

Proline 320.280 H

Operating instructions

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

Service and information

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7⁰⁰ – 16⁰⁰

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EC Declaration of Conformity

1) We

BOMAR, spol. s r.o.
Těžební 1236/1
627 00 Brno, The 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 range: **Proline 320.280 H**

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.

Hydraulic YES NO Control system YES NO

Technical data: Cutting rate 20–120 m.min⁻¹
 Cutting angle 0°
 Total dimensions in mm (l×w×h) 2172×1197×1771
 Supply voltage 400 V TN-C-S, 400 V TN-C or 230 V TN-C
 Total power requirement 5 kW
 Weight 800 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/ES
 2004/108/ES

The applied harmonized standards, National standards and technical specifications:
 ČSN EN ISO 12100:2011, ČSN EN 13 898+A1:2009, ČSN EN ISO 13857:2008, ISO 4413:2011,
 ČSN EN 61000-6-2 ed.3:2006, ČSN EN 61000-6-4 ed.2:2007, ČSN EN 60204-1 ed.2:2007

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


The conformity judging was performed according to §12, par. 3, let. a), of the Law no. 22/1997 Coll. as amended

2) The declaration of conformity was carried out in the cooperation with the TÜV SÜD Czech s.r.o., Novodvorská 994, 142 21 Prague 4 – Czech Republic, Identification number: 63987121 - Inspection body no. 4002

The inspection certificate no . 05.692.383 was issued.

 Alfred Pichlmann, Managing Director

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



Point of issue, datum

Name and function
 of the responsible subject

Signature

Person authorised to complete the technical documentation: BOMAR, spol. s r. o., Těžební 1236/1, 627 00 Brno

1) Name, address and identification number of the subject issuing the conformity declaration (producer of importer)

2) 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. **Safety notes**

The operating instructions must be read by the person, who keeps in touch with the machine before transportation, installation, using, servicing, repair, stocking or removal!

The operating instructions include relevant information. The operator must familiarise himself with the install and operation, safety notes and machine servicing, because reliability and service life must be reached. The operating instructions must avoid risks, which are linked to work on the machine. Before transporting and using of the machine, please read the instructions thoroughly!

Attention!

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

1.1. Machine determination

The band saw **Proline 320.280 H** is determined for cutting and shortening of rolled bars and drawn bars and profiles from steels, stainless steels, non-ferrous metals and plastics **without angle cutting**.

Combustible materials are excluded for 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 guarding for operator and machine protection. Nevertheless, this safety and protective guarding cannot prevent injury. Service personnel must read this chapter and comprehend it, before he starts to work on the machine. **Always keep instructions about work safety!** Service personnel must take into account other aspects of the risk, which refer to the ambient conditions and the material.

Attention!

Consider the safety signs on the machine. Do not remove or damage them!

1.2. Protective suit and personal safety

Wear tight fitting overalls! Loose fitting clothes may be caught with machine parts and cause serious injury.

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

Attention!

*Gloves you can use only at working material replacement (saw band)! The machine and accessories must be inactive!
If the machine is running, you must not wear gloves! It is dangerous, because some parts of the machine can catch gloves!*

Wear protective shoes with non-skid soles! The unsuitable shoes may cause balance loss and following injury. Falling work pieces may cause serious injuries too.

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

Always wear ear protections! Most of the machines emit up to 80 dB and may damage your 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 to work. Illnesses or injuries diminish concentration. Avoid machine work, which may compromise the safety of you and your colleagues!

1.3. Safety notes for machine operator

Attention!

*Machine can be operated by person older than 18 years!
Machine can be operated only person physically and mentally fit for this activity*

Only one person can operate machine. Machine operator is responsible for presence of other persons by the machine.

Keep instructions and orders about work safety!

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

Close covers before the machine starting and check, if the covers are not damaged. Damaged covers must be repaired or changed. Do not start the machine, if the cover is removed! Check, if the electric cables are not damaged.

Attention!

Do not connect the machine to electricity if the covers are removed. Do not touch the electrical equipment.

- Do not hold the material for clamping to the vice and for cutting!
- Do not operate with the buttons and the switches on the control panel, when you have gloves!
- For machine starting take care, that there is nobody in the working area of the machine (it means in the working area of the vice, the saw band, the saw arm etc.).
- In no circumstances, touch the rotating elements.
- Work on the machine only when the machine is in good condition!
- Check at least once in a shift, if the machine is not damaged. If the machine is damaged, you must bring the machine in order and you must inform your superior!
- Keep your working area clean! Ensure sufficient lighting in the working area.
- Take off the spilt water or the oil from the floor and dry it. Do not touch the cooling liquid with bare hands! Do not set the nozzle of the cooling liquid, when the machine is started on
- Do not remove the chips from the working area of the machine, when the machine is started on!
- Do not use the compressed air for the machine cleaning or for the chips removing!
- Use the protective instruments for chips removal!

1.4. Safety notes for the servicing and repairs

Attention!

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

Switch off the main switch and lock it, before you start service work! Otherwise, there is possibility of hazardous machine starting.

Only qualified person can do the servicing and repairs. For parts changing, use only parts, which are identical with the originals. Otherwise, there is possibility of health hazard. Use only recommended type of the hydraulic oils and oils and lubricants!

Do not remove or do not lock the limit switches or safety equipments! Any use of the saw, accessories or machine parts other than that intended by the BOMAR, spol. s r.o. company is not permitted. The guarantee on this product will be afterward lost and BOMAR, spol. s r.o. takes no responsibility for caused damages.

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

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

Always use clean tools. Parts and fasteners, which are part of a hydraulic circuit, never put away the dirty surface. The best cleaning agent is crepe paper, because the fibers of the cleaning cloths can also cause malfunction.

Protective cap from the threaded chamber remove just before the assembly of the unit.

Hoses and pipes before mounting flush with gasoline or other cleaning agent and blow compressed air.

All fittings must be properly tightened. However, do not raw power.

1.6. Safety machine accessories

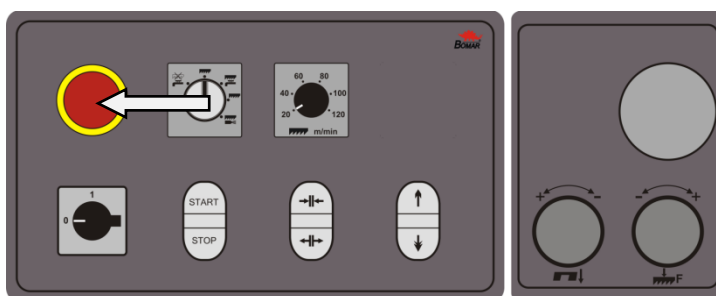
The machine is equipped with safety accessories. It protects the operator from injuries and the machine before damage. The safety accessories are blocking accessories, emergency switches and covers. Check once in a week the function of the safety accessories. If the safety accessories are functionless, you must stop work and repair or change the safety accessories.

Enhanced risk!

Do not come into or intervene in the cutting area. Otherwise, there is possibility of heavy injury.

1.6.1. Total Stop

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



If any damages or fault appears, immediately press TOTAL STOP button! Release the pressing button is possible by twisting of the upper part of the button.

1.6.2. Arm covers

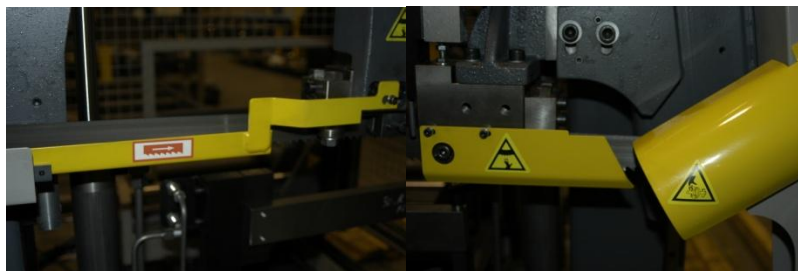
If the cover is opened during operation, the limit switch is opened and the band saw is stopped. The band saw is not possible to start in set mode.



The band saw is stated to the operation, when the covers is closed! Limit switched on saw arm control if covers are open or not.

1.6.3. Band saw cover

It covers the visible area of the saw band from left guiding cube to the frame.



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

1.6.4. Brush cover

It covers the brush for saw blade.



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

1.7. Safety guidelines for laser beam

Band saw for the accurate detection of their material during cutting uses a laser beam is placed near saw arm.



It is forbidden to look into the laser beam.

Near laser beam is safety sticker.

The laser device is used for Class 1M

Warning!

It is necessary to check the patency of the laser beam at the sensor and cleaned regularly, the laser after each layer of impurities (clean rag + alcohol), because of the correct functioning of the laser. Careful when cleaning procedure to prevent scratches and damage to the laser.

1.8. Safety notes for the cooling

Attention!

- *When handling cooling agents always wear hazardous fluid-proof gloves!*
- *Wear protective goggles!*
- *Cooling liquid can get in contact with your eyes and may cause permanent severe injuries*

1.8.1. Instructions for first help

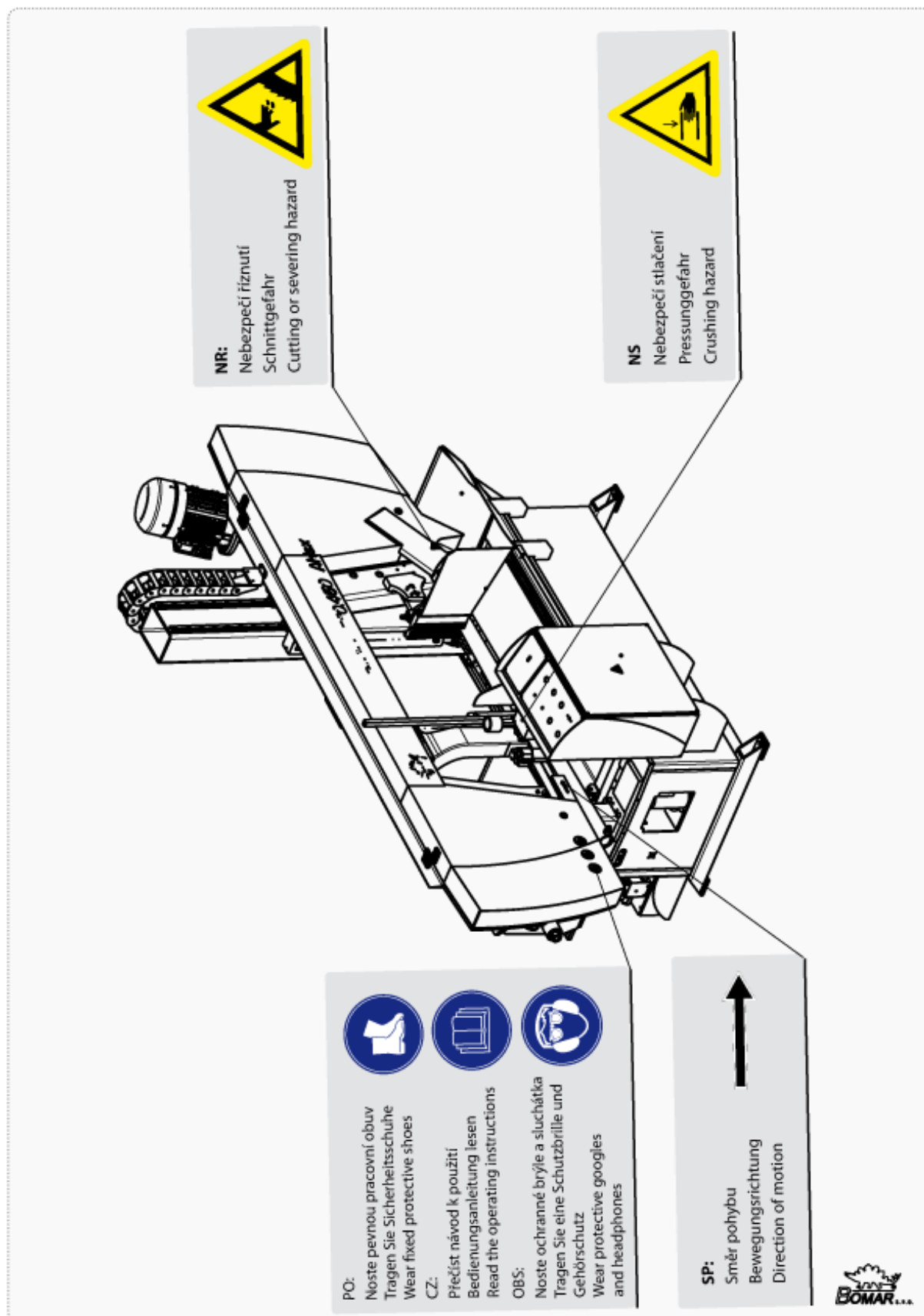
1. Pull off and safely remove polluted, soaked clothing.
2. For breathing, go out in the fresh air or look for first aid treatment.
3. Wash with water or use crèmes for contact with the skin.
4. Flush with water for eyes and look for first aid treatment.
5. For swallowing, drink a lot of water and induce vomiting. Look for medical help.

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



Machine label is placed on saw frame.

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



2. **Machine documentation**

2.1. Technická data / Technische Daten / Technical data

Hmotnost stroje / Maschinengewicht / Machine weight:				
• Hmotnost / Gewicht / Weight	800 kg			
Rozměry stroje / Maschinengröße / Machine size :				
• Délka / Länge / Length	2 172 mm			
• Šířka / Breite / Width	1 197 mm			
• Výška / Höhe / Height	1 771 mm			
Elektrické vybavení / Elektrische Ausrüstung / Electrical equipment:				
• Napájení / Versorgungsspannung / Supply voltage	~3 x 400 V, 50Hz, TN-C-S/TN-C			
• Příkon / Gesamtschlosswert / Total Input	5 kW			
• Max.jištění / Max. Vorschalticherung / Max. Fuse	16 A			
• Krytí / Schutzart / Protection	IP 54			
Akustický tlak / Schalldruckpegel / Acoustic pressure:				
• Proline 320.280 H	$L_{Aeqv} = 76,3$ dB			
Pohon / Atrieb / Drive:				
• Typ / Typ / Type	MDEARAXX 100-32 J			
• Napájení / Versorgungsspannung / Supply voltage	~3x400V, 50Hz			
• Výkon / Leistung / Output	3 kW			
• Jmenovité otáčky / Motornendrehzahl / Nominal speed	1440 min ⁻¹			
Hydraulické zařízení / Hydraulikeinrichtung / Hydraulic equipment:				
• Typ / Typ / Type	PPM-AC0,48(0,6 kW/300/1500-P61/2,5-TM20-CB03-FRS001_137_1 (92.001.077))			
• Výkon / Leistung / Output	0,6 kW			
Chladicí zařízení / Kühlmiteleinrichtung / Cooling equipment:				
• Typ / Typ / Type	2COP1-12H1-4			
• Obsah nádrže / Volumen vom Kühlmittel / Capacity	40 l			
Rozměr pásu / Sägebandedimension / Band size:				
4580x34x1,1 mm				
Řezná rychlost / Schnittgeschwindigkeit / Cutting speed:				
20–120 m/min.				
Řezné rozsahy / Schnittbereiche / Cutting size:				
				
0°	Ø280 mm	320x280 mm	320x280 mm	280x280 mm

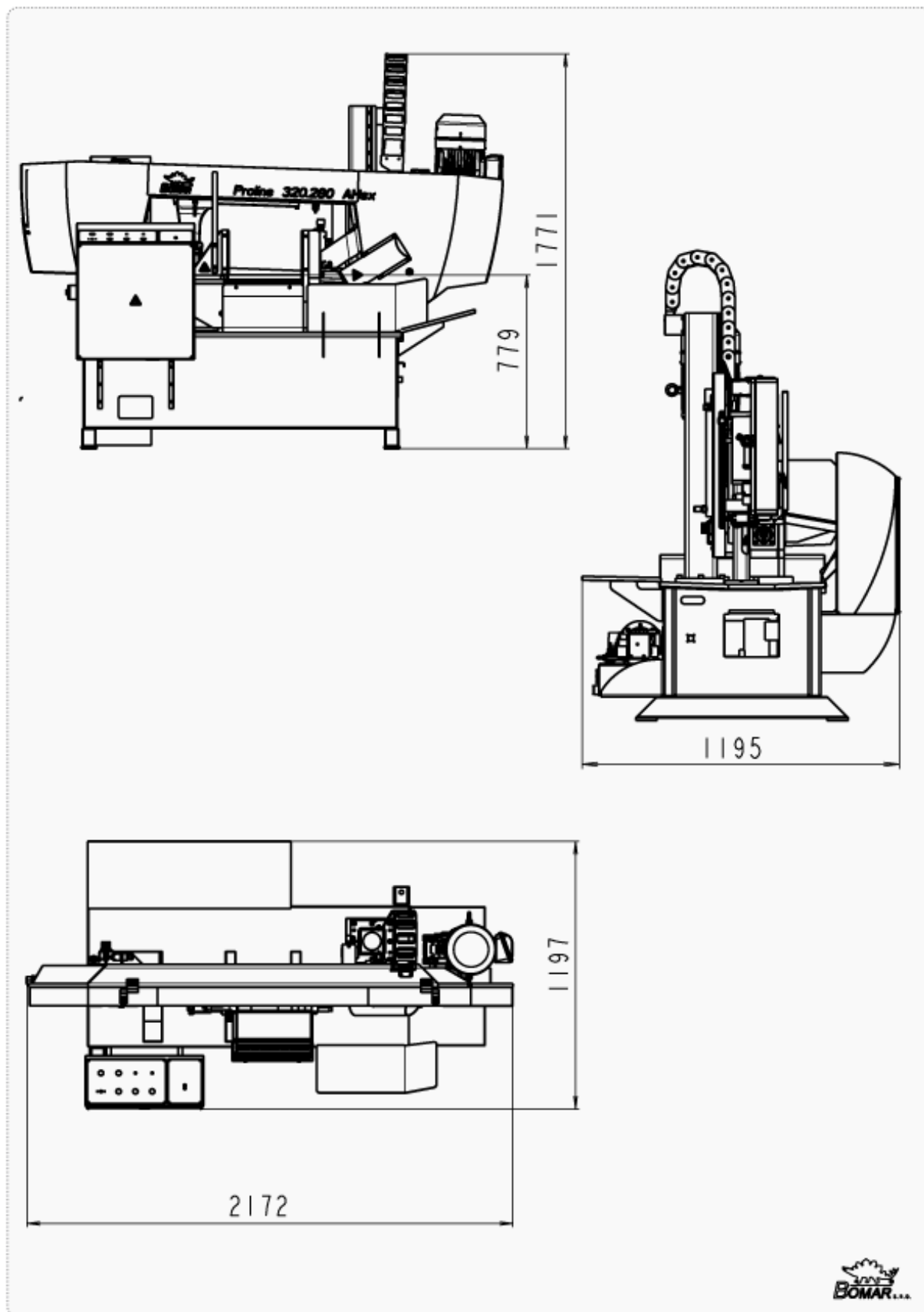
Warning:

If the material detection device is installed on the machine then maximal workpiece height is 10 mm shorter.
If machine has bundle device then material maximal height is half.

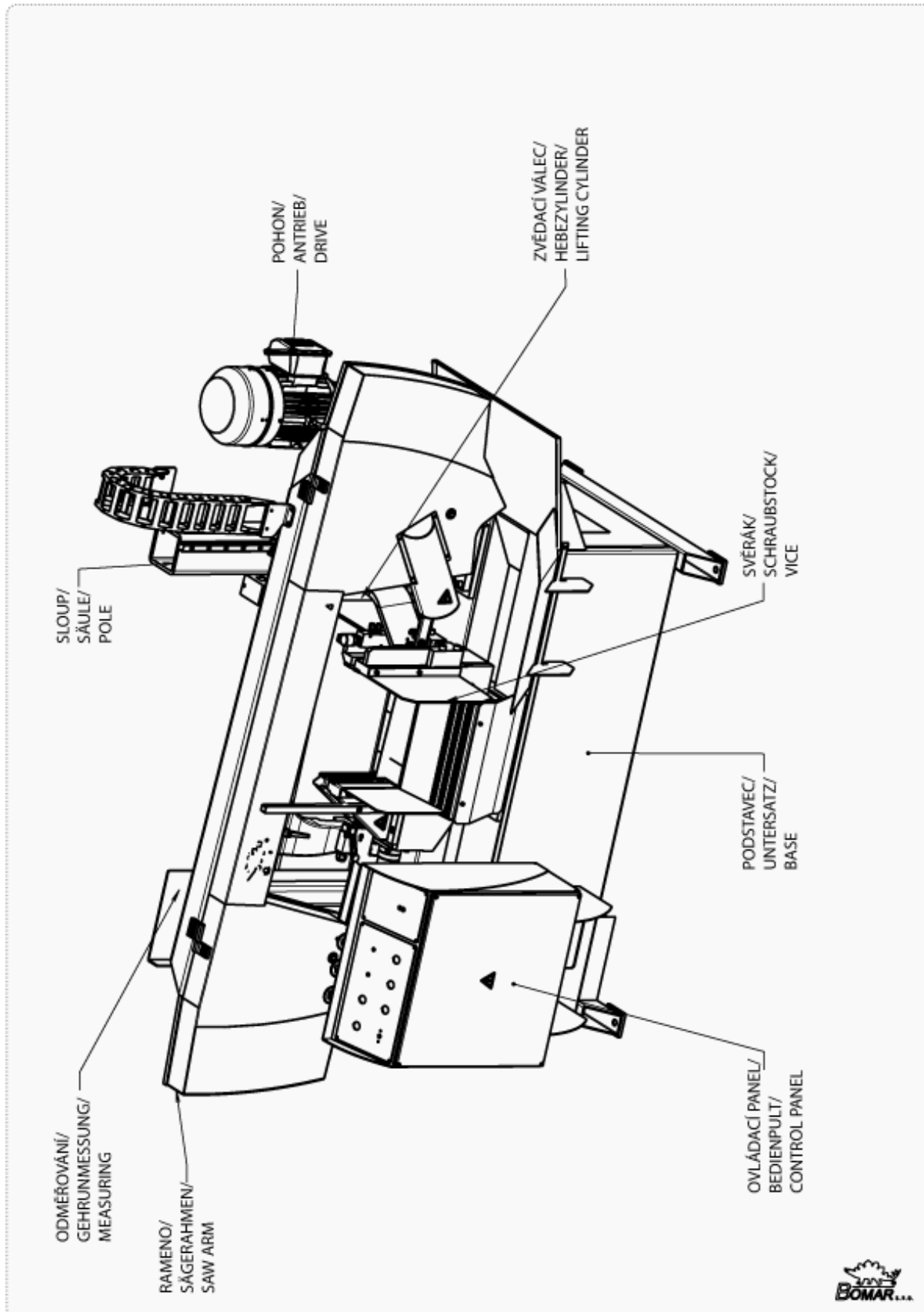
Level of acoustic pressure:

Equivalent level of acoustic pressure A (noise) at operator position are $L_{Aeqv} = 76,3$ dB. Mentioned values are levels of emission which doesn't have to represent safe levels. Factors which influence real level of acoustic pressure on machine operator are: working place characteristics, cut material, saw band. These factors have significantly influence on acoustic pressure.

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

Keep recommendations for the manufacturers for transportation and stocking! If the recommendations are not kept, damage can occur to the machine.

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

2.4.2. Transport and stocking preparations

Close the vice and thoroughly oil all blank surfaces.

Lower the saw frame to the lowest position.

Make sure to empty the machine of all traces of the cooling agent.

Fasten all loose parts securely to the machine.

Pack and wrap the control desk securely to avoid damage during transport.

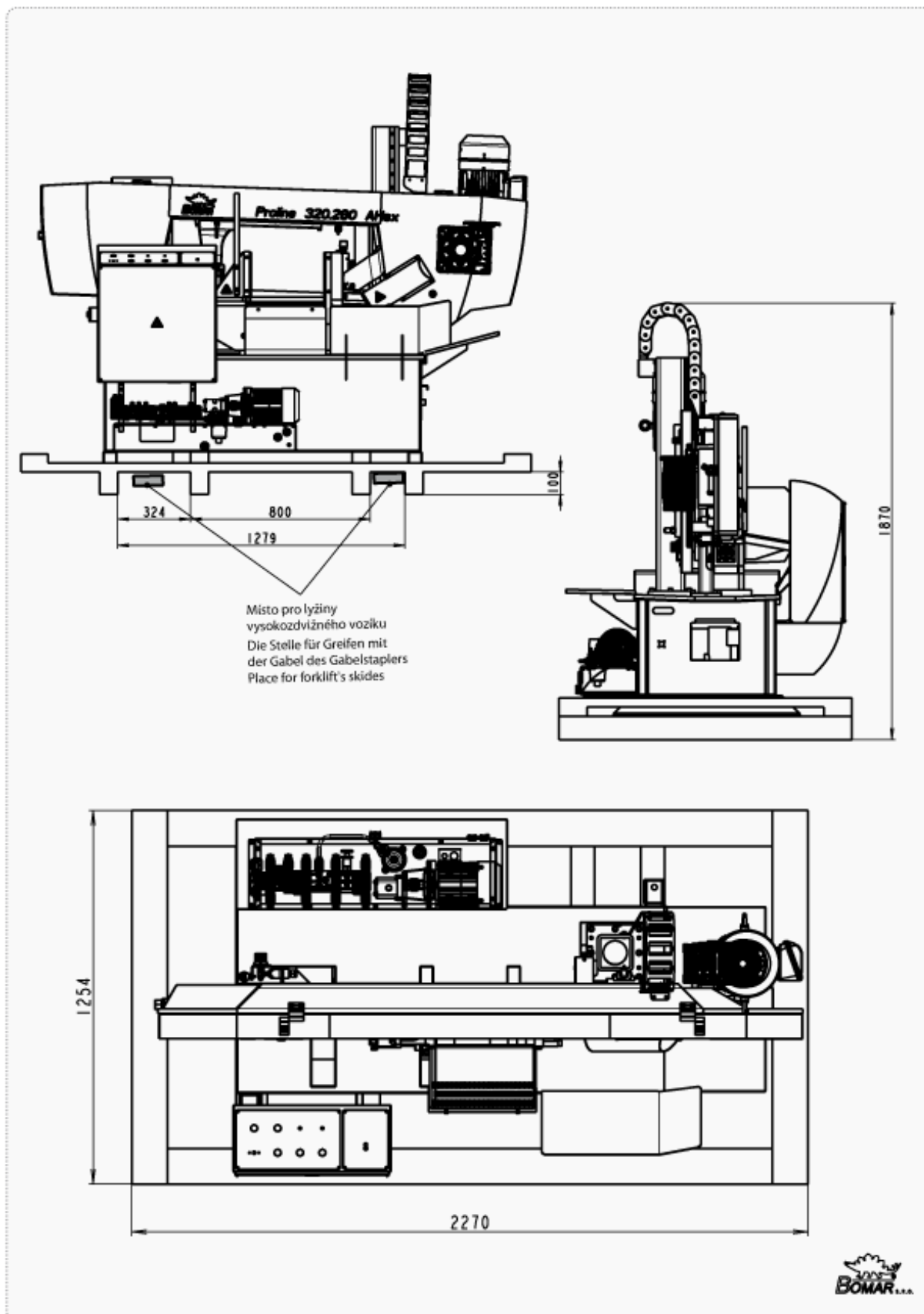
Fix the stickers stating the minimum approximate machine weight to at least five well visible places.

2.4.3. Transport and stocking

The machine must be secured during transportation. Screw on the palette to the floor of the van or the trailer. Be careful that the machine is not damaged during transportation. Store the machine only under conditions mentioned in the manual, to avoid damage of the machine.

It is forbidden to handle the machine any other way, than it is written in this operating instructions, the machine can be damaged.

2.4.4. Transportní schéma /
Transport schema /
Transport



2.5. Activation

2.5.1. Machine working conditions

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

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

- At temperature air from **5°C to 40°C**, the temperature average during 24 hours must **not exceed over 35°C**.
- At relative dampness of the air in the extend from 30% to 95% (not concentrate). Altitude lower than 1000 metres.
- Do not expose the machine to the radiation (for example microwave radiation, ultra-violet radiation, laser radiation, x-ray radiation). Radiation can cause problems with the machine function and deteriorating condition of the isolation.

Attention!

If the ambient temperature drops below 15 °C is required before operating the machine to have switch on hydraulic unit around 10 minutes and then made several motion few times (for example, in manual mode) by all hydraulic cylinders. The reason is to heat hydraulic coil to the operating temperature for proper function of the pressure switches (and choke).

2.6. Band saw unpacking and assembling

Remove the packing from the machine and unpack all parts.

Attention!

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

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

2.6.1. Machine installing and levelling

Check the floor supporting capacity before machine installing. If the floor capacity does not agree with requirements, you must prepare the necessary base for the machine.

Minimal requirement:

machine weight – Proline 320.280 H – 800 kg

+ weight of accessories

+ maximum weight of material

- The machine must be levelled at the horizontal position. All feet of the machine must touch with the floor after levelling
- The machine must be levelled by means of the calibrated spirit level. Spirit level is put on the vice area. Set the roller conveyors according to the spirit level.
- For machine levelling, take care that there is sufficient available space for operation, repair work, servicing of the machine and handling the material.
- The machine including appended parts and accessories must be visible from the place of operation.

2.6.2. Machine disposal after lifetime

Blown out all service fluids (cooling liquid, hydraulic oil) into designated reservoir.
Dismantle machine into separate parts and dispose them in accordance with valid directives.

2.6.3. First run of the power pack

Before the first run check:

- The direction of the Pump, while run the power pack for max. 2seconds.
- The cooling fan of the motor has to rotate in the same direction as the arrow on the top of the motor cowling indicates.
- In case of wrong rotational direction, the electrical phase in the connection box is to be changed. This check is required after every disconnection from the power source
- Wiring matches with electrical and hydraulic diagrams
- the electric motors (pump and cooler) are properly connected and have the prescribed rotation
- the hydraulic accumulator with nitrogen gas to the specified value
- aux. elements work right (thermometer, level gauge, heater)

First run (Attention – working pressure on securing valve is set by producer in accoring the hydraulic diagram):

- In the short intervals activate an electric pump
- check for leaks and noise
- Bleed the hydraulic circuit
- if possible, test the circuit function with minimum load
- test the electrical equipment
- during operation monitor measuring equipment, noise, height and temperature of oil in the tank
- During this time a careful bleeding off for the whole hydraulic system is necessary. In case there is no bleeder port, the power pack will bleed itself after a while via the air breather on the tank or the return line filter.
- After multiple start-up.

2.6.4. Filling the reservoir with hydraulic oil

Oil regulations and recommendations of the manufacturer in the technical documentation (appendix) are to be carefully observed. For standard power packs we recommend the oiltype OH-HM32 (DIN 51524) of all known oil manufacturers.

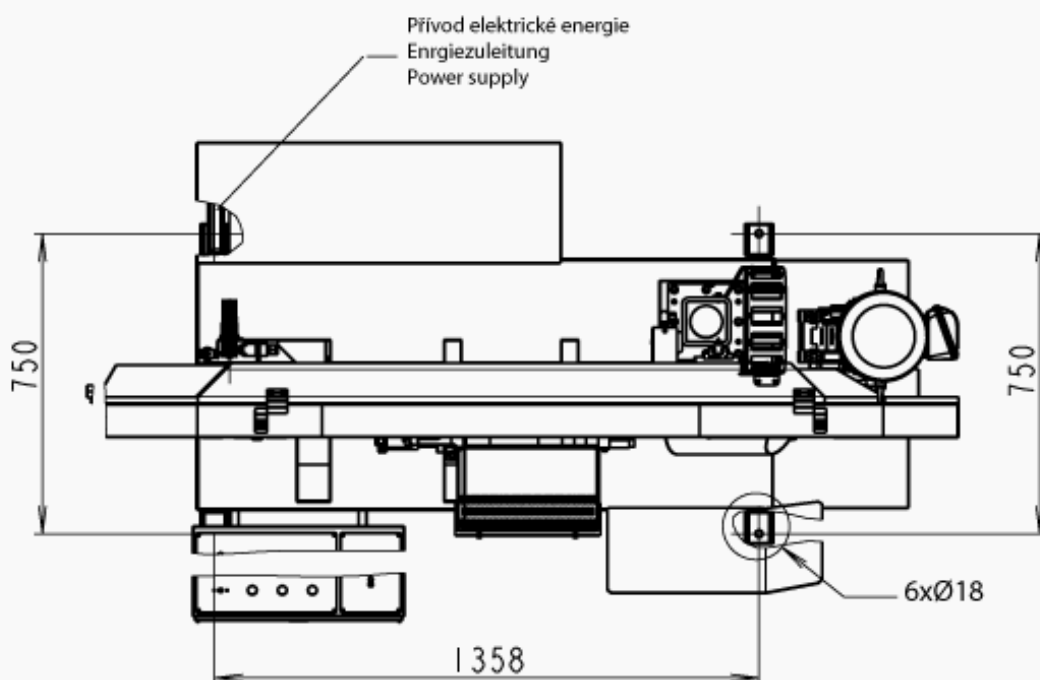
Power packs have to be filled up with clean, pre-filtered oil! The purity of the hydraulic fluid must correspond to the class 10 NAS 1638 (reachable with filter $\beta = 75$)!

Filling from container, such as barrels, buckets, etc. is not recommended or permitted!

The maximum oil level will be shown on the upper marking at the dipstick or the sight level glass. Overfilling has to be prevent. The maximum filling rate of 15 l/min shouldn't be exceed.

Oil type	Kinematic viscosity v in mm^2/s in relationship to the fluid temperatur					Freezing point °C
	0°C	20°C	40°C	60°C	80°C	
OH-HM 32	220	100	32	15	7	-40
OH-HM 46	400	170	46	18	11	-30
OH-HM 68	700	170	68	26	14	-28
OH-HV 32	180	67	32	17	11	-40
OH-HV 46	350	110	46	25	14	-36

2.6.5. Kotevní plan / Verankerungsplan / Grounding plan



Kotvicí materiál / Verankerungsmaterial / Grouding material

- 6x Hmoždina / Dübel / Plug – $\varnothing 12$ mm
- Vrtáno do hloubky / In die Tiefe gebohrt / Drilled to – 95 mm
- Šrouby / Schraube / Screws – M16 x 135 mm

- Šrouby podložit deskami o min. rozměrech P10x100-100
- Die Schrauben mit Platten mit Minimaldimensionen P10x100-100 unterlegen
- Screw must be bottomed with plates (min. dimensions P10x100-100)

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

± 10 mm / 1 m

2.7. Electrical connection

Attention!

Only a qualified professional must carry out the servicing and repairs of the electric equipment! Take special care during work with electrical equipment. High voltage shock can have fatal consequences! Always keep notes about work safety.

Electrical parameters of the machine:

- Service voltage: ~ 3×400 V, 50 Hz, TN-C-S
- Total input / Max. fuse: 5 kW / 16 A

Before connecting switch off the main switch of the power supply circuit for the machine and ensure dry place when doing connecting works!

Note:

The values of the crosscut of the conductor and the rated current are in the norms.

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

Note:

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

In case the machine is connected with a direct connection, an extra main switch must be added which can be locked in zero position.

Attention!

In this case the extra main switch becomes primary and the main switch on the machine has only secondary function.

2.7.1. Check the direction of the saw band



After the machine has been successfully connected, briefly switch on the machine and put the driving engine of the band in the running position. The direction must be in accordance with the arrow direction on the saw band cover. In case the direction of the saw band does not match, two phases at the terminal strip must be switched.

2.7.2. Check machine connection into electrical network

2.8. Filling of the cooling system

Attention!

When you connect the machine to the electrical network observe correct connection of all phases!

ENGINE IN IN HYDRAULIC AGGREGATE CANNOT BE OPERATED WITH REVERSE TURNING MORE THEN 10 SECONDS!!!

Prepare the mixture of the water and the cooling liquid. Keep the concentration specified by manufacturer. Shift away the cover from the drainage hole. Fill the mixture of the water and the cooling liquid to the tank of the cooling system. Area of the tank for the cooling liquid is discovered from the chapter *Technical data*.

Let the drainage hole opened and with the sieve during operation, because it secures the right work of the cooling system. Filling the tank with the cooling liquid, take care that the liquid does not drip out of the tank and the tank does not overflowed.

Note:

If machine is equipped with microniser, fill microniser with prescribed cooling liquid. This made the Microniser ready for use.

2.9. Check machine function

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

Check, if covers are installed and functional. Check by means of the Tenzomat if the saw band is correctly stretched. If it is necessary, you can stretch the saw band according to chapter *Selection and replacement of the saw band*. Values of the saw band stretching are on the Tenzomat. Switch on the main switch and check the motors and systems (saw band drive, hydraulic pump, cooling pump, chips conveyor).

Open and close the main vice. Turn the saw frame of the band saw from one outer position to other outer position. Raise the saw frame to the top position and drop the saw frame to the lowest position.

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 the operation. Carry one cycle of cutting without material. Check, if the machine runs with no irregularities. If all machine functions are right, the machine is ready for operation..

2.10. Saw band

Refit the saw band cover only after you have installed and tightened the saw band.

2.10.1. Saw band size

4580x34x1,1 mm

2.10.2. Selection of the saw band tooth system

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

1. *Constant tooth system* – the saw band has parallel tooth pitch all over length. This way is suitable for cutting of solid material.

BOMAR recommended Variable tooth system for band saw.

2. *Variable tooth system* – tooth pitch is variable. Variable tooth system is used for profiled materials and bundle cutting. Variable tooth pitch lowers vibration of the saw band, increases service life of the saw band and quality of the cutting area.

In tables, there are advised type of the tooth system depending on sizes and form of the cutting material.



Footnotes:

Z,Z – teeth number on one inch
 S – tooth with zero angle of the teeth
 K – tooth with positive angle of the teeth

Examples of the tooth system marking:

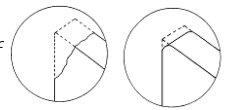
32 S – number „32“ means 32 teeth on one inch (that means constant tooth system), letter „S“ marks teeth with zero angle of the tooth.

4–6 K – number „4–6“ means 4 till 6 teeth on one inch (that means variable tooth system); letter „K“ marks teeth with positive angle of the teeth.

2.10.3. Saw band running-in

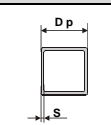
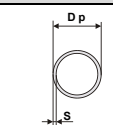
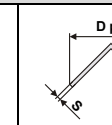
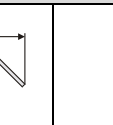
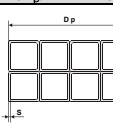
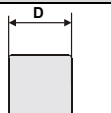
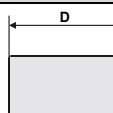
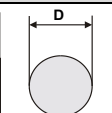
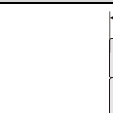
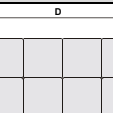
Running-in: Cut the material with the frame lowering reduced to 50% only. When vibrations occur increase or decrease the band speed.

