

Serie **Extend**



Extend 1000.820

Operating instructions

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

Seriové číslo / Serien Nummer / Serial Number _____

Service and information

Your BOMAR dealer:

Direct BOMAR contact:

BOMAR spol. s r.o.
Těžební 1236/1
62700 Brno
Czech Republic, EU

telefon: +420 – 533 426 100
fax: +420 – 533 426 109
e-mail: info@bomar.cz
www: <http://www.bomar.cz>

We are available:

Mondays to Fridays

7⁰⁰ – 16⁰⁰

Version:

1.03 / Feb. 2010
rev. 1

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

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. In the event of any device modification not approved by us this declaration shall lose its validity.

Name: **Band Saw**

Type range: **Extend 1000.820**

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 15–90 m.min⁻¹, cutting angle 0°
 Total dimensions in mm (l×w×h) 4360x1400x2970
 Supply voltage 3×400 V TN-C-S/3×400 V TN-C/3×230 TN-C/1×230 V TN-C
 Total power requirement 13 kVA, weight 7500 kg

The applied decrees of governments: **No. 176/2008 Coll.** (Directive 2006/42/EC)
No. 616/2006 Coll. (Directive 2004/108/EC)
No. 17/2003 Coll. (Directive 2006/95/EC)

The applied harmonized standards,

National standards and technical specifications: ČSN EN ISO 12 100-2:2004, ČSN EN 13 898+A1:2009, ČSN EN ISO 13857:2008, ČSN EN 982+A1:2008, ČSN EN 61000-6-2 ed. 2:2007, ČSN EN 61000-6-4:2002 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) ²⁾ The declaration of conformity was carried out in the cooperation with the TUV SÜD Czech s.r.o, Novodvorská 994, 142 21 Prague 4 – Czech Republic, Identification number: 63987121 - Inspection body no. 4002

The inspection certificate no. 01.125.728/09/07/02/0 was issued.

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

Alfred Pichlmann, Managing Director



Point of issue, datum

Name and function
of the responsible subject

Signature

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



If the equipment is installed without safety equipment offered by BOMAR, spol. s r.o 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 r.o have been declared "identical" to a safety device, as offered by BOMAR, spol. s r.o or its agents.

Content

1. SAFETY NOTES	7
1.1. Machine determination.....	9
1.2. Protective suit and personal safety.....	9
1.3. Safety notes for machine operator.....	10
1.4. Safety notes for the servicing and repairs.....	10
1.5. Safety notes for the servicing and repairs on hydraulic unit.....	11
1.6. Safety machine accessories.....	11
1.6.1. Total Stop.....	11
1.6.2. Saw band stretching and rupture inspection.....	11
1.6.3. Band saw cover.....	12
1.6.4. Arm covers.....	12
1.7. Safety notes for the cooling.....	12
1.7.1. Instructions for first help.....	12
1.8. Umístění štítku stroje / Maschinenschild position / Position of machine label.....	13
1.9. Umístění bezpečnostních značek / Verteilung der Sicherheitszeichen / Position of safety symbols.....	14
2. MACHINE DOCUMENTATION	15
2.1. Technická data / Technische Daten / Technical data.....	17
2.2. Rozměrové schéma / Aufstellzeichnung / Installation diagram.....	18
2.3. Popis / Beschreibung / Description.....	19
2.4. Transportation and stocking.....	20
2.4.1. Conditions for transportation and stocking.....	20
2.4.2. Transport and stocking preparations.....	20
2.4.3. Transport and stocking.....	20
2.4.4. Transportní schéma / Transport schema / Transport scheme.....	21
2.5. Activation.....	22
2.5.1. Machine working conditions.....	22
2.6. Band saw unpacking and assembling.....	22
2.6.1. Machine installing and levelling.....	22
2.6.2. Machine disposal after lifetime.....	22
2.6.3. First run of the power pack.....	22
2.6.4. Filling the reservoir with hydraulic oil.....	23
2.6.5. Kotevní plan / Verankerungsplan / Grounding plan.....	24
2.7. Electrical connection.....	25
2.7.1. Check the direction of the saw band.....	25
2.8. Filling of the cooling system.....	25
2.9. Check machine function.....	26
2.10. Saw band.....	26
2.10.1. Saw band size.....	26
2.10.2. Selection of the saw band tooth system.....	26
2.10.3. Saw band running-in.....	27
2.11. Material insertion.....	27
2.11.1. Handling agent selection.....	27
2.11.2. Material insertion.....	27
2.12. Bundle material cutting.....	28
3. MACHINE CONTROL.....	31
3.1. Starting the band saw.....	33
3.2. Control panel.....	34
3.3. Control panel – description.....	35
3.4. Machine control.....	36
3.4.1. Preparative mode.....	36
3.4.2. Semi-automatic cycle.....	36
3.4.3. Cycle breaking.....	37
3.5. Band saw adjusting.....	37
3.5.1. Cutting speed adjusting.....	37
3.5.2. Adjustment of pressure to the cut.....	38
3.5.3. Speed adjustment of the arm lowering.....	38
3.5.4. Saw frame lift stop setting.....	38
3.5.5. Brush adjustment.....	39
4. MACHINE SERVICE	41
4.1. Saw band dismantling.....	43
4.2. Saw band installation.....	43
4.3. Saw band stretching and inspection.....	44
4.3.1. Saw band stretching.....	44
4.4. Saw band run adjustment on stretching wheel.....	44
4.4.1. Saw band run inspection.....	44
4.4.2. Saw band run setting.....	45
4.5. Limit switch setting of the saw band stretching ng.....	45
4.6. Saw arm lower position stop adjustment.....	45
4.7. Adjusting of the limit switch of the saw band stretching.....	46
4.7.1. Setting inspection.....	46

4.7.2.	Limit switch setting.....	46
4.8.	Adjustment of the cutting pressure regulation.....	46
4.8.1.	Setting on the right guiding cube.....	47
4.8.2.	Setting on the left guiding cube.....	47
4.9.	Cooling agents and chips disposal.....	48
4.9.1.	Cooling liquid preparation.....	48
4.10.	Coolant device inspection.....	49
4.10.1.	Chips disposal.....	49
4.11.	Hydraulic, Greases and oils.....	50
4.11.1.	Gearbox oils.....	50
4.11.2.	Lubricant greases.....	50
4.11.3.	Lubrication.....	51
4.11.4.	Hydraulic oils.....	51
4.11.5.	Hydraulic unit service.....	52
4.11.6.	Hydraulic oil level check.....	53
4.12.	Machine cleaning.....	53
4.13.	Worn pieces replacement.....	53
4.13.1.	Pushing bearing replacement.....	53
4.13.2.	Saw band guiding pulleys replacement.....	55
4.13.3.	Hard metal guides replacement.....	57
4.13.4.	Brush replacement.....	59

5. ZÁVADY / TROUBLESHOOTING61

5.1.	Mechanical problems.....	63
5.2.	Electric problems.....	65
5.3.	Hydraulic problems.....	66

6. SCHÉMATA / SCHEMAS / SCHEMATICS67

6.1.	Elektrické schéma / Elektroschema / Wiring diagrams – 3×400 V, TN-C-S.....	68
6.2.	Hydraulické schéma / Hydraulikschema / Hydraulic diagram.....	80

7. VÝKRESY SESTAV PRO OBJEDNÁNÍ NÁHRADNÍCH DÍLŮ / ZEICHNUNGEN FÜR BESTELLUNG DER ERSATZTEILE / DRAWING ASSEMBLIES FOR SPARE PARTS ORDER83

7.1.	Extend 1000.820 - 1.....	84
7.2.	Kusovník / Stückliste / Piece list – Extend 1000.820 - 1.....	85
7.3.	Extend 1000.820 - 2.....	86
7.4.	Kusovník / Stückliste / Piece list – Extend 1000.820 - 2.....	87
7.5.	Rameno / Sägerahmen / Saw arm 1.....	88
7.6.	Kusovník / Stückliste / Piece list – Rameno / Sägerahmen / Saw arm 1.....	89
7.7.	Rameno / Sägerahmen / Saw arm 2.....	90
7.8.	Kusovník / Stückliste / Piece list – Rameno / Sägerahmen / Saw arm 2.....	91
7.9.	Podstavec / Untersatz / Base.....	92
7.10.	Kusovník / Stückliste / Piece list – Podstavec / Untersatz / Base.....	93
7.11.	Pohon / Antrieb / Drive.....	94
7.12.	Kusovník / Stückliste / Piece list – Pohon / Antrieb / Drive.....	95
7.13.	Svěrák / Schraubstock / Vice.....	96
7.14.	Kusovník / Stückliste / Piece list – Svěrák / Schraubstock / Vice.....	97
7.15.	Válec svěráku / Schraubstockzylinder / Vice cylinder.....	98
7.16.	Kusovník / Stückliste / Piece list – Válec svěráku / Schraubstockzylinder / Vice cylinder.....	99
7.17.	Vodící kostka / Führungsklotz / Guiding cube 1.....	100
7.18.	Kusovník / Stückliste / Piece list – Vodící kostka / Führungsklotz / Guiding cube 1.....	101
7.19.	Vodící kostka / Führungsklotz / Guiding cube 2.....	102
7.20.	Kusovník / Stückliste / Piece list – Vodící kostka / Führungsklotz / Guiding cube 2.....	103
7.21.	Vedení pásu / Sägebandführung / Belt guide 1.....	104
7.22.	Kusovník / Stückliste / Piece list – Vedení pásu / Sägebandführung / Belt guide 1.....	105
7.23.	Vedení pásu / Sägebandführung / Belt guide 2.....	106
7.24.	Kusovník / Stückliste / Piece list – Vedení pásu / Sägebandführung / Belt guide 2.....	107
7.25.	Vedení pásu / Sägebandführung / Belt guide 3.....	108
7.26.	Ovládací panel / Bedienpult / Control panel.....	110
7.27.	Kusovník / Stückliste / Piece list – Ovládací panel / Bedienpult / Control panel.....	111
7.28.	Kartáč / Bürste / Brush.....	112
7.29.	Kusovník / Stückliste / Piece list – Kartáč / Bürste / Brush.....	113
7.30.	Doraz / Anschlag / Stop Piece.....	114
7.31.	Kusovník / Stückliste / Piece list – Doraz / Anschlag / Stop Piece.....	115
7.32.	Trískový vynašeč / Spanabführung / Chip extraktor.....	116
7.33.	Chlazení / Kühlung / Cooling.....	117
7.34.	Odměrování / Gehrungsmessung / Measuring.....	118
7.35.	Rošt / Gitter / Grill.....	119
7.36.	Kostka regulace / Regulation cube / Regelungswürfel.....	120
7.37.	Valec napínací/Spannzylinder/Tensioning cylinder.....	121

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 **Extend 1000.820** is determined for cutting and shortening of rolled bars and drawn bars and profiles from steels, stainless steels, non-ferrous metals and plastics **with zero cutting angle.**

Combustible materials are excepted 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*

Machine can be operated only by one person. 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!

Attention!

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

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.

- 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 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. Saw band stretching and rupture inspection

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



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

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. Arm covers

Left cover – It covers tightening wheel. If the cover is opened during operation, the limit switch is opened and the band saw is stopped. The band saw is not possible start in set mode.

Right cover – It covers driving wheel. If the cover is opened during operation, the limit switch is opened and the band saw is stopped. The band saw is not possible start in set mode.



The band saw is started to the operation, when the covers is closed!

1.7. Safety notes for the cooling

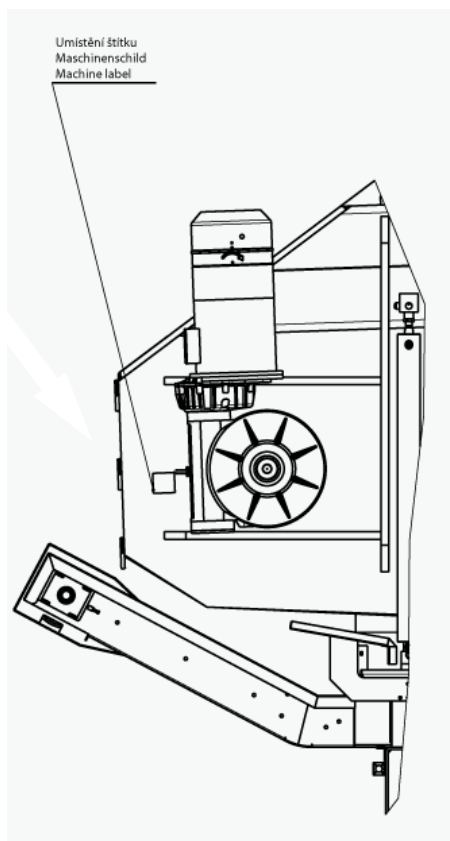
Attention!

- *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*

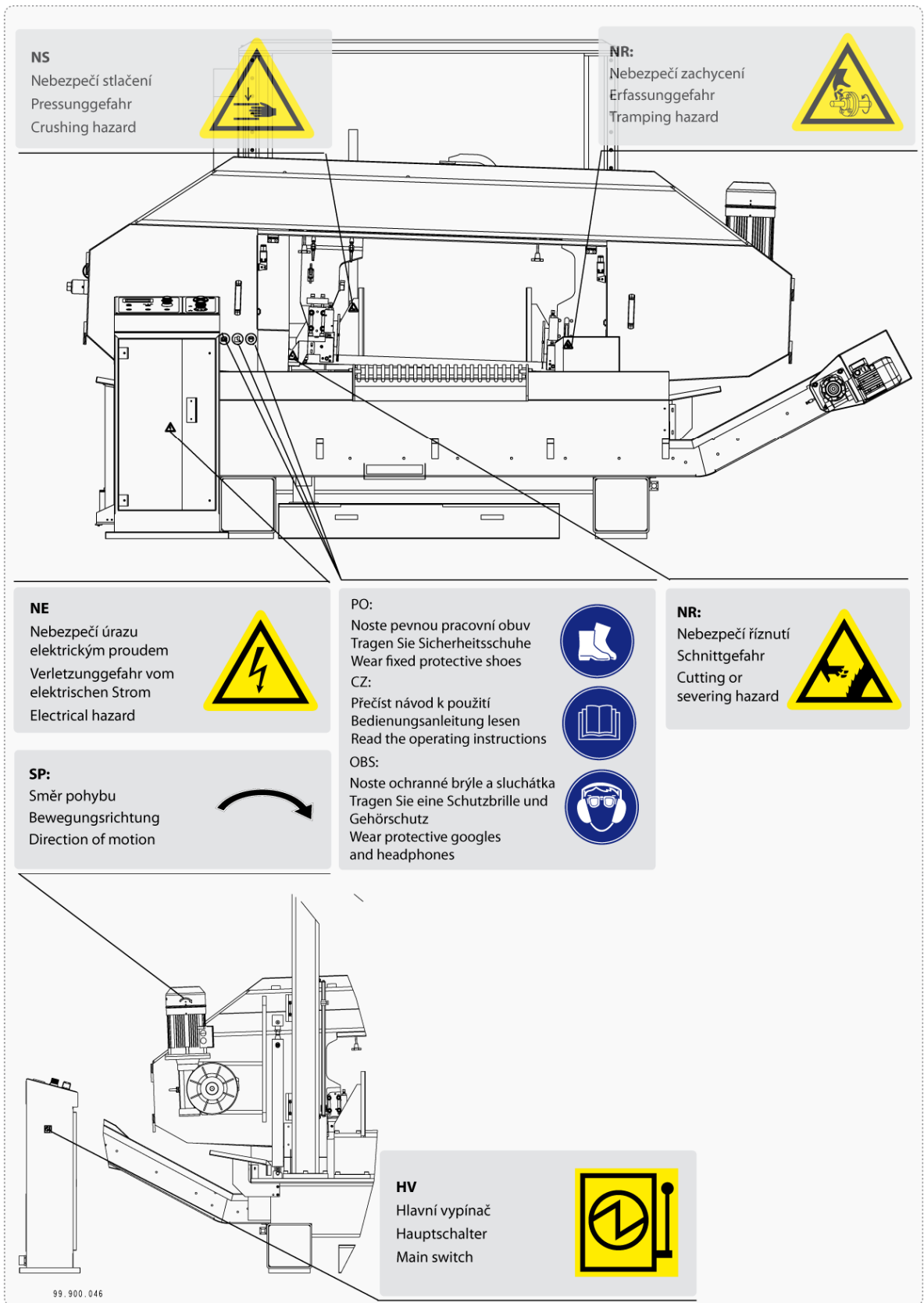
1.7.1. Instructions for first help

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.

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



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



2. **Machine documentation**

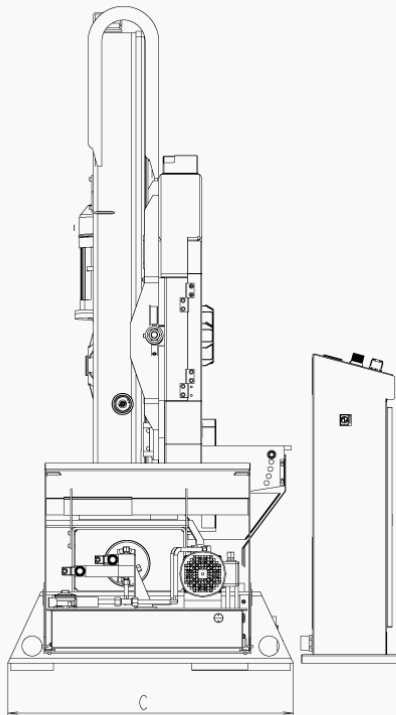
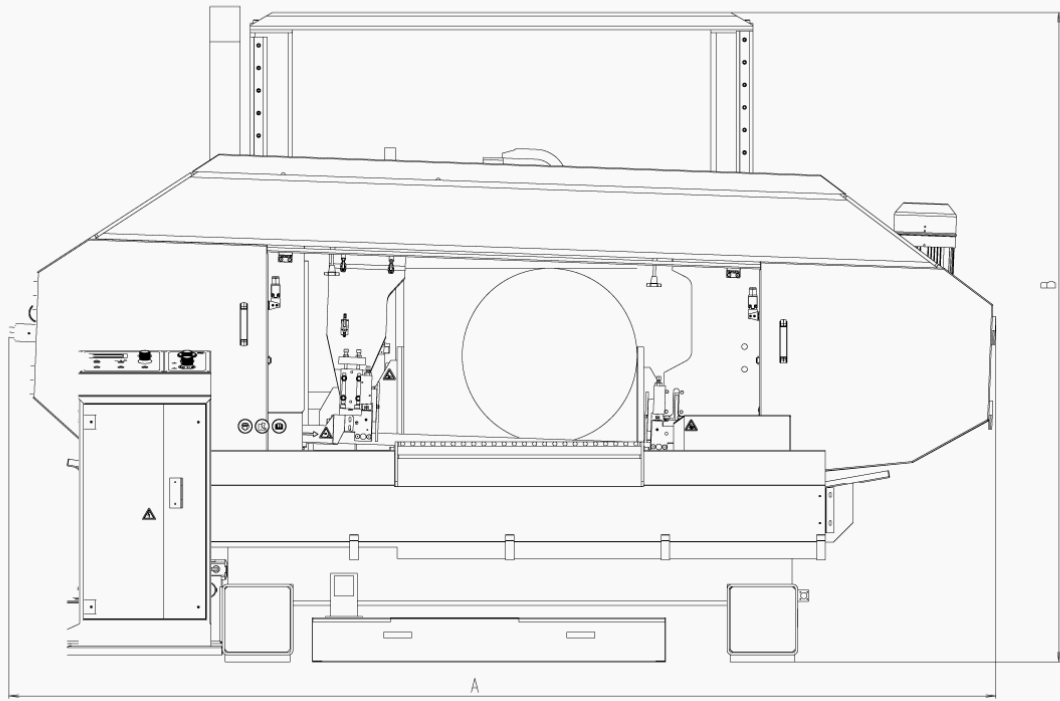
2.1. Technická data / Technische Daten / Technical data

Hmotnost stroje / Maschinengewicht / Machine weight:				
• Hmotnost / Gewicht / Weight	7500 kg			
Rozměry stroje / Maschinengröße / Machine size :				
• Délka / Länge / Length	4360 mm			
• Šířka / Breite / Width	1400 mm			
• Výška / Höhe / Height	2970 mm			
Elektrické vybavení / Elektrische Ausrüstung / Electrical equipment:				
• Napájení / Versorgungsspannung / Supply voltage	~3 x 400V, 50Hz, TN-C-S			
• Příkon / Gesamtschlusswert / Total Input	13 kW			
• Max.jištění / Max. Vorschaltssicherung / Max. Fuse	32 A			
• Krytí / Schutzart / Protection	IP 54			
Akustický tlak / Schalldruckpegel / Acoustic pressure:				
• Extend 1000.820	$L_{Aeqv} = 86$ dB			
Pohon / Atrieb / Drive:				
• Typ / Typ / Type	1LA7133-4AA61			
• Výkon / Leistung / Output	7,5 kW			
• Jmenovité otáčky / Motornendrehzahl / Nominal speed	1455 min ⁻¹			
Hydraulické zařízení / Kühlmiteleinrichtung / Hydraulic equipment:				
• Typ / Typ / Type	92.001.048/(731-0507)			
• Výkon / Leistung / Output	6,5 MPa/2,2 kW			
• Jmenovité otáčky / Motornendrehzahl / Nominal speed	1425 min ⁻¹			
Chladicí zařízení / Kühlmiteleinrichtung / Cooling equipment:				
• Typ / Typ / Type	3-COA4-14 HP1			
• Výkon / Leistung / Output	0,05 kW			
• Obsah nádrže / Volumen vom Kühlmittel / Capacity	50 l			
Rozměr pásu / Sägebandedimension / Band size:				
9280×54 (67)×1,6 mm				
Řezná rychlost / Schnittgeschwindigkeit / Cutting speed:				
15–90 m/min. (special 10-70 m.min⁻¹, 20-120 m.min⁻¹)				
Řezné rozsahy / Schnittbereiche / Cutting size:				
 0°	 Ø820 mm	 820×1000 mm	 820×1000 mm	 820×820 mm

Level of acoustic pressure:

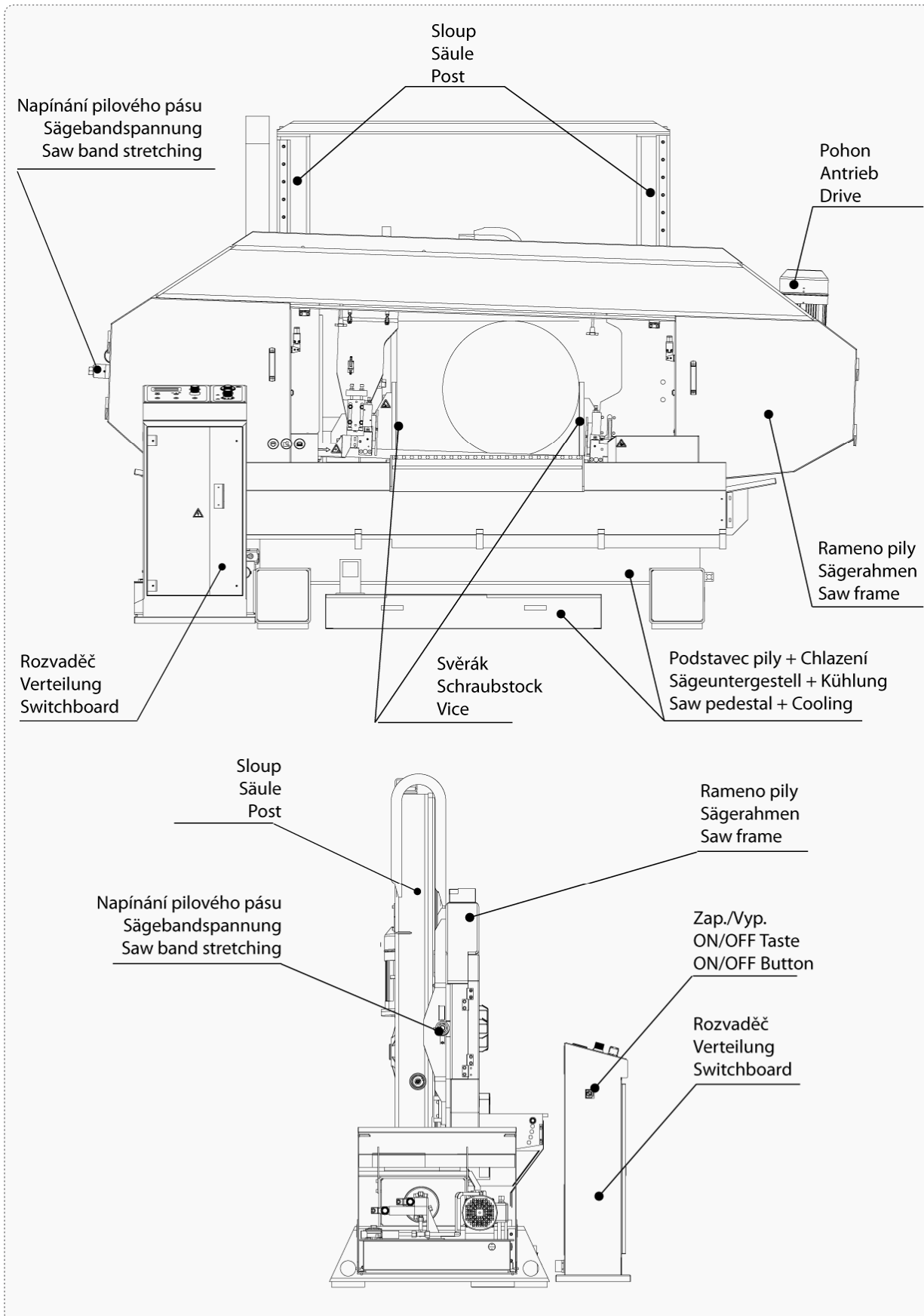
Equivalent level of acoustic pressure A (noise) at operator position are $L_{Aeqv}=86$ dB. Mentioned values are levels of emission which doesn't have to represent safe levels. Factors which influence real level of acoustic pressure on machine operator are: working place characteristics, cut material, saw band. These factors have significantly influence on acoustic pressure.

2.2. Rozměrové schéma /
Aufstellzeichnung /
Installation diagram



	A	B	C
Extend 700.520	3250	2230	1000
Extend 800.620	3500	2330	1000
Extend 900.720	4000	2600	1250
Extend1000.820	4350	3000	1400
Extend1120.1120	5120	3280	1700

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

Handle the machine only with suspension cables and the crane. The pedestal is equipped with slots $\varnothing=70$ mm. Insert the appropriate steel bars to all of these slots (see arrows on the picture). It is possible use two long or four short bars. Fix the suspension cables to the steel bars

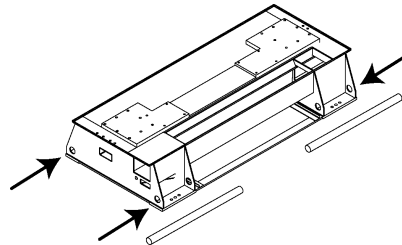
Make sure that the suspension cables and the crane had sufficient capacity

Make sure that the van or the trailer had sufficient capacity

The machine must be secured during transportation

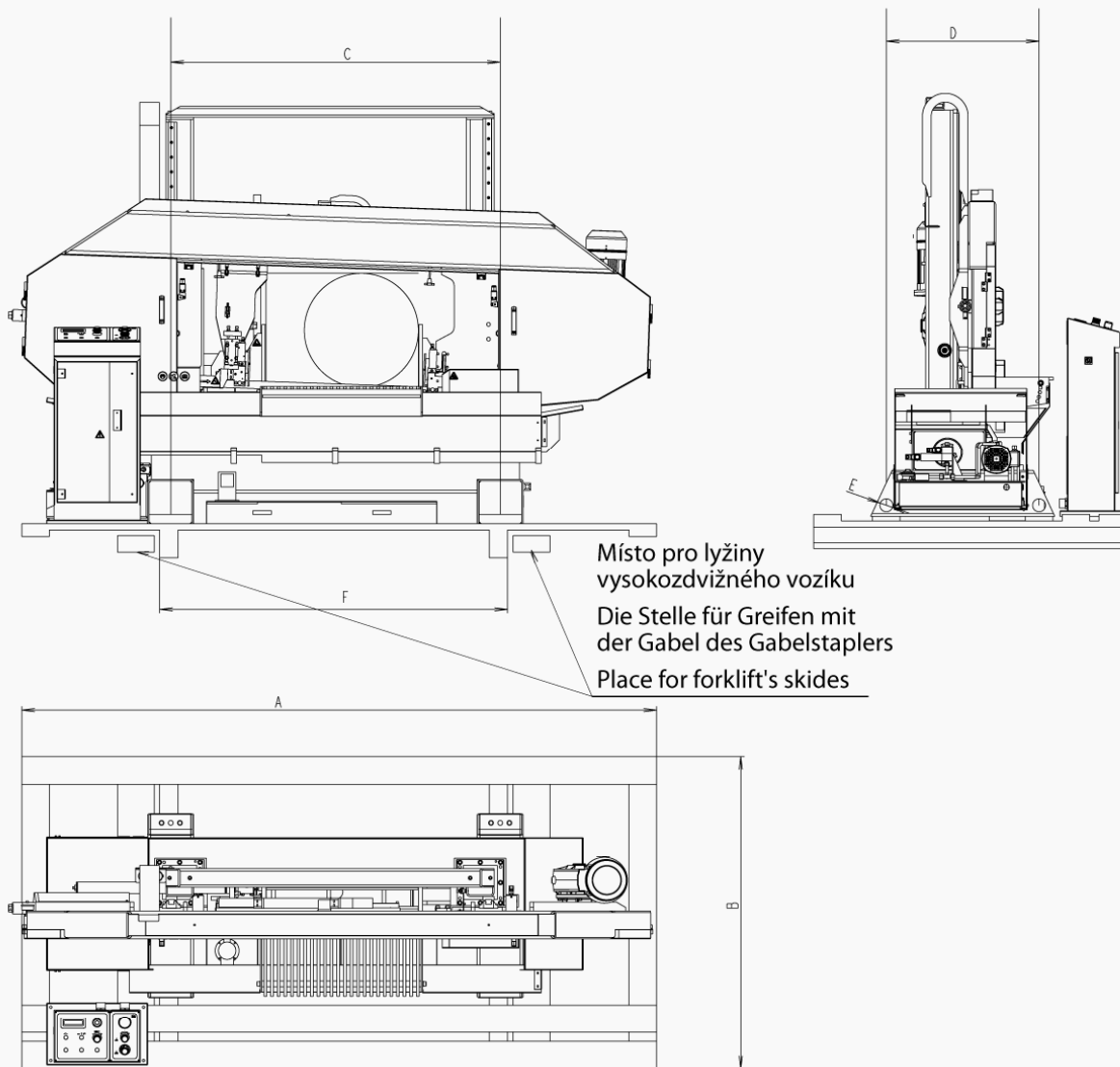
Screw on the palette to the floor of the van or the trailer.

Be careful that the machine is not damaged during transportation



It is forbidden to handle the machine any other way (for example by, lifting by the saw frame of the band saw), than it is written in this operating instructions, the machine can be damaged!

2.4.4. Transportní schéma /
Transport schema /
Transport scheme



	A	B	C	D	E	F
Extend 700.520	3300	1540	1655	900	ø70	1865
Extend 800.620	3450	1700	1790	900	ø70	1990
Extend 900.720	4000	1800	1950	1150	ø70	2150
Extend1000.820	4300	2200	2275	1300	ø70	2475
Extend1120.1120	3000	2400	2565	1600	ø70	

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.

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.

