure, are properties of the workshop room, type of cut material and level of wear of the saw band – these may significantly influence the exposure levels.					

2.2. Rozměrové schéma /
Aufstellzeichnung /
Installation diagram



2.3. Popis / Beschreibung / Description



2.4. Transportation and stocking

2.4.1. Conditions for transportation and stocking

Follow the recommendations of the manufacturer for transportation and stocking! If the recommendations are not kept, damage may occur to the machine.

- Don't use a forklift truck for handling the machine, if you do not have a license for it!
- Don't move under suspended loads! Fault in the lifting device may cause a serious injury.
- Keep a safe distance from the machine during transport.
- Temperature of the air must be between **-25°C and 55°C**, for a *short period* (max. 24 hours) up to 70°C.
- Do not expose the machine to radiation (microwave radiation, ultraviolet radiation, laser radiation, x-ray radiation). Radiation can cause problems with the machine function and deteriorating of the condition of the insulation.
- Take measures, to prevent damage by dampness, by vibrations and by shakes.

2.4.2. Transport and stocking preparations

- Tighten the vice and thoroughly oil all smooth surfaces.
- Lower the saw frame to the lowest position.
- Make sure to empty the machine of all traces of cooling agent.
- Fasten all loose parts securely to the machine.
- Pack and wrap the control panel securely to avoid damage during transport.
- Put stickers stating the minimum approximate machine weight to at least five well visible places.

The machine has to be screwed to a pallet for transportation. Make sure the pallet is firm enough to be able to hold the saw.

2.4.3. Transport and stocking

Handle the machine only with the hand pallet truck or the forklift truck! Use the lifters of the truck according to the Transport schema

Make sure that the hand pallet truck or forklift truck has sufficient lifting capacity.

Make sure that the van or the trailer had sufficient capacity

The machine must be secured sufficiently during transportation so it won't roll over or fall off the vehicle.

Fasten the pallet to the floor of the vehicle.

Beware of damaging the machine during transportation.

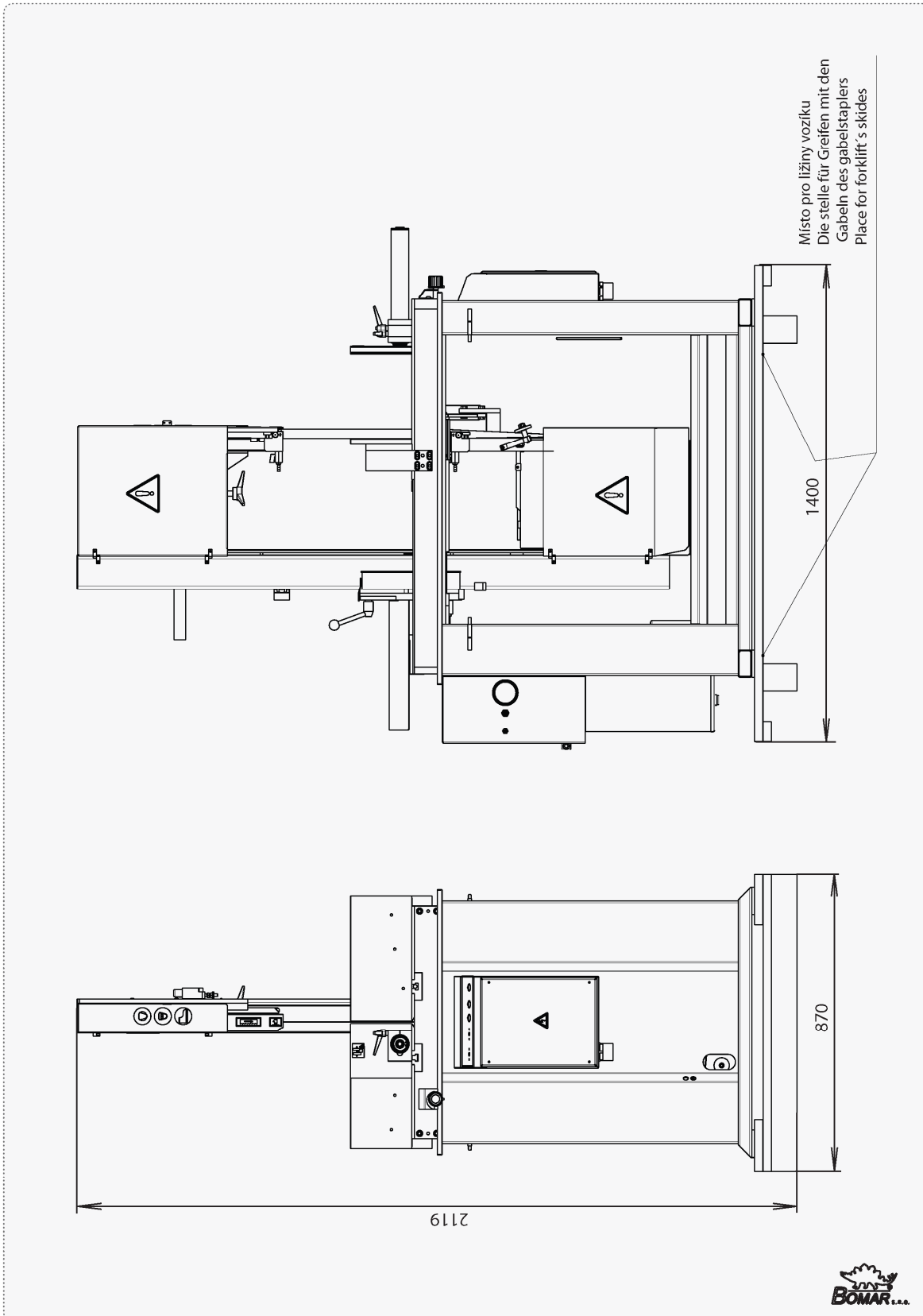
It is forbidden to handle the machine in any way different from that written in these operating instructions (for example lifting it by the saw arm); the machine could get damaged!

Store the machine only under conditions mentioned in the manual to avoid damaging it.

Place the forks of a fork lift truck according to these signs!



2.4.4. Transportní schéma /
Transportschema /
Transport diagram



2.5. Activation of the machine

2.5.1. Machine working conditions

Keep the conditions of the manufacturer for machine operation! If the recommendations are not kept, damage can occur to the machine.

The manufacturer warrants the correct function of the machine for these conditions:

- At air temperature from **10°C to 40°C**; the temperature average during 24 hours must **not exceed 35°C**.
- At relative dampness of the air in the interval from 30% to 95% (not condensing). Altitude up to 1000 meters.
- Do not expose the machine to any radiation (microwave radiation, ultra-violet radiation, laser radiation, x-ray radiation). Radiation can cause problems with the machine function and deteriorate the condition of the insulation.

Attention!

If the ambient temperature drops below 15 ° C it is required to switch on the electromotor of the hydraulic unit for 10 minutes and then move all the hydraulic cylinders through the entire lifting range before operation (for example in manual mode). The reason being is primarily warming up the hydraulic oil to working temperature so that the pressure switches and throttle valves function properly.

2.6. Band saw unpacking and assembling

Remove the wrapping from the machine and unpack all parts.

Attention!

Switch off the main switch and lock it in position, before you start the assembly! Otherwise, there is a possibility of accidental machine starting.

If the hydraulic unit is outside the machine (only connected to the machine by hoses and cables), it needs to be placed and mounted to a solid basis (floor, etc.). The mounting holes are located on the bottom (feet) of the tank.

2.6.1. Machine installing and leveling

Check the floor supporting capacity before installing the machine. If the floor capacity does not meet the requirements, you must ready a necessary base for the machine.

Minimal requirement:

machine weight – PR1247 SV 330 DGH – 380 kg

+ weight of the accessories

+ maximum weight of material

- The machine must be leveled horizontally. All feet of the machine must touch the floor after leveling.
- The machine must be leveled by means of a calibrated spirit level. Put the spirit level on the loading surface of the vice. Adjust the roller conveyors according to the spirit level.
- For machine leveling, take care that there is sufficient space available for operation, repair work, servicing of the machine and handling of the material.

- The machine and all appended parts and accessories must be visible from the place of operation

2.6.2. Saw frame locking screw (for transportation)

The saw frame should be secured in place with a bolt (see arrows) for transportation. Remove the bolt before saw frame operation.



2.7. Machine disposal after lifetime

Pour all service fluids (cooling liquid, hydraulic oil) from the machine over into designated reservoirs. Dismantle machine into separate parts and dispose of them in accordance with valid directives.

2.8. Putting the hydraulic unit into operation

Before the first run check that:

the tank is filled with a prescribed oil to its upper limit

the hydraulic pump is not running in the opposite direction. Hydraulic generator must not be operated with opposite direction of rotation for longer than 5-10 seconds.

all connections are properly tightened, pipes are assembled without internal stress

wiring matches with electrical and hydraulic diagrams

the electric motors (pump and cooling) are properly connected and have the prescribed rotation

the hydraulic accumulator is filled with nitrogen to specified value

aux. elements work right (thermometer, level gauge, heater)

First run (Attention – working pressure on the safety valve is set according the hydraulic diagram by manufacturer).

activate the electric pump in short intervals

check for leaks and noise

bleed the hydraulic circuit

if possible, test the circuit function with minimum load

test the electrical equipment

during operation watch the monitoring and measuring equipment, noise, level and temperature of oil in the tank

during the first run the distribution system and appliances will be filled with oil; the level of the oil in the tank will drop. If it drops below the minimum value it is necessary to refill the tank after the machine has been shut down.

after multiple start-ups the hydraulic unit is ready

2.8.1. Filling the hydraulic unit with oil

Fill the tank with one of the oils stated in the chart below. These are hydraulic oils class HM and HV in accordance with the European CETOP RP 91H specification in viscosity classes ISO VG 32.

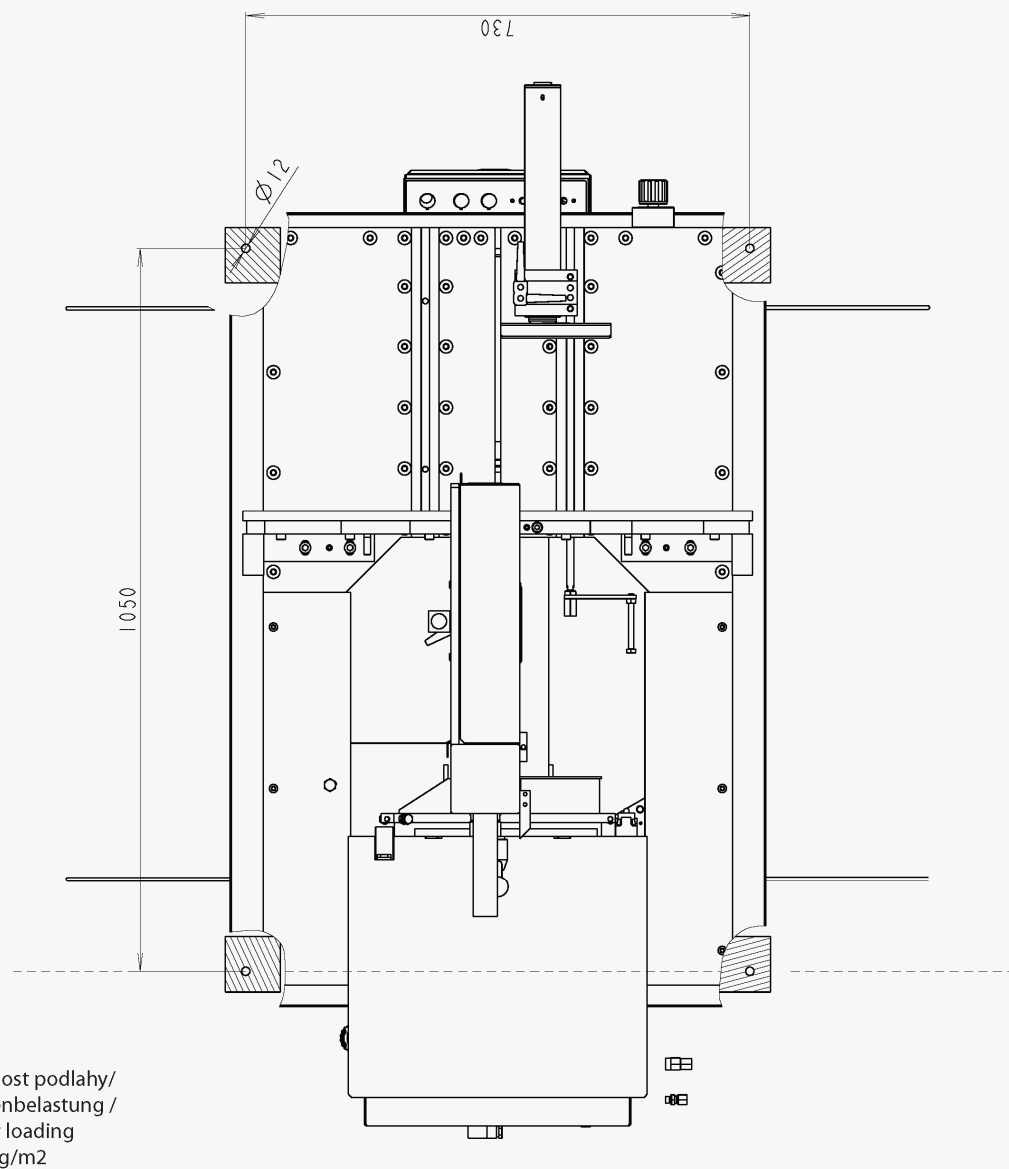
Do not pour the oil directly from the barrel into the tank but use a filtration device with a grid spacing of 20 µm or finer.

In a case of leakage it is imperative to prevent contamination of water sources. Remove the escaped oil with a suitable chemical detergent (Vapex) or pour sand or sawdust on it and dispose of this oil soaked material on a designated disposal site.

It is necessary to liquidate used hydraulic oil according to the waste disposal law.

Oil type	Kinematic viscosity ν in mm ² /s in relationship to the fluid temperature					Freezing point °C
	0°C	20°C	40°C	60°C	80°C	
OH-HM 32	220	100	32	15	7	-40
OH-HV 32	180	67	32	17	11	-40

2.9. Kotevní plan / Verankerungsplan / Grounding plan



Kotvící materiál / Verankerungsmaterial / Grouding material

- 4x Chemická hmoždina / Chemisch Dübel / Chemical Plug – $\varnothing 12$ mm
- Vrtáno do hloubky / In die Tiefe gebohrt / Drilled to – 120 mm
- 4x Šrouby / Schraube / Screws – M10

- Šrouby podložit deskami o min. rozměrech P10×100-100
- Die Schrauben mit Platten mit Minimaldimensionen P10×100-100 unterlegen
- Screw must be bottomed with plates (min. dimensions P10×100-100)

Požadavky na rovinnost podlahy / Anforderungen an die Bodenebenheit / Requirements for floor flatness

± 10 mm / 1 m

2.10. Electrical connection

Attention!

*Only a qualified professional must carry out the servicing and repairs of the electric equipment! **Take special care during work with the electrical equipment. High voltage accident can have fatal consequences! Always follow instructions for work safety.***

Electrical parameters of the machine:

Service voltage:	~ 3x400 V, 50 Hz, TN-C-S
Total input /	1,6 kW
Max. fuse:	16 A

Note:

Values of the cross section of the conductor and the rated current can be found in the regulations.

Before connecting the machine turn off the main power switch and ensure a dry area for the connection work.

Service voltage must agree with the line voltage! Cross section of the supply line must respond with the rated current for max. machine load.

Note:

A socket with fork can be used only for machines with the rated current less than 16 A and total input less than 3 kVA.

In case the machine is connected directly to the electrical network terminals, an extra main switch which can be locked in zero position must be added.

Attention!

In this case the extra switch on the electrical line becomes the primary switch and the main switch on the machine has only a secondary function!

2.10.1. Direction of the saw band check

After the machine has been successfully connected, switch on the machine and run the driving engine of the band briefly. The movement of the band must be in agreement with the direction of the arrow on the saw band cover.



If the direction of the saw band does not agree, the phases at the terminal line must be switched.

2.10.2. Check of connection to the electrical network

Attention!

**When you connect the machine to the electrical network secure a correct connection of all phases!
THE HYDRAULIC AGGREGATE ENGINE MUST NOT BE OPERATED IN REVERSED DIRECTION FOR MORE THEN 10 SECONDS!!!**

2.11. Filling of the cooling system

Prepare a mixture of water and a cooling liquid. Keep the concentration specified by manufacturer. Remove the cover from the drainage hole.

Pour the mixture into the tank of the cooling system.

When filling the tank with the cooling liquid, take care that the liquid does not drip out of the tank and that the tank does not overflow.

When adding anticorrosion agents, antifreeze and other chemicals follow the instructions of the manufacturer! By mixing various products poisonous and aggressive chemicals can be created that can damage your health or the cooling equipment of the machine.

Note:

If the machine is equipped with a Microniser, fill the Microniser with prescribed cooling liquid. This makes the Microniser ready for operation.

2.12. Machine functions check

Before you proceed with the check study the instructions in this manual thoroughly.

Do not proceed with the check if you did not fully understand all control elements and machine functions.

Check, if the machine or some parts of the machine were not damaged during transport.

Check, if all covers are installed and functional.

Check (with the Tenzomat) if the saw band is correctly stretched. If it is necessary, stretch the saw band. Correct values of the saw band tension are on the Tenzomat.

Switch on the main switch and check the motors and aggregates (saw band drive, hydraulic pump, cooling pump, swarf conveyor).

Fully open and then close the main vice. Move the saw frame of the band saw from one outer position to the other.

Start the machine with the cooling pump and let it run without load until the cooling system will be filled with cooling liquid. As soon as the cooling liquid starts to escape from the nozzles of the cooling system, the cooling system is ready for operation.

Carry out one cutting cycle without any material. Check, if the machine runs with no irregularities. If all machine functions run properly, the machine is ready for operation.

2.13. Saw band

Remove the saw band cover only after you have installed and stretched the saw band a bit. This way you minimize the risk of injury.



2.13.1. Saw band size

3725x25 (27)x0,9 mm

2.13.2. Selection of the saw band tooth system

The manufacturers provide the saw bands with constant and variable tooth systems. The important factor for selection of the tooth system is the length of the cutting channel with respect to the size of the product.

1. *Constant tooth system* – the saw band has a constant tooth pitch all over its length. This type is suitable for cutting solid materials.
2. *Variable tooth system* – tooth pitch is variable. Variable tooth system is used for profiled materials and bundle cutting. Variable tooth pitch lowers vibrations of the saw band, increases service life of the saw band and quality of the cut.

BOMAR recommends variable tooth system for its band saws.

In the table below the type of the tooth system depending on the sizes and profile of the cutting material is advised.

Footnotes:

Z_pZ – teeth number on one inch S – tooth with zero angles of the teeth K – tooth with positive angle of the teeth

Examples of the tooth system marking:

32 S – number „32“ means 32 teeth per inch (constant tooth system), letter „S“ marks teeth with zero angle with respect to the band.

4–6 K – number „4–6“ means 4 to 6 teeth per inch (variable tooth system); letter „K“ marks teeth with positive angle with respect to the band.

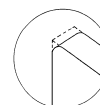
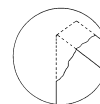
2.13.3. Saw band running-in

For reaching a full lifespan of the band we recommend performing a running-in.

Running-in: Perform a cut with the frame lowering speed at 50%. If vibrations occur increase or decrease the band's speed. When cutting large pieces run the band for approximately 15 minutes. When cutting small pieces run the band until approximately 300 cm² of material has been cut.

When the band has been run-in, increase the lowering speed of the arm to normal. The running in of the saw band avoids micro chips on the cutting edges of a new saw band ensuing from first excessive stress. This would decrease its lifespan substantially.

The optimal running in of the saw band produces ideal rounded cutting edges and therefore the conditions for an optimal service life are met.



Note:
Run-in reground saw bands too.

2.13.4. Tables for teeth selection:

SHAPED MATERIAL ($D_p, S = \text{mm}$)						
Note: Table shows tooth system selection for cutting one piece of selected profile. When cutting more pieces of the selected profile (bundle), you must double the corresponding wall thickness of the profile to get an accurate estimation (i.e., wall thickness equates to $2 \times S$). There are constant and variable tooth systems in the table.						
Thickness of the wall S [mm]	Tooth system ($Z_p Z$) Outer diameter of the profile D_p [mm]					
	20	40	60	80	100	120
2	32 S	24 S	18 S	18 S	14 S	14 S
3	24 S	18 S	14 S	14 S	10-14 S	10-14 S
4	24 S	14 S	10-14 S	10-14 S	8-12 S	8-12 S
5	18 S	10-14 S	10-14 S	8-12 S	6-10 S	6-10 S
6	18 S	10-14 S	8-12 S	8-12 S	6-10 S	6-10 S
8	14 S	8-12 S	6-10 S	6-10 S	5-8 S	5-8 S
10	-	6-10 S	6-10 S	5-8 S	5-8 S	5-8 S
12	-	6-10 S	5-8 S	5-8 S	4-6 K	4-6 K
15	-	5-8 S	5-8 S	4-6 K	4-6 K	4-6 K
20	-	-	4-6 K	4-6 K	4-6 K	3-4 K
30	-	-	-	3-4 K	3-4 K	3-4 K
50	-	-	-	-	-	3-4 K

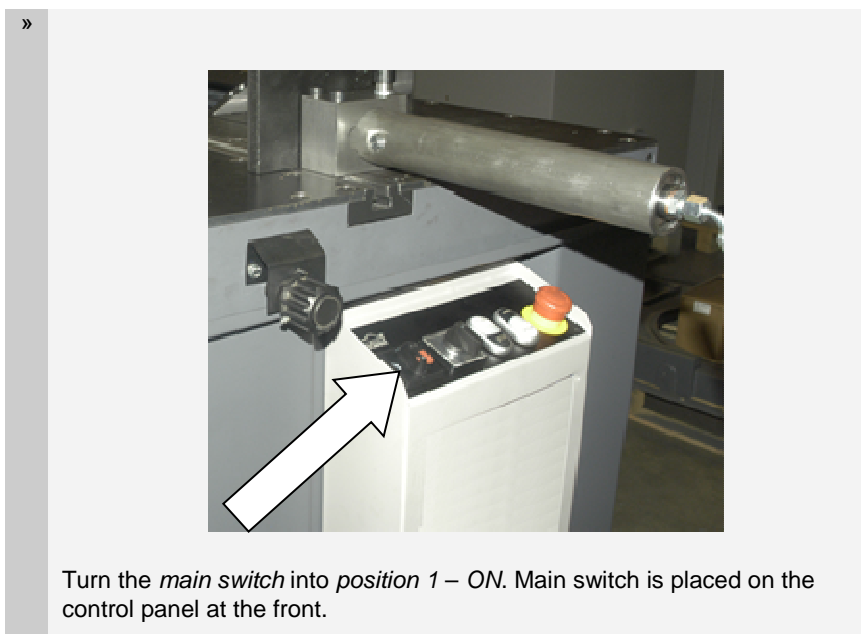
Thickness of the wall S [mm]	Tooth system ($Z_p Z$) Outer diameter of the profile D_p [mm]					
	150	200	300	500	750	1000
2	10-14 S	10-14 S	8-12 S	6-10 S	5-8 S	5-8 S
3	8-12 S	8-12 S	6-10 S	5-8 S	4-6 K	4-6 K
4	6-10 S	6-10 S	5-8 S	4-6 K	4-6 K	4-6 K
5	6-10 S	5-8 S	4-6 K	4-6 K	4-6 K	3-4 K
6	5-8 S	5-8 S	4-6 K	4-6 K	3-4 K	3-4 K
8	5-8 S	4-6 K	4-6 K	3-4 K	3-4 K	3-4 K
10	4-6 K	4-6 K	4-6 K	3-4 K	3-4 K	2-3 K
12	4-6 K	4-6 K	3-4 K	3-4 K	2-3 K	2-3 K
15	4-6 K	3-4 K	3-4 K	2-3 K	2-3 K	2-3 K
20	3-4 K	3-4 K	2-3 K	2-3 K	2-3 K	2-3 K
30	3-4 K	2-3 K	2-3 K	2-3 K	1,4-2 K	1,4-2 K
50	2-3 K	2-3 K	2-3 K	1,4-2 K	1,4-2 K	1,4-2 K
75	-	2-3 K	1,4-2 K	1,4-2 K	1,4-2 K	0,75-1,25 K
100	-	-	1,4-2 K	0,75-1,25 K	0,75-1,25 K	0,75-1,25 K
150	-	-	-	0,75-1,25 K	0,75-1,25 K	0,75-1,25 K
200	-	-	-	0,75-1,25 K	0,75-1,25 K	0,75-1,25 K

SOLID MATERIAL ($D = \text{mm}$)						
Constant tooth system				Variable tooth system		
length of the cut D	tooth system ($Z_p Z$)			length of the cut D	tooth system ($Z_p Z$)	
to 3 mm	32			to 30 mm	10-14	
to 6 mm	24			20-50 mm	8-12	
to 10 mm	18			25-60 mm	6-10	
to 15 mm	14			35-80 mm	5-8	
15-30 mm	10			50-100 mm	4-6	
30-50 mm	8			70-120 mm	4-5	
50-80 mm	6			80-150 mm	3-4	
80-120 mm	4			120-350 mm	2-3	
120-200 mm	3			250-600 mm	1,4-2	
200-400 mm	2			500-3000 mm	0,75-1,25	
300-800 mm	1,25					
700-3000 mm	0,75					

In spite of the proposals above, consider your supplier's recommendations and ask him for professional advice even though the manufacturers will often recommend their own saw bands.