When cutting small pieces run the band until approximately 300 cm² of material has been cut. When cutting large pieces run the band for 15 minutes approximately. When the band has been run, increase the lowering-speed to normal speed. The running in of the saw band avoids micro-breaks on the cutting edges of new saw band ensuing from first excessive stress. This would decrease service life substantially. The optimal running in of the saw band produces ideal rounded cutting edges and therefore the conditions for an optimal service life.



Note: Run regrinding saw bands too.

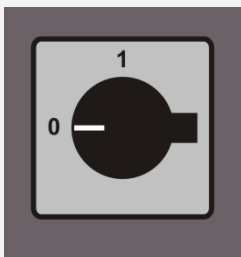
2.10.4. Tables for teeth selection

SHAPED MATERIAL ($D_p, S = \text{mm}$)						
						
Note: Table shows tooth system selection for cutting one piece of the profile. For cutting of more pieces of the profiles (bundle), you must think of the size of the wall as double size of the wall of one profile (that means, size „S“ equates to 2xS). In table, there are tooth systems constant and variable.						
Size of the wall S [mm]	Tooth system (Z,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
Size of the wall S [mm]	Tooth system (Z,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,Z)		length of the cut D	tooth system (Z,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					

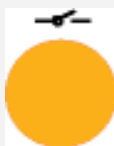
3. **Machine control**

3.1. Starting the band saw

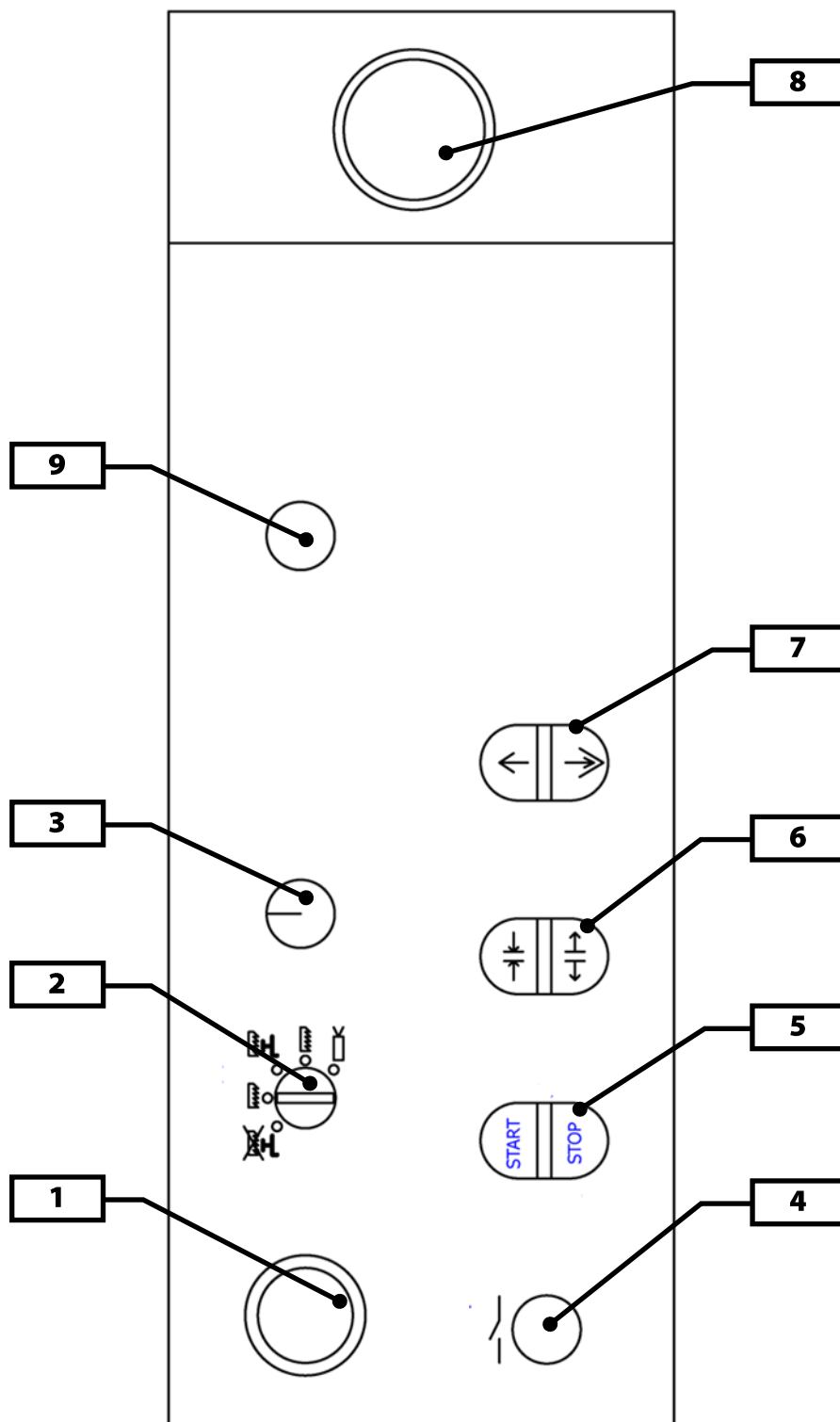
- » 1. Switch on the main switch of the band saw. The main switch is placed on the switchboard side.



2. Switch the saw's safety (control) circuit on – button **No.4** at the control panel of the saw.



3.2. Control panel



1	<p>NOT-AUS Taste Sie setzt die Maschine in Notfällen sofort still.</p>
2	<p>Cooling system selection You can select from three possibilities: See chapter "Setting of a cooling method"</p>
3	<p>Frequency converter Frequency converter sets the speed of saw band in the range of 20-120m.min⁻¹</p>
4	<p>Safety circuit Button switch on the control circuit of control system</p>
5	<p>START/STOP - Switch on / off the working cycle Push of a button START starts the cutting cycle Button STOP stops or brake cutting cycle.</p>
6	<p>Open/Clamp main vice Pressing and holding the button in manual mode allows voltage and solve the main chip stocks. The feed vice must always be clamped earlier than the main vice</p>
7	<p>Lift/Lower the saw arm Pressing and holding button lifts or drops saw arm by the lifting hydraulic cylinder. It is possible to lift the arm using the whole range of the lifting hydraulic cylinder. As you move down saw arm, you can activate rapid lowering by pressing both buttons simultaneously</p>
8	<p>Regulation valve Regulation valve sets the lowering speed of the frame into the cut. The speed is limited by the adjustment of the pressure regulation in the cut on the guiding cubes. Note: If the throttle valve is closed too tightly, the valve seat may be damaged and may start to leak. Tighten the valve lightly.</p>
9	<p>Laserliner – optional accessory Switcher of the laser beam</p>

3.3. Machine control

1. Lift the saw arm so that the lower portion of the bandsaw blade (cut) about 10 mm above the material is located (starting position). Raising the arm is ensured by the establishment ..
2. When pressing the START button to start the cutting cycle
3. Pressing the START button starts the saw blade drive, the arm begins to sink into the cut. After the cutting process, the arm moves to the preset lower position (see the lower arm position adjustment of the stop) and then raises the arm to the starting position. When pressing the START button, the starting position of the key is stored, ie that the arm after the cut returned to the position in which the START button is pressed.

3.4. Cycle breaking

- »
- **STOP button**
Semi-automatic cycle is interrupted by pressing **STOP** of the cycle
The arm stops fall into cut and saw blade is stopped.
By pressing button **START** of the working cycle, you can start the cycle.
 - **TOTAL STOP button**
In case of the risk, press button **TOTAL STOP**.
After pressing **TOTAL STOP** button, saw band drive is immediately broken and the arm sinking is stopped.
 - **Reactivation**
 1. Turn button **TOTAL STOP** according to the arrows (on the button).
 2. Switch the saw's safety (control) circuit on –button **No.4** at the control panel of the saw.
 3. Lift saw arm above cut material and push START button.

3.5. Band saw adjusting

3.5.1. Cutting speed adjusting

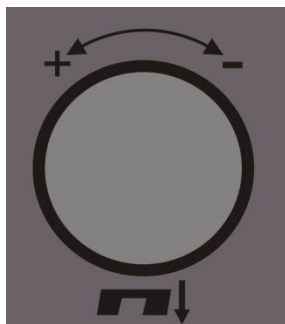
Band speed is possible adjusted continuously from 20 to 120 m / min.



Use the frequency convertor on control panel (pos. 3) to adjust requested speed of the saw band.

3.5.2. Speed adjustment of the arm lowering

Speed of the arm lowering is adjusted by regulation valve on control panel (pos.8)



- Set the **lower speed** of the arm lowering to the cut by turning the switch **clockwise**.
- Set the **higher speed** of the arm lowering to the cut by turning the switch **anti-clockwise**.

Notice:

If you keep closing the throttle valve too tightly, the valve seat may wear off which causes its leakage. Therefore, close the valve always gently.

3.5.3. Saw frame upper position stop adjustment – lift arm adjustment

The position of the guide arm is monitored by a transducer which is located in the rear arm portion. In order to shorten the cycle time, the amount of Armhubs can be adjusted according to the height of the material to be cut.

1. Insert material in a vice
2. Take arm using the **Arm up** to a position above the material.
3. Carefully pull off the arm of the material using the **Arm down**, or rapid move. Arm stops 5-10 mm above the cut material
4. Adjust the height of Armhubs material according to height so that the top of the adjustable eccentric with a scale indicating the desired value (the value of the eccentric-scale corresponds to the value of the material height)
5. Pressing the START button for the beginning of the cutting cycle.



Setting the Armhubs using the incremental transducer of the upper arm position (optional accessories):

1. Insert material in a vice
2. Take arm using the **Arm up** to a position above the material.
3. Carefully pull off the arm of the material using the **Arm down**, or rapid move. Arm stops 5-10 mm above the cut material

- Pressing the START button for the beginning of the cutting cycle
- Of the saw, the material is cut to the lower arm position and moves back into the upper arm position in which the START button has been pressed (the saw notes the position - upper arm stop)



3.5.4. Saw frame lower position stop adjustment

The lower arm stop separates the bottom arm position.

This stopper is to be set according to the amount of material to be cut (the scale).

An incorrect setting of this attack, the saw can cut too deeply into the table of a vice or the material is not completely cut through.



Adjustment of the stop of the lower arm position with the aid of the adjustable eccentric to the column of the arm.

Attention!

*During adjustment of the stop of the lower arm position it is necessary to keep the scope **from 50° to 320°**! When the stop of the lower arm position is adjusted over the mentioned scope, the cutting cycle will not be finished and the arm will stay at the lower position and the machine will not be stopped!*

The limit is set by the manufacturer, this is not readjust.

3.5.5. Adjusting band guides

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



1. Release the stopping lever of the listel. Move the left part of the guide so that the left edge of the guide blocks is as close as possible cutted material.
2. Lower the frame to the lower position and check the position of the guide cube towards vice loading area. The guide cube must be a distance of at least 10 mm from the vice loading area.
3. Tighten the lever of the gib and check the guide cube setting once more for possible collision with binding table or vice jaw.

3.5.6. Digital indicator of arm turning angle (optional accessories)

Intended for applications with frequent mitre cuts.

The digital indicator of the arm turning angle prevents possible mistakes caused by inaccurate reading of an angle on the scale, and increases the speed of preparation for cutting. In connection with LaserLine, the digital indicator will make every band saw the most effective tool for mitre cuts.

A large, easy to read display and accurate measuring of the arm position with a magnetic tape allow the angle to be set with the maximum accuracy.

The measuring unit is set by the manufacturer. However, its further functions may be easily controlled with four keys.

Digital indicator is placer on the band saw pedestal:

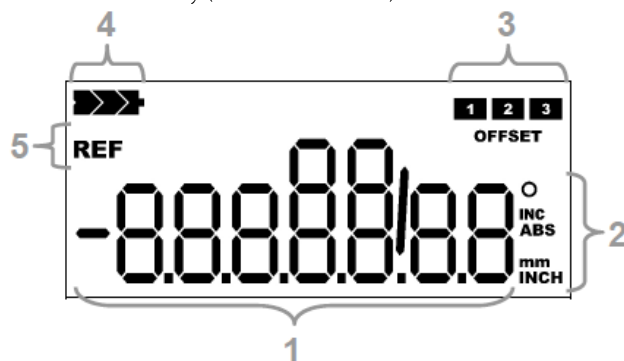


Zero position setting

1. Turn the saw arm to a zero angle position.








2. Push the Incr/Abs key (even several times) until "0" is shown on the display.





Digital measuring adjustment

Position	Description
1	Current position
2	Unit, measuring mode
3	Active additional constant (* key)
4	Battery status
5	Reference record shall be made – after the apparatus is switched on.

Description of key functions:

Key	Stop mode	Setting mode
	Basic key	Entering parameters (3 sec) Saving parameters and returning (3 sec)
	Reference recording (P09 value)	-
	Change of displaying in inches	Selection of following decade
	Absolute and incremental measuring	Change of active decade o +1
	Selection of additional constant	Change of sign •

Description of key functions at measuring initialisation:

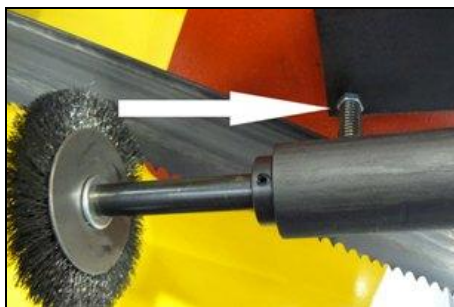
Key	Description
	Induces calibration of the apparatus when it is switched on (battery inserted).
	Induces calibration of the apparatus and sets default values when the apparatus is switched on.

Description of digital measuring parameters:

Parameter	Description	Default value
P01 A	Measuring configuration: A = 0: positive direction of measuring A = 1: negative direction of measuring	0
P02 A	Measuring unit: A = 0: mm / symbol "mm" A = 1: inch / symbol "Inch" A = 2: mm / symbol "m" A = 3: mm / symbol "0m" A = 4: mm / no symbol	0
P03 A	Decimal point (0..4) > only for mm	2
P05 ABC	Key blocking: A: "Set" key (0 = active / 1 = inactive) B: "Incr/Abs" key (0 = active / 1 = inactive) C: "*" key (0 = active / 1 = inactive)	000
P08	Correction factor (0.0001 ... 9.9999)	1.0000
P09	Reference (-9999999 ... +9999999)	0
P10	Additional constant 1 (-9999999 ... +9999999)	0
P11	Additional constant 2 (-9999999 ... +9999999)	0
P12	Additional constant 3 (-9999999 ... +9999999)	0
P13 A	Configuration of additional constants (0...3) A = 0: inactive (cannot be selected) A = 1: Additional constant 1 active A = 2: Additional constants 1 & 2 active A = 3: Additional constants 1 & 2 & 3 active	3
P90	No function	0
P99	Displaying firmware version	x.xx

3.5.7. Brush adjustment

The brush for chip removal from the saw band influences cutting durability saw band lifetime and wheels lifetime, hard metal guides and finally the cut accuracy. Brush adjustment must be checked every shift.



1. Release the fixative screw of the brush. It is possible to move with the brush.
2. Set the brush to the saw band according to the picture.

Attention!

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

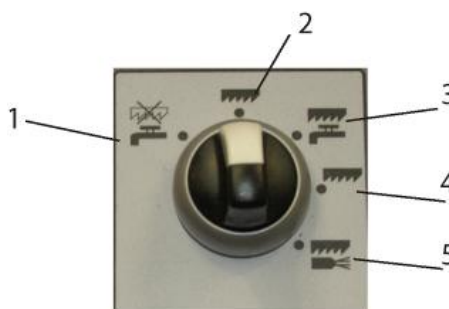
3. Tighten the fixative screw.
4. In case, that the brush is not turned right (driving wheel slips on the driving wheels of the saw band), push by means of the screw (see arrow) driving wheel of the brush to the driving wheel of the saw band.

Attention!

*The screw **must not** be tightened with heavy force, because driving wheel of the brush can be damaged or the lifetime of the bearings of the driving wheel of the band can be lowered!*

3.5.8. Setting of a cooling method

Required cooling method can be selected using a switch no. 3 on control panel.



Liquid cooling

1. Coolant pump runs when the drive of the belt is switched off (rinse)
2. Saw band runs without cooling
3. Cooling starts while starting of the drive of the saw band .

Oil mist – Micronizer (optional accessory)

4. Saw band runs without cooling
5. Cooling starts while starting of the drive of the saw band

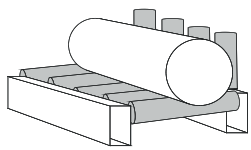
3.6. Material insertion

- Never walk under a suspended load!
- Never climb onto the gravity-roller conveyor!
- Do not hold the material for clamping material to the vice! The vice can cause injury!

3.6.1. Handling agent selection

- Use the strong handling agents to lift and transfer the material!
- Handle with the material only with the lift truck or use the suspension strands and the crane!
- Do not use the lift truck or crane in case that you do not have the license to handle with it!

3.6.2. Insertion



Insert material to the vice and ensure that the material cannot move in the vice or fall from the vice after the clamping. If you cut long pieces of the material (for example rod, tube), you must use the roller conveyors for material shifting to the band saw. Contact Bomar for more information about roller conveyors

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

Be especially careful with round materials that it always stays on two vertical rollers and that it cannot fall off the conveyor!

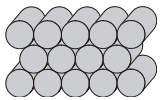
3.6.3. Bundle material cutting

Attention:

Manual bundle clamping device is not standard equipment. Without this device it is not possible to cut a bundle.

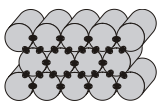
Attention!

If the machine has a bundle device then the material's maximal height is half.



If you want to cut the material in the bundle, there are suggestions for the positioning of 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 with movement.



Always weld the material at the rear end of the bundle to secure it from moving.

Before welding always switch the machine off at the main switch! The magnetic fields, which often occur during welding, may damage the controls!

Attention:

Not all material shapes are suitable for bundle cuts. Keep the recommendation of your supplier of the saw bands for material insertion to the bundle.

4. **Machine service**

4.1. Saw band dismantling

During the dismantling, take care that you do not damage the limit switch if the saw band stretching.

1. Lift the saw frame to the top position. Stop the saw frame in top position by control valve.



2. Dismantle yellow protective cover of the saw band. The cover is clamped with two screws.



3. Open the cover of the arm.
4. Turn by stretching star to the left side, release saw band stretching and pull saw band from blade wheels.



5. Pull up the saw band from the guiding cubes

4.2. Saw band instalation

During the installation, take care that you do not damage the limit switch if the saw band stretching!

1. Prior to installation, clean all track wheels, guide 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 new saw band in the guide cubes. Make sure the saw band runs between both guide rollers and it is pushed all the way to the top.



3. Put the saw band on both guide wheels. Make sure that the saw band ridge fits tightly to the wheel rim. Then push the saw band as far back as possible.
4. By turning the stretching star to the right, you will stretch the saw band slightly. Remove the plastic cover of the saw band teeth.
5. Close the cover of the arm.



6. Install the yellow protective cover of the band. The arrow on the cover must match the direction of the arrow on the band. If it does not, you must turn the band round.

4.3. Saw band stretching and rupture inspection

Right saw band stretching is one of the most important criteria's, which influents accuracy and saw band service life. Stretch the saw bands according to the selected saw band and the band saw. Keep the recommendation of your manufacturer.

Check the band stretching carefully and regularly - adjust if necessary.

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

This device checks the saw band stretching and causes immediate machine shut – down in the event the band ruptures.



- Remove the protective cover of the device (if not removed).
- The saw band to the optimum value (see table) using the Allen screw clamping, the value of the band tension can be checked on the display of the band tension (gauge). When tensioning the band saw a Tensomat can be used (optional Accessories)
- Refit the protective cover

The device contains limit switch. Check the stretching carefully and periodically – eventually adjust.

Each limit switch complies with the machine two basic functions:

- signals the moment the band tension with the target value of this setting, the machine can be switched on, ie if the tape is stretched and turned on the limit switch.
- meets the safety function and, in the event that the saw band breaks or any other problem that directly affect the value of the band tension has shut down immediately and stops the whole machine.

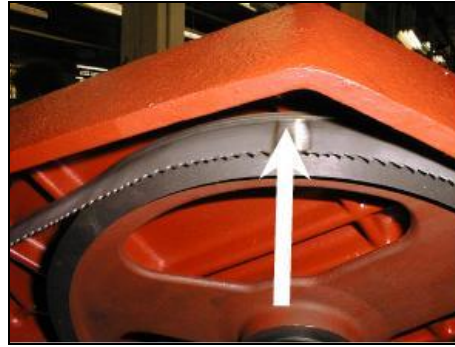
The limit is set by the manufacturer, this is not readjust.

4.3.2. Saw band run adjustment on stretching wheel

Saw band run on the stretching wheel must be regularly inspected. The inspection has to follow every saw band replacement

If the band drive is not set correctly, the following problems may occur:

- The saw band falls off the wheel – the saw band and protective cover can be damaged.
 - The saw band runs on the wheel rim – The saw band and wheel rim can be damaged
1. Turn the saw band drive and then again
 2. Turn off the main switch!
 3. Open the cover and check the saw band run
 4. Check the saw band run to the wheels.



- if the distance between backside of the saw band and the offset wheel is **1 – 3 mm**, setting is right
- if the distance is bigger than **3 mm**, or the saw band is on the offset of the wheel, set the saw band

The saw band run is adjusted with the adjustment screw.

The saw band run is adjusted with an Allen screw in the tension prism of the arm. If the distance of the rear part of the saw band from wheel rim is **1 mm**, setting is right

- Turn the adjusting screw to the right, then the bandsaw moves closer to the border.
- Turn the screw to the left, then the bandsaw moves further from the border.

After adjustment check the saw band run again.

4.4. Cooling agents and chips disposal

The quality of the cooling agent will deteriorate due to:	If the solution is too weak:	If the solution is too strong:
<ul style="list-style-type: none"> • use of contaminated water • impurity • outside oil contamination (hydraulics, gears) • high operating temperatures • lack of air circulation • wrong concentration 	<ul style="list-style-type: none"> • corrosion protection is diminished • lubrication decreases • microbial attack is more likely 	<ul style="list-style-type: none"> • the cooling ability is decreased • foam behavior increases • emulsions stability deteriorates • sticky residue develops

4.4.1. Coolant device inspection

The state of the cooling agent has significant influence on the cutting quality and on the operational life 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 cooling liquid (especially with oils) and on the other factors.

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

Note:

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

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

Testing	Interval	Method	Condition	Precaution
Liquid level	daily	visually	too low	after concentration check, refill with water or emulsion
Concentration	daily	refractometer densimeter	too high too low	refill water refill base emulsion
Smell	daily	by sense of smell	unpleasant smell	good ventilation, add biocides or renew coolant
Contamination	daily	by sense of smell	visible oil leaks, sludge fungi	surface cleaning, fix leaks, add biocides or fungicides, or coolant renewal after added system cleanser*
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, enquiries to supplier
Foam reaction	when necessary	shaking test	too much foam, foam disperses too slowly	avoid aeration, increase water hardness, ix with defoamer

* According to manufacturers' instructions

4.4.2. Chips disposal

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

- Let the chips drip excess fluid!
- Fill a watertight container with the chips! Be careful that the container does not leak, because even after a long dripping time, they still contain coolant residue.
- *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 micro-spray installation, the chips must also be handed over to a disposal company.
- Third coolant inflow (optional accessories)

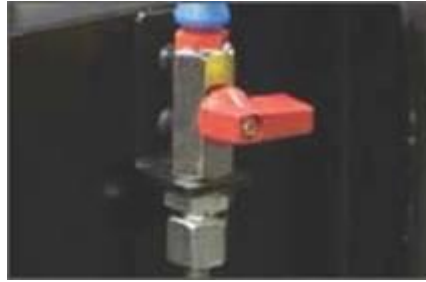
Flexible coolant supply allows to bring the coolant to the desired location.

Third, easily routable and adjustable coolant supply with nozzle ensures sufficient lubrication and cooling of the strip in the middle of the cut material



Particularly suitable for cutting materials with a larger average, where the opening of the guide blocks larger blade and prevents proper lubrication and cooling of the entire length of the cut

For normal cutting off the third coolant inflow may be easily disconnected by closure



The third coolant inflow get in the package complete package including all jumpers and hoses - just connect to existing cooling divorce

Complete package includes: flexible hose (length 600 mm), shunt valve, inlet plastic hose (depending on the type of machine - min. 1m), interconnection schedule, holderto the machine screws (2xM5), transformer and wiring.



The entire portfolio of BOMAR saws can be extended to a third feed.

4.4.3. Gun cleaning machines from chip (optional accessories)

Tool cleaning machines from chips after cutting.



With custom pump (min. capacity 16 l / min.) The coolant gets into the rinsing pistol with the trigger lever.

Sufficient pressure to the chips and debris were eliminated from the bearing surfaces of the base material and the saw.

Gun cleaning machine from the chip is supplied with a sufficient supply hose for easy handling (diameter of 12/8 mm).

Package includes:

1. Ergonomic handle allows easy handling of the gun during cleaning machine.



2. Brass adjustable nozzle allows for smooth width rinse stream.



3. Valve for setting maximum coolant flow



4. Also included is a convenient holder for postponement gun after use!



Suitable for machine brand Bomar

4.5. Hydraulic, Greases and oils

4.5.1. 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 specification DIN 51517 in the gearboxes. Select the viscosity grade ISO VG according to the original oil fill.

Attention:

When replacing, use oils recommended by BOMAR or oils, which has comparable parameters from the other manufacturers. 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	Capacity
Proline 320.280 H	Shell Tivela S 320	1,0l

Comparative table of the gearbox oils

Manufacturer	Viscosity grade		
	ISO VG 100	ISO VG 220	ISO VG 320

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

4.5.2. Lubricant greases

We recommend using lithium based saponified grease, class NGLI-2 for lubrication. Different greases are mixable, if their oil bases and consistence type are identical.

Comparative table of the 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

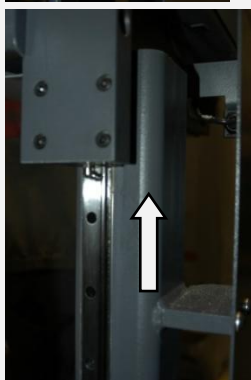
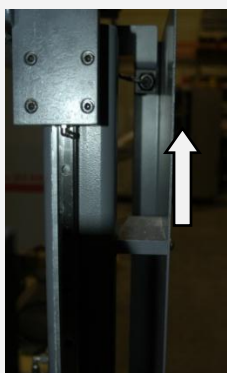
4.5.3. Lubrication

There are several placing on the machine, which are necessary to grease periodically. It secures the right function of the machine.

Lubrication place	Lubrication
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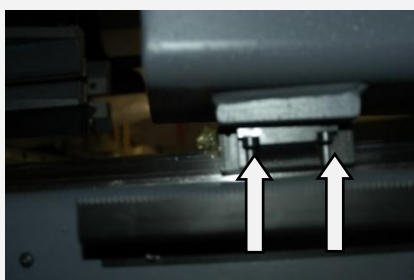


The guiding cubes leading – grease with oil from both sides once a week.



4 x linear carriage for moving the saw arm

Linear guide of the saw arm - every three months. Lubricate with a grease (see Chapter greases). Every carriage of the linear guide grease with about 3-5g of grease. Use for lubrication grease gun. During the lubrication shut down the linear carriage 3 to 5 times back and forth.



4.5.4. Hydraulic oils

Replace the hydraulic oil once in 2 years, because the oil can deteriorate its properties and cause problems the hydraulic equipment. If the hydraulic system is equipped with filter (2SF 56/48-0,063), replace the filter too.

Use oils with specification DIN 51524-HLP, ISO 6743-4 and viscosity grade ISO VG 46 in hydraulic aggregates. Hydraulic oils quantity – see chapter **Hydraulic oil level check**.

Note:

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

Comparative table of the hydraulic oils

Manufacturer	Type	Manufacturer	Type
Agip	Oso 46	Ina	Hidraol 46 HD
Aral	Vitam GF 46	Klüber	Lamora HLP 46
Avia	Avilub RSL 46	Hungary	Hidrokomol P 46
Benzina	OH-HM 46	Mobil	Mobil DTE 25
BP	Energol HLP 46	ÖMV	HLP 46
Bulgaria	MX-M/46	Poland	Hydrol 30
Castrol	Hyspin AWS 46	Rumania	H 46 EP
Čepro	Mogul HM 46	Russia	IGP 30
DEA	Astron HLP 4hy6	Shell	Tellus Oil 46
Elf	Elfolna 46	Sun	Sunvis 846 WR
Esso	Nuto H 46	Texaco	Rando HD B 46
Fam	HD 5040	Valvoline	Ultramax AW 46
Fina	Hydran 46		

4.5.5. Hydraulic unit service

After 50 hours working time, or the latest 3 months after the first run, the first service should be carried out. This includes:

- checking off all screws and connections, fixing points, tubes and hoses for leakage
- Check hydraulic oil level
- During time of duty the oil temperature shouldn't exceed 60-70°C
- check function of signaling components (thermometer, level gauge, dirty filter indicator)
- Check the adjustment of working pressure



To realize a high reliability of the power pack, 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	-	-	•	-	-	-

4.6. Machine cleaning

Clean the machine from the cooling liquid and impurities after every shift stopping. Conserve the guiding surfaces, mainly.

- Clamping jaws guiding of the vice.
- The guiding of the feeder.
- Loading surface of the vice.

4.7. Worn pieces replacement

4.7.1. Hard metal guides replacement

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

1. Dismantle the saw band. Remove the hosepipe leading the cooling agent. Dismantle guide cube of the saw band.



2. Loosen the adjusting screws of the metal guide.



3. Loosen the binding screw of first metal guide. Remove adjustable hard metal guide.



4. Loosen the binding screw of second metal guide. Remove the hard metal guide
5. Insert new hard metal guides and fasten them tightly.
6. Mount the saw band. Adjust the hard metal guides.

4.7.2. Round brush replacement

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



1. Release the nut of the brush, exchange old brush to new brush and screw on the nut of the brush.
2. Set the brush to the saw band.

4.7.3. Saw band guiding rollers replacement

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

ATTENTION!

Guiding pulleys must be replaced together on both guiding cubes!!

1. Dismantle the saw band.
2. Disconnect the hose from the cooling agent, screw off the pressure regulation. Let the pressure regulation connected to the hydraulic system. Dismantle the guiding cube of the saw band..



3. Tighten the guiding cube to the vice and dismantle both eccentrics with bearings following way.

ATTENTION!
Mark both eccentrics placing and components on the eccentric!
Eccentrics must not be replaced with each other!!

- Screw off nuts from eccentrics..



- Remove eccentrics from bearings by means of the swager



- Change all bearings and other worn parts.



- Install eccentrics to the cubes. Install components on both eccentrics in given order. Put bearings by means of the preparation on eccentrics.

ATTENTION!
Do not replace the eccentrics placing in the cube



- Screw on nuts on both eccentrics and tighten them.



9. Insert the saw band to the guiding cube (ca. 15 – 20 cm). Set the eccentrics by means of the wrenches, the saw band must run in the centre. Guide pulleys must not press too much on the band, but must spin freely during the band run.
10. Tighten nuts on both eccentrics.
11. Remove the testing piece of saw band from the cube lead. Install the guiding cube on the machine and connect the pressure regulation to the cut and cooling. Install the saw band.

4.7.4. Stretching wheel replacement

1. Dismantle the saw band.



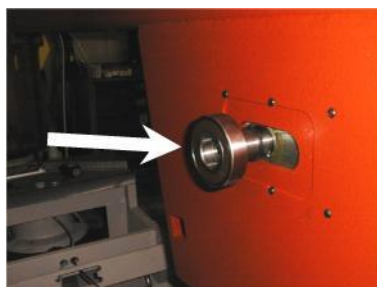
2. Screw off the screw and take down the washer.



3. Pull off the wheel from the shaft by means of the three-armed puller. If bearing stayed on the shaft, pull off it too
4. Check score of the bearings of the stretching wheel and replace them for new.



5. Clean the shaft and grease it with oil. Insert retaining ring to the groove.



6. Install bearing on the shaft and move it to the retaining ring. Insert the distance ring on the shaft and move it to the bearing.



7. Insert the retaining ring to the hole in the wheel.



8. Insert the bearing to the hole in the wheel and press it to the retaining ring.



9. Put the wheel on the shaft and screw on the preparation to the wheel stretching to the hole in the shaft.



10. Pull on the wheel on the shaft.



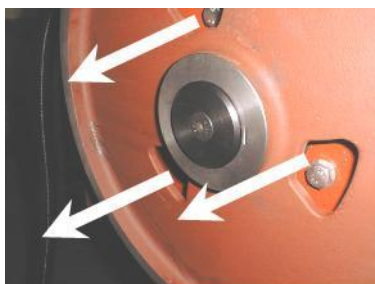
11. Screw on washer and screw back.
 12. Install the saw band. Wheel replacement is ready.

4.7.5. Driving wheel replacement

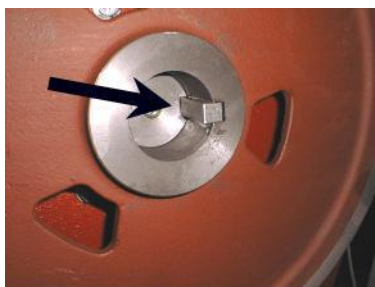
1. Dismantle the saw band



2. Screw off the screw and remove the washer.



3. Pull off the wheel from the shaft by means of the three-armed puller.



4. Install the wheel on the shaft. Insert the feather to the groove.



5. Screw on the preparation to the wheel stretching to the hole in the shaft. Pull on the wheel on the shaft.



6. Screw on washer and screw back.
7. Install the saw band. Wheel replacement is ready.

4.7.6. Cooling pump replacement

Only a qualified worker can carry out the connection!

High-voltage shock may have fatal results

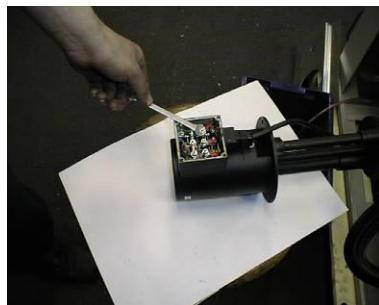
1. Pull the tank with the liquid from the pedestal..
2. Remove the hosepipe leading to the cooling agent from the plug on the pump. Screw off four screws from the cooling pump flange and pull out the pump from the sheet metal holder.



3. Remove the cover of the pump terminal switchboard. Disconnect 4 terminal connectors of the input cables. Cables are identified according to the red clamps..



4. Loosen the bushing and pull the cable out from the pump.



5. Dismantle new pump switchboard cover. Push the cable through the bushing and fasten it.



6. Screw on the cable bushing and cover of the terminal block. Do not forget the rubber gasket! Tighten the cooling liquid hose with non-stick tape and screw it again. Install cooling liquid hose, place the pump on the sheet metal holder and screw it

5. **Troubleshooting**

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 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.	Rise the saw band stretching and set the limit switch.
	- Wrongly chosen tooth system of the saw band.	Replace the saw band and keep the instructions of manufacturer on new saw band choice.
	- Worn saw band.	Replace the saw band.
	- Wrongly balanced roller conveyor.	Set the roller conveyor.
	- Dirty feeding board.	Cleanse the feeding board from debris, chip and residue material.
	- Guiding arm and guiding cube are loosened.	Clamp the guiding arm.
	- Guiding arm and cube are too far from the material.	Set the guiding cube to the material.
	- Too fast cutting rate.	Lower the material feeding speed.
	- Unexpected oscillation in material quality.	Set the cut and feeding speed to the relevant 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 cut angle.	Check the angle adjustment with a protractor and possibly set 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 arm and guiding cube are loosened.	Fasten the guiding arm 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.	Raise the tightening of the saw band set the scanner 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 use as 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 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 guide and if it is too worn, replace hard metal guides according to chapter „Worn pieces replacement“

Problem	Possible causes	Repair
	- Worn saw band guide bearings.	Check guiding bearings and if you notice some sort of excessive damage, replace them according to chapter „Worn pieces replacement“
	- Wrongly adjusted guiding cubes of the saw band.	Set guiding cube according to chapter „Servicing and adjustment“
	- Wrongly adjusted down feed and saw band speed.	Adjust the feeding and speed of a saw band according to values published by saw band manufacturer.
	- Different material quality.	Adjust feeding and speed of a saw band according to desired material (try cut-test).
	- Low-class saw band	Replace the saw band (contact your local accessory supplier for more information)
	- Wrongly chosen saw band tooth system.	Replace the saw band and keep instructions of the manufacturer on the choice.
	- Wrongly adjusted tracking.	Check the space between top of a saw band and driving wheel. Perhaps adjust the tracking as described in chapter „Servicing and adjustment“
4. Insufficient cut output.	- Worn saw band.	Replace the saw band and keep instructions of the manufacturer on the choice.
	- Wrong saw band tooth system.	Replace the saw band and keep instructions of the manufacturer on the choice.
	- Wrongly set down feed and speed of a saw band.	Set feed and speed of a saw band according to values published by 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 messed-up.	Cleanse stop point surface of the limit switch from debris and residue material.
6. By choke is not possible turn	- Metal clamps between valve and panel.	Clamps must be removed and put on the shaft O-Ring about 10x2 mm.
	- Metal clams are in body of valve.	Valve must be cleared or changed.
7. Saw band drive cannot be started.	- Pressure switch is adjusted wrong.	Set the pressure switch according to chapter „Servicing and adjustment“
	- Pressure switch is defective.	Replace defective parts of the pressure switch.
8. The saw bands are cracked.	- In stretching wheel is wrong adjusting geometry.	Adjust distance band from recess wheel c.2 mm according to operating instructions.
	- Hard metal plates of circuit saw band are not adjusting.	Hard metal plates of circuit saw band must be adjusting according to operating instructions.
	- Guiding cubes are not adjusting (bearings + hard metal circuit)	Guiding cubes must be adjusting (bearings + hard metal circuit) according to operating instructions.
	- Bearings of guiding cubes are used (rolling elements are damaged or outside ring of bearing has conical form).	Bearings of guiding cubes must be replaced. Bearings must be adjusting according to operating instructions.
9. Damage tooth system of the saw band	- In gripping the lifting cylinder is backlash.	
	- Squeezed pin upper or downer holder of the lifting cylinder.	Exchange complete upper or downer holder of lifting cylinder.
10. The saw is cut downing.	- Geometry of hardmetal guiding cubes is wrong adjusted.	Hardmetal guiding cubes must be adjusted.
	- Bearings of guiding cubes are used.	Bearings of guiding cubes must be replaced.
11. Cleansing of the saw band is not functional.	- Elastic wheel of the brush drive is worn-down.	Elastic wheel of the brush must be changed.
	- Knurling of the driving wheel is worn-down.	Driving wheel must be changed.
	- The shaft of the brush drive is rusted.	The shaft of the brush must be cleaned and oiled.

