Serie **Extend**

Extend 800.620

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: fax: e-mail: www:	+420 – 533 426 100 +420 – 533 426 109 info@bomar.cz http://www.bomar.cz
We are available:		
Mondays to Fridays	$7^{00} – 16^{00}$	
Version:		
2.06 / Feb. 2013 rev. 1		

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 800.620**

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 , Hydraulic, cooling system, el. switch board with control panel.

Technical data: Cutting rate 15–90.m.min^{-1}, cutting angle 0°
Total dimensions in mm (l × w × h) 3500×1000×2330 mm,
Supply voltage 3×400(230) V, total power requirement 8,2 (10,1) kW, weight 4200 kg

The applied decrees of governments: **No. 17/2003 Coll.** (Directive 73/23/EEC)
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.3:2006, ČSN EN 61000-6-4 ed.2:2007, ČSN EN 60204-1 ed.2:2007

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

The conformity judging was performed according to §12, par. 3, let. a), of the Law no. 22/1997 Coll. as amended
2) [2)] The declaration of conformity was carried out in the cooperation with the TÜV CZ 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

Content

1. Safety notes

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The operating instructions must be read by the person, who keeps in touch with the machine before transportation, installation, using, servicing, reparation, 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 800.620** is determined for cutting and shortening of rolled bars and drawn bars and profiles from steels, stainless steels, non-ferrous metals and plastics **without 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!

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

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

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

1.4. Safety notes for the servicing and repairs

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

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

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

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

1.5. Safety 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.

1.5.1. 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.

1.5.2. 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 stated to the operation, when the covers is closed!

1.5.3. 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!

1.5.4. 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. Safety notes for the cooling

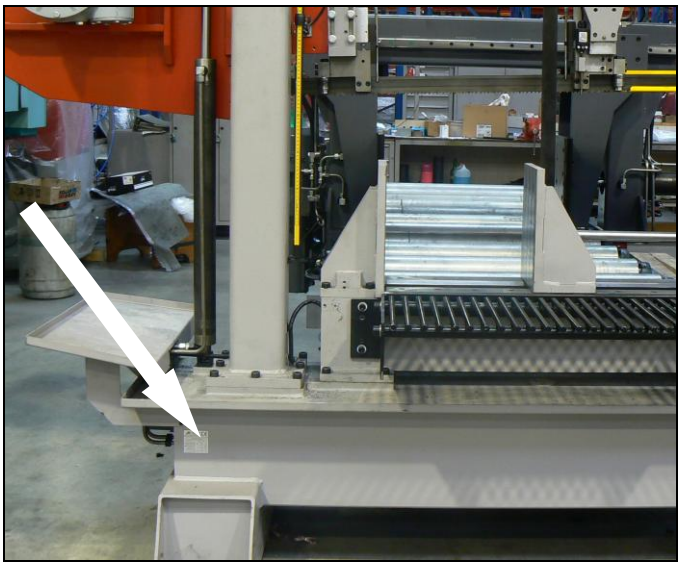
Attention!

- *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*

1.6.1. 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.

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



Machine label is placed on base.

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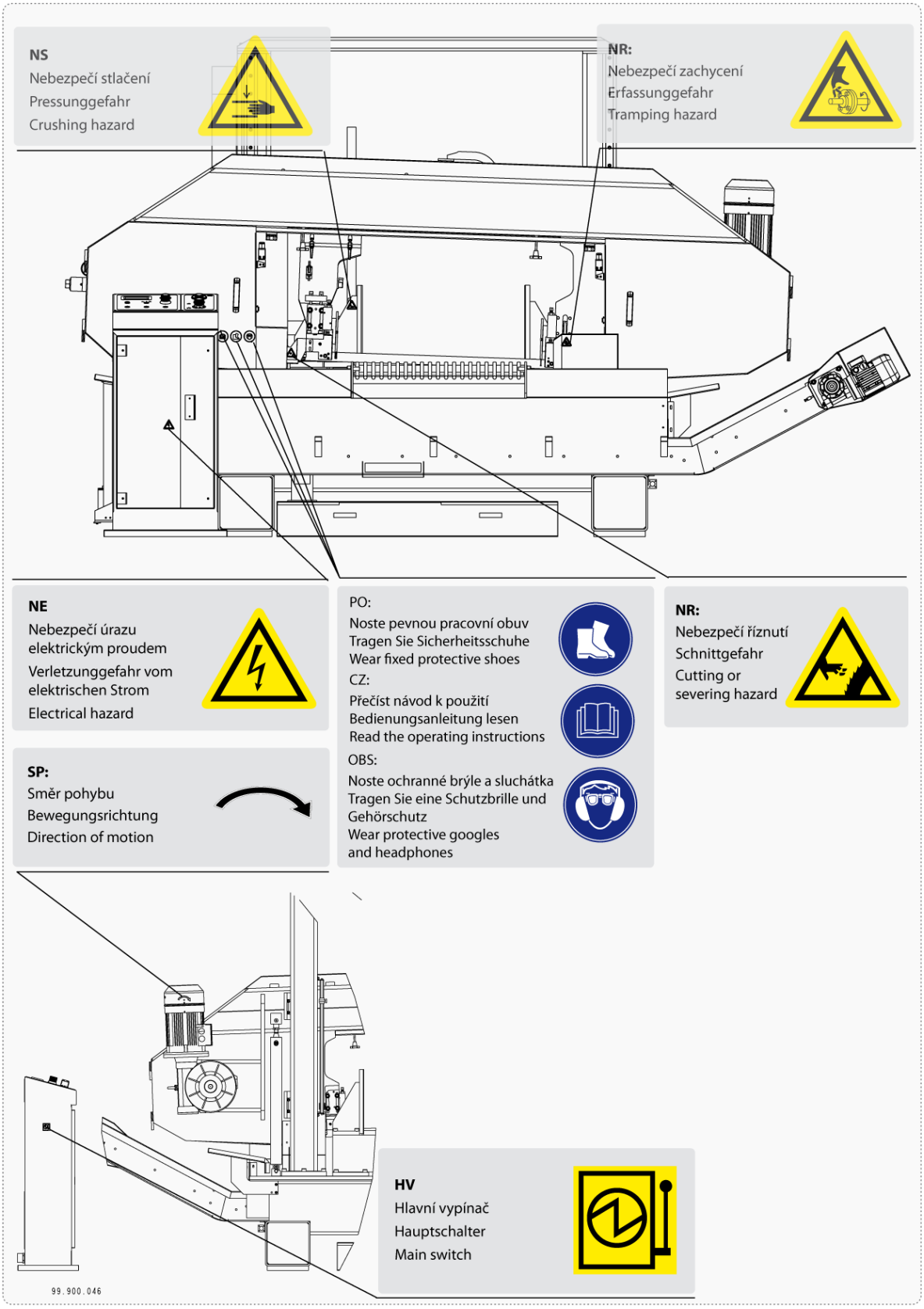
1.8. Umístění bezpečnostních značek / Verteilung der Sicherheitszeichen / Position of safety symbols



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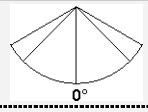
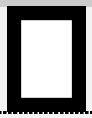
2. Machine documentation

2.1. Technická data / Technische Daten / Technical data

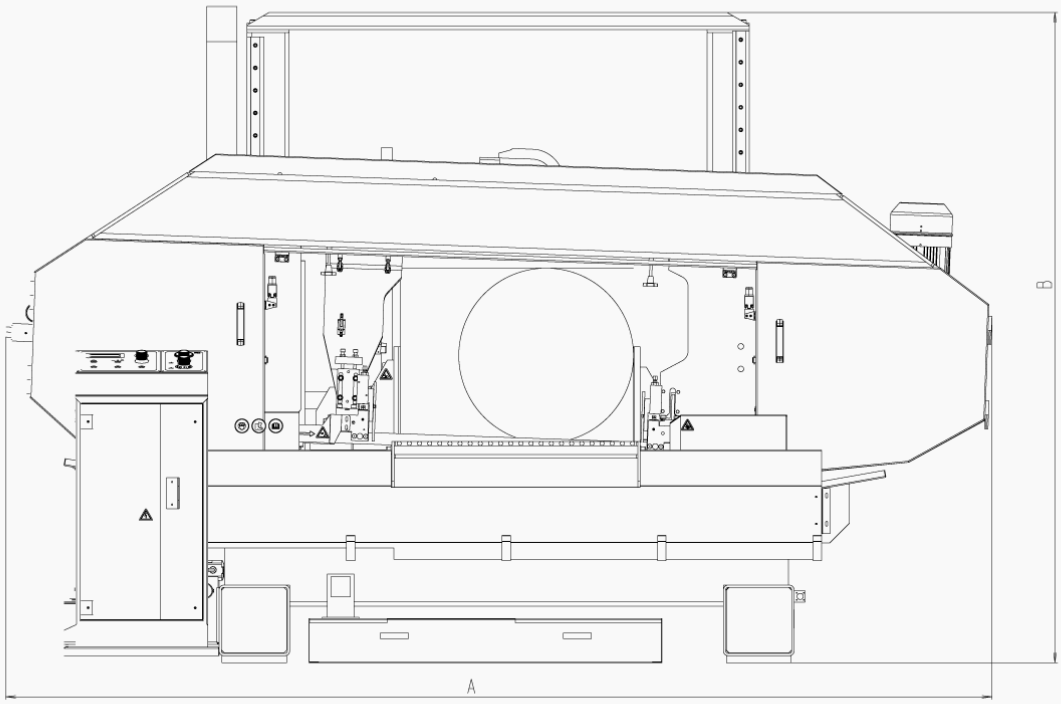
Hmotnost stroje / Maschinengewicht / Machine weight:	
• Hmotnost / Gewicht / Weight	4200 kg
Rozměry stroje / Maschinengröße / Machine size :	
• Délka / Länge / Lenght	3500 mm
• Šířka / Breite / Width	1000 mm
• Výška / Höhe / Height	2330 mm
Elektrické vybavení / Elektrische Ausrüstung / Electical equipment:	
• Napájení / Versorgungsspannun / Supply voltage	~3 x 400V, 50Hz, TN-C-S/TN-C
• Příkon / Gesamptschlusswert / Total Input	8,2kW (motor 5,5 kW – 10,1 kW)
• Max.jištění / Max. Vorschaltsicherung / Max. Fuse	32 A
• Krytí / Schutzart / Protection	IP 54
Akustický tlak / Schalldruckpegel / Acoustic pressure:	
• Extend 800.620	L_{Aeqv}=86 dB
Pohon / Atrieb / Drive:	
• Typ / Typ / Type	1LA7113-4AA60 – motor 4,0 kW 1LA7130-4AA61 – motor 5,5 kW
• Napájení / Versorgungsspannun / Supply voltage	~3 x 400V, 50Hz
• Výkon / Leistung / Output	4 kW (special 5,5 kW)
• Jmenovité otáčky / Motornenndrehzahl / Nominal speed	1440 min^{-1}
Hydraulické zařízení / Kühlmiteleinrichtung / Hydraulic equipment:	
• Typ / Typ / Type	(731-0507)/870-2038
• Výkon / Leistung / Output	6,5 MPa/2,2 kW
Chladící 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 / Sägebanddimension / Band size:	
7300×41 (54)×1,30 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:	