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 – Extend 1000.820 – 7500 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.

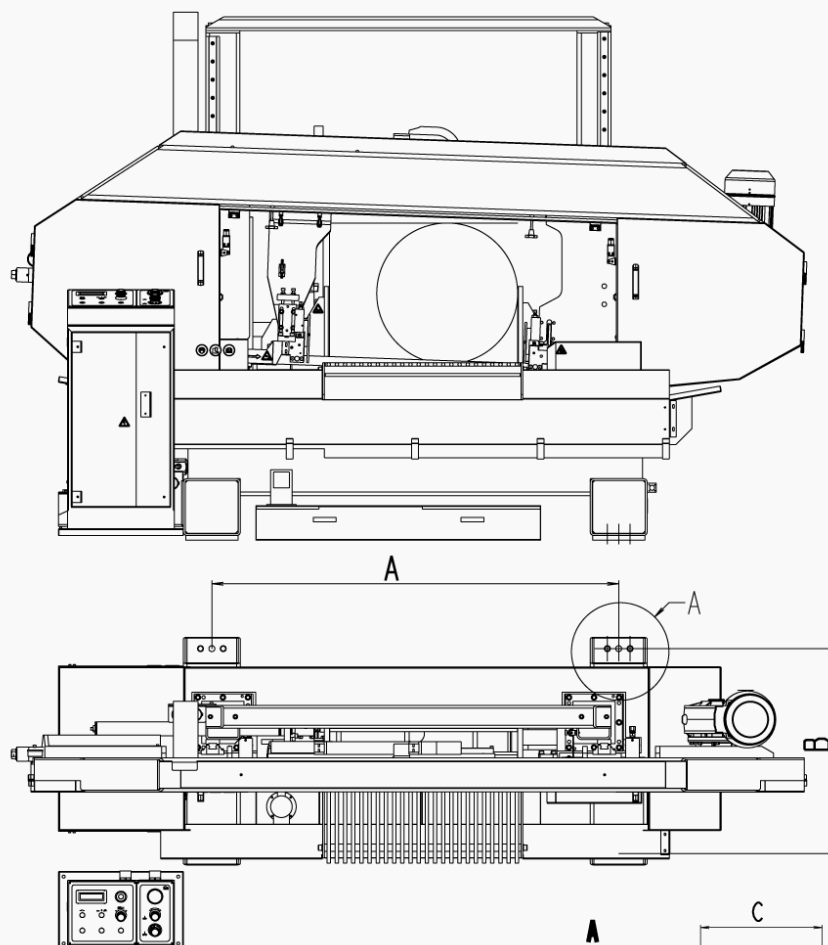
Power packs have to be filled up with clean, pre-filtered oil! The purity of the hydraulic fluid must correspond to the class 10 NAS 1638 (reachable with filter $\beta = 75$)!

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

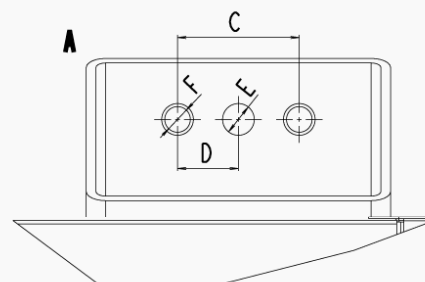
The maximum oil level will be shown on the upper marking at the dipstick or the sight level glass. Overfilling has to be prevent. The maximum filling rate of 15 l/min shouldn't be exceed.

Oil type	Kinematic viscosity ν 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

2.6.5. Kotevní plan / Verankerungsplan / Grounding plan



	A	B	C	D	E	F
Extend 700.520	1665	900	100	50	ø26	2× M24
Extend 800.620	1790	900	100	50	ø26	2× M24
Extend 900.720	1950	1150	100	50	ø26	2× M24
Extend 1000.820	2275	1300	100	50	ø26	2× M24
Extend 1120.1120	2565	1600	100	50	ø26	2× M24



Kotvící materiál / Verankerungsmaterial / Grouding material

- 4× Kotvící šroub / Verankerungsschraube / Grounding screw M24, pos. E
- 8× Stavěcí šroub / Stellschraube / Set-screw M24, pos. F
- Do hloubky / In die Tiefe / Into deep 150 mm

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

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: $\sim 3 \times 400 \text{ V}$, 50 Hz, TN-C-S
- Total input / Max. fuse: 13 kW/32A

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

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

Note:

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

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.

2.8. Filling of the cooling system

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*.

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!!!



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.

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

9280x54 (67)x1,6 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 for 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_zZ – 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:

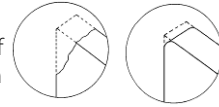
32 S – number „32“ means 32 teeth on one inch (that means constant tooth system), letter „S“ marks teeth with zero angle of the tooth.

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.

2.11. 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!

2.11.1. Handling agent selection

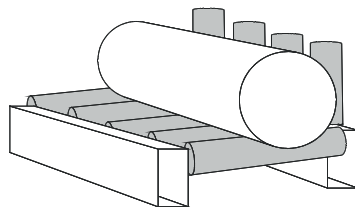
- Use the strong handling agents to lift and transfer the material!
- Handle with the material only with the lift truck or use the suspension strands and the crane!
- Do not use the lift truck or crane in case that you do not have the licence to handle with it!

2.11.2. Material 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. The roller conveyors are described in the chapter „**Roller conveyors and accessories**“

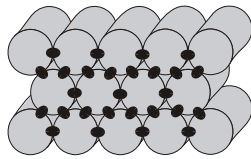
Make sure the conveyor is long enough and the material cannot tip off the conveyor. Be especially careful with round materials that it always stays on two vertical rollers and that it cannot fall off the conveyor!



2.12. Bundle material cutting

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

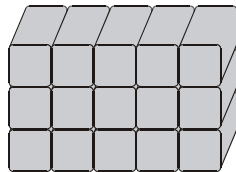
Chyba! Objekty nemohou být vytvořeny úpravami kódů polí.



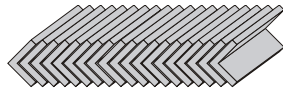
Round material bundle. Take care especially with round material that the bars are put according to the picture. If the bars are put differently, you may have problems with movement.

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

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



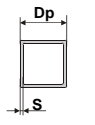
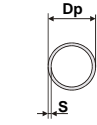
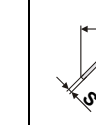
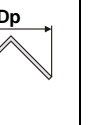
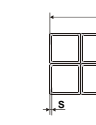
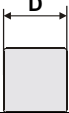
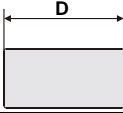
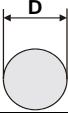
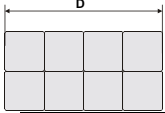
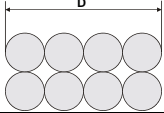
Square material bundle.



Angled material bundle.

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

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_p, Z)					
	Outer diameter of the profile D_p [mm]					
	20	40	60	80	100	120
2	32 S	24 S	18 S	18 S	14 S	14 S
3	24 S	18 S	14 S	14 S	10-14 S	10-14 S
4	24 S	14 S	10-14 S	10-14 S	8-12 S	8-12 S
5	18 S	10-14 S	10-14 S	8-12 S	6-10 S	6-10 S
6	18 S	10-14 S	8-12 S	8-12 S	6-10 S	6-10 S
8	14 S	8-12 S	6-10 S	6-10 S	5-8 S	5-8 S
10	-	6-10 S	6-10 S	5-8 S	5-8 S	5-8 S
12	-	6-10 S	5-8 S	5-8 S	4-6 K	4-6 K
15	-	5-8 S	5-8 S	4-6 K	4-6 K	4-6 K
20	-	-	4-6 K	4-6 K	4-6 K	3-4 K
30	-	-	-	3-4 K	3-4 K	3-4 K
50	-	-	-	-	-	3-4 K
Size of the wall S [mm]	Tooth system (Z_p, Z)					
	Outer diameter of the profile D_p [mm]					
	150	200	300	500	750	1000
2	10-14 S	10-14 S	8-12 S	6-10 S	5-8 S	5-8 S
3	8-12 S	8-12 S	6-10 S	5-8 S	4-6 K	4-6 K
4	6-10 S	6-10 S	5-8 S	4-6 K	4-6 K	4-6 K
5	6-10 S	5-8 S	4-6 K	4-6 K	4-6 K	3-4 K
6	5-8 S	5-8 S	4-6 K	4-6 K	3-4 K	3-4 K
8	5-8 S	4-6 K	4-6 K	3-4 K	3-4 K	3-4 K
10	4-6 K	4-6 K	4-6 K	3-4 K	3-4 K	2-3 K
12	4-6 K	4-6 K	3-4 K	3-4 K	2-3 K	2-3 K
15	4-6 K	3-4 K	3-4 K	2-3 K	2-3 K	2-3 K
20	3-4 K	3-4 K	2-3 K	2-3 K	2-3 K	2-3 K
30	3-4 K	2-3 K	2-3 K	2-3 K	1,4-2 K	1,4-2 K
50	2-3 K	2-3 K	2-3 K	1,4-2 K	1,4-2 K	1,4-2 K
75	-	2-3 K	1,4-2 K	1,4-2 K	1,4-2 K	0,75-1,25 K
100	-	-	1,4-2 K	0,75-1,25 K	0,75-1,25 K	0,75-1,25 K
150	-	-	-	0,75-1,25 K	0,75-1,25 K	0,75-1,25 K
200	-	-	-	0,75-1,25 K	0,75-1,25 K	0,75-1,25 K
SOLID MATERIAL ($D = \text{mm}$)						
						
Constant tooth system			Variable tooth system			
length of the cut D	tooth system (Z_p, Z)		length of the cut D	tooth system (Z_p, Z)		
to 3 mm	32		to 30 mm	10 - 14		
to 6 mm	24		20-50 mm	8-12		
to 10 mm	18		25-60 mm	6-10		
to 15 mm	14		35-80 mm	5-8		
15-30 mm	10		50-100 mm	4-6		
30-50 mm	8		70-120 mm	4-5		
50-80 mm	6		80-150 mm	3-4		
80-120 mm	4		120-350 mm	2-3		
120-200 mm	3		250-600 mm	1,4-2		
200-400 mm	2		500-3000 mm	0,75-1,25		
300-800 mm	1,25					
700-3000 mm	0,75					

3. **Machine control**

3.1. Starting the band saw

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

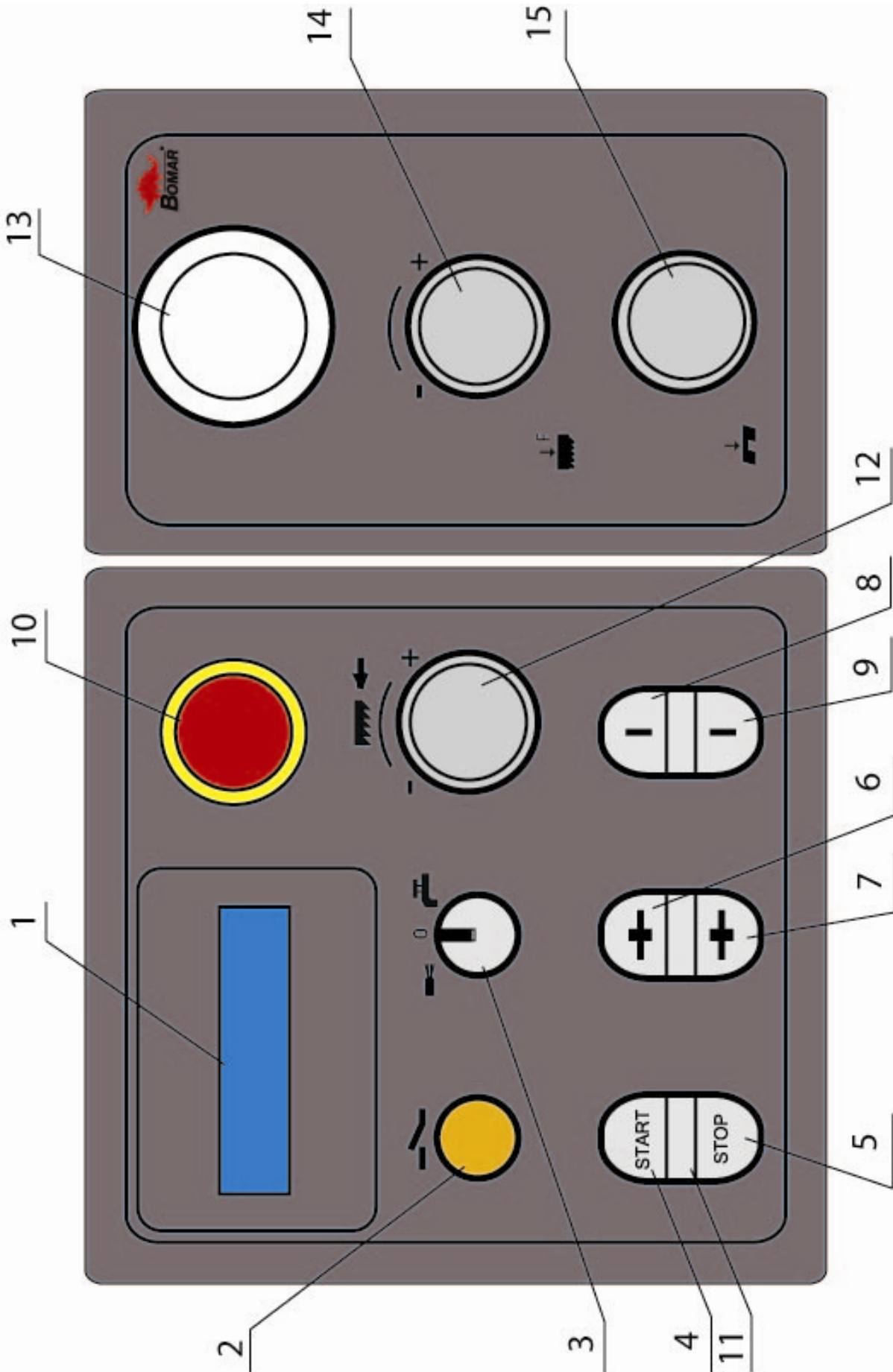


2. Switch on the safety circuit of the band saw (button **2** – control panel of the band saw).





3.2. Control panel

Ovládání stroje
Bedienung der Maschine
Machine control



3.3. Control panel – description

1	Display Onto display are described all processes.
2	Safety circuit switching on Switch on the safety circuit by pressing button.
3	Cooling system selection You can select from three possibilities:  Cooling with Microniser 0 Without cooling  Cooling with water
4	START - Switch on the semi-automatic cycle By pressing 6 and button 4 is starting only the band saw drive. It is stopped with button 5.
5	STOP - Switch off the engine of the band saw It stops the engine of the machine. With holding button STOP during the time 2 second is stopped hydraulic engine (if it running). The hydraulic engine is started automatic on switch whatever motion.(Open vice, close, Lift the saw arm, lower) or the cycle is starting with button Start.
6	Close the vice When this button is pressed, the vice is opened. This button may be used in semi-automatic cycle.
7	Open vice Vice is opened after pressing this button
8	Lift the saw arm
9	TOTAL – STOP button In emergency causes the machine must be immediately switched off.
10	Tlačítko TOTAL – STOP V nouzových případech uvede stroj okamžitě do klidu.
11	LED – control lamp blink by cycle
12	Frequency convertor Turn to change the speed of the saw band.
13	Cutting pressure manometer
14	Cutting pressure regulation Adjust the arm pressure to the cut.
15	Governing valve Adjust the speed of the arm sinking to the cut by governing valve. 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.

3.4. Machine control

3.4.1. Preparative mode

- »
1. Entrance to menu
 - Press button **5+6+7+8+9** together. Hydraulic must be off.
 2. Cutting parameters
 - You can select, if you want to stop the saw band drive in upper or lower position of the saw arm, or do not stop the drive.
 - If you strain button **6**, the saw band drive will be stopped **in the bottom** position of the saw arm or **in the top** position.
 3. Interrupting the cycle selection
 - Press button **6** to preselect the cycle interrupts.
 - Press button **9** to move to the next menu.
 4. Vice parameters (vice opening)
 - Press button **9** to entrance to menu: Vice parameters.
 - By repeated pressing button **6** you select:
up ⇌ down ⇌ not release
 - Press button **9** to move to the next menu
 5. Stop time of the hydraulics
 - To set the stop time, press button **6**:
5 min. ⇌ 30 min. ⇌ Do not Turn-OFF
 - Press button **9** to move to the next menu
 6. Swarf conveyor
 - Swarf conveyor will be automatic stoped and starting with saw band drive.
 7. Language version selection
 - By repeated pressing button **6**, select the language :
Czech ⇌ German ⇌ English
 8. Press button **9** to ending **Preparative mode**

3.4.2. Semi-automatic cycle

1. Lift the saw arm to the top position by pressing button **8**.
2. Open the vice by pressing button **7**.
3. Clamp material to the vice by pressing button **6**.

Attention!

Do not move the saw frame to the material, when the saw band driving is not running! Do not move the saw frame to the material with accelerated motion! The saw band can be damaged!

4. Lower the frame about 10 mm above the material by button **9**.
5. Select the max. height of the arm with limit switch.
6. Set the saw band speed according to the kind of the cutting material.
7. Set the speed of the arm sinking by adjust governing valve **15**.

8. You can clear the register of the performed cycles by button **5 – 6** second stop on.
9. Press button „**4**“ (**START** of semi-automatic cycle).

Attention!

Press button „5“ (STOP of semi-automatic cycle). In risk of injury or damage of the band saw, press the emergency button TOTAL STOP „10“!

10. The band saw clamps the material to the vice and it makes the cut.
11. Open the vice. If the vice is not opened, you can open it by button „**7**“. Remove the blank.
12. You can repeat whole process.

3.4.3. Cycle breaking

»

- **STOP button**

Semi-automatic cycle is interrupted by pressing button „**5**“ (**STOP** of the semi-automatic cycle).

The arm is lifted to the top position and the saw band drive is stopped..

By pressing button **4 – START of the semi-automatic cycle**, you can start the cycle.

- **TOTAL STOP button**

In case of the risk, press button **TOTAL STOP „10“**.

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 on the safety circuit by button „**2**“.
3. By pressing button „**4**“ (**START** of the semi-automatic cycle), you can start the cycle. The arm is lifted to the top position and the saw band starts the cycle.

3.5. Band saw adjusting

3.5.1. Cutting speed adjusting

Speed of the saw band is possible change from **15 to 90 m/min**. You can effect to adjusting speed of the saw band following.

Use the frequency convertor **12** to adjust requested speed of the saw band. You can see the speed on display.

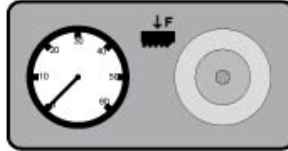
Attention!

At least once a week set the saw band speed from the lowest up to the highest speed.

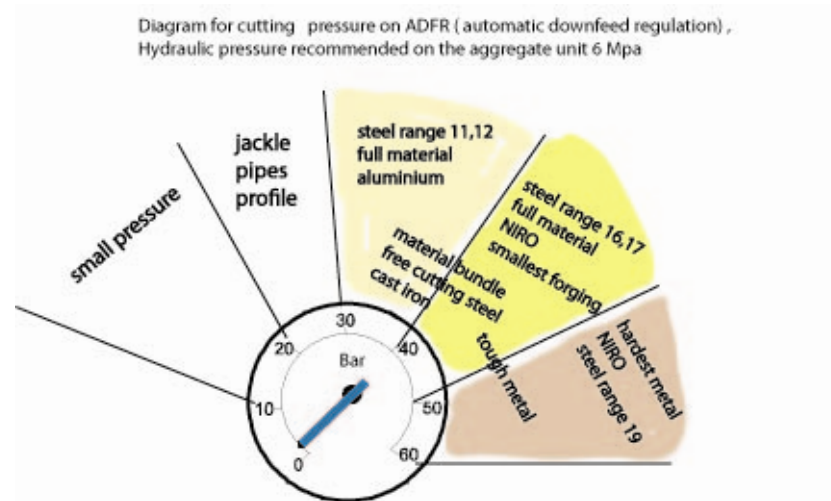
3.5.2. Adjustment of pressure to the cut

The band saw **Extend 1000.820** is equipped with cutting pressure regulation on the both guiding cubes.

Pressure adjusting is performed with regulating wheel (position **14** – control panel). The pressure to the cut is displayed on the cutting pressure manometer **13**.



Lower pressure to the cut – turn the wheel against the clock's direction.



Higher pressure to the cut – turn the wheel to the clock's direction. Přítlak do řezu se nastavuje pomocí regulace **14**

3.5.3. Speed adjustment of the arm lowering

Set the speed of the arm lowering to the cut by control valve (position **15** – control panel).

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.

3.5.4. Saw frame lift stop setting

If you want to shorten the time of operations in automatic cycle, you have to adjust the height of the saw arm according to the height of the cutting material.

1. Press button **8**. Lift the saw arm to the upper position.
2. Insert a material into the vice. Carefully lower the saw arm button **9** to the material. (**8+9**-accelerated shift)..
3. Stop the saw arm 10mm above the material.
4. The lift stop setting is sensed by the limit switch.

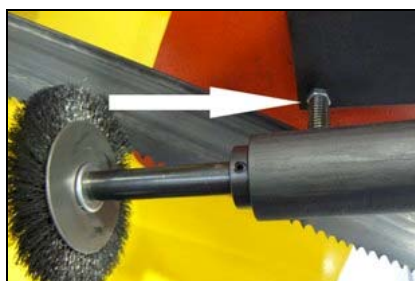


Note:

Position of the guiding cubes is secure by the limit switch. The limit switch is activated after switch lever hits the listel.

3.5.5. 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!*



4. **Machine service**

4.1. Saw band dismantling

Press the button **4 (START semi-automatic cycle)**

1. Press button **8** to lift the saw arm to maximum position.
2. Switch off hydraulic by button **Stop**
3. Switch **Deblock** to position **1**
4. Open the covers of both driving wheels.



5. Open cover by 2 star screws



6. Dismantle yellow band cover..
7. Release screw tightening brush position
8. Release the saw band by pressing left button



9. Draw the saw band down from driving wheels.
10. After carefully take the saw band out of guiding cubes.

4.2. Saw band installation

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. Stretch the saw band by means of the screw, that the band did not falls from wheels.
5. Install yellow protective cover of the band.

6. Move the brush to the saw band. Tighten the securing screw.
7. Close the covers of both driving wheels.
8. Saw band installation is finished.

4.3. Saw band stretching and 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.

4.3.1. Saw band stretching

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.



- The saw band must not fall from the wheels after setting
- Install the Tenzomat on the saw band and secure it with screws
- Stretch the saw band until it is stretched to the recommended value

4.4. Saw band run adjustment on stretching wheel

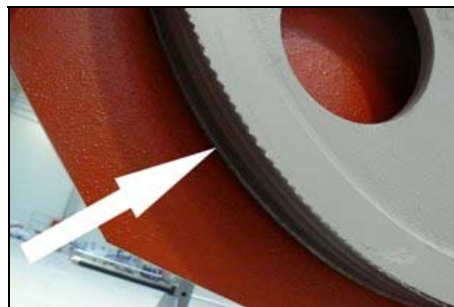
Saw band run on the stretching wheel must be regularly inspected. The inspection has to follow every saw band replacement.

4.4.1. Saw band run inspection

If the run is not correct, 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. Start and stop saw band drive.
2. Stop the main switch!.

3. Open rear cover of the saw frame.
 4. Check saw band placing on the wheels.
- If the distance of the rear part of the saw band from wheel rim is **1 mm**, setting is right.
 If the distance is bigger than **1 mm**, or the saw band runs on the wheel rim, saw band run must be set.

4.4.2. Saw band run setting



Saw band run is set with screw (arrow) in the stretching cube on the saw arm. Right distance rear part of the saw band from wheel rim is **1 – 3 mm**.

- Turn with the screw to the right, the saw band is closer to the stretching wheel rim.
- Turn with the screw to the left, the saw band is far from the stretching wheel rim

Check saw band run adjustment again.

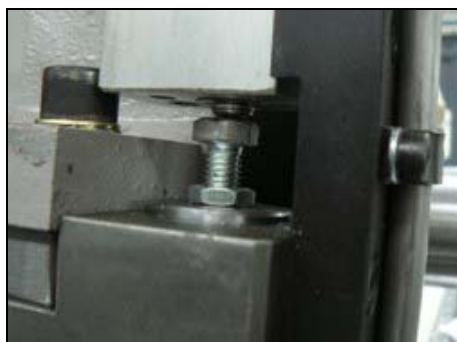
4.5. Limit switch setting of the saw band stretching ng

The limit switch of the saw band stretching is set from the manufacturer. Is not necessary to set it. After the saw band is replaced, the limit switch setting must be checked out. If the limit switch is not set correctly, the band is stretch too much or it is to loose

Release 2 screws and check the limit switch setting -on-state



4.6. Saw arm lower position stop adjustment



The lower stop limits the lowest position of the saw arm. This stop point has to be checked at least once a month. If the lower stop point is wrongly adjusted, the cutting table can be deeply cut or the material will not be cut completely.

1. Lift the saw frame to the top position.
2. Release the nut of the screw and set it on the desired value.
3. Secure the screw with nut again.
4. Set the limit switch of the saw frame lower position.

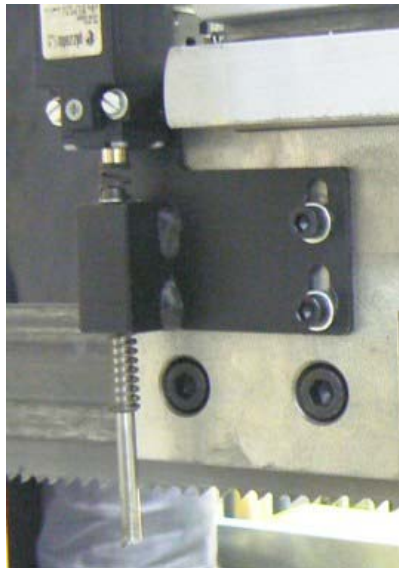
4.7. Adjusting of the limit switch of the saw band stretching

The limit switch of the saw band stretching is set from the manufacturer. Is not necessary to set it.

4.7.1. Setting inspection

Lower the saw frame to the lowest position. If the saw frame is on the lower stop and the limit switch responds, the limit switch adjustment is correct. Make the limit switch adjustment in failing which.

4.7.2. Limit switch setting



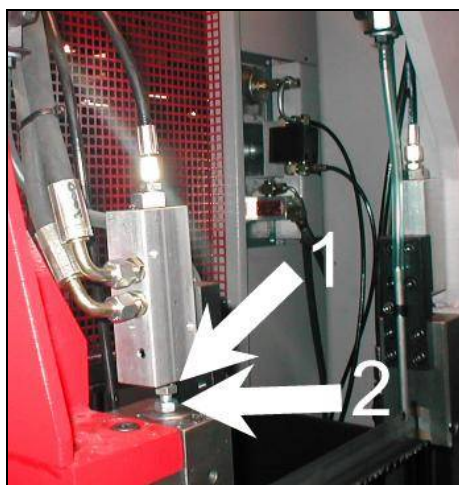
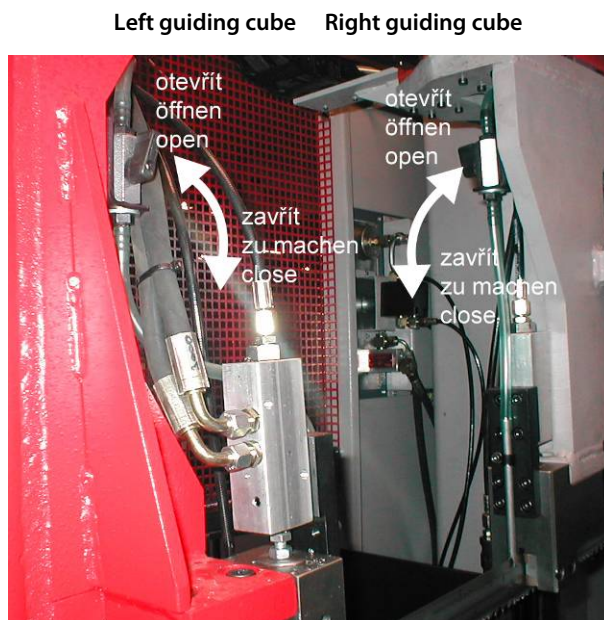
1. Release the nut of the stop screw of the limit switch and screw the screw.
2. Lower the saw frame to the lower stop and switch on the saw band drive (**button 4**).
3. Screw out the stop screw of the limit switch, until the saw band drive is not stopped.
4. Secure the screw with nut and check limit switch adjustment again.

4.8. Adjustment of the cutting pressure regulation

This chapter describes the basic speed setting of arm sinking to the cut for idle run. Saw is equipped with cutting pressure regulation on both guiding cubes. Cutting pressure regulation is set separately on every guiding cube.

4.8.1. Setting on the right guiding cube

1. Close the tap on the left guiding cube. Let the tap opened on the right guiding cube.



2. Screw off the set – screw on the right guiding cube to the stop, the valve is blocked (pos1). You can move by arm only up, because the arm movement down is blocked with pressure regulation valve.
3. Press button „Arm down“ and slowly screw on the set – screw on the right guiding cube. Screw by set – screw until the optimal speed of the arm sinking is not reached. The optimum speed of the arm sinking to the cut from maximum lift until lower stop is about 55 seconds.
4. Secure the set – screw with nut (pos. 2) for reaching of the optimum speed of the arm sinking.
5. Pressure regulation on the right guiding cube is set.

4.8.2. Setting on the left guiding cube

6. Open the tap on the left guiding cube. Close it on the right guiding cube.
7. Set the cutting pressure regulation on the left guiding cube in the same way.

8. Open taps on both guiding cubes after pressure regulation setting. **ATTENTION!**
Both taps must be opened during operation!
9. Setting is ended.

4.9. 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 behaviour increases • emulsions stability deteriorates • sticky residue develops

4.9.1. Cooling liquid preparation

Prepare the mix of the water and cooling liquid. Conform the notes of the manufacturer and keep manufacturer-approved concentration

All instructions are stated on the tank of the cooling liquid or in documents of the cooling liquid. For cooling liquid using and liquidation reads date of cooling liquid manufacturer, which it is necessary to keep

Fill the mix of water and cooling liquid to the tank of the cooling system. The capacity of the tank for the cooling liquid is stated in chapter „2.1

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

Keep manufacturer specified recommendations for adding the anticorrosive agents, the antifreeze or other agents! For mixture of two different mixes can produce toxic and aggressive mixes, which can peril your health or damage cooling system of the machine.

Note: If the machine is equipped with Microniser (see. **Special accessory**), fill the tank of the Microniser by specified cooling liquid. Microniser is ready for the operation

The quality of the cooling agent will deteriorate due to:

- use of contaminated water
- impurity
- outside oil contamination (hydraulics, gears)
- high operating temperatures
- lack of air circulation
- wrong concentration

If the solution is too weak:

- corrosion protection is diminished
- lubrication decreases
- microbial attack is more likely

If the solution is too strong:

- the cooling ability is decreased
- foam behaviour increases
- emulsions stability deteriorates
- sticky residue develops

4.10. 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

4.10.1. 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.

4.11. Hydraulic, Greases and oils

4.11.1. 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
Extend 1000.820	Shell Tivela S 320	3,3 l
Swarf conveyor	Shell Tivela S 320	0,075 l

Comparative table of the gearbox oils

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

4.11.2. 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.