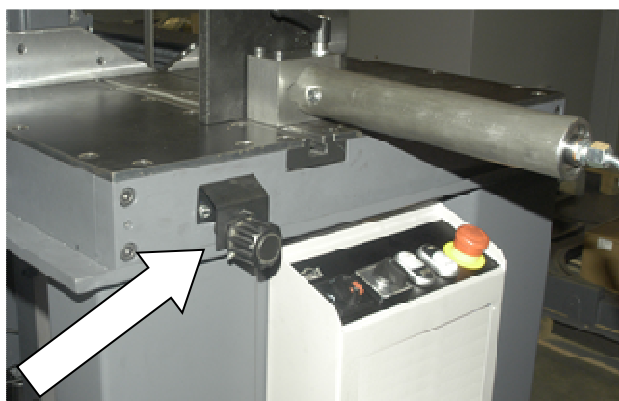
3. Ovládání stroje / Machine control / Bedienung der Maschine

3.1. Starting the band saw



3.1.1. Throttle valve

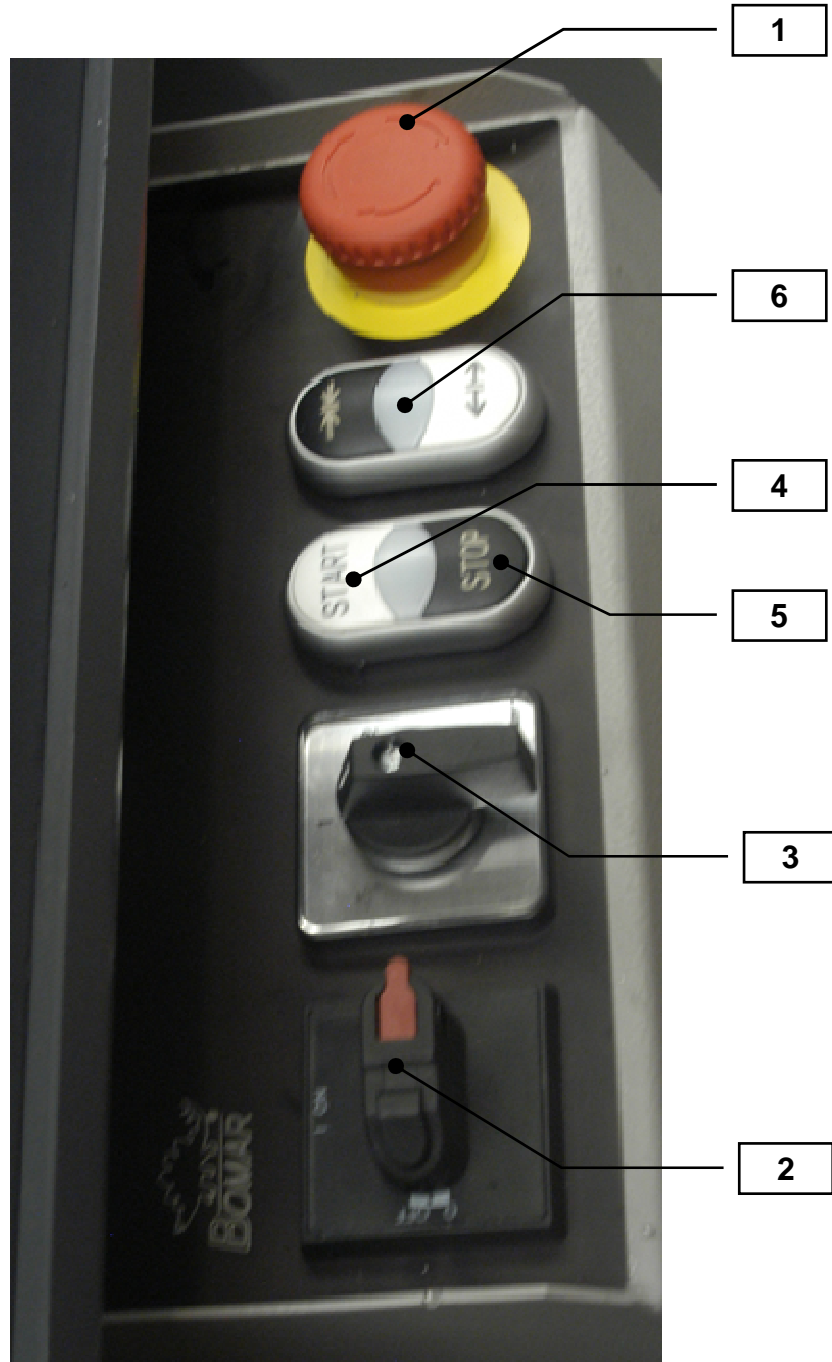
The valve regulates the movement of saw band into cut. Throttle valve is located on the left side at the front above the control panel (see arrow).



Note!
If the throttle valve is tightened too much when being closed, the valve seat can be worn out, which will cause its leakage. Always tighten the valve gently.

3.2. Control panel

Ovládání stroje
Bedienung der Maschine
Machine control



1	TOTAL STOP button In a case of emergency, this button immediately stops the machine.
2	Main switch Switches the saw on /off
3	Saw band speed and rinsing switch Tap symbol – only rinse the saw band while it holds still. Position 1 – saw band speed 32 m.min ⁻¹ with cooling. Position 2 – saw band speed 64 m.min ⁻¹ with cooling.
4	START Saw band drive and movement of saw frame are started.
5	Frame to the back position Press button 5 to move the saw frame into back position.
6	Control of vice Opening of the vice / Clamping of the vice

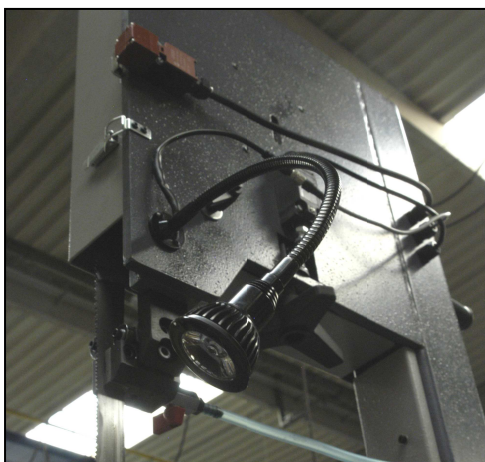
3.2.1. Halogen lighting of working area (optional accessory)

Light the working area of the machine with natural light and helps to facilitate cutting with a band saw.

Proper lighting in your work area greatly enhances ergonomics machines t.

Thanks flexible arm halogen light can accurately adjust to the desired location

The switch is located on the lights head (see arrow).

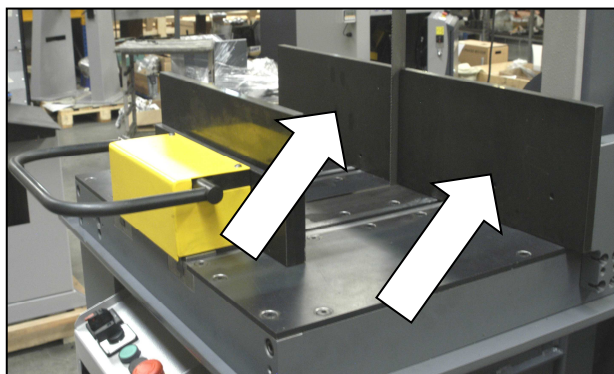


3.3. Machine control

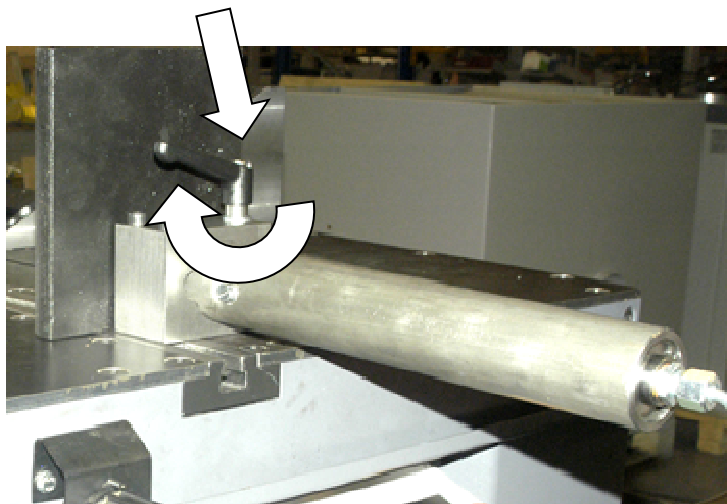
3.3.1. Semi-automatic cycle

Cutting:

1. Move the saw frame into the initial position (further from vice) by **button "5"**.
2. Set the cutting angle (see chapter Angular cut setting).
If you want to make a vertical cut (i.e. 0°), screw the auxiliary metal boards to the fixed vice jaws (see below).



3. Open the vice.
4. Insert the material into the vice next to the fixed vice jaw.
5. Press the locking pin, release the locking lever, move the moveable jaw of the vice to the distance cca 5mm from material and lock the lever again.



6. Clamp the vice.
7. Set the speed of saw frame movement by the throttle valve.
8. Select the speed of the saw band by switch "3".

- Press button “4” (**Start**) to start the cut.

Attention!

You can stop the semi-automatic mode by pressing **button no. 5** or the **TOTAL STOP** – emergency button.

Attention!

Saw frame movement can be stopped only by closing the **throttle valve** or pressing the **TOTAL STOP** button!

- After the cut is finished the vice opens and the material is removed.
- You may repeat the cutting cycle.

3.3.2. Semi-automatic cycle interruption possibilities

Frame to the back position button

Semi-automatic cycle is interrupted by pressing **button no. 5 – frame to the back position**.

The saw arm is moved to the furthest position and then the saw band drive is stopped. You may start the cycle again by pressing the **START** button.

TOTAL STOP emergency button

In case of an accident, press the **TOTAL STOP** button.

After pressing the **TOTAL STOP** button the saw frame springs back a bit (2-3 mm) to pull the saw band out of the cut, the saw band drive is immediately stopped and the frame movement is halted.

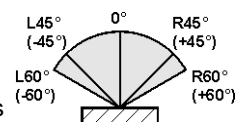
Reactivation:

- Release **TOTAL STOP** the button (arrows on button).
- Press **START** button.

3.4. Cut adjustments

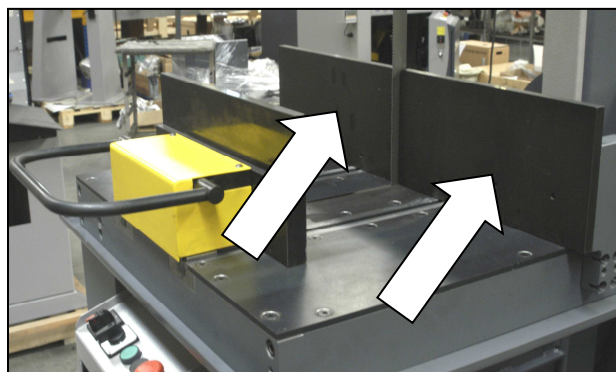
3.4.1. Angular cut setting

The saw PR1247 SV 330 DGH can be used to cut material in an angle interval from **-60° to +60°**. There are angular stops to help set most common cutting angles (**-60°, -45°, 0°, +45°, +60°**).

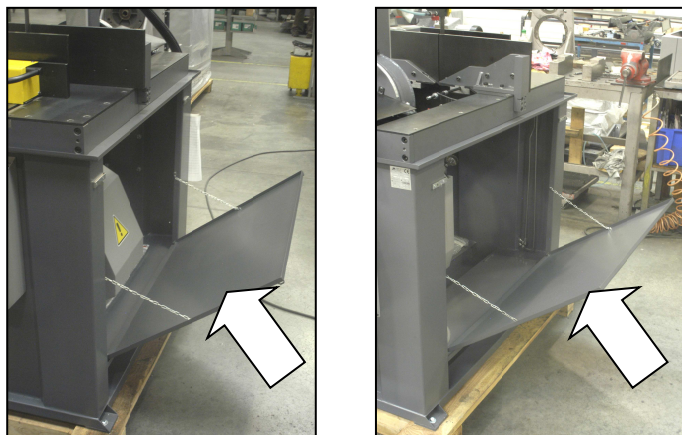


To set desired angle:

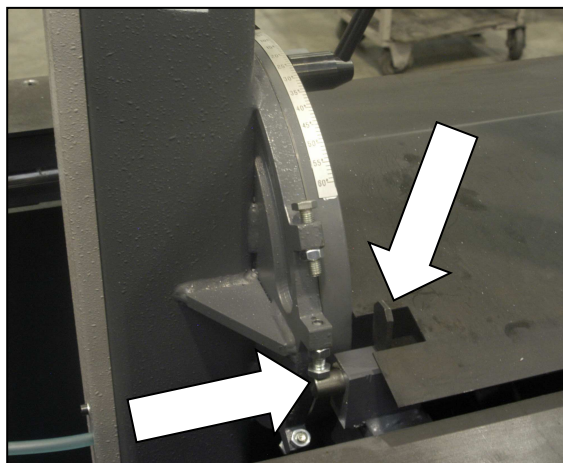
- Dismantle the auxiliary metal boards from the fixed vice jaws!**



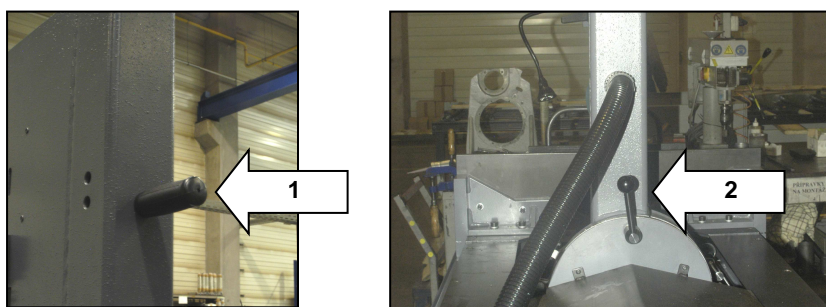
2. Open corresponding cover on the side of the saw.



3. Move the saw frame to the back position (furthest from vice).
4. Pull out the locking pin (arrows).

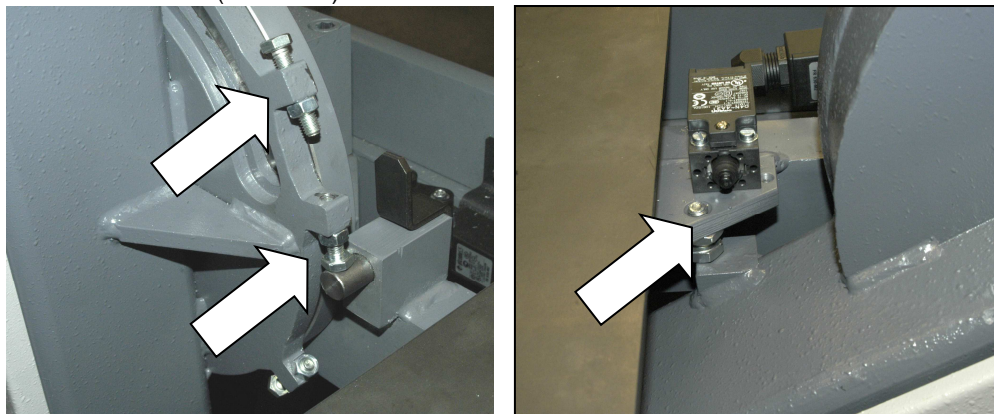


5. Grip the rubber handle (arrow 1) on the saw frame and loosen the locking lever (arrow 2).



6. Set the desired angle according to the scale on the console with the help of the scale and the angular stops for common cutting angles.

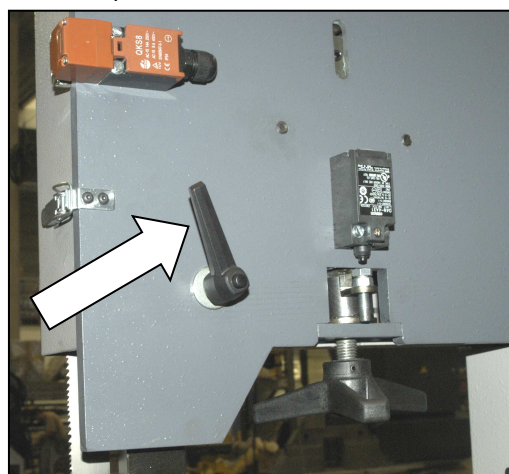
- Put the locking pin back into the opening. If you are setting the angle with the help of the stops, make sure the head of the bolt of the angular stop rests either against the locking pin or against the facet on the other side of the frame (see below).



- Tighten the securing lever.

3.4.2. Setting of the optimal span of the guiding cubes


If you want to achieve a smooth and precise cut, it is helpful to position the guiding cube as close as possible to the material.



- Release securing lever of the guiding cube.
- Slide the guiding cube closer to the material.
- Tighten the securing lever.

3.4.3. Cutting speed adjustment and rinsing

There are two saw band speeds available, 32 m.min⁻¹ and 64 m.min⁻¹. You can switch between the speeds using **switch no. 3**. The band is always cooled while cutting. If you want to rinse the band while it is not moving, turn the switch to the tap symbol.

Picture	Description
	<p>Tap symbol – only rinse the saw band</p> <p>Position 1 – 32 m.min⁻¹</p> <p>Position 2 – 64 m.min⁻¹</p>

3.5. Material insertion

Never walk under a suspended load!

Never climb onto the-roller conveyor!

Do not hold the material for clamping in the vice! The vice can cause injuries!

3.5.1. Handling agent selection

Use the sufficient means to lift and transfer the material!

Handle the material only with a lift truck or use suspension strands and a crane!

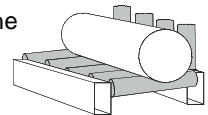
Do not use the lift truck or crane in case that you do not have the license to operate it!

3.5.2. Insertion

Insert material into the vice and ensure that the material cannot move in the vice or fall from the vice after the clamping. If you are cutting long pieces (for example rods, tubes), you must use a roller conveyor for shifting the material to the band saw. Contact Bomar for more information about roller conveyors.

Make sure the conveyor is long enough and the material cannot drop off the conveyor.

Make sure round pieces always stay on two vertical rollers and cannot fall off the conveyor!



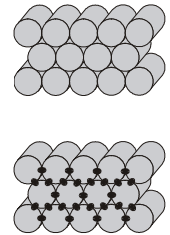
3.5.3. Bundle material cutting

If you want to cut bundled material, there are some procedures for handling the bundles.

Round material bundle: Take care (especially with round material) that the bars are put according to the picture. If the bars are put differently, you may have problems moving them.

Weld the material at the rear end of the bundle to secure it.

Before welding **always** switch off the machine with the main switch! Magnetic fields which often occur during welding may damage the control systems!



Attention:

**Not all shapes are suitable for cutting in a bundle.
Follow the recommendation of your saw band supplier
for material insertion in a bundle.**

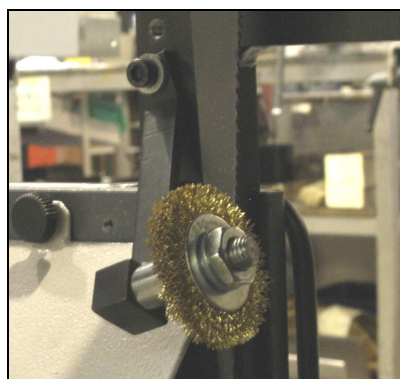
4. Údržba stroje / Machine maintenance / Wartung

4.1. Saw band dismantling

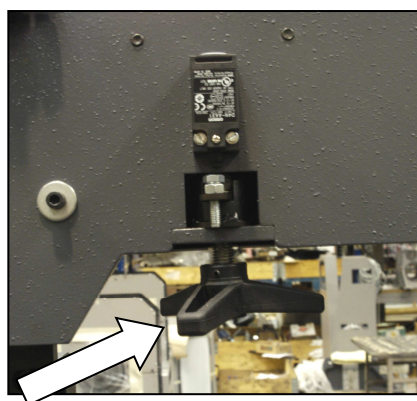
1. Open the cover on the pedestal (side of the driving wheel).
2. Open upper cover of the tightening wheel and lower cover of the driving wheel (after loosening the securing screws with plastic head).



3. Dismantle the yellow protective cover and guiding cubes. The cover is fastened by two hex screws. The screws are located under the tightening wheel at the upper guiding cube.



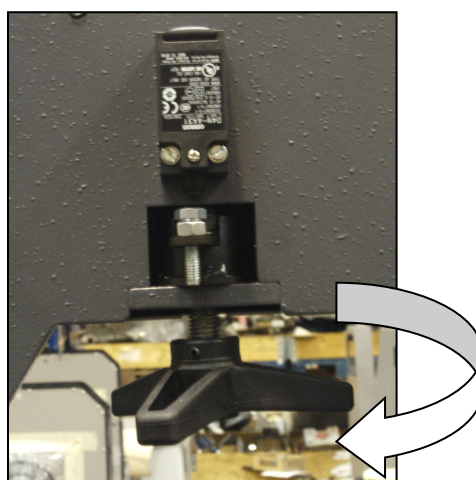
4. Loosen the hex screws on the brush holder and turn the brush away from the saw band.