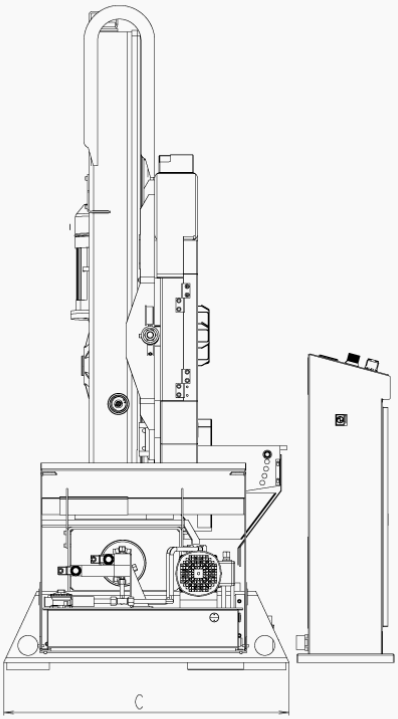
				
0°	Ø620 mm	800×620 mm	800×620 mm	620×620 mm

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.

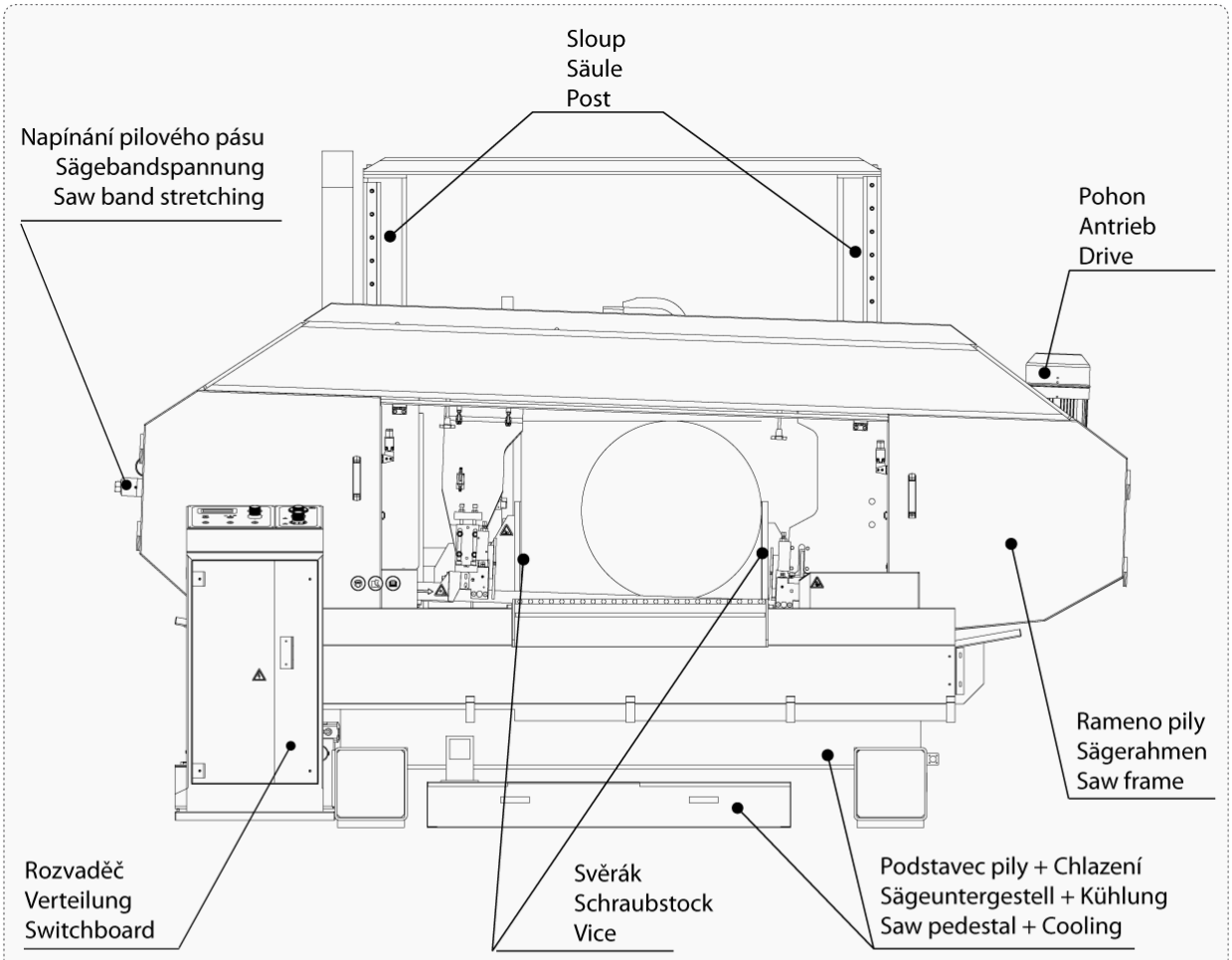
2.2. Rozměrové schéma / Aufstellzeichnung / Installation diagram

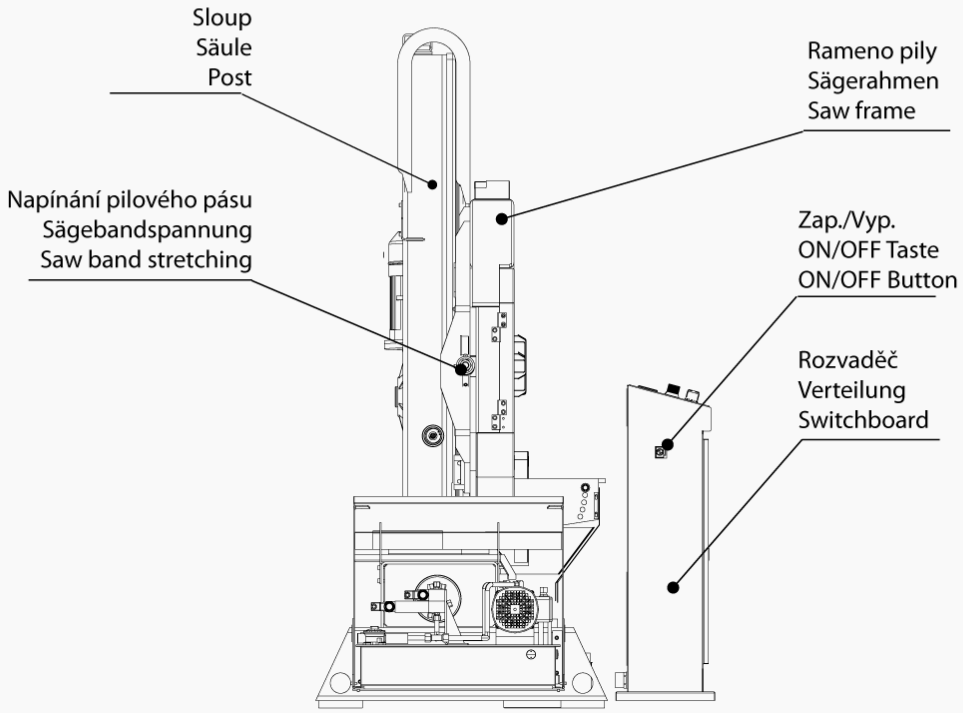




	A	B	C
Extend 700.520	3250	2230	1000
Extend 800.620	3500	2330	1000
Extend 900.720	4000	2600	1250
Extend1000.820	4350	3000	1400
Extend1120.1120	5120	3280	1700

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.