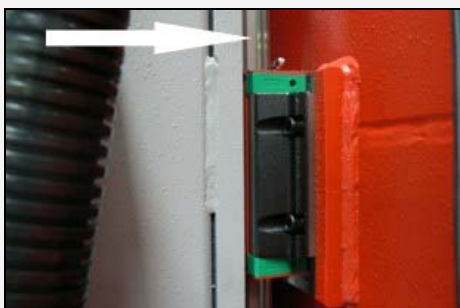
Comparative table of the lubricant greases:

Manufacturer	Type of the lubricant grease
BP	Energrease LS - EP
DEA	Paragon EP1
Esso	FETT EGL 3144
	Beacon EP 1
FINA	Beacon EP 2
	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

Manufacturer	Type of the lubricant grease
Texaco	Multifak EP1

4.11.3. 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
	The guiding cubes leading – grease with oil from both sides once a week.
	The linear guiding of the saw arm – lubricate with grease once a three months (see chapter Lubricant greases). Use 3-5g grease on the every carriage of the linear guiding. Use the grease gun to the lubrication. Drive 3-5 times whole line of the linear guiding during lubrication.

4.11.4. 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

Manufacturer	Type	Manufacturer	Type
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		

4.11.5. Hydraulic unit service

After 50 hours working time, or the latest 3 month 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

Cheb 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 realise 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	-	-	•	-	-	-

4.11.6. Hydraulic oil level check



Pull up the gauge and check the state of the oil. The oil level must be situated between water-glas.

Fill the hydraulic oil, if it is necessary. Use always the filter (10 μm or better) when you fill the oil. You avoid impurities penetration to the hydraulic system and troubles in hydraulic system.

4.12. 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.

4.13. Worn pieces replacement

4.13.1. Pushing bearing replacement

If it is impossible to adjust the bundle gripping assembly and the pushing bearing is worn, it needs to be replaced.



The bearing condition is possible discover, on the cube from the bottom side, for a better inspection is possible to put out the holder of the bearing from the cube.

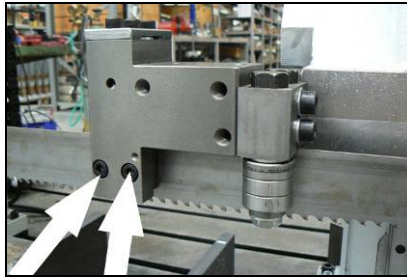
If the bearing is worn, there is a visible channel on it.

Bearing replacement:

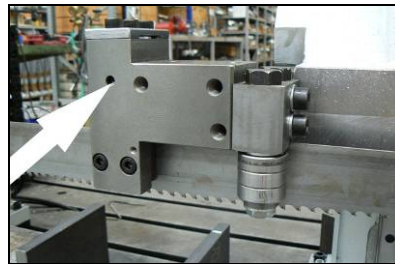
1. Dismantle the saw band.



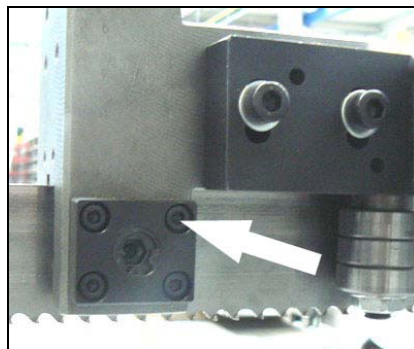
2. Disconnect the hose from the cooling agent.



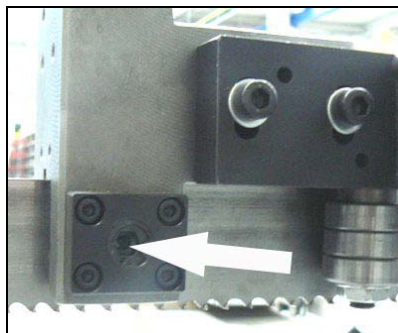
3. Release 2 Screws.



4. Release the fixative pin of the bearing holder.



5. Release 4 screws.



6. Release centric screws M10..



Attention:

The vice has aluminium jaws, eventually, there has to be an aluminium agent to protect the pivot from damage.

7. Insert the pivot to the vice.
8. Remove the bearing pivot from the bearing holder by means of the swager.



9. Remove the worn bearing.
10. Fasten the holder to the vice.

Attention:

The vice has aluminium jaws, eventually, there has to be an aluminium agent to protect the pivot from damage.

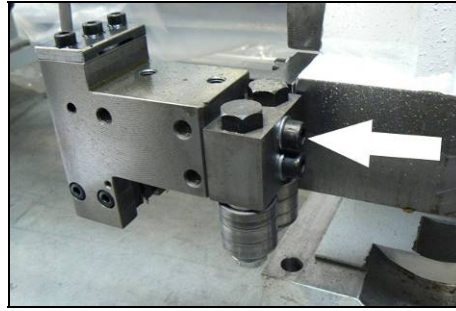
11. Insert the bearing and washers and return the pivot to its original place.
12. The pivot may not extend past the holder; otherwise, the bundle gripping assembly regulator gets worse.

4.13.2. Saw band guiding pulleys replacement

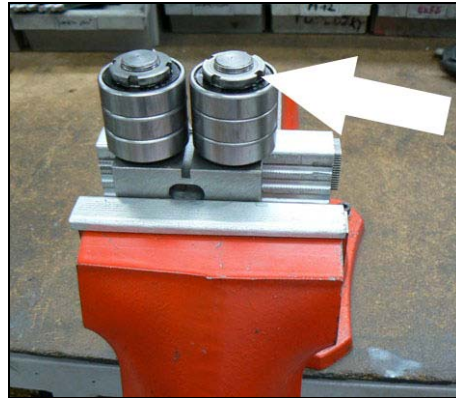
If the saw band is not sufficiently guided by guiding pulleys or if the pulleys are obviously worn, the pulleys should be replaced.

Attention:

Guiding pulleys must be replaced together on both guiding cubes!



1. Release 2 screws. Dismantle the guiding cube of the saw band.

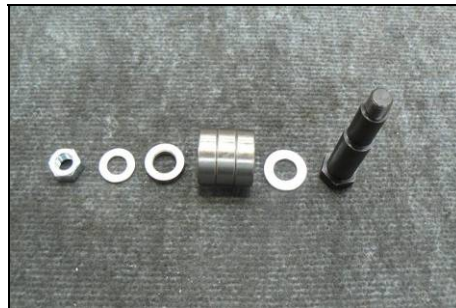


2. Tighten the guiding cube to the vice and dismantle both eccentrics with bearings following way.

Attention:

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

3. Screw off nuts from eccentrics.
4. Remove eccentrics from bearings by means of the swager.



5. Change all bearings and other worn parts.
6. 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.



7. Screw on nuts on both eccentrics and tighten them.



8. Insert the saw band to the guiding cube (cca 15 – 20 cm). Secure the movable hard metal guide with scotch so, that the saw band is pressed with guides and it is possible to move with saw band.
9. 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.

Optimal distance between the band and the pulley is 0,05 mm.

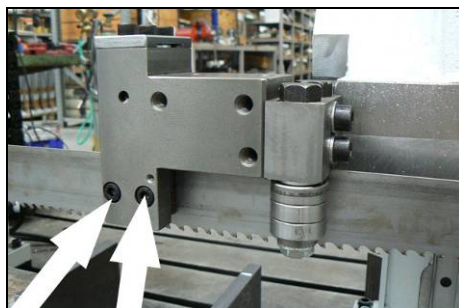
10. Tighten nuts on both eccentrics.
11. Remove the testing piece of saw band from the cube lead. Install the guiding cube on the machine.

4.13.3. Hard metal guides replacement

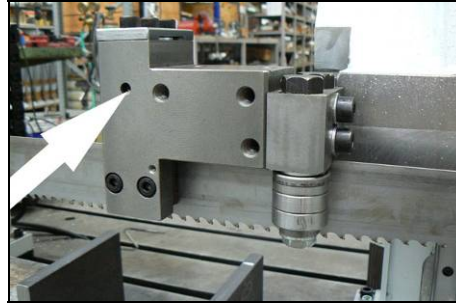
If the hard metal guides cannot be adjusted, they have to be replaced.

ATTENTION! Hard metal guides must be replaced together on both guiding cubes!

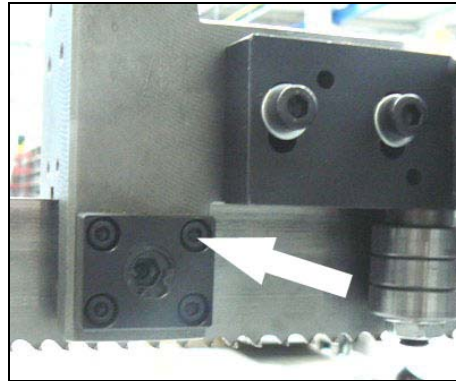
1. Disconnect the hose from the cooling agent.



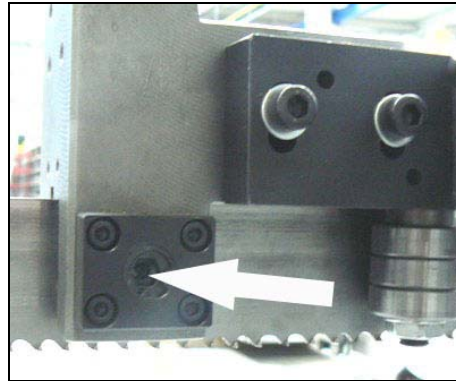
2. Release 2 screws.



3. Release the fixative pin of the bearing holder.



4. Release 4 screws.



5. Release centric screws M10..



6. Dismantle the fixed hard metal guide.



7. Remove the movable hard metal guide and 8 disk springs.
8. Insert the new movable hard metal guide.
9. Screw on the fixed hard metal guide.
10. Hard metal guides replacement is ended.

4.13.4. Brush replacement

If the chip removing brush is not able to fulfil its function, it has to be replaced.

1. Hold shaft of the brush by wrench.



2. Release the nut on the brush, replace worn brush on the new brush, screw on the nut.
3. Set the brush to the saw band.

5. Závady / 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 problems

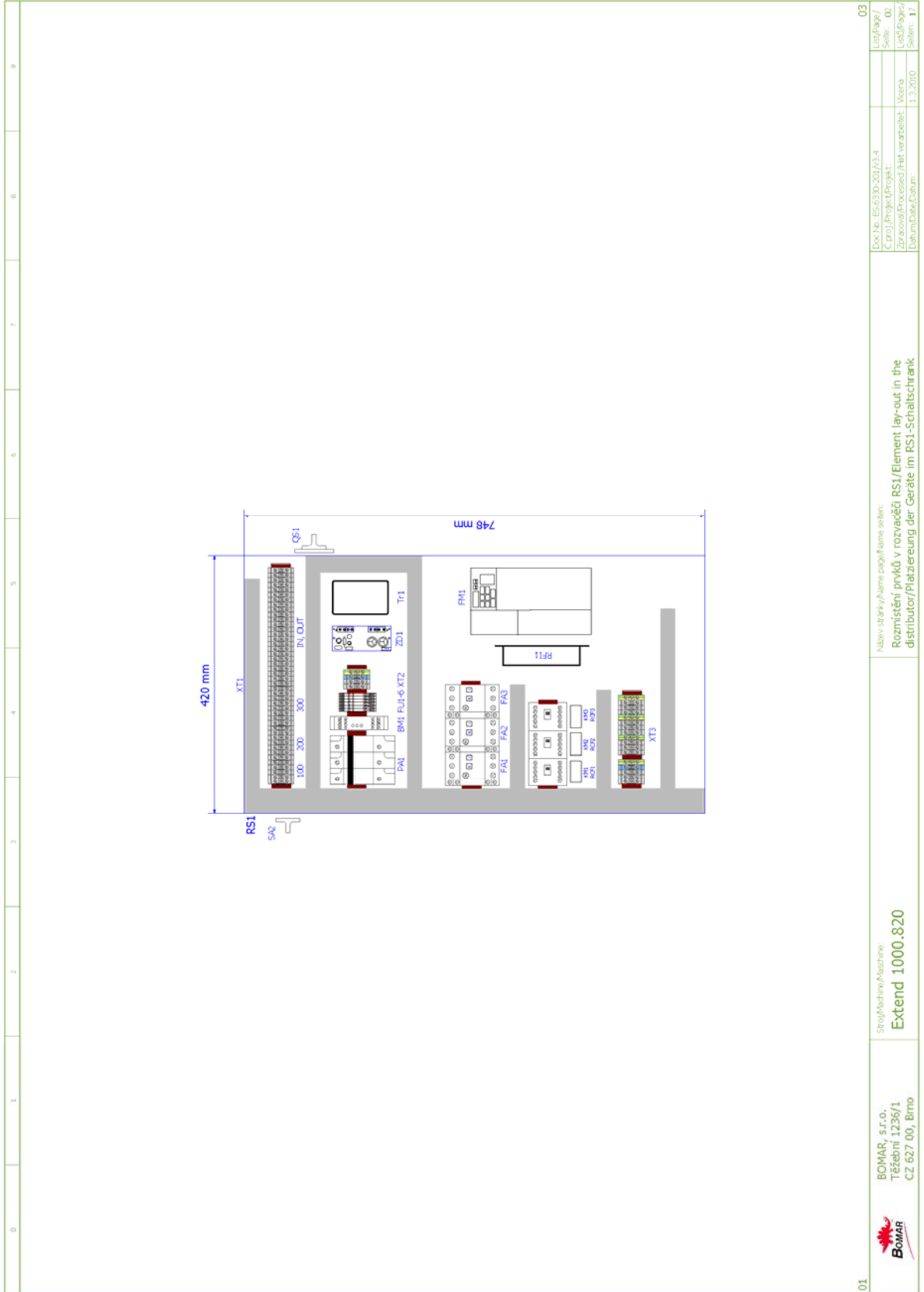
Problem	Possible causes	Repair
1. Machine is not possible start.	- In socket is not voltage	Line voltage must be checked.
	- Transfer relay is closed (thermal protector)	Each FA relay must be checked.
	- Limit switch of saw band stretching, cover of frame or cover of saw band is not started.	Check of 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.

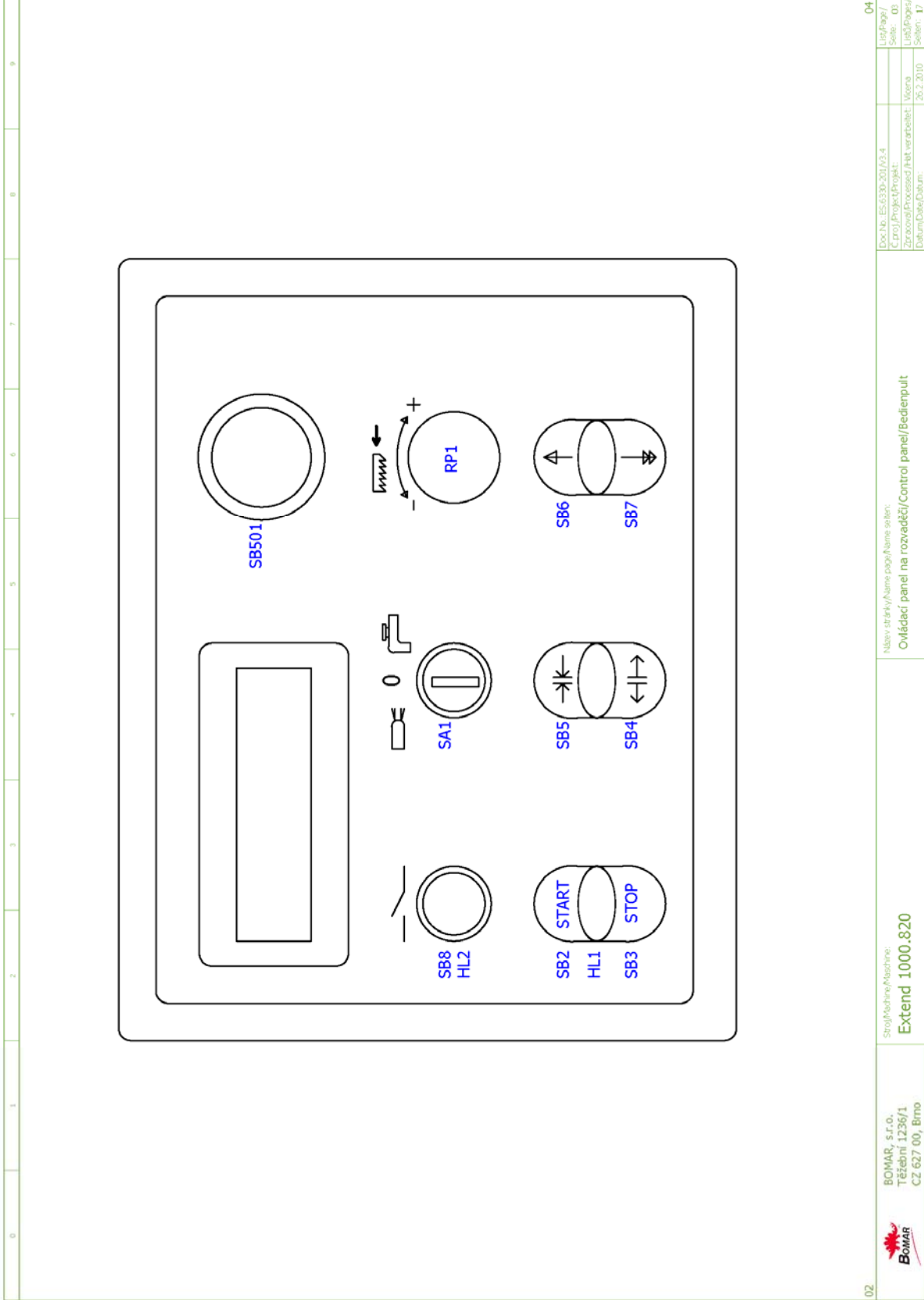
5.3. Hydraulic problems

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. **Schémata / Schemas / Schematics**

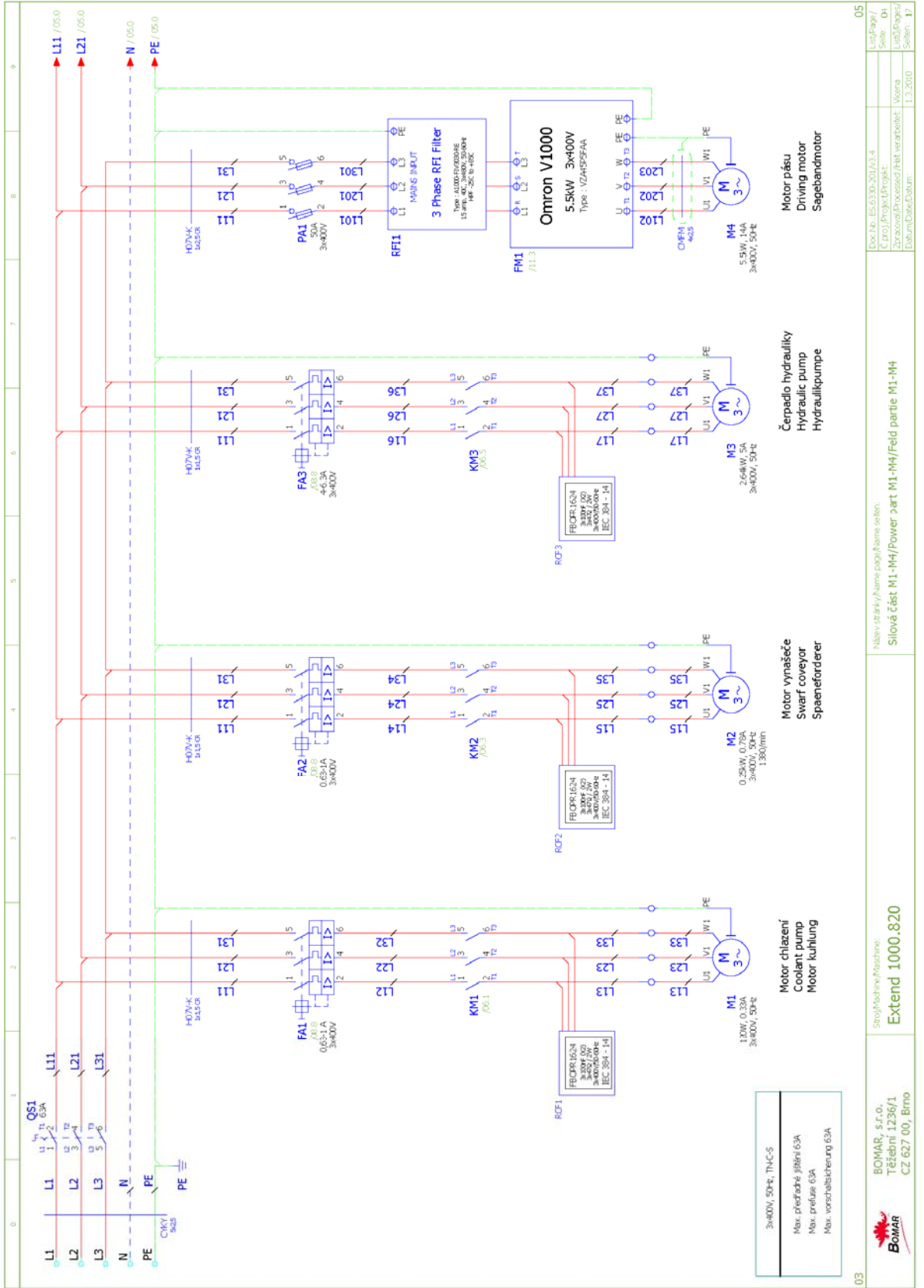
6.1. Elektrické schéma /
 Elektroschema /
 Wiring diagrams – 3×400 V, TN-C-S



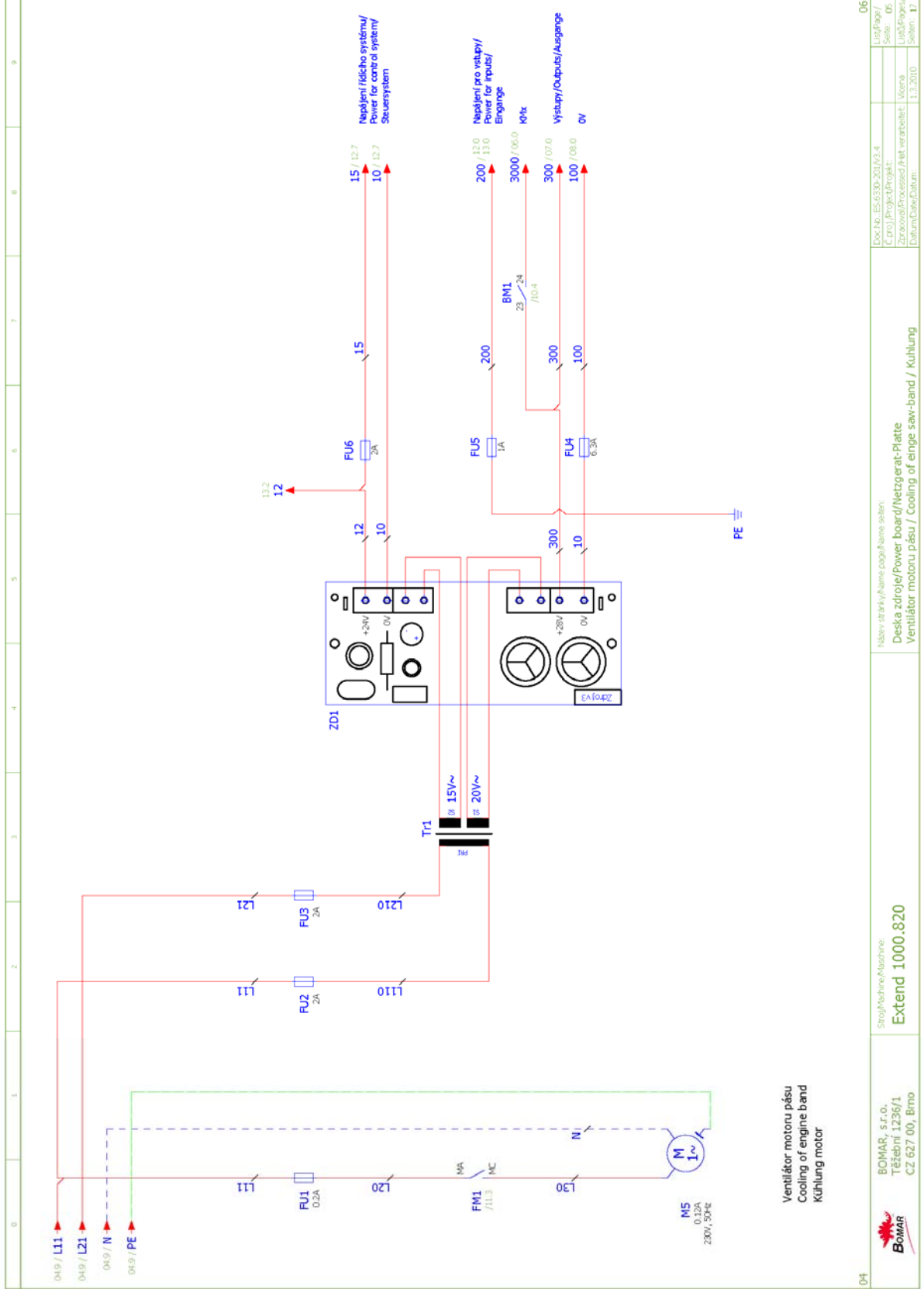


02	<p>BOMAR, s.r.o. Třešněvní 1236/1 CZ 627 00, Brno</p> <p>Stroj/Machine/Machine: Extend 1000.820</p>	<p>04</p>
	<p>Název: Ovládací panel na rozvaděči / Name: Control panel / Bedienpult</p>	
	<p>Doc.No.: ES 6330-201/A3.4</p>	<p>List/Page / Seite: 03</p>
	<p>C Proj./Projekt/Projekt: Zpracováno/Processed /Akt. verarbeitet: Datum/Date/Datum: 26.2.2010</p>	<p>List/Page / Seite: 03 List/Page / Seite: 17</p>

**Schemata
Schemas
Schematics**

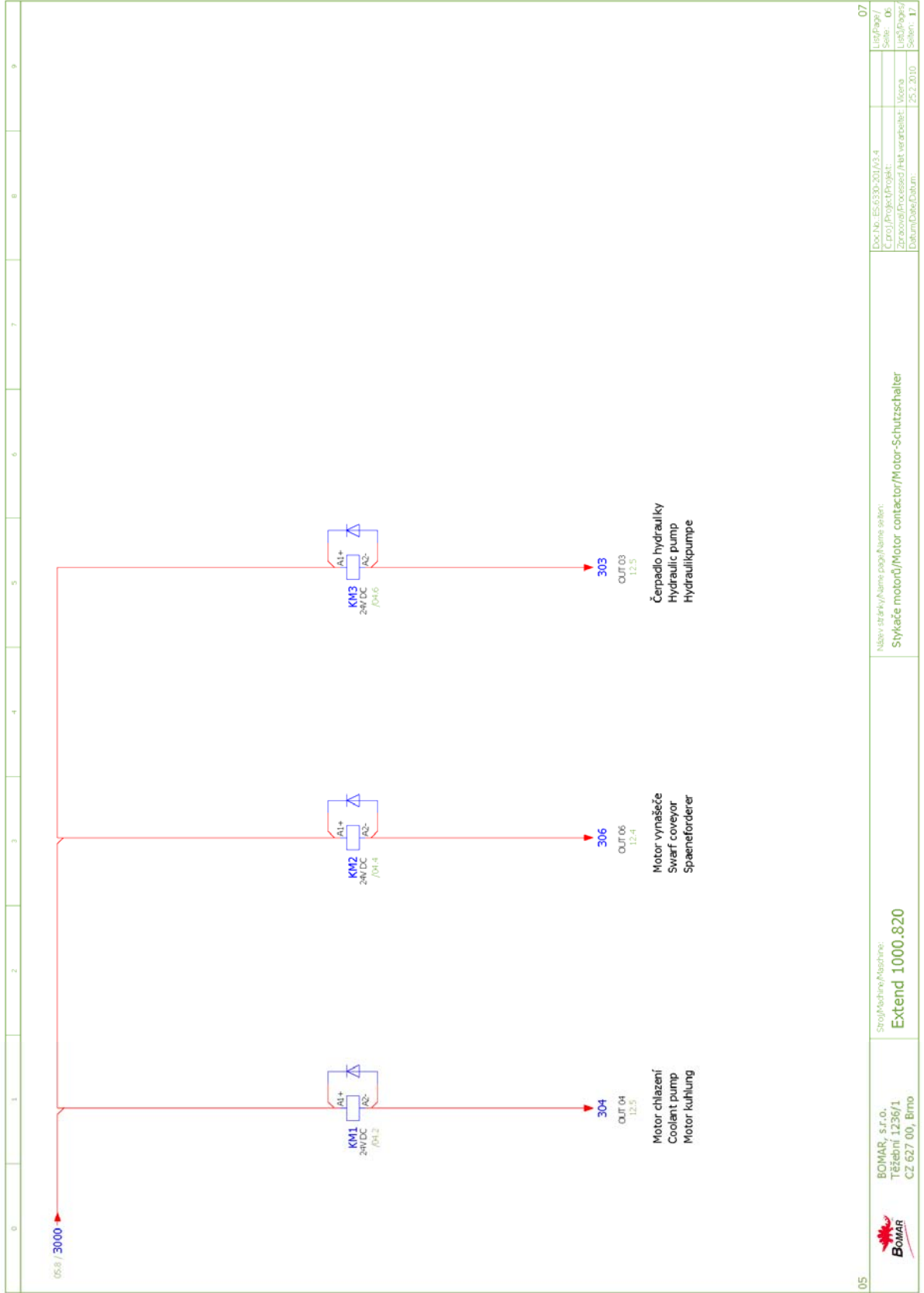


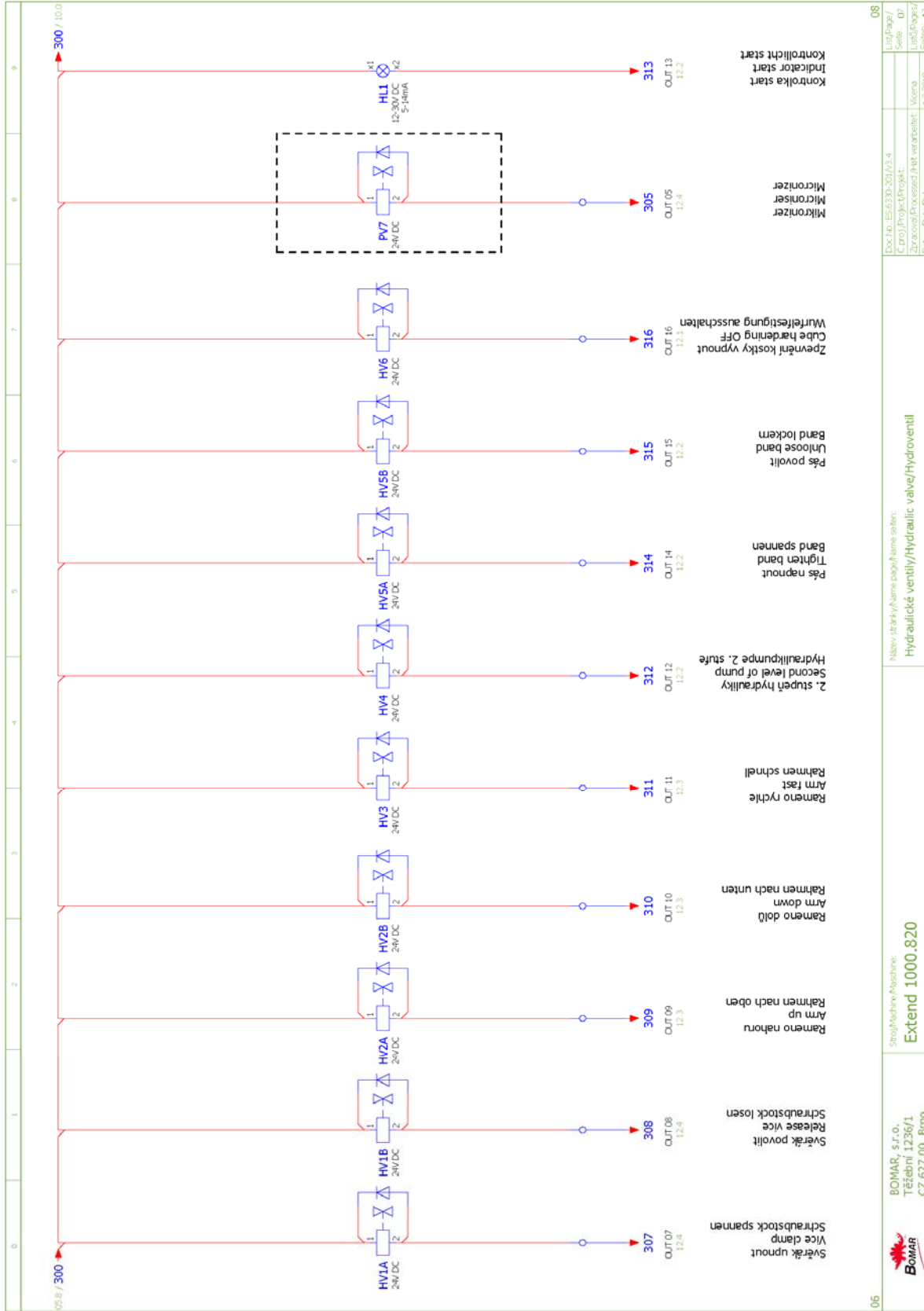
03	Stroj/Machine/Modul: Extend 1000.820	Název: 3f skly/hvz/3mz pap/3mz setten: Silová časť M1-M4/Power part M1-M4/Field partie M1-M4	Doc.No: ES-6330-00/A3.4 Verzia: 04 Zpracoval/Processed/Arb.verarbeitet: Marena Datum/Date/Datum: 1.3.2010 Seiten: 17
----	--	--	--