5. Loosen the tightening star, until you are able to remove the saw band from the wheels.
6. Remove of the saw band from wheels and pull out the saw band from the guiding cubes.

4.2. Saw band installation

1. Prior to installation, clean the track wheels, guiding cubes and inner side of the arm thoroughly of all traces of chips and dirt. **Keep in mind the teeth direction when installing the saw band.**
2. Insert the new saw band in the guide cubes. Make sure the saw band runs between both guiding rollers and that it is pushed all the way to the top.
3. Insert the new saw band inside the protective cover of the arm.
4. Mount the saw band on both guiding wheels. Make sure that the saw band ridge fits tightly to the wheel rim. Push the saw band as tightly to the rim as possible.
5. By turning the stretching star to anticlockwise (tighten), stretch the saw band slightly. Turn the stretching star anticlockwise (tighten) till you activate the limit switch. For correct stretching of the saw band make an additional $\frac{1}{4}$ of a turn in the same direction. Now you can remove the plastic cover on the saw band.



6. Install the yellow protective cover of the band. The arrow on the cover must match the direction of the teeth (see picture). If it does not, you must flip the band.



7. Remove the plastic cover of the saw band teeth, adjust the brush to the band and install the rear protective cover of the arm.
8. Adjust the hard metal guides.

4.3. Saw band stretching and inspection

Correct saw band stretching is one of the most important factors, which influence accuracy and saw band lifespan. Stretch the saw bands according to the band saw and the selected saw band type. Keep to the recommendation of your manufacturer.

Pilový pás Sägeband Saw band	Napětí pilového pásu Sägebandspannung Blade tension	Napětí pilového pásu PSI (pro Tenzomat) Sägebandspannung PSI (für Tenzomat) Blade tension PSI (for Tenzomat)
20 x 0,9 mm	160 N.mm ⁻²	23 500
27 x 0,9 mm	180 N.mm ⁻²	26 500
34 x 1,1 mm	210 N.mm ⁻²	30 500
41 x 1,3 mm	240 N.mm ⁻²	35 000
54 x 1,3 mm	240 N.mm ⁻²	35 000
54 x 1,6 mm	280 N.mm ⁻²	40 600
67 x 1,6 mm	290 N.mm ⁻²	42 000
80 x 1,6 mm	300 N.mm ⁻²	43 500

4.3.1. Saw band stretching



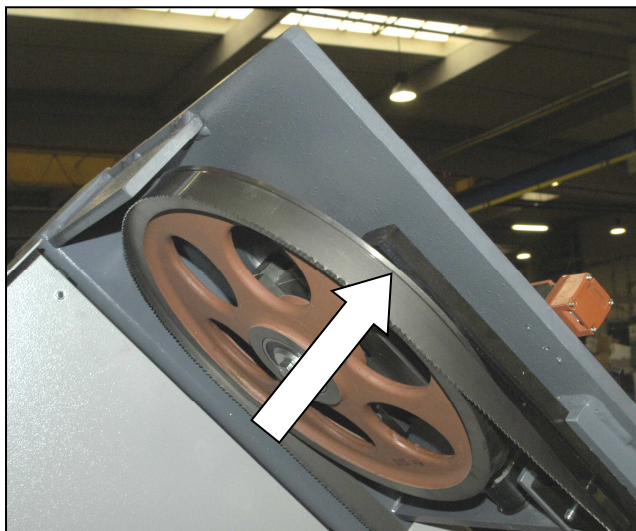
1. After installation of the saw band stretch it gently, so it does not fall off the wheels.
2. Mount the Tenzomat on the saw band and secure it with screws.
3. Stretch the saw band until it is stretched to the recommended value.

4.3.2. Saw band inspection

If the band does not run correctly, following problems can appear:

- **The band falls down from the wheels** – the band or the protective cover of the band can be damaged.
 - **The band runs on the rim of the stretching wheel** – the band or the rim of the wheel can be damaged.
1. Switch on briefly the saw band drive and then switch it off.
 2. Disconnect the saw from the electrical network.

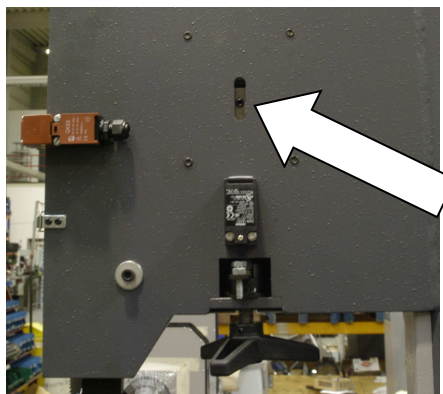
3. Open cover of the wheels and check the position of the saw band on the both wheels.



- If the distance between backside of the saw band and the wheel rim is **1 mm**, the setting is right.
 - If the distance is bigger than **1 mm**, or the saw band runs on the rim of the wheel, adjust the saw band.
4. Close the cover of the saw band.

4.4. Adjustment

4.4.1. Saw band run adjustment

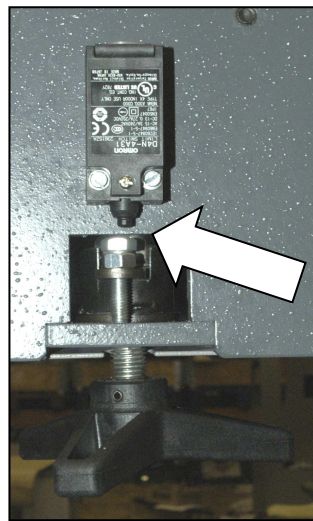


The saw band run is set with screw in the stretching cube on the saw frame. Optimal distance has been determined at **1 mm**.

- Turn the screw to the right, the saw band gets closer to the stretching wheel rim.
- Turn the screw to the left, the saw band departs from the stretching wheel rim.

4.4.2. Adjusting the limit switch of the saw band stretching

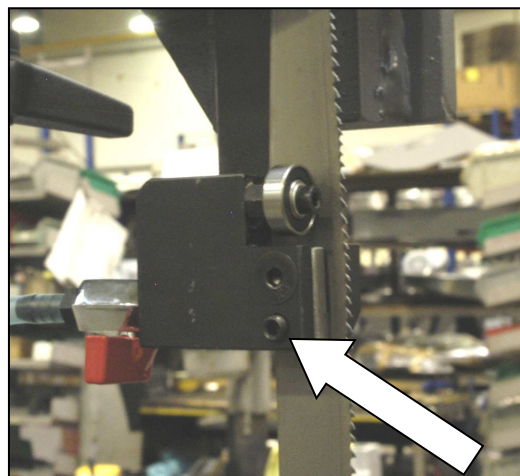
After the saw band is replaced, the limit switch setting must be checked. If the limit switch is not set correctly, the band is stretched either too much or too little.



1. Stretch the band with help of the TENZOMAT to an optimal value (Tenzomat chart)
2. Release the nut on the stop screw
3. Start the band drive. Two scenarios may occur:
 - If the engine is switched on, but it does not run, turn the screw to the left until the engine starts to run
 - If the engine runs turn the screw to the right until it stops, then turn the screw shortly to the left until the engine starts running again
4. Fasten the stop screw with the nut and check the setting of the switch again.

4.4.3. Hard metal guides adjustment

Hard metal guides adjustment is one of the most important criterions which influences the cutting accuracy and saw band lifespan. Therefore it is essential to check regularly if the hard metal guides are adjusted correctly.



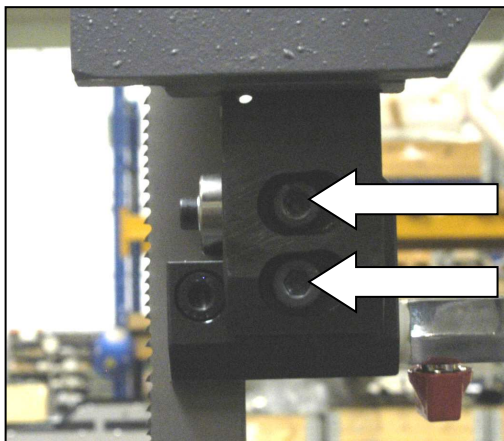
1. Tighten the stop screw on the rear side of guide cube (arrow) so that the band cannot move.

2. Release the stop screw and at the same time grip the saw band by hand and check if the hard metal guide does not put up to much resistance against the movement of the band. As soon as it is possible to move the band without resistance the hard metal guides are adjusted properly.

Make sure that the hard metal guides do not put up to much resistance otherwise the lifetime of the saw band and drive decreases.

4.4.4. Guiding cubes adjustment

Cutting quality and saw band lifespan is also dependent on guide cubes adjustment. Therefore the adjustment of the guiding cubes has to be checked on a regular basis.

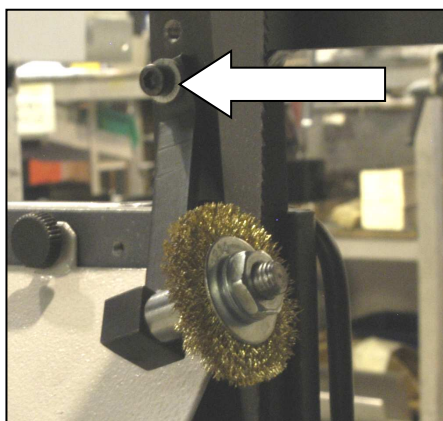


1. Loosen both tightening screws of the guiding cube and push it carefully to the band. **Make sure the saw band is not bent**; otherwise the cube will press against the band and damage it.
2. Fasten both tightening screws again.

If the guiding cube is correctly adjusted, upper edge of the cube and the ruler are parallel.

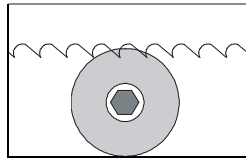
4.4.5. Brush adjustment

The brush influences precision of the cutting, the cutting power and lifetime of the saw band, circular wheels and hard metal guides. Check the brush each shift!



1. Release the tightening bolt of the brush (see arrow) so the brush can be moved.

2. Set the brush to the saw band. Ends of the brush bristles should not touch the base of the saw band teeth (see picture below).



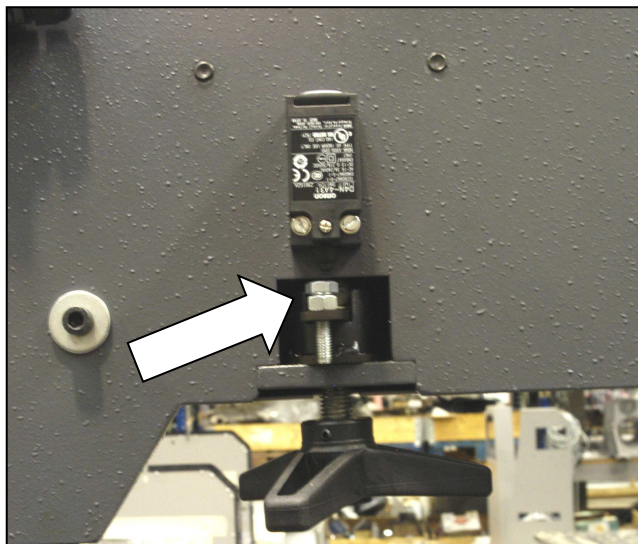
Attention!

The brush must not touch the bottom of the saw teeth!

3. Tighten the bolt again and switch on the saw band drive. If the brush is adjusted properly, it runs fluently together with the saw band.

4.4.6. Adjusting the limit switch of the saw band stretching

After the saw band is replaced, the limit switch setting must be checked. If the limit switch is not set correctly, the band is stretched either too much or too little.

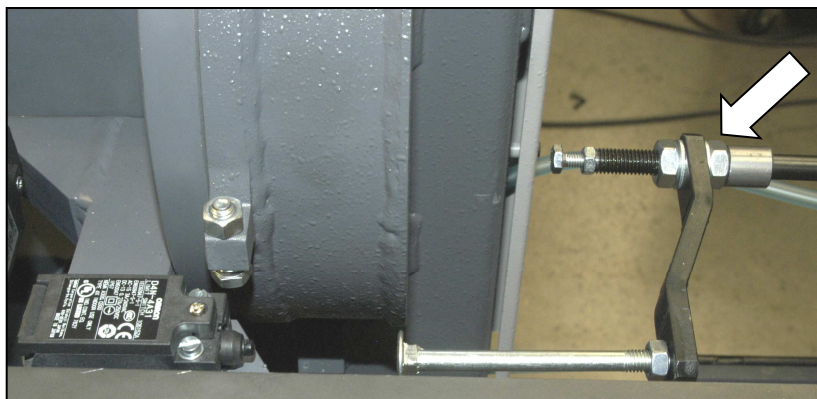


1. Stretch the band with help of the TENZOMAT to an optimal value (Tenzomat chart)
2. Release the nut on the stop screw
3. Start the band drive. Two scenarios may occur:
 - If the engine is switched on, but it does not run, turn the screw to the left until the engine starts running
 - If the engine runs turn the screw to the right until it stops, then turn the screw shortly to the left until the engine starts running again

Fasten the stop screw with the nut and check the setting of the switch again.

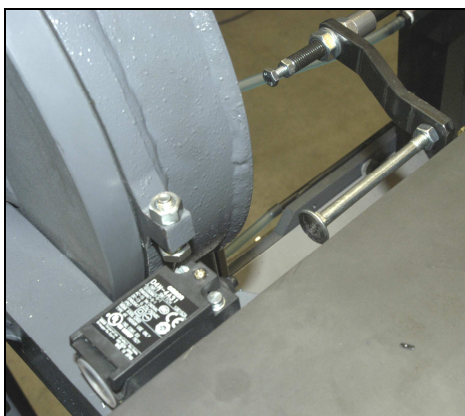
4.4.7. Saw frame furthest position stop adjustment

This stop limits the furthest position of the saw frame from the vice. This stop has to be checked at least once a month.



If the lower stop is adjusted incorrectly

1. Move the saw frame to the furthest position
2. Release the nuts of the adjusting screw and adjust the stop
3. Fasten the adjusting screw with the nuts again
4. Set the limit switch of the furthest arm position



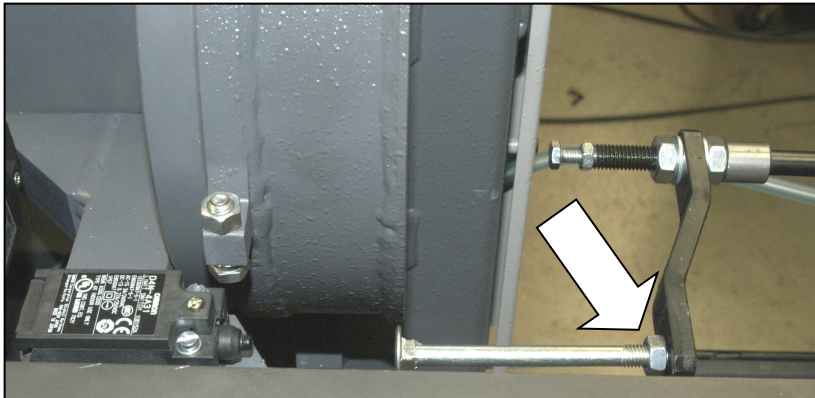
4.4.8. Adjustment of the end switch of saw frame furthest position

If you have adjusted the furthest stop of the saw frame, the limit switch adjustment inspection is required

Setting check

Move the arm to the furthest position. If the arm rests on the furthest stop and the switch reacts, the setting is correct. In other case carry out the switch setting.

Switch setting



1. Release the nut of the stop screw and screw in the stop screw
2. Move the arm to the furthestmost position stop and turn on the band drive
3. Screw out the stop screw until the band drive stops
4. Secure the screw with nut again and check the limit switch setting once more

4.5. Cooling agents and chip disposal

The quality of the cooling agent will deteriorate due to:	If the solution is too weak:	If the solution is too strong:
use of contaminated water	corrosion protection is diminished	the cooling ability is decreased
impurities	lubrication decreases	foam production increases
oil contamination from the outside (hydraulics, gears)	microbial attack is more likely	emulsions stability deteriorates
high operating temperatures		sticky residue develops
lack of air circulation		
wrong concentration		

4.5.1. Coolant inspection

The state of the cooling agent has a significant influence on the cutting quality and on the lifespan of the machine. Lifetime of the cooling liquid is 1 year, after this time we recommend change the cooling liquid. This time is dependent on the degree of pollution of the cooling liquid (especially with oils) and on other factors.

Note:

If the state of the cooling liquid is not satisfactory, the cooling liquid must be replaced.

Check level of the cooling liquid and function of the pump periodically!

Check the state of the cooling agent according to the following table:

Testing	Interval	Method	Condition	Precaution
Liquid level	daily	visually	too low	check concentration, add water or emulsion
Concentration	daily	refractometer densimeter	too high	refill water
			too low	refill base emulsion
Smell	daily	by sense of smell	unpleasant smell	good ventilation, add biocides or replace coolant
Contamination	daily	by sense of smell	visible oil leaks, sludge fungi	surface cleaning, fix leaks, add biocides or fungicides; clean the system with a cleanser* prior to the coolant replacement
Corrosion-protection	when necessary	visually chip test Herbert-test	insufficient corrosion protection	test stability, if necessary – increase concentration or pH value
Stability	when necessary	refractometer	oiling	add concentrate, enquire the supplier
Foam reaction	when necessary	shaking test	too much foam, foam disperses too slowly	avoid aeration, increase water hardness, fix with defoamer

* According to manufacturer's instructions

4.5.2. Chips disposal

Chips resulting from cutting operations must be disposed of in accordance with the relevant regulations.

- Let the chips drip excess fluid!
- Put the chips into a watertight container. Make sure that the container does not leak, because even after a long dripping time, the chips still contain coolant residues.
- *Place the container into the care of a disposal company equipped for the disposal of chips contaminated with cooling liquid.* In case the machine is equipped with micronisation device, the chips must also be handed over to a disposal company.

4.6. Gearbox oils, Greases and hydraulic oils

4.6.1. Gearbox oils

In gearboxes, oil is used for the whole lifetime of the gearbox. We recommend replacing of the filling oil in case of repair.

Use oils with DIN 51517 specification for the gearboxes. Select the ISO VG viscosity class according to the original oil.

Attention:

When replacing the oil, use oils recommended by BOMAR or oils from other manufacturers, which have comparable parameters.

Do not forget, that mineral and synthetic oils must not be mixed!

Recommended oils and quantity according to the type of the band saw

Band saw	Gearbox oil	Volume
SV 330 DGH	Shell Tivela S 320	0.5 l

Comparative table of the gearbox oils

Manufacturer	Viscosity grade		
	ISO VG 100	ISO VG 220	ISO VG 320
BP	Energol GR-XP 100	Energol GR-XP 220	Energol GR-XP 320
Castrol	Alpha SP 100 Alpha MW 100	Alpha SP 220 Alpha MW 220	
Elf	Reductelf SP 100	Reductelf SP 220 Reductelf Synthese 220	Reductelf SP 320
Esso	Spartan EP 100	Spartan EP 220	Spartan EP 320
Mobil	Mobilgear 627	Mobilgear SHC 220 Mobilgear 630	Mobilgear 632
ÖMV		PG 220	
Paramo	PP 7	Paramo CLP 220	Paramo CLP 320
Shell	Shell Omala 100	Shell Omala 220 Shell Tivela S 220	Shell Omala 320 Shell Tivela S 320
Total	Carter EP 100	Carter EP 220	Carter EP 320

4.6.2. Lubricant greases

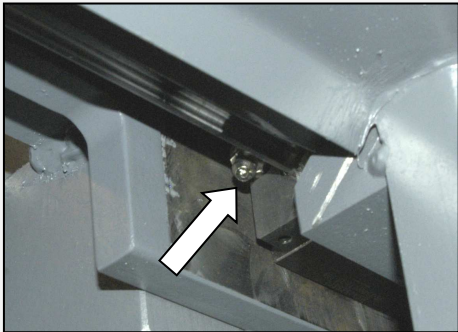
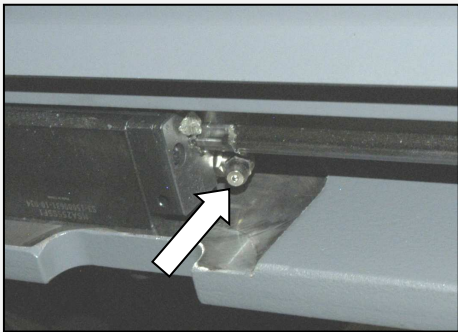
For lubrication we recommend using lithium based class NGLI-2 saponified greases. Different greases are mixable, if their oil bases and density classes are identical.

Comparative table of lubricant greases:

Manufacturer	Type of the lubricant grease
BP	Energrease LS - EP
DEA	Paragon EP1
Esso	FETT EGL 3144
	Beacon EP 1
	Beacon EP 2
FINA	FINA LICAL M12
Klüber	Microlube GB0
	Staburags NBU8EP
	Isoflex Spezial
Optimol	Optimol Longtime PD 0, PD1, PD2
Shell Aseol AG	ASEOL Litea EP 806-077
Texaco	Multifak EP1

4.6.3. Spots for lubrication

There are several spots on the machine, which are to be greased periodically to secure a correct function of the machine.

Lubricator	Procedure
	<p>Linear guiding rails of the saw arm Lubricators are located on the inner side of the track; accessible from bottom.</p>
	<p>Lubricate with grease once in three months (see chapter Lubrication greases). Use 3–5g of grease on every carriage of the linear guiding system. Use a greasing gun. Perform 3–5 runs across the whole track for lubrication.</p>

4.6.4. Hydraulic oils

Replace the hydraulic oils once every 2 years, because the oil properties will deteriorate and cause problems with the hydraulic unit. If the hydraulic system is equipped with a filter (2SF 56/48-0,063), replace the filter as well.

Use oils with specification DIN 51524-HLP, ISO 6743-4 and viscosity class ISO VG 32 in hydraulic aggregates.

Note:

When replacing, use oils recommended by BOMAR or oils, from the other manufacturers which have comparable parameters. Do not forget, that mineral and synthetic oils must not be mixed!

Comparative table of hydraulic oils

Manufacturer	Type	Manufacturer	Type
Agip	Oso 32	Ina	Hidraol 32 HD
Aral	Vitam GF 32	Klüber	Lamora HLP 32
Avia	Avilub RSL 32	Mađarsko	Hidrokomol P 32
Benzina	OH-HM 32	Mobil	Mobil DTE 25
BP	Energol HLP 32	ÖMV	HLP 32
Bulharsko	MX-M/32	Polsko	Hydrol 30
Castrol	Hyspin AWS 32	Rumunsko	H 32 EP
Čepro	Mogul HM 32	Rusko	IGP 30
DEA	Astron HLP 32	Shell	Tellus Oil 32
Elf	Elfolna 32	Sun	Sunvis 846 WR
Esso	Nuto H 32	Texaco	Rando HD B 32
Fam	HD 5040	Valvoline	Ultramax AW 32
Fina	Hydran 32		

4.6.5. Hydraulic unit maintenance

After 50 hours of working time, or at latest 3 month after the first run, first maintenance should be carried out. This includes:



checking all screws and connections, fixing points, tubes and hoses for leakage.

checking hydraulic oil level.

during the time of operation the oil temperature shouldn't exceed 70°C.

checking function of signaling components (thermometer, level gauge, clogged filter indicator).

checking the adjustment of working pressure.