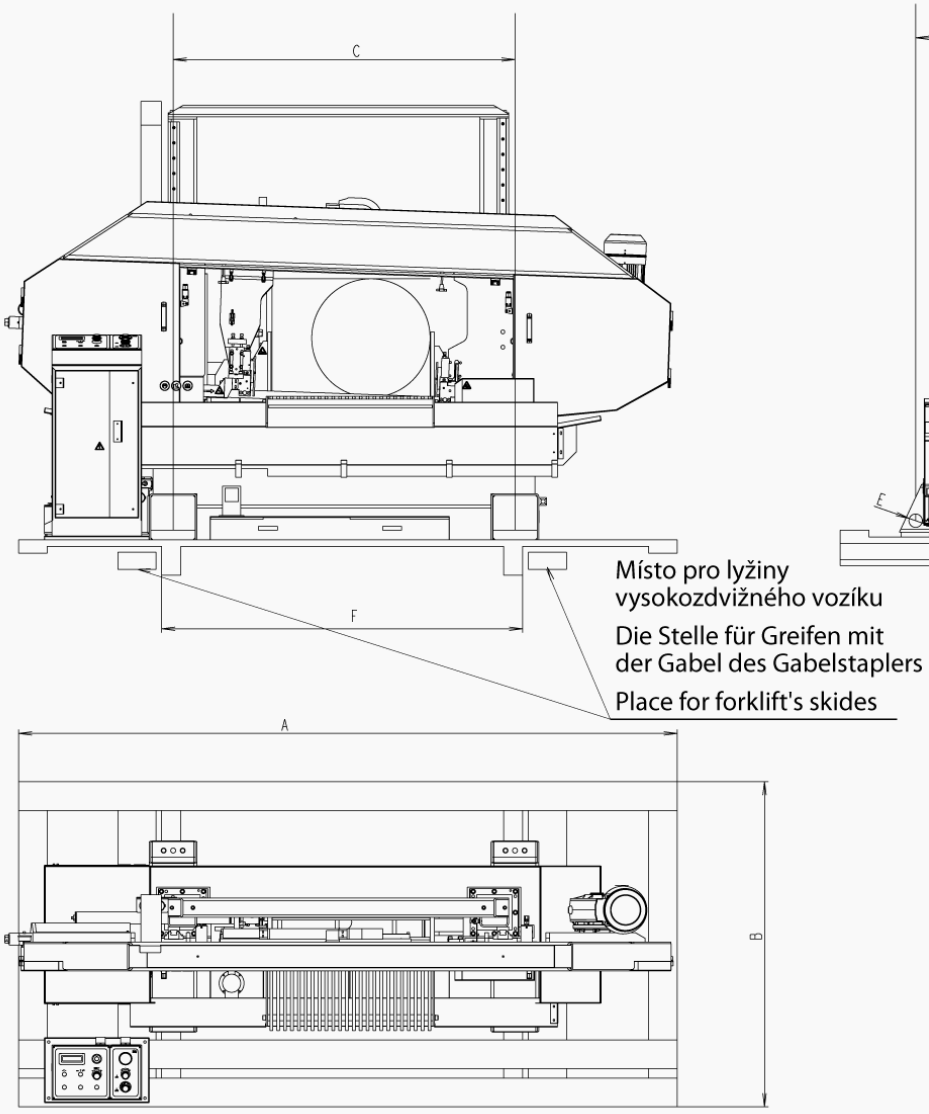
Fix the stickers stating the minimum approximate machine weight to at least five well visible places.

2.4.3. Transport and stocking

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

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

2.4.4. Transportní schéma / Transport schema / Transport 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 800.620 – 4200 kg

+ weight of accessories

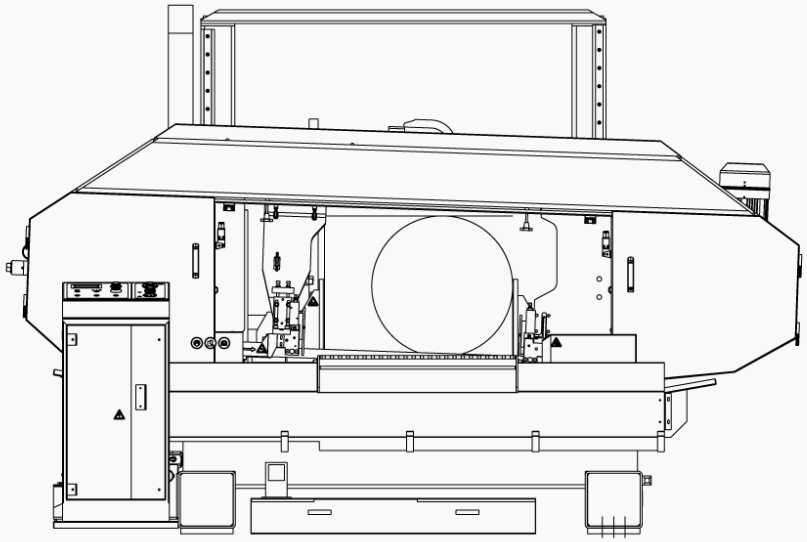
+ maximum weight of material

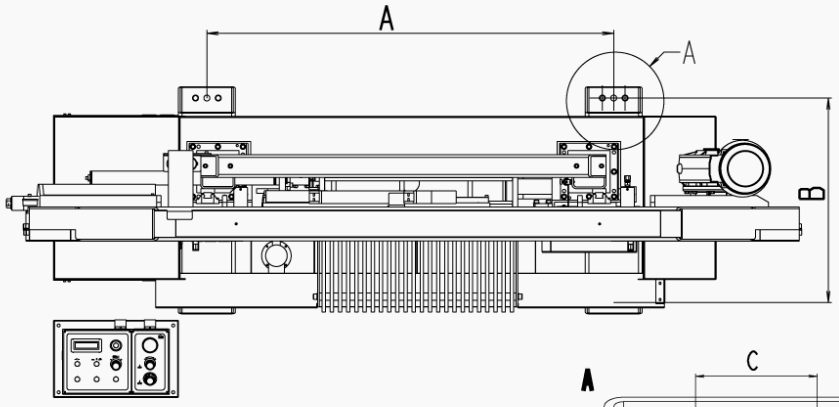
- The machine must be levelled at the horizontal position. All feet of the machine must touch with the floor after levelling
- The machine must be levelled by means of the calibrated spirit level. Spirit level is put on the vice area. Set the roller conveyors according to the spirit level.
- For machine 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.

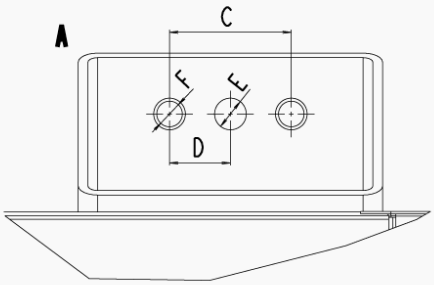
2.6.2. Machine disposal after lifetime

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. 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
Extend1000.820	2275	1300	100	50	ø26	2× M24
Extend1120.1120	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
  Screew 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: ~ 3×400 V, 50 Hz, TN-C-S
- Total input / Max. fuse: 8,2 (10,1) KW

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*.

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

7300×41 (54)×1,30 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

6. *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.

7. *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:

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

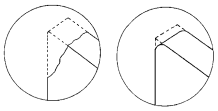
Examples of the tooth system marking:

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

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

2.10.3. Saw band running-in

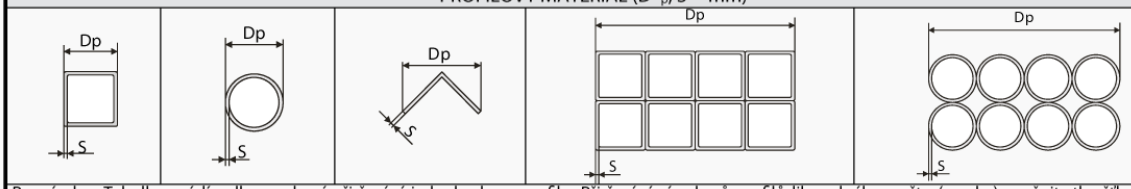
Running-in: Cut the material with the frame lowering reduced to 50% only. When vibrations occur increase or decrease the band speed.



When cutting small pieces run the band until approximately 300 cm^2 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.*

PROFILOVÝ MATERIÁL (D p, S = mm)

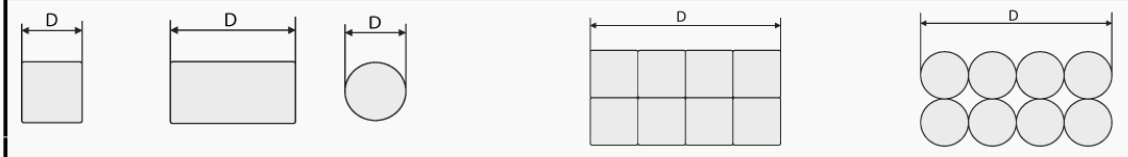


Poznámka: Tabulka uvádí volbu ozubení při řezání jednoho kusu profilu. Při řezání více kusů profilů libovolného počtu (svazku) uvažujte tloušťku stěny jako dvojnásobek tloušťky stěny jednoho profilu (tzn., že tloušťka „S" rovná se 2×S). V tabulce je uvedeno ozubení jak konstantní, tak variabilní.