Ventilátor motoru pásu
Cooling of engine band
Kühlung motor

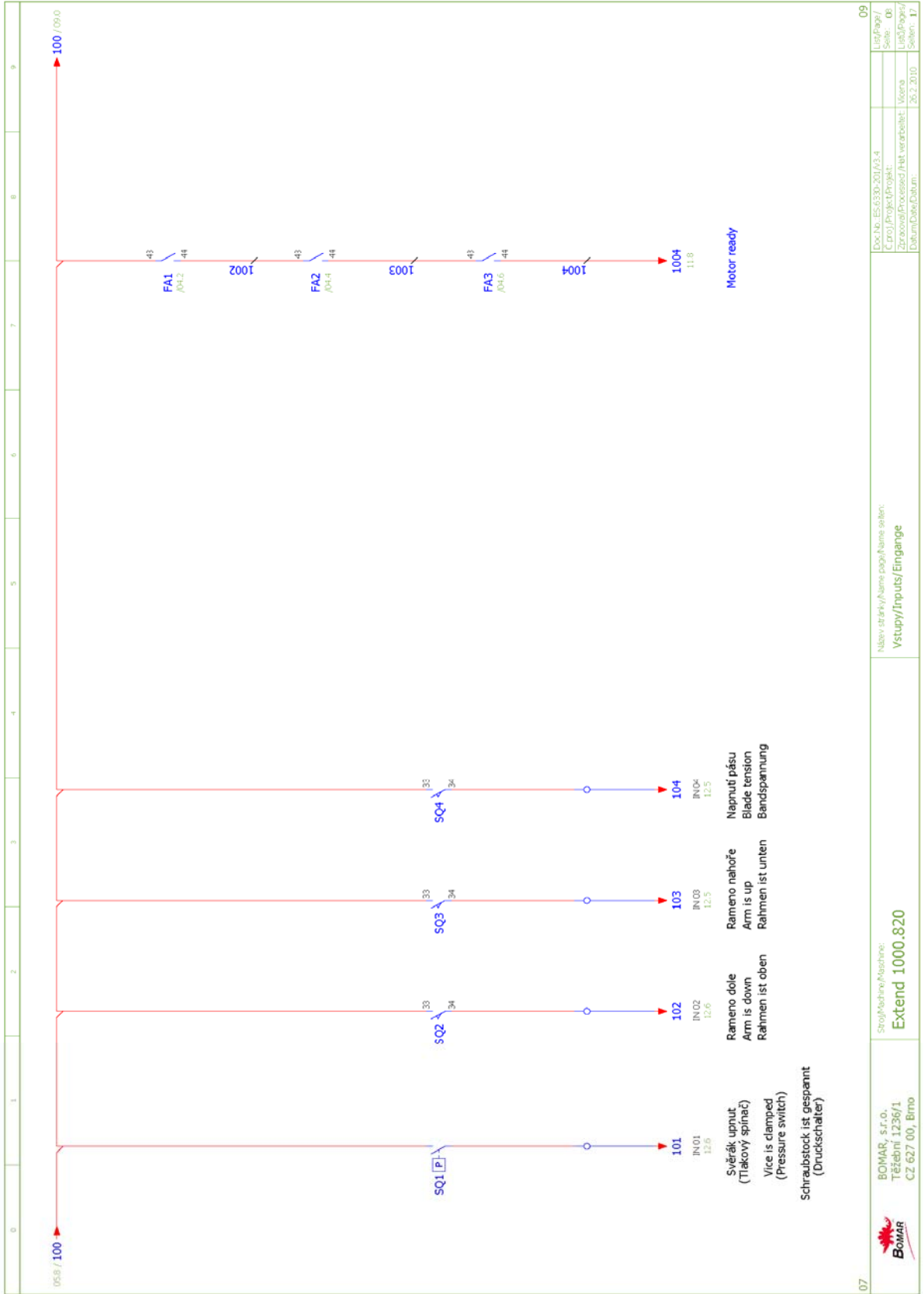
04	Stroj/Machine/Modèle: Extend 1000.820	Název/Title/Name/Objekt/Name setení: Deska zdrojové/Power board/Netzgerät-Platte Ventilátor motoru pásu / Cooling of engine saw-band / Kühlung	Doc.No./ES.6330-201/A3.4 C.proj./Projekt/Projekt: Zpracoval/Processed/Arbeit bearbeitet: Vlasera Datum/Date/Datum: 1.3.2010	06 List/Page / Seite: 06 List/Page / Seite: 17
----	---	--	--	--



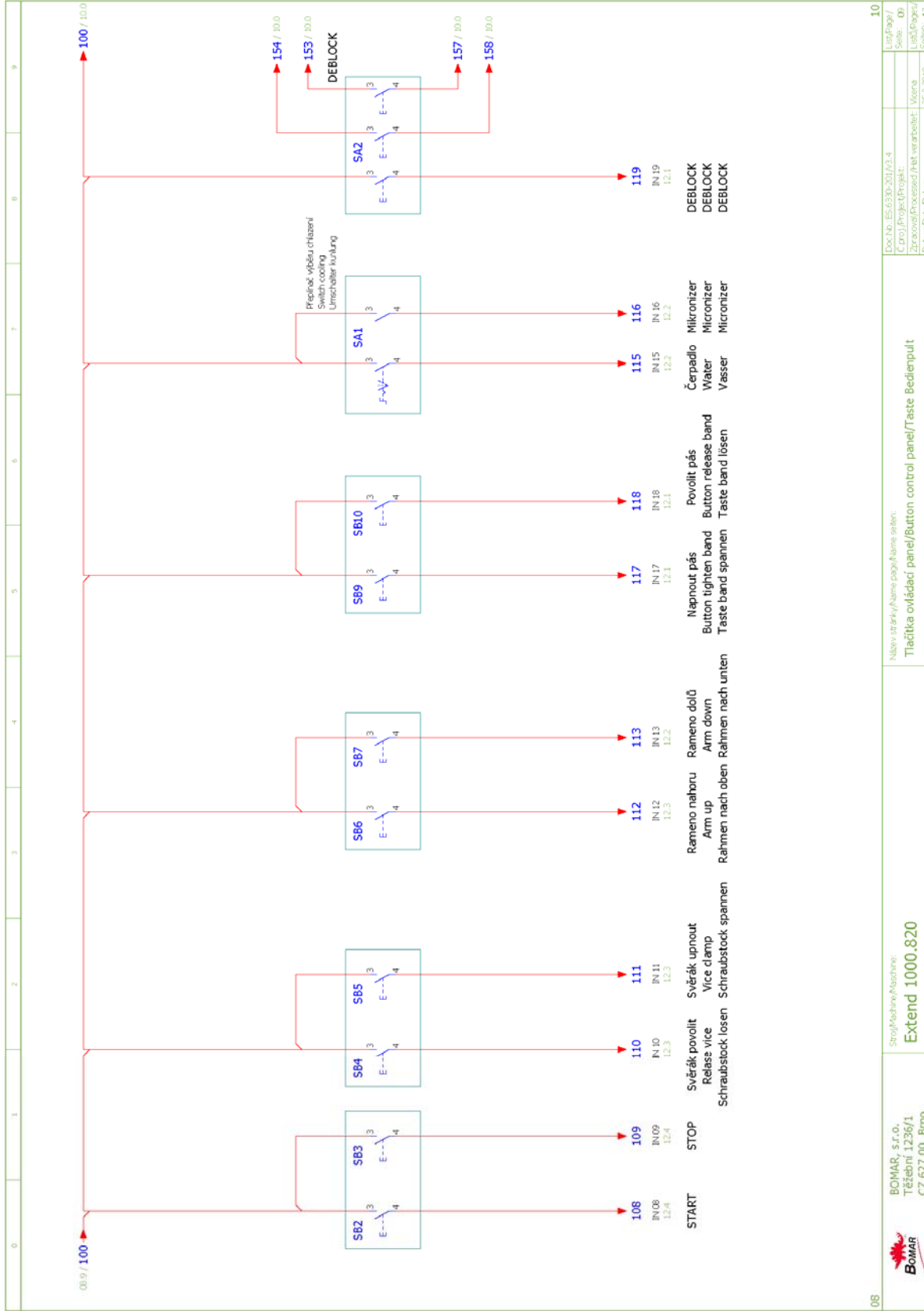


06	BOMAR, s.r.o. Tržební 1236/1 CZ 627 00, Brno	Stroj/Mech./Mozdina: Extend 1000.820	Název: strahy/Name page/Name section: Hydraulické ventily/Hydraulic valve/Hydroventil	Doc.No: ES-6330-20/A3.4 C:pro/Projekt/Projekt: Zpracoval/Processed/Jobt.verarbeitet: Marena Datum/Date/Datum: 1.3.2010	08
					List/Page / Seite: 07 List/Projekt/ Seiten: 17

**Schemata
Schemas
Schematics**

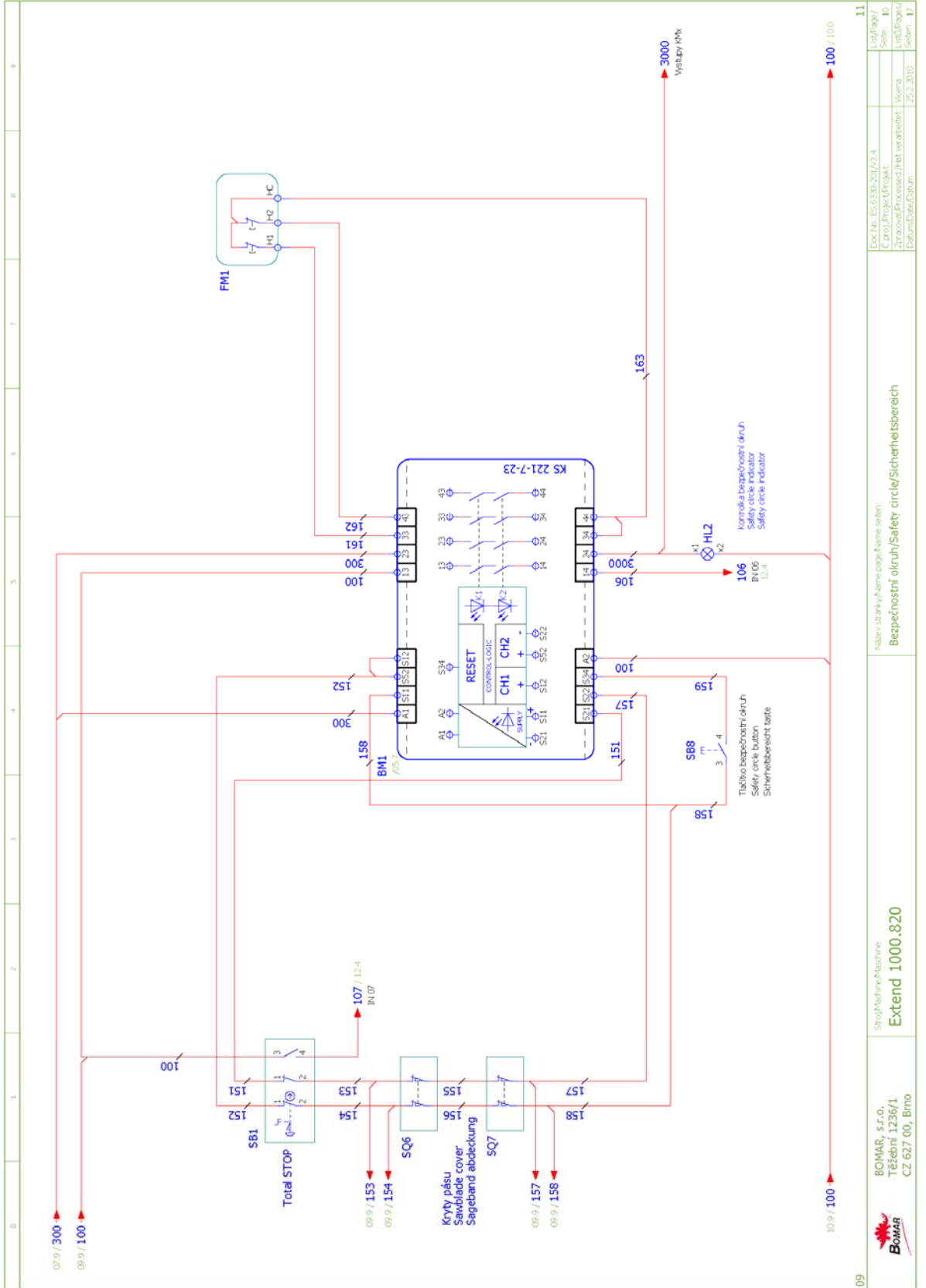


07	<p>BOMAR, s.r.o. Třebáň 1236/1 CZ 627 00, Brno</p>	<p>Stroj/Machine/Modelle: Extend 1000.820</p>	<p>Název /tržby/name popis/Name setten: Vstup/Inputs/Eingänge</p>	<p>Doc.No: ES.6330-20/A3.4 C:proj/Projekt/Projekt: Zpracováno/Processed/Abt.verarbeitet: Měna Datum/Date/Datum: 26.2.2010</p>	<p>09 List/Page / Seite: 08 List/Projekt / Seiten: 17</p>
----	--	--	--	---	---



08		BOMAR, s.r.o. Tržební 1236/1 CZ 627 00, Brno	Stroj/Machine/Modul: Extend 1000.820	Název / název / Name / Name / Name / Name: Tlačítka ovládací panel/Buttons control panel/Taste Bedienpult	Doc.No.: ES-6330-201A3.4 C.proj./Projekt/Projekt: Zpracoval/Processed /Acht verarbeitet: Datum/Date/Datum:	10 List/Page / Seite: 01 List/Page / Seite: 17

Schemata Schemata Schematics



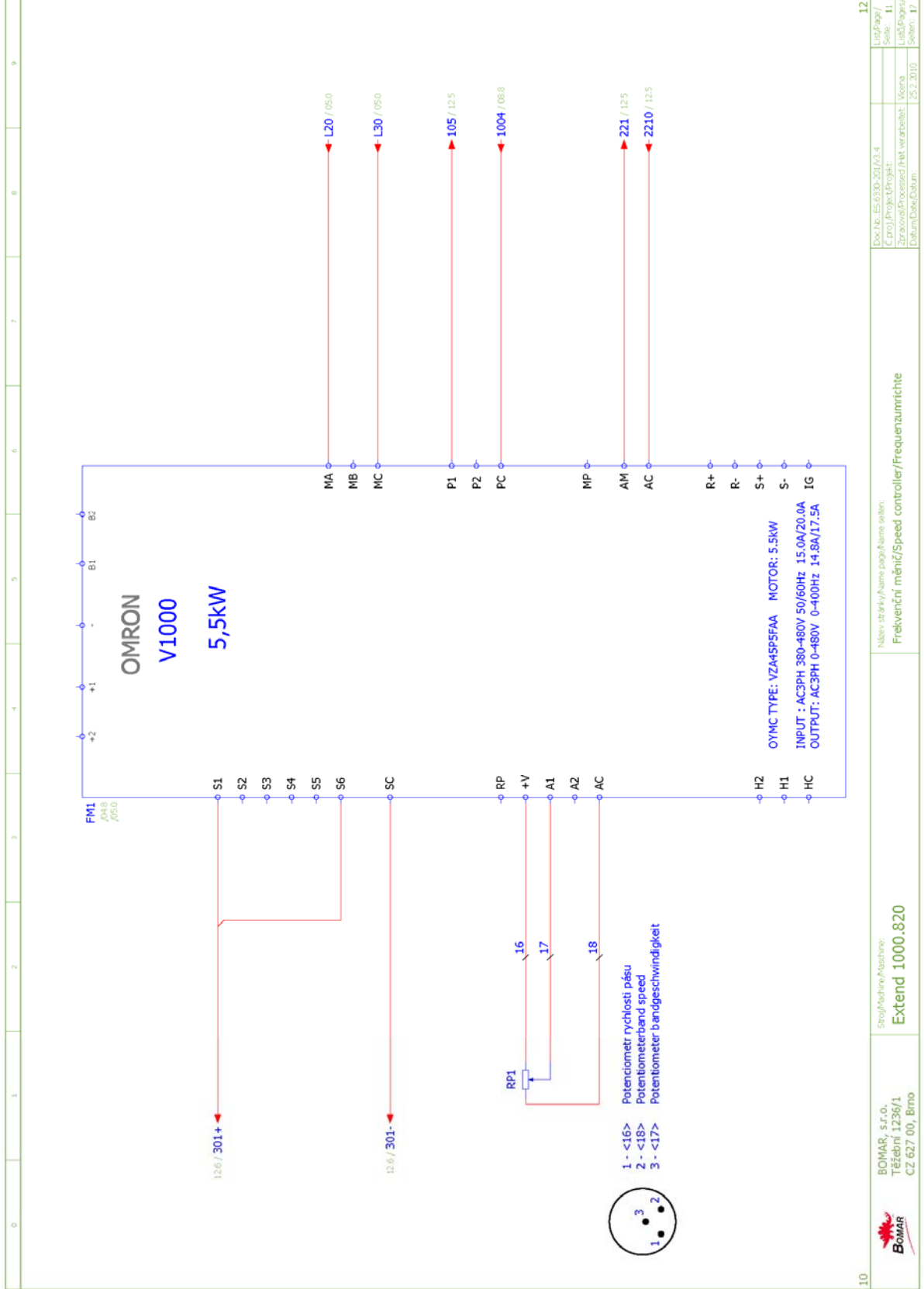
09

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

Stroj/Mechanika/Extens
Extend 1000.820

Název / název / Name / Name setin:
Bezpečnostní okruh/Safety circle/Sicherheitsbereich

Doc.No./ES/330-201/A3.4	11
C.proj./Project/Projekt:	Seite: 10
Zpracováno/Processed/Авт.вработел:	Lib/Pages/
Datum/Date/Datum:	25.2.2010
	Seiten: 17

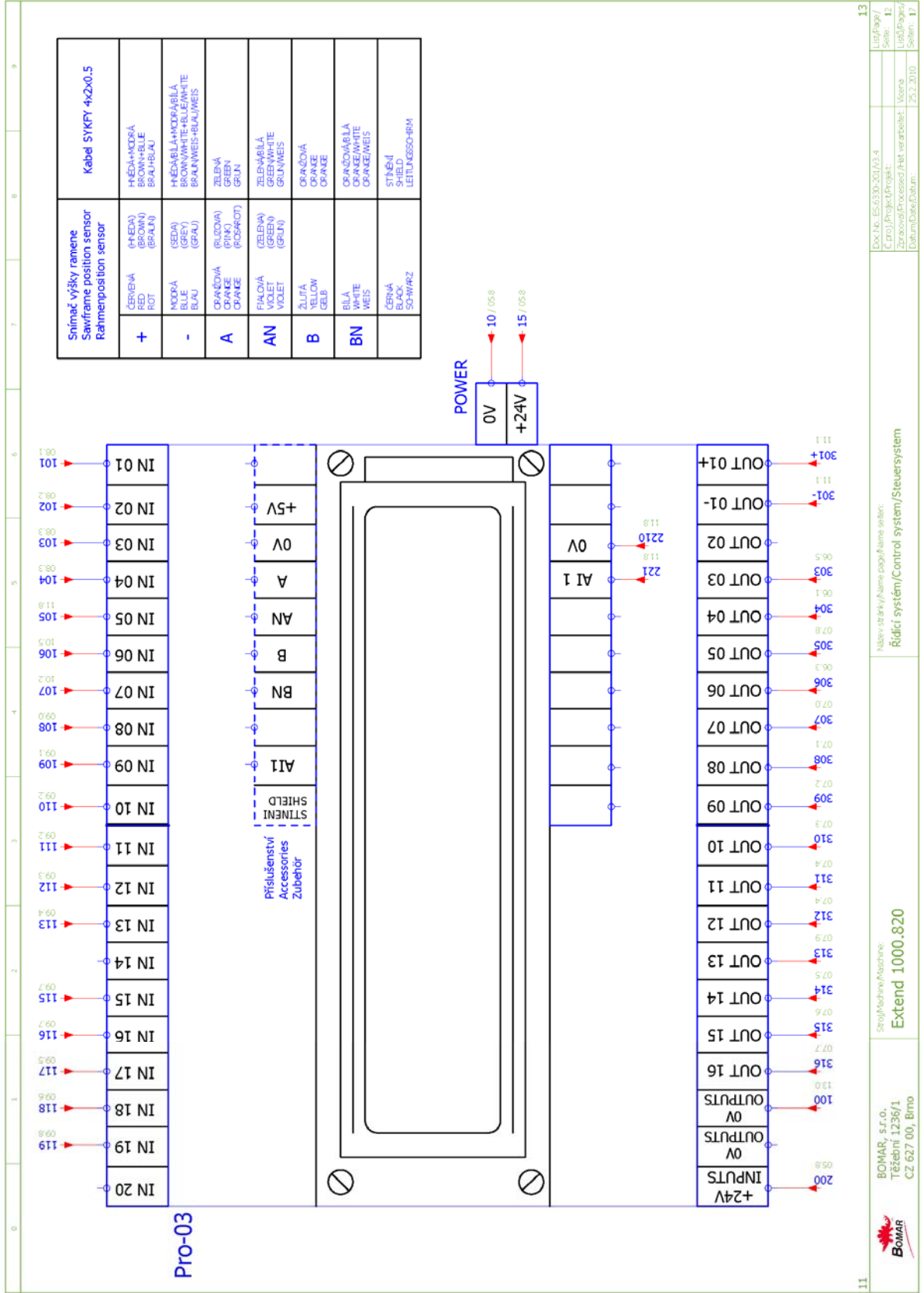


Schemata
Schemata
Schematics

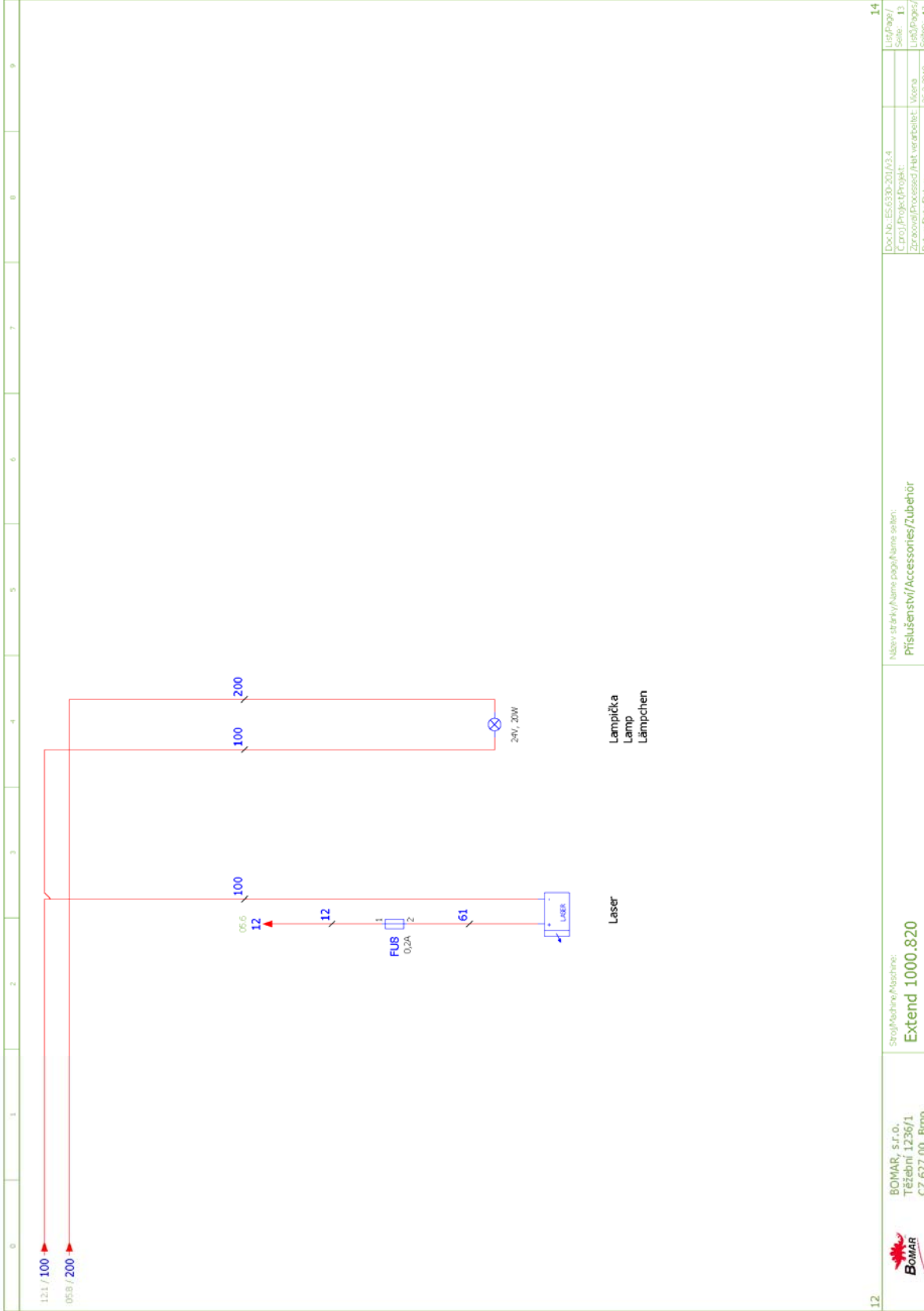
Stroj/Machine/Maschine:
Extend 1000.820

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





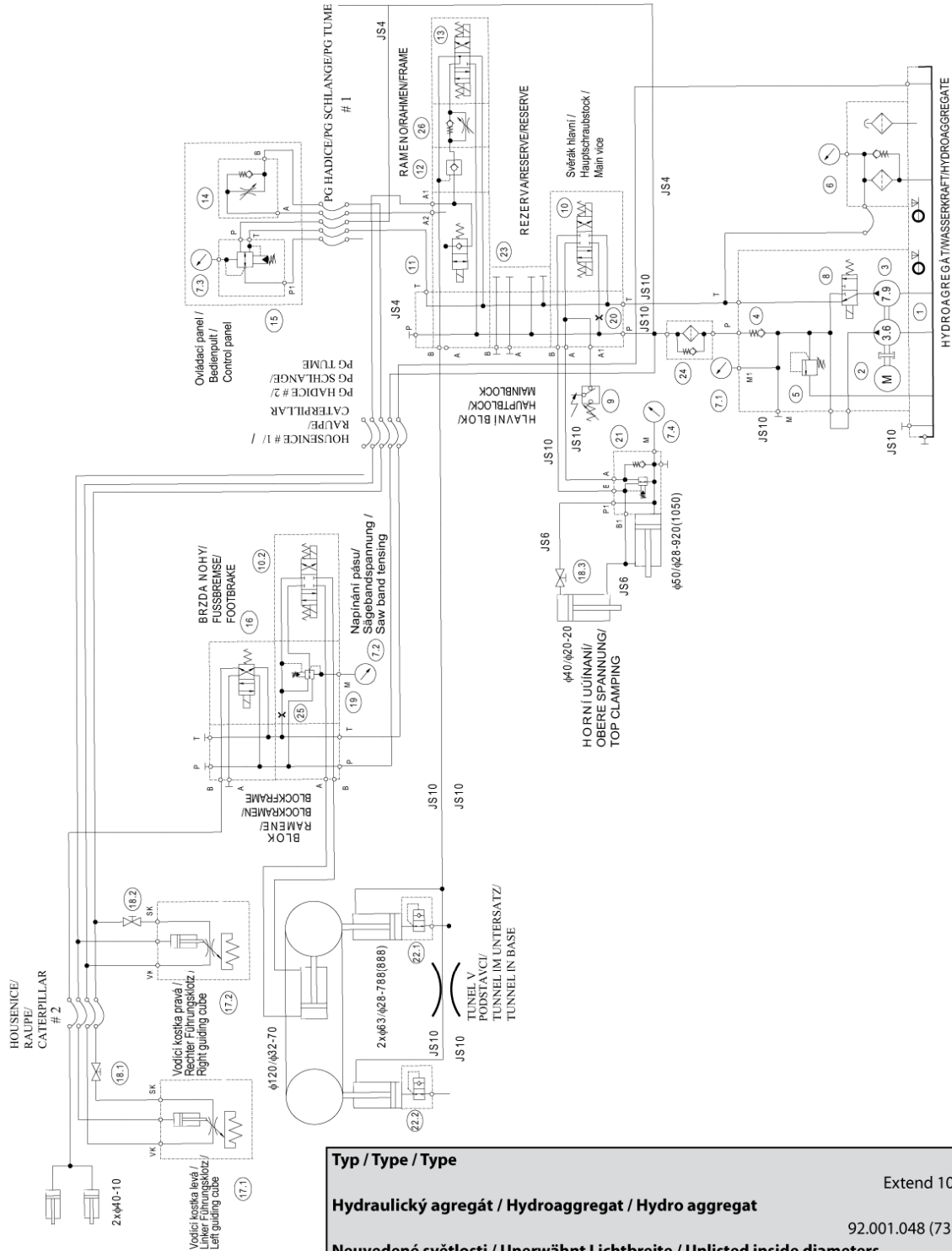
11	BOMAR, s.r.o. Tržební 1236/1 CZ 627 00, Brno	Stroj/Machine/Abstrich: Extend 1000.820	Název/drawing/name/paper name set: Řídicí systém/Control system/Steuersystem	Doc.No./ES/330-201/A3-4 C.proj./Project/Projekt: Zpracováno/Processed/Abt.verarbeitet: Viena Datum/Date/Datum: 25.2.2010	13
----	--	---	---	---	----