To secure high reliability of the hydraulic unit, the manufacturer lays down following inspection intervals

Interval	daily	weekly	monthly	three monthly	six monthly	annually
Hydraulic fluid						
Level	-	•	-	-	-	-
Temperature	-	•	-	-	-	-
Condition	-	-	•	-	-	-
Change interval	-	-	-	-	-	•
Filter						
Change interval	-	-	-	-	-	-
Other checks						
External Leakages	•	-	-	-	-	-
Contamination	•	-	-	-	-	-
Damages	•	•	-	-	-	-
Noise-(level)	•	-	-	-	-	-
Gauges	-	-	•	-	-	-

4.7. Machine cleaning

Clean the machine off cooling agent and impurities after every shift. Conserve the guiding surfaces, mainly:

Clamping jaws of the vice.

The guiding of the jaws of the vice.

The loading surface of the vice

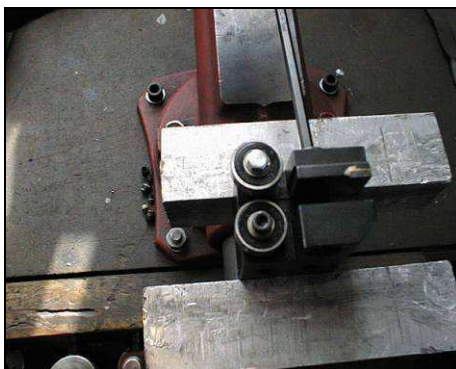
4.8. Worn parts replacement

4.8.1. Hard metal guides replacement

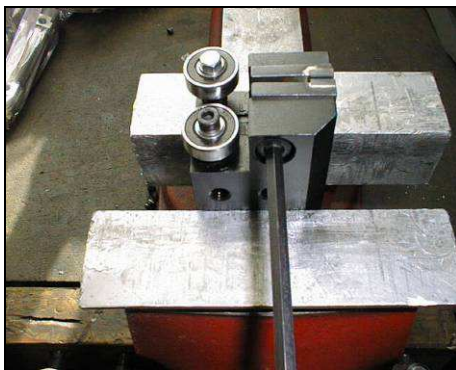
If the hard metal guides cannot be adjusted any more, they have to be replaced.



1. Remove the hosepipe leading to the cooling agent tank and dismantle the saw band and saw band guiding cube.



2. Fasten the guiding cube in a vice and screw out the screws on both hard metal plates.



3. Screw out the adjusting screw of the adjustable guiding plate as far from the guide cube (so that it is not possible to see it from the inner side).
4. Now insert the new hard metal guides and fasten them tightly, then fasten the guide cube to the saw arm.
5. Install the saw band and adjust the guide cubes and hard metal guides.

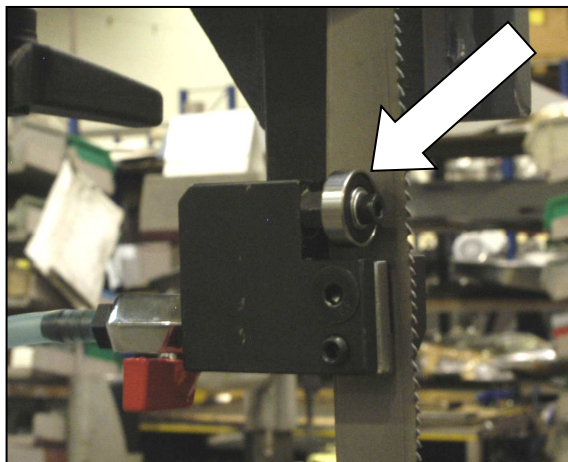
Attention!

Vice must have aluminum jaws or there has to be an aluminium insert in it to avoid damaging the parts when clamping.

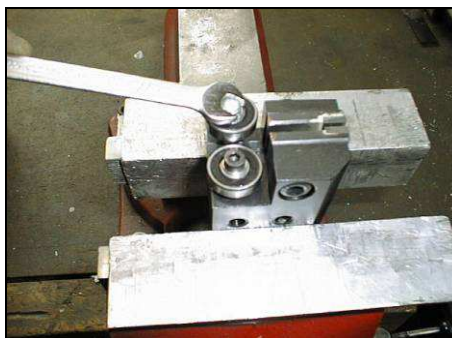
4.8.2. Saw band guiding rollers replacement

If the saw band is not sufficiently guided by guiding rollers and/or if the rollers are obviously worn, the rollers should be replaced.

Attention! Guiding rollers must be replaced on both guiding cubes!



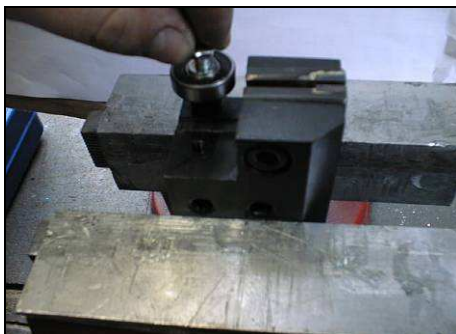
1. Remove the hosepipe leading to the cooling agent tank and dismantle the saw band and saw band guiding cube.



2. Grip the guide cube in a vice and screw out both fastening screws of the eccentrics.



3. Pull both guiding rollers from their eccentrics.



- Put new guide rollers on the eccentrics and screw the eccentrics to the guide cube.



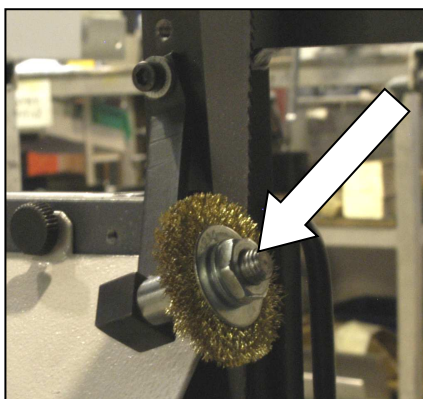
- Now insert a short test piece of a saw band (cca 15 -- 20 cm) into the guiding cube. Adjust both eccentrics so that the band runs in the middle of the milled groove. The groove is located between both eccentrics. Guiding rollers may not press too much against the band, but must be able to spin freely.

Optimal distance between band and roller is 0,05mm.

- Install the cube on the saw arm. Install the saw band and adjust the guiding cubes.

4.8.3. Worn brush replacement

If the chip removing brush is so worn, that it does not fulfill its function, it must be replaced.



- Release the nut of the brush, exchange the old brush for a new one and screw in the nut of the brush.
- Adjust the brush to the saw band.

5. **Závady / Troubleshooting / Störungen**

5.1. Mechanical problems

Problem	Possible causes	Repair
1. Slanting cut	- Wrongly adjusted hard metal guides.	Set according to the chapter „Servicing and adjustment“
	- Worn hard metal guides.	Replace according to the chapter „Worn pieces replacement“
	- Wrongly adjusted cubes of the saw band guiding.	Set according to the chapter „Servicing and adjustment“
	- Worn bearings of the saw band guiding.	Replace according to the chapter „Worn pieces replacement“
	- Wrongly adjusted swarf brush.	Set according to the chapter „Servicing and adjustment“
	- Worn swarf brush.	Replace according to the chapter „Worn pieces replacement“
	- Insufficient saw band stretching.	Increase the saw band stretching and set the limit switch.
	- Wrongly chosen tooth system of the saw band.	Replace the saw band; follow the instructions of the manufacturer for new saw band choice.
	- Worn saw band.	Replace the saw band.
	- Wrongly balanced roller conveyor.	Adjust the roller conveyor.
	- Dirty feeding board.	Cleanse the feeding board from debris, chip and residue material.
	- Guiding rail and guiding cube are loosened.	Tighten the guiding rail.
	- Guiding rail and cube are too far from the material.	Set the guiding cube to the material.
	- Too fast rate of movement into the cut.	Lower the material speed of descent of the arm.
- Unexpected oscillation in material quality.	Adjust the cutting parameters and feeding speed according to the material.	
2. The cut is not cut upon desired angle	- Securing lever is loosened.	Check the securing lever efficiency and carry out its adjustment according to chapter „Servicing and adjustment“.
	- Set angle does not match the cutting angle.	Check the angle adjustment with a protractor and if need be adjust it according to chapter „Servicing and adjustment“.
	- Insufficient saw band stretching.	Stretch the saw band and set the limit switch according to chapter „Servicing and adjustment“.
	- Guiding cube holder and guiding cube are loosened.	Fasten the guiding holder and the cube.
	- Dirt between material and clamping jaw.	Cleanse the material and mating jaw.
3. Short lifetime of the saw band	- Insufficient saw band stretching.	Increase the tightening of the saw band and set the sensor of saw band tightening according to chapter „Servicing and adjustment“.
	- Worn swarf brush.	Check the swarf brush condition and replace it in case of excessive wear as

Problem	Possible causes	Repair
		described in chapter „Worn pieces replacement“
	- Wrongly adjusted swarf brush.	Check swarf brush adjustment, set it according to chapter „Servicing and adjustment“
	- Over stretched saw band	Lower the stretching of the saw band and set the limit switch of the saw band stretching according to chapter „Servicing and adjustment“
	- Wrongly adjusted hard metal guides.	Check the adjustment of the hard metal guides and carry out adjustment as described in chapter „Servicing and adjustment“
	- Worn hard metal guides of the saw band.	Check the condition of the hard metal guides and if they are too worn, replace hard metal guides according to chapter „Worn pieces replacement“
	- Worn saw band guide bearings.	Check the guiding bearings and if you notice any excessive damage, replace them according to chapter „Worn pieces replacement“
	- Wrongly adjusted guiding cubes of the saw band.	Set the guiding cube according to chapter „Servicing and adjustment“
	- Wrongly adjusted speed of descent of the arm and saw band speed.	Adjust the descending speed and speed of the saw band according to values published by the saw band manufacturer.
	- Different material quality.	Adjust the speed of descent and speed of the saw band according to desired material (perform a test cut).
	- Low quality saw band	Replace the saw band (contact your local accessory supplier for more information)
	- Wrongly chosen saw band tooth system.	Replace the saw band, keep to the instructions of the manufacturer.
	- Wrongly adjusted run of the saw band.	Check the space between the top of the saw band and driving wheel. Adjust the tracking as described in chapter „Servicing and adjustment“ if need be.
4. Insufficient cut output.	- Worn saw band.	Replace the saw band, keep to the instructions of the manufacturer.
	- Wrong saw band tooth system.	Replace the saw band, keep to the instructions of the manufacturer.
	- Wrongly adjusted speed of descent of the arm and saw band speed..	Adjust the descending speed and speed of the saw band according to values published by the saw band manufacturer
5. The cut is not finished.	- Wrongly adjusted lower stop point of the saw frame.	Check lower limit switch and screw.
	- Stop point surface is messy.	Cleanse the stop point surface of the limit switch from debris and residue material.
6. Regulation valve cannot be turned	- Metal chips between the valve and the panel.	Chips must be removed, then put an O-Ring of about 10x2 mm onto the shaft.
	- There are metal chips inside the	Valve must be cleaned or changed.

Problem	Possible causes	Repair
	valve.	
7. Saw band drive cannot be started.	<ul style="list-style-type: none"> - Pressure switch is wrongly adjusted. - Pressure switch is defective. 	<p>Set the pressure switch according to chapter „Servicing and adjustment“</p> <p>Replace defective parts of the pressure switch.</p>
8. Saw bands tend to rupture.	- Saw band run not adjusted properly	Adjust the distance of band from the rim according to operating instructions.
	- Wrongly adjusted band guiding (hard metal and bearings).	Hard metal pieces and bearings must be adjusted according to „Servicing and adjustment“.
	- Looseness in the lifting cylinder mounting.	
	- Bearings of guiding cubes are worn out (rolling elements are damaged or outside ring of bearing has conical form).	Bearings of guiding cubes must be replaced. Bearings must be adjusted according to operating instructions.
	Worn out pin of the upper or bottom holder of the lifting cylinder.	Exchange the upper or bottom holder of the lifting cylinder.
9. Damage tooth system of the saw band	- Geometry of hard metal guiding cubes is wrongly adjusted.	Hard metal guiding cubes must be adjusted.
	- Bearings of guiding cubes are worn out.	Bearings of guiding cubes must be replaced.
10. The saw is cut downing.	- Grooving on the driving wheel is worn-out.	Driving wheel must be replaced.
11. Cleansing of the saw band is not functional.	- Elastic wheel of the brush drive is worn-out.	Elastic wheel of the brush must be replaced.
	- The shaft of the brush drive is rusted.	The shaft of the brush must be cleaned and oiled.
	- The brush position and the brush cover is adjusted incorrectly – the cover prevents the brush from turning.	The brush cover must be repositioned, in order for the brush to be able to turn.
12. The saw arm periodically rises and descends a few millimeters during the cut; this shortens the lifetime of the saw band considerably.	- Backlash in driving wheel mounting on the shaft.	Replace following parts: the driving shaft for a longer one, bearings, distance ring, driving wheel, spring, two covers on the forehead of the shaft + screws.
	- Worn channel for spring.	

5.2. Electrical problems

Problem	Possible causes	Repair
1. Machine is not possible to start.	- No voltage in the socket	Line voltage must be checked.
	- Overload relay is defective (thermal protection)	Each FA overload relay's condition (on/off) must be checked.
	- Limit switch of either saw band stretching, band cover or saw arm is not closed	Check the saw band stretching and covers.
2. When the cut is finished, the frame is not raised.	- Bottom limit switch is adjusted wrongly.	Bottom limit switch must be adjusted according to chapter ADJUSTING.
	- A malfunction in the hydraulic (pneumatic) system. The HYTOS (BOSCH) magnetic valve is not working.	Function of magnetic valve must be checked, valve must be switched on, and voltage across its terminals and coil must be checked.
3. Electric motor and pump are without voltage. There is no voltage between the contactor and thermal protection	- Wrong contactor.	Replace the contactor of the engine.
4. The speed indicator of the saw band is not functional.	- Sensor of speed is not adjusted.	Sensor of speed must be adjusted.
	- Defective display	The display must be replaced.
	- Defective sensor – diode of indicator speed does not light.	Sensor must be changed and adjusted.
5. Occasional switching off of the hydraulic aggregate MA3 engine protection	- Too big working pressure in the hydraulic system.	Service engineer must reduce the pressure in hydraulic system.
6. The hydraulic aggregate cannot be started	Auxiliary contact on thermo-relay FA1 is defective.	Replace the defective contact on the motor FA1 starter.
7. Hydraulic aggregate is switched on but the saw arm or the main vice can't be moved	- Wrong connection of electrical supply. The electrical phases are connected conversely.	The phases must be switched. Only service engineer is allowed to do this.
8. Cooling is not active	Lack of cooling agent.	Refill the tank with cooling agent.
	- Thermal relay is defective	Replace the thermal relay
	- Input hosepipe is broken or obstructed.	Check the cooling circuit and eventually cleanse the cooling system.
	- Cooling pump protection is defective	Check the protection of the cooling pump and change it if need be.
	- Cooling pump is defective.	Replace the cooling pump.

5.3. Hydraulic problems


Problem	Possible causes	Repair
1. Hydro generator is not supplying oil	• Reversed rotation	Check the correct connection of each phase. Reconnect the electrical phases properly.
	• Shortage of oil in the tank	Add hydraulic oil
	• Oil viscosity does not correspond to the prescribed viscosity value	Change hydraulic oil.
	• Hydro generator malfunction	Call service
2. Hydraulic oil contains bubbles	• Wrong power supply connection.	Check the correct connection of each phase. Reconnect the electrical phases properly.
	• Hydraulic circuit is not adequately bled	Bleed the hydraulic circuit.
	• Low level of oil	Add hydraulic oil
3. Increased mechanical noise	• The hydro generator gasket is damaged	Call service
	• Damaged clutch of the drive	Call service
	• Damaged or destroyed motor bearings	Call service
4. Low pressure, pump supplies oil	• Air intake	Check for leaks.
	• Failure on the safety valve	Wrong settings. Check the settings and adjust the safety valve.
	• Wear of the hydro generator	Call service
5. Hydro generator is seized	• External or internal leakages	Call service
	• Damage by solid particles in oil	Perform oil filtration or call the service.
	• Non-prescribed viscosity oil	Change hydraulic oil.
6. Overheating oil	• Wrong type of oil	Change hydraulic oil.
	• Exceeded lifespan of the pump	Call service
7. Hydraulic valve cannot be readjusted	• Cooler malfunction	Check the cooler function or call service.
	• Wear of the pump, energy is converted into heat	Call service
7. Hydraulic valve cannot be readjusted	• Electromagnet has no signal (voltage) - interrupted supply lines	Perform recheck.
	• Electromagnet coil burnt	Replace coil – Call service.

- The slider of the switchboard slackens

Replace slider – Call service

6. Schémata / Schemas / Schematics

6.1. Elektrické schéma /
 Elektroschema /
 Wiring diagrams 3x400 +PE, 50 Hz

0	1	2	3	4	5	6	7	8	9					
 <p>BOMAR, s.r.o. Těžební 1236/1 627 00 Brno Czech republic</p> <p>SV 330 DGH ES-4600-201-V1.1.1 Wiring diagram 3x400V+N+PE, 50Hz</p>														
<table border="1"> <tr> <td>  BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno </td> <td> Stroj/Machine/Maschine: SV 330 DGH </td> <td> Název stránky/Name page/Name seiten: Úvodní strana / Title page / Startseite </td> <td> Soubor/Doc./Dokument: ES-4600-201-V1.1.1 Základní provedení typu/nominální napětí: 3x400V+N+PE, 50Hz Datum/Datum: 22.9.2015 </td> <td> Účel/Type/ Strana: 1 Účel/Type/ Strana: 9 </td> </tr> </table>										 BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno	Stroj/Machine/Maschine: SV 330 DGH	Název stránky/Name page/Name seiten: Úvodní strana / Title page / Startseite	Soubor/Doc./Dokument: ES-4600-201-V1.1.1 Základní provedení typu/nominální napětí: 3x400V+N+PE, 50Hz Datum/Datum: 22.9.2015	Účel/Type/ Strana: 1 Účel/Type/ Strana: 9
 BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno	Stroj/Machine/Maschine: SV 330 DGH	Název stránky/Name page/Name seiten: Úvodní strana / Title page / Startseite	Soubor/Doc./Dokument: ES-4600-201-V1.1.1 Základní provedení typu/nominální napětí: 3x400V+N+PE, 50Hz Datum/Datum: 22.9.2015	Účel/Type/ Strana: 1 Účel/Type/ Strana: 9										

Strana Page Seite	Název strany Page name Seitenname	Datum Date Datum
1	Úvodní strana / Title page / Startseite	22.9.2015
2	Obsah / Content / Inhalt	16.5.2016
3	Kusovník artiklů / Parts list / Artikelstückliste	12.5.2016
3.a	Kusovník artiklů / Parts list / Artikelstückliste	16.5.2016
4	Rozmístění prvků v rozvaděči / Placing the elements in the switchboard / Anordnen der Elemente in dem Schrank	16.5.2016
5	Rozmístění na ovládacím panelu / Placing the elements on control panel / Deployment auf dem Bedienfeld	12.5.2016
6	Slová část / Power part / Feld partie	16.5.2016
7	Ovládací část / Control device / Steuereinheit	16.5.2016
8	Příslušenství / Accessories / Zubehör	12.5.2016

Změna	Datum	Název	Pův.	Zkontř.	Zprac.	Správc	Datum
ES-4600-201-V1.1.1	16.5.2016						
SV 330 DGH							
Náhradní z							
Náhradno dím							
EPLAN Software & Service GmbH & Co. KG							
Obsah / Content / Inhalt							
TEC_10001							
Uřet							
Uřet							

3									
2									
9									

Obsah / Table of contents / Inhalt

Kusovník artiklů / Parts list / Stückliste

Označení přístroje Device identification Geräteidentifikation	Typ přístroje Device description Gerätebeschreibung	Objednávací číslo Type number Typennummer	Výrobce Manufacturer Hersteller	Skladové číslo Part number Lagernummer	Množství Quantity Menge	Umístění Location Stelle
-FA1	Tepelné relé - 4.2A Thermal relay - 4.2A Thermische relais - 4.2A	T16-4,2	ABB	91.050.026	1	/6.2
-FA2	Tepelné relé - 0.17A Thermal relay - 0.17 Thermorelais - 0.17	T16-0,17	ABB	91.050.018	1	/6.4
-FA3	Tepelné relé - 0.74A Thermal relay - 0.74A Thermische Relais - 0.74A	T16-0,74	ABB	91.050.021	1	/6.5
-KM1	Ministrykač - 4kW/400V, 3P Mini contactor - 4kW/400V, 3P Mini-Schutz - 4kW/400V, 3P	B6S-30-10-1.7-71	ABB	91.040.048	1	/7.6
-KM2	Ministrykač - 4kW/400V, 3P Mini contactor - 4kW/400V, 3P Mini-Schutz - 4kW/400V, 3P	B6S-30-10-1.7-71	ABB	91.040.048	1	/7.8
-LP1	Signálka LED červená na adaptér Red LED light for adapter Red LED-Licht für Adapter	M22-LED-R	EATON	91.061.027	1	/7.6
-SB3	Upevňovací adaptér + 1NO Attaching adapter + 1NO Montageadapter + 1NO	M22-AK10	EATON	91.061.021	1	/7.4
-SB3	Hlavice dvoutlačítka bílá/černá start/stop Double button head white/black start/stop Doppelrundkopf weiß/schwarz Start/Stop	M22-DDL-WS-GB1/GB0	EATON	91.060.034	1	/7.4
-SB3	Kontaktní blok - 1NO Contact block - 1NO Kontaktblock - 1NO	M22-K10	EATON	91.061.022	1	/7.4
-SB5	Upevňovací adaptér + 1NO Attaching adapter + 1NO Montageadapter + 1NO	M22-AK10	EATON	91.061.021	1	/7.3
-SB5	Hlavice dvoutlačítka bílá/černá, zavřít/otevřít Double button head white/black, arrow close/open Doppelrundkopf weiß / schwarz, Pfeil Schließen / Öffnen	M22-DDL-WS*	EATON	91.060.055	1	/7.3
-SB5	Kontaktní blok - 1NO Contact block - 1NO Kontaktblock - 1NO	M22-K10	EATON	91.061.022	1	/7.3

The manufacturer reserves right to use an equivalent replacement device.