Tloušťka stěny S [mm]	Ozubení (Z pZ) Vnější průměr profilu 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

Tloušťka stěny S [mm]	Ozubení (Z pZ) Vnější průměr profilu 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	1,4–2K	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

PEVNÝ MATERIÁL (D = mm)



Konstantní ozubení	
délka řezu D	ozubení (Z pZ)
do 3 mm	32
do 6 mm	24
do 10 mm	18
do 15 mm	14
15–30 mm	10
30–50 mm	8
50–80 mm	6
80–120 mm	4
120–200 mm	3
200–400 mm	2
300–800 mm	1,25
700–3000 mm	0,75

Variabilní ozubení	
délka řezu D	ozubení (Z pZ)
do 30 mm	10–14
20–50 mm	8–12
25–60 mm	6–10
35–80 mm	5–8
50–100 mm	4–6
70–120 mm	4–5
80–150 mm	3–4
120–350 mm	2–3
250–600 mm	1,4–2
500–3000 mm	0,75–1,25

Přes výše uvedené návrhy berte v úvahu doporučení Vašeho dodavatele a nechte si od něj odborně poradit i přesto, že výrobci Vám často doporučí vlastní pilové pásy.

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3. Machine control

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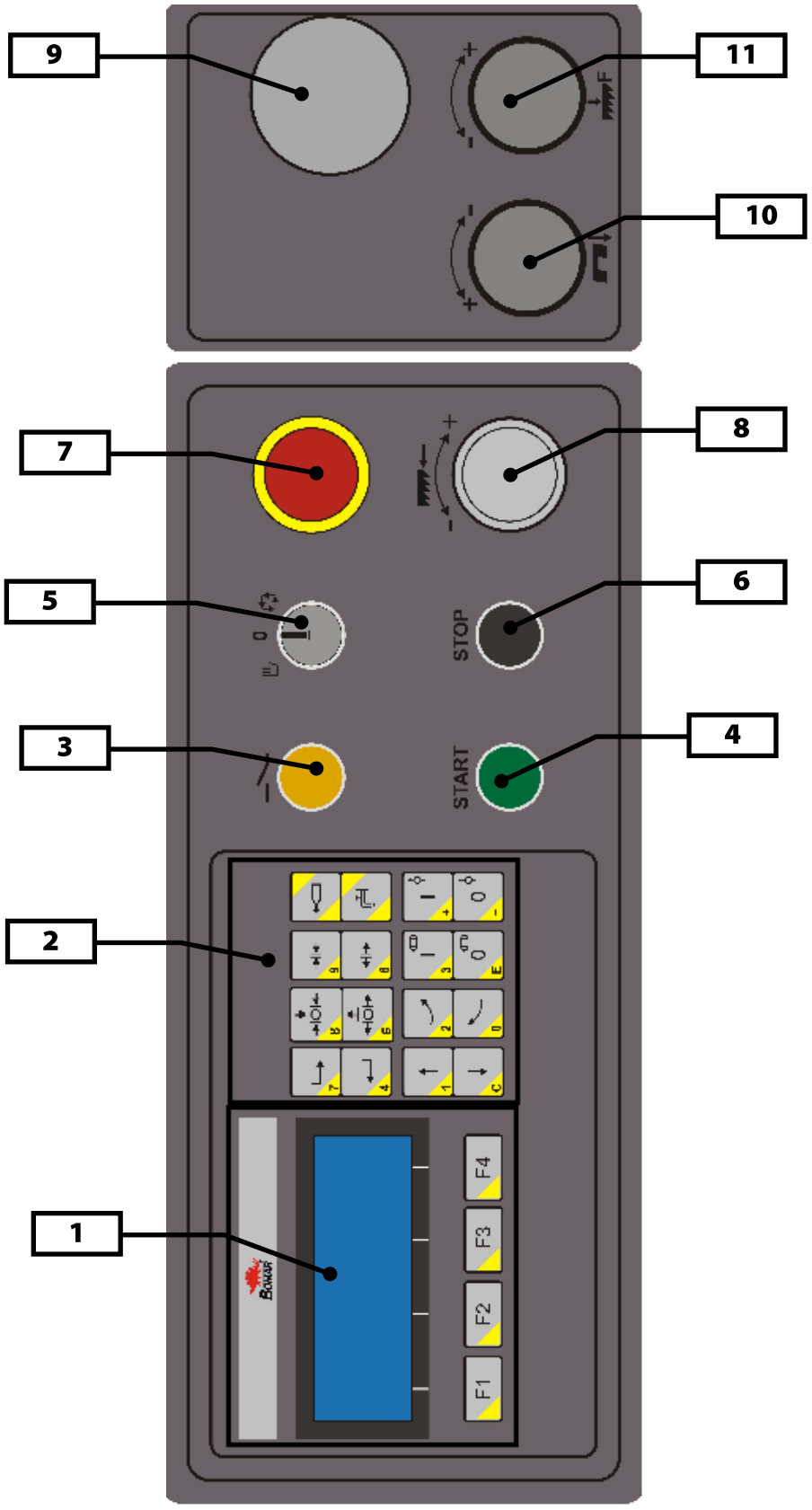
3.1. Starting the band saw

» 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 **Safety circuit** (button 2) on control panel of the band saw.

3.2. Control panel



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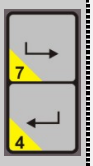
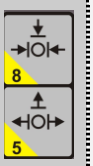
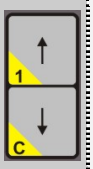
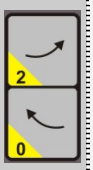
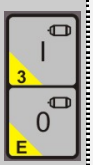
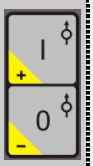
3.2.1. Control panel description

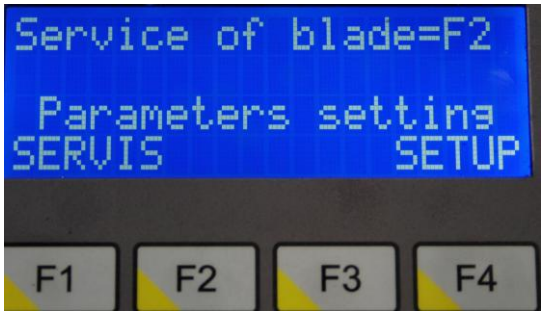
1	**LCD Display** Onto display are described all runnind processes, control with functional buttons **F1-F4**
2	**Control buttons / numeric keypad**
	**No function**
	**Clamp / release vice clamp**
	**Clamp / release vice** In manual cycle pressing and holding the button allows you to release pressure or clamping vise. .
	**Cooling system selection** Cooling with Microniser (optional cccessories) Cooling with water cooling pump runs even when the saw band drive isswitch off.
	**Movement of the arm** Pressing and holding a button or trigger arm lifts the lifting hydraulic cylinder. When lifting the arm using the arm can be lifted in its entirety lifting cylinder. On the down can be activated by simultaneously pressing the **rapid move** functional button F1.
	**No function**
	**Turn on / off the band drive** In manual mode the button is displayed "I" switched band drive, the button with the symbol "0" switch off
	**Turn on / off the hydraulic circuit** Button with the symbol "I" turns the hydraulic circuit, the button with the symbol "0" disables the hydraulic circuit. The hydraulic circuit is automatically switched on when needed.
3	**Safety circuit** Switch on the safety circuit by pressing button.
4	**Button START - Switch on the semi-automatic cycle** After pressing the button will start the cutting cycle

5	**Selecting a mode machines** 0 for servicing and settings manual mode semi-automatic mode **Note**: The functions performed in both manual and semi-automatic mode are the same, but only in semi-automatic cycle it is possible to use the START / STOP (ie start / off cycle)
6	**Button STOP - Switch off on the semi-automatic cycle** After pressing the button will turn off the interruption or of cutting cycle
7	**TOTAL – STOP button** In emergency causes the machine must be immediately switched off.
8	**Frequency convertor** Turn to change the speed of the saw band in the range of 20-120 m / min
9	**Cutting pressure manometer** Pointer to cut pressure adjustment
10	**Cutting pressure regulation** Adjust the arm pressure to the cut. **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.
11	**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.

3.3. Machine setup

Machine setup mode is activated by switch on control panel. Switch must be in **"0"** position.

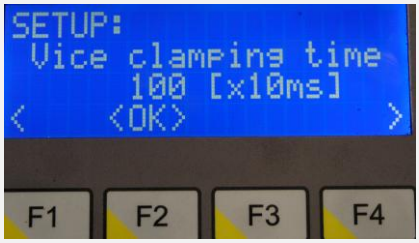
After swiching into position "0" is displayed on LCD this screen.



3.3.1. SERVIS

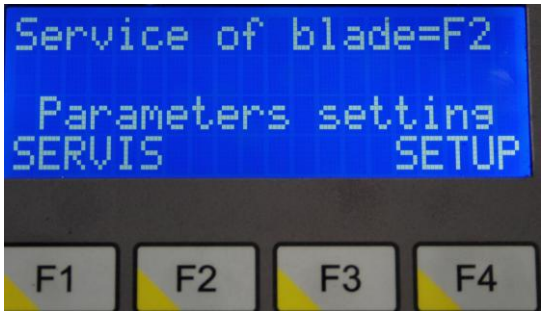
After pressing the **F1** functional key can be set servis parameters that are password protected (947).