12		BOMAR, s.r.o. Tržební 1236/1 CZ 627 00, Brno	Strojířská/Mechanika: Extend 1000.820	Název: držák/Name page/Name setten: Příslušenství/Accessories/Zubehör	Doc.No.: ES.6330-20/A3.4 C-proj./Projekt/Projekt: Zpracováno/Processed/Abt. verarbeitet: Měna Datum/Date/Datum: 26.2.2010	List/Page / Seite: 13 List/Page / Seiten: 17
----	--	--	---	--	--	---

**Schemata
Schemata
Schematics**

6.2. Hydraulické schéma / Hydraulicschema / Hydraulic diagram



Typ / Type / Type	Extend 1000.820
Hydraulický agregát / Hydroaggregat / Hydro aggregat	92.001.048 (731-0507)
Neuvevedené světlosti / Unerwähnt Lichtbreite / Unlisted inside diameters	JS6
Výstupní šroubení / Ausgangsschraubung / Output screwing	G1/4"
Pmax	6,5 MPa
Q	10,6+4,9 dm ³ /min
n	1425 rpm
P	2,2 kW

Poz.	Název položky		ks
Pos.	Bezeichnung		Menge
Pos.	Item		Pcs.
1	Nádrž / Behälter / Tank	N30-BO	1
2	Elektromotor / Elektromotor / Electromotor	MA-AL100L 2,2 kW	1
3	Hydrogenerátor / Hydraulikgenerator / Hydrogenerator	P23-7,9/3,6 L65334	1
4	Jednosměrný ventil / Einwegventil / One-way valve	VJ01-06/SG-1	1
5	Přepouštěcí ventil / Bypašventil / By pass valve	VPN1-06/S-10S	1
6	Zpětný filtr / Filter / Filter	FR 043-166/0 10um	1
7	Manometr / Manometer / Manometer	Ø68 0 s glycerinem/mit glycerin/with glycerin	4(3)
8	Rozváděč / Schaltschrank / Switchboard	SD2E-A3/H2D21	1
9	Tlakový spínač / Druckschalter / Pressure switch 92.201.001	166415031059	1
10	Rozváděč / Schaltschrank / Switchboard	RPE3- 043Z11/02400E1K1	1
11	Blok rychloposuvu / Eilgangsblock / Speed shift block	729-0084	1
12	Hydraulický zámek / Hydraulisches Schloß / Hydraulic lock	VJR1-04/MA	1
13	Rozváděč / Schaltschrank / Switchboard	RPE3- 043Y11/02400E1K1	1
14	Škrtící ventil / Drosselventil / Throttle-valve	VS01-04/R2,5-0	1
15	Redukční ventil / Reduktionventil /Control valve	VRN2-06/S-6R	1
16	Rozváděč / Schaltschrank / Switchboard	RPE3- 042X11/02400E1K1	1
17	Redukční ventil / Reduktionventil /Control valve	VRP2-04/PS-6,9	1
18	Clona/Blende/Shield	Ø1,5	1
19	Redukční ventil / Reduktionventil /Control valve	VRN2-06/S-6R	1(0)
20	Kostka regulace / Regulationklotz /Regulation cube		2
21	Kulový ventil /Kugelventil / Globe valve		3(2)
22	Krycí deska / Schutzplatte / Cover platte	DK 1-04/32-2	1
23	Pojistný ventil / Sicherungventil / Safety valve	VPNH 1/4	2
24	Tlakový filtr / Druckfilter / Pressure filter	D 042-153 (3µm)	1
25	Clona/Blende/Shield	Ø1,2	1
26	Škrtící ventil / Drosselventil / Throttle-valve	VS01-04/ME S	1

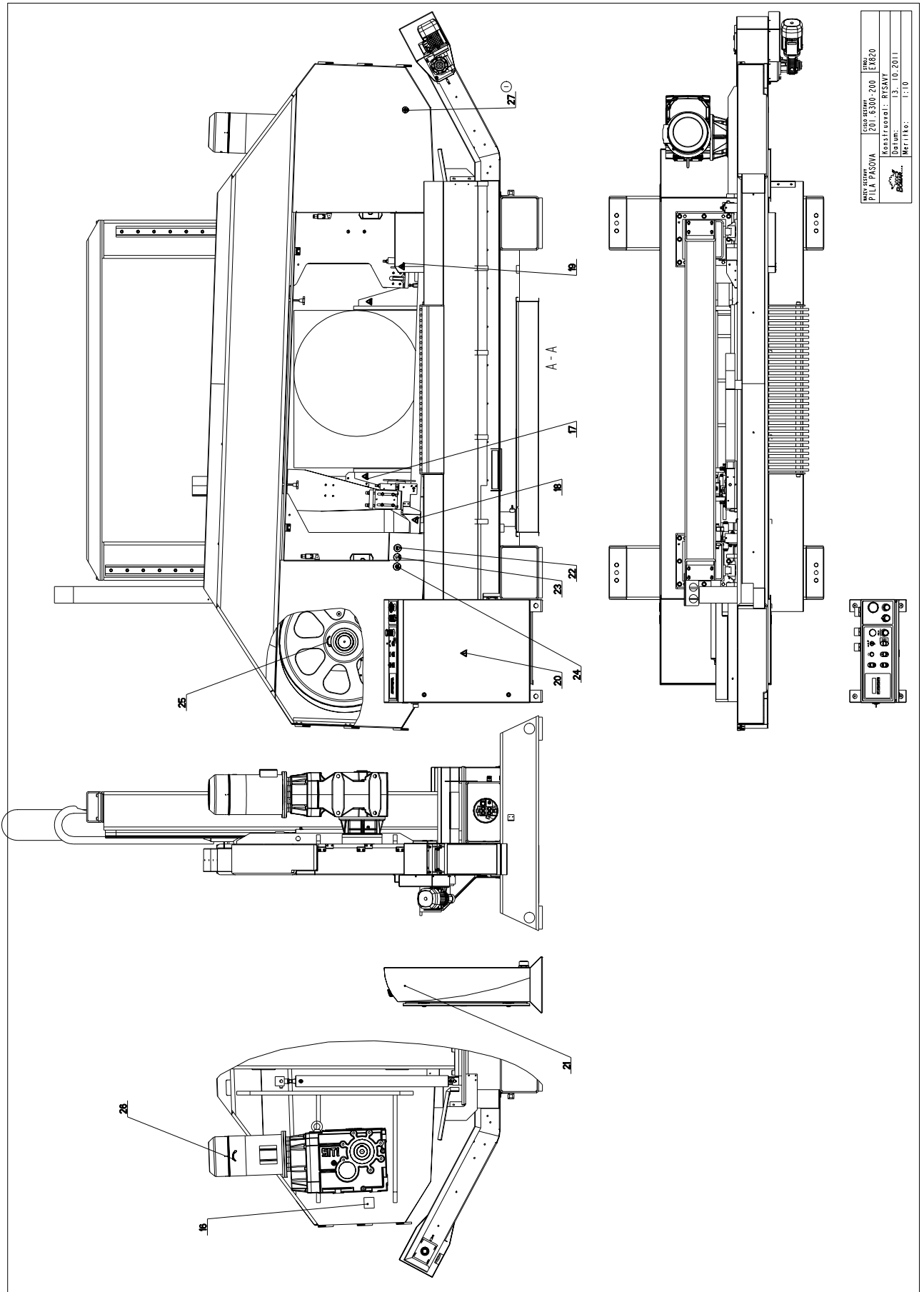
7. Výkresy sestav pro objednání náhradních dílů / Zeichnungen für Bestellung der Ersatzteile / Drawing assemblies for spare parts order

Při objednávání náhradních dílů vždy uvádějte: typ stroje (např. practix Extend 1000.820) , výrobní číslo (např. 125) a rok výroby (např. 1999).

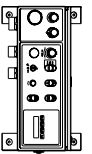
In die Bestellung der Ersatzteile führen Sie immer an: Maschinentyp (z. B. Extend 1000.820), Serien Nr. (z. B. 125) und Baujahr (z. B. 1999).

For spare parts order, you must always to allege: type of machine (for example Extend 1000.820), serial number (for example 125, see cover page) and year of construction (for example 1999).

7.1. Extend 1000.820 - 1



NAZEV STAVBY PILA PASOVA	ČÍSLO STAVBY 201.6300-200	STAV EX820
Konstruoval: RYSAVY		
Datum: 13. 10. 2011		
Nerůtko:		1:10



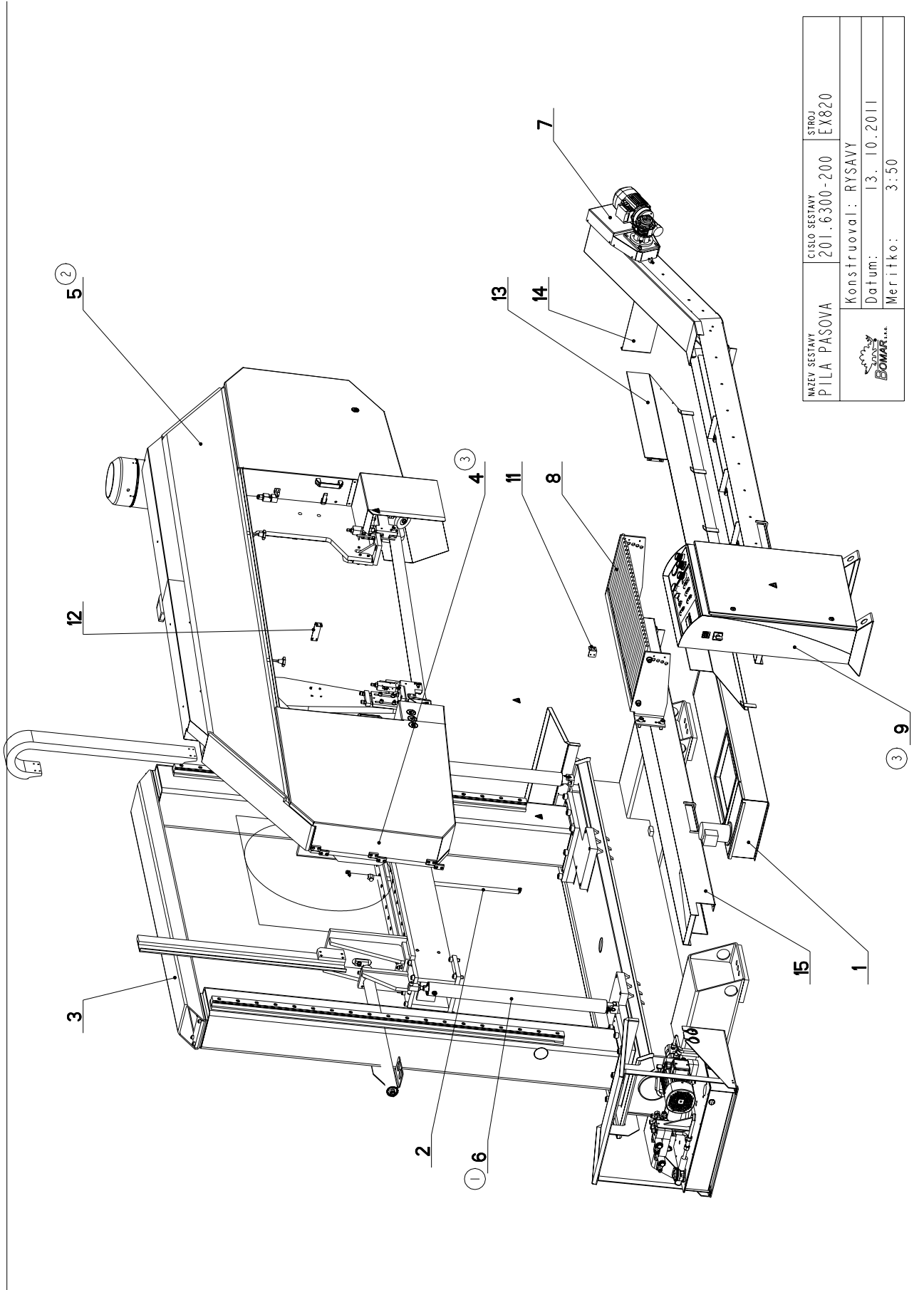
7.2. Kusovník / Stückliste / Piece list – Extend 1000.820 - 1

Císlo Sestavy 201.6300-200		Název sestavy PILA PASOVA/BAND SAW/BANDSÄGE			
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	201.6206-100	0	CHLAZENÍ / COOLING / KÜHLUNG		1
2	201.6214-020	0	ODMĚROVÁNÍ / MEASURING / GEHRUNGSMESSUNG		1
3	201.6301-100	1	PODSTAVEC / BASE / UNTERSATZ		1
4	201.6303-150 (3)	0	SVERAK / VICE / SCHRAUBSTOCK		1
5	201.6304-400 (2)	0	RAMENO / SHOULDER / SÄGERAHMEN		1
6	201.6307-600 (1)	2	VALEC ZVEDACÍ / LIFTING CYLINDER / HEBEZYLLINDER		2
7	201.6317-100	2	VYNASEC TRISKOVÝ / CHIP EXTRACTOR / SPANABFÜHRUNG		1
8	201.6318-100	0	ROST / GRILL / GITTER		1
9	201.Y430-000 (3)	0	OVLADACÍ PANEL / CONTROL PANEL / BEDIENPULT		1
10	202.6320-000	4	PRÍSLUŠENSTVÍ / /		1
11	30.6101-111	0	DRZAK / HOLDER / HALTER	PROFIL 40x40x4	1
12	30.6104-006	0	DRZAK / HOLDER / HALTER	P 3x35	1
13	30.6314-154	0	KRYT / COVER / ABDECKUNG		1
14	30.6314-156	0	KRYT / COVER / ABDECKUNG	P 2x185	1
15	30.6314-280	0	KORYTO / CHANNEL / Rinne		1
16	31.6399-201	0	STÍTEK / LABEL / Schild	P 0.5x65	1
17	99.900.039		SAMOLEPKA / STICKER / AUFKLEBER	NEBEZP. STLAČENÍ	2
18	99.900.040	0	SAMOLEPKA / STICKER / AUFKLEBER		1
19	99.900.043	0	SAMOLEPKA / STICKER / AUFKLEBER		1
20	99.900.045	0	SAMOLEPKA / STICKER / AUFKLEBER		1
21	99.900.046	0	SAMOLEPKA / STICKER / AUFKLEBER		1
22	99.900.047	0	SAMOLEPKA / STICKER / AUFKLEBER		1
23	99.900.048	0	SAMOLEPKA / STICKER / AUFKLEBER		1
24	99.900.049	0	SAMOLEPKA / STICKER / AUFKLEBER		1
25	99.900.050	0	SAMOLEPKA / STICKER / AUFKLEBER		2
26	99.900.051		SAMOLEPKA / STICKER / AUFKLEBER		1
27	99.901.032 (1)	0	SAMOLEPKA / STICKER / AUFKLEBER	CETIFIKACNÍ SAMOLEPKA	1
	201.6316-200		HYDRAULIKA		
	201.6399-200		SADA SAMOLEPEK		

1. ŽRUS.VALEC 201.6307-400 A NAHR.201.6307-600,DOPL.CERTIFIKACNÍ ZNACKA 99.901.032 . 040/ZM226-4 27.8.2010 SLEZACKOVA
2. ŽRUS.RAMENO 201.6304-200 A NAHR.201.6304-400. 220/ZM279 12.10.2011 SLEZACKOVA
3. ŽRUS.SVERAK 201.6303-100 A NAHR.201.6303-150,ZRUS.ROZVADEC 201.62030-100 A NAHR.201.Y430-000. 002/ZM017
23.1.2012 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

7.3. Extend 1000.820 - 2



NAZEV SESTAVY PILA PASOVA	CISLO SESTAVY 201.6300-200	STROJ EX820
Konstruoval: RYŠAVÝ		Datum: 13. 10.2011
Meritko: 3:50		

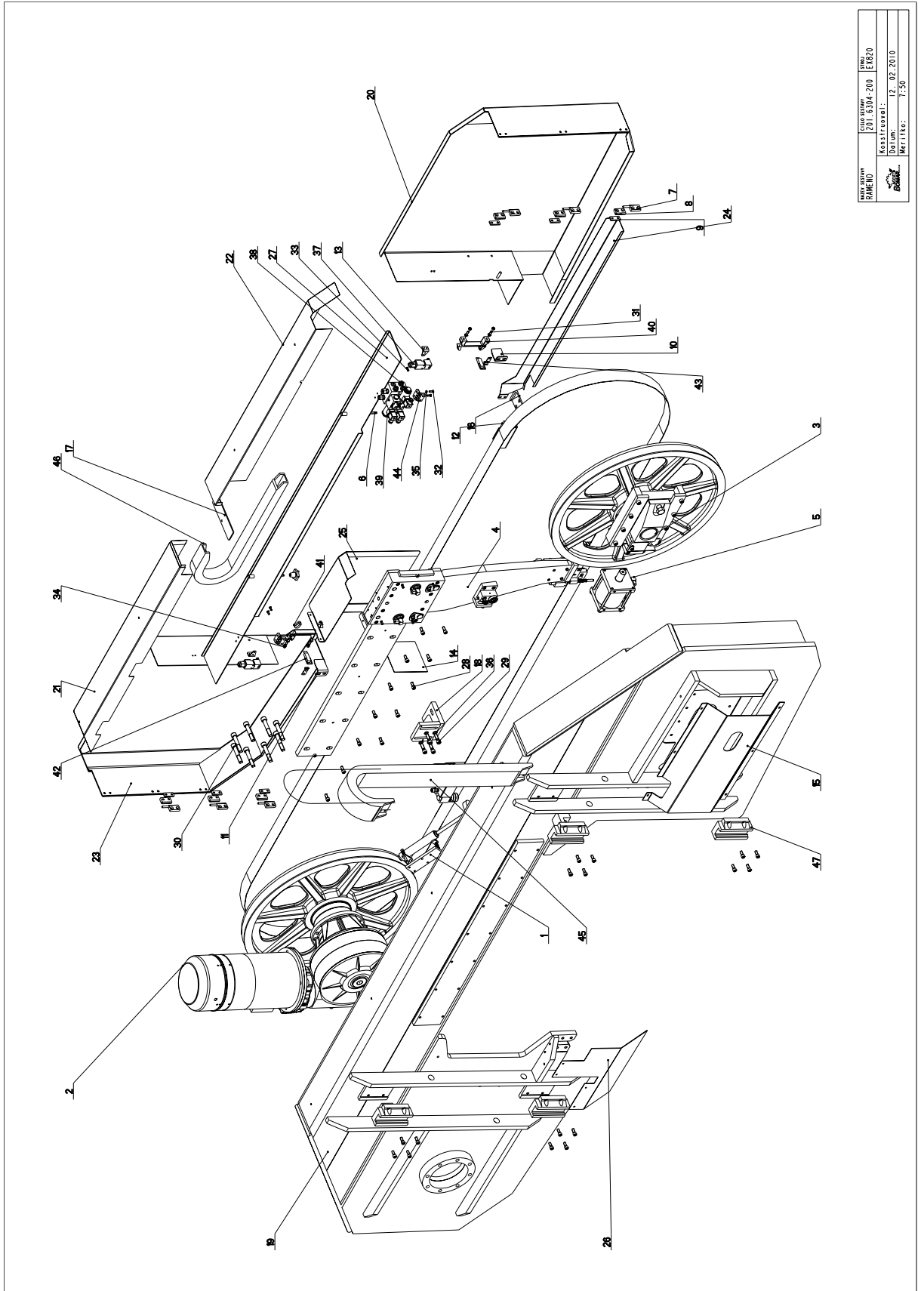
7.4. Kusovník / Stückliste / Piece list – Extend 1000.820 - 2

Císlo Sestavy 201.6300-200		Název sestavy PILA PASOVA/BAND SAW/BANDSÄGE			
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	201.6206-100	0	CHLAZENÍ / COOLING / KÜHLUNG		1
2	201.6214-020	0	ODMĚROVÁNÍ / MEASURING / GEHRUNGSMESSUNG		1
3	201.6301-100	1	PODSTAVEC / BASE / UNTERSATZ		1
4	201.6303-150 (3)	0	SVERAK / VICE / SCHRAUBSTOCK		1
5	201.6304-400 (2)	0	RAMENO / SHOULDER / SÄGERAHMEN		1
6	201.6307-600 (1)	2	VALEC ZVEDACÍ / LIFTING CYLINDER / HEBEZYLINDER		2
7	201.6317-100	2	VYNASEC TRISKOVÝ / CHIP EXTRACTOR / SPANABFÜHRUNG		1
8	201.6318-100	0	ROST / GRILL / GITTER		1
9	201.6430-000 (3)	0	OVĽADACÍ PANEL / CONTROL PANEL / BEDIENPULT		1
10	202.6320-000	4	PRÍSLUŠENSTVI / /		1
11	30.6101-111	0	DRZAK / HOLDER / HALTER	PROFIL 40x40x4	1
12	30.6104-006	0	DRZAK / HOLDER / HALTER	P 3x35	1
13	30.6314-154	0	KRYT / COVER / ABDECKUNG		1
14	30.6314-156	0	KRYT / COVER / ABDECKUNG	P 2x185	1
15	30.6314-280	0	KORYTO / CHANNEL / Rinne		1
16	31.6399-201	0	STÍTEK / LABEL / Schild	P 0.5x65	1
17	99.900.039		SAMOLEPKA / STICKER / AUFKLEBER	NEBEZP. STLACENI	2
18	99.900.040	0	SAMOLEPKA / STICKER / AUFKLEBER		1
19	99.900.043	0	SAMOLEPKA / STICKER / AUFKLEBER		1
20	99.900.045	0	SAMOLEPKA / STICKER / AUFKLEBER		1
21	99.900.046	0	SAMOLEPKA / STICKER / AUFKLEBER		1
22	99.900.047	0	SAMOLEPKA / STICKER / AUFKLEBER		1
23	99.900.048	0	SAMOLEPKA / STICKER / AUFKLEBER		1
24	99.900.049	0	SAMOLEPKA / STICKER / AUFKLEBER		1
25	99.900.050	0	SAMOLEPKA / STICKER / AUFKLEBER		2
26	99.900.051		SAMOLEPKA / STICKER / AUFKLEBER		1
27	99.901.032 (1)	0	SAMOLEPKA / STICKER / AUFKLEBER	CETIFIKACNI SAMOLEPKA	1
	201.6316-200		HYDRAULIKA		
	201.6399-200		SADA SAMOLEPEK		

1. ZRUS.VALEC 201.6307-400 A NAHR.201.6307-600,DOPL.CERTIFIKACNI ZNACKA 99.901.032 . 040/ZM226-4 27.8.2010 SLEZACKOVA
2.ZRUS.RAMENO 201.6304-200 A NAHR.201.6304-400. 220/ZM279 12.10.2011 SLEZACKOVA
3.ZRUS.SVERAK 201.6303-100 A NAHR.201.6303-150,ZRUS.ROZVADEC 201.62030-100 A NAHR.201.Y430-000. 002/ZM017
23.1.2012 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

7.5. Rameno / Sägerahmen / Saw arm 1

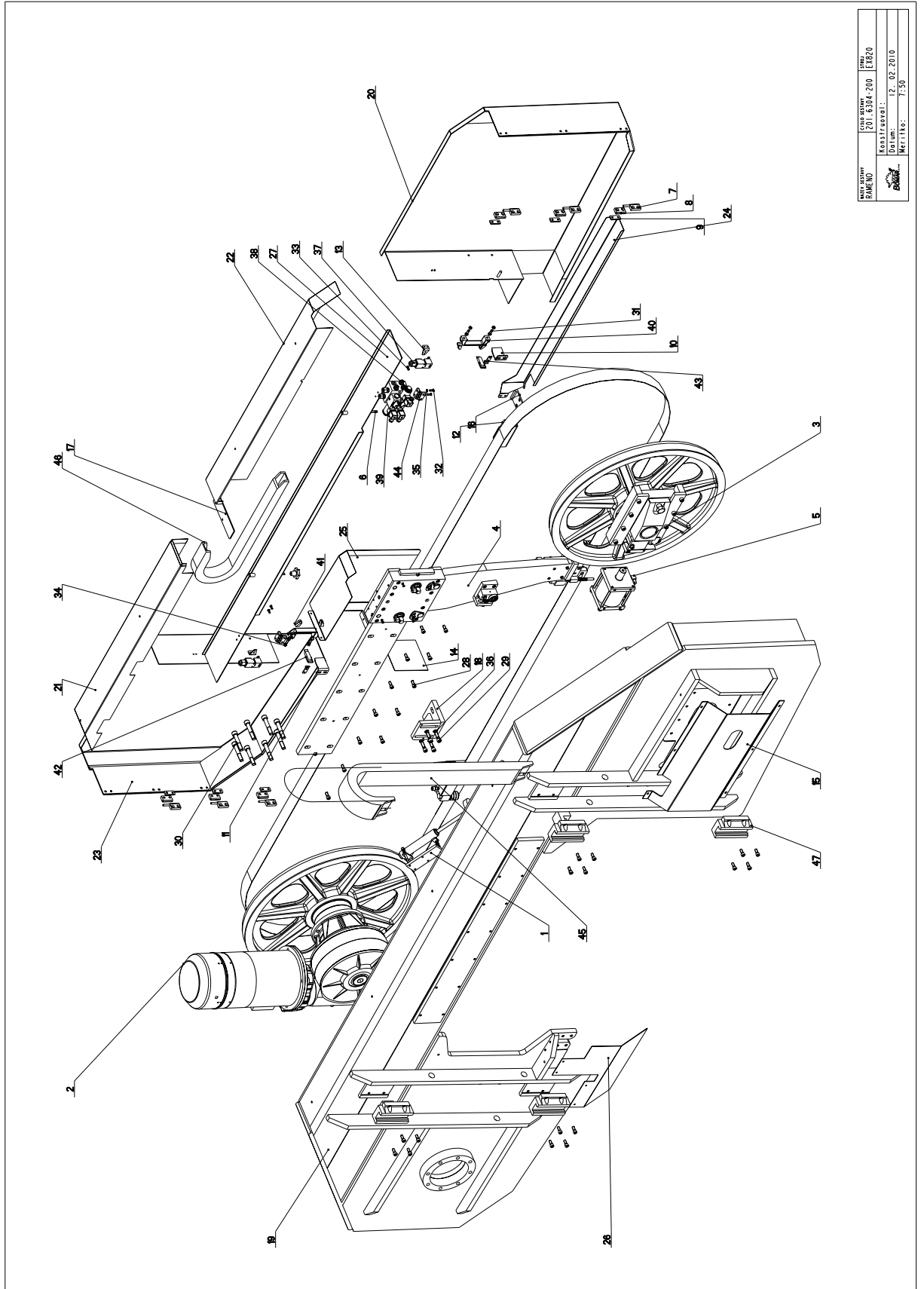



MODELLO	201.13.04-206	STRADA	EX820
CONSTRUTTORE	BOMAR		
DATA	02.02.2010		
REVISIONE	1:30		

7.6. Kusovník / Stückliste / Piece list – Rameno / Sägerahmen / Saw arm 1

Císlo Sestavy 201.6304-200		Nozev sestavy RAMENO/SHOULDER/SÄGERAHMEN			
Poz.	Objednací číslo	Ver.	Nozev položky	Rozměr	Ks
1	201.6214-250	0	KARTAC / BRUSH / BÜRSTE		1
2	201.6305-200	3	POHON / DRIVE / ANTRIEB		1
3	201.6308-100	1	NAPINANI / TENSIONING / SPANNUNG		1
4	201.6310-050	4	VEDENÍ PÁSU / BELT GUIDE / SÄGEBANDFÜHRUNG		1
5	201.6707-400	2	VALEC NAPINACÍ / TENSIONING CYLINDER / SPANNZYLINDER		1
6	30.0203-005	0	SROUB / BOLT / SCHRAUBE	M8	2
7	30.6014-109	1	PANT / HINGE / TÜRBAND		6
8	30.6014-110	1	PANT / HINGE / TÜRBAND	HR 30x12	6
9	30.6014-111	0	DESKA / BOARD / PLATTE	HR 20x6	6
10	30.6114-123	0	DRZAK / HOLDER / HALTER	P 4 - 55	1
11	30.6114-124	1	DRZAK / HOLDER / HALTER	P 4 - 55	1
12	30.6114-146	2	DRZAK / HOLDER / HALTER	P3-150x199	1
13	30.6114-147	0	DRZAK / HOLDER / HALTER	P 3x30x60	2
14	30.6114-160	0	CLONA / CURTAIN / SCHÜRZE	2x180	1
15	30.6214-119	0	KRYT NAPINANI / TENSIONING COVER / BANDSPANNUNGSABDECKUNG	P3-507	1
16	30.6214-124	0	KLUZAK / GLIDER / GLEITER	TYC 50x60 natur	1
17	30.6214-138	0	DRZAK / HOLDER / HALTER	P 4x60	1
18	30.6304-003	1	DRZAK / HOLDER / HALTER		1
19	30.6304-101	4	RAMENO OBROBEK / /		1
20	30.6314-111	1	DVERE / DOOR / TÜR		1
21	30.6314-112	0	KRYT RAMENE / SHOULDER COVER / RAHMENABDECKUNG		1
22	30.6314-113	1	KRYT RAMENE / SHOULDER COVER / RAHMENABDECKUNG	P 1,5- 324	1
23	30.6314-114	1	DVERE / DOOR / TÜR		1
24	30.6314-132	1	KRYT PÁSU / BELT COVER / BANDABDECKUNG	P2x209	1
25	30.6314-151	0	KRYT KARTACKU / BRUSH COVER / BÜRSTENABDECKUNG	P 2x620x651	1
26	30.6314-152	0	KRYT / COVER / ABDECKUNG	P 2x 490	1
27	30.6314-203	1	KRYT RAMENE / SHOULDER COVER / RAHMENABDECKUNG		1
28	90.001.25.047	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x25	30
29	90.001.25.060	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12x40	4
30	90.001.25.101	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M16x90	8
31	90.005.55.016	0	SROUB / BOLT / SCHRAUBE	M8x25	4
32	90.011.27.006	0	SROUB ZAPUSTNÝ / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M6x20	4
33	90.011.27.017	0	SROUB ZAPUSTNÝ / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M6x16	4
34	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE - M8	4
35	90.101.55.008	0	MATICE / NUT / MUTTER	MATICE M6	4