Problem	Possible causes	Repair
	- The brush position and the brush cover is adjusted wrong – with the brush cannot be turned.	The brush cover must be posed, in order to the brush can be turned.
12. The saw arm periodically rise and fall during the cut; this cause short lifetime of the saw band.	- Backlash in driving wheel lodgement on the shaft.	Change the driving shaft for a long one, new bearings, distance ring, new driving wheel, spring, two covers on the forehead of the shaft + screws.
	- Worn channel for spring.	

5.2. Electric and hydraulic problems

Problem	Possible causes	Repair
1. Machine is not possible start.	- In socket is not voltage	Line voltage must be checked.
	- Transfer relay is closed (thermal protector)	Each FA relay must be checked.
	- Limit switch of saw band stretching, cover of frame or cover of saw band is not started.	Check of saw band stretching and covers closing.
2. When cut is finished, the frame is not raising.	- Bottom limit switch is adjusted wrong.	Bottom limit switch must be adjusted according to chapter ADJUSTING.
	- In hydraulic (pneumatic) ring is error. HYTOS (BOSCH) is not acting to frame uplift.	Function of magnetic valve must be checked, valve must be closed, voltage of clamps and inductor must be checked.
3. Electric motor and pump are without voltage. Between contactor and thermal protector is not voltage.	- Wrong contactor.	Replace contactor of engine.
4. The indicator of speed saw band is not functional.	- Sensor of speed is not adjusted.	Sensor of speed must be adjusted.
	- Defective display	The display must be changed.
	- Wrong sensor – diode of indicator speed is not light.	Sensor must be changed and adjusted.
5. Protector is switched off from engine hydraulic aggregate MA3 sometimes.	- Into hydraulic system is high working pressure.	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 motor starter FA1.
7. Hydraulic aggregate is switched on but the saw arm or the main vice is not functional	- Wrong connection of electrical supply. The electrical phases are connected conversely.	The phases must be switched. Only service engineer can do this.
8. Cooling is not active	- Lack of cooling agent.	Fill the tank with cooling agent.
	- Thermal relay is defective	Change the thermal relay
	- Input hosepipe is broken or obstructed.	Check the cooling circuit and perhaps cleanse cooling system.
	- Cooling pump protection is defective	Check the protection of cooling pump if need change it.
	- Cooling pump is defective.	Replace the cooling pump.

5.3. Hydraulic problems

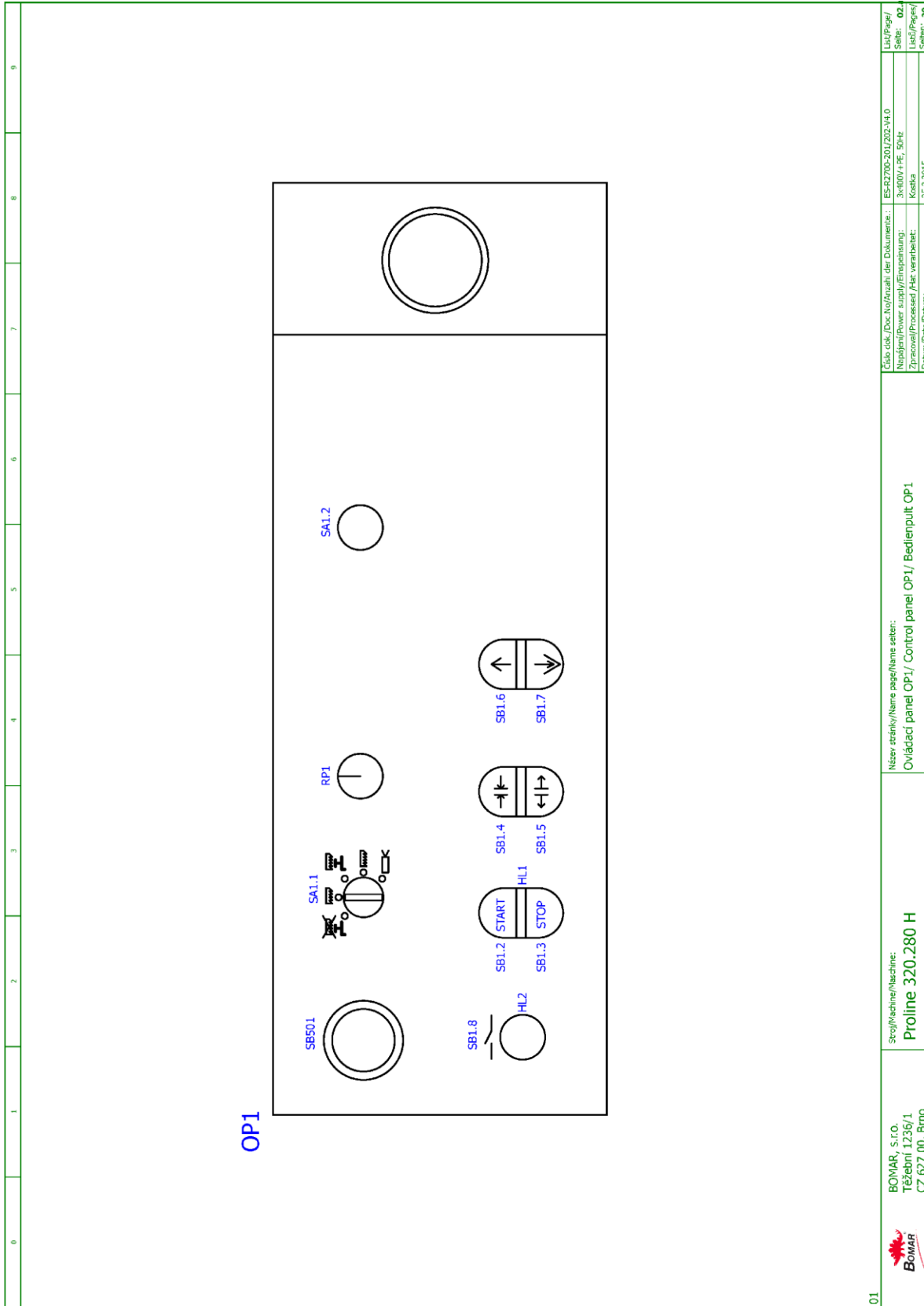
Problem	Possible causes	Repair
1. Hydrogenerator not supplying oil	• reverse rotation	Check the connections of each phase. Reconnect properly connection of the electrical phases.
	• shortage of oil in the tank	Add hydraulic oil
	• Oil viscosity does not correspond prescribed viscosity value	Change hydraulic oil.
	• Hydrogenerator malfunction	Call service
	• Wrong power supply connection.	Check the connections of each phase. Reconnect properly connection of the electrical phases.
2. Hydraulic oil contains bubbles	• Hydraulic circuit is not adequately deaerated	Make deaeration of hydraulic circuit.
	• Low oil level	Add hydraulic oil
	• the pump shaft seals damaged	Call service
3. Increased mechanical noise	• damaged joint drive	Call service
	• damaged or destroyed motor bearings	Call service
	• air intake	Check for leaks.
4. Low pressure, pump supplies oil	• problem in the safety valve	Wrong settings. Check the settings and adjust the safety valve.
	• pump wear	Call service
	• external or internal leakage	Call service
5. Hydrogenerator is seized	• damage by solid particles in oil	Make oil filtration, or call the service.
	• non-prescribed oil	Change hydraulic oil.
	• wrong type of oil	Change hydraulic oil.
	• exceeding the life of the pump	Call service
6. Overheating oil	• cooler malfunction	Check the cooler function or call service.
	• wear the pump, the energy is converted into heat	Call service
7. Hydraulic valve can not be readjusted	• electromagnet has no signal (voltage) - interrupted supply lines	Check again.
	• Electromagnet coil burnt	Replace coil – Call service.
	• spool valve sticking	Replace valve – Call service

6. Schematics

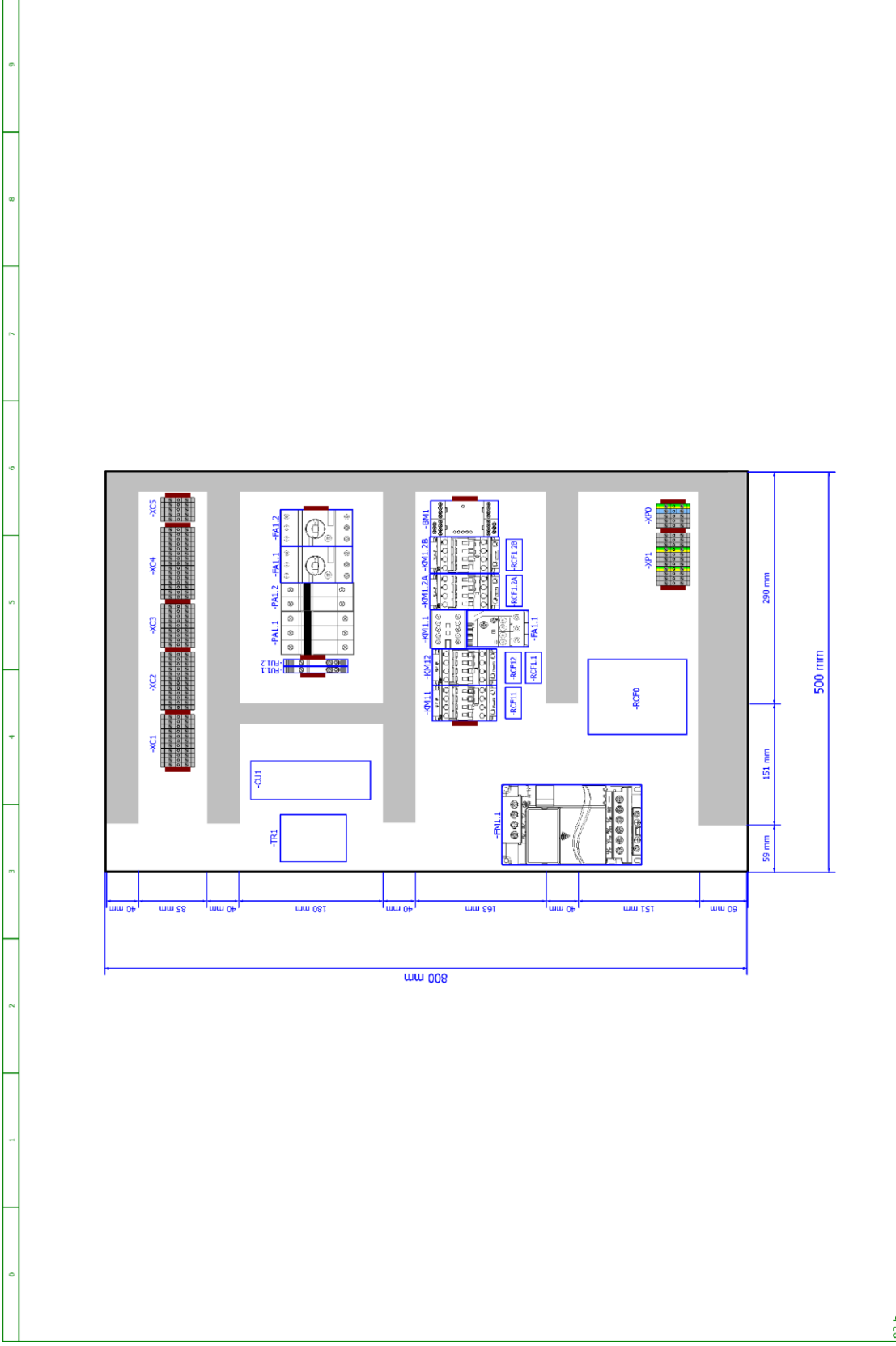
6.1. Elektrické schéma /
 Elektroschema /
 Electric scheme – 3×400 V + PE, 50 Hz

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 <p>Bomar, spol. s r.o. Těžební 1236/1 627 00 Brno Czech republic</p> <p>Proline 320.280 H ES-R2700-201/202-V4.0 Wiring diagram 3x400V+PE, 50Hz</p>										
 <p>BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno</p>			<p>Stroj/Machine/Maschine: Proline 320.280 H</p>				<p>Název stránky/Name page/Name sethn: Úvodní strana/ Start page/ Startseite</p>		<p>Cílová odk./Doc.No/Anzahl der Dokumente.: ES-R2700-201/202-V4.0 Napětí/Power supply/Einspannung: 3x400V+PE, 50Hz Zpracoval/Processed/Hat veranbaltet: Kostka Datum/Date/Datum: 25.3.2015</p>	
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02.a	Ovládací panel OP1/ Control panel OP1/ Bedienpult OP1	25.3.2015							
02.b	Rozmístění hydraulických ventilů/ Placement of Hydraulic valves/ Platzierung die Hydroventile	29.4.2015							
02	Rozmístění prvků v rozvaděči R1/ Placement of elements in enclosure R1/ Platzierung der Elemente im Schaltschrank R1	29.4.2015							
03	Kusovník artiklů/ Parts list/ Artikelstückliste	3.11.2015							
03.a	Kusovník artiklů/ Parts list/ Artikelstückliste	3.11.2015							
03.b	Kusovník artiklů/ Parts list/ Artikelstückliste	3.11.2015							
04	Slova část M1..1/ Power part M1..1/ Feld partie M1.1	6.5.2015							
04a	Slova část M2,M3,M5/ Power part M2,M3,M5/ Feld partie M2,M3,M5	3.11.2015							
04b	Slova část M1, M4/ Power part M1, M4/ Feld partie M1, M4	3.11.2015							
05	Řídicí systém/ Control system/ Steuersystem	25.3.2015							
06	Tlačítka ovládací panel OP1/ Button control panel OP1/ Taste Bedienpult OP1	25.3.2015							
07	Vstupy/ Inputs/ Eingänge	3.11.2015							
08	Hydraulické ventily/ Hydraulic valves/ Hydroventile	25.3.2015							
09	Stykače motorů/ Motor contactors/ Motor-Schutzschalter	25.3.2015							
10	Bezpečnostní okruh/Safety circle/Sicherheitsbereich	25.3.2015							
11	Ovládací čásky/Control device/Steuerinheit	25.3.2015							
12	Snímač výšky ramene/Sawframe position sensor/Rahmenposition sensor	2.4.2014							
13	Příslušenství/Accessories/Zubehör	25.3.2015							
00	 BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno	stroj/Machine/Maschine: Proline 320.280 H	Název stránky/Name page/Name seite: Obsah/ Table of contents/ Inhaltsverzeichnis	Cílová cok./Doc.No/Anzahl der Dokumente.: ES-R2700-201/202-V4.0 Napájení/Power supply/Einspeisung.: 3x400V+PE, 50Hz Zpracování/Processed /Hat.vanarbeite.: Korkka Datum/Date/Datum.: 3.11.2015	List/Page/ Seite: 01 List/Page/ Seiten: 20				




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<div style="border: 1px solid black; padding: 10px; margin: 0 auto; width: 80%;"> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"> HV1.1 Svěrák upnout Vice clamp Schraubstock spannen </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> HV1.2 Svěrák povolit Release vice Schraubstock lösen </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"> HV1.4 Rameno dolů Arm down Rahmen nach unten </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> HV1.3 Rameno nahoru Arm up Rahmen nach oben </div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"> HV1.5 Rameno rychle dolů Arm quickly down Rahmen schnell nach unten </div> </div> </div>																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">02.a</td> <td style="width: 30%;"> Název stroje/Name page/Name seth: Rozmístění hydraulických ventilů/ Placement of Hydraulic valves/ Platzierung die Hydroventile </td> <td style="width: 30%;"> Stoff/Machine/Maschine: Proline 320.280 H </td> <td style="width: 10%;"> LK/Page/ Seite: 02.a List/Page/ Seiten: 20 </td> </tr> <tr> <td></td> <td> Cíle dok./Doc.No/Anzahl der Dokumente: ESR2700-201/202-V4.0 Napájení/Power supply/Einspeisung: 3x400V + PE, 50Hz Zpracování/Processed /Hat. verarbeitet: Korkka Datum/Data/Datum: 29.4.2015 </td> <td></td> <td></td> </tr> </table>										02.a	Název stroje/Name page/Name seth: Rozmístění hydraulických ventilů/ Placement of Hydraulic valves/ Platzierung die Hydroventile	Stoff/Machine/Maschine: Proline 320.280 H	LK/Page/ Seite: 02.a List/Page/ Seiten: 20		Cíle dok./Doc.No/Anzahl der Dokumente: ESR2700-201/202-V4.0 Napájení/Power supply/Einspeisung: 3x400V + PE, 50Hz Zpracování/Processed /Hat. verarbeitet: Korkka Datum/Data/Datum: 29.4.2015		
02.a	Název stroje/Name page/Name seth: Rozmístění hydraulických ventilů/ Placement of Hydraulic valves/ Platzierung die Hydroventile	Stoff/Machine/Maschine: Proline 320.280 H	LK/Page/ Seite: 02.a List/Page/ Seiten: 20														
	Cíle dok./Doc.No/Anzahl der Dokumente: ESR2700-201/202-V4.0 Napájení/Power supply/Einspeisung: 3x400V + PE, 50Hz Zpracování/Processed /Hat. verarbeitet: Korkka Datum/Data/Datum: 29.4.2015																

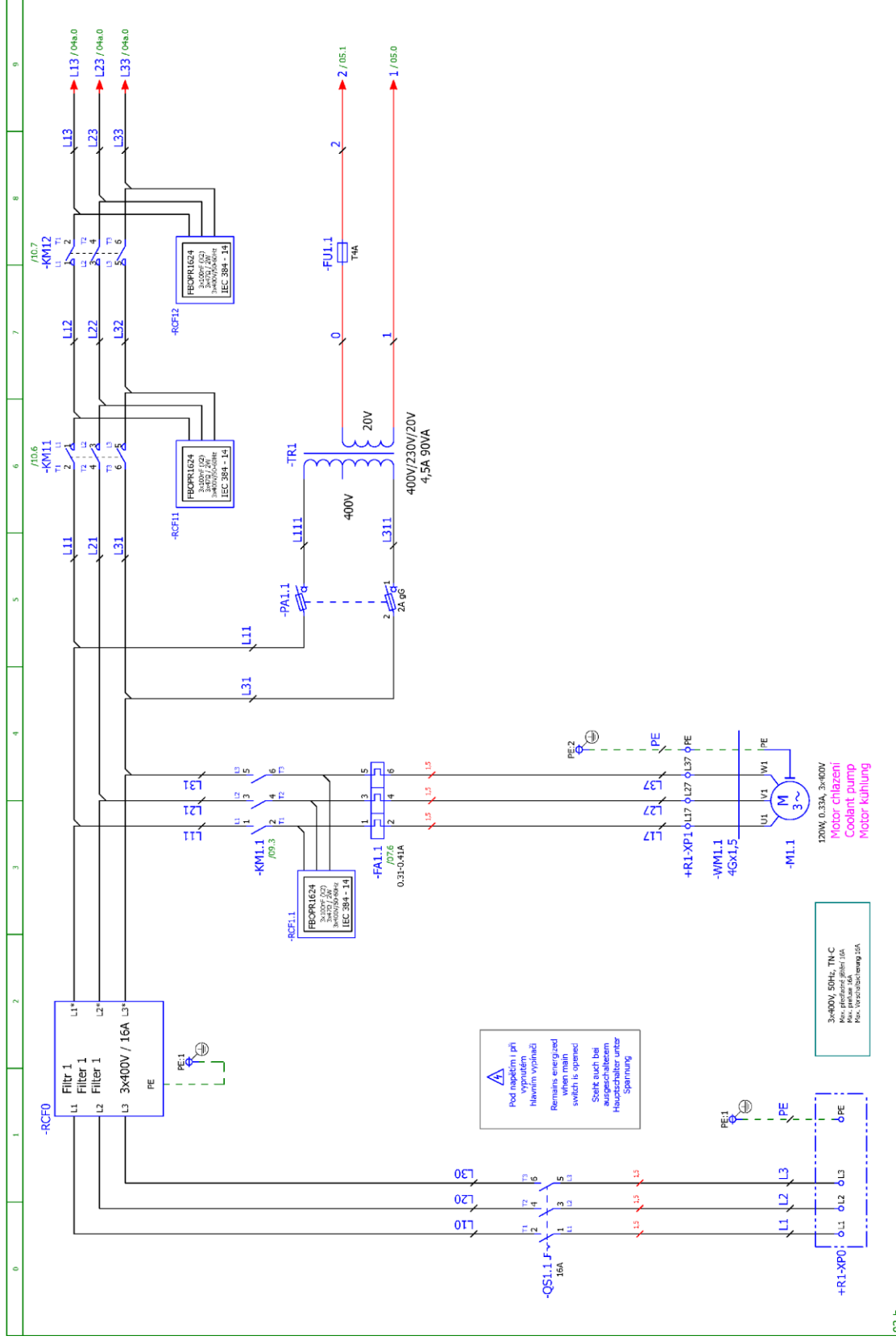


02.b	BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno	Stroj/Machine/Maschine: Proline 320.280 H	Název stránky/Name page/Name sheet: Rozmístění prvků v rozvaděči R1 / Placement of elements in enclosure R1 / Platzierung der Elemente im Schaltschrank R1	Číslo dok./Doc.No./Anzahl der Dokumente.: ESR-2700-201/202-V4.0 Napájení/Power supply/Einspeisung: 3x400V+PE, 50Hz Zpracování/Processed/Her.verarbeitet: Kaska Datum/Date/Datum: 29.4.2015	Liš/Page/ Seit: 02 Liš/Page/ Seit: 20
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Parts list										
Device identification	Device description	Type number	Manufacturer	Part number	Quantity	Location (page.column)				
-FA1.2	Auxiliary contacts - 1xNO+1xNC	HKF1-11	ABB	91.046.002	1	/04a.2				
-FA1.3	Auxiliary contacts - 1xNO+1xNC	HKF1-11	ABB	91.046.002	1	/04a.6				
-HL1	Red light for Eaton adapter	M22-LED-R	EATON	91.061.027	1	/09.1				
-KM1.2A	Contact - 4kW/400V, 3P	AF09-30-01-11	ABB	91.040.047	1	/09.4				
-KM1.2A	Mechanical interlock unit	VN/4	ABB	91.041.045	1	/09.4				
-KM1.2B	Contact - 4kW/400V, 3P	AF09-30-01-11	ABB	91.040.047	1	/09.6				
-KM1.2B	Auxiliary contact - 1xNO	CA4-10	ABB	91.041.044	2	/09.6				
-SA1.1	Head with rotary switch - 4 positions	M22 - WRK4	EATON	91.060.087	1	/06.6				
-FU1.1	Tube fuse - 4A/250V, slow, 5x20	T4A/250V	ESKA	91.230.015	1	/04.8				
-FA1.1	Thermal relay - 0.41	T16-0.41	ABB	91.050.030	1	/04.3				
-RP1	Potentiometer 4k7	TP195 4k7/M20A	GES-ELECTRONICS, a.s.	91.283.015	1	/04b.5				
-RP1	Head of potentiometer: 24mm	S8877 BLK	GES-ELECTRONICS, a.s.	91.060.063	1	/04b.5				
-RCF1.1	Efficient RFC filter	FBOPR1.624	Ing. Miroslav Vítěk	91.041.015	1	/04.2				
-RCF1.2A	Efficient RFC filter	FBOPR1.624	Ing. Miroslav Vítěk	91.041.015	1	/04a.1				
-RCF1.2B	Efficient RFC filter	FBOPR1.624	Ing. Miroslav Vítěk	91.041.015	1	/04a.4				
-RCF11	Efficient RFC filter	FBOPR1.624	Ing. Miroslav Vítěk	91.041.015	1	/04.6				
-RCF12	Efficient RFC filter	FBOPR1.624	Ing. Miroslav Vítěk	91.041.015	1	/04.7				
-FA1.1	Motor starter - 2.5A	MS116-2,5	ABB	91.045.021	1	/02.5				
-FA1.2	Motor starter - 2.5A	MS116-2,5	ABB	91.045.021	1	/04a.2				
-FA1.3	Motor starter - 1A	MS116-1,00	ABB	91.045.019	1	/04a.6				
-FU1.2	Fuse terminal	WK4/THS15U	WIELAND	91.251.102	1	/02.5				
-FU1.4	Tube fuse - 200mA/250V, slow, 5x20	T200mA/250V	ESKA	91.230.037	1	/13.1				
-FU1.4	Fuse terminal	WK4/THS15U	WIELAND	91.251.102	1	/13.1				
-HL2	White light for Eaton adapter	M22-LED-W	EATON	91.061.034	1	/10.8				
-KM1.1	Mini contactor - 4kW/400V, 3P	B65-30-01-1.7-71	ABB	91.040.049	1	/09.3				
-KM1.2A	Auxiliary contact - 1xNC	CA4-01	ABB	91.041.043	1	/09.4				
-KM1.2B	Auxiliary contact - 1xNC	CA4-01	ABB	91.041.043	1	/09.6				
-KM11	Contact - 5.5kW/400V, 3P	AF12-30-01-11	ABB	91.040.051	1	/10.6				
<p>02 The manufacturer reserves right to use an equivalent replacement device.</p>										
BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno		Šroff/Machine/Machine: Proline 320.280 H		Název article/Name page/Name set: Kusovník artiklů/ Parts list/ Artikelstückliste		Číslo dok./Doc.No/Anzahl der Dokumente.: Napájecí/Power supply/Einspeisung: Zpracováno/Processed /Hat.vanarbeid.: Datum/Data/Datum:		ES-R2700-2012-V4.0 3x400V+PE, 50Hz Kaska 3.11.2015		List/Page/ Seite: 03 List/Page/ Seiten: 20

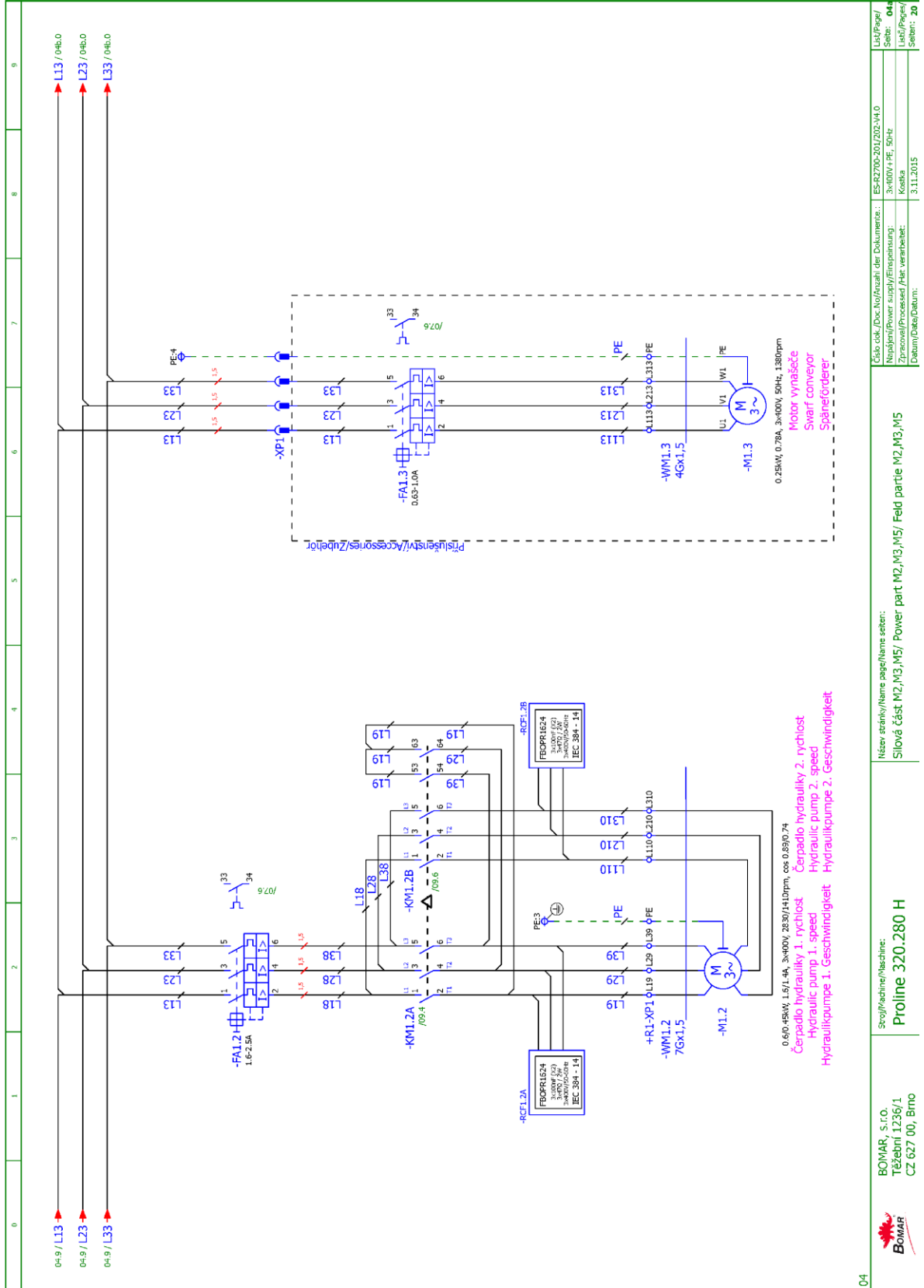
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Parts list									
Device identification	Device description	Type number	Manufacturer	Part number	Quantity	Location (page.column)			
-KM11	Auxiliary contact - 1xNO	CA4-10	ABB	91.041.044	1	/10.6			
-KM12	Contact - 5.5KW/400V, 3P	AF12-30-01-11	ABB	91.040.051	1	/10.7			
-KM12	Auxiliary contact - 1xNO	CA4-10	ABB	91.041.044	1	/10.7			
-PAL.1	Fuse disconnecter E-90 - 2P	E 92/32	ABB	91.241.013	1	/04.5			
-QS1.1	Disconnecter - 3P, 16A	OT16FT3	ABB	91.170.018	1	/04.0			
-RP1	Fastconnect clamp	WAGO 224-112	WAGO	91.250.009	3	/04b.5			
-SA1.1	Mounting adapter	M22-A4	EATON	91.061.045	1	/06.6			
-SA1.1	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	3	/06.6			
-SA1.2	Head for black switch	M22-D-S	EATON	91.060.035	1	/13.1			
-SA1.2	Attaching adapter + INO	M22-AK10	EATON	91.061.021	1	/13.1			
-SB1.2	Double button head white/black start/stop	M22-DDL-WS-GB1/GB0	EATON	91.060.034	1	/06.1			
-SB1.2	Mounting adapter	M22-A	EATON	91.061.028	1	/06.1			
-SB1.2	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.1			
-SB1.3	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.2			
-SB1.4	Mounting adapter	M22-A	EATON	91.061.028	1	/06.3			
-SB1.4	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.3			
-SB1.4	Double button head white/black, arrow close/open	M22-DDL-WS-*	EATON	91.060.055	1	/06.3			
-SB1.5	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.3			
-SB1.6	Mounting adapter	M22-A	EATON	91.061.028	1	/06.4			
-SB1.6	Double button head white/black, arrow up/down	M22-DDL-WS-*.*	EATON	91.060.054	1	/06.4			
-SB1.6	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.4			
-SB1.7	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.5			
-SB1.8	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/10.3			
-SB1.8	Yellow transparent switch	M22-DL-Y	EATON	91.060.053	1	/10.3			
-SB501	Emergency-stop mushroom push - button + 3xNC	YW1B-V4E02R	IDEC	91.060.084	1	/10.1			
-TR1	Toroidal transformer - 400V / 230V / 20V 4,5A 90VA	400V/230V/20V 4,5A 90VA	KARBAN s.r.o.	91.080.023	1	/04.6			
-SQ1.5	Safety Limit Switch - 2x NC	QX58	KEDU	91.173.012	1	/10.1			
-PAL.1	Tube fuse - 2A, 10x38, slow	PV10 2A gG	OEZ	91.230.034	2	/04.5			
<p>03 The manufacturer reserves right to use an equivalent replacement device.</p>									
 <p>BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno</p>		<p>Šteř/Machine/Machine: Proline 320.280 H</p>		<p>Název stránky/Name page/Name sheet: Kusovník artiklů/ Parts list/ Artikelstückliste</p>		<p>Číslo dok./Doc.No/Anzahl der Dokumente.: ES-R2700-201/202-V4.0 Napětí/Power supply/Einspannung: 3x400V+PE, 50Hz Zpracováno/Processed /Hat.vyrobil: Koutka Datum/Date/Datum: 3.11.2015</p>		<p>Liš/Page/Sheet: 03 Liš/Page/Sheet: 20</p>	

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Parts list														
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-PA1.2	Fuse disconnecter E-90 - 3P	E 93/32	ABB	91.241.014	1	/04b.1								
-PA1.2	Tube fuse - 20A, 10x38, slow	PV10 20A aM	OEZ	91.230.049	3	/04b.1								
-SQ1.4	Limit switch - 1NC+1NO	D4N-4A31	OMRON	91.173.007	1	/07.6								
-SQ1.1	Limit switch - 1NO + 1NC, pulley, M2, snap action	FR 605-M2	PIZZATO	91.173.009	1	/07.3								
-SQ1.2	Limit switch - 1NO + 1NC, pulley, slow action	FR 615-M2	PIZZATO	91.173.044	1	/07.4								
-SQ1.3	Limit switch - 1NO + 1NC, long adjustable pulley, M2, snap action	FR 655-M2	PIZZATO	91.173.045	1	/07.5								
-FM1.1	Frequency converter - 3.7kW, 3x400VAC	VFD037E43A	DELTA ELECTRONICS, INC.	91.012.094	1	/04b.1								
-QS1.1	Handle switch 48x48mm - black	OHBS3PH	ABB	91.180.018	1	/04.0								
-BM1	Safety circuit relay - 3xNO, 24VDC	RT6	ABB	91.051.056	1	/10.4								
-CU1	Control unit	SMA, 4.01W	Bomar	265.918	1	/05.0								
-RCF0	Input noise filter 16A	16EB15/50	WIDECOM TECHNOLOGY s.r.o.	91.041.062	1	/04.1								
-FU1.1	Fuse terminal	WK4/THS15U	WIELAND	91.251.102	1	/04.8								
-M1.5	Fan 24VDC, 154CFM	RDH1238 B2	Xinruilian Electronic Co.	91.015.126	1	/04b.8								
<p>03.a</p> <p>The manufacturer reserves right to use an equivalent replacement device.</p> <table border="0"> <tr> <td> BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno </td> <td> Šroff/Machine/Machine: Proline 320.280 H </td> <td> Název artiklu/Name page/Name setten: Kusovník artiklů/ Parts list/ Artikelstückliste </td> <td> Cílová cca./Doc.No./Anzahl der Dokumente.: ES-R2700-201/202-V4.0 Napájení/Power supply/Einspeisung: 3x400V+PE, 50Hz Zpracování/Processed /Hat veranbelet: Korkka Datum/Date/Datum: 3.11.2015 </td> <td> LK/Page/ Seite: 03.4 List/Pages/ Seiten: 20 </td> </tr> </table>										 BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno	Šroff/Machine/Machine: Proline 320.280 H	Název artiklu/Name page/Name setten: Kusovník artiklů/ Parts list/ Artikelstückliste	Cílová cca./Doc.No./Anzahl der Dokumente.: ES-R2700-201/202-V4.0 Napájení/Power supply/Einspeisung: 3x400V+PE, 50Hz Zpracování/Processed /Hat veranbelet: Korkka Datum/Date/Datum: 3.11.2015	LK/Page/ Seite: 03.4 List/Pages/ Seiten: 20
 BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno	Šroff/Machine/Machine: Proline 320.280 H	Název artiklu/Name page/Name setten: Kusovník artiklů/ Parts list/ Artikelstückliste	Cílová cca./Doc.No./Anzahl der Dokumente.: ES-R2700-201/202-V4.0 Napájení/Power supply/Einspeisung: 3x400V+PE, 50Hz Zpracování/Processed /Hat veranbelet: Korkka Datum/Date/Datum: 3.11.2015	LK/Page/ Seite: 03.4 List/Pages/ Seiten: 20										