Označení přístroje Device identification	Typ přístroje Device description	Objednáací číslo Type number	Výrobce Manufacturer	Skladové číslo Part number	Množství Quantity	Umístění Location
-FU1	Pojistka trubková - 2A/250V, pomalá, 5x20 Rohrsicherung - 2A / 250V, langsam, 5x20 Tube fuse - 2A/250V, slow, 5x20	T2A/250V	ESKA	91.230.001	1	/6,6
-FU3	Pojistka trubková - 4A/250V, pomalá, 5x20 Rohrsicherung - 4A / 250V, langsam, 5x20 Tube fuse - 4A/250V, slow, 5x20	T4A/250V	ESKA	91.230.015	1	/6,8
-SB1	Total stop - hlavice + 3XNC Emergency-stop mushroom push - button + 3XNC Not-Aus-Pilz - Taster + 3 XNC	YW1B-V4E02R	IDEC	91.060.084	1	/7,6
-SB1	Kontakt - 1x NO Contact - 1x NO	YW-E10	IDEC	91.061.044	1	/7,6
-RCF1	Filter RFC vývodový Efferent RFC filter	FBOPR1624	Ing. Miroslav Víšek	91.041.015	1	/6,5
-RCF2	Filter RFC vývodový Efferent RFC filter	FBOPR1624	Ing. Miroslav Víšek	91.041.015	1	/6,7
-TR1	Toroidní transformátor - 400V/230V/20V 4,5A 90VA Toroidal transformer - 400V / 230V / 20V 4,5A 90VA Ringkerntransformator - 400V / 230V / 20V 4,5A 90VA	400V/230V/20V 4,5A 90VA	KARBAN s.r.o.	91.080.023	1	/6,7
-SB1	Hlavice tlačítka černá Button black head Taste Miltesser	ZB5AA2	TELEMECANIQUE	91.060.013	1	/7,5
-FU1	Svorčka pojistková Fuse terminal Sicherungsklemme	WK4/THS15U	WIELAND	91.251.102	1	/6,6
-FU3	Svorčka pojistková Fuse terminal Sicherungsklemme	WK4/THS15U	WIELAND	91.251.102	1	/6,8

The manufacturer reserves right to use an equivalent replacement device.

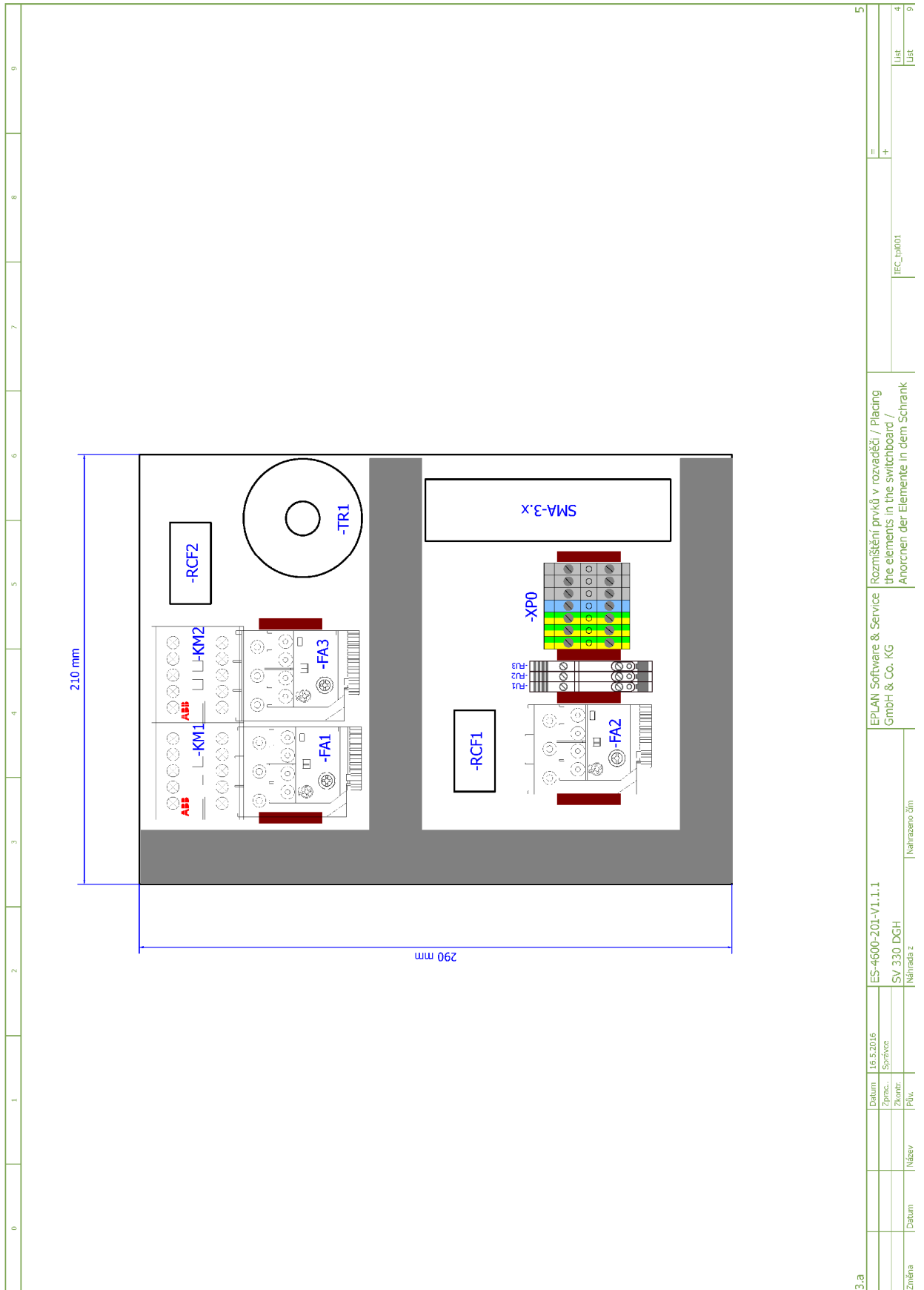


BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno

Svojí/Machine/Maschine:
SV 330 DGH

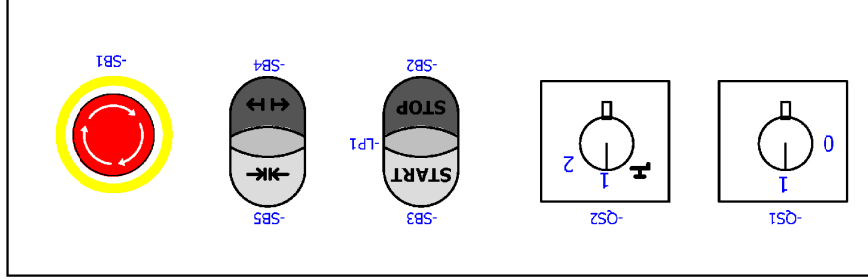
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Kusovník artiklů / Parts list / Artikelstückliste

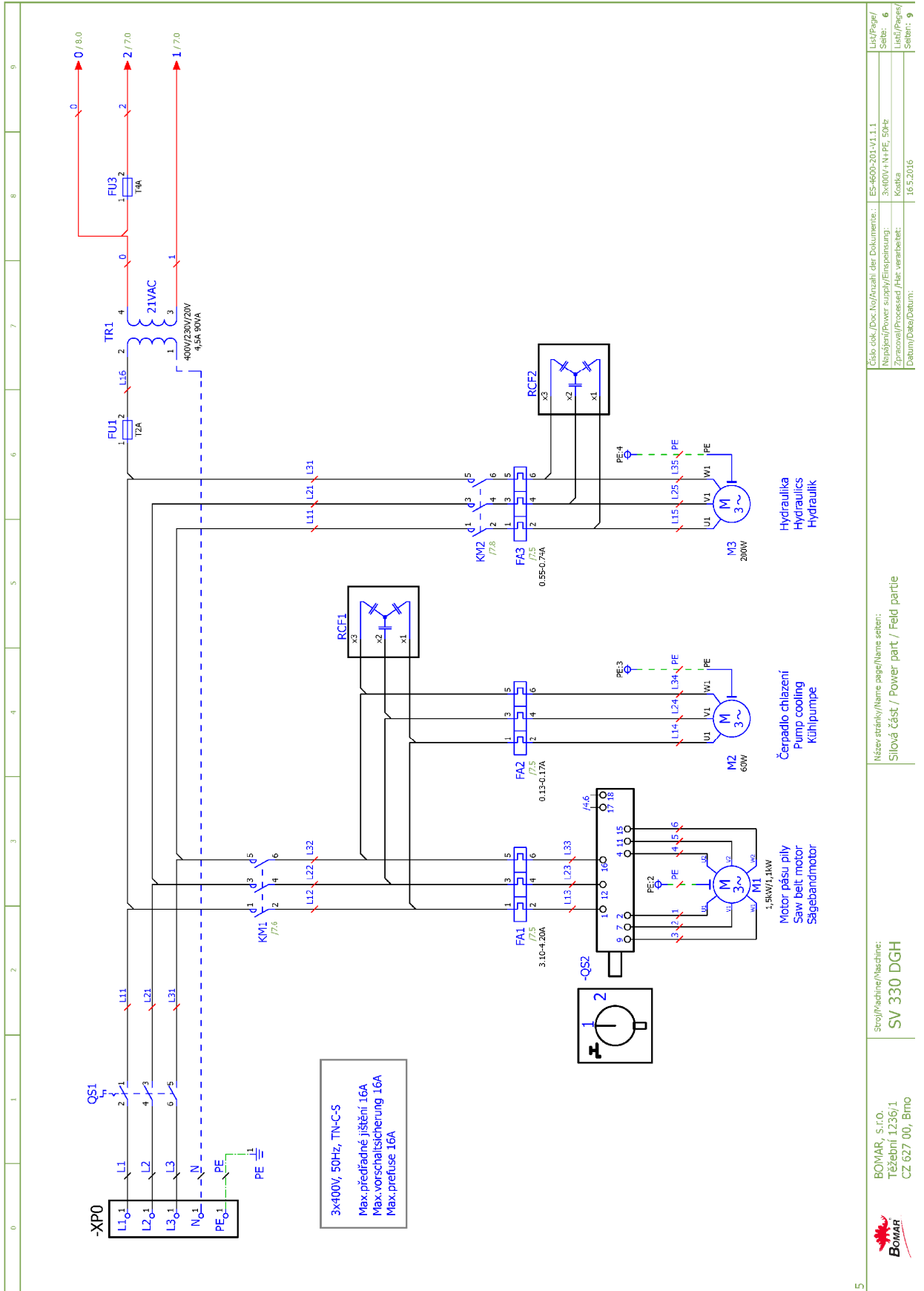
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Lst/Part/
Seite: 3.9
Nápnětí/Power supply/Einspeisung: 3x100V+N+PE, 50Hz
Lst/Part/
Seite: 9
Zpracováno/Processed /Hier verarbeitet:
Kotla
Datum/Date/Datum: 16.5.2016

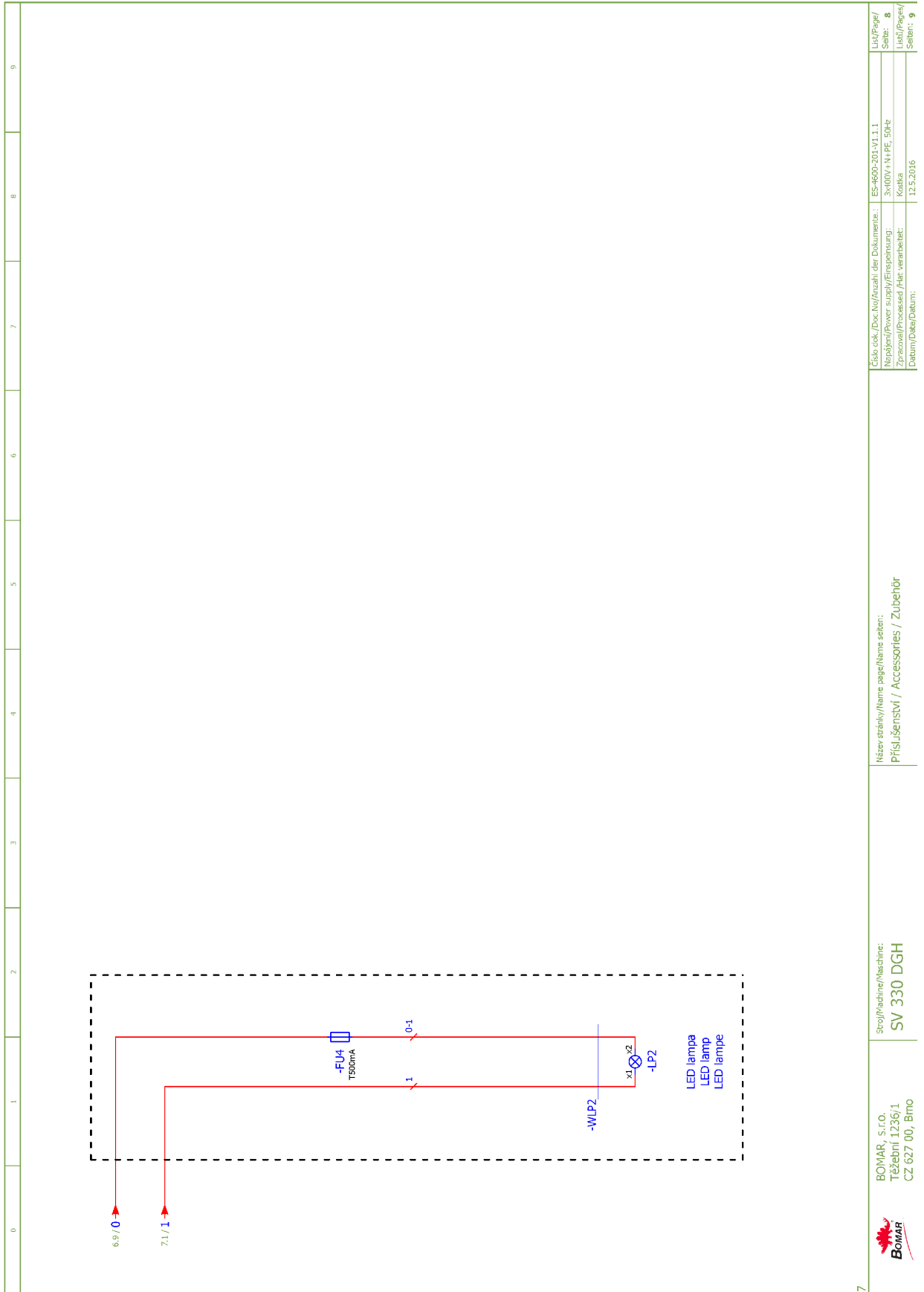


3.a	Datum	16.5.2016	ES-4600-201-V1.1.1	Rozmístění prvků v rozvaděči / Placing the elements in the switchboard / Anordnen der Elemente in dem Schrank	=	5
		Zprac.:				
Změna	Datum		SV 330 DGH	EP/LAN Software & Service GmbH & Co. KG	IEC_1001	4
		Název				
						9

Změna	Datum	Název	Fyz.	Název z	Názevo (tm)	EPLAN Software & Service GmbH & Co. KG	Rozměřní na ovládacím panelu /	Deployment auf dem Bedienfeld	TEC:K001	Uřet	Uřet
4	Datum 12.5.2016	Zprac: Spoluce	ES-4600-201-V1.1.1	SV 330 DGH	Názevo (tm)	EPLAN Software & Service GmbH & Co. KG	Rozměřní na ovládacím panelu /	Deployment auf dem Bedienfeld	TEC:K001	Uřet	Uřet
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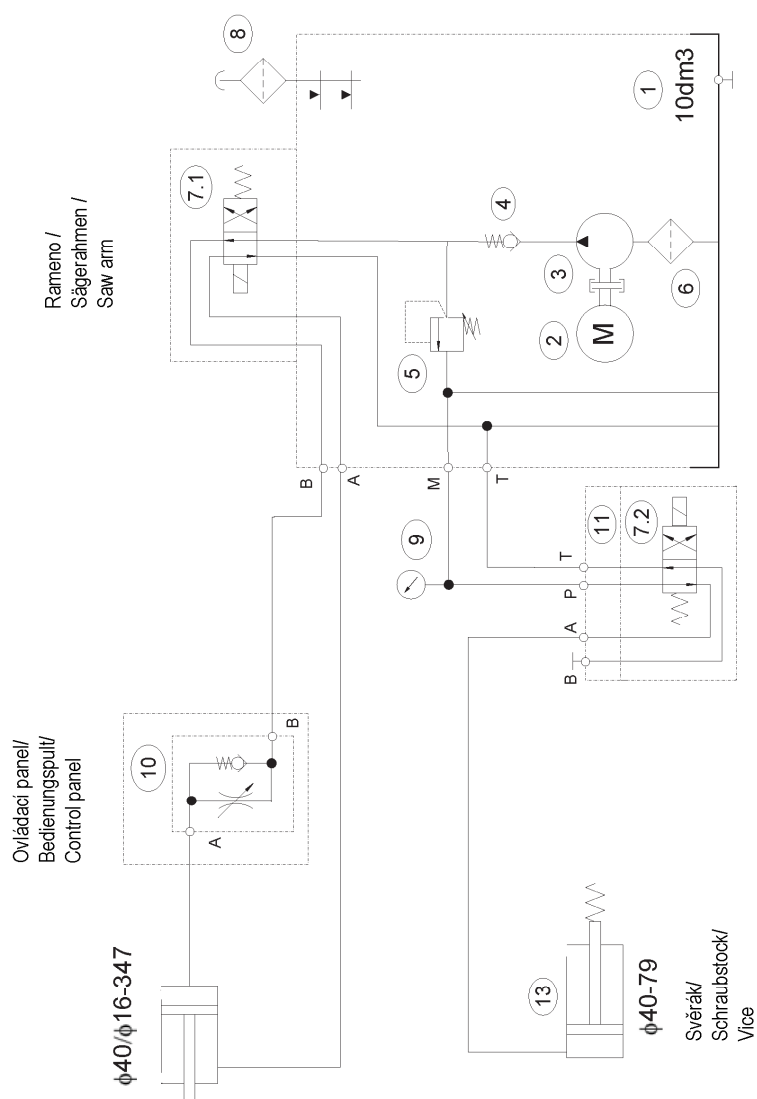






 BOMAR, S.r.l.o. Trášební 1236/1 CZ 627 00, Brno	Stroj/Machine/Maschine: SV 330 DGH	Název stránky/Name page/Noms seiten: Příslušenství / Accessories / Zubehör
Číslo dok./Doc.No./Anzahl der Dokumente: ES-4605-201-V1.1.1 Napájení/Power supply/Einspeisung: 3x400V/1N/PE, 50Hz Zpracováno/Processed /Hft. verarbeitet: Kořka Datum/Date/Datum: 12.5.2016		
		List/Page/ Seite: 8 List/Page/ Seiten: 9

6.2. Hydraulické schéma Hydraulisches Schéma Hydraulic diagram



205.4616-200
VS-330+SVERAK

Základní technické parametry
Technische Spezifikation
Technical specification

Typ / Type / Type	SV 330 DGH
Hydraulický agregát / Hydroaggregat Hydro aggregat	92.001.060
Neuvedené světlosti / Unerwähnt Lichtbreite Unlisted inside diameters	JS6
Výstupní šroubení / Ausgangsschraubung Output screwing	G1/4"
p_{max}	2 Mpa
Q	2,5 dm ³ /min
n	1390 ot./min
P	0,12 kW

Poz.	Název položky		ks
Pos.	Bezeichnung		Menge
Pos.	Item		Pcs.
1	Nádrž / Behälter / Tank	kod 55, s drzakem 10dm3l	1
2	Elektromotor / Elektromotor / Electromotor	MA-AL63 0,12kW	1
3	Hydrogenerátor / Hydraulikaggregat / Hydrogenerator	P23-2,1L.66017 2,1cm3/ot.	1
4	Jednosměrný ventil / Einwegventil / One-way valve	VJ01-06/SG-1	1
5	Přepouštěcí ventil / Bypassventil / By pass valve	VPP2-04/S-2	1
6	Sací filtr / Filter / Filter	2SF 56/48-0,063 63µm	1
7	Rozváděč / Verteilungsventil / Distributor	RPE 3- 042R11/02400E1K1 92.101.001	1 (2)
8	Nálevací zátka / Stopfen / Plug	L1.0406	1
9	Manometr / Manometer / Manometer	ø68 S GLYCERINEM 0-60 bar	1.1
10	Škrťací ventil / Drosselventil / Throttle valve	201.4607-000	1
11	Připojovací deska	DP4-04/32-4	0(1)
12	--	--	--
13	Válec hydr. / Hydraulischer Zylinder / Hydraulic cylinder	ø40-79 Jednočinný	0(1)
14	--	--	--

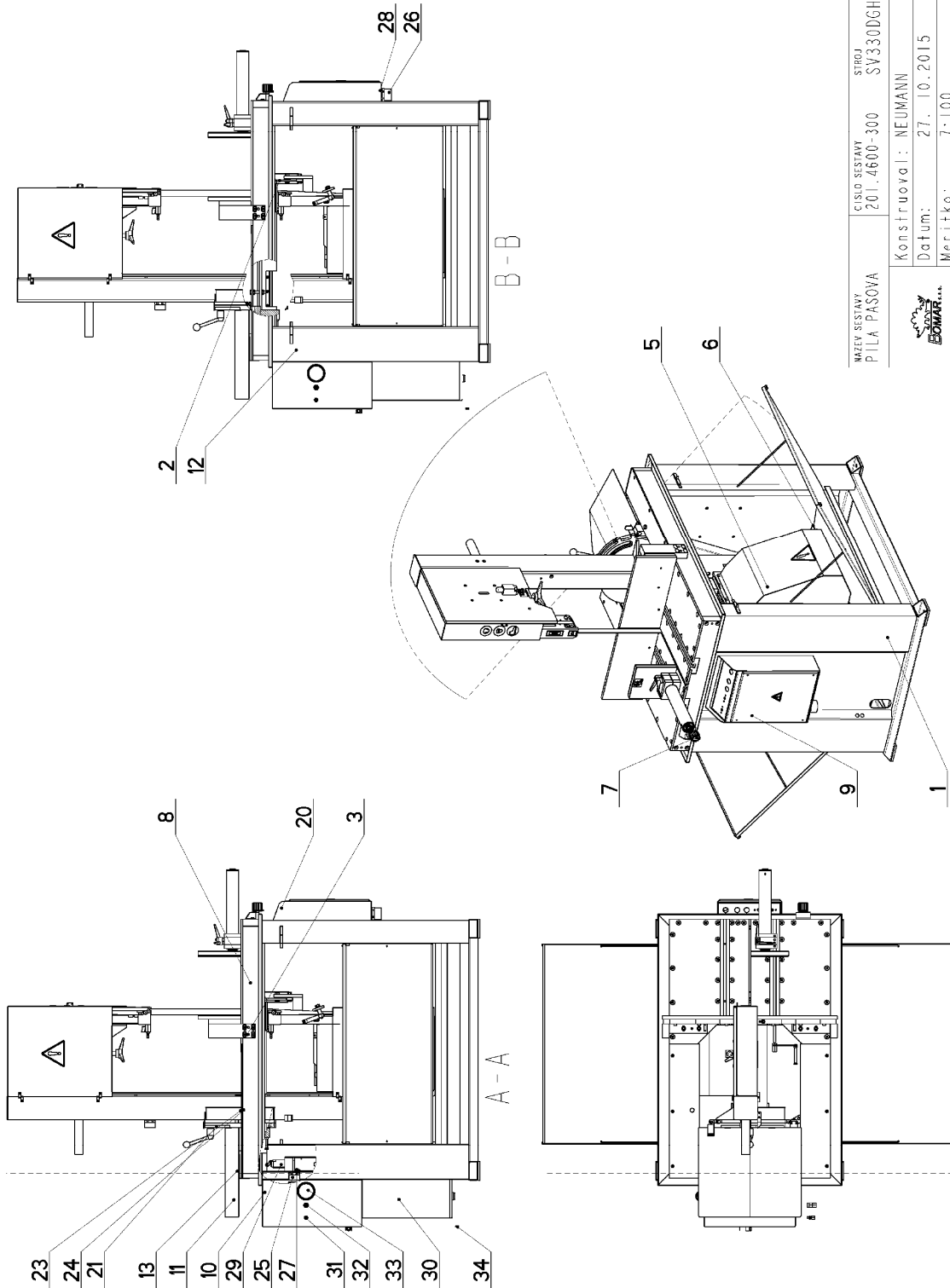
7. Výkresy sestav pro objednání náhradních dílů / Zeichnungen für Bestellung der Ersatzteile / Drawing assemblies for spare parts order-

Při objednávání náhradních dílů vždy uvádějte: typ stroje (např. practix PR1247 SV 330 DGH) , výrobní číslo (např. 125) a rok výroby (např. 1999).