7.7. Rameno / Sägerahmen / Saw arm 2

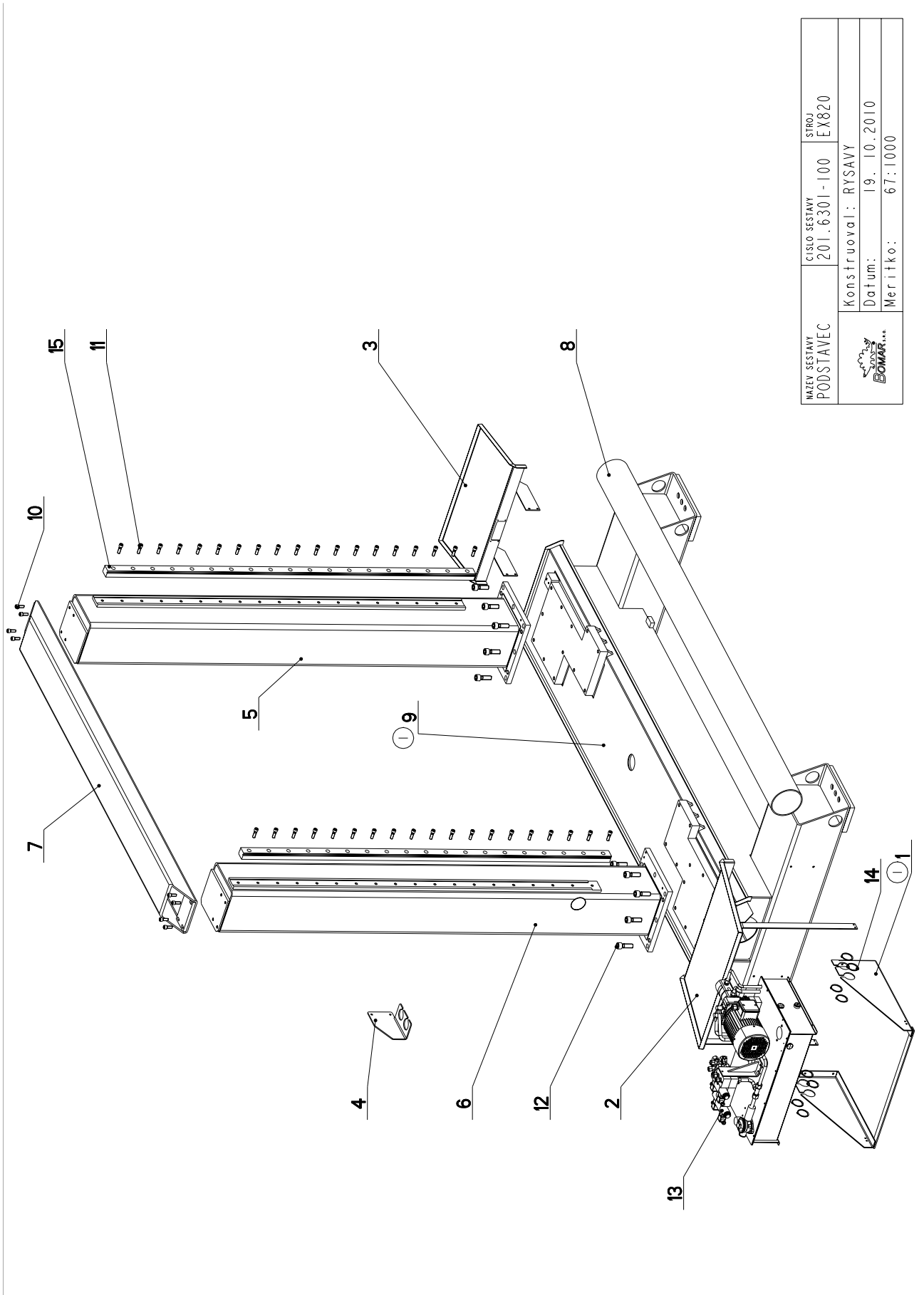



PROJEKTANT RAMENO	ČÍSLO KRESU 20.1304-200	STRANA 1/2
KONSULTACE 13.02.2010	ČÍSLO 13.02.2010	ČAS 17:50
		

7.8. Kusovník / Stückliste / Piece list – Rameno / Sägerahmen / Saw arm 2

36	90.163.00.003	0	PODLOZKA / WASHER / UNTERLEGSCHLEIBE	NORD-LOCK	4
37	91.173.012	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	OKS8-2XNC	2
38	92.153.048	0	BLOK / BLOCK / BLOCK	881-0027*RAMENO	1
39	94.003.001	0	HLAVICE / HEAD / KOPF		2
40	94.012.001	0	RUKOJET / HANDLE / GRIF		2
41	94.012.002	0	KRYT / COVER / ABDECKUNG		4
42	99.100.003	0	ZAMEK / LOCK / SCHLOSS		2
43	99.100.004	0	ZAMEK / LOCK / SCHLOSS	D13-00	2
44	99.100.007	0	PANT / HINGE / TÜRBAND		2
45	99.170.001	0	RETEZ ENERGI I / ENERGY BELT / ENERGIEKETTE	MP35086, R=100	1
46	99.170.021	0	RETEZ ENERGI I / ENERGY BELT / ENERGIEKETTE	17+2K	1
47	99.201.013	0	VOZIK LINEARNIHO VE DENI / LINEAR GUIDE CART / LINEARFÜHRUNGSWAGEN	HGW45HC-Hiwin	4

7.9. Podstavec / Untersatz / Base



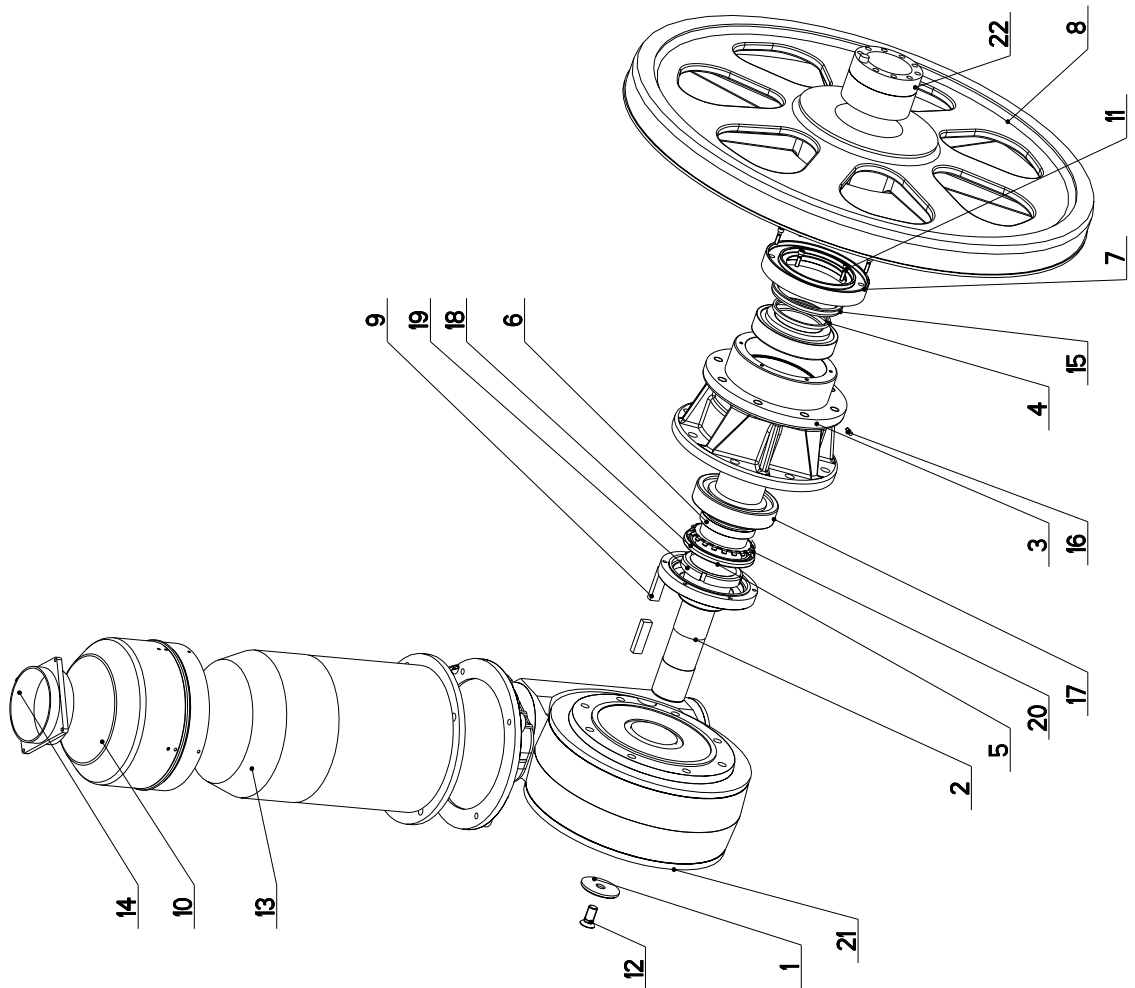
NAZEV SESTAVY PODSTAVEC	CÍSLO SESTAVY 201.6301-100	STROJ EX820
		
Konstruoval: RYSAVY		
Datum: 19. 10. 2010		
Meritko: 67:1000		


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

Císlo Sestavy 201.6301-100		Ver. 1		Název sestavy PODSTAVEC/BASE/UNTERSATZ	
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.6101-110 (1)	0	DRŽAK / HOLDER / HALTER		1
2	30.6114-131	0	OKAP / GUTTER CHANNEL / BLECH		1
3	30.6114-134	0	OKAP / GUTTER CHANNEL / BLECH		1
4	30.6114-136	1	DRŽAK / HOLDER / HALTER	P5x210	1
5	30.6301-102	1	SLOUP / POLE / SÄULE		1
6	30.6301-103	2	SLOUP / POLE / SÄULE		1
7	30.6301-104	0	NOSNIK / CARRIER / TRÄGER		1
8	30.6301-105	0	TRUBKA / TUBE / ROHR	D 150	1
9	30.6301-401 (1)	1	PODSTAVEC / /		1
10	90.001.25.058	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X30	8
11	90.001.25.060	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X40	38
12	90.001.25.114	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M20X60	16
13	92.001.048	0	AGREGAT HYDRAULICKÝ / HYDRAULIC GENERATOR / HYDRAULIKAGGREGAT		1
14	95.800.019	0	SEGR HRÍDEL. / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNÝ KROUZEK 52	8
15	99.200.074	0	VEDENÍ LINEARNÍ / /	HGR45R-1965 e=3	2

I. ZRUS. PODSTAVEC 30.6301-101 A NAHR. 30.6301-401, ZRUS. SOUC. 30.6101-105, 30.6101-106, 30.6101-108 A NAHR. 30.6101-110.
358,031/226-4 27.8.2010 SLEZACKOVA

7.11. Pohon / Antrieb / Drive

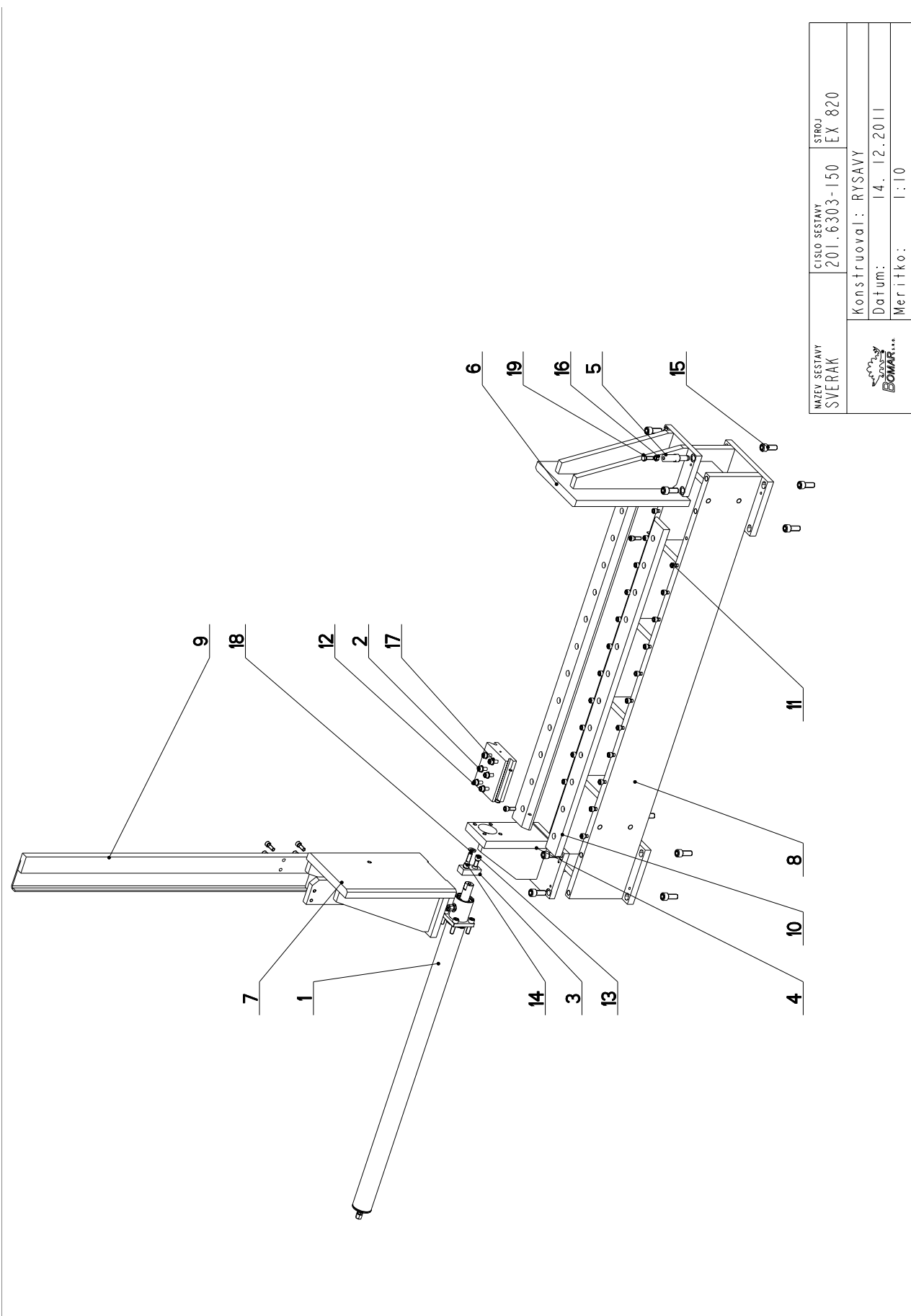


NAZEV SESTAVY POHON	ČÍSLO SESTAVY 201.6305-200	STROJ EX820
Konstruoval: RYŠAVÝ		Datum: 12. 02. 2010
Meritko:		7:50
		

7.12. Kusovník / Stückliste / Piece list – Pohon / Antrieb / Drive

Císlo sestavy 201.6305-200		Ver. 3		Název sestavy POHON/DRIVE / ANTRIEB	
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.1804-005	0	PODLOŽKA / WASHER / UNTERLEGSCHIEBE	ø 70	1
2	30.6205-101	3	HRIDEL / SHAFT / WELLE	D 110	1
3	30.6205-102	2	PRIRUBA / FLANGE / FLANSCH		1
4	30.6205-103	1	KROUZEK / RING / RING	TR 114x12.5	1
5	30.6205-105	1	VÍKO / COVER / DECKEL	VYPALEK	1
6	30.6205-106	1	KROUZEK DISTANČNÍ / DISTANCE RING / DISTANZRING	TR 102x10	1
7	30.6205-107	2	VÍKO / COVER / DECKEL	VYPALEK	1
8	30.6305-007	0	KOLO HNACÍ / DRIVE WHEEL / ANTRIEBSRAD		1
9	30.6305-109	0	PERO / SPRING / FEDER	TYC 18x11	2
10	30.6704-018	2	VENTILATOR / VENTILATOR / VENTILATOR		1
11	90.001.25.019	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6x25	6
12	90.011.27.XXX	0	SROUB ZAPUSTNÝ / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M16X35	1
13	91.001.070	0	ELEKTROMOTOR / ELECTRIC MOTOR / ELEKTROMOTOR	7,5kW,4P,B5,Ve1	1
14	91.015.100	0	VENTILATOR / VENTILATOR / VENTILATOR		1
15	95.830-039	0	GUFERO / GIT SEAL / DICHTUNG	GUFERO 105X130X12	1
16	95.860.001	0	MAZNICE / LUBRICATOR / ÖLER	KULOVA PRIMA M5	1
17	95.300.XXX	0	LOŽISKO KUZELÍK / BEARING / LAGER	32217A	2
18	95.830.00X	0	GUFERO / GIT SEAL / DICHTUNG	GUFERO 100X130X12	1
19	95.850.0XX	0	MATICE KM / KM NUT / KM-MUTTER	MATICE KM17	1
20	95.855.0XX	0	PODLOŽKA / WASHER / UNTERLEGSCHIEBE	POJISTINA PODLOŽKA MB17	1
21	99.001.077	0	PREVODOVKA / TRANSMISSION / GETRIEBE	VFR 185 PI 75 P132 B5 V6	1
22	99.710.013	0	SPOJKA / JOINT / KUPPLUNG	85x125	1

7.13. Svěrák / Schraubstock / Vice



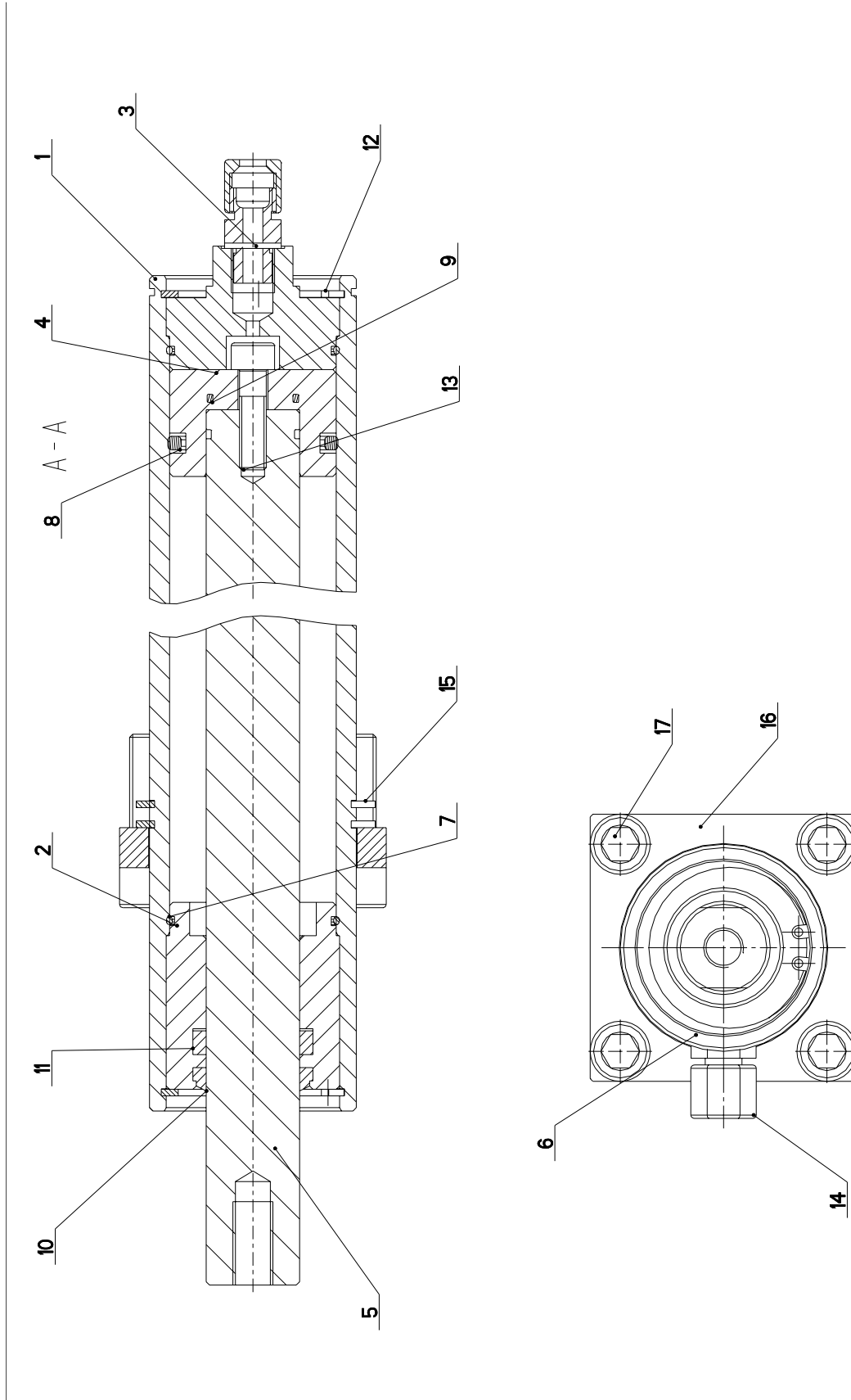
NAZEV SESTAVY SVĚRÁK	CÍSLO SESTAVY 201.6303-150	STROJ EX 820
Konstruoval: RYŠAVÝ		
Datum: 14. 12. 2011		
Meritko: 1:10		


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

Císlo Sestavy 201.6303-150		Název sestavy SVĚRÁK/VICE/SCHRAUBSTOCK		
Ver.	0	Ver.	0	
Poz.	Objednací číslo	Název položky	Rozměr	Ks
1	201.6307-200	VALEC SVĚRAKU / VICE CYLINDER / SCHRAUBSTOCKZYLINDER		
2	30.6003-552	KLIZÁK / GLIDER / GLEITER	HR 130x50	1
3	30.6103-005	DRZÁK / HOLDER / HALTER	HR 30x20	1
4	30.6203-108	KONZOLA / CONSOLE / KONSOLE		1
5	30.6203-111	DORAZ / STOP PIECE / ANSCHLAG	TYC 6HR 22	1
6	30.6303-001	CELIST / JAW / BACKE		1
7	30.6303-108	CELIST POHYBLIVÁ / MOVING JAW / BEWEGLICHE BACKE		1
8	30.6303-109	PODSTAVEC SVĚRAKU / VICE BASE / SCHRAUBSTOCKUNTERSATZ		1
9	30.6303-110	LISTA / TRIM / LEISTE		1
10	30.6303-151	LISTA SVĚRAKU / VICE TRIM / SCHRAUBSTOCKLEISTE	HR 82x27	2
11	90.001.25.048	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X30	28
12	90.001.25.054	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X60	6
13	90.001.25.057	SROUB IMBUS ČERNÝ / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12x25	1
14	90.001.25.060	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X40	1
15	90.001.25.086	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M16X40	16
16	90.100.55.006	MATICE / NUT / MUTTER	MATICE – M10	1
17	90.150.50.006	PODLOŽKA / WASHER / UNTERLEGSCHIBE	PODLOŽKA 10,5	6
18	90.150.50.007	PODLOŽKA / WASHER / UNTERLEGSCHIBE	PODLOŽKA 13	1
19	90.401.0Z.002	SROUB 6HRANNÝ / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M10X30	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

7.15. Válec svěráku / Schraubstockzylinder / Vice cylinder

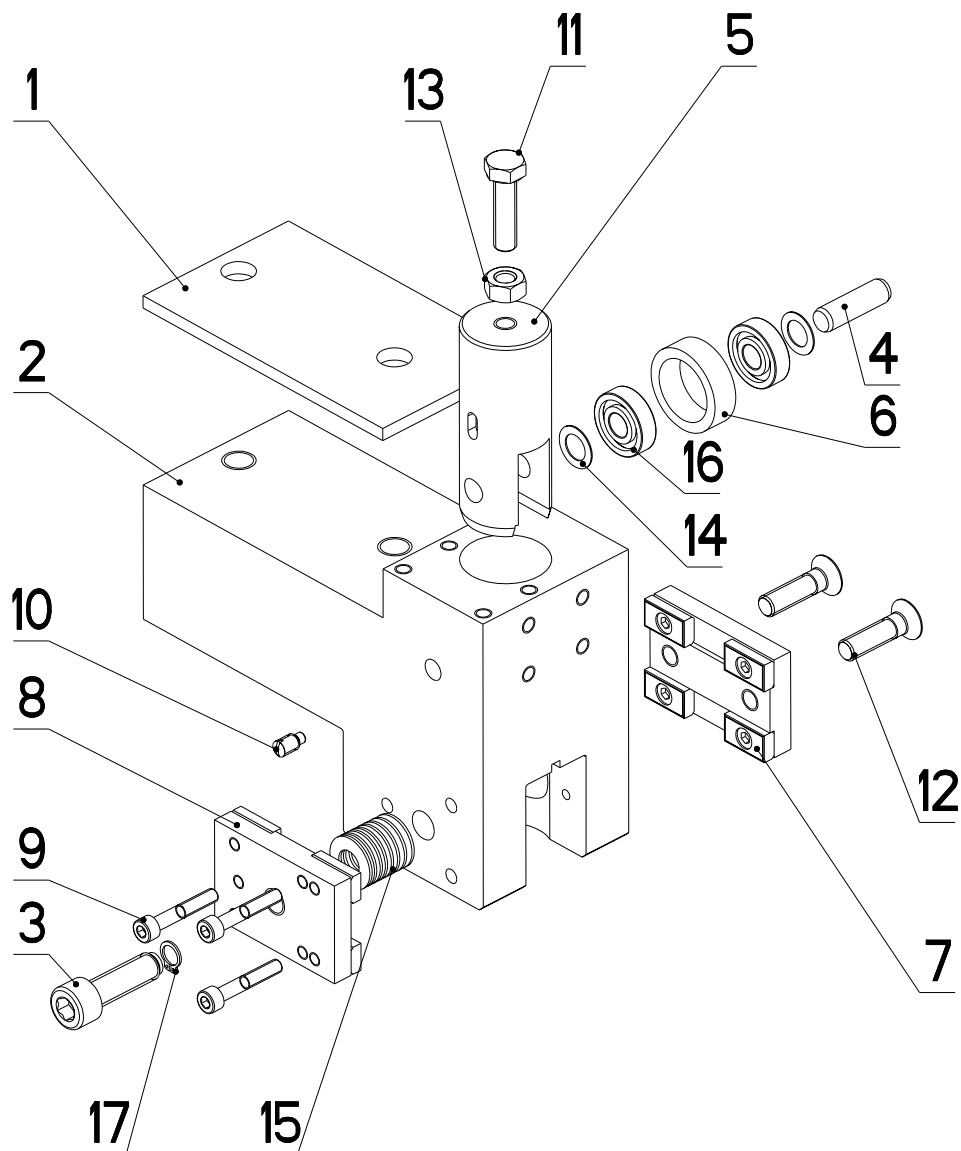


MAZEV SESTAVY VALEC SVĚRAKU	ČÍSLO SESTAVY 201.6307-200	STROJ SL-820
		Konstruoval: RYSAVY
		Datum: 05. 02. 2010
		Meritko: 1:1

7.16. Kusovník / Stückliste / Piece list – Válec svěráku / Schraubstockzylinder / Vice cylinder

Císlo sestavy 201.6307-200		Název sestavy VÁLEC SVĚRÁKU/VICE CYLINDER/SCHRAUBSTOCKZYLINDER			
Poz.	Objednací číslo	Ver.	Název položky	Forma	Ks
1	30.6307-201	0	VÁLEC SVĚRÁKU / VICE CYLINDER / SCHRAUBSTOCKZYLINDER	TRUBKA 62/50	1
2	30.1807-104	2	VÍKO / COVER / DECKEL	TYC 55	1
3	30.2007-304	0	VÍKO / COVER / DECKEL	ø 55	1
4	30.2007-302	0	PIST / PISTON / KOLBEN	ø 55	1
5	30.6307-202	1	PISTNICE / PISTON ROD / KOLBENSTANGE	D 28	1
6	96.082.002	0	TESNĚNÍ / SEALING / DICHTUNG	KROUZEK CU 13/17	2
7	96.001.013	0	KROUZEK O STATICKY / STATIC O RING / O-RING STATISCH	45x2	2
8	96.020.005	0	KROUZEK TĚSNIČÍ / SEAL RING / DICHTUNGSRING	39.2x5.33	1
9	96.002.011	0	KROUZEK O DYNAMICKY / DYNAMIC O RING / O-RING DYNAMISCH	24x2	1
10	96.060.003	0	KROUZEK STÍRACÍ / SCRAPER RING / ABSTREIFRING	KROUZEK STÍRACÍ 28	1
11	96.041.003	0	TESNĚNÍ / SEALING / DICHTUNG	601-28x36x7.1	1
12	95.801.009	0	KROUZEK POJIST.VNITR / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTINY KROUZEK 52	2
13	90.001.25.034	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8x30	1
14	92.002.101	0	SROUBENÍ PRÍME / DIRECT BOLTING / GERADE VERSCHRAUBUNG		2
15	95.800.021	0	KROUZEK POJIST.VNEJŠÍ / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTINY KROUZEK 62	2
16	30.6007-107	0	PRÍLOŽKA / STAP / LASCHÉ	HR 80x12	1
17	90.001.25.060	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M 2x40	4

7.17. Vodíci kostka / Führungsklotz / Guiding cube 1



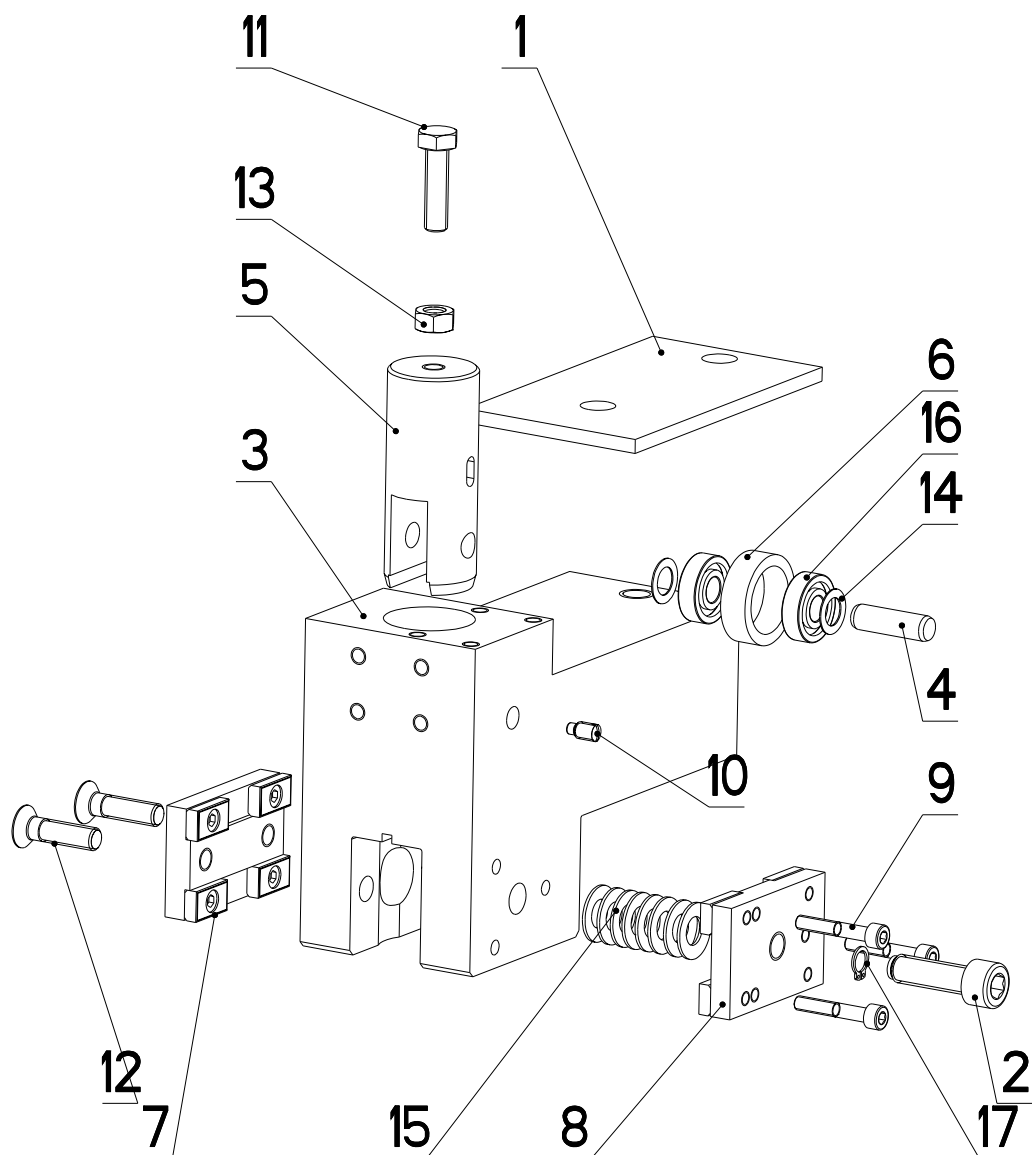
PAS 54x1,3-1,6

NAZEV SESTAVY KOSTKA VODICI	CISLO SESTAVY 201.6210-100	STROJ EXTEND 720
	Konstruoval: STASTNA	
	Datum: 11. 01.2010	
	Meritko: 1:2	