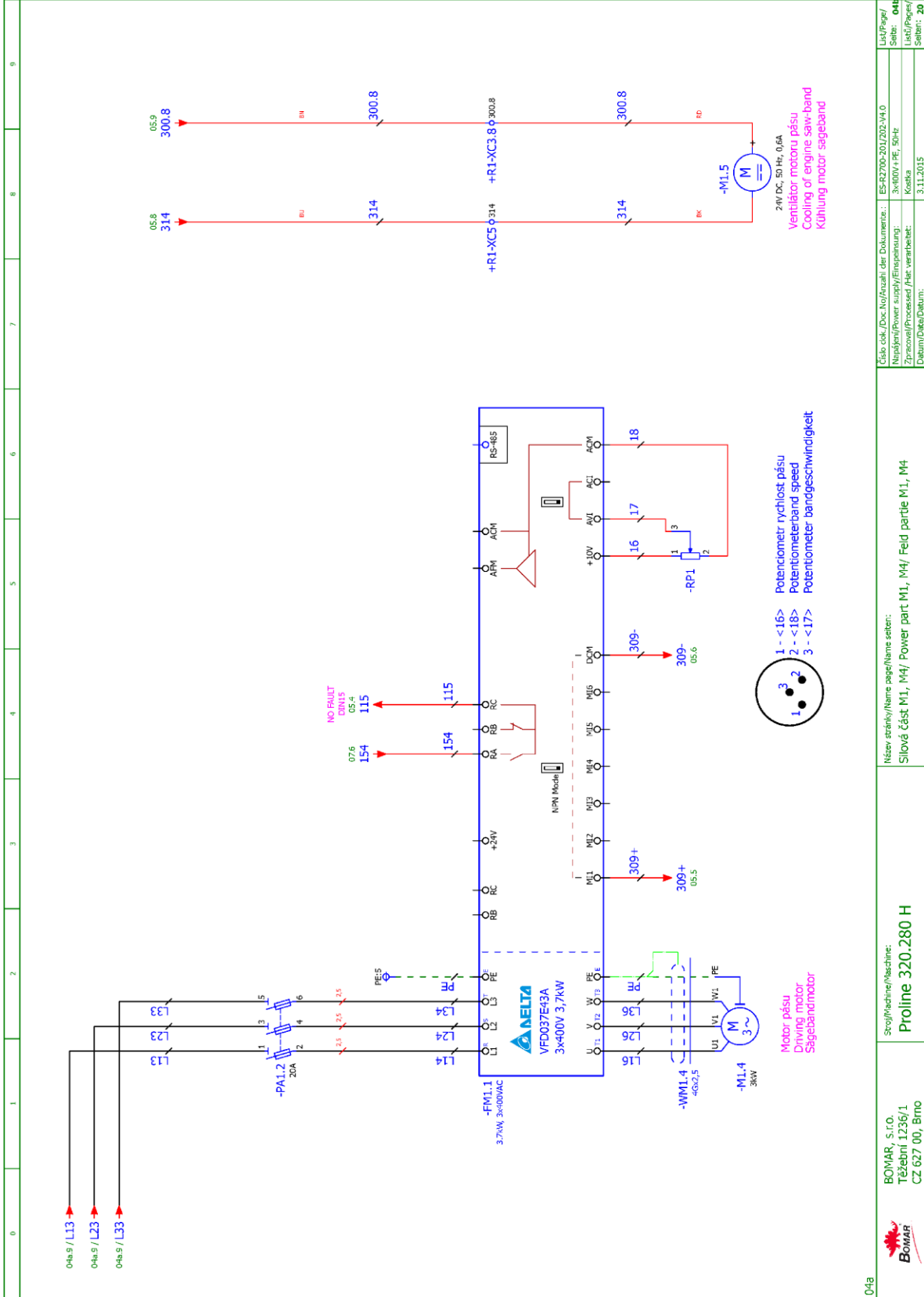


03.b	Stroj/Machine/Maschine: Proline 320.280 H	Název stránky/Name page/Name setten: Slová část M1.1./ Power part M1.1./ Feld partie M1.1	Číslo dok./Doc.No./Anzahl der Dokumente.: ESR-R2700-201/202-V4.0	LiSt/Page/ Seit: 04
			Napájení/Power supply/Einspeisung: 3x400V + PE, 50Hz	LiSt/Page/ Seit: 04
			Zpracování/Processed /Her.vorbereit: Kostka	LiSt/Page/ Seit: 20
			Datum/Date/Datum: 6.5.2015	LiSt/Page/ Seit: 20

Schéma
Schemata
Schematics



04	<p>Název stránky/Název page/Name sether: Slová Gást M2,M3,M5/ Power part M2,M3,M5</p> <p>Stroj/Machine/Maschine: Proline 320.280 H</p> <p>BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno</p>	04
04	<p>Číslo dok./Doc.No./Anzahl der Dokumente.: ESR2700-201202-V4.0</p> <p>Nápisel/Power supply/Ernennung.: 3~400V + PE, 50Hz</p> <p>Zpracovatel/Processed/Her.vyrobitel.: Krotka</p> <p>Datum/Data/Datum.: 3.11.2015</p>	04
04	<p>Stránka/Page/Seite.: 04</p>	
04	<p>Stránka/Page/Seite.: 20</p>	



CS: Úč. / Doc. No./Anzahl der Dokumente:	ES-R-2702-201/202-V4.0
Název/Power supply/Einspeisung:	3x400V+PE, 50Hz
Zpracování/Processed /Hr. verarbeitet:	Kostka
Datum/Date/Datum:	3.11.2015
LiSt/Page/Seit:	04H
LiSt/Page/Seit:	20

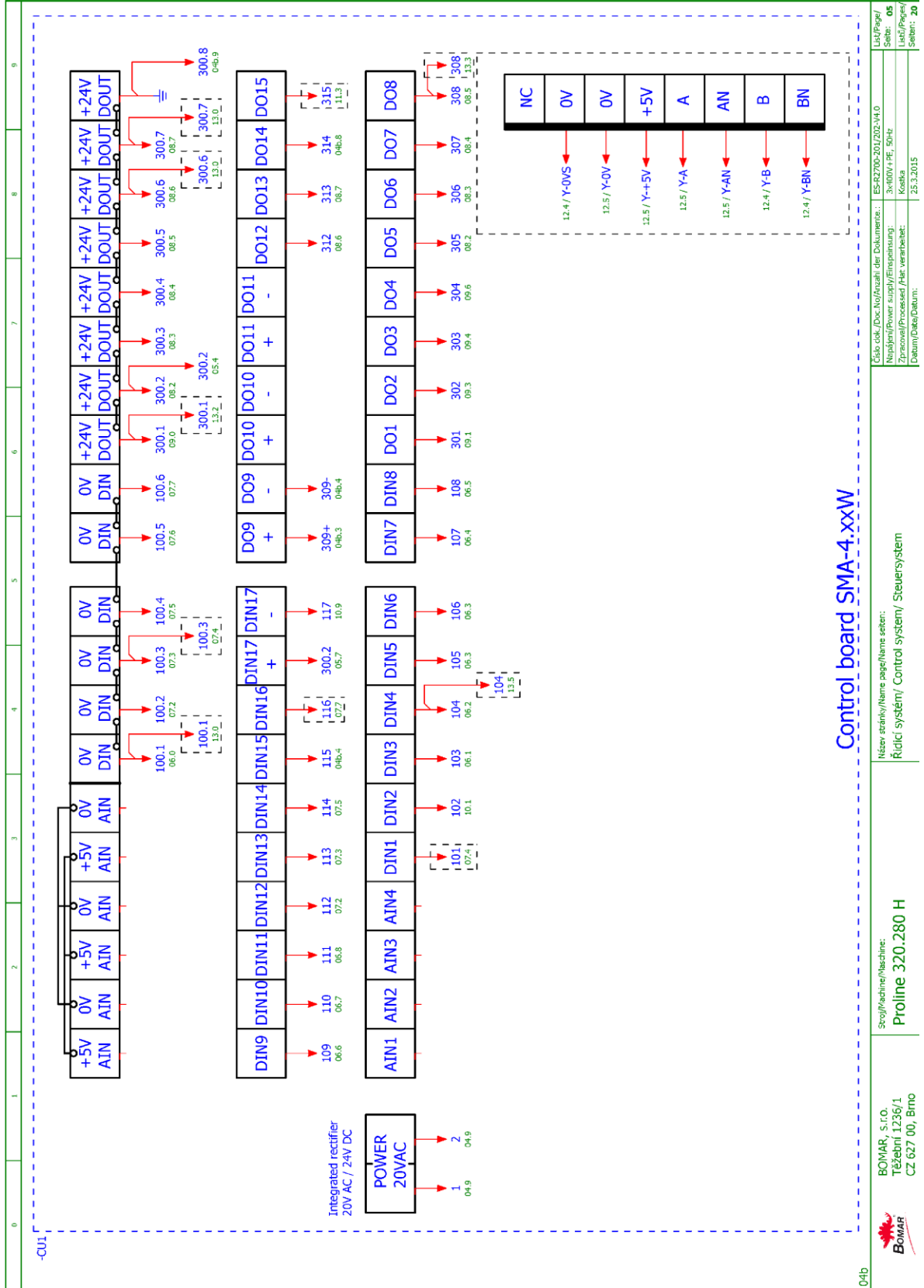
Název schém/Nome page/Nome schém:	Silová část M1, M4/ Power part M1, M4/ Feld partie M1, M4
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Stroj/Machine/Maschine:
Proline 320.280 H

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



Schéma
Schemas
Schematics



Číslo dok./Doc.No/Anzahl der Dokumente: ES-R2700-2012-VA-0
 Napájecí/Power supply/Einspeisung: 3x100V+PE, 50Hz
 Zpracování/Processed/Her.vyrobě: Kaska
 Datum/Data/Datum: 25.3.2015

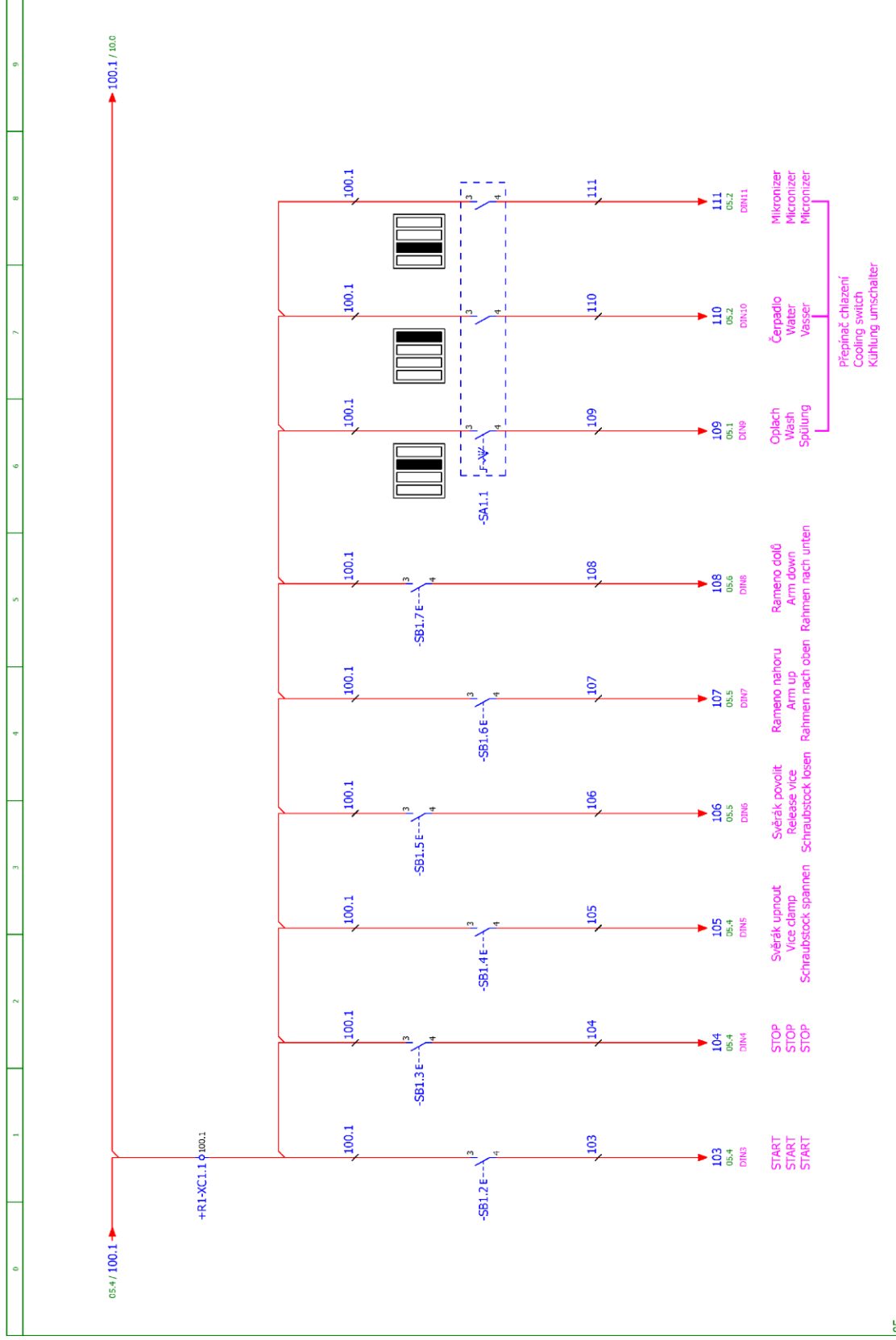
Název stránky/Name page/Name set: Řídicí systém/ Control system/ Steuersystem

Stroj/Machine/Maschine: Proline 320.280 H

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 CZ 627 00, Brno



04b



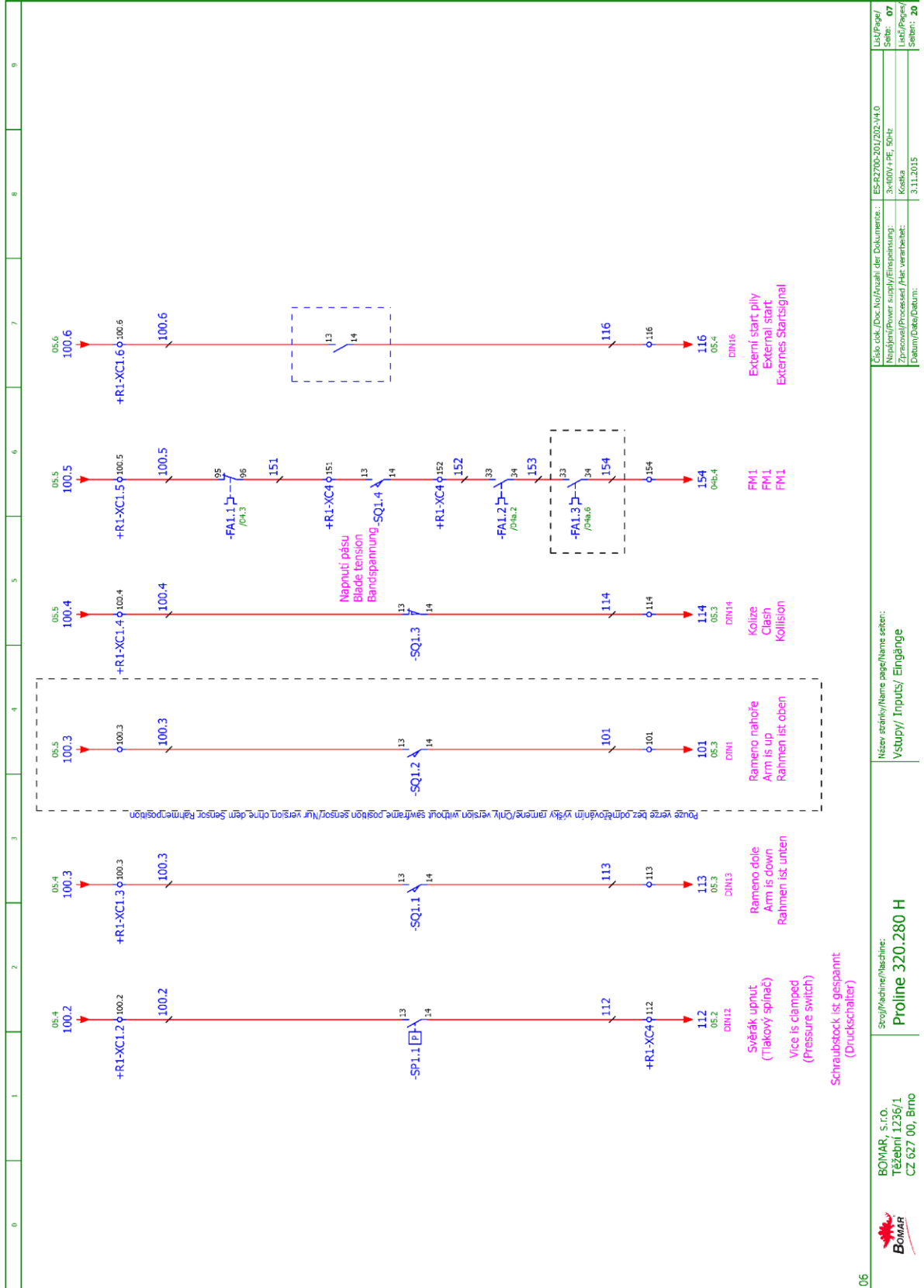
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	3x400V+PE, 50Hz	3x400V+PE, 50Hz	06
	Kostka	Kostka	06
	25.3.2015	25.3.2015	20

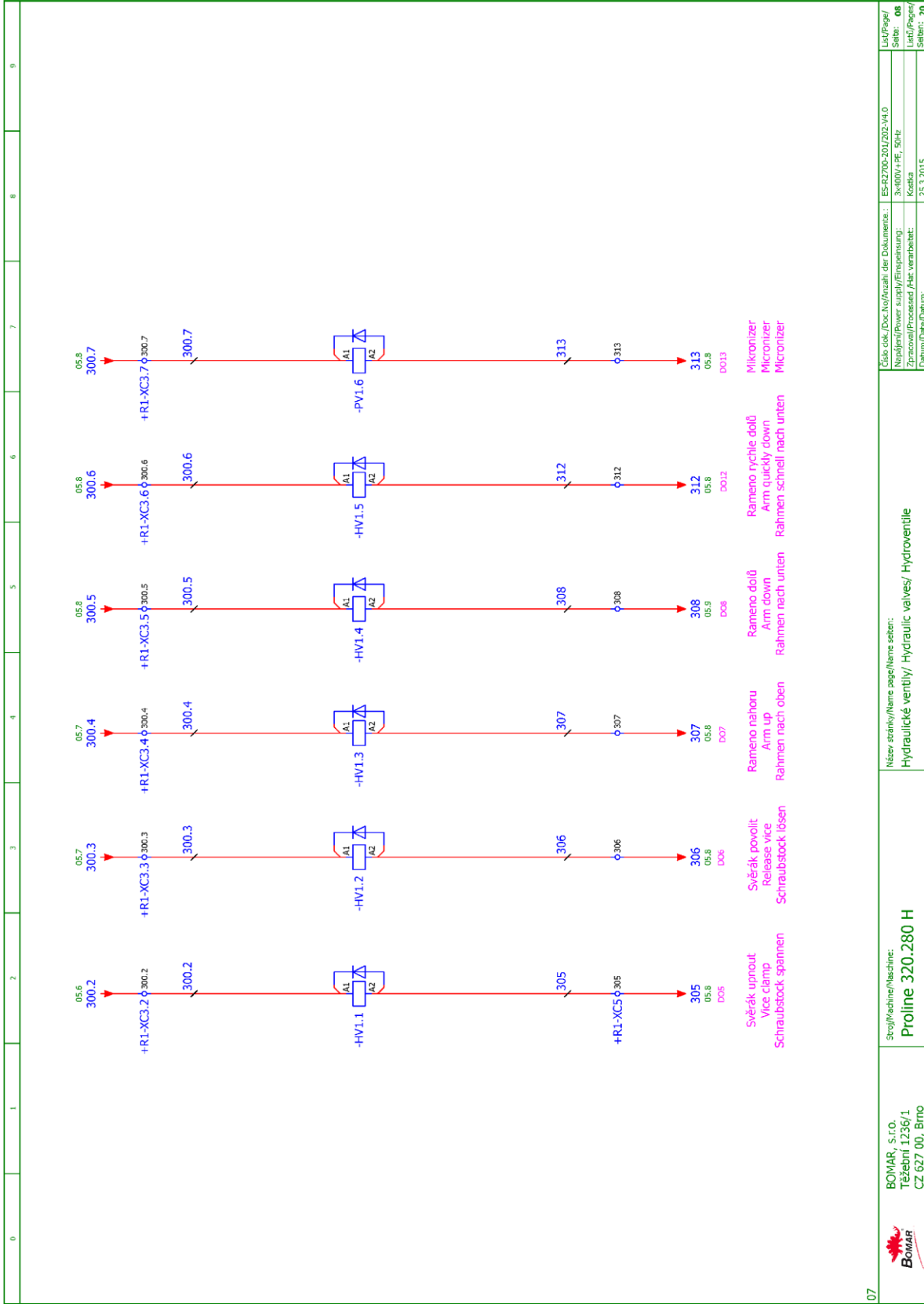
Název stránky/Name page/Name sheet:
Tlačítka ovládací panel OP1 / Button control panel OP1 / Taste Bedienpult OP1

Stroj/Machine/Maschine:
Proline 320.280 H

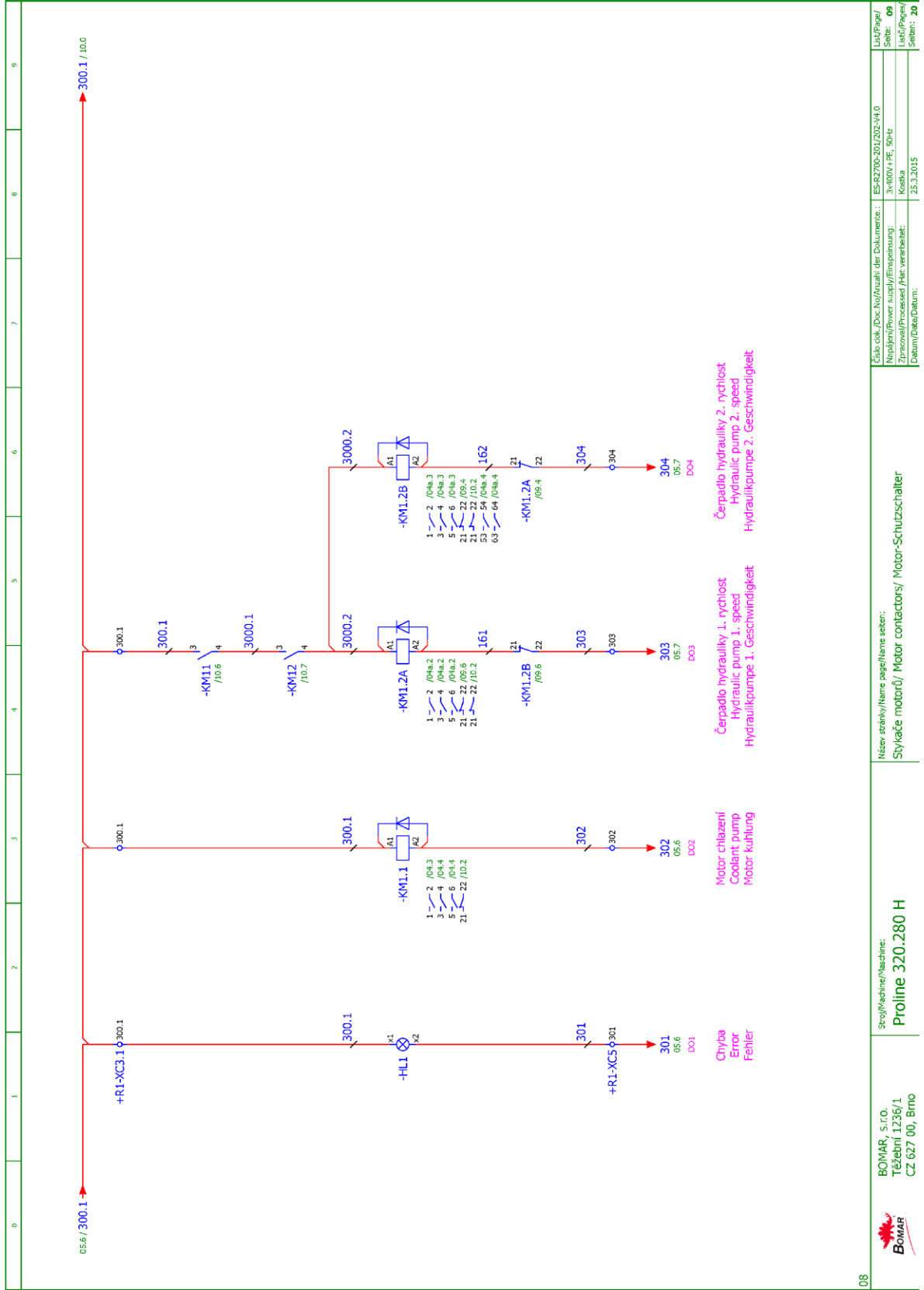
BOMAR, s.r.o.
 Těžební 1236/1
 CZ 627 00, Brno



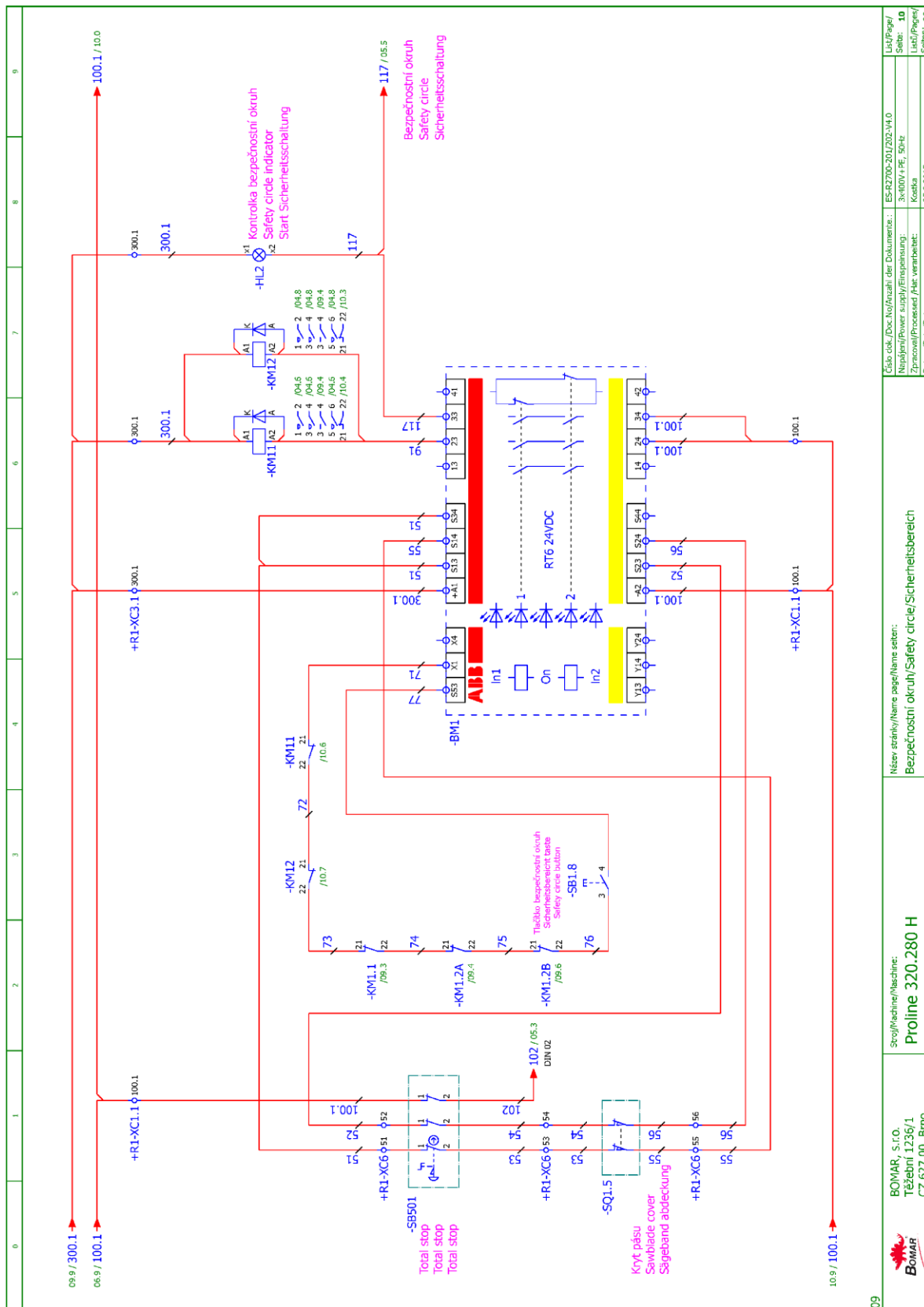




07



08		Stroj/Machine/Maschine: Proline 320.280 H		Název stroje/Název stroje/page/Name sethe: Stykače motorů/ Motor contactors/ Motor-Schutzschalter		Číslo dok./Doc.No./Anzahl der Dokumente.: ESR2700-201/202-V4.0		Lis/Page/ Seit: 09	
BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno						Napětí/Power supply/Einspannung: 3x400V + PE, 50Hz		List/Pages/ Seiten: 20	
						Zpracováno/Processed/Her.vyroběn: Kostka		Datum/Date/Datum: 25.3.2015	

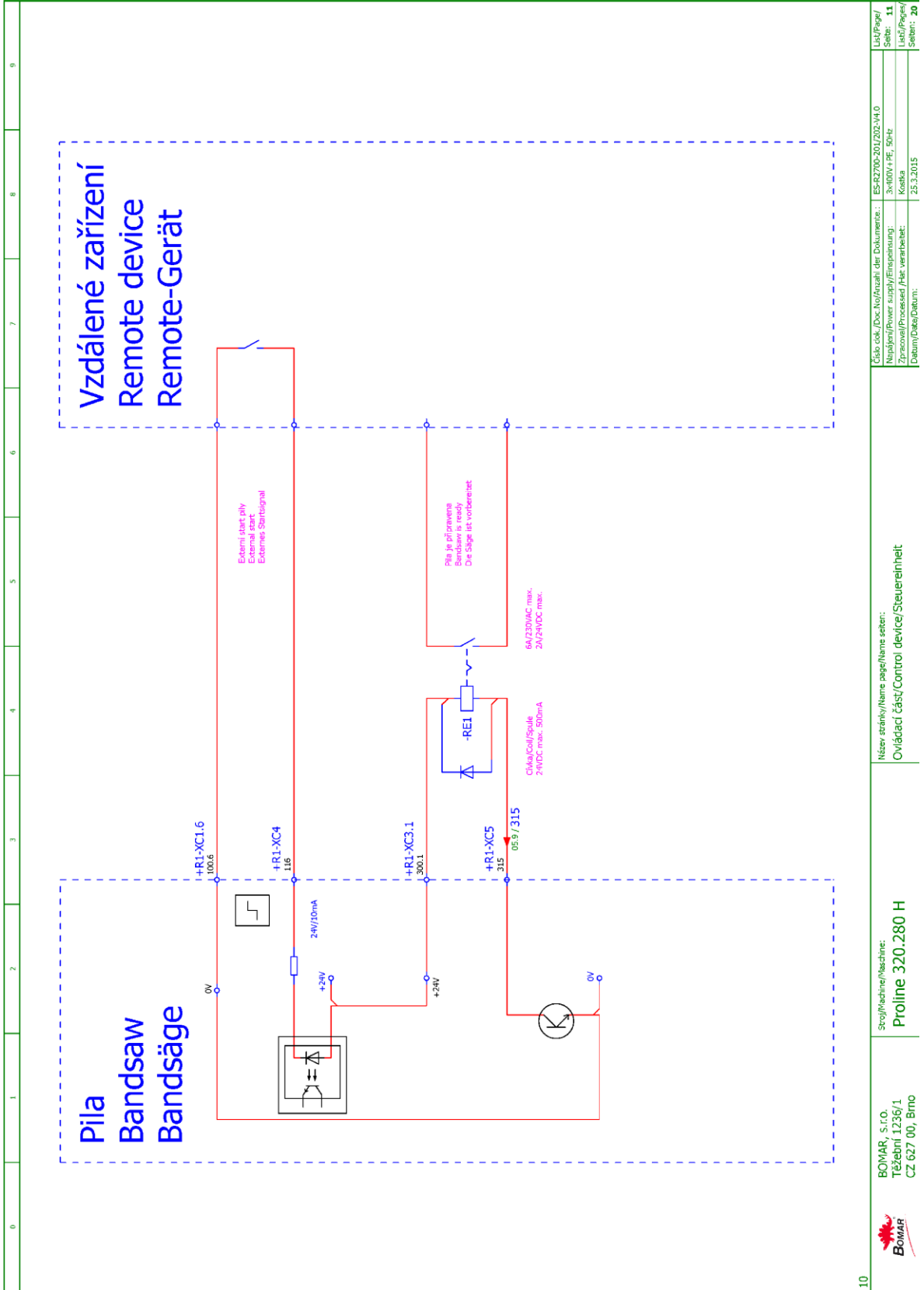


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Zpracovatel/Processed/Her.vyrobitel: Kostka	Verf./Page/Verf.: 20
Datum/Data/Datum: 25.3.2015	Seit: 20

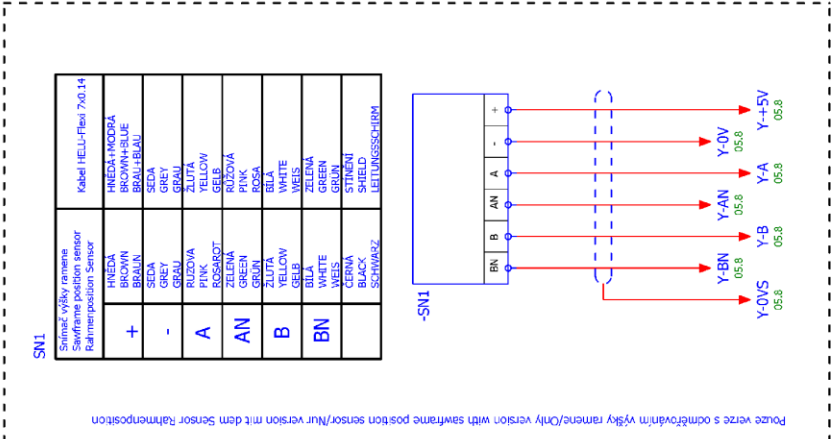
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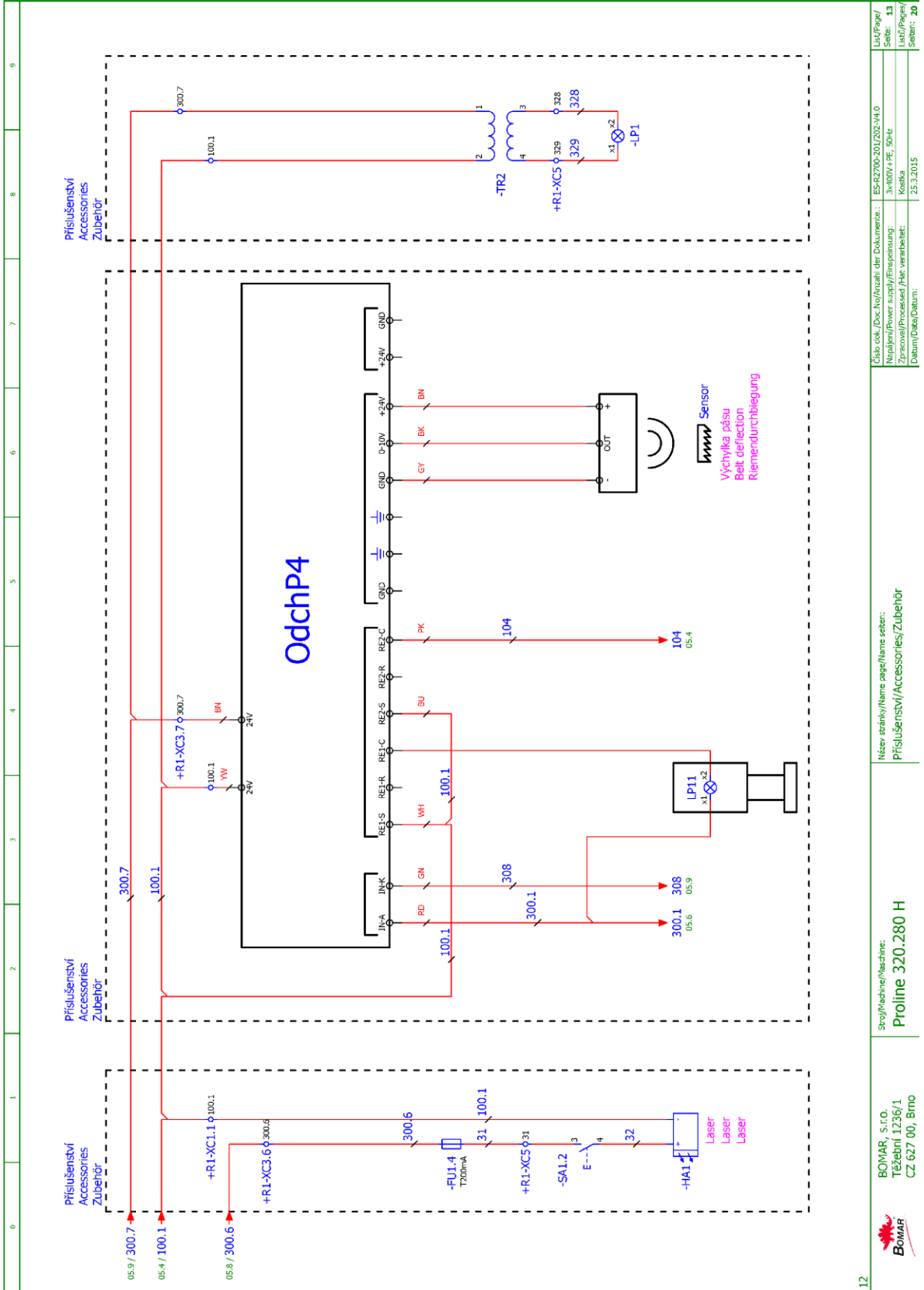
Stroj/Machine/Maschine: Proline 320.280 H

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Těžební 1236/1
CZ 627 00, Brno



0	1	2	3	4	5	6	7	8	9
<p>10</p> <p>BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno</p> <p>Stroj/Machine/Maschine: Proline 320.280 H</p> <p>Název stránky/Name page/Name sether: Ovládací část/Control device/Steuerinheit</p> <p>Csiko dok./Doc.No./Anzahl der Dokumente.: ESR2700-201/202-V4.0 Nájdění/Power supply/Einspeisung.: 3x400V + PE, 50Hz Zpracování/Processed/Her.verrbeitet.: Kosteja Datum/Data/Datum.: 25.3.2015</p> <p>Liš/Page/ Seit.: 11 Liš/Page/ Seit.: 20</p>									





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12									
BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno									
Stroj/Machine/Maschine: Proline 320.280 H									
Název stránky/Name page/Name sether: Příslušenství/Accessories/Zubehör									
Cílová odk./Doc.No/Anzahl der Dokumente.: ES-R2700-201202-V4.0									
Napájení/Power supply/Einspeisung.: 3x400V+PE, 50Hz									
Zpracování/Processed/Her.verarbeitet.: Kaska									
Datum/Data/Datum.: 25.3.2015									
LX/Page/ Seit.: 13									
List/Paper/ Seiten.: 20									

6.2. Elektrické schéma /
 Elektroschema /
 Electric scheme – 3x230 V + 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>Proline 320.280 H ES-R2700-203-V4.0</p> <p>Wiring diagram 3x230V+PE, 50Hz</p>										
 <p>BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno</p>			<p>Stroj/Machine/Maschine: Proline 320.280 H</p>				<p>Název stránky/Name page/Name seiten: Úvodní strana/ Start page/ Startseite</p>		<p>Cílová odk./Doc.No/Anzahl der Dokumente.: ES-R2700-203-V4.0 Napětí/Power supply/Einspannung: 3x230V+PE, 50Hz Zpracováno/Processed /Hat verarbeitet: Kostka Datum/Date/Datum: 26.3.2015</p>	
			<p>LiSt/Page/ Seit: 00</p>				<p>LiSt/Page/ Seiten: 20</p>			