Control and movement in SERVIS can be set using the function keys **F1 - F4.**

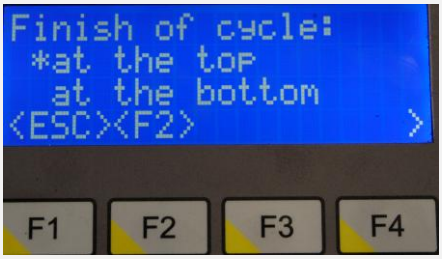
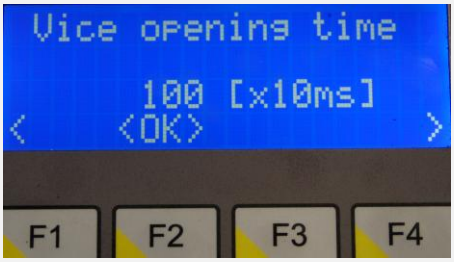
On display	Descriptiom
	**Blade speed correction** • Constant for calculation of blade speed display values from analog input. • **F1** go back, **F4** next menu screen, **F2** enter value
	**Sensor** • Display variable sensor arm (optional accessories) • Use to check the functionality of the sensor on the arm • Read only • **F1** go back, **F4** next menu screen
	**Vice clamping time** • Watch vice clamping time in ms. • **F1** go back, **F4** next menu screen, **F2** enter value
	**The type of machine.** • Display the machine type (the value set by the manufacturer) • Read only

3.3.2. SETUP

After pressing the **F4** functional key can be set setup parameters that are not password protected.



Control and movement in SETUP can be set using the function keys **F1 - F4.**

On display	Description
	**Finish of cycle** • At the top – arm after cut starts above the material and cutting cycle ends • Athe the bottom – arm after cut remains in the lower position, the above material does not exit • **F1** go back, **F4** next menu screen, **F2** enter value
	**Turn off motor after cut** • Up position – saw arm move up after cut and then turn off drive of saw blade. • Down position – drive of saw band turn off immediately after cut. • **F1** go back, **F4** next menu screen
	**Upper vice** • Allows to able / disable the upper vice in the cutting process • **F1** go back, **F4** next menu screen, **F2** enter value
	**Vice mening time** • Watch vice opening time in ms. • **F1** go back, **F4** next menu screen, **F2** enter value

Upper vice opening time

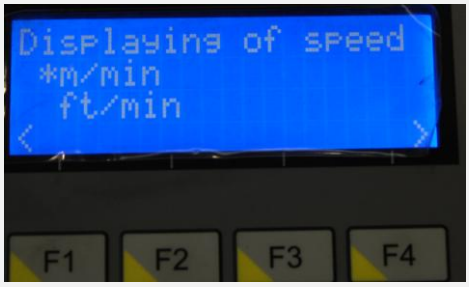
- Watch upper vice opening time in ms.
- **F1** go back, **F4** next menu screen, **F2** enter value

Switch off hydraulic

- Setting the hydraulic unit off when idle machines
- **F1** go back, **F4** next menu screen, **F2** enter value

Language

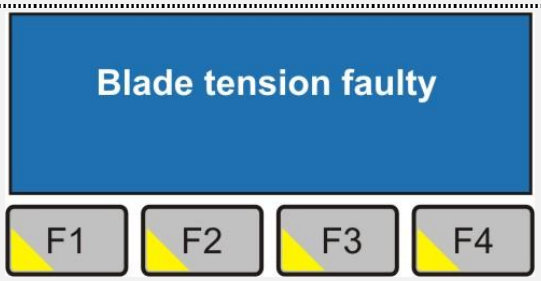
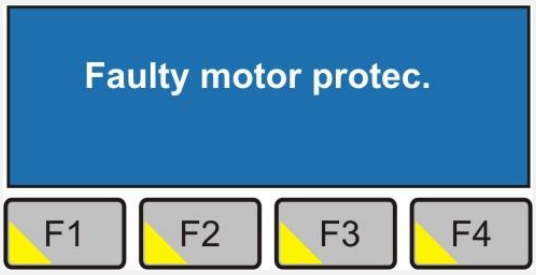
- Choose menu language
- **F1** go back, **F4** next menu screen, **F2** enter value



Displaying of speed

- Displaying of band speed according to the selected units
  (m / min or ft / min)
- **F1** go back, **F4** next menu screen, **F2** enter value

3.4. Machine error messages

Error	Information
	Saffety button (pos. 2 on kontrol panel) is not ON. Press **F4** to confirm error.
	Total Stop button is active. Turn button **TOTAL STOP** according to the arrows. Press **F4** to confirm error.
	Saw blade in properly tensioned. Press **F4** to confirm error.
	Engine temperature protection is active. **Do not overload saw!** Press **F4** to confirm error.

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3.5. Machine control

3.5.1. Semi-automatic cycle

1. Lift the saw arm to the top position by pressing button 

.
2. Open the vice by pressing button 

.
3. Clamp material to the vice by pressing button 

.
4. Lower the frame about 10 mm above the material by button 

.

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!

5. Select the max. height of the arm with limit switch.

   You can clear the register of the performed cycles by button 

and stop on 5 seconds.
6. Press button **START** (position **4**) of semi-automatic cycle.

   Set the saw band speed according to the kind of the cutting material.

   Set the speed of the arm sinking by adjust governing valve (position **10**).

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"!

7. The band saw clamps the material to the vice and it makes the cut.
8. Open the vice. If the vice is not opened, you can open it by button 

. Remove the blank ((cut off a piece of material).
9. You can repeat whole process.

3.5.2. Cycle breaking

»

- **STOP button**

  Semi-automatic cycle is interrupted by pressing button **STOP** (position **6**) of the semi-automatic cycle.

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

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

- **TOTAL STOP button**

  In case of the risk, press button **TOTAL STOP** (position **7**).

  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 (position **3**).
  3. By pressing button **START** (position **4**) 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.

3.6. Band saw adjusting

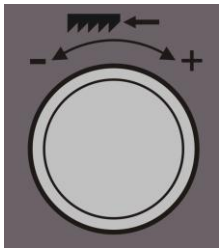
3.6.1. Adjusting band guides

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

1. Press button ***STOP*** (pozice **6)** to switch off the hydraulics and stop on 2 second.
2. Release the stopping lever of the listel (see picture).
3. Move the left part of the guide apparatus so that the left guide cube edge is as close to the cut material as possible.
4. Tighten the lever of the gib and check the guide cube setting for possible collision with binding table or vice jaw.

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

3.6.2. 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 by button ***8*** (position on control panel) to adjust requested speed of the saw band. You can see the speed on display. Band speed is displayed on the screen **1** (position on control panel) during one semi-automatic cycle.

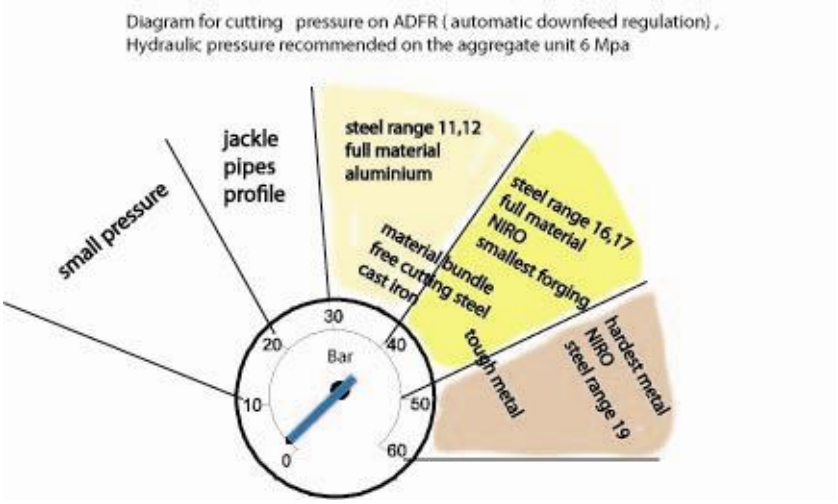
3.6.3. Adjustment of pressure to the cut

The band saw ***Extend 800.620*** is equipped with cutting pressure regulation on the both guiding cubes.

Pressure adjusting is performed with governing valve **11** (position on control panel). The pressure to the cut is displayed on the cutting pressure manometer **9** (position on control panel) .

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.

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.

3.6.4. Speed adjustment of the arm lowering

Set the speed of the arm lowering to the cut by control valve for Cutting pressure regulation **10** (position on control panel).

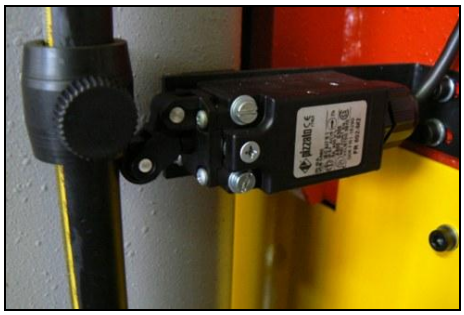
- Set the lower speed of the arm lowering to the cut by turning the switch clockwise.
- Set the higher speed of the arm lowering to the cut by turning the switch anti-clockwise.

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.

3.6.5. Saw frame lift stop setting

Notice:
Arm Position is monitored by a limit switch. If the limit switch lever hits the bar and goes, then you can not run a semi-automatic cycle.