In die Bestellung der Ersatzteile führen Sie immer an: Maschinentyp (z. B. PR1247 SV 330 DGH), Serien Nr. (z. B. 125) und Baujahr (z. B. 1999).

For spare parts order, you must always to allege: type of machine (for example PR1247 SV 330 DGH), serial number (for example 125, see cover page) and year of construction (for example 1999).

7.1. Pila pásová / Bandsäge / Bandsaw



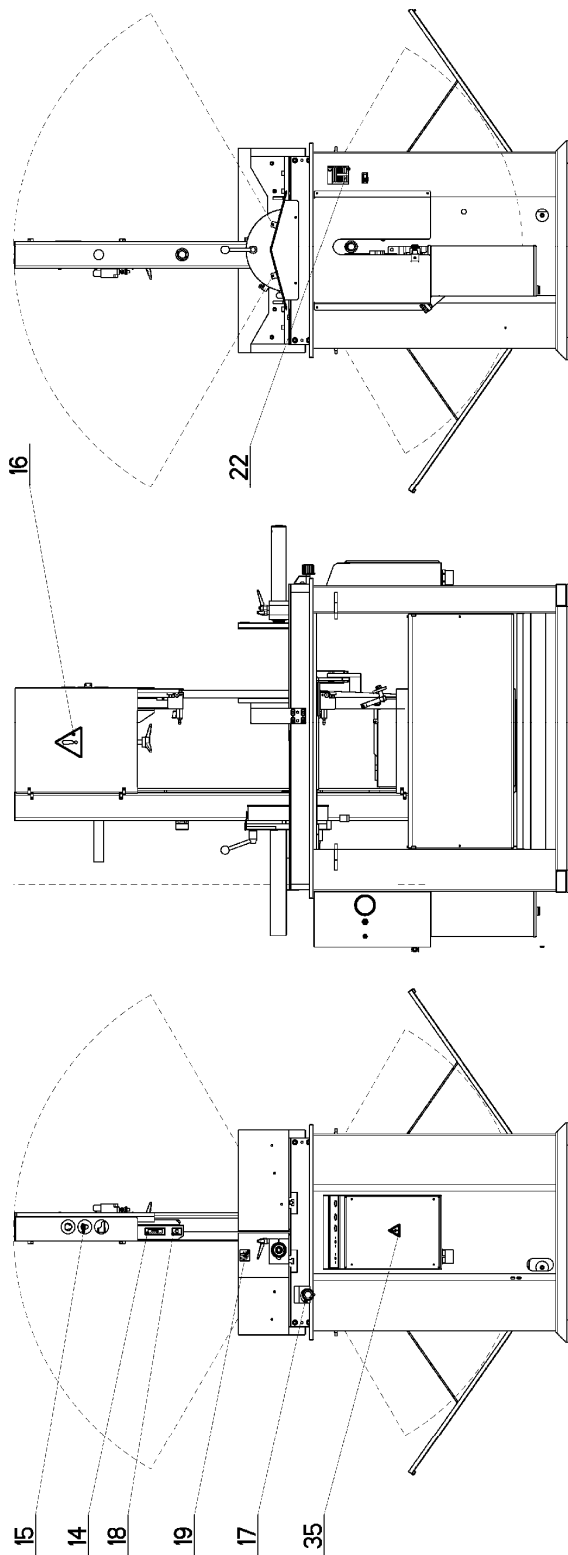
NAZEV SESTAVY PILA PÁSOVÁ	ČÍSLO SESTAVY 201.4600-300	STROJ SV330DGH
Konstruoval: NEUMANN		Datum: 27. 10. 2015
Meritko: 7:100		


7.2. Kusovník / Stückliste / Piece list – Pila pásová / Bandsäge / Bandsaw

Císlo Sestavy 201.4600-300		Název sestavy PILA PÁSOVÁ/BAND SAW/BANDSÄGE			
Ver.	0				
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	201.4601-300	0	PODSTAVEC / BASE / UNTERSATZ		1
2	201.4602-350	0	VOZÍK / CART / WAGEN		1
3	201.4603-300	0	SVERAK / VICE / SCHRAUBSTOCK		1
4	201.4603-350	2	SVERAK / VICE / SCHRAUBSTOCK		1
5	201.4604-100	0	RAMENO / SHOULDER / SÄGERAHMEN		1
6	201.4606-000	2	CHLAZENÍ / COOLING / KÜHLUNG		1
7	201.4607-000	1	VALEC TLUMIČÍ / DAMPING CYLINDER / DÄMPFUNGSZYLINDER		1
8	201.4609-300	0	STUJL / TABLE / TISCH		1
9	201.4614-300	0	OVLADACÍ PANEL / CONTROL PANEL / BEDIENPULT		1
10	30.4601-006	0	KRYT / COVER / ABDECKUNG	P 2x643	1
11	30.4614-111	0	KRYT / COVER / ABDECKUNG		1
12	30.4614-114	0	PLECH / /		1
13	30.4614-312	0	KRYT / COVER / ABDECKUNG	P 3x30	1
14	31.0104-026	0	SAMOLEPKA / STICKER / AUFKLEBER		1
15	31.0899-005	0	SAMOLEPKA / STICKER / AUFKLEBER		1
16	31.0899-006	0	SAMOLEPKA / STICKER / AUFKLEBER		3
17	31.0899-009	0	SAMOLEPKA / STICKER / AUFKLEBER	SAMOLEPKA PULMESIC	1
18	31.3199-004	0	SAMOLEPKA / STICKER / AUFKLEBER		1
19	31.3199-005	0	SAMOLEPKA / STICKER / AUFKLEBER		1
20	31.4513-050	0	STÍTEK / LABEL / SCHILD	P 0.5 x 97	1
21	31.4602-020	0	ODMĚROVÁNÍ / MEASURING / GEHRUNGSMESSUNG	P 0.5-11	1
22	31.4699-001	1	STÍTEK TYPY / /	P 0.5x65	1
23	90.005.55.029	0	SROUB 6HRANNÝ / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M10X60	1
24	90.100.55.006	0	MATICE / NUT / MUTTER	MATICE - M10	2
25	91.071.004	0	VYVODKA / BUSHING / TÜLLE	VYVODKA	1
26	91.071.005	0	PRUCHODKA / LEADTHROUGH / DURCHFÜHRUNG		1
27	91.072.007	0	MATICE / NUT / MUTTER	MATICE	1
28	91.072.008	0	MATICE / NUT / MUTTER		1
29	91.173.008	0	SPINAC KONCOVÝ / END SWITCH / ENDSCHALTER	D4N-4A62	1
30	92.001.060	0	AGREGAT HYDRAULICKÝ / HYDRAULIC GENERATOR / HYDRAULIKAGGREGAT		1
31	92.002.102	0	SROUBENÍ / BOLTING / VERSCHRAUBUNG	S-GEV-8LLR	1
32	92.015.001	0	SROUBENÍ PRÍME / DIRECT BOLTING / GERADE VERSCHRAUBUNG	66353	1
33	92.080.001	0	MANOMETER / MANOMETER / MANOMETER	d63 1/4"	1
34	94.500.003	0	PRUCHODKA / LEADTHROUGH / DURCHFÜHRUNG	d 11	1
35	99.900.045	0	SAMOLEPKA / STICKER / AUFKLEBER		1

Císlo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver./Version/Versio); Název sestavy/Assembly File/Name der Baugruppe; Pozice (Pos./Position/Position);
Objednávací číslo/Purchase order number/Bestellnummer; Název položky/Vollname LieferName der Position; Rozměr/Size/Abmessung

7.3. Pila pásová / Bandsäge / Bandsaw



NAZEV SESTAVY PILA PÁSOVÁ	CÍSLO SESTAVY 201.4600-300	STROJ SV330DGH
		
Konstruoval: NEUMANN		
Datum: 27. 10. 2015		
Měřítko: 7:100		

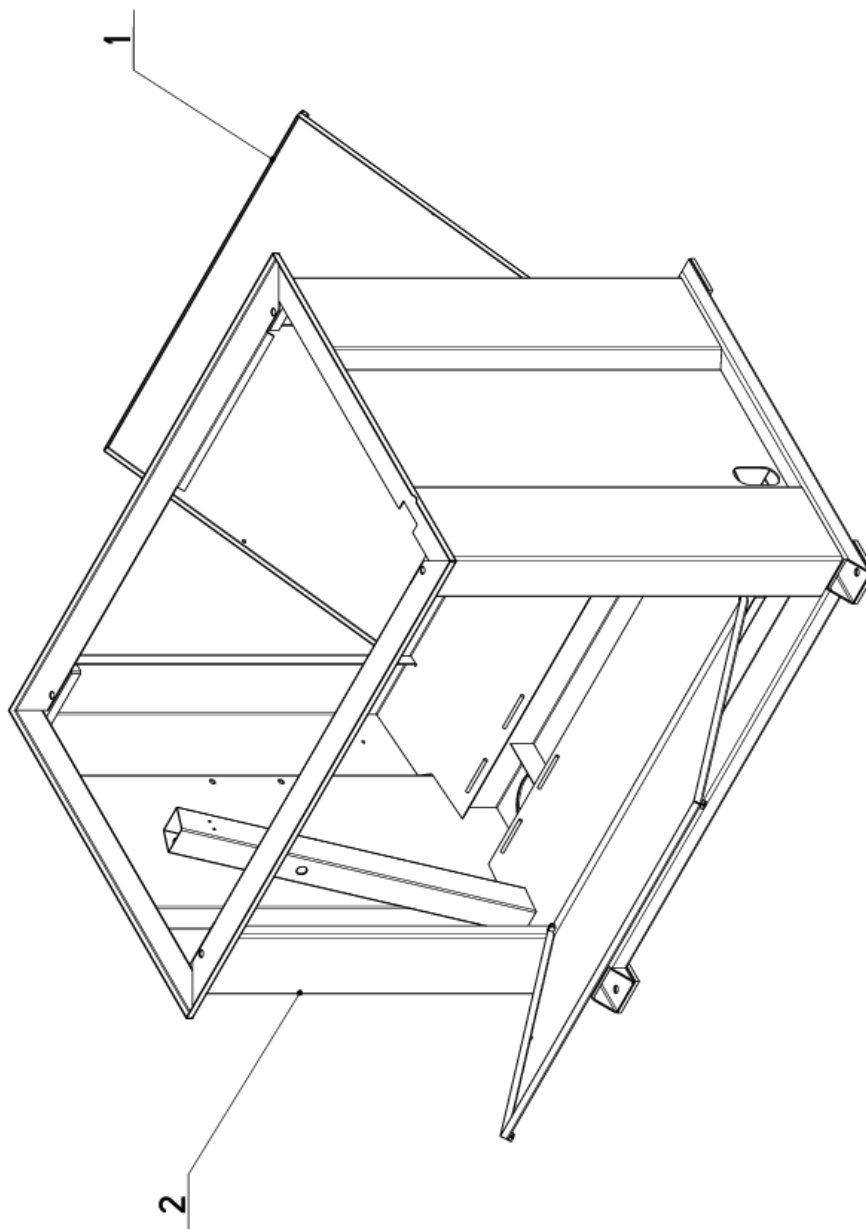
7.4. Kusovník / Stückliste / Piece list – Pila pásová / Bandsäge / Bandsaw

Císlo Sestavy 201.4600-300		Název sestavy PILA PASOVA/BAND SAW/BANDSÄGE			
Ver.	0				
Poz.	Objednací číslo	Ver.	Název položky	Rožmer	Ks
1	201.4601-300	0	PODSTAVEC / BASE / UNTERSATZ		1
2	201.4602-350	0	VOZIK / CART / WAGEN		1
3	201.4603-300	0	SVERAK / VICE / SCHRAUBSTOCK		1
4	201.4603-350	2	SVERAK / VICE / SCHRAUBSTOCK		1
5	201.4604-100	0	RAMENO / SHOULDER / SÄGERAHMEN		1
6	201.4606-000	2	CHLAZENÍ / COOLING / KÜHLUNG		1
7	201.4607-000	1	VALEC TLUMICI / DAMPING CYLINDER / DÄMPFUNGSSYLINDER		1
8	201.4609-300	0	STUJ / TABLE / TISCH		1
9	201.4614-300	0	OVLADACÍ PANEL / CONTROL PANEL / BEDIENPULT		1
10	30.4601-006	0	KRYT / COVER / ABDECKUNG	P 2x643	1
11	30.4614-111	0	KRYT / COVER / ABDECKUNG		1
12	30.4614-114	0	PLECH / /		1
13	30.4614-312	0	KRYT / COVER / ABDECKUNG	P 3x30	1
14	31.0104-026	0	SAMOLEPKA / STICKER / AUFKLEBER		1
15	31.0899-005	0	SAMOLEPKA / STICKER / AUFKLEBER		1
16	31.0899-006	0	SAMOLEPKA / STICKER / AUFKLEBER		3
17	31.0899-009	0	SAMOLEPKA / STICKER / AUFKLEBER	SAMOLEPKA PULMESIC	1
18	31.3199-004	0	SAMOLEPKA / STICKER / AUFKLEBER		1
19	31.3199-005	0	SAMOLEPKA / STICKER / AUFKLEBER		1
20	31.4513-050	0	STITEK / LABEL / SCHILD	P 0.5 x 97	1
21	31.4602-020	0	ODMEROVANI / MEASURING / GEHRUNGSMESSUNG	P 0.5-11	1
22	31.4699-001	1	STITEK TYPOVY / /	P 0.5x65	1
23	90.005.55.029	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M10X60	1
24	90.100.55.006	0	MATICE / NUT / MUTTER	MATICE - M10	2
25	91.071.004	0	VYVODKA / BUSHING / TÜLLE	VYVODKA	1
26	91.071.005	0	PRUCHODKA / LEADTHROUGH / DURCHFÜHRUNG		1
27	91.072.007	0	MATICE / NUT / MUTTER	MATICE	1
28	91.072.008	0	MATICE / NUT / MUTTER		1
29	91.173.008	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	D4N-4A62	1
30	92.001.060	0	AGREGAT HYDRAULICKY / HYDRAULIC GENERATOR / HYDRAULIKAGGREGAT		1
31	92.002.102	0	SROUBENI / BOLTING / VERSCHRAUBUNG	S-GEV-8LLR	1
32	92.015.001	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG	66353	1
33	92.080.001	0	MANOMETER / MANOMETER / MANOMETER	d63 1/4"	1
34	94.500.003	0	PRUCHODKA / LEADTHROUGH / DURCHFÜHRUNG	d 11	1
35	99.900.045	0	SAMOLEPKA / STICKER / AUFKLEBER		1

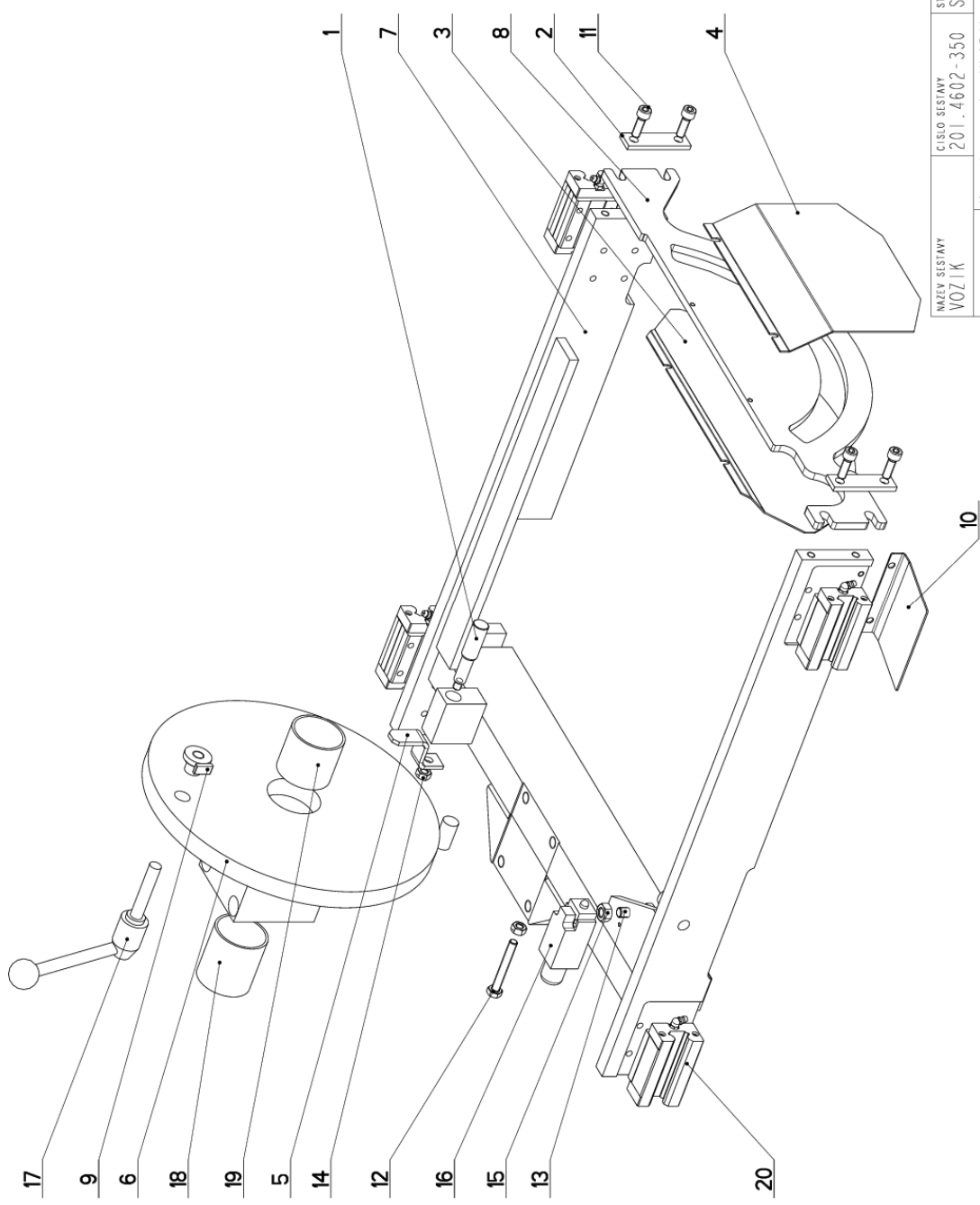
Císlo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver./Version/Versio); Název sestavy/Assembly File/Name der Baugruppe; Pozice (Pos./Position/Position);
Objednací číslo/Purchase order number/Bestellnummer; Název položky/Vollname Liefer/Name der Position; Rožmer/Size/Abmessung


7.5. Podstavec / Untersatz / Base

Císlo Sestavy 201.4601-300		Ver. 0		Název sestavy PODSTAVEC / BASE / UNTERSATZ	
Poz.	Objednací číslo	Ver.	Název položky	Rožmer	Ks
1	30.4601-002	0	OKAP / GUTTER CHANNEL / BLECH		2
2	30.4601-301	0	PODSTAVEC / BASE / UNTERSATZ		1



7.6. Vozík / Wagen / Cart



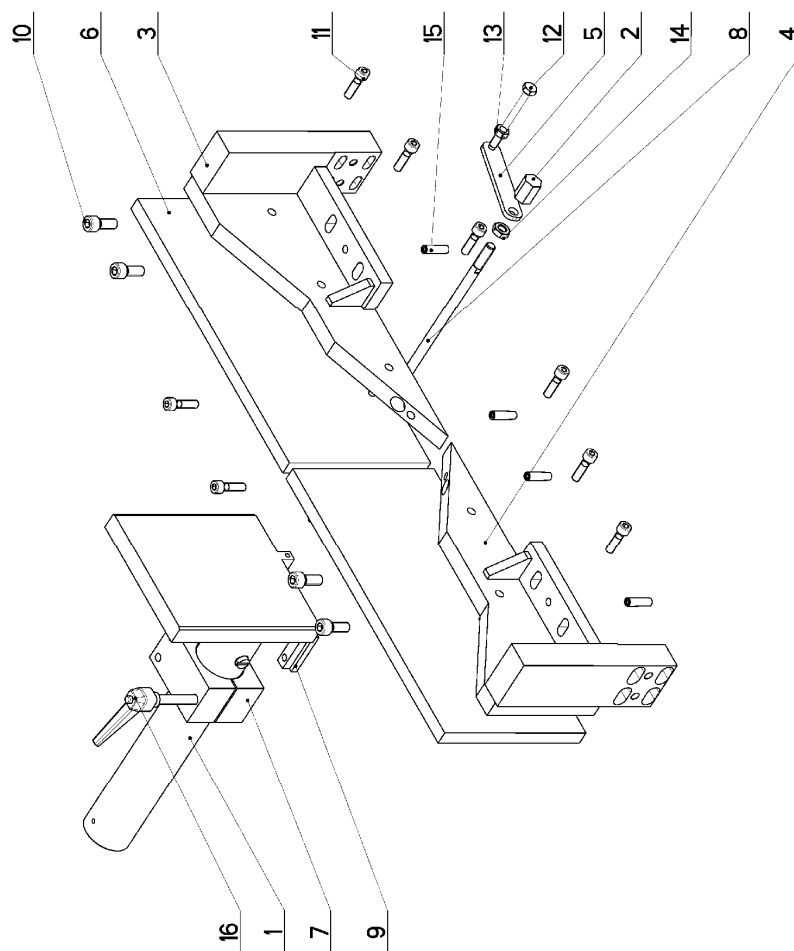
NAZEV SESTAVY VOZÍK	CÍSLO SESTAVY 201.4602-350	STROJ SV-330DG
		Konstruoval: HLADIL
		Datum: 26. 01.2015
		Meritko: 2:7