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Obsah/ Table of contents/ Inhaltsverzeichnis									
Stránka/Page/Seite	Název stránky/Name page/Name Seite	Datum/Date/Datum							
00	Úvodní strana/ Start page/ Startseite	26.3.2015							
01	Obsah/ Table of contents/ Inhaltsverzeichnis	3.11.2015							
02	Rozmístění prvků v rozvaděči R1/ Placement of elements in enclosure R1/ Platzierung der Elemente im Schaltschrank R1	29.4.2015							
02.a	Ovládací panel OP1/ Control panel OP1/ Bedienpult OP1	26.3.2015							
02.b	Rozmístění hydraulických ventilů/ Placement of Hydraulic valves/ Platzierung die Hydroventile	29.4.2015							
03	Kusovník artiklů/ Parts list/ Artikelstückliste	3.11.2015							
03.a	Kusovník artiklů/ Parts list/ Artikelstückliste	26.3.2015							
03.b	Kusovník artiklů/ Parts list/ Artikelstückliste	3.11.2015							
04	Slovní část M1.1./ Power part M1.1./ Feld partie M1.1	6.5.2015							
04a	Slovní část M1.2, M1.3/ Power part M1.2, M1.3/ Feld partie M1.2, M1.3	3.11.2015							
04b	Slovní část M1.4, M1.5/ Power part M1.4, M1.5/ Feld partie M1.4, M1.5	3.11.2015							
05	Řídicí systém/ Control system/ Steuersystem	29.4.2015							
06	Tlačítka ovládací panel OP1/ Button control panel OP1/ Taste Bedienpult OP1	29.4.2015							
07	Vstupy/ Inputs/ Eingänge	6.5.2015							
08	Hydraulické ventily/ Hydraulic valves/ Hydroventile	29.4.2015							
09	Stykače motorů/ Motor contactors/ Motor-Schutzschalter	29.4.2015							
10	Bezpečnostní okruhy/Safety circles/Sicherheitsbereich	26.3.2015							
11	Ovládací čásky/Control device/Steuerinhalt	26.3.2015							
12	Snímač výšky ramene/Sawframe position sensor/Rahmenposition sensor	26.3.2015							
13	Příslušenství/Accessories/Zubehör	26.3.2015							

00



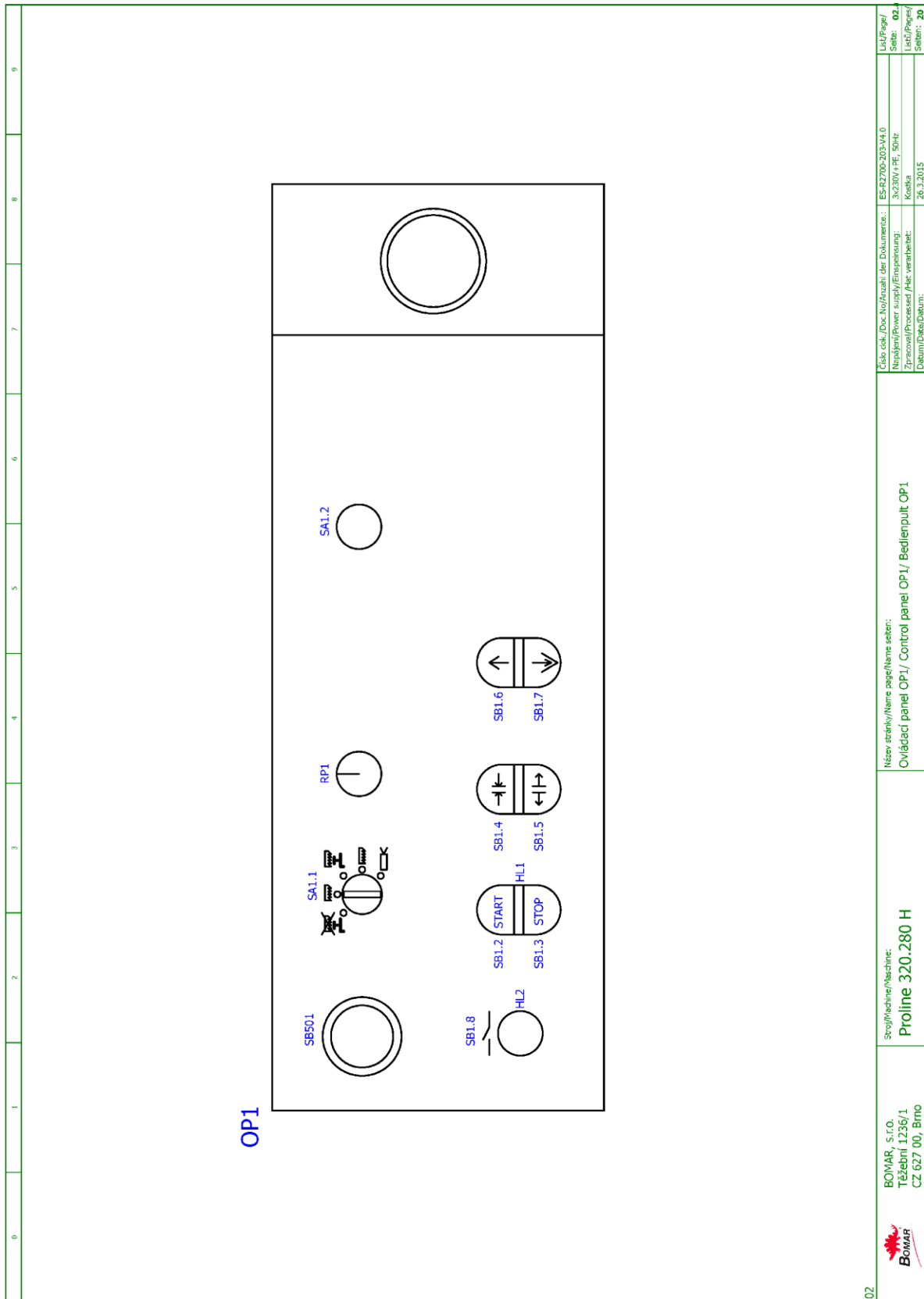
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CZ 627 00, Brno


Stroj/Machine/Maschine:
Proline 320-280 H

Název stránky/Name page/Name seite:
Obsah/ Table of contents/ Inhaltsverzeichnis

Cs/ko Doc./Doc.No/Anzahl der Dokumente.: ESR2700-203-V4.0
Název/Power supply/Einspeisung.: 3x230V+PE, 50Hz
Zpracovatel/Processed/Her.vannabreit.: Kaska
Datum/Date/Datum.: 3.11.2015

Lič/Page/
Seit.: 01
Lič/Page/
Seit.: 20




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02.a	 BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno		stroj/Machine/Maschine: Proline 320.280 H		Název stránky/Name page/Name sethe: Rozmístění hydraulických ventilů/ Placement of Hydraulic valves/ Platzierung die Hydroventile		číslo dok./Doc.No/Anzahl der Dokumente.: ESR-2702-203-V4.0 Napájení/Power supply/Einspeisung: 3x230V + PE, 50Hz Zpracování/Processed/Her.vyrobil: Kostka Datum/Data/Datum: 29.4.2015		List/Page/ Seite: 02	List/Page/ Seite: 20

0	1	2	3	4	5	6	7	8	9
Parts list									
Device identification	Device description	Type number	Manufacturer	Part number	Quantity	Location (page.column)			
-FA1.2	Auxiliary contacts - 1xNO+1xNC	HKF1-11	ABB	91.046.002	1	/04a.2			
-FA1.3	Auxiliary contacts - 1xNO+1xNC	HKF1-11	ABB	91.046.002	1	/04a.6			
-HL1	Red light for Eaton adapter	M22-LED-R	EATON	91.061.027	1	/09.1			
-KM1.2A	Contact - 4kW/400V, 3P	AF09-30-01-11	ABB	91.040.047	1	/09.4			
-KM1.2A	Mechanical interlock unit	VW4	ABB	91.041.045	1	/09.4			
-KM1.2B	Contact - 4kW/400V, 3P	AF09-30-01-11	ABB	91.040.047	1	/09.6			
-KM1.2B	Auxiliary contact - 1xNO	CA4-10	ABB	91.041.044	2	/09.6			
-SA1.1	Head with rotary switch - 4 positions	M22 - WRK4	EATON	91.060.087	1	/06.6			
-FU1.1	Tube fuse - 4A/250V, slow, 5x20	T4A/250V	ESKA	91.230.015	1	/04.8			
-FA1.1	Thermal relay - 0.74	T16-0.74	ABB	91.050.021	1	/04.3			
-RP1	Potentiometer 4k7	TP195 4k7/M20A	GES-ELECTRONICS, a.s.	91.283.015	1	/04b.5			
-RP1	Head of potentiometer: 24mm	S8877 BLK	GES-ELECTRONICS, a.s.	91.060.063	1	/04b.5			
-RCF1.1	Efferent RFC filter	FBOPR1624	Ing. Miroslav Vříček	91.041.015	1	/04.2			
-RCF1.2A	Efferent RFC filter	FBOPR1624	Ing. Miroslav Vříček	91.041.015	1	/04a.1			
-RCF1.2B	Efferent RFC filter	FBOPR1624	Ing. Miroslav Vříček	91.041.015	1	/04a.3			
-RCF11	Efferent RFC filter	FBOPR1624	Ing. Miroslav Vříček	91.041.015	1	/04.6			
-RCF12	Efferent RFC filter	FBOPR1624	Ing. Miroslav Vříček	91.041.015	1	/04.7			
-FA1.1	Thermal relay - 0.41	T16-0.41	ABB	91.050.030	1	/02.5			
-FA1.1	Motor starter - 2.5A	MS116-2,5	ABB	91.045.021	1	/02.5			
-FA1.2	Motor starter - 2.5A	MS116-2,5	ABB	91.045.021	1	/04a.2			
-FA1.3	Motor starter - 1.6A	MS116-1,6	ABB	91.045.020	1	/04a.6			
-FU1.2	Tube fuse - 200mA/250V, slow, 5x20	T200mA/250V	ESKA	91.230.037	1	/13.1			
-FU1.2	Fuse terminal	WK4/THS15U	WIELAND	91.251.102	1	/13.1			
-HL2	White light for Eaton adapter	M22-LED-W	EATON	91.061.034	1	/10.8			
-KM1.1	Mini contactor - 4kW/400V, 3P	B65-30-01-1.7-71	ABB	91.040.049	1	/09.3			
-KM1.2A	Auxiliary contact - 1xNC	CA4-01	ABB	91.041.043	1	/09.4			
-KM1.2B	Auxiliary contact - 1xNC	CA4-01	ABB	91.041.043	1	/09.6			

The manufacturer reserves right to use an equivalent replacement device.

02.b

BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno		Šroff/Machine/Machine: Proline 320.280 H		Název stránky/Name page/Name set: Kusovník artiklů/ Parts list/ Artikelstückliste		Údaje dok./Doc.No./Anzahl der Dokumente.: ES-R2700-203-V4.0		Lic/Pages/ Stran/ Seiten: 03	
				Napájení/Power supply/Einspeisung: 3x230V+PE, 50Hz		Lic/Pages/ Stran/ Seiten: 20			
				Datum/Date/Datum: 3.11.2015		Lic/Pages/ Stran/ Seiten: 20			

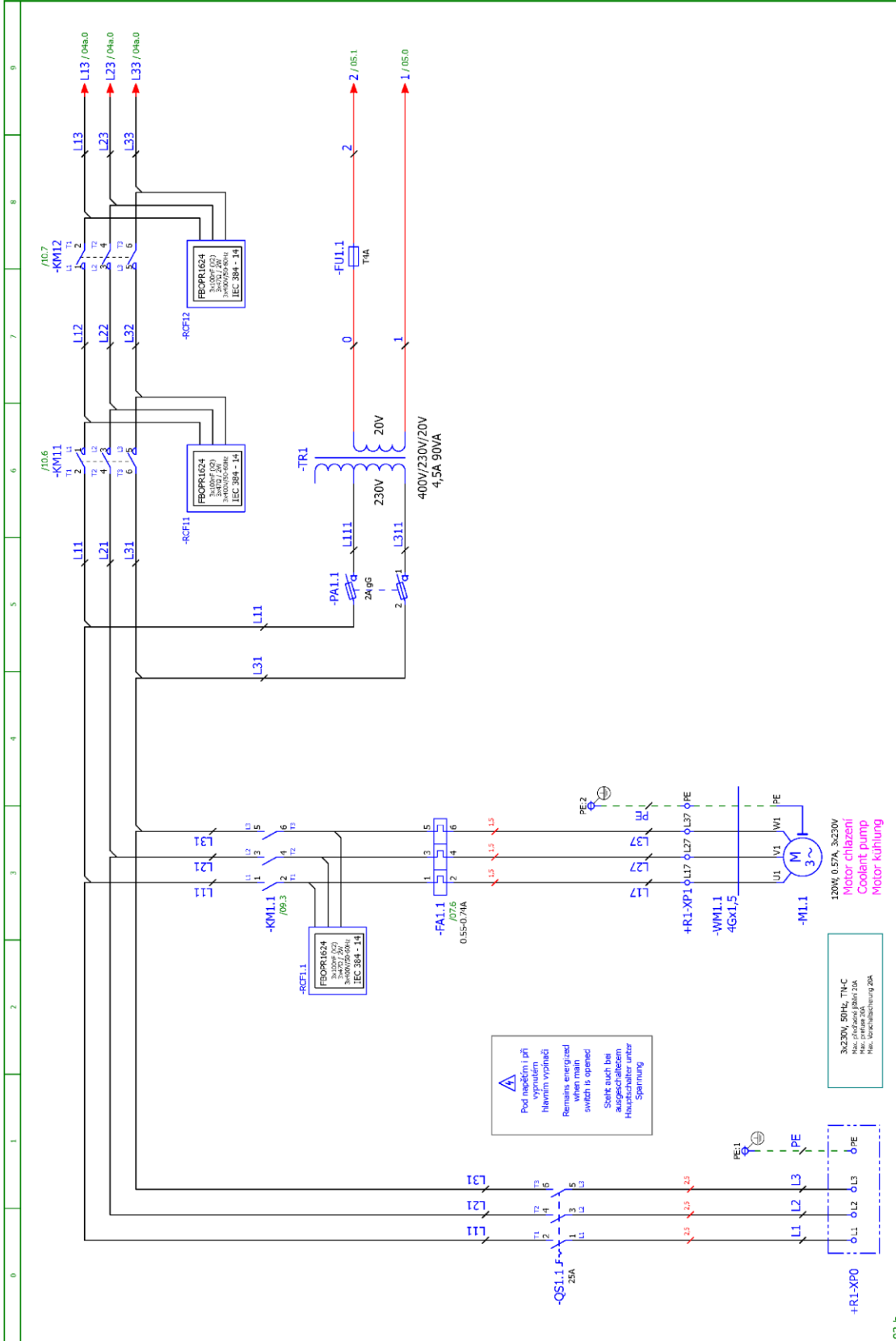
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Parts list									
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-KM11	Contact - 5.5KW/400V, 3P	AF12-30-01-11	ABB	91.040.051	1	/10.6			
-KM11	Auxiliary contact - 1xNO	CA4-10	ABB	91.041.044	1	/10.6			
-KM12	Contact - 5.5KW/400V, 3P	AF12-30-01-11	ABB	91.040.051	1	/10.7			
-KM12	Auxiliary contact - 1xNO	CA4-10	ABB	91.041.044	1	/10.7			
-PAL.1	Fuse disconnecter E-90 - 2P	E 92/32	ABB	91.241.013	1	/04.5			
-QSL.1	Disconnecter - 3P, 25A	OT25FT3	ABB	91.170.016	1	/04.0			
-RP1	Fastconnect clamp	WAGO 224-112	WAGO	91.250.009	3	/04b.5			
-SA1.1	Mounting adapter	M22-A4	EATON	91.061.045	1	/06.6			
-SA1.1	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	3	/06.6			
-SA1.2	Head for black switch	M22-D-S	EATON	91.060.035	1	/13.1			
-SA1.2	Attaching adapter + JNO	M22-AK10	EATON	91.061.021	1	/13.1			
-SB1.2	Double button head white/black start/stop	M22-DDL-WS-GBJ/GB0	EATON	91.060.034	1	/06.1			
-SB1.2	Mounting adapter	M22-A	EATON	91.061.028	1	/06.1			
-SB1.2	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.1			
-SB1.3	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.2			
-SB1.4	Mounting adapter	M22-A	EATON	91.061.028	1	/06.3			
-SB1.4	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.3			
-SB1.4	Double button head white/black, arrow close/open	M22-DDL-WS*	EATON	91.060.055	1	/06.3			
-SB1.5	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.3			
-SB1.6	Mounting adapter	M22-A	EATON	91.061.028	1	/06.4			
-SB1.6	Double button head white/black, arrow up/down	M22-DDL-WS*-*	EATON	91.060.054	1	/06.4			
-SB1.6	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.4			
-SB1.7	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/06.5			
-SB1.8	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/10.3			
-SB1.8	Yellow transparent switch	M22-DL-Y	EATON	91.060.053	1	/10.3			
-SB501	Emergency-stop mushroom push - button + 3xNC	YW1B-V4E02R	IDEC	91.060.084	1	/10.1			
-TR1	Toroidal transformer - 400V / 230V / 20V 4,5A 90VA	400V/230V/20V 4,5A 90VA	KARBAN s.r.o.	91.080.023	1	/04.6			
-SQL.5	Safety Limit Switch - 2x NC	QXS8	KEDU	91.173.012	1	/10.1			
<p>The manufacturer reserves right to use an equivalent replacement device.</p>									
 <p>BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno</p>		<p>Šroff/Machine/Machine: Proline 320.280 H</p>		<p>Název stříhacího nástroje/Name sether: Kusovník artiklů/ Parts list/ Artikelstückliste</p>		<p>Číslo dok./Doc.No./Anzahl der Dokumente.: ESR2702-203-V4.0 Napětí/Power supply/Einspannung: 3x230V+PE, 50Hz Zpracováno/Processed /Hat.vyrobilost: Kaska Datum/Date/Datum: 26.3.2015</p>		<p>LiSt/Page: 03 Seit: 03 LiSt/Page: 20 Seiten: 20</p>	

03

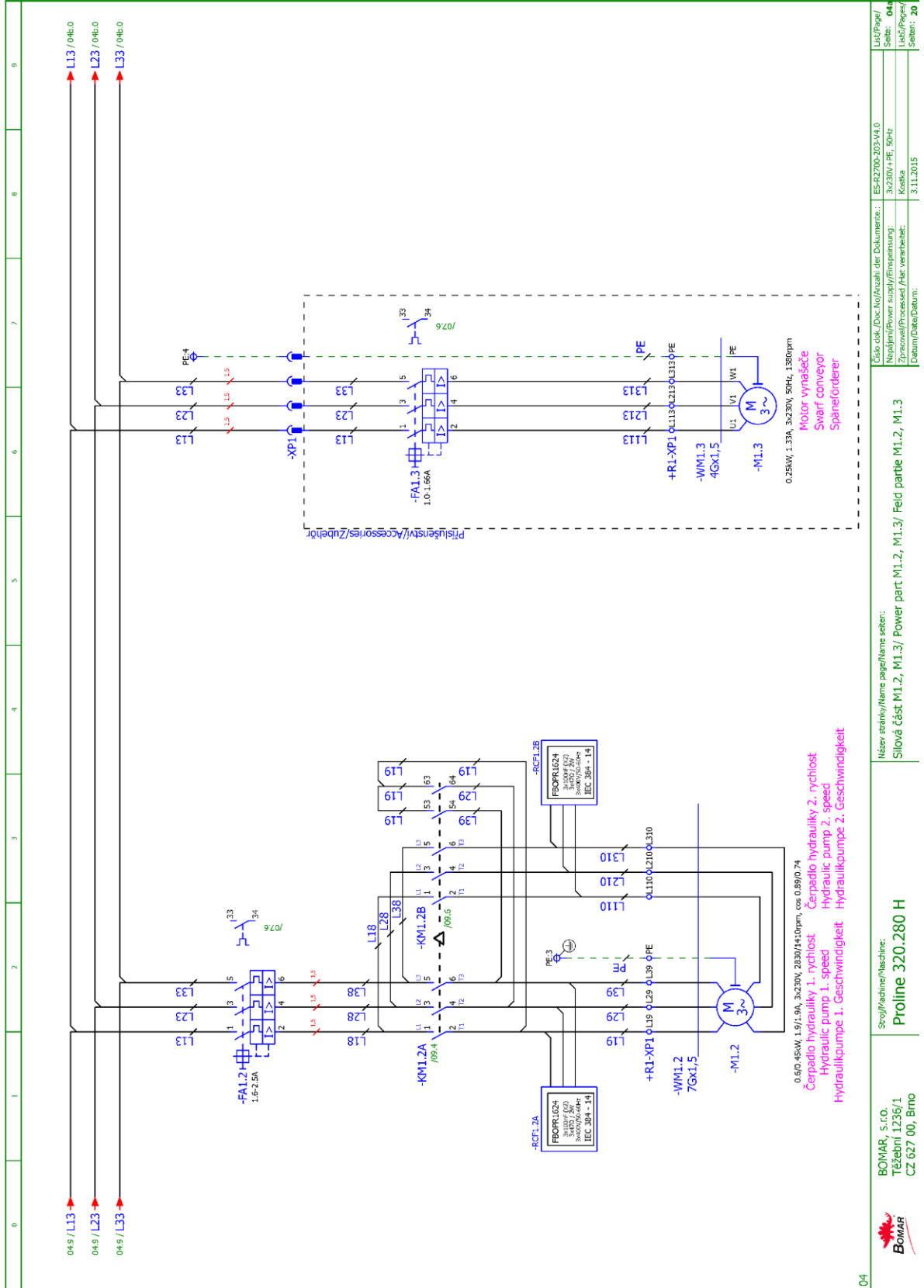
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Parts list									
Device identification	Device description	Type number	Manufacturer	Part number	Quantity	Location (page.column)			
-PA1.1	Tube fuse - 2A, 10x38, slow	PV10 2A gG	OEZ	91.230.034	2	/04.5			
-PA1.2	Fuse disconnecter E-90 - 3P	E 93/32	ABB	91.241.014	1	/04b.1			
-PA1.2	Tube fuse - 20A, 10x38, slow	PV10 20A aM	OEZ	91.230.049	3	/04b.1			
-SQ1.4	Limit switch - 1NC+1NO	D4N-4A31	OMRON	91.173.007	1	/07.6			
-SQ1.1	Limit switch - 1NO + 1NC, pulley, M2, snap action	FR 605-M2	PIZZATO	91.173.009	1	/07.3			
-SQ1.2	Limit switch - 1NO + 1NC, pulley, slow action	FR 615-M2	PIZZATO	91.173.044	1	/07.4			
-SQ1.3	Limit switch - 1NO + 1NC, long adjustable pulley, M2, snap action	FR 655-M2	PIZZATO	91.173.045	1	/07.5			
-FM1.1	Frequency converter - 3.7kW, 3x230VAC	VFD037E23A + KPE-LE02	DELTA ELECTRONICS, INC.	91.012.090	1	/04b.1			
-FM1.1	Frequency converter - 3.7kW, 3x400VAC	VFD037E43A	DELTA ELECTRONICS, INC.	91.012.094	1	/02.3			
-QS1.1	Handle switch 48x48mm - black	OHBS3PH	ABB	91.180.018	1	/04.0			
-BM1	Safety circuit relay - 3xNO, 24VDC	RT6	ABB	91.051.056	1	/10.4			
-CU1	Control unit	SMA, 4.01W	Bomar	265.918	1	/05.0			
-RCF0	RFC-filter - 5.5 kW, 3x400V/230V, 25A	ATV31/5.5KW	Ing. Miroslav Vřeček	91.041.027	1	/04b.1			
-FU1.1	Fuse terminal	WK4/THS15U	WIELAND	91.251.102	1	/04.8			
-M1.5	Fan 24VDC, 154CFM	RDH1238 B2	Xinruijian Electronic Co.	91.015.126	1	/04b.8			

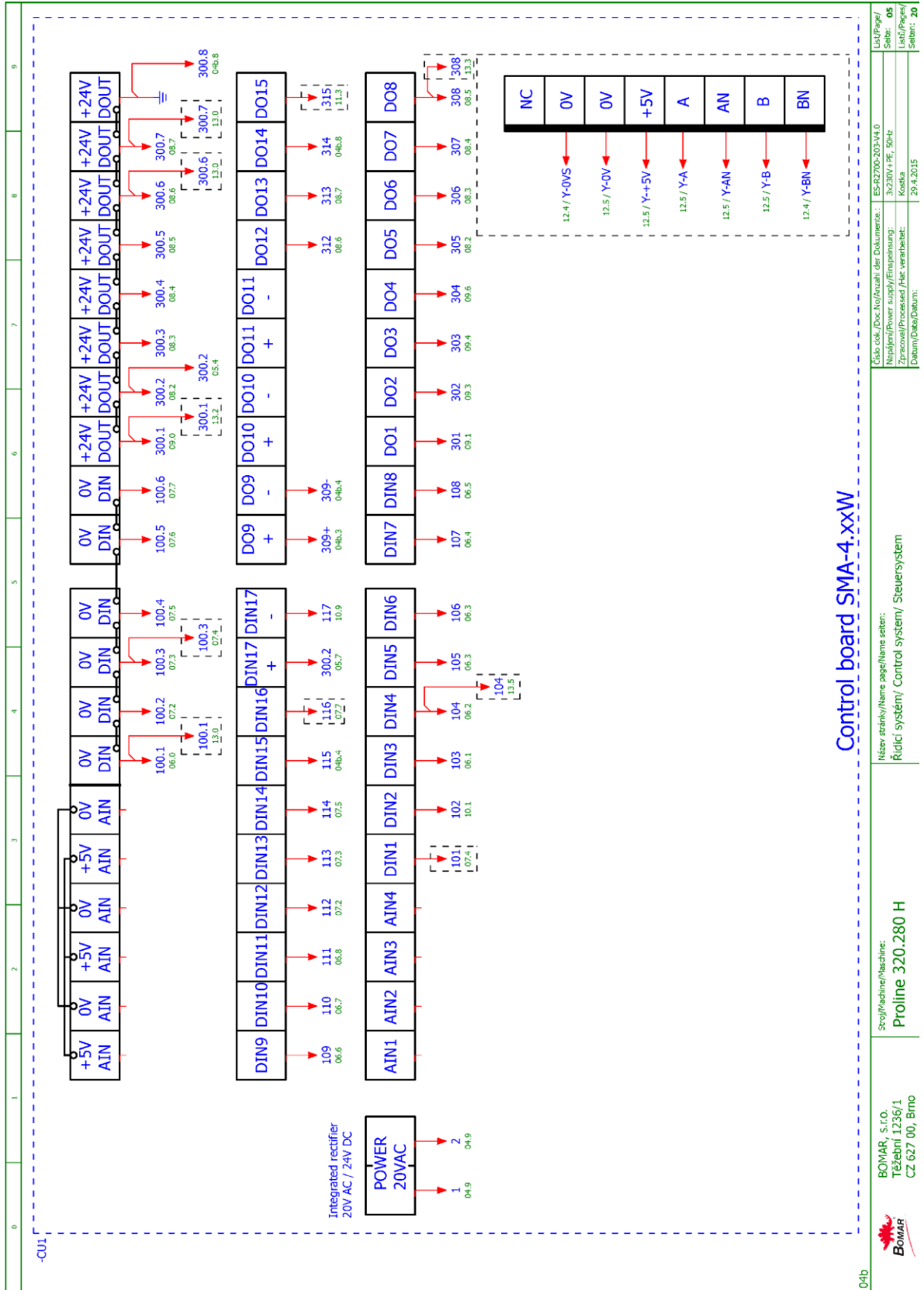
The manufacturer reserves right to use an equivalent replacement device.

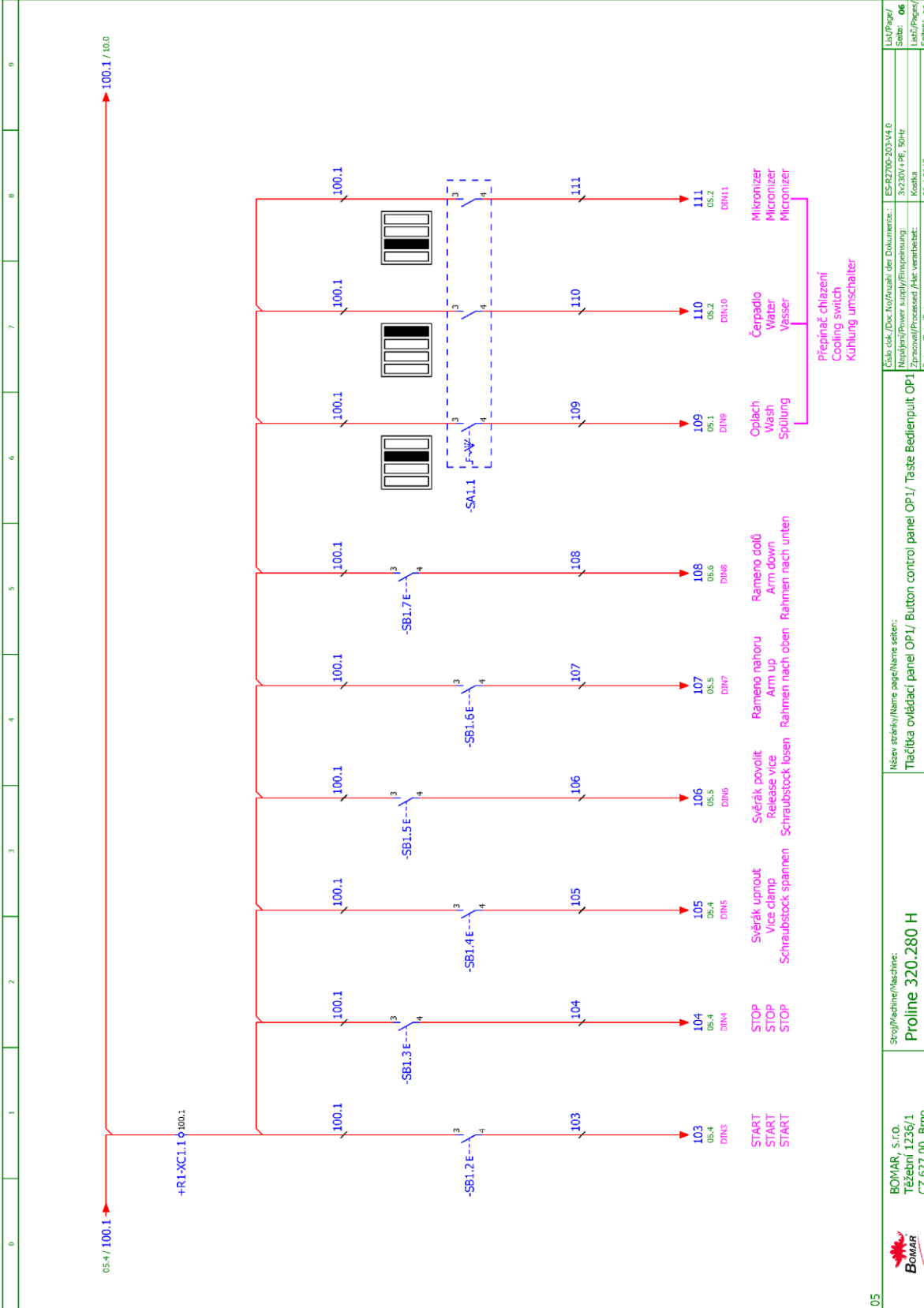
03.a	BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno	Stroj/Machine/Maschine: Proline 320.280 H	Název artiklu/Name page/Name sether: Kusovník artiklů/ Parts list/ Artikelstückliste	Číslo dok./Doc.No./Anzahl der Dokumente.: ESR2700-203-V4.0	Lič/Pages/ List/Pages/ Seiten: 03
				Nápis/Power supply/Einspeisung: 3x230V+PE, 50Hz	
				Zpracov./Processed /Hat.vyrobil: Kostka	
				Datum/Date/Datum: 3.11.2015	Seiten: 20



03.b	Název schéma/Name page/Name sheet: Slovní část M1.1./ Power part M1.1./ Feld partie M1.1	Číslo dok./Doc.No./Anzahl der Dokumente.: ES-R2702-203-V4.0	Stroj/Machine/Maschine: Proline 320.280 H	Liš/Page/ Seit: 04
		Napájení/Power supply/Einspeisung: 3x230V+PE, 50Hz		Liš/Page/ Seit: 20
		Zpracování/Processed /Her.verrbeitet: Kostka		
		Datum/Data/Datum: 6.5.2015		







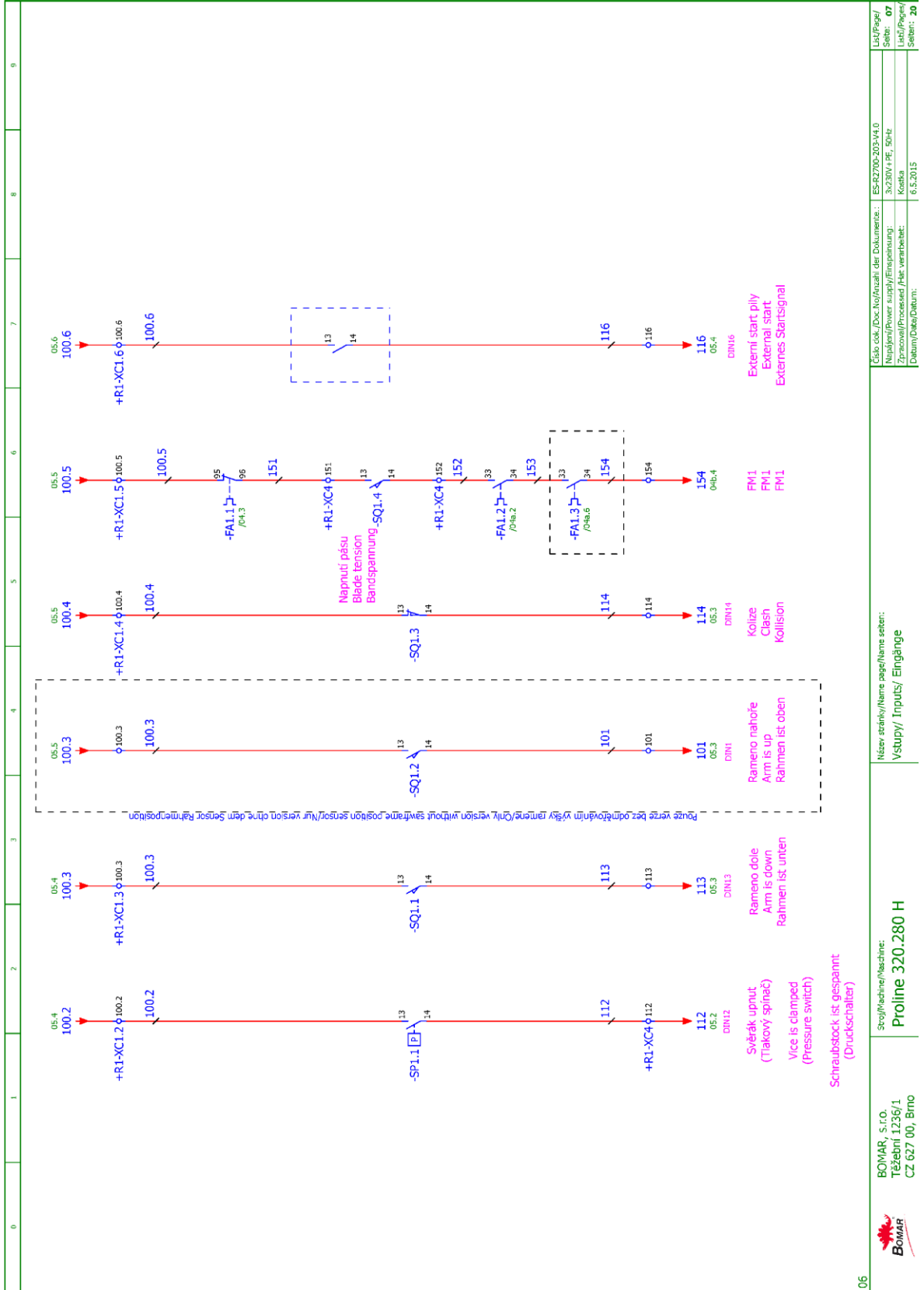
05

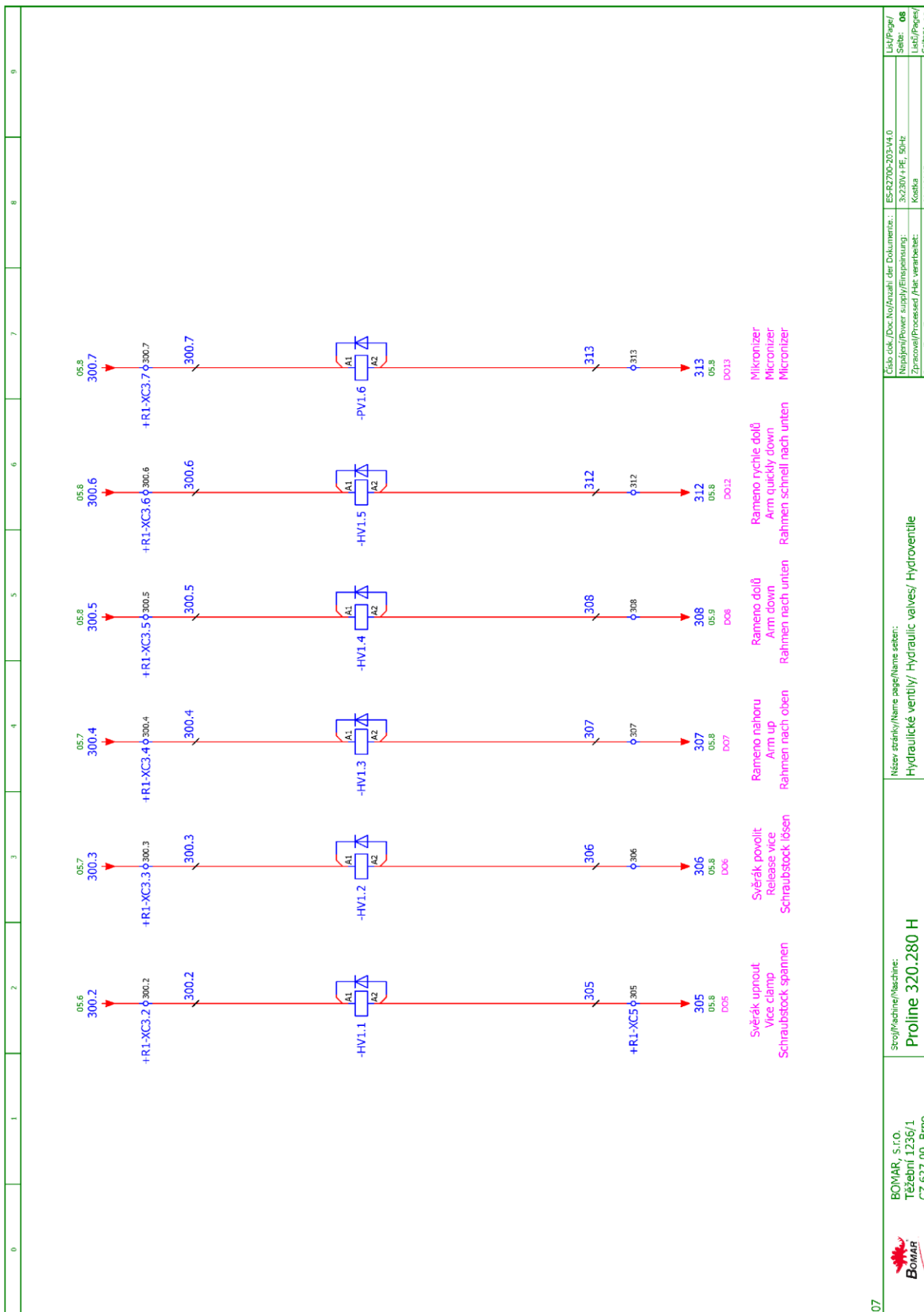
ES-R2702-203-V4.0	ES-R2702-203-V4.0	ES-R2702-203-V4.0	ES-R2702-203-V4.0
3x230V+PE, 50Hz	3x230V+PE, 50Hz	3x230V+PE, 50Hz	3x230V+PE, 50Hz
Kostka	Kostka	Kostka	Kostka
29.4.2015	29.4.2015	29.4.2015	29.4.2015