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. Height adjustment is sensed by a limit switch
2. Press button 

and lift the saw arm to the upper position.
3. Insert a material into the vice. Carefully lower the saw arm button 

to the material.
4. Stop the saw arm 10mm above the material.
5. The lift stop setting is sensed by the limit switch

   Set the stop just above arm height sensor - slide stop turning the locking knob close to the limit switch

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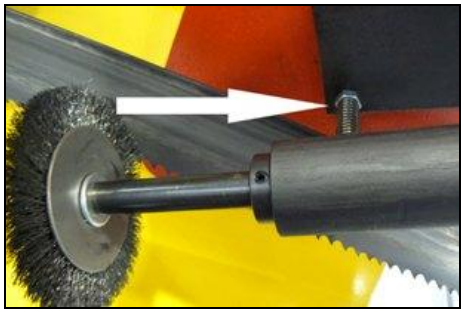
3.6.6. Setting the upper camping

The band saw ***Extend 800.620*** is equipped with upper clamping on the main vice of the band saw.

The upper clamping operates automatically with the main vice. Use the valve to switch off the upper clamping.

3.6.7. Brush adjustment

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



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

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

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

3.7. 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 injur

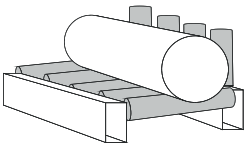
3.7.1. Handling agent selection

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

3.7.2. Insertion

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

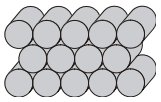
Make sure the conveyor is long enough and the material cannot tip off the conveyor.



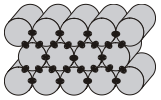
Be especially careful with round materials that it always stays on two vertical rollers and that it cannot fall off the conveyor!

3.7.3. Bundle material cutting

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



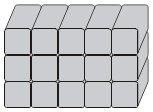
Round material bundle: Take care especially with round material that the bars are put according to the picture. If the bars are put differently, you may have problems with movement.



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

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

Square 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.

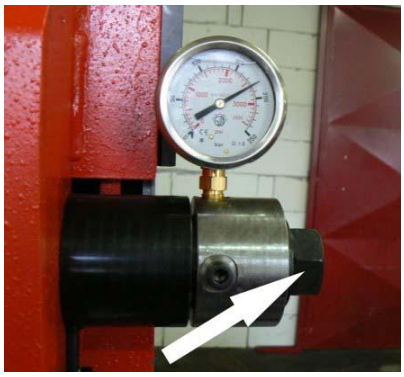
4. Machine service

4.1. Saw band dismantling

1. Press button **8** to lift the saw arm to maximum position.
2. ***STOP hydraulic*** with button **5**.

3. Open the covers of both driving wheels.

4. Dismantle left protective cover of the band (arrow). Cover is fastened by screws..
5. Release the screw holding the brush. Turn the brush to the side



6. Release the saw band stretching by means of screw (arrow), until it is possible to remove the band off the wheel.
7. Pull down the band from the wheels.
8. Pull up the saw band from the 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.

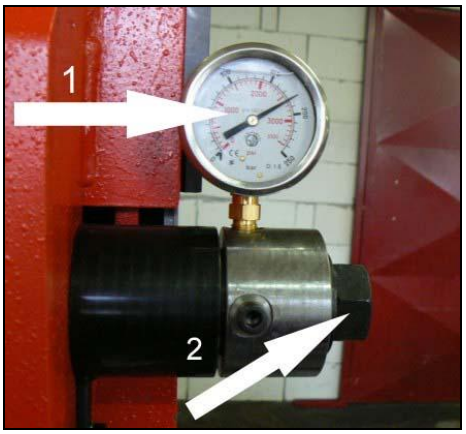
5. Install yellow protective cover of the band.
6. Move the brush to the saw band. Tighten the securing screw.
7. Close the covers of both driving wheels.
8. Saw band installation is finished.

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

- Switch on the hydraulic aggregate after the saw band installation check the saw band stretching on the manometer (arrow 1).



- Use the screw (arrow 2) to stretch the saw band until it is stretched to the recommended value.

4.3.2. Saw band inspection

Check the saw band in the guiding cubes and on the wheels

1. Check, if the saw band is right in the guiding cubes..
2. Switch on the saw band drive and then after 10 seconds switch off saw band drive. If the saw band drive is not possible to switch on, set the limit switch of the saw band stretching.
3. Switch off the main switch.
4. Open cover(s) of the wheels and check position of the saw band on the both wheels..

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

5. Close cover of the saw band.

4.3.3. 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.

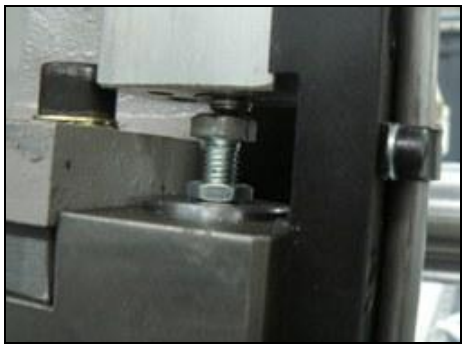
4.4. Adjusting of the limit switch of the saw band stretching

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

- Tighten the saw band by means of the TENZOMAT on the optimal value (table is on the Tenzomat).

- If the drive engine is switched on, but it is not running, turn with the screw clockwise, until the engine begins run..
- If the drive engine is possible switched on, turn with the screw anticlockwise, until the engine is stopped and then turn with the screw clockwise, until the engine begins run.

4.5. 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.

4.6. 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. Limit switch adjustment of the saw frame lower positron

If we had adjusted lower stop point of the saw frame, the limit switch adjustment inspection is required.

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.

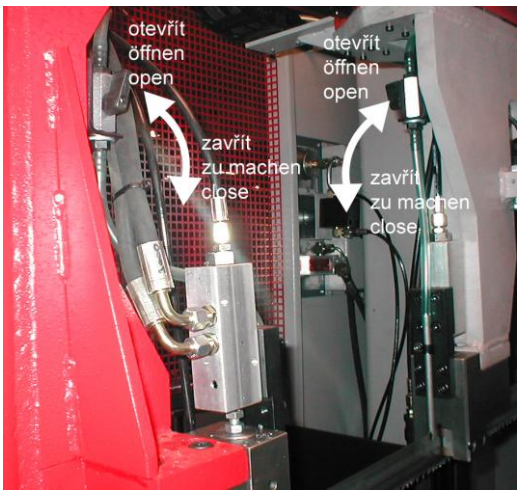
4.8. Adjustment of the cutting pressure regulation

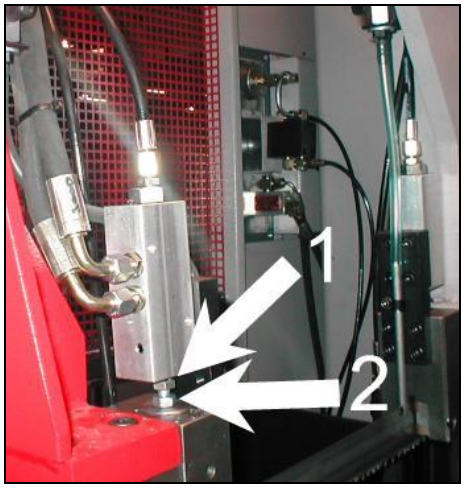
This chapter describes the basic speed setting of arm sinking to the cut for idle run. Saw is equipped with cutting pressure regulation on both guiding cubes. Cutting pressure regulation is set separately on every guiding cube.

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.

Left guiding cube **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

1. Open the tap on the left guiding cube. Close it on the right guiding cube.
2. Set the cutting pressure regulation on the left guiding cube in the same way.
3. Open taps on both guiding cubes after pressure regulation setting. **ATTENTION!** Both taps must be opened during operation!
4. 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:
• use of contaminated water • impurity • outside oil contamination (hydraulics, gears) • high operating temperatures • lack of air circulation • wrong concentration	• corrosion protection is diminished • lubrication decreases • microbial attack is more likely	• the cooling ability is decreased • foam behaviour increases • emulsions stability deteriorates • sticky residue develops

4.9.1. Coolant device inspection

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

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

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

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

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

* according to manufacturers' instructions

4.9.2. Chips disposal

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

- Let the chips drip excess fluid!.
- Fill a watertight container with the chips! Be careful that the container does not leak, because even after a long dripping time, they still contain coolant residue.
- *Place the container into the care of a disposal company equipped for the disposal of chips contaminated with cooling liquid.* In case the machine is equipped with micro-spray installation, the chips must also be handed over to a disposal company.

4.10. Hydraulic, Greases and oils

4.10.1. 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 800.620	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

4.10.2. Lubricant greases

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

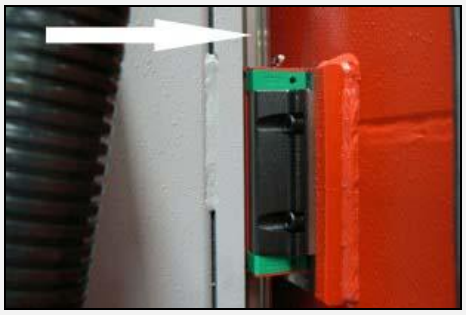
Comparative table of the lubricant greases:

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

Manufacturer	Type of the lubricant grease
Texaco	Multifak EP1

4.10.3. 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.