7.7. Kusovník / Stückliste / Piece list – Vozík / Wagen / Cart

Císlo sestavy 201.4602-350		Ver. 0		Název sestavy VOZÍK/CART/WAGEN	
Poz.	Objednací číslo	Ver.	Název položky	Rozev. d 16hg	Ks
1	30.0701-016	0	DORAZ / STOP PIECE / ANSCHLAG	HR 20x5	1
2	30.4502-005	0	PŘILOŽKA / STRAP / LASCHE	P 1,5 x 168	2
3	30.4514-110	0	KRYT / COVER / ABDECKUNG	P 1,5 x 177	1
4	30.4514-113	0	KRYT / COVER / ABDECKUNG	P 4 -20	1
5	30.4602-005	0	PLECH / PLATE / BLECH		1
6	30.4602-007	0	PŘÍRUČA / FLANGE / FLANSCH		1
7	30.4602-303	0	KONZOLA / CONSOLE / KONSOLE		1
8	30.4602-304	0	SEGMENT / SEGMENT / SEGMENT	P8x165	1
9	30.4604-003	0	MATICE / NUT / MUTTER		1
10	30.4614-314	0	DRŽAK / HOLDER / HALTER	HR 30x4	1
11	90.001.25.033	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x25	4
12	90.005.55.021	0	SROUB 6HRANNÝ / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8x60	1
13	90.005.55.025	0	SROUB 6HRANNÝ / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M10x30	1
14	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE - M8	2
15	90.100.55.006	0	MATICE / NUT / MUTTER	MATICE - M10	1
16	91.173.007	0	SPINAC KONCOVÝ / END SWITCH / ENDSCHALTER		1
17	94.011.002	0	PAKA UPINACÍ / ATTACHMENT LEVER / SPANNHEBEL	M12x63 d28	1
18	95.700.009	0	POUZDRO / SLEEVE / BÜCHSE	50x60	1
19	95.700.026	0	POUZDRO / SLEEVE / BÜCHSE	50x50	1
20	99.201.066	0	VOZÍK LINEARNÍHO VEDENÍ / LINEAR GUIDE CART / LINEARFUHRUNGSWAGEN	MSA25S	4

Císlo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver./Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Poz./Position/Position;
Objednací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rozev./Stock size/Abmessung

7.8. Svěrák / Schraubstock / Vice



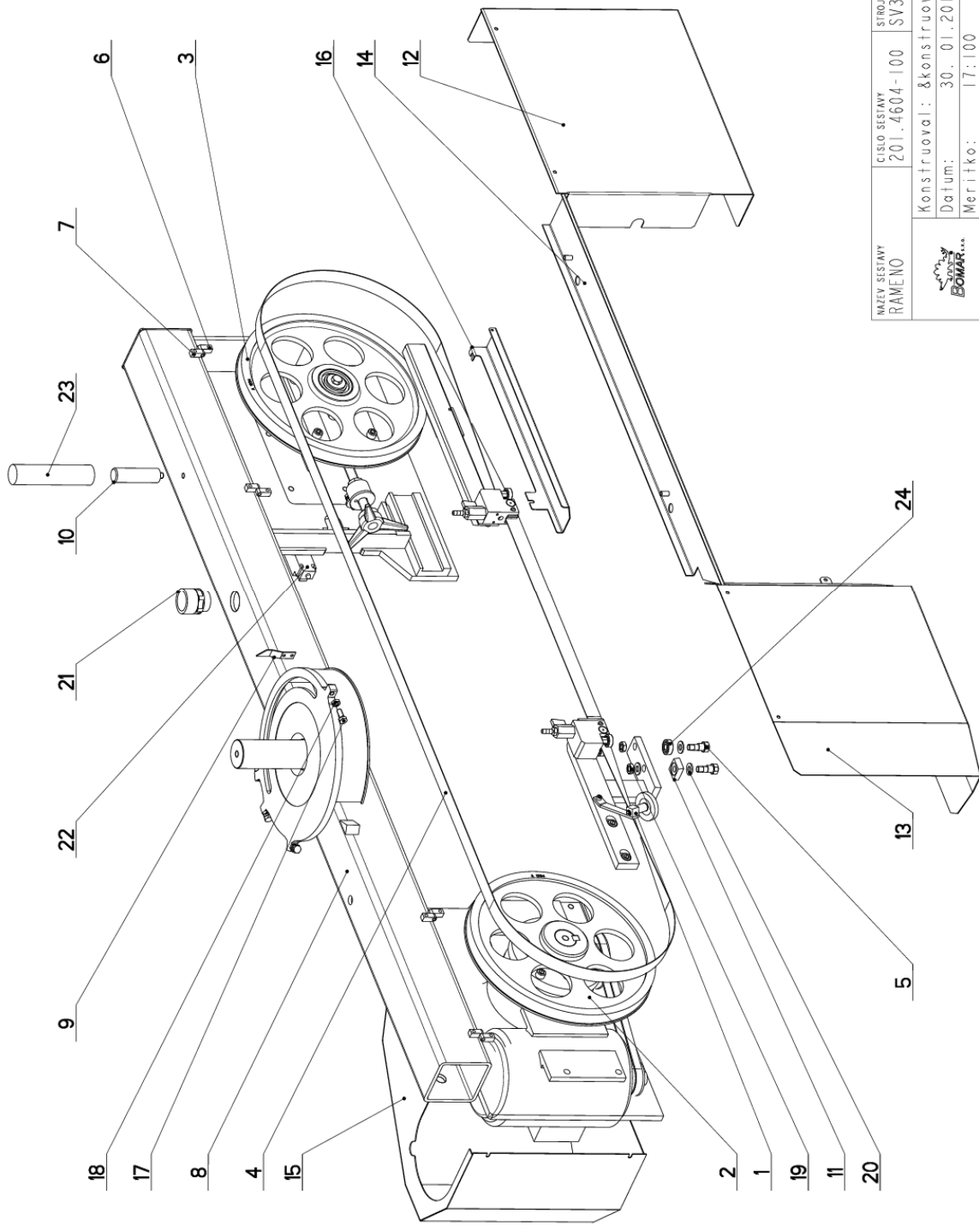
NAZEV SESTAVY SVĚRÁK	ČÍSLO SESTAVY 201.4603-300	STROJ SV330
		
Konstruoval: MRKOS		
Datum: 12. 05. 2016		
Měřítko: 1:4		


7.9. Kusovník / Stückliste / Piece list – Svěrák / Schraubstock / Vice

Císlo sestavy 201.4603-300		Ver. 0		Název sestavy SVĚRÁK/VICE/SCHRAUBSTOCK	
Poz.	Objednávací číslo	Ver.	Název položky	Rozevřer	Ks
1	201.4607-330	0	VALEC UPINACÍ / FIXING CYLINDER / SPANNZYLINDER		1
2	30.4503-017	0	DORAZ / STOP PIECE / ANSCHLAG	Sk 17	1
3	30.4603-301	0	CELIST / JAW / BÄCKE		1
4	30.4603-302	0	CELIST / JAW / BÄCKE		1
5	30.4603-318	0	PLECH / PLATE / BLECH	P 5x20	1
6	30.4603-320	0	CELIST / JAW / BÄCKE	HR 180x15	2
7	30.4603-332	0	DRŽÁK / HOLDER / HALTER	HR 70x50	1
8	30.4603-333	0	TYC / POLE / STANGE	d 10	1
9	30.4603-334	0	KAMEN / STONE / STEIN	HR 20x16	1
10	90.001.25.047	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x25	4
11	90.001.25.083	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8x30	8
12	90.005.55.022	0	SROUB 6HRANNÝ / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8x80	1
13	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE _ M8	1
14	90.101.55.002	0	MATICE / NUT / MUTTER	MATICE M10	1
15	90.302.02.002	0	KUZEL. KOLÍK S ZAV. / TAPER PIN + THREAD / KEGELBOLZEN + GEWINDE	KOLÍK 8x30	4
16	90.008.006	0	PAKA UPINACÍ / ATTACHMENT LEVER / SPANNHEBEL	M10	1

Císlo sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver./Version/Version); Název sestavy/Assembly Title/Name der Baugruppe; Pozice (Poz./Position/Position);
Objednávací číslo/Purchase order number/Bestellnummer; Název položky/Volume Title/Name der Position; Rozevřer/Size/Abmessung

7.10. Rameno / Sägerahmen / Saw arm



NAZEV BĚSTAVY RAVENO	CÍSLO BĚSTAVY 201.4604-100	STROJ SV330
	Konstruoval: &konstruoval	Datum: 30. 01.2015
	Meritko:	17:100

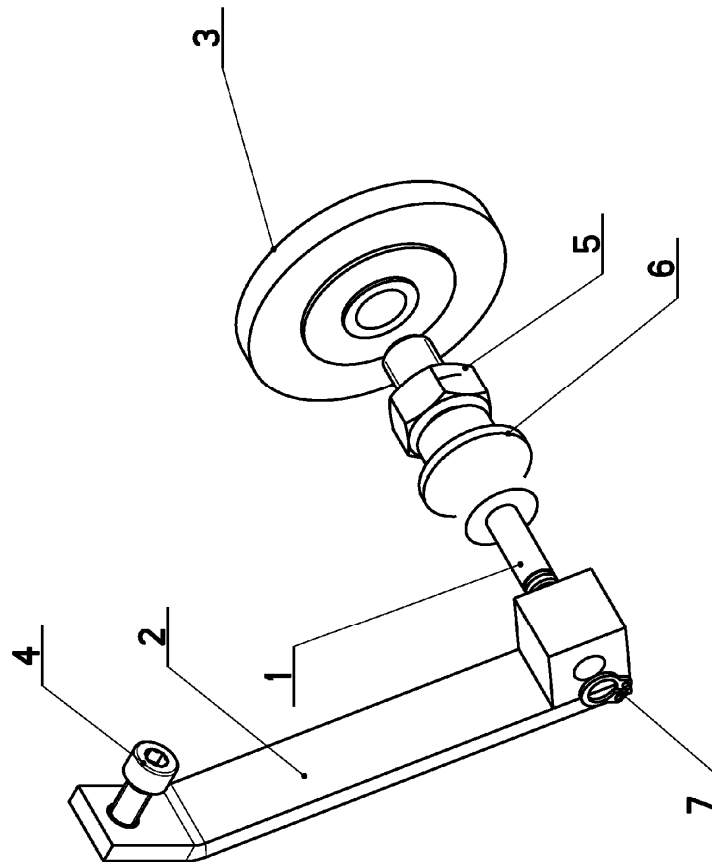
7.11. Kusovník / Stückliste / Piece list – Rameno / Sägerahmen / Saw arm

Císlo Sestavy 201.4604-100		Ver. 0		Název sestavy RAMENO/SHOULDER/SÄGERAHMEN	
Poz.	Objednací číslo	Ver.	Název položky	Rožmer	Ks
1	201.4514-200	0	KARTAC / BRUSH / BÜRSTE		1
2	201.4605-000	0	POHON / DRIVE / ANTRIEB		1
3	201.4608-000	0	NAPINANI / TENSIONING / SPANNUNG		1
4	201.4610-000	2	VEDENÍ PASU / BELT GUIDE / SÄGEBANDFÜHRUNG		1
5	30.4504-006	1	EXCENTR / CAM / EXZENTER	SK17	2
6	30.4514-108	1	PANT / HINGE / TÜRBAND		4
7	30.4514-109	0	DESKA / BOARD / PLATTE	HR 10x10	4
8	30.4604-001	5	RAMENO / SAW ARM / SÄGERAHMEN		1
9	30.4604-004	0	UKAZATEL / INDICATOR / ZEIGER	P 1,5x15	1
10	30.4604-005	0	MAĎLO / HANDLE / RAIL / HANDGRIFF	d 25	1
11	30.4604-007	0	LISTA TRECI / FRICTION TRIM / FRIKTIONSLEISTE	HR 32x10	1
12	30.4614-101	1	KRYT / COVER / ABDECKUNG		1
13	30.4614-102	1	KRYT / COVER / ABDECKUNG		1
14	30.4614-103	0	KRYT / COVER / ABDECKUNG		1
15	30.4614-104	1	KRYT MOTORU / MOTOR COVER / MOTORABDECKUNG		1
16	30.4614-105	2	KRYT PASU / BELT COVER / BANDABDECKUNG	P 1,5x101	1
17	90.005.55.015	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8x20	4
18	90.101.55.001	0	MATICE / NUT / MUTTER	MATICE M8	4
19	90.101.55.002	0	MATICE / NUT / MUTTER	MATICE M10	2
20	90.150.50.006	0	PODLOZKA / WASHER / UNTERLEGSCHETBE	PODLOZKA 10,5	3
21	91.071.004	0	VYVODKA / BUSHING / TÜLLE	VYVODKA	1
22	91.173.007	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER		1
23	94.004.501	0	RUKOJET / HANDLE / GRIFF		1
24	95.001.004	0	LOZISKO / BEARING / LAGER	6000 2RS	1

Císlo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver./Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Pos./Position/Position;
Objednací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rožmer/Stock size/Abmessung

7.12. Kartáč / Brush / Bürste

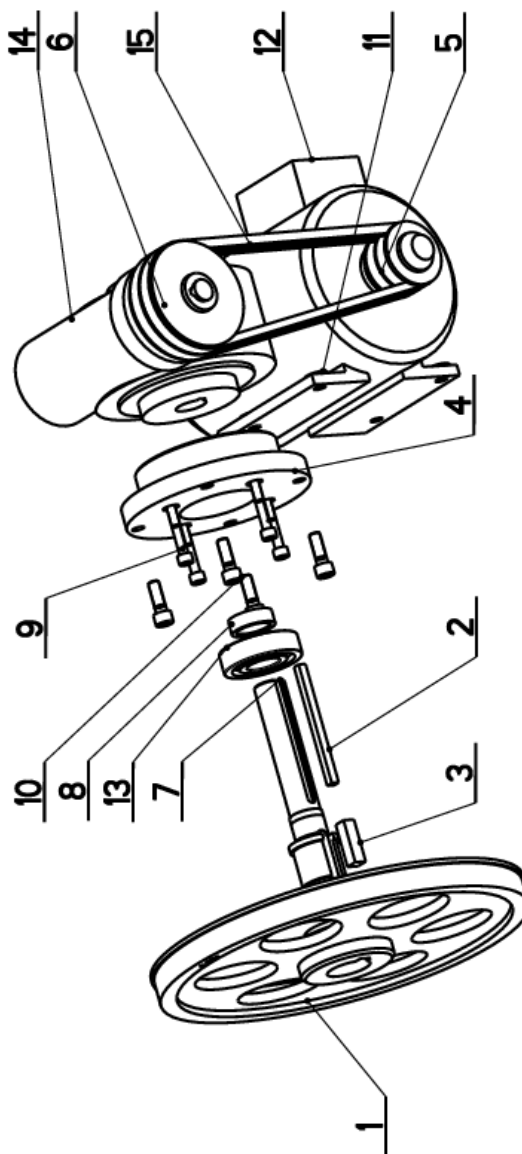
Cislo Sestavy 201.4514-200		Název sestavy KARTAC/BRUSH/BÜRSTE			
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.0704-029	0	HRIDEL / SHAFT / WELLE	d 14	1
2	30.4514-201	0	DRŽAK / HOLDER / HALTER		1
3	31.0704-031	0	KARTAC / BRUSH / BÜRSTE		1
4	90.001.25.007	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X10	1
5	90.100.55.006	0	MATICE / NUT / MUTTER	MATICE - M10	1
6	90.150.50.006	0	PODLOŽKA / WASHER / UNTERLEGSCHIBE	PODLOŽKA 10,5	1
7	95.800.001	0	KROUZEK POJIST. VNEJS. / OUTSIDE SAFETY RING / SICHERUNGSRING AUBEN	POJISTINY KROUZEK 6	1



Cislo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver.)/Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Poz.)/Position/Position;
Objednací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rozměr/Stock size/Abmessung

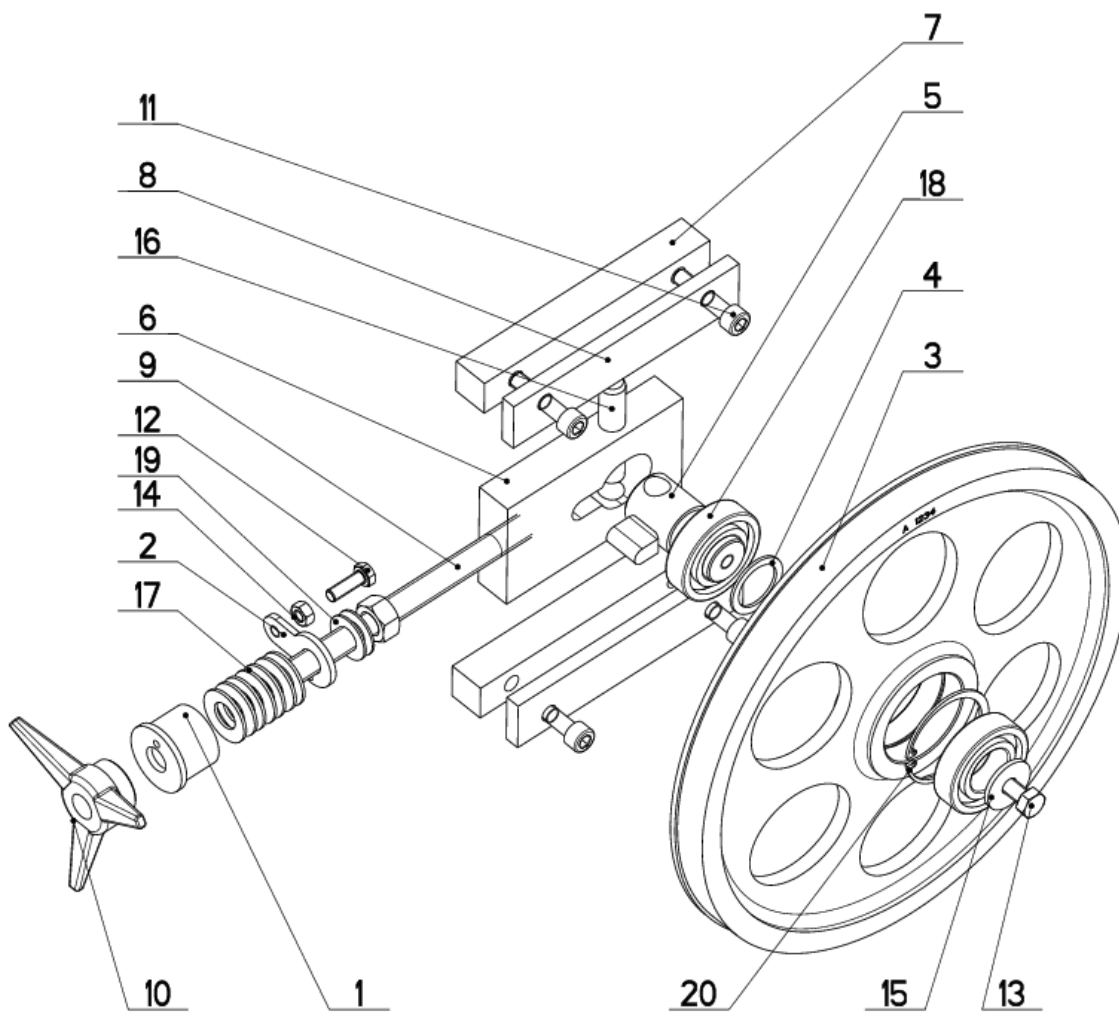
7.13. Pohon / Antrieb / Drive

Cislo Sestavy 201.4605-000		Název sestavy POHON/DRIVE /ANTRIEB	
Ver.	0	Název položky	Rožmer
1	30.1704-005	KOLO HMACI / DRIVE WHEEL / ANTRIEBSRAD	ODLITEK
2	30.1704-011	PERO / SPRING / FEDER	8x7
3	30.1704-012	PERO / SPRING / FEDER	
4	30.4605-001	PRIRUBA / FLANGE / FLANSCH	d 180
5	30.4605-002	REMENICE / PULLEY / RIEMENSCHLEIBE	d 60
6	30.4605-003	REMENICE / PULLEY / RIEMENSCHLEIBE	d 100
7	30.4605-004	HRDEL / SHAFT / WELLE	d 45
8	30.4605-005	KROUZEK DISTANCI / DISTANCE RING / DISTANZRING	TR 40x5
9	90.001.25.038	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8x50
10	90.001.25.048	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x30
11	90.150.50.006	PODLOZKA / WASHER / UNTERLEGSCHLEIBE	PODLOZKA 10,5
12	91.001.017	ELEKTROMOTOR / ELECTRIC MOTOR / ELEKTROMOTOR	AP 90L
13	95.001.025	LOZISKO / BEARING / LAGER	6306 2RS
14	99.001.001	PREVODOVKA / TRANSMISSION / GETRIEBE	
15	99.021.005	REMEN KLIMNOVY / V BELT / KEILRIEMEN	AX13x710 Li



Cislo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver./Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Poz./Position/Position;
Objednací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rožmer/Stock size/Abmessung

7.14. Napínání / Spannung / Tensioning



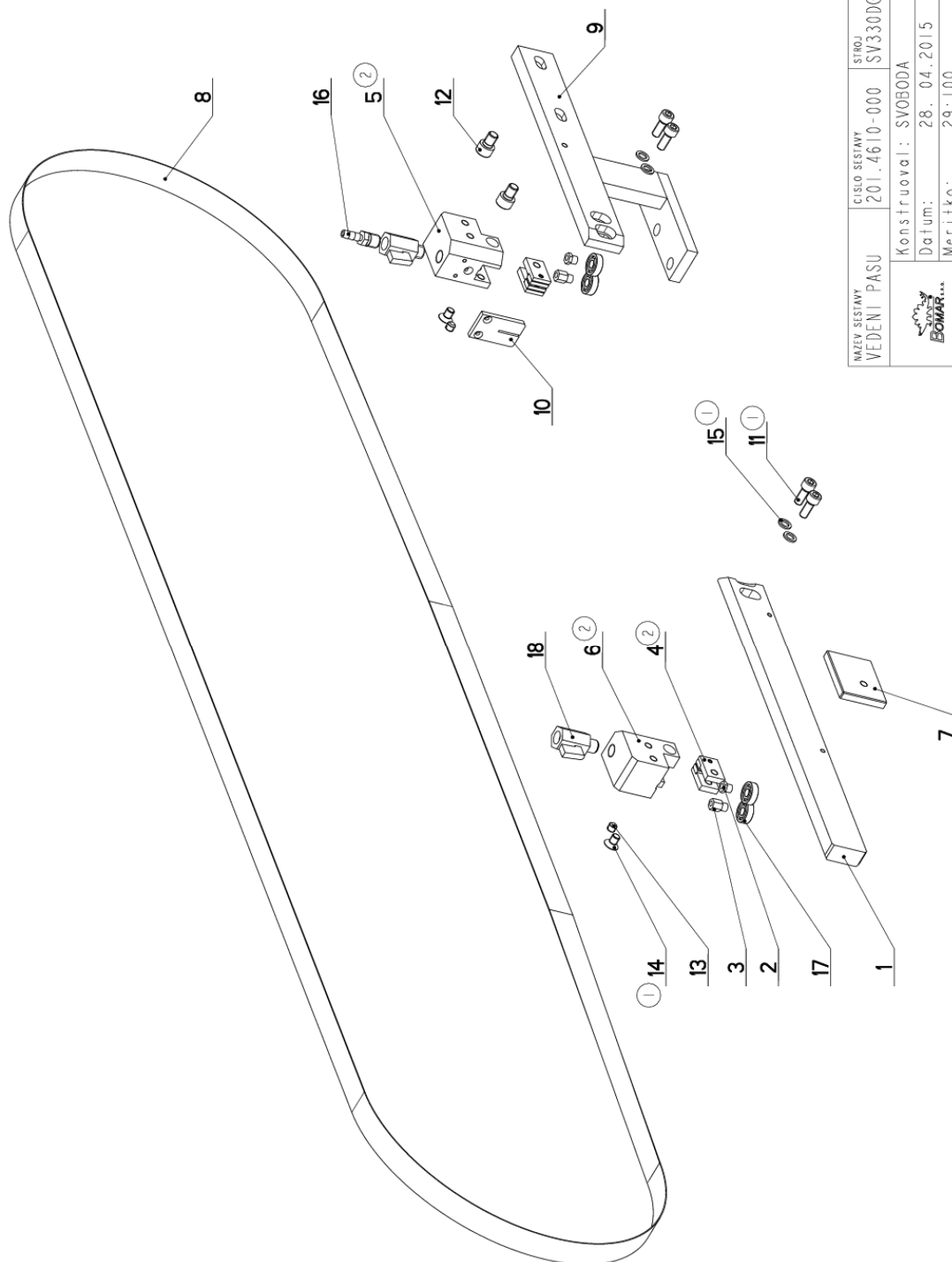
NAZEV SESTAVY NAPINANI	CISLO SESTAVY 201.4608-000	STROJ SV330
	Konstruoval: &konstruoval	
	Datum: 25. 07.2014	
	Meritko: 3:10	