Proline 320.280 H

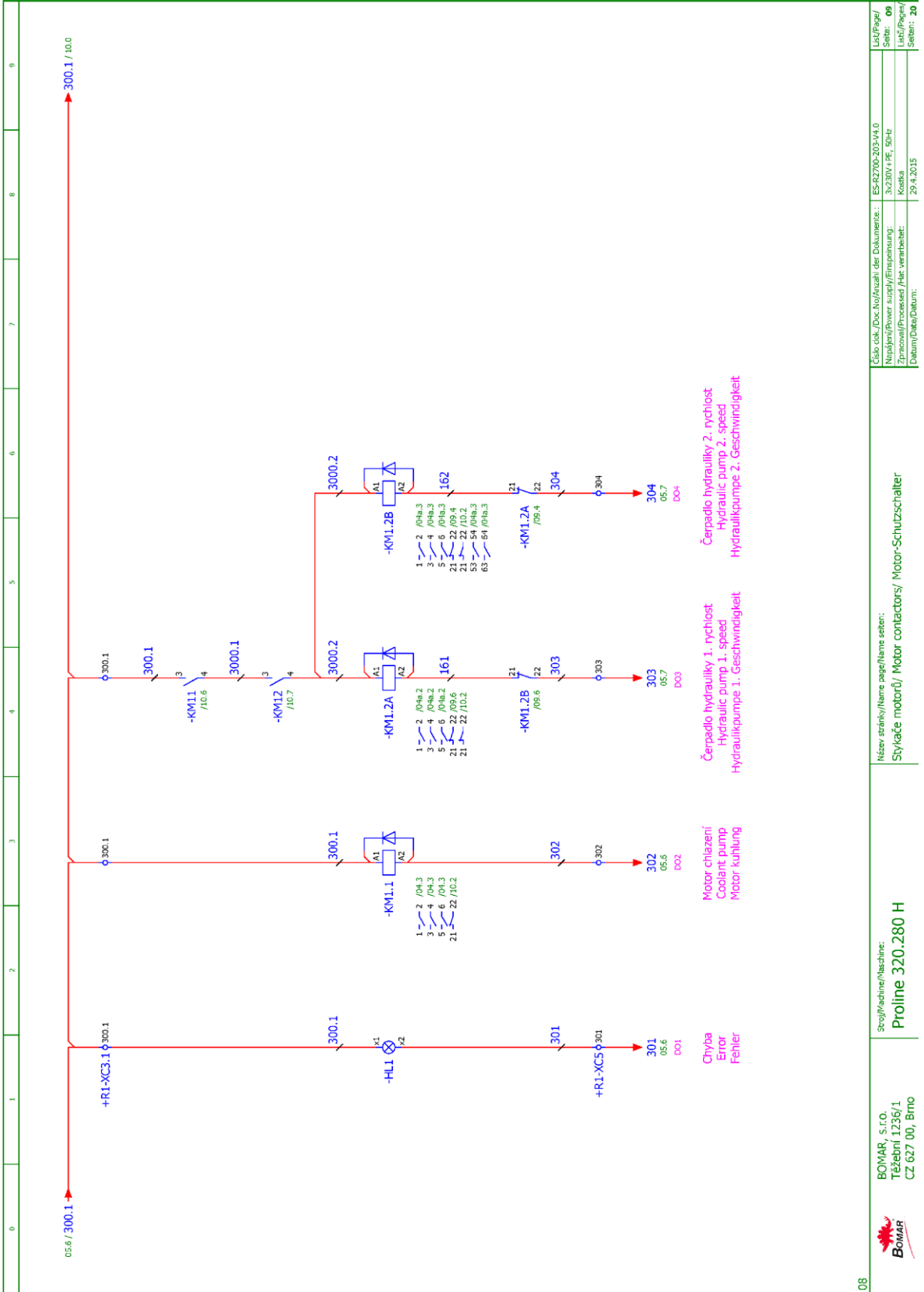
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno

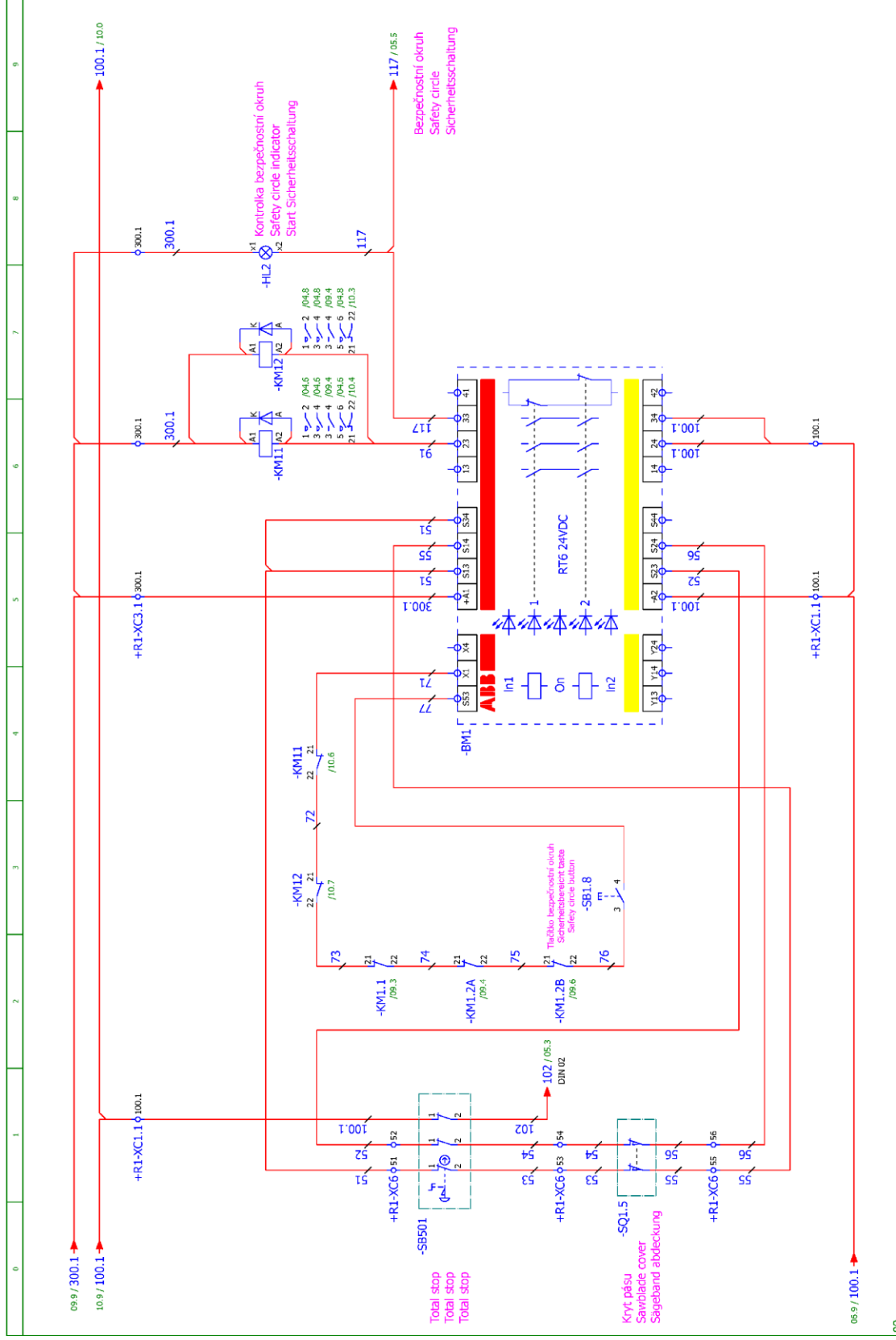






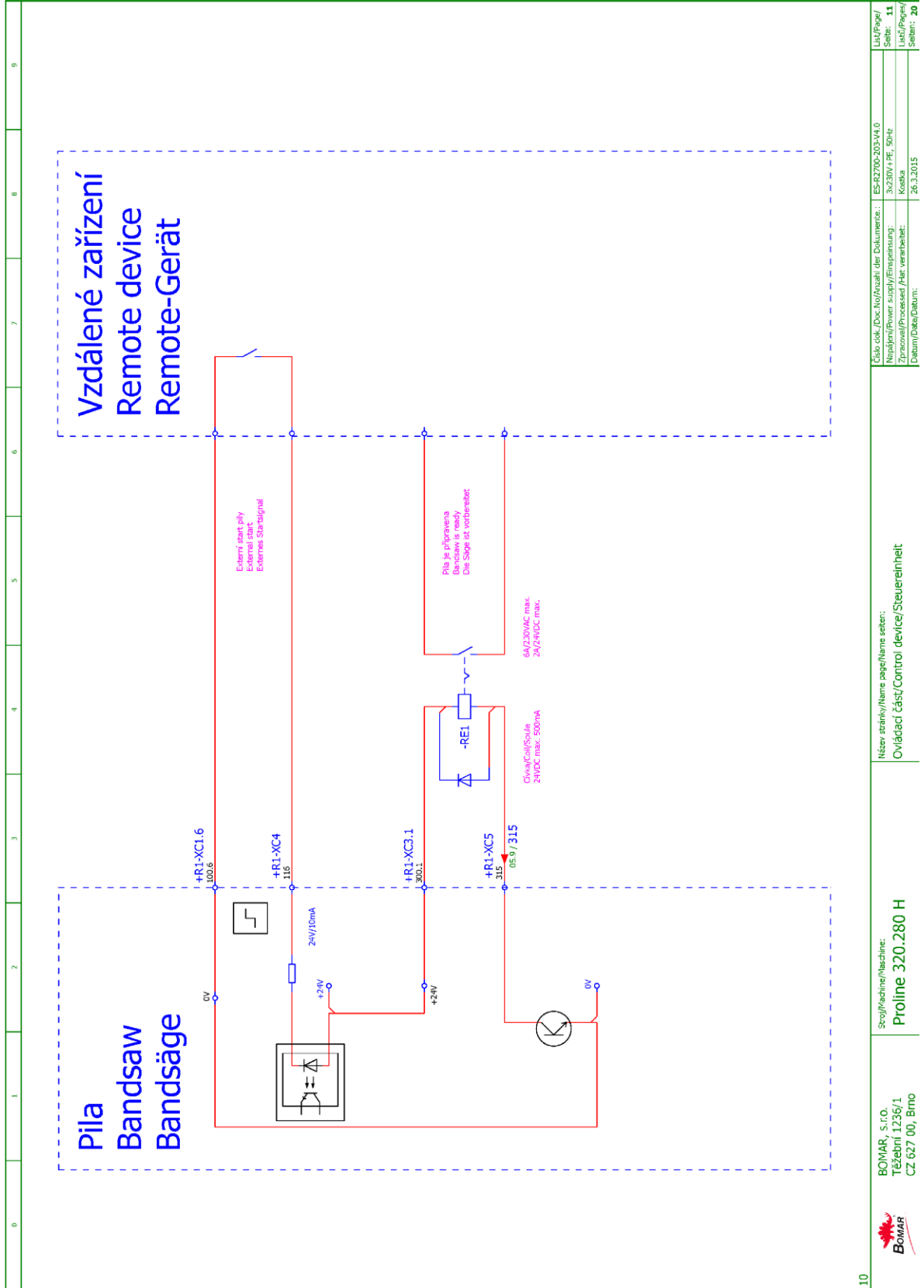
07	stroj/Machine/Maschine: Proline 320.280 H	Název stránky/Name page/Name sethn: Hydraulické ventily/ Hydraulic valves/ Hydroventile	číslo dok./Doc.No/Anzahl der Dokumente: ESR-2702-203-V4.0 Napájení/Power supply/Einspeisung: 3x230V+PE, 50Hz Zpracování/Processed/Hat verarbeitet: Kostka Datum/Date/Datum: 29.4.2015	List/Page/ Seit: 08 List/Page/ Seit: 20
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09	069 / 300.1	109 / 100.1	0300.1	300.1	117 / 05.5	100.1 / 10.0
<p>Total stop Total stop Total stop</p> <p>Kryt pásu Sawblade cover Sägeband abdeckung</p>						
<p>Název stránky/Name page/Name sether: Bezpečnostní okruh/Safety circle/Sicherheitsbereich</p>						
<p>Stroj/Machine/Maschine: Proline 320.280 H</p>						
<p>BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno</p>						
<p>Číslo dok./Doc.No./Anzahl der Dokumente.: ESR-2702-203-V4.0 Napájení/Power supply/Einspeisung: 3x230V + PE, 50Hz Zpracovatel/Processed/Her.verarbeitet: Kostka Datum/Date/Datum: 26.3.2015</p>						
<p>Liš/Page/ Seit: 10 List/Pages/ Seiten: 20</p>						

Schéma
Schemas
Schematics



Číslo dok./Doc.No./Anzahl der Dokumente:	ESR2700-203-V4.0
Napájení/Power supply/Einspeisung:	3x230V + PE, 50Hz
Zpracování/Processed/Hat. verarbeitet:	Kostka
Datum/Data/Datum:	26.3.2015
Liš/Page/ Seit: 11	
Liš/Page/ Seit: 20	

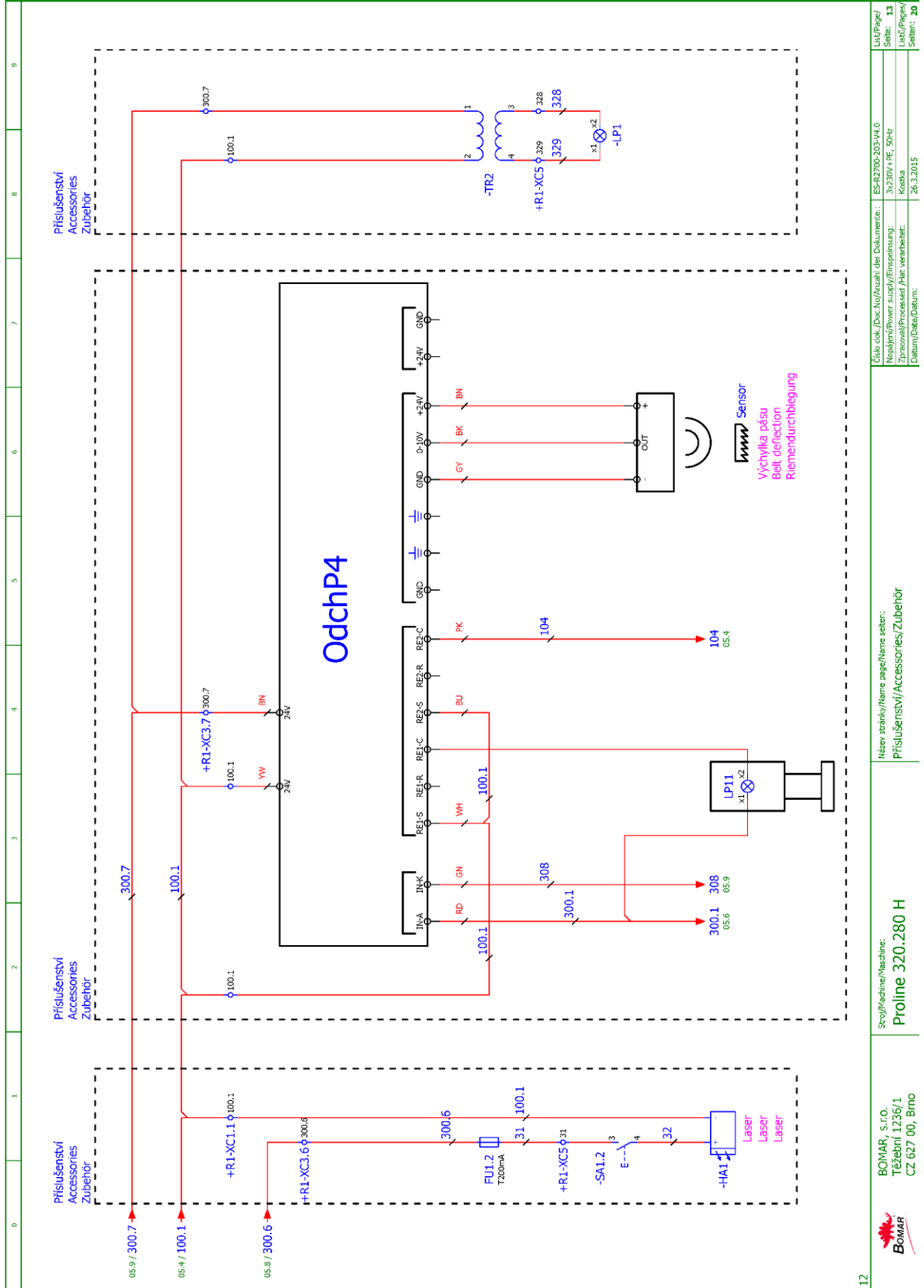
Název stránky/Name page/Name seite:	Ovládací část/Control device/Steuereinheit
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Stroj/Machine/Maschine:	Proline 320.280 H
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BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno



0	1	2	3	4	5	6	7	8	9																
<div style="border: 1px dashed black; padding: 10px;"> <p>SN1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Snimač výšky ramene Sawframe position sensor Rahmenposition sensor</th> <th style="width: 50%;">Kabel HELIX-Flex 7x0,14</th> </tr> </thead> <tbody> <tr> <td>+</td> <td>HNĚDA BROWN BRUN SEIGEL GREY GRAU</td> </tr> <tr> <td>-</td> <td>RUŽOVÁ PINK ROSE ROSE ROSE ROSE</td> </tr> <tr> <td>A</td> <td>ZLUTÁ YELLOW GELB GELB GELB GELB</td> </tr> <tr> <td>AN</td> <td>ZELENÁ GREEN GRÜN GRÜN GRÜN GRÜN</td> </tr> <tr> <td>B</td> <td>BÍLÁ WHITE WEISS WEISS WEISS WEISS</td> </tr> <tr> <td>BN</td> <td>ČERNÁ BLACK SCHWARZ SCHWARZ SCHWARZ SCHWARZ</td> </tr> <tr> <td></td> <td>STĚNĚNÍ SHIELD LEITUNGSSCHIRM LEITUNGSSCHIRM</td> </tr> </tbody> </table> <p style="text-align: center;">Pozor verze s omeřováním výšky ramene/Only version with sawframe position sensor/Nur version mit dem Sensor Rahmenposition</p> </div>										Snimač výšky ramene Sawframe position sensor Rahmenposition sensor	Kabel HELIX-Flex 7x0,14	+	HNĚDA BROWN BRUN SEIGEL GREY GRAU	-	RUŽOVÁ PINK ROSE ROSE ROSE ROSE	A	ZLUTÁ YELLOW GELB GELB GELB GELB	AN	ZELENÁ GREEN GRÜN GRÜN GRÜN GRÜN	B	BÍLÁ WHITE WEISS WEISS WEISS WEISS	BN	ČERNÁ BLACK SCHWARZ SCHWARZ SCHWARZ SCHWARZ		STĚNĚNÍ SHIELD LEITUNGSSCHIRM LEITUNGSSCHIRM
Snimač výšky ramene Sawframe position sensor Rahmenposition sensor	Kabel HELIX-Flex 7x0,14																								
+	HNĚDA BROWN BRUN SEIGEL GREY GRAU																								
-	RUŽOVÁ PINK ROSE ROSE ROSE ROSE																								
A	ZLUTÁ YELLOW GELB GELB GELB GELB																								
AN	ZELENÁ GREEN GRÜN GRÜN GRÜN GRÜN																								
B	BÍLÁ WHITE WEISS WEISS WEISS WEISS																								
BN	ČERNÁ BLACK SCHWARZ SCHWARZ SCHWARZ SCHWARZ																								
	STĚNĚNÍ SHIELD LEITUNGSSCHIRM LEITUNGSSCHIRM																								
<p>Název stránky/Name page/Name setlist: Snimač výšky ramene/Sawframe position sensor/Rahmenposition sensor</p>																									
<p>Stroj/Machine/Maschine: Proline 320.280 H</p>																									
<p>BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno</p>																									
<p>Číslo dok./Doc.No./Anzahl der Dokumente.: ESR-2702-203-V4.0 Napájení/Power supply/Einspeisung.: 3x230V + PE, 50Hz Zpracování/Processed /Hat. verarbeitet.: Korkka Datum/Date/Datum.: 26.3.2015</p>																									
<p>11</p>																									
<p>LiSt/Page/ Seit.: 12 List/Page/ Seiten.: 20</p>																									

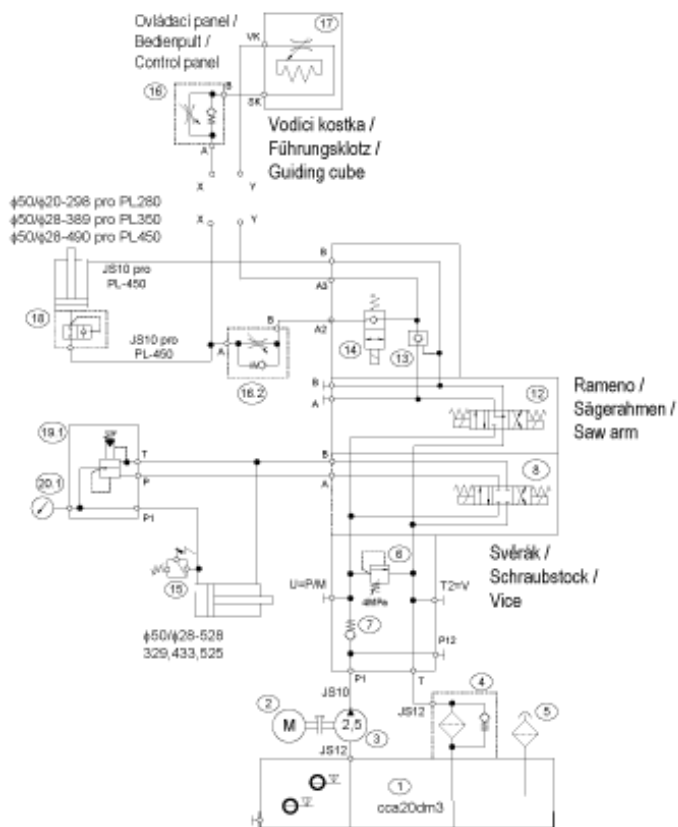


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<p>12</p> <p>Název stránky/Name page/Name set: Příslušenství/Accessories/Zubehör</p> <p>Stroj/Machine/Maschine: Proline 320.280 H</p> <p>BOMAR, s.r.o. Těžební 1236/1 CZ 627 00, Brno</p> <p>Číslo dok./Doc.No/Anzahl der Dokumente.: ESR2700-203-V4.0 Napájení/Power supply/Einspeisung.: 3x230V+PE, 50Hz Zpracování/Processed/Her.verrbeitet.: Kaska Datum/Data/Datum.: 26.3.2015</p> <p>Liš/Paper/ Seit.: 13 Liš/Paper/ Seit.: 20</p>									

6.3. Hydraulické schéma / Hydraulikschema / Hydraulic scheme

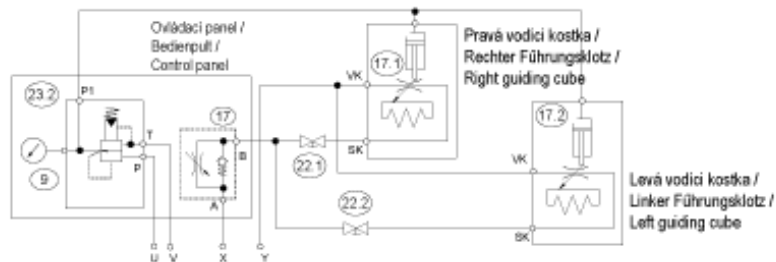
Regulační závělek /
Regulatorischen Spur /
Regulatory trail

Proline 280, Proline 350



Regulační závělek /
Regulatorischen Spur /
Regulatory trail

Proline 450



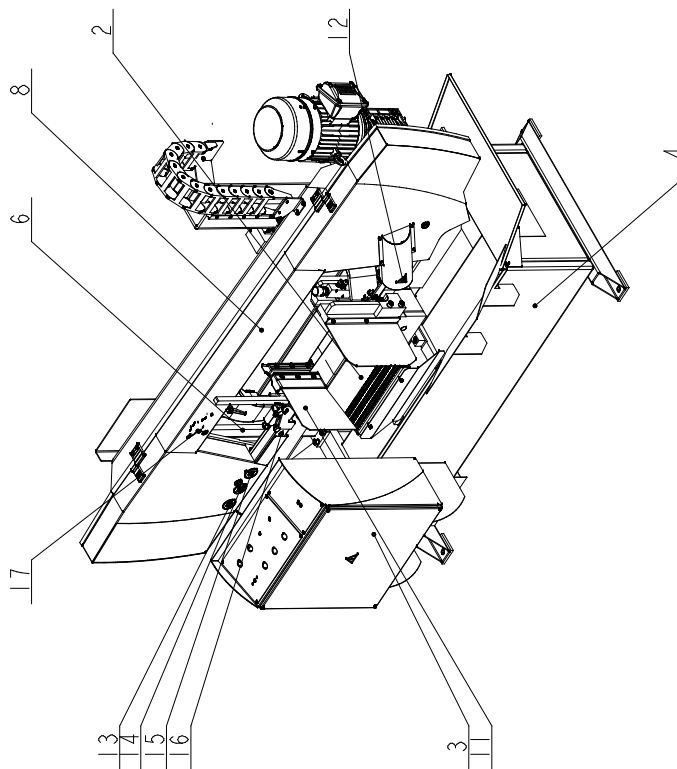
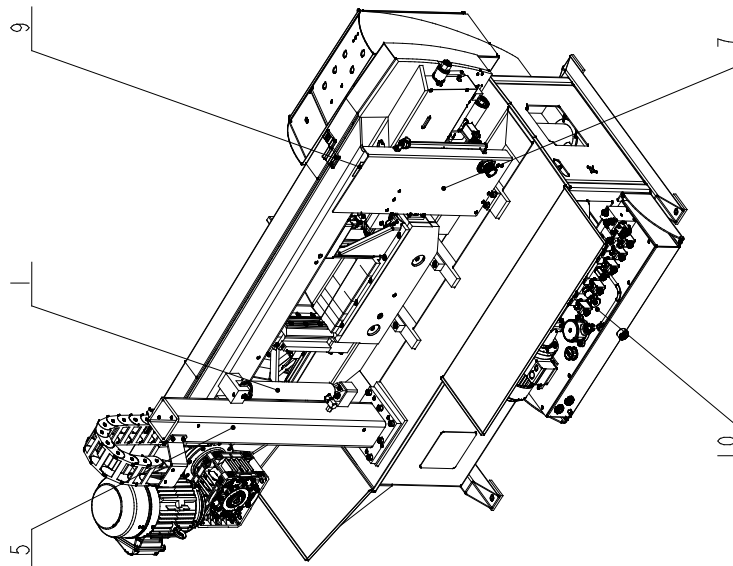
Typ / Type / Type	Proline 280,35,450
Hydraulický agregát / Hydroaggregat / Hydro aggregat	PPM -AC0,48 (0,6 kW/300/1500-P61/2,5-TM20-CB03-FRS001_137_1)
Neuvedené světlosti / Unerwähnt Lichtbreite / Unlisted inside diameters	JS6
Výstupní šroubení / Ausgangschraubung / Output screwing	G1/4"
P_{max}	4,5 MPa
Q	3,3/6,6 dm ³ /min
n	1500/3000 ot./min
P	0,48 / 0,6 kW


Poz.	Název položky		ks
Pos.	Bezeichnung		Menge
Pos.	Item		Pcs.
1	Elektromotor / Elektromotor / Electromotor	0,48/0,6 kW 400/230 V, 50 Hz	1
2	Hydrogenerátor / Hydraulikgenerator / Hydrogenerator	10A2, 5X053G	1
3	Zpětný filtr / Rückschlagfilter / Charge-back filter	MPF0301AG1	1
4	Nalévací zátka / Stopfen / Fill stopper	CPT-MD-FA/1	1
5	Přepouštěcí ventil / Bypašventil / By pass valve	MO-020/32	1
6	Jednosměrný ventil / Einwegventil / One-way valve	CV08-20-0-N-4	1
7	Rozváděč / Schaltschrank / Switchboard	DVE03-S01-B4-C24-20-T1-M1	1
8	Jednosměrný ventil / Einwegventil / One-way valve	SC1F-A2/H005 V205-007-1-01	1
9	Manometr / Manometer / Manometer	Ø68 s/mit/with Glycerin	1
10	-	-	-
11	-	-	-
12	Rozváděč / Schaltschrank / Switchboard	DVE03-S04-Bx-C24/20/T1-M1	1
13	Hydraulický zámek / Hydraulisches Schloß / Hydraulic lock	PC08-30-0-N	1
14	Sedlový ventil / Sattelventil/ Saddle valve	SV08-20-0-N-24EG	1
15	Tlakový spínač / Druckschalter / Pressure switch	Kod/Kode/Code 0166415031059	1
16	Škrtící ventil / Drosselventil / Throttle-valve	VS01-04-R2, 5-0S 92.152.001	2
17	Kostka regulace / Regulationklotz / Regulation cube Manuální přítlak/Manuellen Druck/Manual pressure - (Proline 320.280 a/und/ and Proline 420.350) Hydraulický přítlak/Hydraulikdruck/Hydraulic pressure (Proline 520.450)	Manuální/Hydraulický přítlak Manuellen Druck/Hydraulikdruck Manual pressure/Hydraulic pressure	2/1
18	Ventil pojistný / Sicherungsventil / Retaining valve	VPNH ¼ 92.151.001	1
19	Redukční ventil / Reduktionsventil / Control valve	VRN1-06/RV-6,3	2/1/0
20	Manometr / Manometer / Manometer	Ø68 , 0-60 bar	2/1/0
21	-	-	-
22	Kulový ventil / Kugelventil / Globe valve		4/0
23	Redukční ventil / Reduktionsventil / Control valve	VRN2-06/S-6R	1
24	-	-	-
25	-	-	-

7. **Drawing assemblies for spare parts order**

- Při objednávání náhradních dílů vždy uvádějte: typ stroje (např. Proline 320.280 H) , výrobní číslo (např. 125) a rok výroby (např. 1999).
- In die Bestellung der Ersatzteile führen Sie immer an: Maschinentyp (z. B. Proline 320.280 H), Serien Nr. (z. B. 125) und Baujahr (z. B. 1999).
- For spare parts order, you must always to allege: type of machine (for example Proline 320.280 H), serial number (for example 125, see cover page) and year of construction (for example 1999).

7.1. Proline 320.280 H



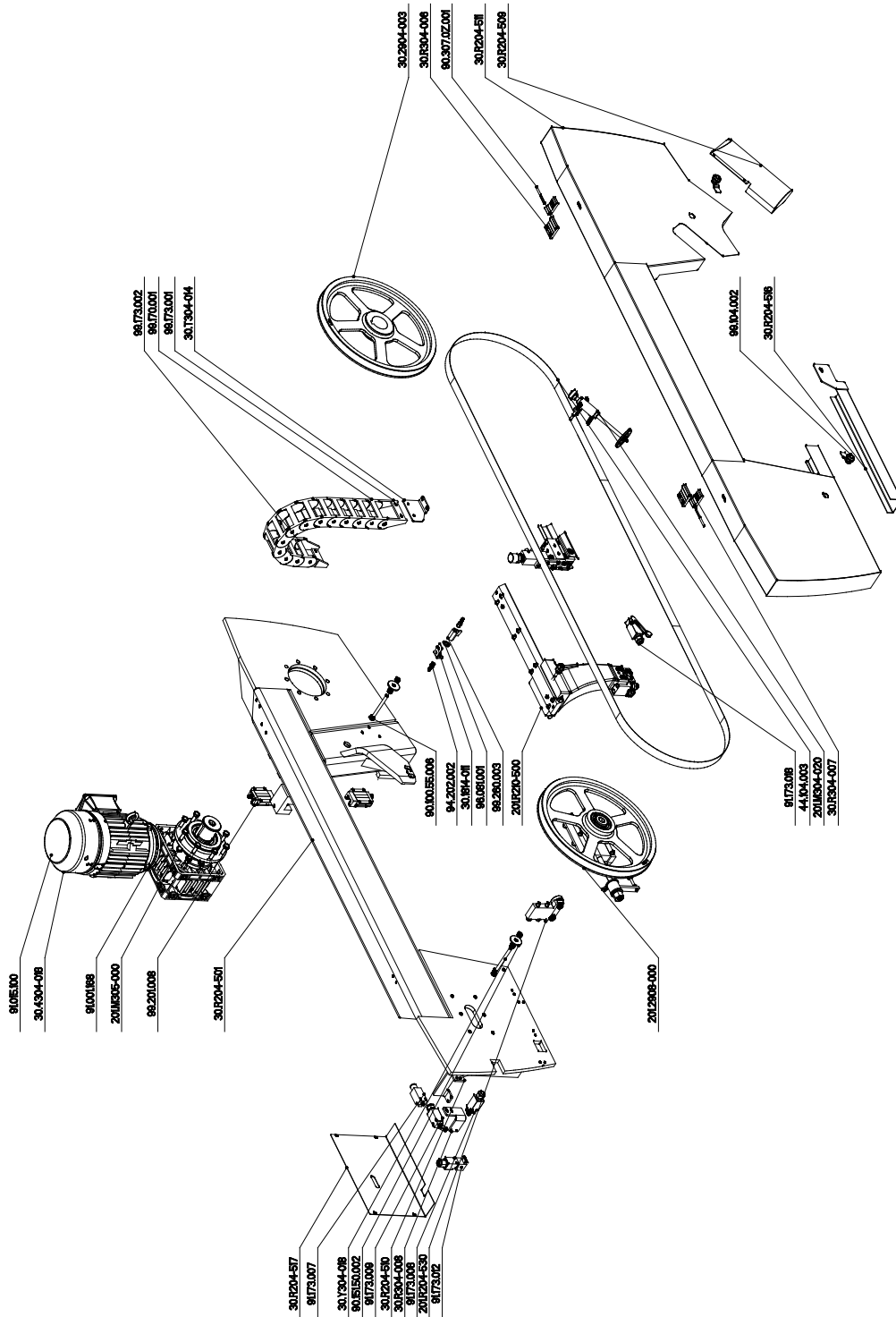
 NAZEV SESTAVY PILA PASOVA	CÍSLO SESTAVY 201.RZ00-700	STROJ Proline280H
Konstruktor: KOLESA		Datum: 14. 06.2012
Meritko: 7:100		

7.2. Kusovník / Stückliste / Piece list – Proline 320.280 H

Cislo Sestavy 201.R200-700		Název sestavy PILA PASOVA/BAND SAW/BANDSÄGE			
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	201.8307-200	2	VALEC ZVEDACI / LIFTING CYLINDER / HEBEZYLINDER		1
2	201.R203-000	2	SVERAK / VICE / SCHRAUBSTOCK		1
3	221.M230-700	0	OVLADACI PANEL / CONTROL PANEL / BEDIENPULT		1
4	221.R201-700	0	PODSTAVEC / BASE / UNTERSATZ		1
5	221.R202-500	0	SLOUP / POLE / SAULE		1
6	221.R202-520	0	SLOUP / POLE / SAULE		1
7	221.R202-730	0	ODMEROVANI / POLE / SAULE		1
8	221.R204-700	0	RAMENO / SAW ARM / SÄGERAHMEN		1
9	30.R299-701	0	STITEK TYPOVY / MACHINE LABEL / MASCHINE SCHILD	P 0.5x65	1
10	92.001.077	0	AGREGAT HYDRAULICKY / HYDRAULIC GENERATOR / HYDRAULIKAGGREGAT		1
11	99.900.039	0	SAMOLEPKA / STICKER / AUFKLEBER	NEBEZP.-STLACENI	1
12	99.900.040	0	SAMOLEPKA / STICKER / AUFKLEBER		1
13	99.900.047	0	SAMOLEPKA / STICKER / AUFKLEBER		1
14	99.900.048	0	SAMOLEPKA / STICKER / AUFKLEBER		1
15	99.900.049	0	SAMOLEPKA / STICKER / AUFKLEBER		1
16	99.900.053	0	SAMOLEPKA / STICKER / AUFKLEBER		1
17	99.901.047	0	SAMOLEPKA / STICKER / AUFKLEBER		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