7.18. Kusovník / Stückliste / Piece list – Vodící kostka / Führungsklotz / Guiding cube 1

Císlo Sestavy 201.6210-100		Název sestavy KOSTKA VODÍCI / LEAD CUBE / FÜHRUNGSKLOTZ		Ver. 3	
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.6210-103	1	DESKA / BOARD / PLATTE	P 5x70x120	1
2	30.6210-104	0	KOSTKA / CUBE / WÜRFEL	TYC 120 x 80	1
3	30.6210-107	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x35	1
4	30.6710-108	1	KOLÍK / PIN / BOLZEN	TYC 10	1
5	30.6710-109	0	PIST / PISTON / KOLBEN	d 32	1
6	30.6710-110	1	KROUZEK / RING / RING	LH 2403210	1
7	30.1610-110	0	DRŽÁK TVRDOKOVU / POA HOLDER / HM-HALTER		1
8	30.1610-120	0	DRŽÁK TVRDOKOVU / POA HOLDER / HM-HALTER		1
9	90.001.25.012	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5x30	3
10	90.004.2D.002	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M6x12	1
11	90.005.55.017	0	6 HR SROUB ZIN / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8x30	1
12	90.011.27.XXX	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M8x30	2
13	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE - M8	1
14	90.154.50.003	0	PODLOZKA / WASHER / UNTERLEGSCHIBE	10x16x0.50	2
15	90.350.02.005	0	PRUŽINA TALIROVA / DISC SPRING / TELLERFEDER	20x10.2x1.1	8
16	95.001.044	0	LOŽISKO / BEARING / LAGER	609 2RS	2
17	95.800.002	0	KROUZEK POJIST. VNEJS. / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 8	1

7.19. Vodící kostka / Führungsklotz / Guiding cube 2



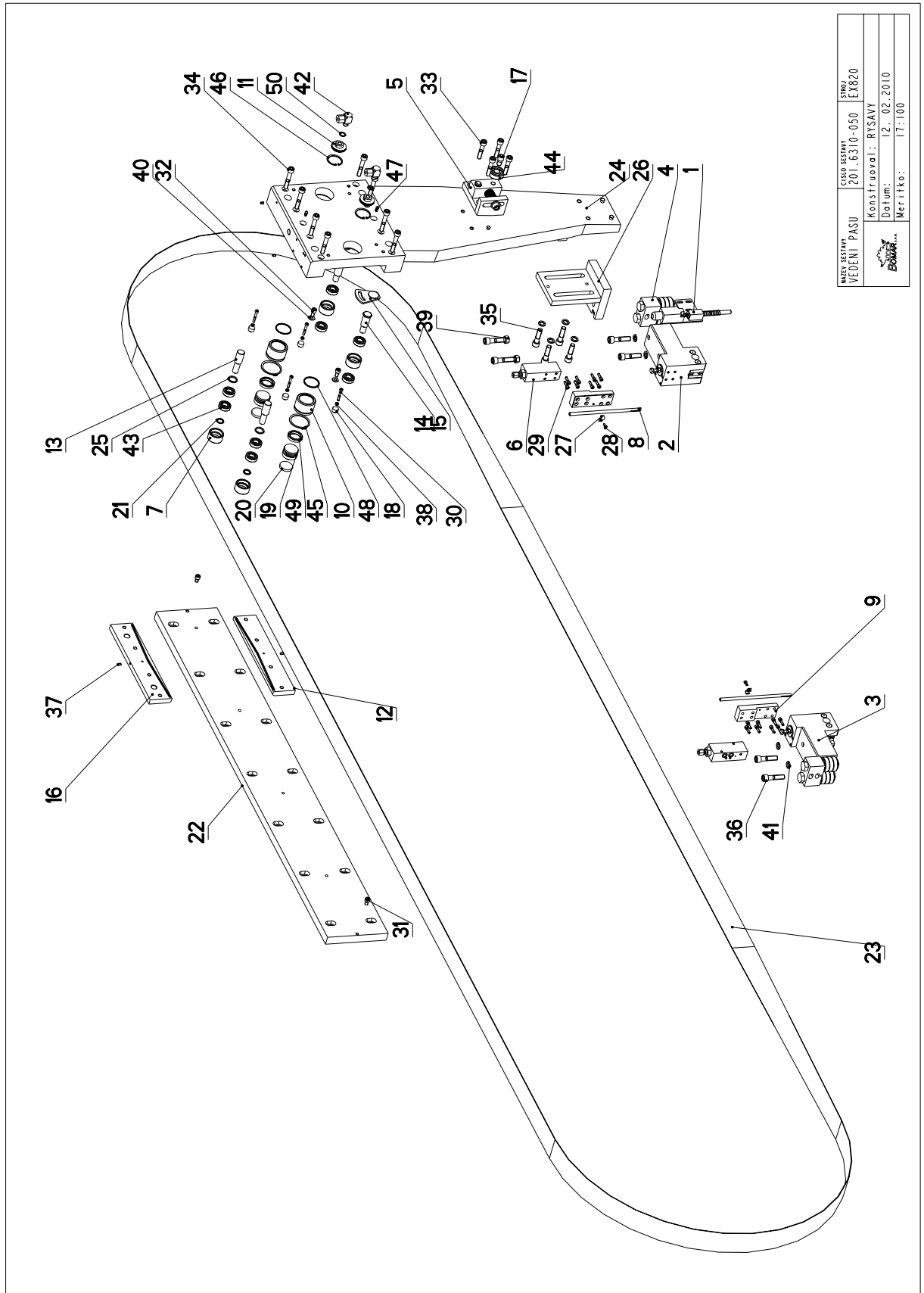
PAS 54x1,3-1,6

NAZEV SESTAVY KOSTKA VODICI	CISLO SESTAVY 201.6210-200	STROJ EXTEND720
	Konstruoval: STASTNA	
	Datum: 11. 01.2010	
	Meritko: 1:2	

7.20. Kusovník / Stückliste / Piece list – Vodící kostka / Führungsklotz / Guiding cube 2

Císlo Sestavy 201.6210-200		Název sestavy KOSTKA VODÍCI / LEAD CUBE / FÜHRUNGSKLOTZ		
Ver. 3		Ver. 3		
Poz.	Objednáací číslo	Název položky	Rozměr	Ks
1	30.6210-103	DESKA / BOARD / PLATTE	P 5x10x120	1
2	30.6210-107	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x35	1
3	30.6210-203	KOSTKA VODÍCI / LEAD CUBE / FÜHRUNGSKLOTZ	TYC 120 x 80	1
4	30.6710-108	KOLÍK / PIN / BOLZEN	TYC 10	1
5	30.6710-109	PIST / PISTON / KOLBEN	d 32	1
6	30.6710-110	KROUZEK / RING / RING	LH 2403210	1
7	30.Y610-110	DRŽÁK TVRDOKOVU / POA HOLDER / HM-HALTER		1
8	30.Y610-120	DRŽÁK TVRDOKOVU / POA HOLDER / HM-HALTER		1
9	90.001.25.012	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5x30	3
10	90.004.2D.002	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M6x12	1
11	90.005.55.017	6 HR SROUB ZIN / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8x30	1
12	90.011.27.XXX	SROUB ZAPUSTNÝ / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M8x30	2
13	90.100.55.005	MATICE / NUT / MUTTER	MATICE - M8	1
14	90.154.50.003	PODLOŽKA / WASHER / UNTERLEGSCHIBE	10x16x0.50	2
15	90.350.02.005	PRUŽINA TALIROVA / DISC SPRING / TELLERFEDER	20x10.2x1.1	8
16	95.001.044	LOŽISKO / BEARING / LAGER	609 2RS	2
17	95.800.002	KROUZEK POJIST. VNEJŠ. / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNÝ KROUZEK 8	1

7.21. Vedení pásu / Sägebandführung / Belt guide 1

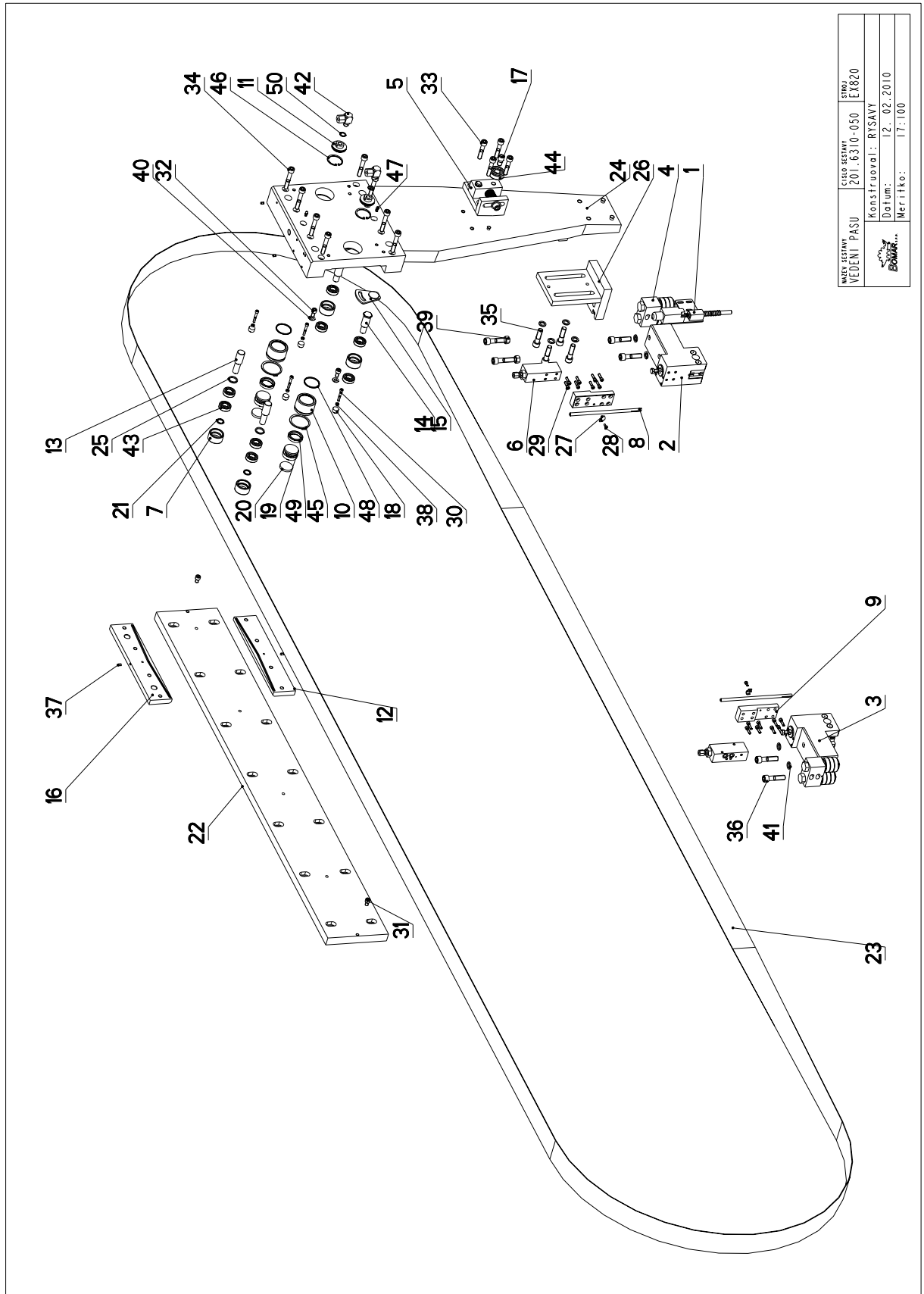


NAZEV SOUSTAVY VEDENÍ PÁSU	ČÍSLO SOUSTAVY 201.6310-050	STŘOJ. EX820
Konstruoval: RYSÁVÝ		
Datum: 12. 02. 2010		
Meritko:	17:100	

7.22. Kusovník / Stückliste / Piece list – Vedení pásu / Sägebandführung / Belt guide 1

Císlo Sestavy 201.6310-050		Název sestavy VEDENÍ PÁSU/BELT GUIDE/SÄGEBANDFÜHRUNG		Ver. 4	Ks	
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks	
1	201.6110-020	1	DORAZ / STOP PIECE / ANSCHLAG		1	
2	201.6210-100	3	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ		1	
3	201.6210-200	3	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ		1	
4	201.6210-300	3	VEDENÍ PÁSU / BELT GUIDE / SÄGEBANDFÜHRUNG		2	
5	201.6310-060	0	VEDENÍ / GUIDE / BACKENFÜHRUNG		1	
6	201.6816-100	0	KOSTKA REGULACE / REGULATION CUBE / REGULINGSWÜRFEL		2	
7	30.1503-006	0	KLADKA / PULLEY / ROLLE	d 45	4	
8	30.6010-315	0	TRUBKA / TUBE / ROHR	TR 8 x 1	2	
9	30.6016-002	0	DESKA / BOARD / PLATTE	HR 40x20	2	
10	30.6210-053	0	TRUBKA / TUBE / ROHR	TR 52/40	2	
11	30.6210-054	0	VIKO / COVER / DECKEL	TYC KR TAZ 42	2	
12	30.6210-055	0	LISTA VODICI / LEAD TRIM / FÜHRUNGSLEISTE	TYC PL T 65x15	1	
13	30.6210-056	0	ČEP / LUG / BOLZEN	TYC 22	2	
14	30.6210-057	0	ČEP / LUG / BOLZEN	TYC 6HR	2	
15	30.6210-058	0	PODLOŽKA / WASHER / UNTERLEGSCHIEBE		2	
16	30.6210-060	0	LISTA VODICI / LEAD TRIM / FÜHRUNGSLEISTE	TYC PL T 65x15	1	
17	30.6210-061	0	SROUB / BOLT / SCHRAUBE	SROUB 12x20	1	
18	30.6210-062	0	PODLOŽKA / WASHER / UNTERLEGSCHIEBE	TYC 16	4	
19	30.6210-063	0	PIST / PISTON / KOLBEN	D 40	2	
20	30.6210-064	1	PODLOŽKA / WASHER / UNTERLEGSCHIEBE	TYC d 36	2	
21	30.6210-068	1	KROUZEK DISTANČNÍ / DISTANCE RING / DISTANZRING	TR 20 x 4	2	
22	30.6310-002	2	LISTA / TRIM / LEISTE	HR 180x25	1	
23	30.6310-004	0	PAS PÍLOVÝ / SAW BELT / SÄGEBAND	67x1,6	1	
24	30.6310-051	4	DRŽAK / HOLDER / HALTER		1	
25	30.6310-052	0	KROUZEK DISTANČNÍ / DISTANCE RING / DISTANZRING	TR 25x2.5	2	
26	30.6310-053	1	DRŽAK / HOLDER / HALTER		1	
27	30.9010-003	0	DRŽAK / HOLDER / HALTER	Pl. 5x10	2	
28	90.001.25.002	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M4X10	2	
29	90.001.25.010	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X20	16	
30	90.001.25.013	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X35	4	
31	90.001.25.029	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X12	2	
32	90.001.25.031	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x16	2	
33	90.001.25.052	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X50	4	
34	90.001.25.054	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X60	8	

7.23. Vedení pásu / Sägebandführung / Belt guide 2

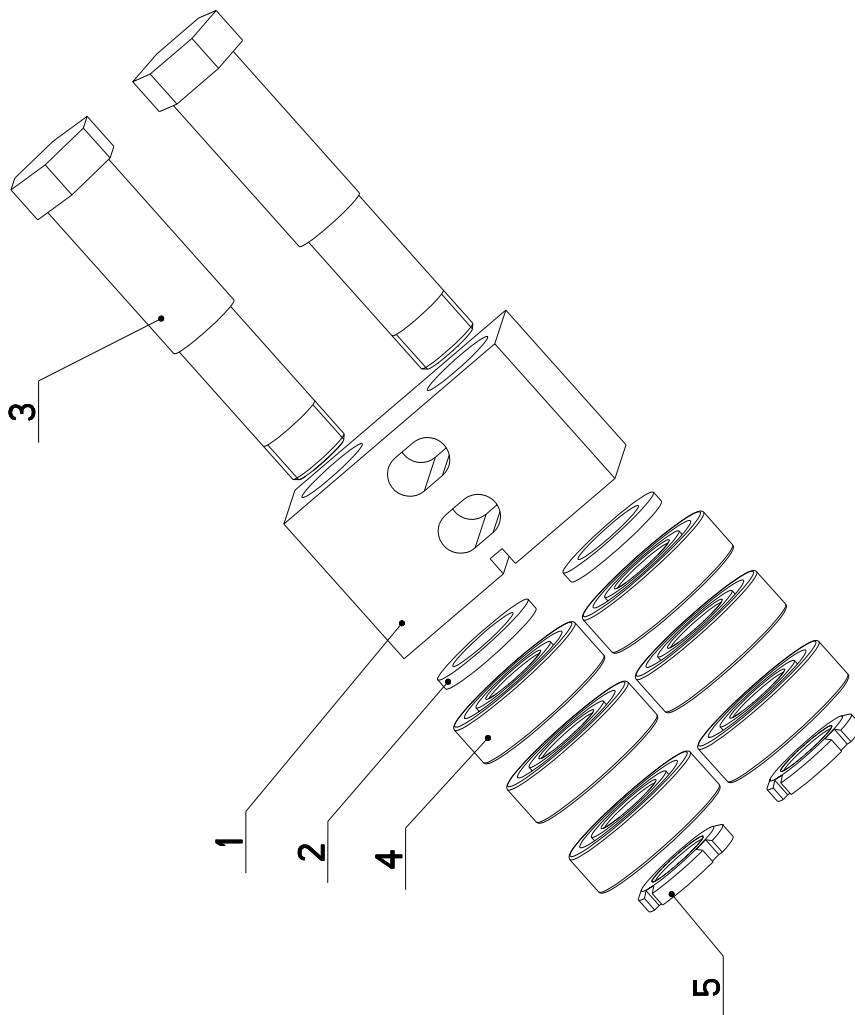


7.24. Kusovník / Stückliste / Piece list – Vedení pásu / Sägebandführung / Belt guide 2

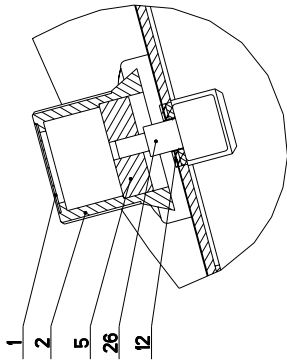
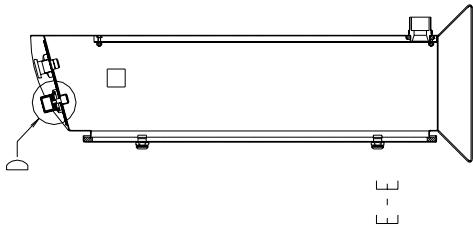
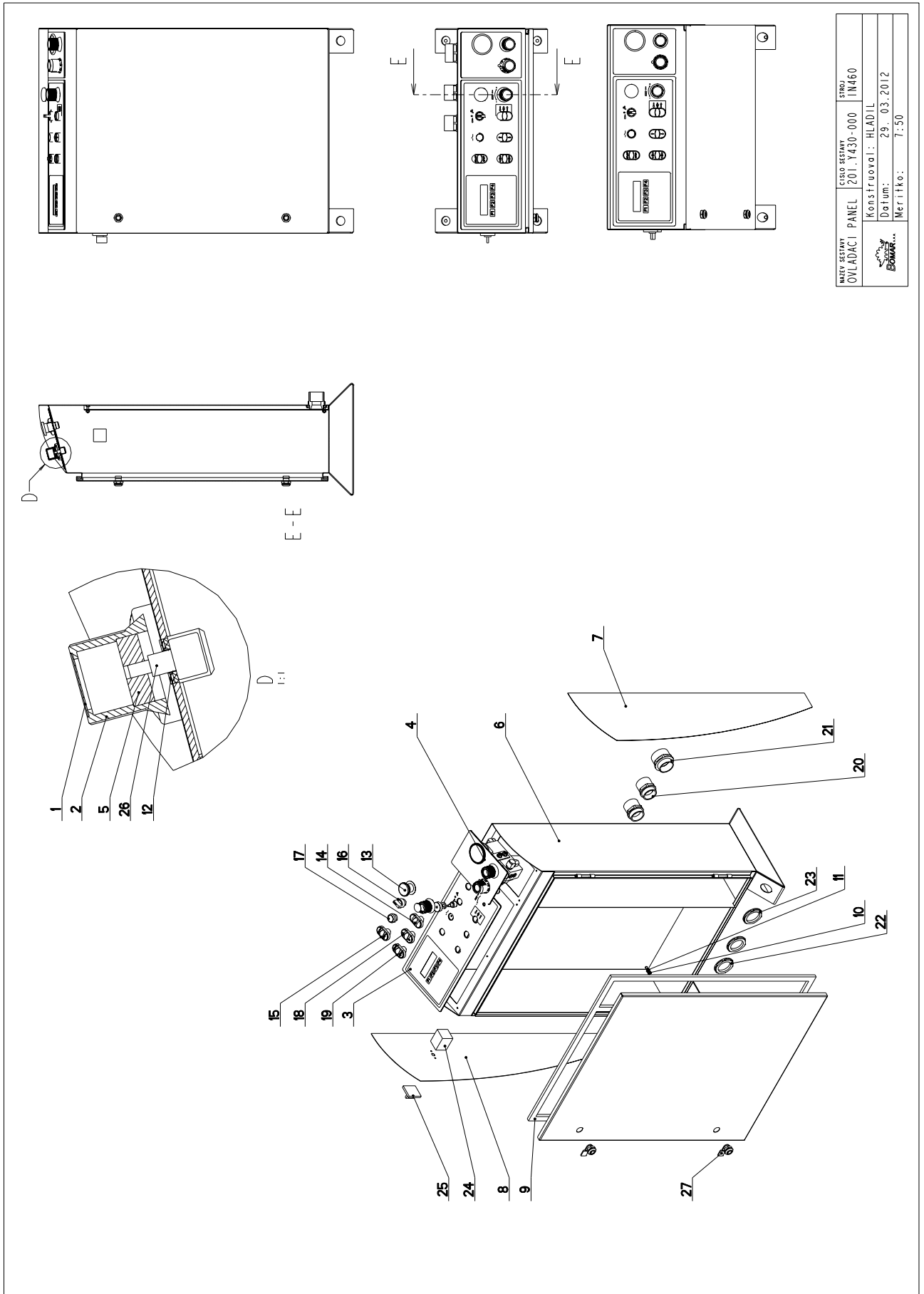
35	90.001.25.061	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X45	4
36	90.001.25.062	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X50	6
37	90.003.20.002	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M5X10	4
38	90.100.55.003	0	MATICE / NUT / MUTTER	MATICE - M5	4
39	90.100.55.007	0	MATICE / NUT / MUTTER	MATICE - M12	2
40	90.150.50.005	0	PODLOZKA / WASHER / UNTERLEGSCHIBE	PODLOZKA 8,4	2
41	90.163.00.003	0	PODLOZKA / WASHER / UNTERLEGSCHIBE	NORD-LOCK	8
42	92.003.001	0	SROUBENI UHLOVE / ANGLE BOLTING / WINKELVERSCHRAUBUNG	P-RSWS-08LR	2
43	95.001.006	0	LOZISKO / BEARING / LAGER	6002 2RS	8
44	95.001.023	0	LOZISKO / BEARING / LAGER	6302 2RS	1
45	95.800.019	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUBEN	POJISTNY KROUZEK 52	2
46	95.801.005	0	KROUZEK POJIST.VNITR / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 40	2
47	95.860.001	0	MAZNICE / LUBRICATOR / ÖLER	KULOVA PRIMA M5	2
48	96.001.010	0	KROUZEK O STATICKY / STATIC O RING / O-RING STATISCH	36X2	2
49	96.042.001	0	TESNENI / SEALING / DICHTUNG	40x30x8 K606	2
50	96.082.002	0	TESNENI / SEALING / DICHTUNG	KROUZEK CU 13/17	2

7.25. Vedení pásu / Sägebandführung / Belt guide 3

Cislo Sestavy 201.6210-300		Ver. 3		Název sestavy VEDENÍ PÁSU/BELT GUIDE/SÄGEBANDFÜHRUNG	
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.5910-109	0	KOSTKA / CUBE / WÜRFEL	TYC 70x50	1
2	30.6210-301	0	PODLOŽKA / WASHER / UNTERLEGSCHIBE	TR 30/5	2
3	30.7510-103	3	ČEP / LUG / BOLZEN	6HR24	2
4	95.001.016	0	LOŽISKO / BEARING / LAGER	6203 2RS	6
5	95.850.004	0	MATICE KM / KM NUT / KM-MÜTTER	MATICE KM3	2



7.26. Ovládací panel / Bedienpult / Control panel



NAZEV SESTAVY OVLÁDACÍ PANEĽ	ČÍSLO SESTAVY 201.7430-000	STROJ IM460
Konštruoval: HLADIL		
Datum: 29. 03. 2012		
Merítko: 7:50		

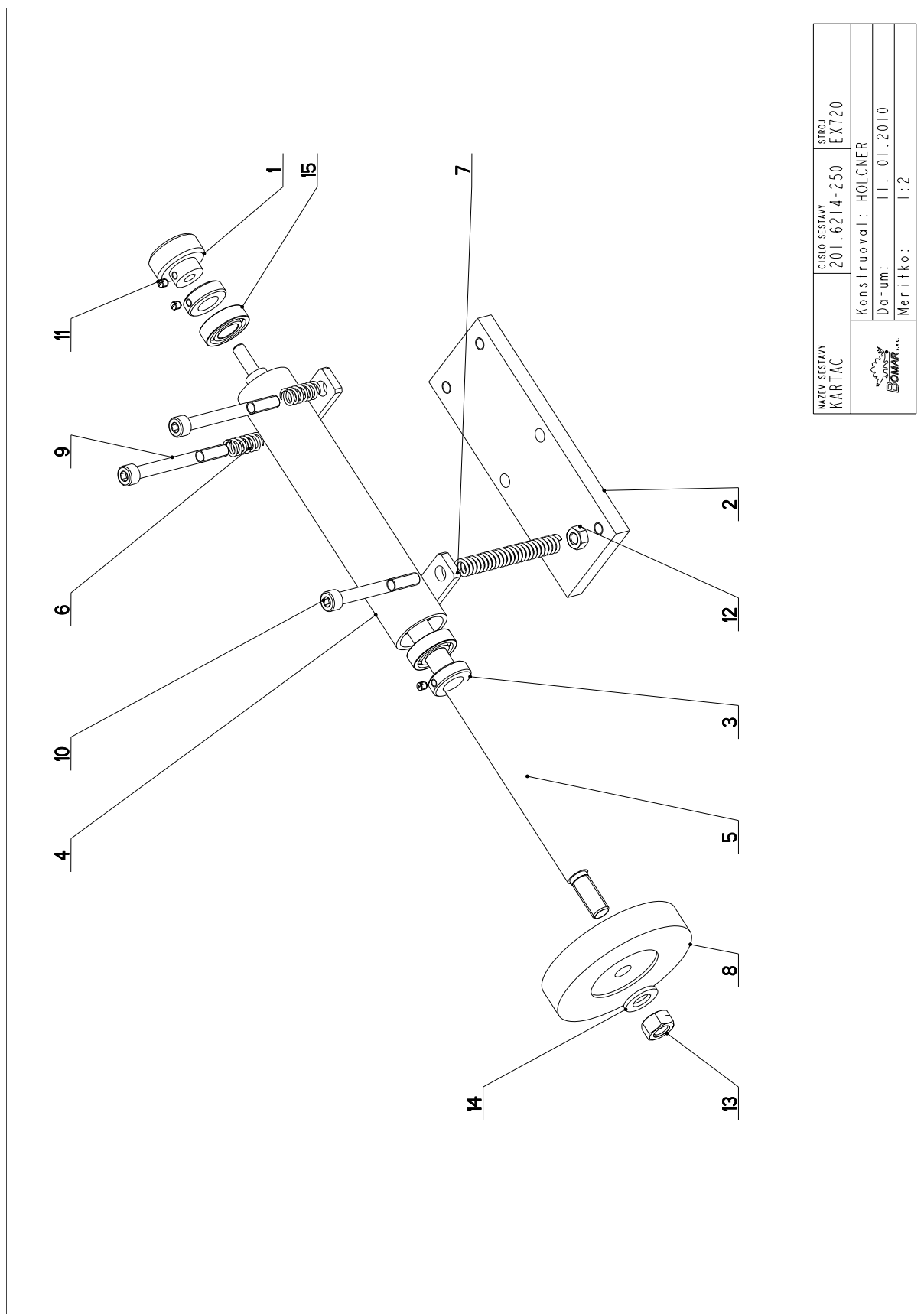
7.27. Kusovník / Stückliste / Piece list – Ovládací panel / Bedienpult / Control panel

Císlo Sestavy 201.Y430-000		Název sestavy OVLADACÍ PANEL/CONTROL PANEL/BEDIENPULT			
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.6130-012	0	VÍKO / COVER / DECKEL	P 0.5x 30x30	3
2	31.6130-008	0	HLAVICE / HEAD / KOPF		1
3	251.654	0	PANEL ELEKTRO / ELECTRO PANEL / PANEL		1
4	201.R230-220	1	OVLADACÍ PANEL / CONTROL PANEL / BEDIENPULT		1
5	30.R230-010	0	MEZIKUS / INTERMEDIATE PIECE / PASSSTÜCK	d 32	1
6	30.R230-201	3	SKRIN / BOX / KASTEN		1
7	30.R230-204	0	PLECH / PLATE / BLECH	P 1x220	1
8	30.R230-206	0	PLECH / PLATE / BLECH	P 1x220	1
9	30.R230-209	0	TESNENÍ / SEALING / DICHTUNG	TESNENÍ 19x10	1
10	90.100.55.004	0	MATICE / NUT / MUTTER	MATICE _ M6	4
11	90.150.50.004	0	PODLOŽKA / WASHER / UNTERLEGSCHIBE	PODLOŽKA 6,4	4
12	90.150.50.006	0	PODLOŽKA / WASHER / UNTERLEGSCHIBE	PODLOŽKA 10,5	2
13	91.060.030	0	HLAVICE TOTAL STOP / TOTAL STOP HEAD / TASTE TOTAL STOP		1
14	91.060.033	0	HLAVICE / HEAD / KOPF		1
15	91.060.034	0	HLAVICE / HEAD / KOPF	START/STOP	1
16	91.060.051	0	PREPINAC / SWITCH / UMSCHALTER		1
17	91.060.053	0	HLAVICE / HEAD / KOPF		1
18	91.060.054	0	HLAVICE / HEAD / KOPF	NAHORU/DOLU	1
19	91.060.055	0	HLAVICE / HEAD / KOPF	SV. ZAVR/OTEV	1
20	91.071.005	0	PRUCHODKA / LEADTHROUGH / DURCHFÜHRUNG		2
21	91.071.022	0	VYVODKA / BUSHING / TÜLLE		1
22	91.072.008	0	MATICE / NUT / MUTTER		2
23	91.072.016	0	MATICE / NUT / MUTTER		1
24	91.170.003	0	SPINAC VACKOVY / CAM SWITCH / SCHALTER	LE2-12-1763	1
25	91.180.001	0	DESKA SPINACE / ELECTRIC BOARD / PLATINE		1
26	91.283.015	0	POTENCIOMETR / POTENTIOMETER / POTENTIOMETER	TP 195 4K7/N 20A	1
27	99.104.002	0	ZAMEK / LOCK / SCHLOSS	ZAMEK CINSKY	2