7.15. Kusovník / Stückliste / Piece list – Napínání / Spannung / Tensioning

Císlo Sestavy 201.4608-000		Ver. 0		Název sestavy NAPÍNÁNÍ / TENSIONING / SPANNUNG	
Poz.	Objednací číslo	Ver.	Název položky	Rožmer	Ks
1	30.0104-004	3	DRŽAK / HOLDER / HALTER		1
2	30.0704-025	1	PŘILOŽKA / STRAP / LASCHE	P 4 x 36	1
3	30.1708-001	1	KOLO / WHEEL / UMLENRAD	ODLITEK	1
4	30.1708-003	0	PODLOŽKA / WASHER / UNTERLEGSCHIBE	d 40	1
5	30.4608-001	1	ČEP / LUG / BOLZEN		1
6	30.4608-002	0	KOSTKA / CUBE / WÜRFEL	HR 80x25	1
7	30.4608-003	0	LISTA VODICI / LEAD TRIM / FÜHRUNGSLEISTE	HR 25x25	2
8	30.4608-004	0	LISTA / TRIM / LEISTE	HR35x10	2
9	30.4608-005	1	SROUB NAPÍNACÍ / TENSION BOLT / SCHRAUBE BANDSPANNUNG		1
10	31.0104-006	0	HVEZDICE / STAR WHEEL / STERN	PLAST	1
11	90.001.25.051	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x45	4
12	90.005.55.016	0	SROUB 6HRANNÝ / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8x25	1
13	90.005.55.023	0	SROUB 6HRANNÝ / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M10x20	1
14	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE - M8	1
15	90.151.50.001	0	PODLOŽKA / WASHER / UNTERLEGSCHIBE	PODLOŽKA 10	1
16	90.300.07.003	0	KOLÍK VALC. KAL. / CYLINDRICAL PIN TEMPERED / ZYLINDERSTIFT GEHARTET	KOLÍK 16x80	1
17	90.350.07.002	0	PRUŽINA TALIROVA / DISC SPRING / TELLERFEDER	35.5x18.3	7
18	95.001.019	0	LOŽISKO / BEARING / LAGER	6206 2RS	2
19	95.750.001	0	KROUZEK KU / KU RING / KU-RING	16x1	2
20	95.801.010	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNÝ KROUZEK 62	1

Císlo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver./Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Pos./Position/Position; Objednací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rožmer/Stock size/Abmessung

7.16. Vedení pásu / Sägebandführung / Belt guide



NAZEV ESTAVY VEDENÍ PÁSU	CÍSLO ESTAVY 201.4610-000	STROJ SV330DGH
	Konstruoval: SVOBODA	Datum: 28. 04. 2015
	Meritko: 29:100	

7.17. Kusovník / Stückliste / Piece list – Vedení pásu / Sägebandführung / Belt guide

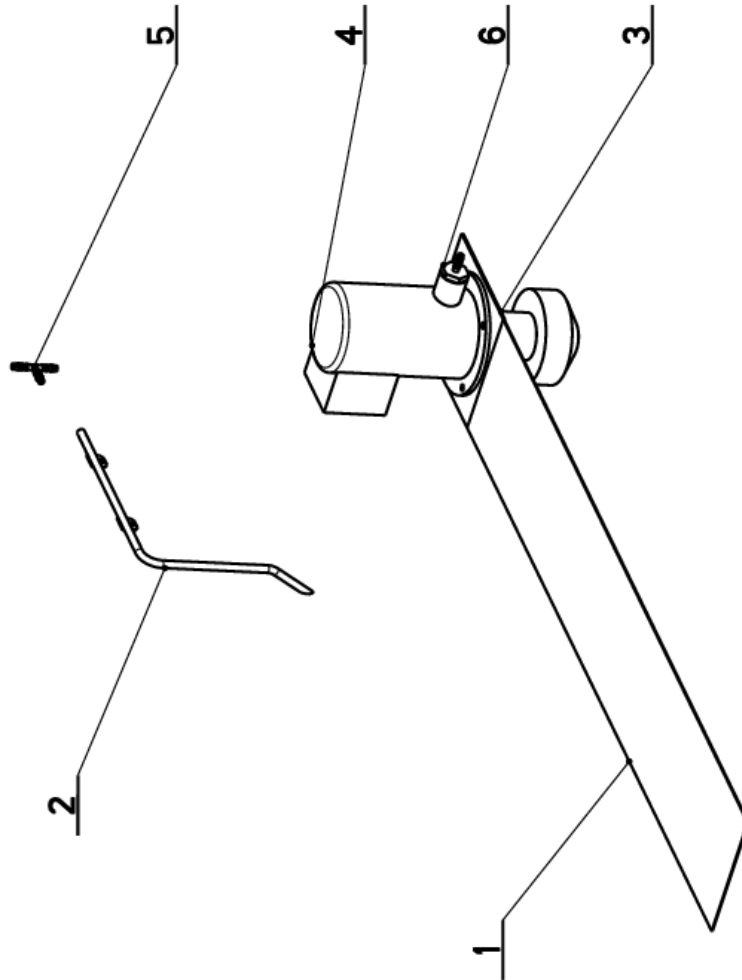
Císlo Sestavy 201.4610-000		Název sestavy VEDENÍ PASU/BELT GUIDE/SÄGEBANDFÜHRUNG			
Poz.	Objednávací číslo	Ver.	Název položky	Rozebr	Ks
1	30.0104-015	5	LISTA / TRIM / LEISTE	HR 40x20	1
2	30.0104-018	0	EXCENTR / CAM / EXZENTER	SK10	2
3	30.0104-019	0	EXCENTR / CAM / EXZENTER	SK10	2
4	30.0104-021 (2)	0	DRZAK / HOLDER / HALTER		4
5	30.0104-031 (2)	2	KOSTKA VODICÍ / LEAD CUBE / FÜHRUNGSKLOTZ	TYC 60x40	1
6	30.0104-032 (2)	2	KOSTKA VODICÍ / LEAD CUBE / FÜHRUNGSKLOTZ	TYC 60x40	1
7	30.4510-002	1	DESKA / BOARD / PLATTE	HR 50x8	1
8	30.4604-913	0	PAS / BELT / BAND	27x0.9	1
9	30.4610-001	2	DRZAK / HOLDER / HALTER		1
10	30.4610-003	0	DESKA / BOARD / PLATTE	HR 30x5	1
11	90.001.25.032 (1)	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x20	4
12	90.001.25.044	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X14	2
13	90.002.20.010	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M8x8	2
14	90.011.27.007 (1)	0	ZAPUSTNÝ IMBUS / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M8x12	2
15	90.163.00.002 (1)	0	PODLOZKA / WASHER / UNTERLEGSCHIBE	PODLOZKA 8	4
16	94.202.002	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	GES 6/R1/4"	2
17	95.001.001	0	LOZISKO / BEARING / LAGER	608 ZRS	4
18	99.260.001	0	VENTIL / VALVE / VENTIL	VENTIL KULOVY	2

1. PRIDANO 4x PODLOZKA M8 NORDLOCK, 4xSROUB IMBUS M8x20 (90.001.25.032), 2xSROUB ZAPUSTNÝ M8x12 (90.011.27.007), 2xSROUB STAVECI M8x8 (90.002.20.010. 1617ZM171 4.6.2008 SLEZACKOVA

2. ZRUS. KOSTKA 30.0104-016 A NAHR. KOSTKOU 30.0104-031, ZRUS. KOSTKA 30.0104-017 A NAHR. KOSTKOU 30.0104-032, ZRUS. DRZAK 30.0104-020 A NAHR. DRZAKEM 30.0104-021. 024/ZM044 3.3.2009 SLEZACKOVA

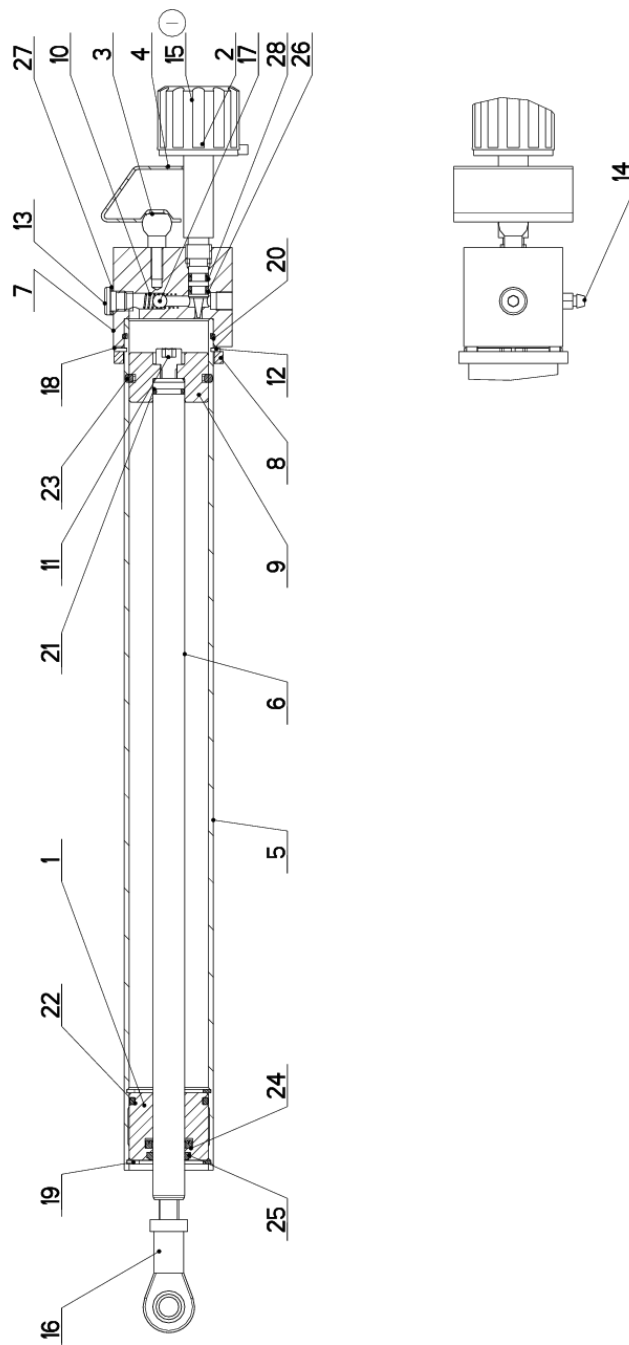
7.18. Chlazení / Kühlung / Cooling


Cislo Sestavy 201.4606-000		Ver. 0		Název sestavy CHLAZENÍ / COOLING / KÜHLUNG	
Poz.	Objednací číslo	Ver.	Název položky	Rožmer	Ks
1	30.4606-004	0	SITO / SIEVE / GITTERWERK	P 1x142x880	1
2	30.4606-005	0	TRUBKA / TUBE / ROHR		1
3	30.4606-006	0	DESKA / BOARD / PLATTE	P 2x142x150	1
4	91.020.004	0	CERPADLO CHLAZENÍ / COOLING PUMP / KÜHLMITTELpumpe	230/400V	1
5	94.200.001	0	REDUCE / REDUCTION / ADAPTOR / REDUKTION	6	1
6	94.202.005	0	REDUCE / REDUCTION / ADAPTOR / REDUKTION	3/4"-6	1



Cislo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver.)/Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Poz.)/Position/Position;
Objednací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rožmer/Stock size/Abmessung

7.19. Válec tlumicí / Dämpfungszylinder / Damping cylinder



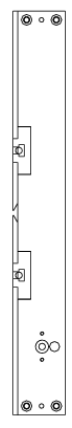
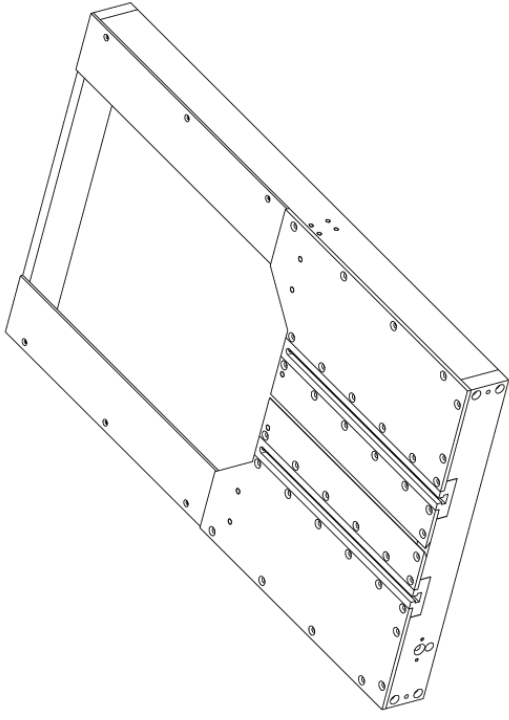
NAZEV SESTAVY VÁLEC TLUMICÍ	CÍSLO SESTAVY 201.4607-000	STROJ SV330DGH
		
Konstruoval: &konstruoval		
Datum: 12. 07.2010		
Měřítko: 1:2		

7.20. Kusovník / Stückliste / Piece list – Válec tlumící / Dämpfungszylinder / Damping cylinder


Císlo sestavy 201.4607-000		Název sestavy VÁLEC TLUMÍCÍ / DAMPING CYLINDER / DÄMPFUNGSZYLINDER			
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.0507-003	0	VÍKO / COVER / DECKEL	d 45	1
2	30.4507-010	0	JEHLA / NEEDLE / NADEL	d 15	1
3	30.4507-011	0	KLOUB / JOINT / GELENK	d 16	1
4	30.4507-012	1	DRŽÁK / HOLDER / HALTER	P 1,5x60	1
5	30.4607-001	0	VALEC / ROLLER / ZYLINDER	TR 45/40	1
6	30.4607-002	0	PISTNICE / PISTON ROD / KOLBENSTANGE	d 16	1
7	30.4607-005	0	KOSTKA / CUBE / WÜRFEL	HR 50x50	1
8	30.4607-007	0	PŘILOŽKA / STRAP / LASCHE	P 6 x55	1
9	30.4607-009	0	PIST / PISTON / KOLBEN	d 45	1
10	31.0916-004	0	PRŮŽINA / SPRING / FEDER	0.63x7.3x18x8.5	1
11	90.001.25.031	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x16	1
12	90.011.27.005	0	ZAPUSTNÝ IMBUS / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M6x12	4
13	90.400.5Z.001	0	ZATKA / PLUG / STOPFEN	M10x1	1
14	90.402.5Z.001	0	SROUB / BOLT / SCHRAUBE	M8	1
15	92.150.001.1	0	RUKOJET / HANDLE / GRIFF	RUKOJET KOMPLETNÍ	1
16	95.170.001	0	HLAVICE / HEAD / KOPF	M10x1,25	1
17	95.691.003	0	KULICKA LOŽISKA / BALL / KUGEL	KULICKA 7.15	1
18	95.800.017	0	SEGR HRÍDEL. / OUTSIDE SAFETY RING / SICHERUNGSRING AUSSEN	POJISTNÝ KROUZEK 45	1
19	95.801.005	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNÝ KROUZEK 40	2
20	96.001.011	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	40x2	1
21	96.002.006	0	KROUZEK O DYNAMICKY / DYNAMIC O RING / O-RING DYNAMISCH	12x2 NBR 70SH	1
22	96.002.017	0	KROUZEK O DYNAMICKY / DYNAMIC O RING / O-RING DYNAMISCH	34x3 NBR 70SH	1
23	96.020.006	0	O-KROUZEK / SEAL RING / DICHTUNGSRING	32.92X3.53	1
24	96.041.001	0	TESNĚNÍ / SEALING / DICHTUNG	16x24x4 UN	1
25	96.060.001	0	KROUZEK STÍRAČI / SCRAPER RING / ABSTREIFRING	16x22 NBR 70	1
26	96.082.001	0	KROUZEK / RING / RING	10x7-1,2	2
27	96.082.001	0	KROUZEK TESNÍCÍ / SEAL RING / DICHTUNGSRING	10/14x1.5 CU	1
28	96.083.002	0	KROUZEK / RING / RING	10x2	2

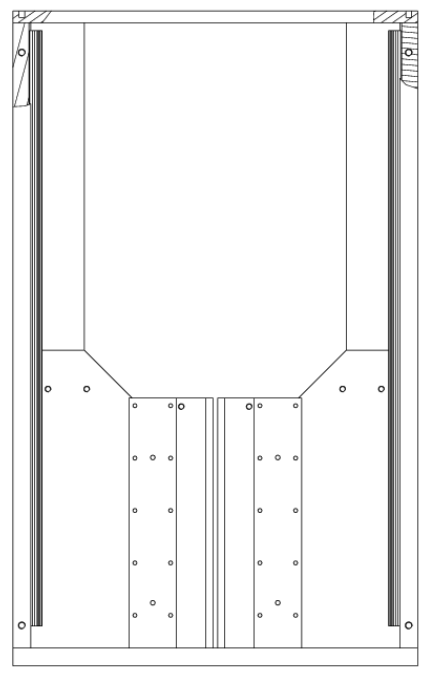
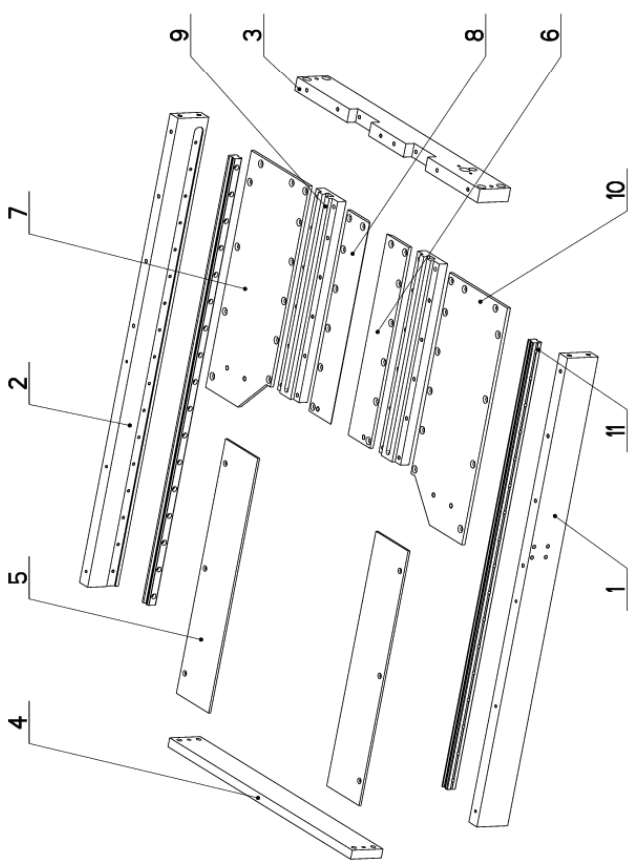
I. PRIDANA RUKOJET 92.150.001. 191/ZM215 12.7.2010 SLEZACKOVA

7.21. Stůl / Table / Tisch



DODRŽET ROVNOBEZNOST

NAZEV SESTAVY STŮL	CÍSLO SESTAVY 201.4609-300	STŮJ SV330
		Konstruoval: MRKOS
		Datum: 25. 09. 2015
		Meritko: 3:20



7.22. Kusovník / Stückliste / Piece list – Stůl / Table / Tisch

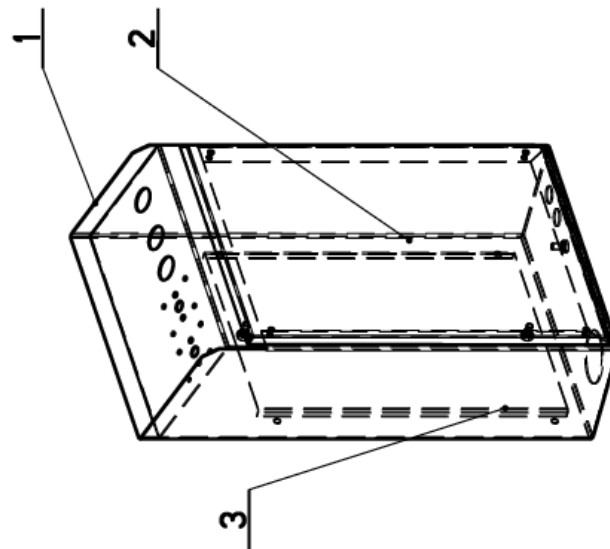
Císlo sestavy 201.4609-300		Ver. 0		Název sestavy STUL/TABLE/TISCH	
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.4609-301	0	LISTA / TRIM / LEISTE	HR 80x30	1
2	30.4609-302	0	LISTA / TRIM / LEISTE	HR 80x30	1
3	30.4609-303	0	LISTA / TRIM / LEISTE	HR 80x30	1
4	30.4609-304	0	LISTA / TRIM / LEISTE	HR 80x20	1
5	30.4609-306	0	KRYT / COVER / ABDECKUNG	P 5x120	2
6	30.4609-308	0	PLECH / PLATE / BLECH	P 8x81	1
7	30.4609-309	0	PLECH / PLATE / BLECH	P 8x215	1
8	30.4609-310	0	PLECH / PLATE / BLECH	P 8x81	1
9	30.4609-311	0	LISTA VODÍČI / LEAD TRIM / FUHRUNGSLEISTE	HR 80x30	2
10	30.4609-312	0	PLECH / PLATE / BLECH	P 8x215	1
11	99.200.296	0	VEDENÍ LINEARNÍ / LINEAR GUIDE / LINEARE FUHRUNG	MSA 25R 1000 20/20N	2

Císlo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver./Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Pos./)Position/Position;
Objednávací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rozměr/Stock size/Abmessung

7.23. Ovládací panel / Bedienpult / Control panel

Cislo Sestavy 201.4614-300		Ver. 0		Název sestavy OVLADACÍ PANEĽ / CONTROL PANEL / BEDIENPULT	
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.4514-304	0	PANEĽ ELEKTRO / ELECTRO PANEL / PANEL		1
2	30.4514-305	0	VÍKO / COVER / DECKEL	P 1.5 x 264	1
3	30.4514-306	0	DESKA ELEKTRO / ELECTRIC BOARD / PLATINE	P 1.5 x 220	1

I. ZRUS. KRYT HYDRAULIKY 30.4514-308. 024/ZM044 3.3.2009 SLEZACKOVA



Cislo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver./Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Poz./Position/Position;
Objednací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rozměr/Stock size/Abmessung