4.10.4. 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		

4.10.5. 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.

4.11. 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.

4.12. Worn pieces replacement

4.12.1. Pushing bearing replacement

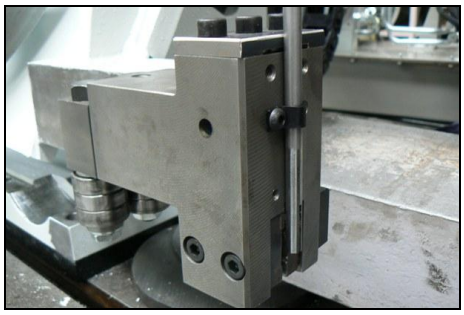
If it is impossible to adjust the bundle gripping assembly and the pushing bearing is worn, it needs to be replaced.

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.

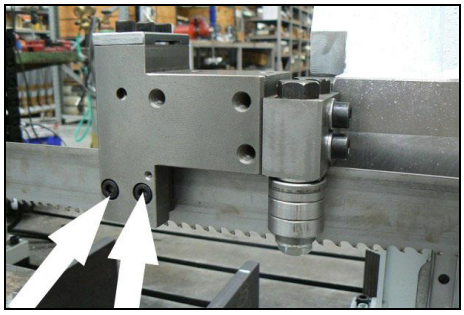
If the bearing is worn, there is a visible channel on it.

Bearing replacement:

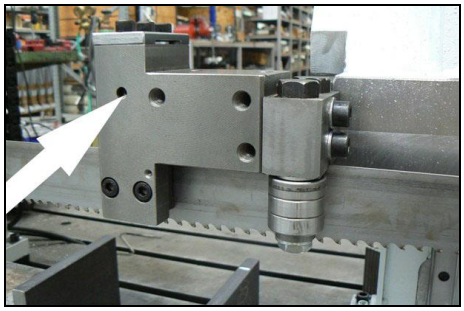
1. Dismantle the saw band.



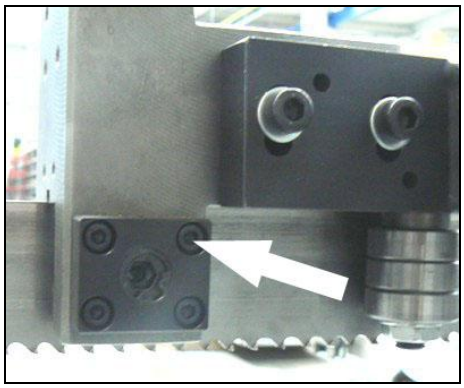
2. Disconnect the hose from the cooling agent.



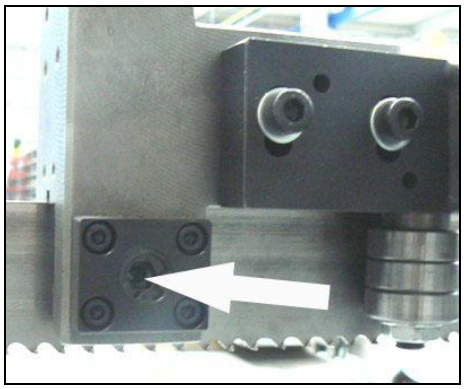
3. Release 2 Screws.



4. Release the fixative pin of the bearing holder.



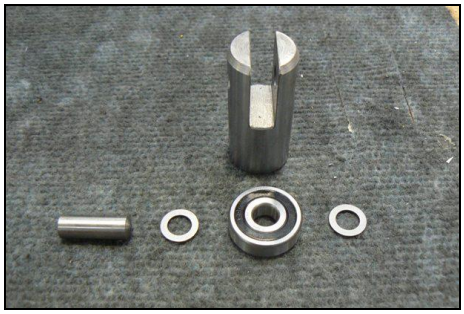
5. Release 4 screws.



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.

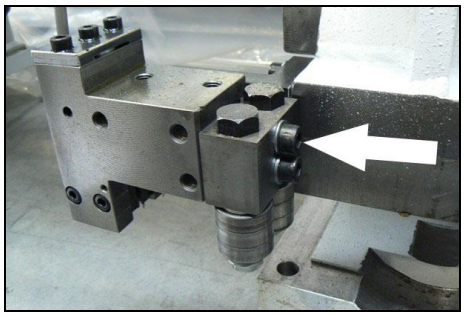
Attention:
The vice has aluminium jaws, eventually, there has to be an aluminium agent to protect the pivot from damage.

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.

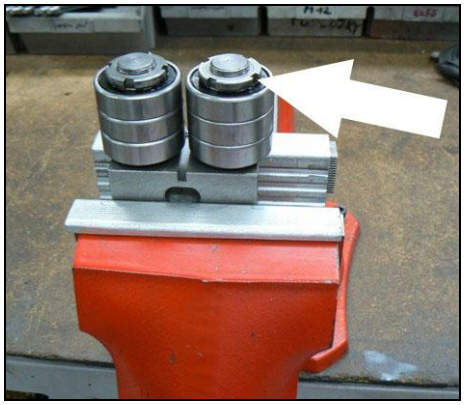
4.12.2. Saw band guiding pulleys replacement

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!



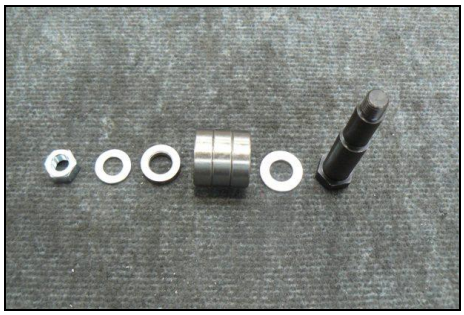
1. Release 2 screws. Dismantle the guiding cube of the saw band.



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

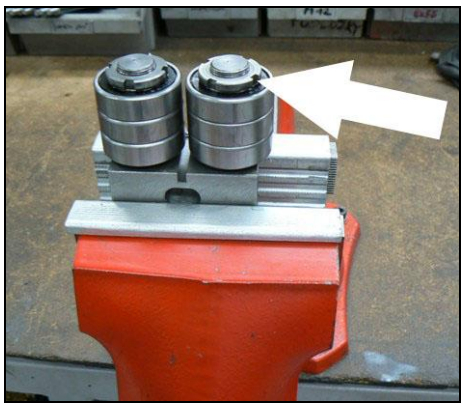
Attention:
Mark both eccentrics placing and components on the eccentric!
Eccentrics must not be replaced with each other!

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.

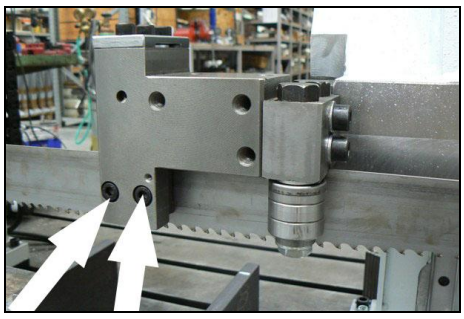
   Optimal distance between the band and the pulley is 0,05 mm.

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.

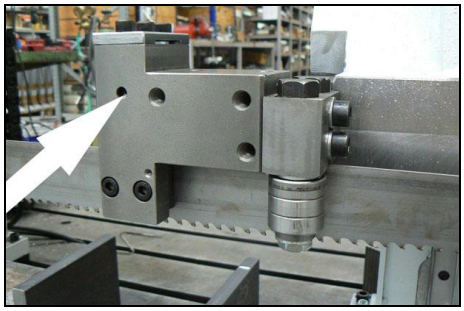
4.12.3. Hard metal guides replacement

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!

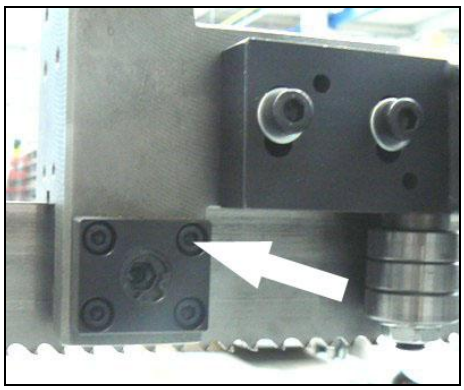
1. Disconnect the hose from the cooling agent.



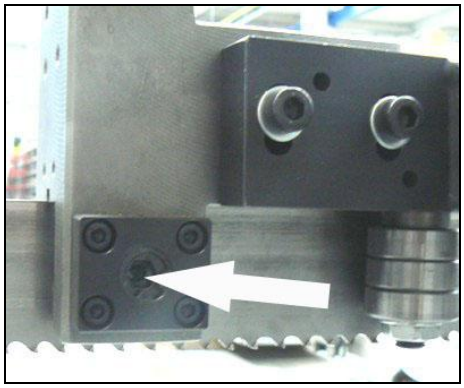
2. Release 2 screws.



3. Release the fixative pin of the bearing holder.



4. Release 4 screws.



5. Release centric screws M10..

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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.

4.12.4. 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.

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5. Závady / Troubleshooting

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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.

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Manual rev.: 1

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.	- Backslash in driving wheel lodgement on the shaft.	Change the driving shaft for a long one, new bearings, distance ring, new driving wheel, spring, two covers on the forehead of the shaft + screws.
	- Worn channel for spring.	