I.ZRUS.VIKO 30.R230-203,PANEL 30.R230-202,2xCEP 30.7217-028,2XPOJ.KROUZEK 95.802.003 (PRIDANO DO SKRINE 30.R230-201).
061/ZM110 29.3.2012 SLEZACKOVA

Císlo Sestavy/Number of assembly/Nummer der Baugruppe; Verze (Ver.)/Version/Versio; 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

7.28. Kartáč / Bürste / Brush

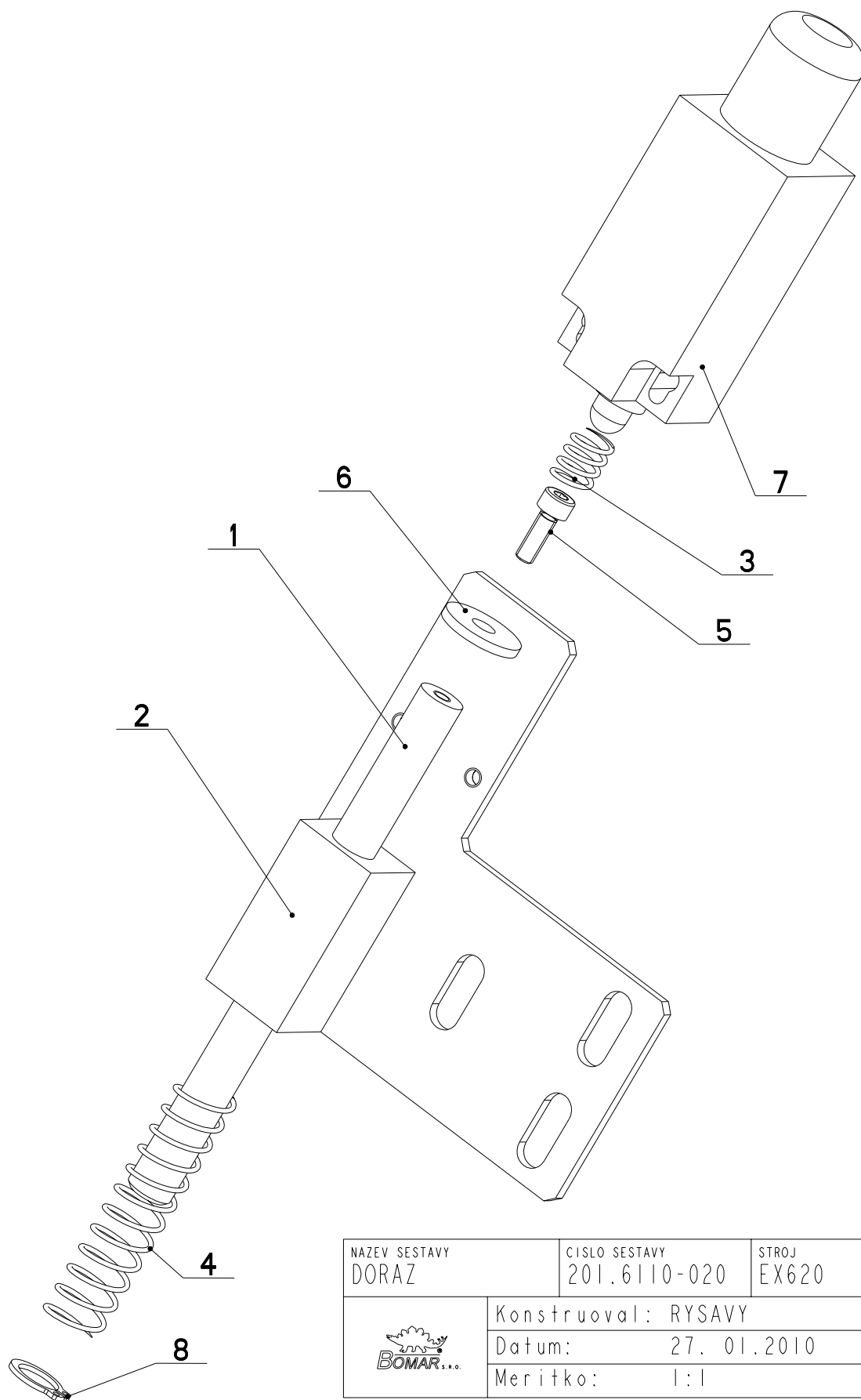


NAZEV SESTAVY KARTAC	CISLO SESTAVY 201.6214-250	STROJ EXT20
Konstruoval: HOLCNER		Datum: 11. 01. 2010
Meritko: 1:2		

7.29. Kusovník / Stückliste / Piece list – Kartáč / Bürste / Brush

Císlo sestavy 201.6214-250		Název sestavy KARTAC/BRUSH/BÜRSTE			
Poz.	Objednací číslo	Ver.	Název položky	Forma	Ks
1	30.0814-204	0	KOLEČKO / WHEEL / ROLLE	SESTAVA	1
2	30.6114-105	0	DESKA / BOARD / PLATTE	HR.70x12	1
3	30.6114-119	1	KROUZEK / R.ING / RING	ø 28	2
4	30.6114-128	0	DRŽÁK / HOLDER / HALTER		1
5	30.6214-251	0	HRÍDEL / SHAFT / WELLE	D 15	1
6	31.1506-115	0	PRUŽINA / SPRING / FEDER	L.6x12x25x7.5	2
7	31.2107-206	0	PRUŽINA / SPRING / FEDER		1
8	49.250.017	0	KARTAC / BRUSH / BÜRSTE	SPB 100x12	1
9	90.001.25.067	0	ŠROUB / IMBUS / ALLEN HEAD BOLT / IMBUSHSCRAUBE	M8x80	2
10	90.001.25.095	0	ŠROUB / IMBUS / ALLEN HEAD BOLT / IMBUSHSCRAUBE	M8x70	1
11	90.002.20.003	0	STAVEČÍ Š. KUŽEL / ADJUSTMENT BOLT / STELLSCHRAUBE	ŠROUB M5x6	3
12	90.100.55.005	0	MATICE / NUT / MÜTTER	MATICE - M8	1
13	90.100.55.007	0	MATICE / NUT / MÜTTER	MATICE - M12	1
14	90.150.50.007	0	PODLOŽKA / WASHER / UNTERLEGSCHIEBE	PODLOŽKA 13	1
15	95.001.006	0	LOŽISKO / BEARING / LAGER	6002 ZRS	2

7.30. Doraz / Anschlag / Stop Piece



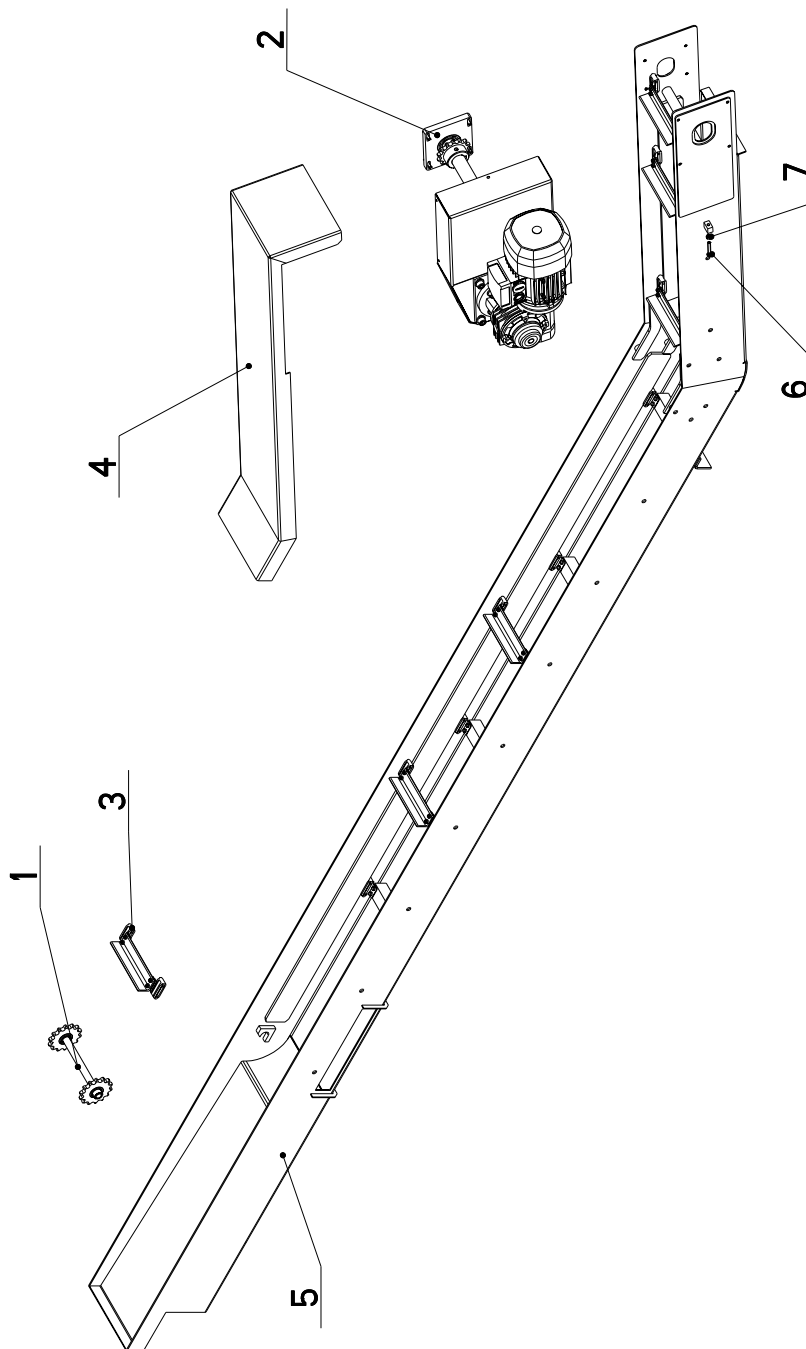
NAZEV SESTAVY DORAZ	CISLO SESTAVY 201.6110-020	STROJ EX620
	Konstruoval: RYSAVY	
	Datum: 27. 01.2010	
	Meritko: 1:1	

7.31. Kusovník / Stückliste / Piece list – Doraz / Anschlag / Stop Piece

Cislo sestavy 201.6110-020		Ver. 1		Název sestavy DORAZ/STOP PIECE/ANSCHLAG	
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.6110-114	0	TYC / POLE / STANGE	d 10	1
2	30.6110-116	0	DORAZ / STOP PIECE / ANSCHLAG		1
3	31.1605-121	0	PRUŽINA / SPRING / FEDER	1 x 9,5 x 12 x 4,0 (0,8 x 9 x 10 x 6)	1
4	31.2801-014	0	PRUŽINA / SPRING / FEDER	1 x 12,5 x 60 x 12	1
5	90.001.25.003	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M4 X 12	1
6	90.151.50.006	0	PODLOŽKA / WASHER / UNTERLEGSCHETBE	PODLOŽKA 5	1
7	91.173.007	0	SPÍNAC KONCOVÝ / END SWITCH / ENDSCHALTER	-R1WK	1
8	95.800.003	0	KROUZEK POJIST. VNEJŠÍ / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNÝ KROUZEK 10	1

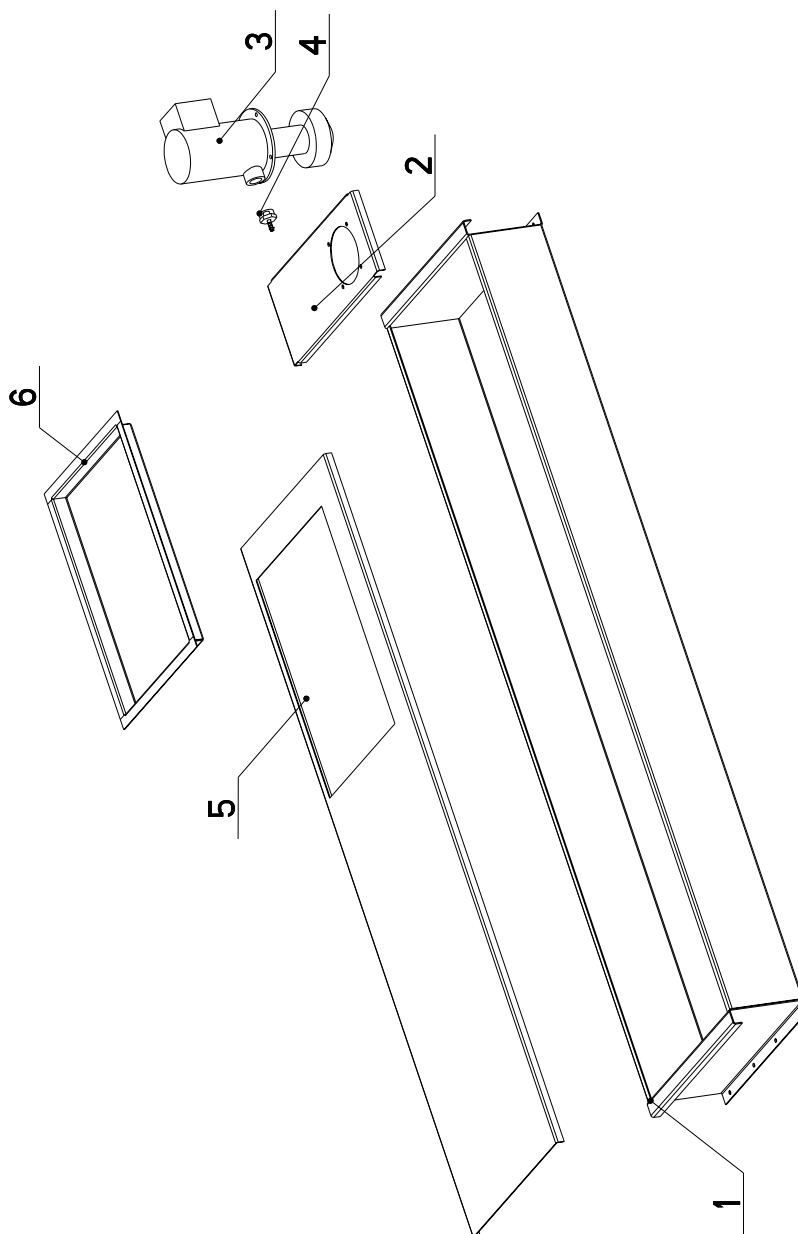
7.32. Třískový vynašeč / Spanabführung / Chip extractor.

Císlo Sestavy 201.6317-100		Název sestavy VYNAŠEČ TRÍSKOVÝ/CHIP EXTRACTOR/SPANABFÜHRUNG			
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	201.6017-103	0	KOLO NAPÍNACÍ / TENSIONING WHEEL / UMLENKRAD		1
2	201.6017-250	1	POHON / DRIVE / ANTRIEB		1
3	201.6717-304	1	RETEZ / CHAIN / KETTE		12
4	30.6317-122	2	KRYT / COVER / ABDECKUNG		1
5	30.6317-201	0	KORYTO / CHANNEL / RINNE		1
6	90.005.55.012	0	SROUB 6HRANNÝ / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M6X40	2
7	90.100.55.004	0	MATICE / NUT / MUTTER	MATICE - M6	2



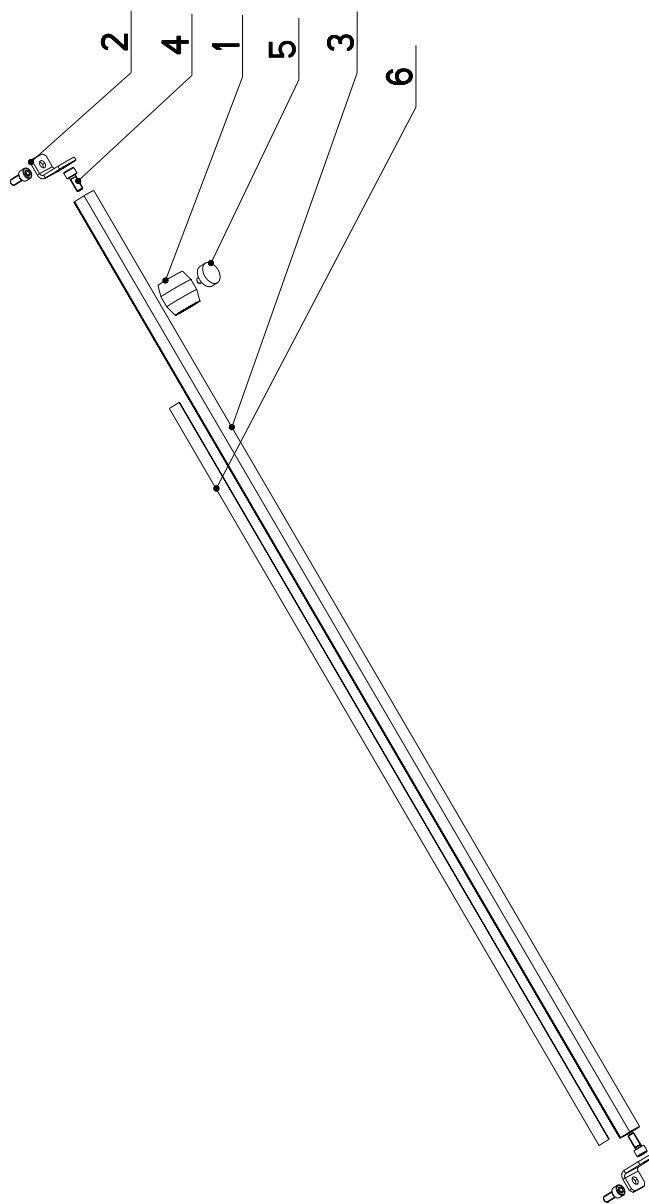
7.33. Chlazení / Kühlung / Cooling

Cislo Sestavy 201.6206-100		Název sestavy CHLAZENÍ/COOLING/KÜHLUNG			
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.6206-101	0	VANA / TANK / WANNE		1
2	30.6206-102	0	PLECH / PLATE / BLECH	P 1.5x186x410	1
3	91.020.009	0	CERPADLO CHLAZENÍ / COOLING PUMP / KÜHLMITTELpumPE	3COA 2-14	1
4	94.202.005	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	3/4"-6	1
5	30.6206-103	0	KRYT / COVER / ABDECKUNG	P 1.5 - 410	1
6	30.6206-104	0	SÍTO / SIEVE / GITTERWERK	P 1.5 x386	1



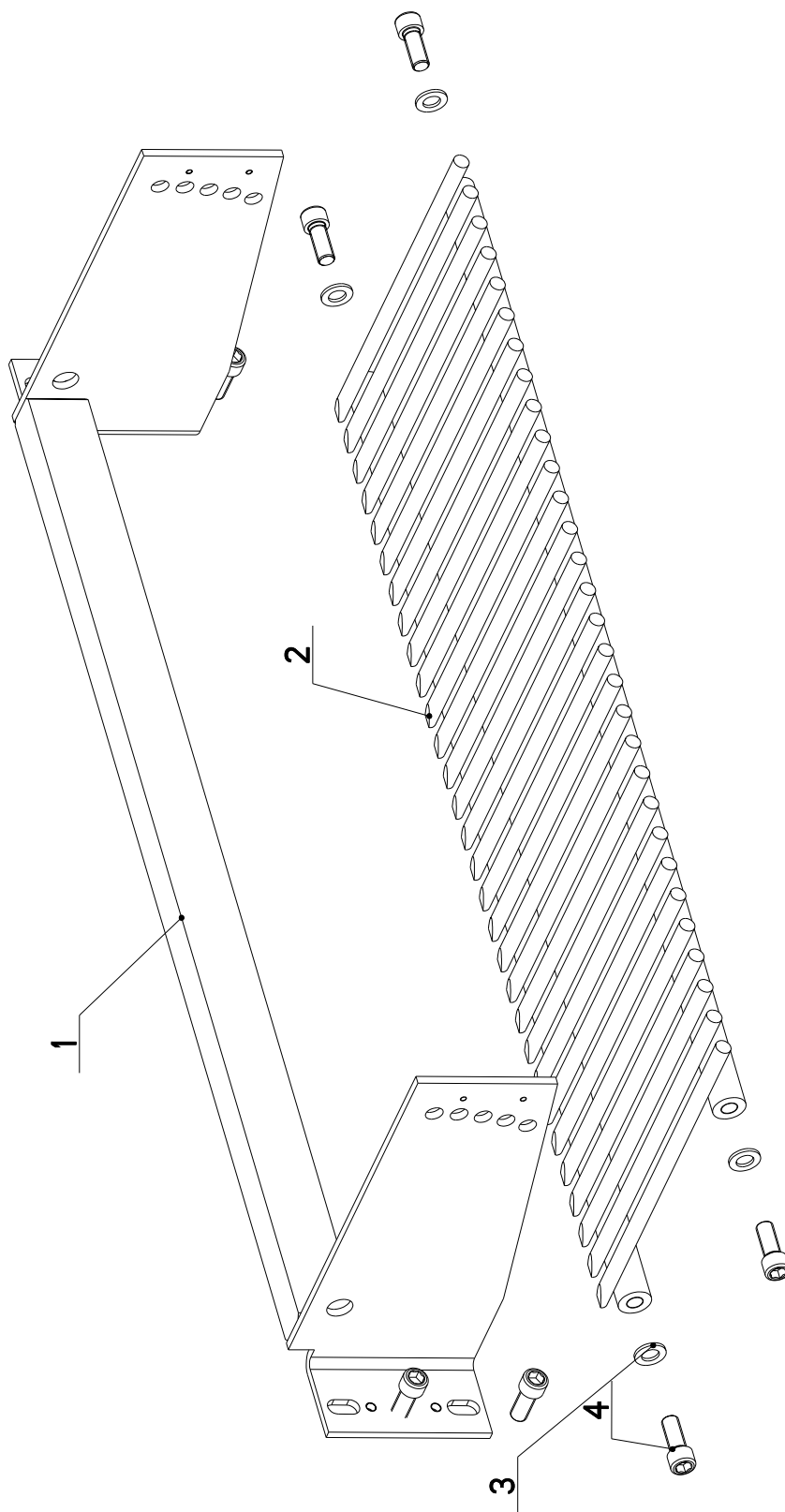
7.34. Odměrování / Gehrungsmessung / Measuring

Císlo Sestavy 201.6214-020		Ver. 0		Název sestavy ODMĚROVÁNÍ / MEASURING / GEHRUNGSMESSUNG	
Poz.	Objednáací číslo	Ver.	Název položky	Rozměr	Ks
1	30.2014-001	0	OBJIMKA / CLAMP / KLAMMERSTÜCK		1
2	30.6114-023	0	DRŽAK / HOLDER / HALTER	P 3x20	2
3	30.6214-021	0	TYC / POLE / STANGE	d 20	1
4	90.001.25.092	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6 X 14	4
5	94.007.001	0	SROUB / BOLT / SCHRAUBE	M5 x 10	1
6	99.120.002	0	PRÁVITKO / RULER / SKALENBANDMAß		1



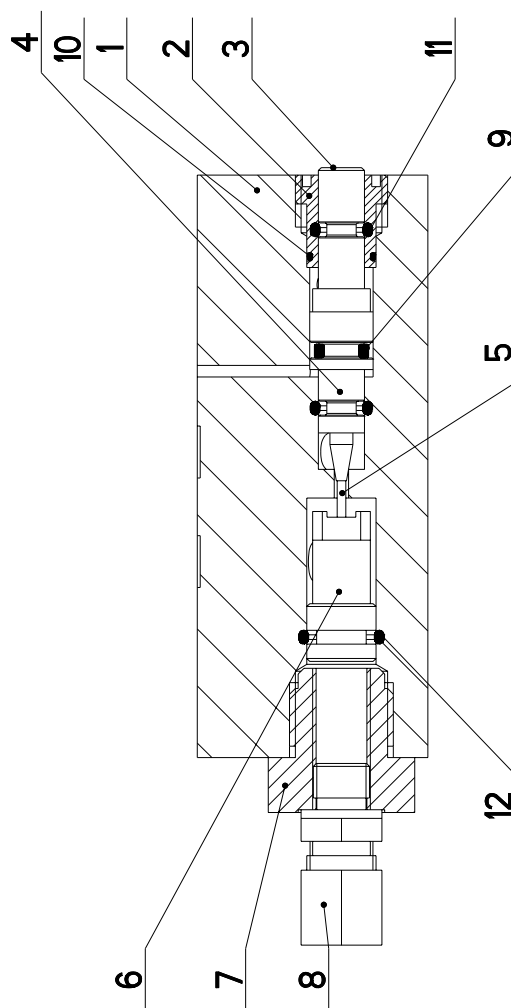
7.35. Rošt / Gitter / Grill

Cislo Sestavy 201.6318-100		Nazev sestavy ROST/GRILL/GITTER	
Ver.	0	Ver.	0
Objednaci cislo		Nazev polozky	
1 30.6318-101	0	DRZAK / HOLDER / HALTER	Rozmer
2 30.6318-102	1	ROST / GRILL / GITTER	
3 90.150.50.009	0	PODLOZKA / WASHER / UNTERLEGSCHIEBE	PODLOZKA 17
4 90.001.25.086	0	SROUB / IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M16X40
			Ks
			1
			1
			4
			8



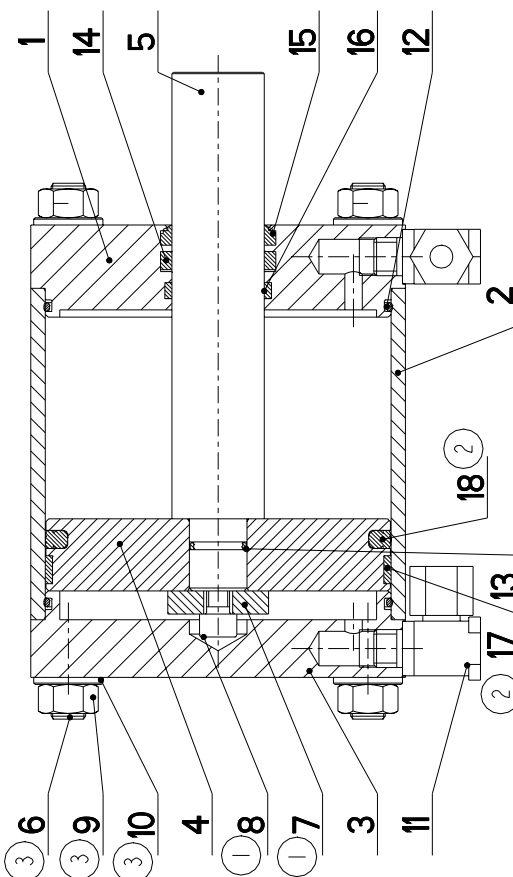
7.36. Kostka regulace / Regulation cube / Regelungswürfel I

Cislo sestavy 201.6816-100		Název sestavy KOSTKA REGULACE / REGULATION CUBE / REGELUNGSWÜRFEL			
Poz.	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.6816-101	1	KOSTKA REGULACE / REGULATION CUBE / REGELUNGSWÜRFEL	TYC 40x40	1
2	30.6816-104	1	VÍKO / COVER / DECKEL	TYC 16	1
3	30.6816-103	0	PIST / PISTON / KOLBEN	TYC 12	1
4	30.6816-108	0	JEHLA / NEEDLE / NADEL	TYC 8	1
5	95.690.001	0	JEHLA / NEEDLE / NADEL	1.5x11.8	1
6	30.6816-106	2	PIST / PISTON / KOLBEN	TYC 12	1
7	30.6816-107	0	VÍKO / COVER / DECKEL	TYC 22	1
8	92.002.102	0	SROUBENÍ / BOLTING / VERSCHRAUBUNG	S-6EV-8LLR	1
9	96.002.003	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	6X2	1
10	96.002.041	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	10x1	1
11	96.001.001	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	4X1,8	2
12	96.001.003	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	8X2	1



7.37. Valec napínací/Spannzylinder/Tensioning cylinder

Císlo Sestavy 201.6707-400		Název sestavy VALEC NAPÍNACÍ/TENSIONING CYLINDER/SPANNZYLINDER			
Poz.	Objednávací číslo	Ver.	Název položky	Rozměr	Ks
1	30.6707-401	2	VIKO / COVER / DECKEL	HR 130x40	1
2	30.6707-402	0	VALEC / ROLLER / ZYLINDER	TRUBKA 130/120	1
3	30.6707-403	2	VIKO / COVER / DECKEL	HR 130x30	1
4	30.6707-404	1	PIST / PISTON / KOLBEN	d 125	1
5	30.6707-405	1	PISTNICE / PISTON ROD / KOLBENSTANGE	TYC 32	1
6	30.6707-407	3	TYC ZAVITOVÁ / THREADED POLE / GEWINDESTANGE	TYC M12	4
7	30.K407-005	1	PODLOŽKA / WASHER / UNTERLEGSCHIBE	TYC 35	1
8	90.001.25.031	1	SROUB IMBUS CERNÝ / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x16	1
9	90.100.25.006	3	MATICE / NUT / MUTTER	MATICE - M12 - PEVNOSTNÍ	8
10	90.150.50.007	3	PODLOŽKA / WASHER / UNTERLEGSCHIBE	PODLOŽKA B13	8
11	92.003-001	0	SROUBENÍ UHLOVÉ / ANGLE BOLTING / WINKELVERSCHRÄUBUNG	P-RSWS-08LR	2
12	96.001-031	0	KROUZEK O STATICKÝ / STATIC O RING / O-RING STATISCH	114X3	2
13	96.002-007	0	KROUZEK O DYNAMICKÝ / DYNAMIC O RING / O-RING DYNAMISCH	16X2	1
14	96.042-007	0	TESNĚNÍ / SEALING / DICHTUNG	32x40x6.3	1
15	96.060-009	0	KROUZEK STÍRACÍ / SCRAPER RING / ABSTREIFRING	32x40x5x6	1
16	96.084-003	0	KROUZEK VODICÍ / LEAD RING / FÜHRUNGSRING	GR 6500320	1
17	96.084-014	2	KROUZEK VODICÍ / LEAD RING / FÜHRUNGSRING	Páska	1
18	96.900-028	2	TESNĚNÍ KOMBINOVANÉ / COMBINATION SEALING / KOMBIDICHTUNG		1



1. ZRUS.PODLOŽKA 8 90.151.50.005 A NAHR. PODLOŽKOU 30.K407-005,
ZRUS.SROUB M8x10A NAHR. SROUBEM M8x16 90.001.25.031.
191/ZM224 4.6.2007 SLEZACKOVA
2. ZRUS."O" KROUZEK 96.002.044 A NAHRÁZENO
TESNĚNÍ KOMBINOVANÉ 96.900.028.
ZRUS.PASKA 95.780.001 A NAHR. 96.084.014.
316/ZM337 27.8.2007 SLEZACKOVA
3. ZRUS.TYC 30.6707-406 A NAHR. 30.6707-407,
ZRUS.PODLOŽKA 90.150.50.006 A NAHR. 90.150.50.007,
ZRUS.MATICE 90.100.55.006 A NAHR. 90.100.25.006.
377/ZM098 4.5.2011 SLEZACKOVA