7.3. Rameno / Sägerahmen / Saw arm1



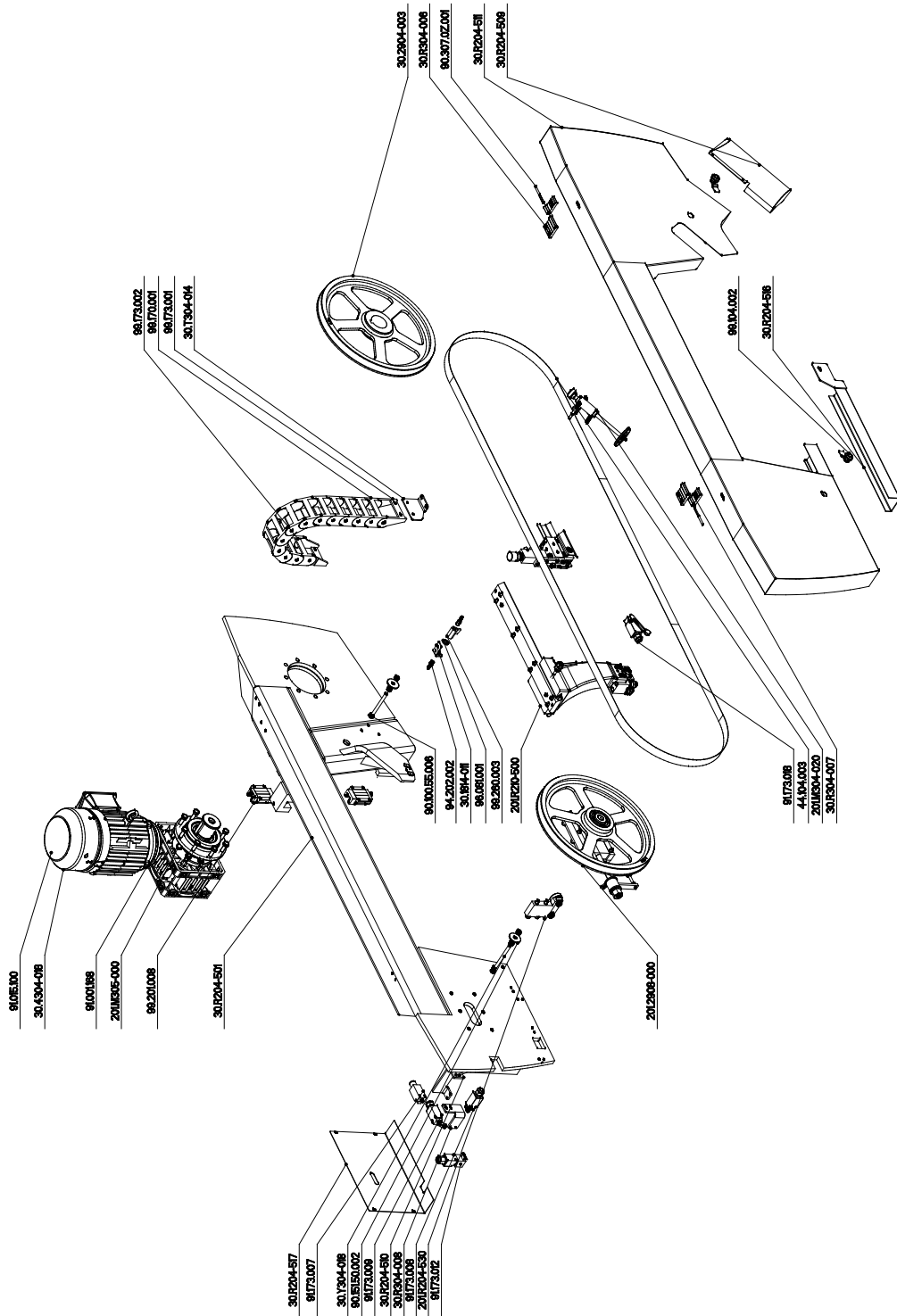
NAZEV SESTAVY RAMENO	CÍSLO SESTAVY 221.R204-700	STROJ ***
Konstruoval: ODVARKA		
Datum: 26. 04. 2012		
Měřitko: 1:100		

7.4. Kusovník / Stückliste / Piece list – Rameno / gerahmen / Saw arm 1

Císlo Sestavy 221.R204-700		Název sestavy RAMENO / SAW ARM / SÄGERAHMEN			
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.R204-501	0	RAMENO / SAW ARM / SÄGERAHMEN		1
2	201.2908-000	2	NAPINANI / TENSIONING / SPANNUNG		1
3	201.M305-000	0	PREVODOVKA / TRANSMISSION / GETRIEBE		1
4	201.R210-500	0	VEDENÍ PASU / BELT GUIDE / SÄGEBANDFÜHRUNG		1
5	201.M304-020	0	KARTAC / BRUSH / BÜRSTE		1
6	201.R204-530	0	KONZOLA / CONSOLE / KONSOLE		1
7	91.173-012	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER		1
8	30.R304-006	2	PANT / BOARD / PLATTE	PROFIL	2
9	30.R304-007	1	PANT / BOARD / PLATTE	PROFIL	2
10	30.R204-511	0	KRYT / COVER / ABDECKUNG		1
11	30.R204-509	0	KRYT KARTACKU / BRUSH COVER / BÜRSTENABDECKUNG		1
12	30.R204-516	0	KRYT PASU / BELT COVER / BANDABDECKUNG		1
13	30.2904-003	3	KOLO HNACI / DRIVE WHEEL / ANTRIEBSRAD	ODLITEK	1
14	30.Y304-018	0	TYC ZAVITOVA / THREADED POLE / GEWINDESTANGE	M10	2
15	90.100.55.006	0	MATICE / NUT / MUTTER	MATICE - M10	6
16	30.1814-011	1	DRZAK / HOLDER / HALTER	P 3x76	1
17	99.260-003	0	VENTIL / VALVE / VENTIL	1/4"	1
18	96.081-001	0	KROUZEK TESNICI / SEAL RING / DICHTUNGSRING	23x15x3	1
19	94.202.002	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	REDUKCE 6/R1/4"	2
20	90.151-50.002	0	PODLOZKA / WASHER / UNTERLEGSCHIBE	PODLOZKA 12	2
21	91.173-007	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	-R1WK	1
22	99.104-002	0	ZAMEK / LOCK / SCHLOSS	ZAMEK CINSKY	2
23	99.201-008	0	VOZIK LINEARNIHO VEDENI / LINEAR GUIDE CART / LINEARFÜHRUNGSWAGEN	HGW 25CC	2
24	30.R204-517	0	KRYT NAPINANI / TENSIONING COVER / BANDSPANNUNGSABDECKUNG	P 1.5x310	1
25	30.T304-014	0	DRZAK / HOLDER / HALTER	P 4-100	1
26	99.173-001	0	RETEZ ENERGI / ENERGY BELT / ENERGIEKETTE	KONCOVKA VNEJ	1
27	99.170-001	0	RETEZ ENERGI / ENERGY BELT / ENERGIEKETTE	0555.030.075.100	12
28	99.173-002	0	RETEZ ENERGI / ENERGY BELT / ENERGIEKETTE	KONCOVKA VNIT	1
29	44.104-003	0	PAS PÍLOVY 280 / SAW BELT / SÄGEBAND	4580x34x1.1	1
30	90.307-02.001	0	KOLIK / PIN / BOLZEN	D6	2
31	91.001.168	0	ELEKTROMOTOR / ELECTRIC MOTOR / ELEKTROMOTOR	M22 MHERAXX112M	1
32	30.R204-510	0	DRZAK / HOLDER / HALTER	P 6x83	1
33	30.R304-008	0	DRZAK / HOLDER / HALTER	P 80x6	1

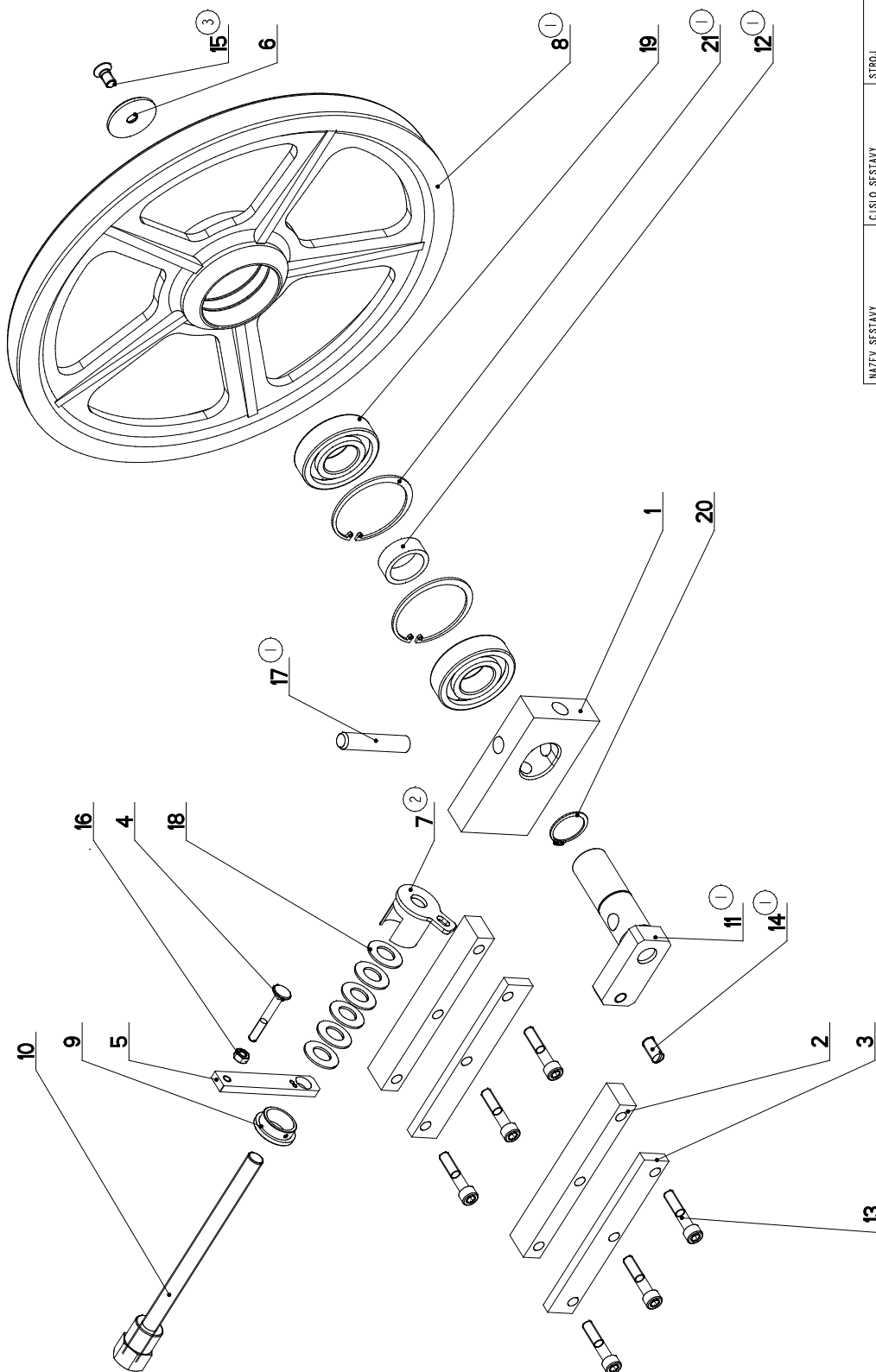
Císlo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver.)/Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Poz.)/Position/Position;
Objednací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rozměr/Stock size/Abmessung


7.5. Rameno / Sägerahmen / Saw arm 2



NAZEV ŠESTVY RAMENO	CÍSLO ŠESTVY 221.R204-700	STRUJ ***
Konstruoval: ODVARKA		
Datum: 26. 04. 2012		
Měřitko: 1:100		

7.7. Napínání / Spannung / Tensioning



NAZEV SESTAVY NAPÍNÁNÍ	ČÍSLO SESTAVY 201.2908-000	STROJ STG 330GA
		
Konstruoval: &konstruoval		
Datum: 21. 06.2012		
Měřítko: 3:10		

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

Císlo Sestavy 201.2908-000		Ver. 3		Název sestavy NAPÍNÁNÍ / TENSIONING / SPANNUNG	
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.0808-001	1	KOSTKA NAPÍNÁNÍ / TENSIONING CUBE / BANDSPANNUNGSWÜRFEL	80x30	1
2	30.0808-002	1	LISTA VODÍČI / LEAD TRIM / FÜHRUNGSLEISTE	30x20	2
3	30.0808-006	1	LISTA / TRIM / LEISTE	HR 30x10	2
4	30.0808-007	0	SROUB / BOLT / SCHRAUBE	M8x60	1
5	30.1708-004	4	DRZAK / HOLDER / HALTER	HR 20x8	1
6	30.2908-001	1	PODLOŽKA / WASHER / UNTERLEGSCHLEIBE	d 50	1
7	30.2908-102 (2)	1	DRZAK / HOLDER / HALTER		1
8	30.2908-103 (1)	2	KOLO NAPÍNACÍ / TENSIONING WHEEL / UMLENKRAD	ODLITEK	1
9	30.3508-004	1	KROUZEK / RING / RING	d42	1
10	30.4008-001	1	SROUB / BOLT / SCHRAUBE		1
11	30.4808-101 (1)	4	CEP NAPÍNÁNÍ / TENSIONING LUG / SPANNUNGSBOLZEN		1
12	30.4808-103 (1)	1	KROUZEK DISTANČNÍ / DISTANCE RING / DISTANZRING	d 45	1
13	90.001.25.052	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x50	6
14	90.002.2D.013 (1)	0	SROUB STAVEČI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M12x25	1
15	90.011.27.008 (3)	0	ZAPUSTNÝ IMBUS / COUNTERSINK BOLT / SENKRSCHRAUBE	SROUB M10x20	1
16	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE _ M8	1
17	90.300.0Z.003 (1)	0	KOLÍK VALC. KAL. / CYLINDRICAL PIN TEMPERED / ZYLINDERSTIFT GEHARTET	KOLÍK 16x80	1
18	90.350.0Z.002	0	TALÍROVA PRUŽINA / DISC SPRING / TELLERFEDER	35,5x18,3x2,0x2,8	6
19	95.001.026	0	LOŽISKO / BEARING / LAGER	6307 ZRS	2
20	95.800.014	0	SEGR HR IDEL. / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNÝ KROUZEK 35	1
21	95.801.013 (1)	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNÝ KROUZEK 80	2

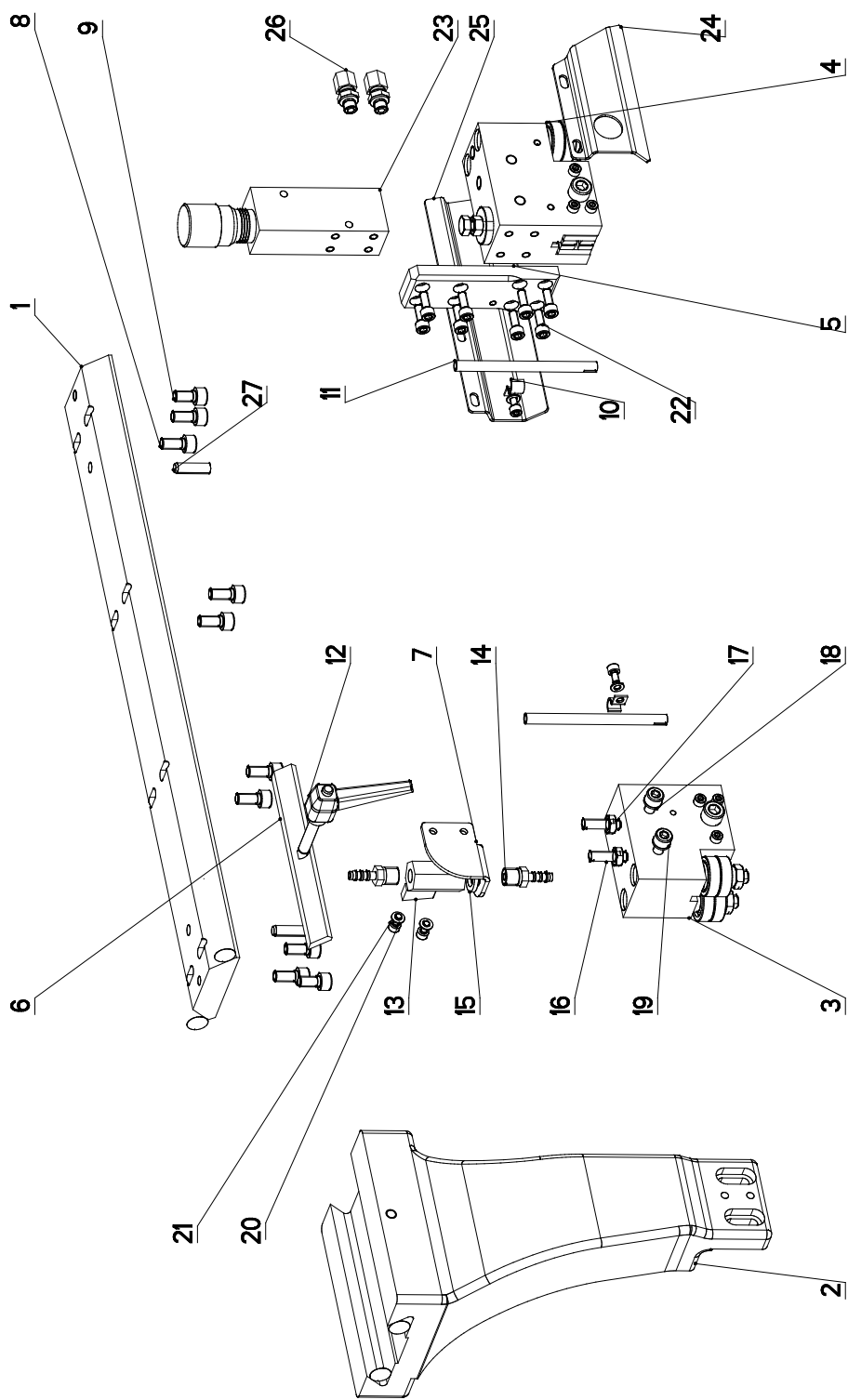
1. ZMENA 30.1808-004 NA 30.4808-103, 2908-003 NA 2908-103, 1808-003 NA 4808-101, 90.002.2D.014 NA 90.004.2D.013
90.001.25.056 NA 90.011.27.09, PRIDAN IKS 95.801.013, 90.301.0Z.019 NA 90.300.0Z.003 14.5.2004 URICAR

2. ZRUSEN KALISEK 30.3508-002A NAHRAZEN 30.2908-102. 076/ZMI40 30.4.2008 SLEZACKOVA

3. ZRUS. SROUB M12x20(90.011.27.009) A NAHR. M10x20(90.011.27.008). 110/ZM212 21.6.2012 SLEZACKOVA

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; Rozměr/Stock size/Abmessung

7.9. Vedení pásu/ Sägebandführung / Belt guide



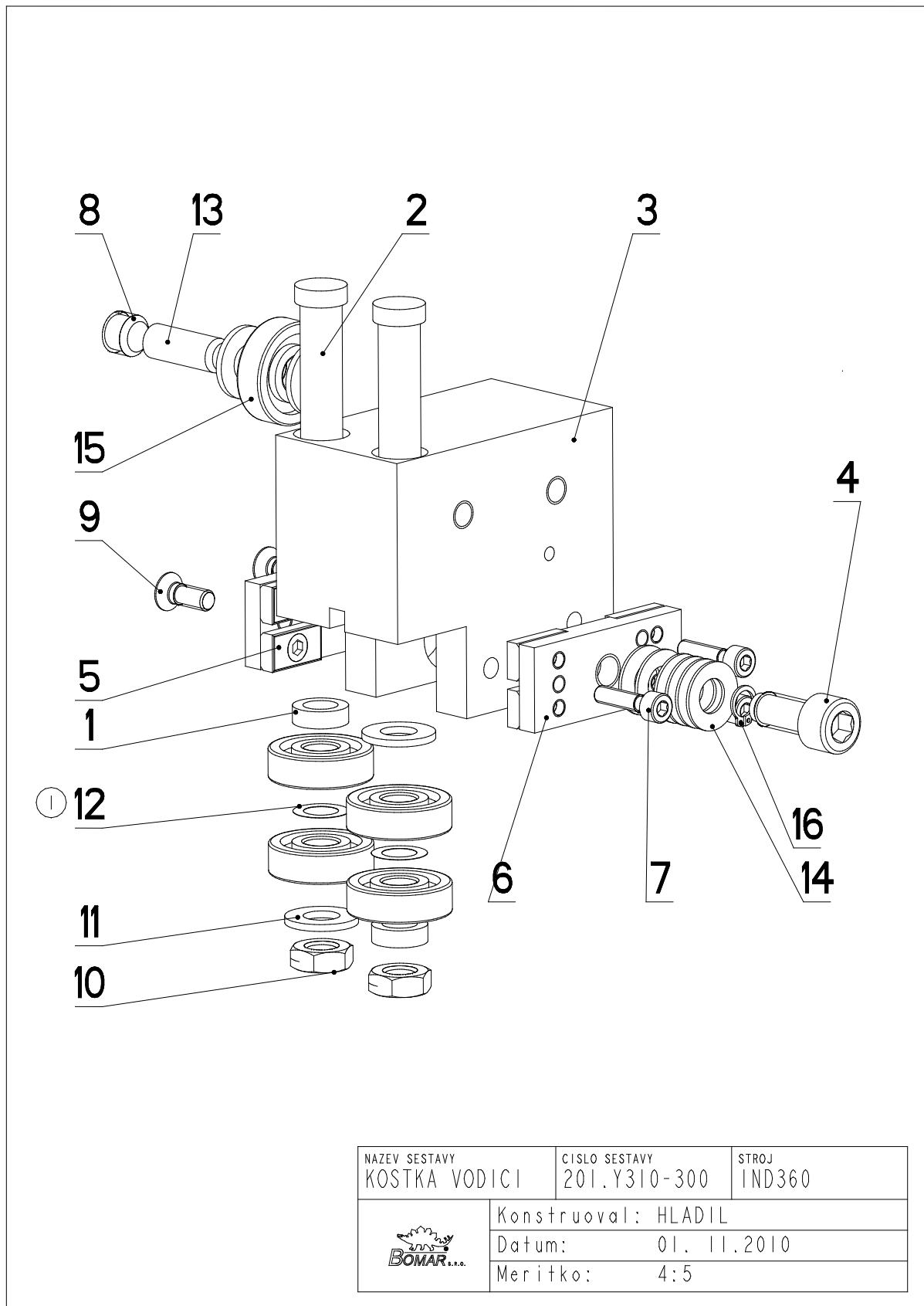
NAZEV SESTAVY VEDENÍ PÁSU	ČÍSLO SESTAVY 201_R210-500	STROJ PL280/34
Konstruktor: ODVARKA	Datum: 19. 04. 2012	Meritko: 1:2

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

Císlo Sestavy 201.R210-500		Název sestavy VEDENÍ PÁSU/BELT GUIDE/SÄGEBANDFÜHRUNG		Ver. 0	Ks
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.M210-002	0	LISTA / TRIM / LEISTE	HR 80x20	1
2	30.R210-504	0	KONZOLA / CONSOLE / KONSOLE		1
3	201.Y310-300	1	KOSTKA VODICÍ / LEAD CUBE / FÜHRUNGSKLOTZ		1
4	201.Y310-400	1	KOSTKA VODICÍ / LEAD CUBE / FÜHRUNGSKLOTZ		1
5	30.2016-006	0	DESKA / BOARD / PLATTE	HR 40x12	1
6	30.M210-008	0	LISTA / TRIM / LEISTE	HR 25x6	1
7	30.Y310-008	0	DRŽÁK / HOLDER / HALTER	P3-50	1
8	90.001.25.105	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X18	8
9	90.001.25.031	0	SROUB IMBUS CERNÝ / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x16	2
10	30.9010-003	0	DRŽÁK / HOLDER / HALTER	Pl. 5x10	2
11	30.3510-004	0	TRUBKA / TUBE / ROHR	TR 8x 1	2
12	94.008.003	0	PAKA UPÍMACÍ / ATTACHMENT LEVER / SPANNHEBEL	M8x40	1
13	99.260.003	0	VENTIL / VALVE / VENTIL	1/4"	1
14	94.202.002	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	REDUKCE 6/R/1/4"	2
15	96.081.001	0	KROUZEK TESNICÍ / SEAL RING / DICHTUNGSRING	23x15x3	1
16	90.002.2D.022	0	SROUB STAVEČÍ / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M8X30	2
17	90.101.55.001	0	MATICE / NUT / MUTTER	MATICE M8	2
18	90.163.00.002	0	PODLOŽKA / WASHER / UNTERLEGSCHLEIBE	PODLOŽKA 8	2
19	90.001.25.033	0	SROUB IMBUS CERNÝ / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x25	2
20	90.150.50.003	0	PODLOŽKA / WASHER / UNTERLEGSCHLEIBE	PODLOŽKA 5,3	4
21	90.001.25.007	0	SROUB IMBUS CERNÝ / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X10	4
22	90.001.25.017	0	SROUB IMBUS CERNÝ / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X16	8
23	201.2016-000	0	REGULACE PRITLAKU / PRESSURE REGULATION / SCHNITTDRUCKREGULATION		1
24	30.M310-006	2	KRYT PÁSU / BELT COVER / BANDABDECKUNG	P 2x70	1
25	30.M310-007	1	KRYT PÁSU / BELT COVER / BANDABDECKUNG	P 2x70	1
26	92.002.102	0	SROUBENÍ / BOLTING / VERSCHRAUBUNG	S-GEV-8LLR	2
27	90.303.0Z.021	0	KOLÍK / PIN / BOLZEN	KOLIK 8X28	2

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; Rozměr/Stock size/Abmessung

7.11. Vodící kostka / Führungsklotz / Guiding cube1

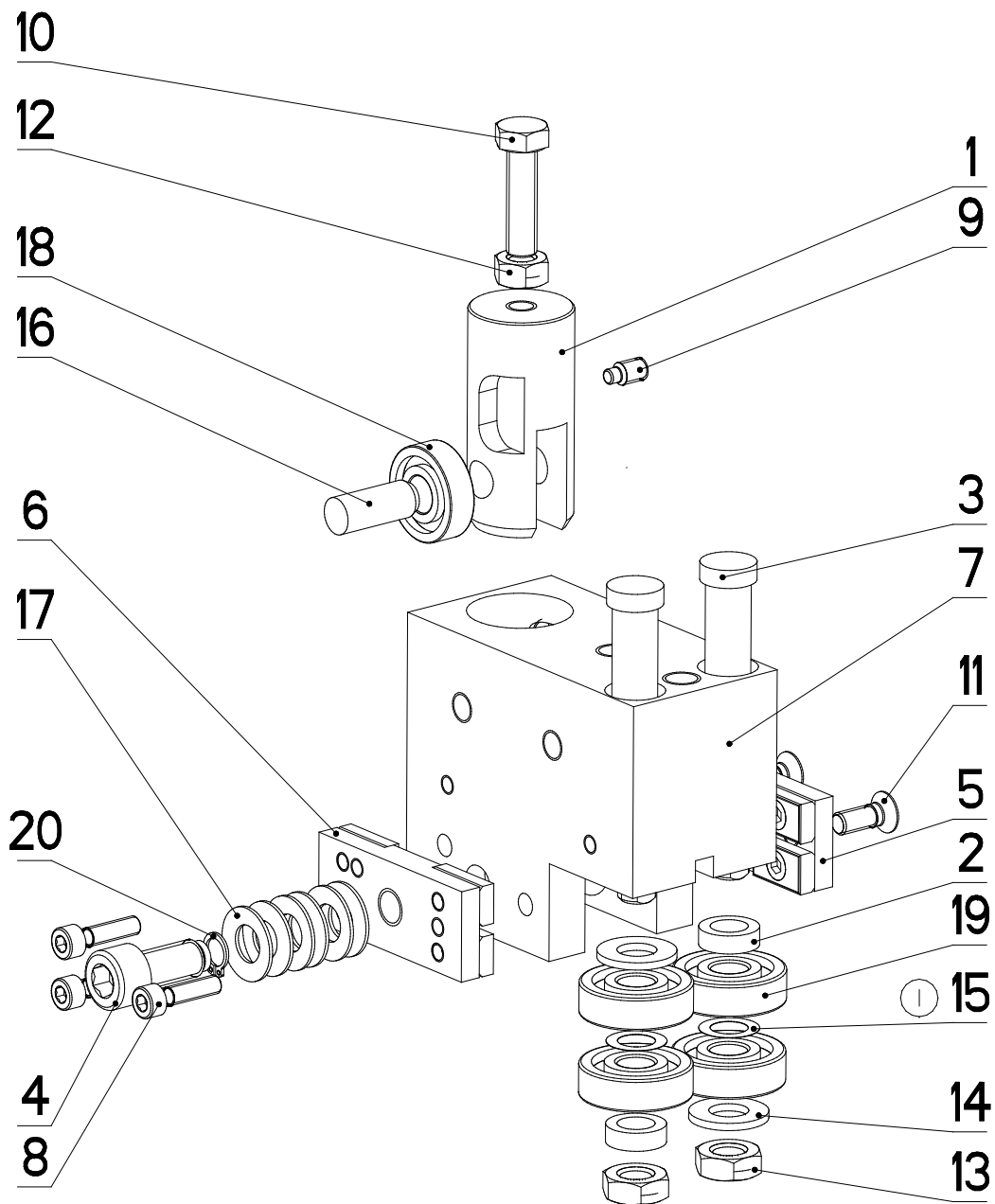



7.12. Kusovník / Stückliste / Piece list – Vodící kostka / Führungsklotz / Guiding cube1

Císlo Seostavy 201.Y310-300		Název seostavy KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ			
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.C210-403	1	DISTANC / DISTANCE / DISTANZ	TR 16x3	2
2	30.Y310-212	0	EXCENTR / CAM / EXZENTER	d 15	2
3	30.Y310-301	1	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ	HR 80x50	1
4	30.Y310-306	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x25	1
5	30.Y310-310	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
6	30.Y310-320	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
7	90.001.25.010	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5x20	3
8	90.002.2D.016	0	SROUB STAVEC / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M12x10	1
9	90.011.27.017	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKRSCHRAUBE	SROUB M6x16	2
10	90.101.55.002	0	MATICE / NUT / MÜTTER	MATICE M10	2
11	90.150.50.006	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	PODLOZKA 10,5	4
12	90.154.50.001 (1)	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	10x16x0,1	2
13	90.301.07.001	0	KOLIK VALCOVY / CYLINDRICAL PIN SOFT / ZYLINDERSTIFT WEICH	KOLIK 10x28	1
14	90.350.07.005	0	PRUZINA TALIROVA / DISC SPRING / TELLERFEDER	20x10.2X1	6
15	95.001.014	0	LOZISKO / BEARING / LAGER	6200 ZRS	5
16	95.800.002	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 8	1

I.PRIDANA PODLOZKA 90.154.50.001. 2777/ZM294 I.II.2010 SLEZACKOVA

7.13. Vodící kostka / Führungsklotz / Guiding cube2



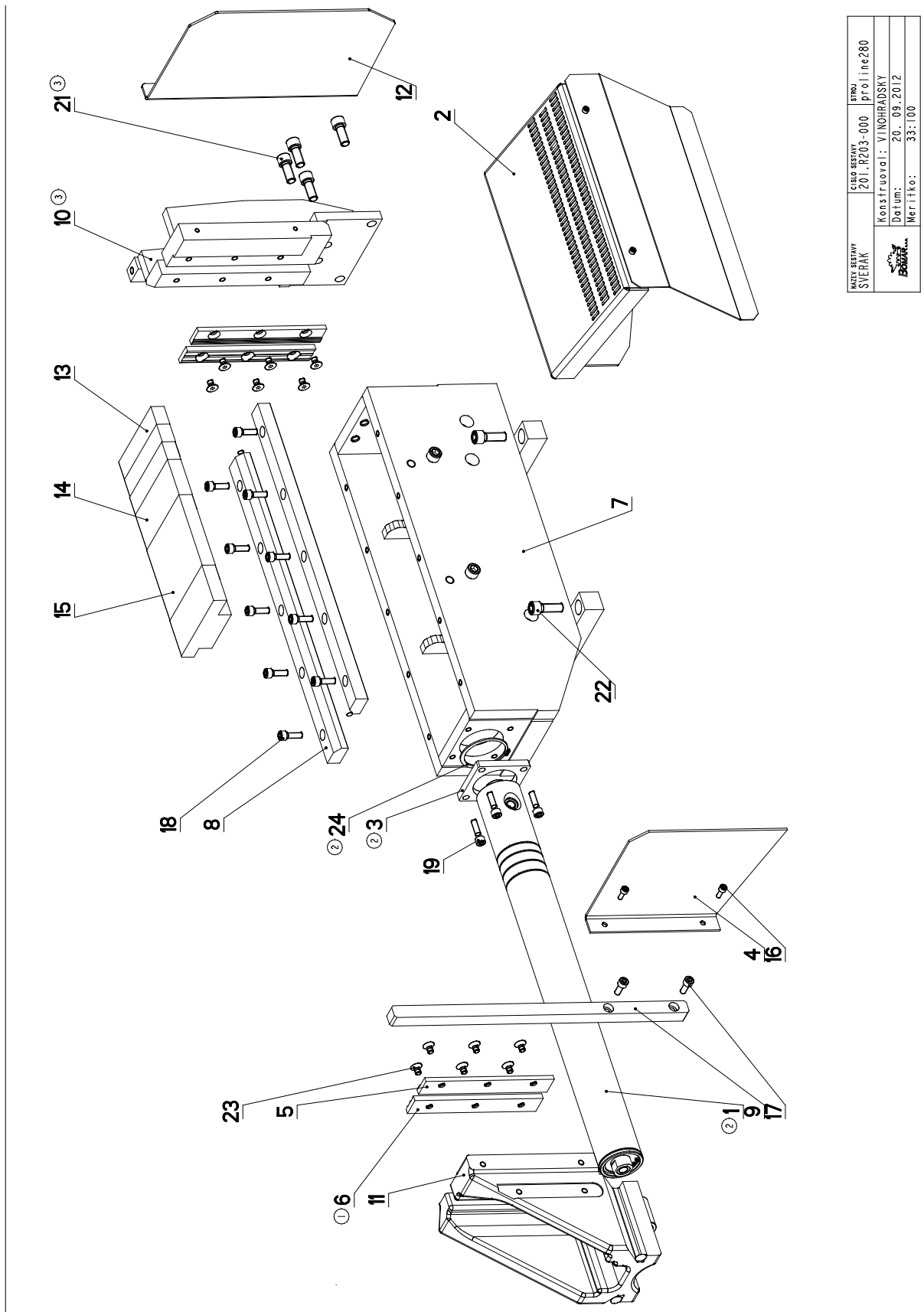
NAZEV SESTAVY KOSTKA VODICI	CISLO SESTAVY 201.Y310-400	STROJ IN360
	Konstruoval: HLADIL	
	Datum: 01. 11.2010	
	Meritko: 7:10	

7.14. Kusovník / Stückliste / Piece list – Vodící kostka / Führungsklotz / Guiding cube2

Císlo Seostavy 201.Y310-400		Název seostavy KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ			
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.1810-102	3	DRZAK / HOLDER / HALTER	TYC 28	1
2	30.C210-403	1	DISTANC / DISTANCE / DISTANZ	TR 16x3	2
3	30.Y310-212	0	EXCENTR / CAM / EXZENTER	d 15	2
4	30.Y310-306	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x25	1
5	30.Y310-310	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
6	30.Y310-320	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
7	30.Y310-401	3	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ	HR 80x50	1
8	90.001.25.010	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X20	3
9	90.004.2D.002	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M6X12	1
10	90.005.55.017	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8X30	1
11	90.011.27.017	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SEMWSCHRAUBE	SROUB M6X16	2
12	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE _ M8	1
13	90.101.55.002	0	MATICE / NUT / MUTTER	MATICE M10	2
14	90.150.50.006	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	PODLOZKA 10,5	2
15	90.154.50.001	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	10x16x0.1	2
16	90.301.0Z.009	0	KOLIK VALCOVY / CYLINDRICAL PIN SOFT / ZYLINDERSTIFT WEICH	KOLIK 10X26	1
17	90.350.0Z.005	0	PRUZINA TALIROVA / DISC SPRING / TELLERFEDER	20X10.2X1	6
18	95.001.004	0	LOZISKO / BEARING / LAGER	6000 2RS	1
19	95.001.014	0	LOZISKO / BEARING / LAGER	6200 2RS	4
20	95.800.002	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 8	1

I.PRIDANA PODLOZKA 90.154.50.001 . 277/ZM294 1.11.2010 SLEZACKOVA

7.15. Svěrák / Schraubstock / Vice



NAZEV SESTAVY SVĚRÁK	ČÍSLO SESTAVY 201_R203-000	STROJ proline280
Konstruoval: VINOHRADSKÝ		
Datum: 20. 09. 2012		
Měřilko: 33:100		

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

Císlo Sestavy 201.R203-000	Ver. 3	Název sestavy SVĚRÁK/VICE/SCHRAUBSTOCK			
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	201.3707-000 (2)	1	VALEC / ROLLER / ZYLINDER		1
2	201.R203-050	1	SKLIZ / SLIDE / RUTSCH		1
3	30.2011-010 (2)	0	PRÍLOŽKA / STRAP / LASCHE	HR 80x10	1
4	30.5503-015	1	BOCNICE / SIDE PLATE / SEITENTEIL	P 3x233	1
5	30.6903-109	1	LISTA CELISTI / JAW TRIM / BACKENLEISTE	HR 30x10	2
6	30.D311-235 (1)	2	LISTA / TRIM / LEISTE	HR 30x10	2
7	30.R203-001	3	SVĚRÁK / VICE / SCHRAUBSTOCK		1
8	30.R203-004	1	LISTA VODÍČI / LEAD TRIM / FUHRUNGSLEISTE	HR 40x25	2
9	30.R203-005	1	LISTA / TRIM / LEISTE	HR 20x20	1
10	30.R203-017 (3)	0	CELIST PĚVNA / /		1
11	30.R303-014	1	CELIST POKRYTÍ / MOVING JAW / BEWEGLICHE BACKE	ODLITEK	1
12	30.R303-015	1	BOCNICE / SIDE PLATE / SEITENTEIL	P 3x226	1
13	30.R303-016	1	VLOŽKA / INSERT / EINLAGE	HR 40x30	3
14	30.R303-017	1	VLOŽKA / INSERT / EINLAGE	TYC 60x40	2
15	30.R303-018	1	VLOŽKA / INSERT / EINLAGE	HR 120x40	1
16	90.001.25.017	0	SROUB IMBUS ČERNÝ / /	M6X16	2
17	90.001.25.032	0	SROUB IMBUS ČERNÝ / /	8x20	2
18	90.001.25.033	0	SROUB IMBUS ČERNÝ / /	8x25	10
19	90.001.25.034	0	SROUB IMBUS / /	M8X30	4
20	90.001.25.056	0	SROUB IMBUS ČERNÝ / /	M12x20	2
21	90.001.25.058 (3)	0	SROUB IMBUS / /	M12X30	4
22	90.001.25.059	0	SROUB IMBUS / /	M12X35	4
23	90.011.27.007	0	SROUB / /	M8x12	12
24	95.800.021 (2)	0	SEGR HR IDEL. / OUTSIDE SAFETY RING / SICHERUNGSRING AUSSEN	POJISTNÝ KROUZEK 62	1

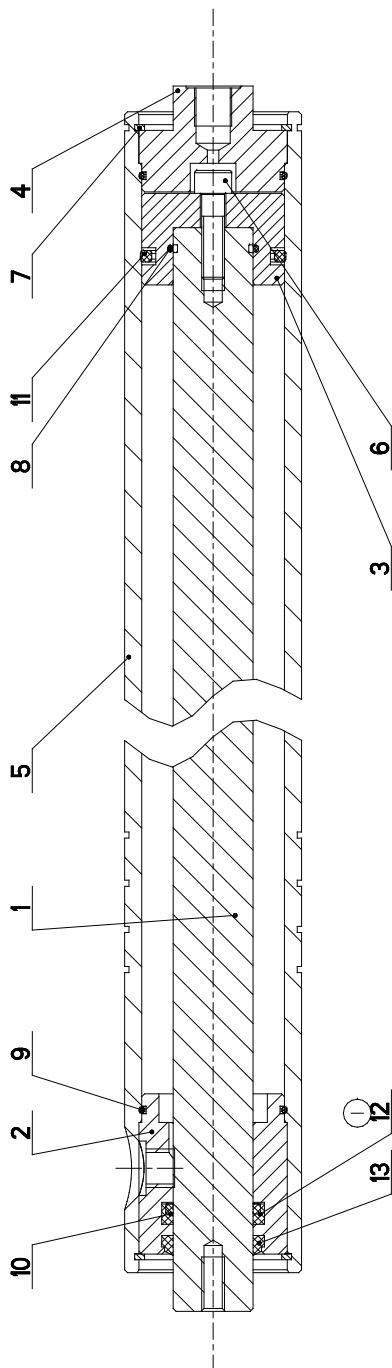
1. ZRUS.LISTA 30.6903-110 A NAHR. 30.D311-235,ZRUS.CELIST 30.R203-012 A NAHR.30.R203-015,ZRUS.CELIST 30.R203-002
A NAHR.30.R203-016, ZRUS.6XSROUB M12x35(90.001.25.059) A NAHR.4XSROUB M12x70 (90.001.25.064) A 2XSROUB M12x30(90.001.058)
112/ZM129 30.5.2011 SLEZACKOVA


2.ZRUS.VALEC 201.3507-000 A NAHR.201.3707-000, ZRUS.PRÍLOŽKA 30.3511-009 A NAHR.30.2011-010,ZRUS.POJ.KROUZEK D52
(95.800.019) A NAHR.POJ.KROUZKEM D62 (95.800.021). 164/ZM197 25.7.2011 SLEZACKOVA

3.ZRUS.CELIST 30.R203-015,30.R203-016 A NAHR.30.R203-017,ZRUS.4XSROUB M12x70(90.001.25.064),
PR ID..2XSROUB M12x30(90.001.25.058). 196/ZM246 20.9.2012 SLEZACKOVA

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 Baugruppe; Rozměr/Stock size/Abmessung

7.17. Válec / Zylinder / Roller



NAZEV SESTAVY VALEC	ČÍSLO SESTAVY 201.3707-000	STROJ STG 320GA
		
Konstruoval: ZEZULA		
Datum: 04. 03.2010		
Meritko: 7:10		

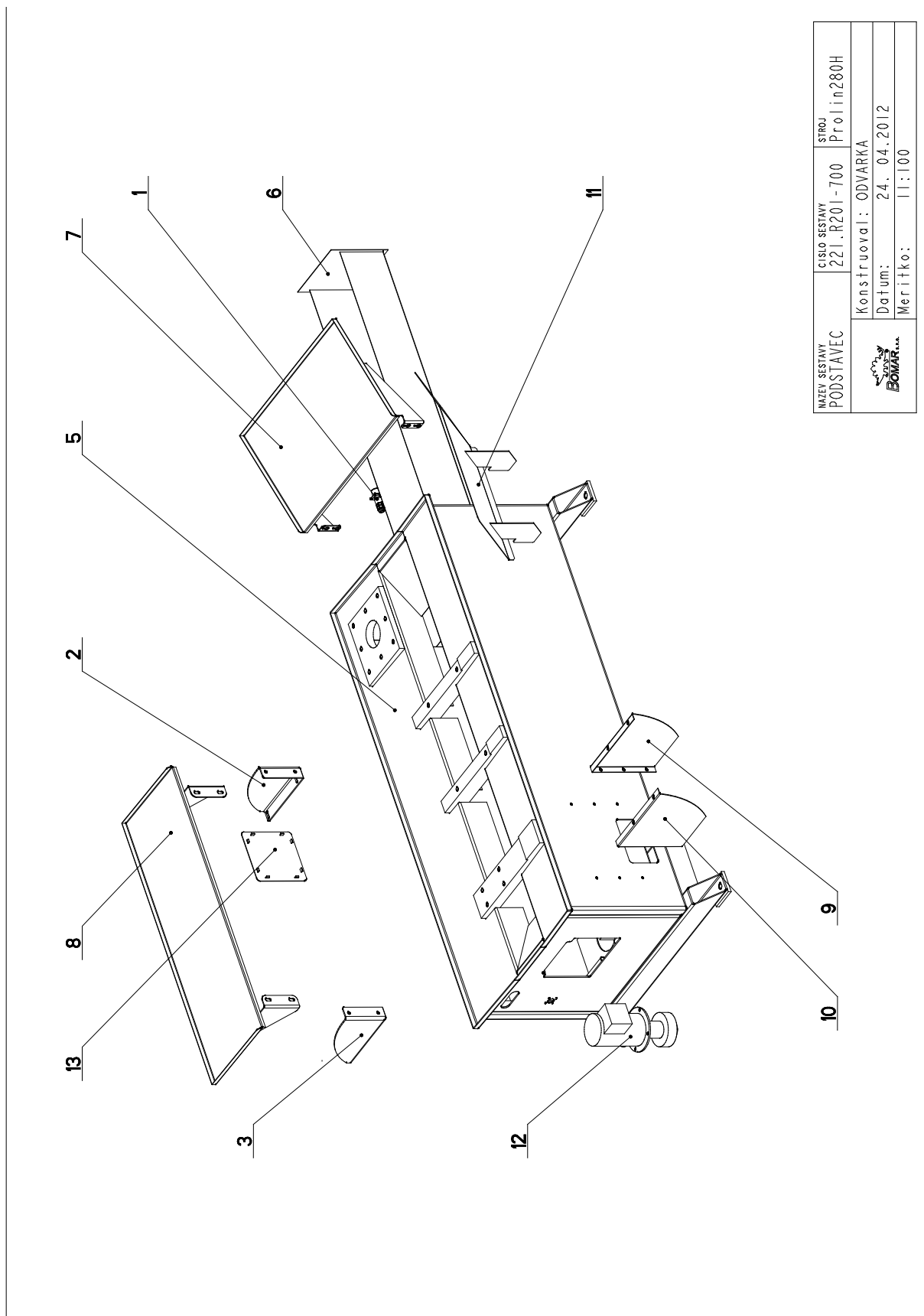
7.18. Kusovník / Stückliste / Piece list – Válec / Zylinder / Roller

Císlo Sestavy 201.3707-000		Název sestavy VALEC/ROLLER/ZYLINDER			
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.0607-102	1	PISTNICE / PISTON ROD / KOLBENSTANGE	d 28	1
2	30.1807-104	2	VÍKO / COVER / DECKEL	TYC 55	1
3	30.2007-302	0	PIST / PISTON / KOLBEN	d 55	1
4	30.2007-304	0	VÍKO / COVER / DECKEL	d 55	1
5	30.3707-001	3	VALEC SVĚRAKU / VICE CYLINDER / SCHRAUBSTOCKZYLINDER	TR 62/50H8	1
6	90.001.25.034	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X30	1
7	95.801.009	0	KROUZEK POJIST.VNITR / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTINY KROUZEK 52	2
8	96.001.007	0	KROUZEK O STATICKY / STATIC O RING / O-RING STATISCH	25X2	1
9	96.001.013	0	KROUZEK O STATICKY / STATIC O RING / O-RING STATISCH	45X2	2
10	96.002.014	0	KROUZEK O DYNAMICKY / DYNAMIC O RING / O-RING DYNAMISCH	28X3	1
11	96.020.005	0	KROUZEK TESNICI / SEAL RING / DICHTUNGSRING	39.2X5.33	1
12	96.041.003 (1)	0	TESNENI / SEALING / DICHTUNG	601-28x36x7.1	1
13	96.060.003	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	KROUZEK STIRACI 28	1

(1) 0-KROUZEK 96.002.014 NAHRAZEN MANZETOU 96.041.003 24.4.2003 ROZKOSNY

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; Rozměr/Stock size/Abmessung

7.19. Podstavec / Untersatz / Base



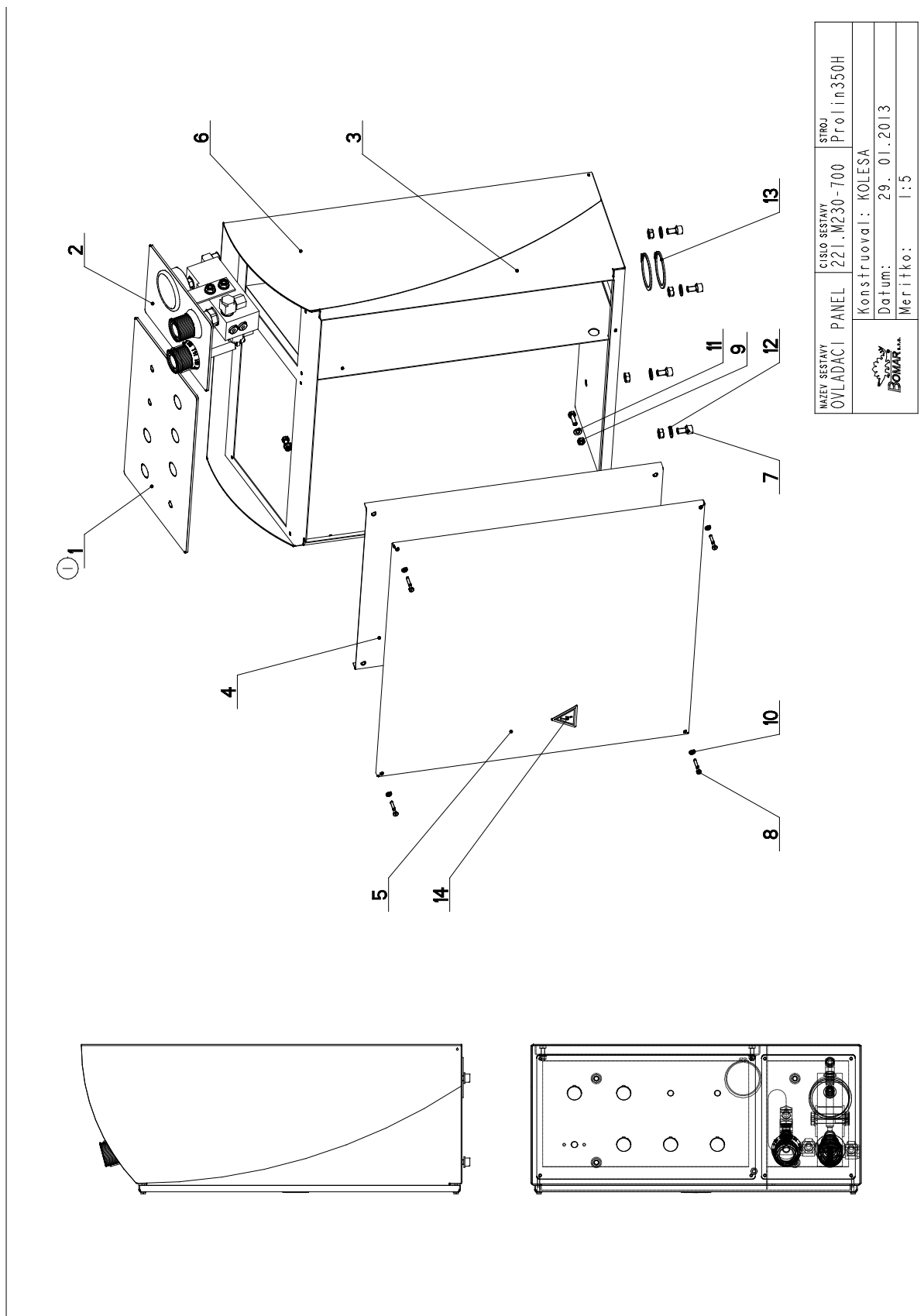
NÁZEV SESTAVY PODSTAVEC	ČÍSLO SESTAVY 221.RZ01-700	STROJ Prolin280H
Konstruoval: ODVARKA		Datum: 24. 04. 2012
Meritko:		1:100

7.20. Kusovník / Stückliste / Piece list – Podstavec / Untersatz / Base

Císlo Sestavy 221.R201-700		Ver. 0		Název sestavy PODSTAVEC / BASE / UNTERSATZ	
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	262.007	0	KONEKTOR / CONNECTOR / STECKVERBINDER		1
2	30.M201-005	1	DRŽAK / HOLDER / HALTER	P 4x173	1
3	30.M201-006	1	DRŽAK / HOLDER / HALTER	P 4x173	1
4	30.R201-005		KRYT / COVER / ABDECKUNG		1
5	30.R201-701	0	PODSTAVEC / BASE / UNTERSATZ		1
6	30.R206-001	0	VANA / TANK / WANNE		1
7	30.R301-053	0	KRYT / COVER / ABDECKUNG		1
8	30.R301-703	0	KRYT / COVER / ABDECKUNG		1
9	30.R301-704	0	DRŽAK / HOLDER / HALTER	P 2x237	1
10	30.R301-705	0	DRŽAK / HOLDER / HALTER	P 2x237	1
11	30.R314-260	0	KRYT / COVER / ABDECKUNG		1
12	91.020.015	0	CERPADLO / PUMP / PUMPE	3 COA 4-12	1
13	94.101.039	0	ZASLEPKA / PLUG / BLINDFLANSCH	154x154x4	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; Rozměr/Stock size/Abmessung

7.21. Ovládací panel / Bedienpult / Control panel



NAZEV SESTAVY OVLADACÍ PANEĽ	CÍSLO SESTAVY 221.M230-700	STROJ Prolin350H
Konstruoval: KOLESA		Datum: 29. 01.2013
Meritko: 1:5		

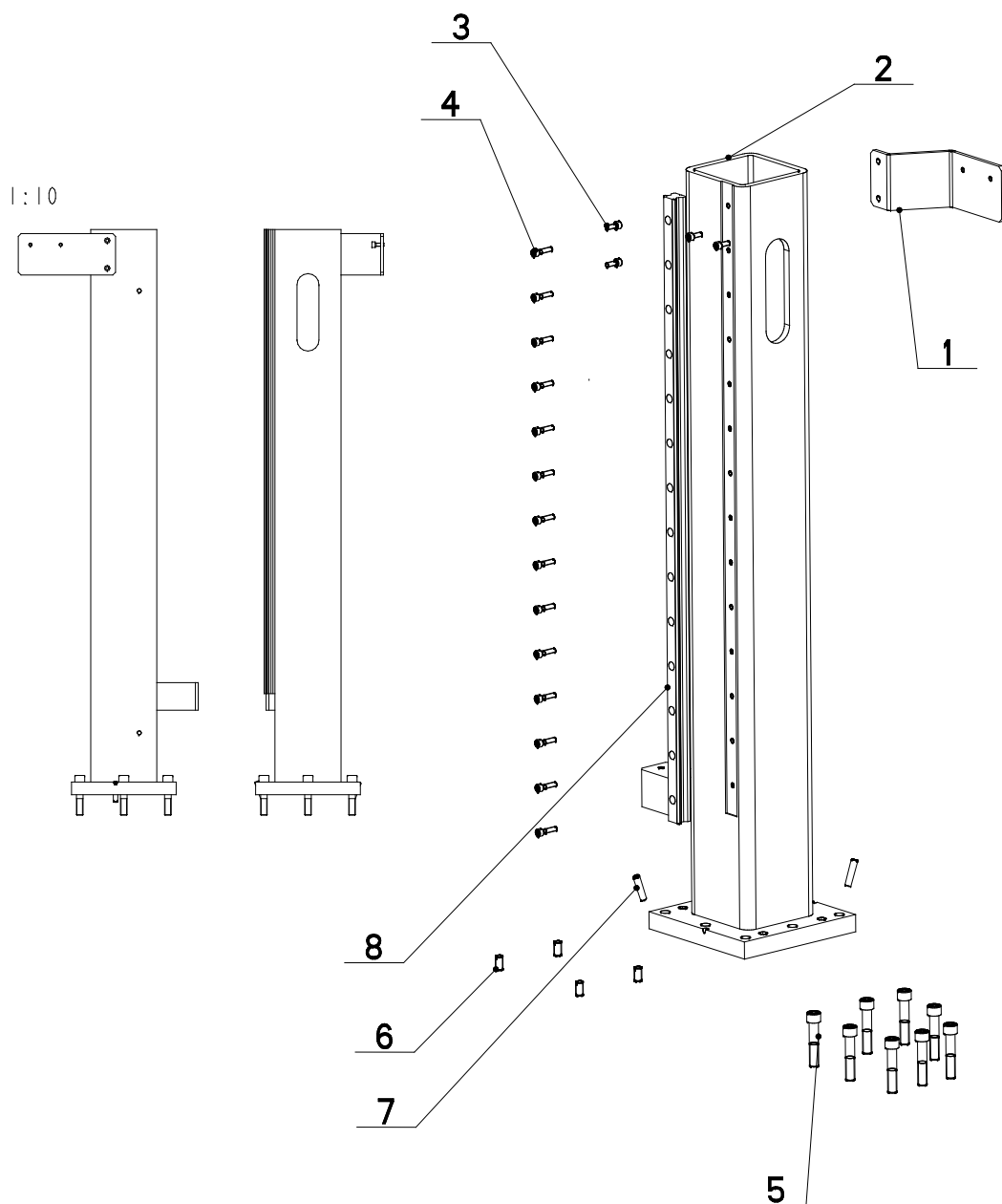
7.22. Kusovník / Stückliste / Piece list – Ovládací panel / Bedienpult / Control panel

Císlo Sestavy 221.M230-700		Ver. 1		Název sestavy OVLADACÍ PANEL/CONTROL PANEL/BEDIENPULT	
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	251.834 (1)	0	PANEL ELEKTRO / ELECTRO PANEL / PANEL		1
2	201.R230-220	1	OVLADACÍ PANEL / CONTROL PANEL / BEDIENPULT		1
3	30.M230-710	0	SKRIN / BOX / KASTEN		1
4	30.M230-712	0	PANEL / PANEL / PANEL	P 1.5x384	1
5	30.M230-713	0	VIKO / COVER / DECKEL	P 1.5x529	1
6	30.M230-714	1	PLECH / PLATE / BLECH	P 1x220	2
7	90.001.25.031	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x16	4
8	90.012.50.006	0	SR. S VALC. HLAV. / ROLLER BOLT / ZYLINDERSCHRAUBE	SROUB M4x25	4
9	90.100.55.004	0	MATICE / NUT / MUTTER	MATICE - M6	4
10	90.150.50.002	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	PODLOZKA 4,3	4
11	90.150.50.004	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	PODLOZKA 6,4	4
12	90.150.50.005	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	PODLOZKA 8,4	4
13	95.800.034	0	SEGR HRIDEL. / OUTSIDE SAFETY RING / SICHERUNGSRING AUSSEN	POJISTNY KROUZEK 55	2
14	99.900.045	0	SAMOLEPKA / STICKER / AUFKLEBER		1

I. ZRUSEN PLECH 30.M230-715 A NAHR.PANEL ELEKTRO 251.834 . 001/ZM013 29.1.2013 SLEZACKOVA

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; Rozměr/Stock size/Abmessung

7.23. Sloup / Säule / Pole 1



NAZEV SESTAVY SLOUP	CISLO SESTAVY 221.R202-500	STROJ PL280/34
	Konstruoval: ODVARKA	
	Datum: 26. 07.2012	
	Meritko: 7:50	

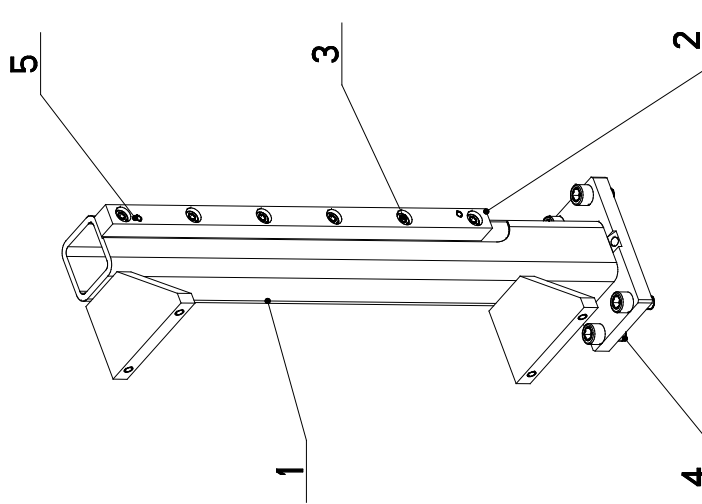
7.24. Kusovník / Stückliste / Piece list – Sloup / Säule / Pole 1

Císlo Sestavy 221.R202-500		Ver. 0		Název sestavy SLOUP/POLE / SÄULE	
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.R202-013	0	DRŽÁK / HOLDER / HALTER	P 5x75	1
2	30.R202-501	0	SLOUP / POLE / SÄULE		1
3	90.001.25.017	0	SROUB IMBUS ČERNÝ / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X16	4
4	90.001.25.019	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X25	14
5	90.001.25.063	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X60	8
6	90.002.2D.015	0	SROUB STAVEČI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M10X20	4
7	90.302.07.003	0	KUŽEL, KOLÍK S ZÁV. / TAPER PIN / KEGELBOLZEN	KOLÍK 8X36	2
8	99.200.326	0	VEDENÍ LINEÁRNÍ / LINEAR GUIDE / LINEARE FÜHRUNG	MSA25R 840 E30	1

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

7.25. Sloup / Säule / Pole 2

Cislo Sestavy 221. R202-520		Ver. 0		Název sestavy SLOUP/POLE / SÄULE	
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.R202-521	0	SLOUP / POLE / SÄULE		1
2	30.R202-008	0	VEDENÍ / GUIDE / BACKENFÜHRUNG	HR 20x20	1
3	90.001.25.031	0	SROUB IMBUS ČERNÝ / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x16	6
4	90.001.25.057	0	SROUB IMBUS ČERNÝ / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12x25	4
5	90.301.0Z.023	0	KOLÍK VALCOVÝ MĚKKÝ / CYLINDRICAL PIN SOFT / ZYLINDERSTIFT WEICH	KOLÍK 6X26	2

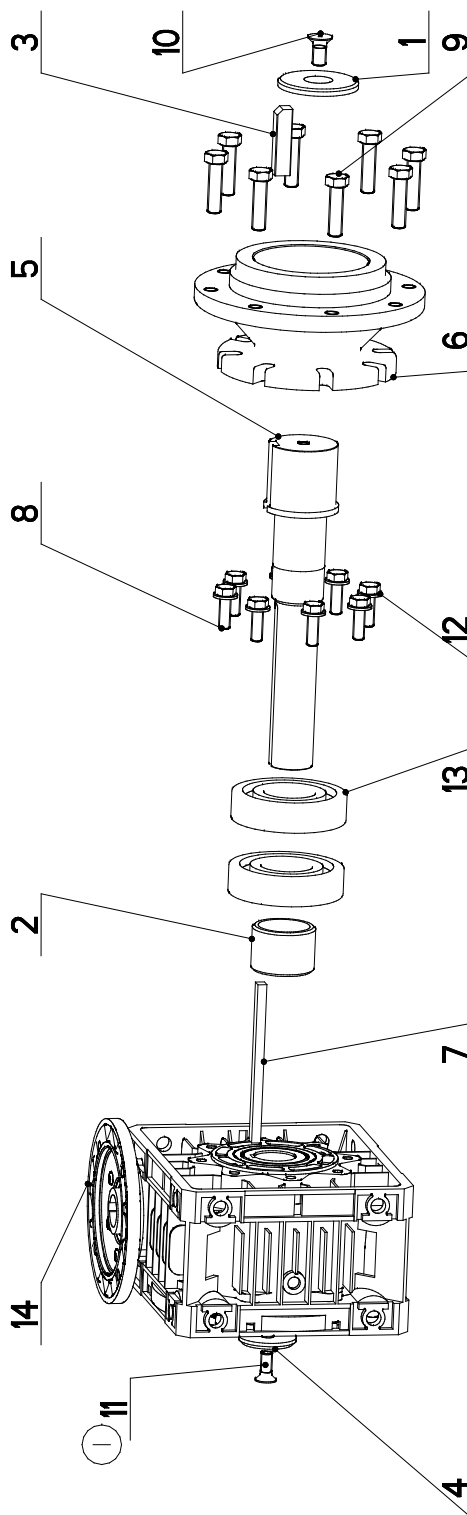


Cislo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver.)/Version/Version; Název sestavy/Assembly title/Name der Baugruppe; Pozice (Poz.)/Position/Position;
Objednací číslo/Purchase order number/Bestellnummer; Název položky/Volume title/Name der Position; Rozměr/Stock size/Abmessung

7.26. Pohon / Antrieb / Drive

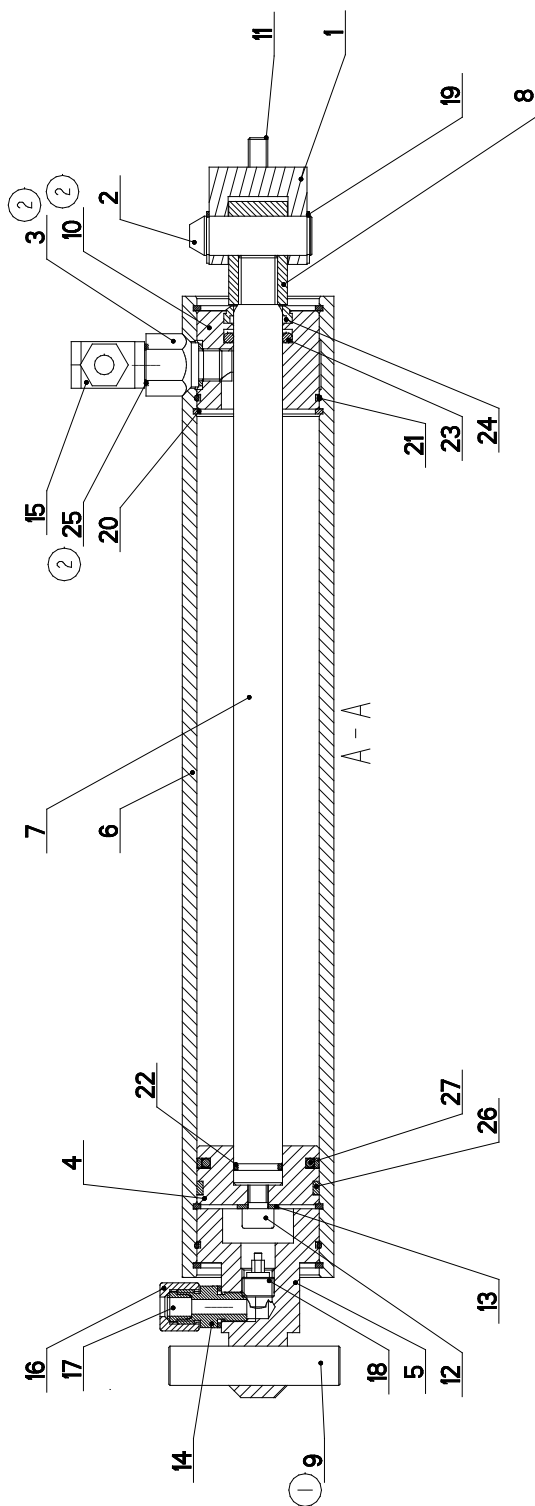
Cislo Sestavy 201.M305-000		Navez sestavy PREVODOVKA / TRANSMISSION / GETRIEBE			
Poz.	Objednaci cislo	Ver.	Navez polozky	Rozmer	Ks
1	30.1804-010	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	d 70	1
2	30.2904-005	0	DISTANC / DISTANCE / DISTANZ	TR 55x8	1
3	30.2904-006	0	PERO / SPRING / FEDER	HR 14x14	1
4	30.2908-001	1	PODLOZKA / WASHER / UNTERLEGSCHIEBE	d 50	1
5	30.M305-003	2	HR IDEL / SHAFT / WELLE	d 65	1
6	30.M305-005	0	PRI RUBA / FLANGE / FLANSCH	ODLITEK	1
7	30.M305-008	0	PERO / SPRING / FEDER	HR 10x8	1
8	90.005.55.025	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M10X30	8
9	90.005.55.035	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M12X45	8
10	90.011.27.025	0	ZAPUSTNY IMBUS / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M12X25	1
11	90.011.27.036	1	ZAPUSTNY IMBUS / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M10X25	1
12	90.150.50.006	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	PODLOZKA 10,5	8
13	95.001.027	0	LOZISKO / BEARING / LAGER	6309 2RS	2
14	99.001.129	0	PREVODOVKA SNEKOVA / WORM GEAR TRANSMISSION / SCHNECKENGETRIEBE		1

1. ZRUS. 1xSROUB M12x25(90.011.27.025) A NAHR. 1xSROUBEM M10x25(90.011.27.036). 110/ZMI12 25.6.2012 SLEZACKOVA



Cislo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver.)/Version/Versio; Navez sestavy/Assembly title/Name der Baugruppe; Pozice (Poz.)/Position/Position;
Objednaci cislo/Purchase order number/Bestellnummer; Navez polozky/Volume title/Name der Position; Rozmer/Stock size/Abmessung

7.27. Válec zvedací / Hebezyylinder / Lifting cylinder



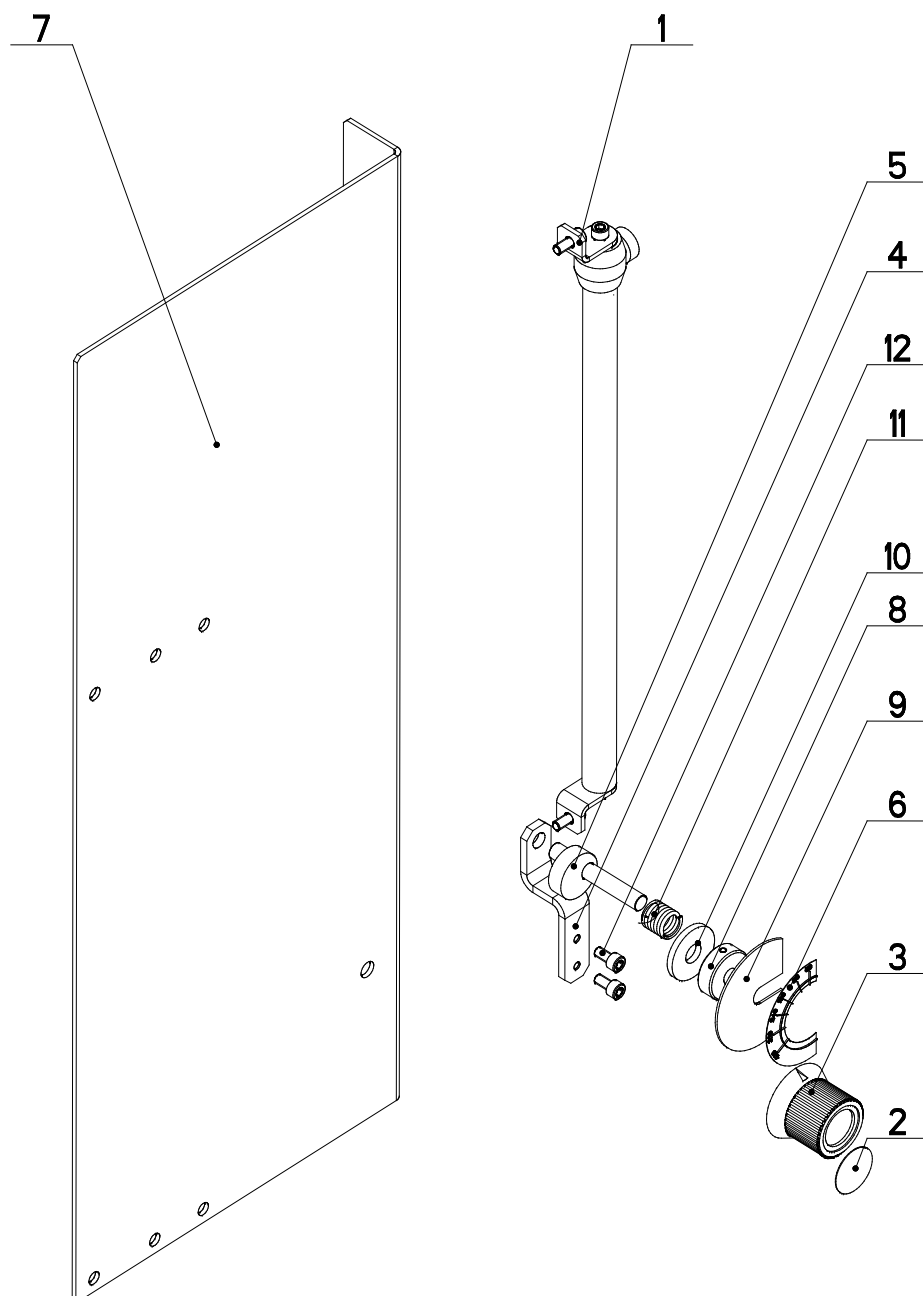
NAZEV SESTAVY VALEC ZVEDACI	CISLO SESTAVY 201.8307-200	STROJ IND260GA
Konstruoval: STASTNA		
Datum: 02. 09. 2010		
Měřítko: 3:5		

7.28. Kusovník / Stückliste / Piece list –
Válec zvedací / Hebezyylinder / Lifting cylinder

Císlo Seostavy 201.8307-200		Název seostavy VÁLEC ZVEDACÍ / LIFTING CYLINDER / HEBEZYLINDER			
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.0807-008	2	DRZAK / HOLDER / HALTER	HR 40x40	1
2	30.0807-009	1	CEP / LUG / BOLZEN	d 16h9	1
3	30.1807-005 (2)	3	SROUBENÍ / BOLTING / VERSCHRAUBUNG	6-HR 22	1
4	30.2807-004	0	PIST / PISTON / KOLBEN	d 55	1
5	30.4107-003	4	VIKO / COVER / DECKEL	TYC 50	1
6	30.8307-201	2	VALEC / ROLLER / ZYLINDER	TR 62/50H8	1
7	30.8307-203	2	PISTNICE / PISTON ROD / KOLBENSTANGE	ø20	1
8	30.8307-204	0	DRZAK / HOLDER / HALTER	HR 25x25	1
9	30.8307-205	0	CEP / LUG / BOLZEN	d 16h9	1
10	30.K107-008 (2)	3	VIKO / COVER / DECKEL	d 55	1
11	90.001.25.031	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x16	2
12	90.001.25.032	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x20	1
13	90.150.50.005	0	PODLOZKA / WASHER / UNTERLEGSCHLEIBE	PODLOZKA 8,4	1
14	92.002.001	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG	G 1/4"	1
15	92.003.001	0	SROUBENI UHLOVE / ANGLE BOLTING / WINKELVERSCHRAUBUNG	RSWS-08LR	1
16	92.013.001	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG		1
17	92.014.001	0	KROUZEK TESNICI / SEAL RING / DICHTUNGSRING	372405	1
18	92.151.001	0	VENTIL POJISTNY / SAFETY VALVE / SICHERUNGSVENTIL	VPN-H 1/4"	1
19	95.800.007	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 16	2
20	95.801.018	0	KROUZEK POJIST.VNITR / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 50	4
21	96.001.013	0	KROUZEK O STATICKY / STATIC O RING / O-RING STATISCH	45X2	2
22	96.002.007	0	KROUZEK O DYNAMICKY / DYNAMIC O RING / O-RING DYNAMISCH	16X2	1
23	96.041.002	0	TESNENI / SEALING / DICHTUNG	20/28x4	1
24	96.060.002	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	20x28	1
25	96.082.002 (2)	0	TESNENI / SEALING / DICHTUNG	KROUZEK CU 13/17	3
26	96.084.001	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING	GP6500500-T47	1
27	96.900.001	0	TESNENI KOMBINOVA NE / COMBINATION SEALING / KOMBIDICHTUNG		1

1 KOLIK 16x70 DIN 6358 NAHRAZEN POZ. 30.8307-205 11.06.03 STASTNA
2.ZRUS.SROUBENI 30.3407-103 A NAHR.SROUBENIM 30.1807-005,ZRUS.VIKO 30.2807-002 A NAHR.VIKEM 30.K107-008,
ZRUS.KROUZEK CU 10/14 96.082.001 A NAHR. KROUZEKEM CU 13/17 96.082.002. 074/ZM091 2.4.2009 SLEZACKOVA

7.29. Odměrování / Gehrungsmessung / Measuring



NAZEV SESTAVY ODMEROVANI	CISLO SESTAVY 221.R202-730	STROJ PL280/34
	Konstruoval: VINOHRADSKY	
	Datum: 24. 04.2012	
	Meritko: 3:10	

**7.30. Kusovník / Stückliste / Piece list –
Oměrování / Gehrungsmessung / Measuring**

Cislo Sestavy 221.R202-730		Ver. 0		Nazev sestavy ODMEROVANI / POLE / SÄULE	
Poz.	Objednací číslo	Ver.	Nazev položky	Rozmer	Ks
1	201.R202-040	0	ODMEROVANI / MEASURING / GEHRUNGSMESSUNG	SESTAVA	1
2	30.6130-012	0	VIKO / COVER / DECKEL	P 0.5x 30x30	1
3	30.6130-020	0	OVLADANI / CONTROLS / STEUERUNG	VYLISEK	1
4	30.R202-031	0	DRZAK / HOLDER / HALTER	HR 20x5	1
5	30.R202-033	1	OSA / AXLE / ACHE	SVARENO	1
6	30.R302-034	0	STUPNICE / SCALE / SKALA	P1x41	1
7	30.R314-701	0	DRZAK / HOLDER / HALTER	P 3x311	1
8	30.Y302-058	1	VLOZKA / INSERT / EINLAGE	d 32	1
9	30.Y302-153	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	Pl, 5-72	1
10	31.K107-006	1	GUMA / RUBBER / GUMMI	d35	1
11	31.T302-054	0	PRUZINA / SPRING / FEDER	d 2.24	1
12	90.001.25.016	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X12	2

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