5.2. Electric and hydraulic problems

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

6. Schémata / Schemas / Schematics

6.1. Elektrické schema/ Elektroschema/ Wiring diagrams – 3x400 V, PE+N

Obsah/ Table of contents/ Inhaltsverzeichnis

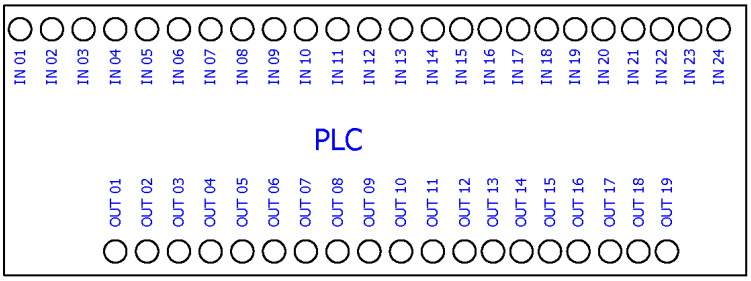
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno

Stroj/Machine/Maschine:
Extend 800.620

Název stránky/Name page/Name seiten:
I/O řídící systém / I/O Control station / I/O Steuerung

C.proj./Projekt/Projekt:
Napětí/Power supply/Einspeisung: 3x400V+PE+N, 50Hz
Datum/Date/Datum: 13.12.2012
Zpracoval/Processed/Hat verarbeitet: HAL,TAK
ES.6130-201/v6.1
List: 02
Listů: 19

Extend 800.620



HW	
FW	

Pohled ze spodu/From under view/Blick nach

I/O	CZE	ENG	DE
IN 01	Svěrák upnut	Vice is clamped	Schraubstock ist gespannt
IN 02	Rameno dole	Arm is down	Rahmen ist unten
IN 03	Rameno nahoře	Arm is up	Rahmen ist oben
IN 04	Napnutí pásu	Blade tension	Bandspannung
IN 05	Motory OK	Motors OK	Motoren OK
IN 06	Bezpečnostní okruh uzavřen	Safety circle shut down	Sicherheitsschaltung gesperrt
IN 07	Tlačítko TOTAL STOP	Button TOTAL STOP	Taste TOTAL STOP
IN 08	Tlačítko START	Button START	Taste START
IN 09	Tlačítko STOP	Button STOP	Taste STOP
IN 10	MANUAL	MANUAL	MANUAL
IN 11	CYKLUS	CYCLE	ZYKLUS
IN 12	Kolize kostky	Cube collision	Klotzkollision
IN 13	NC	NC	NC
IN 14	NC	NC	NC
IN 15	NC	NC	NC
IN 16	NC	NC	NC
IN 17	NC	NC	NC
IN 18	NC	NC	NC
IN 19	Tlačítko napnout pás	Button band tension	Taste band spannen
IN 20	Tlačítko povolit pás	Button band release	Taste band lösen
IN 21	Tlačítko rameno nahoru	Button arm up	Taste Rahmen nach oben
IN 22	NC	NC	NC
IN 23	Přítlak upnut	Upper vice is clamped	Ober Schraubstock ist gespannt
IN 24	NC	NC	NC
OUT 01+	Start FM1	Start FM1	Start FM1
OUT 01-			
OUT 02+	NC	NC	NC
OUT 02-			
OUT 03+	NC	NC	NC
OUT 03-			
OUT 04	Motor chlazení	Coolant pump	Motor Kühlung
OUT 05	Čerpadlo hydrauliky	Hydraulic pump	Hydraulikpumpe
OUT 06	2.stupeň hydrauliky	Second level of hydraulic pump	Hydraulikpumpe 2.Stufe
OUT 07	Svěrák upnout	Vice clamp	Schraubstock spannen
OUT 08	Svěrák povolit	Release vice	Schraubstock lösen
OUT 09	NC	NC	NC
OUT 10	NC	NC	NC
OUT 11	Rameno nahoru	Arm up	Rahmen nach oben
OUT 12	Rameno dolů	Arm down	Rahmen nach unten
OUT 13	Rameno rychle	Arm fast	Rahmen schnell
OUT 14	Přítlak upnout	Upper vice clamp	Ober Schraubstock spannen
OUT 15	Přítlak povolit	Release upper vice	Ober Schraubstock lösen
OUT 16	Napnout pás	Sawblade tension	Spannen des Sägebandes
OUT 17	Uvolnit pás	Sawblade leave	Entspannen des Sägebandes
OUT 18	Mikronizer	Microniser	Mikronizer
OUT 19	Kontrolka start	Indicator start	Kontrollicht start

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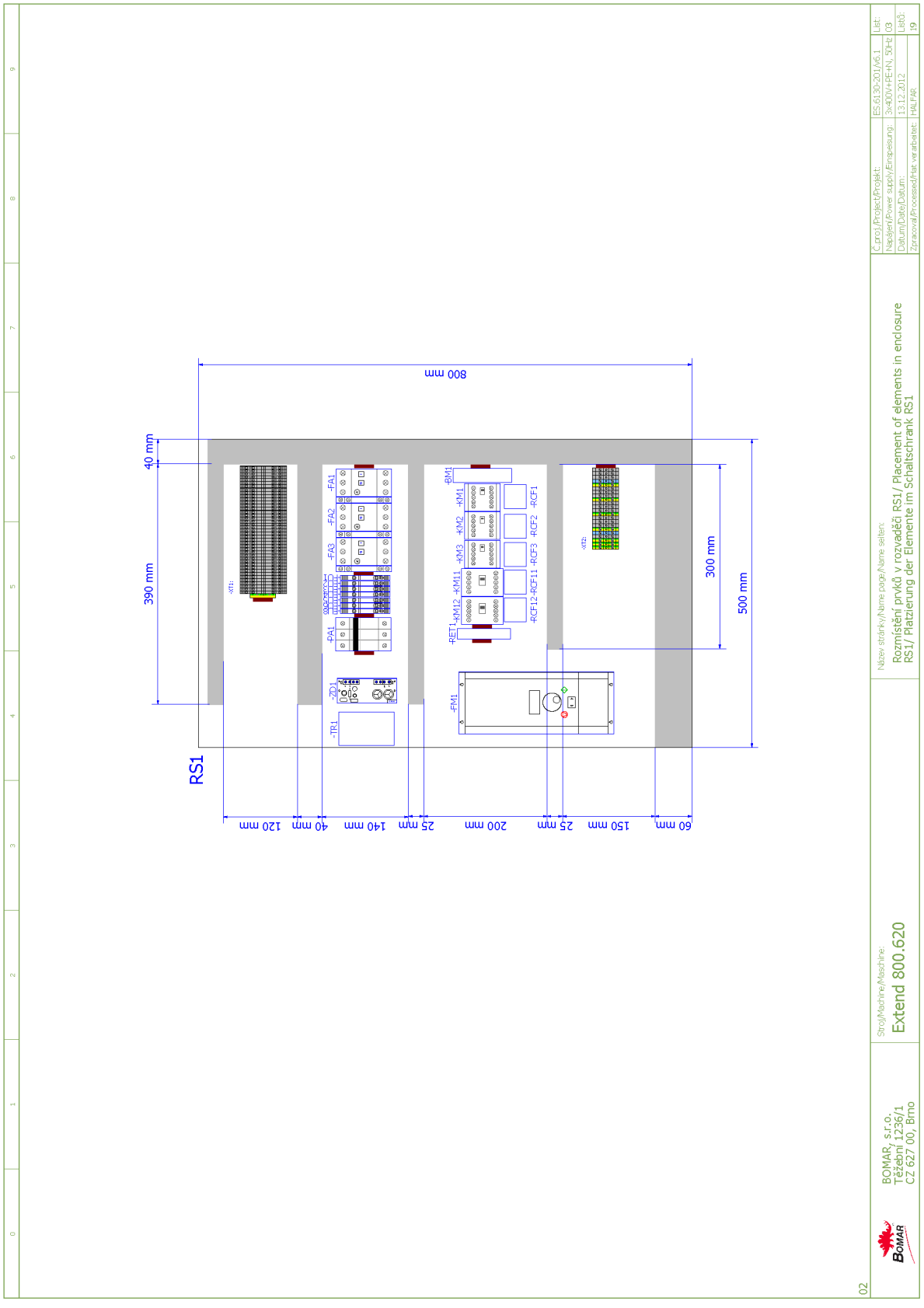
Manual rev.: 1


800 mm
40 mm
390 mm
300 mm
500 mm
RS1
120 mm
40 mm
140 mm
25 mm
200 mm
25 mm
150 mm
60 mm
-XT1:
-FA1
-FA2
-FA3
-DA1
-ZD1
-TR1
-BM1
-KM1
-KM2
-KM3
-KM11
-KM12
-RCF1
-RCF2
-RCF3
-RCF11-RCF12
-RET1
-FM1
-XT2:
02
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno
Stroj/Machine/Maschine:
Extend 800.620
Název stránky/Name page/Name seiten:
Rozmístění prvků v rozvaděči RS1/ Placement of elements in enclosure
RS1/ Platzierung der Elemente im Schaltschrank RS1
Č.proj./Project/Projekt:
ES 6130-201/V6.1
Napájení/Power supply/Einspeisung:
3x400V+PE+N, 50Hz
Datum/Date/Datum:
13.12.2012
Zpracoval/Processed/Hat verarbeitet:
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03
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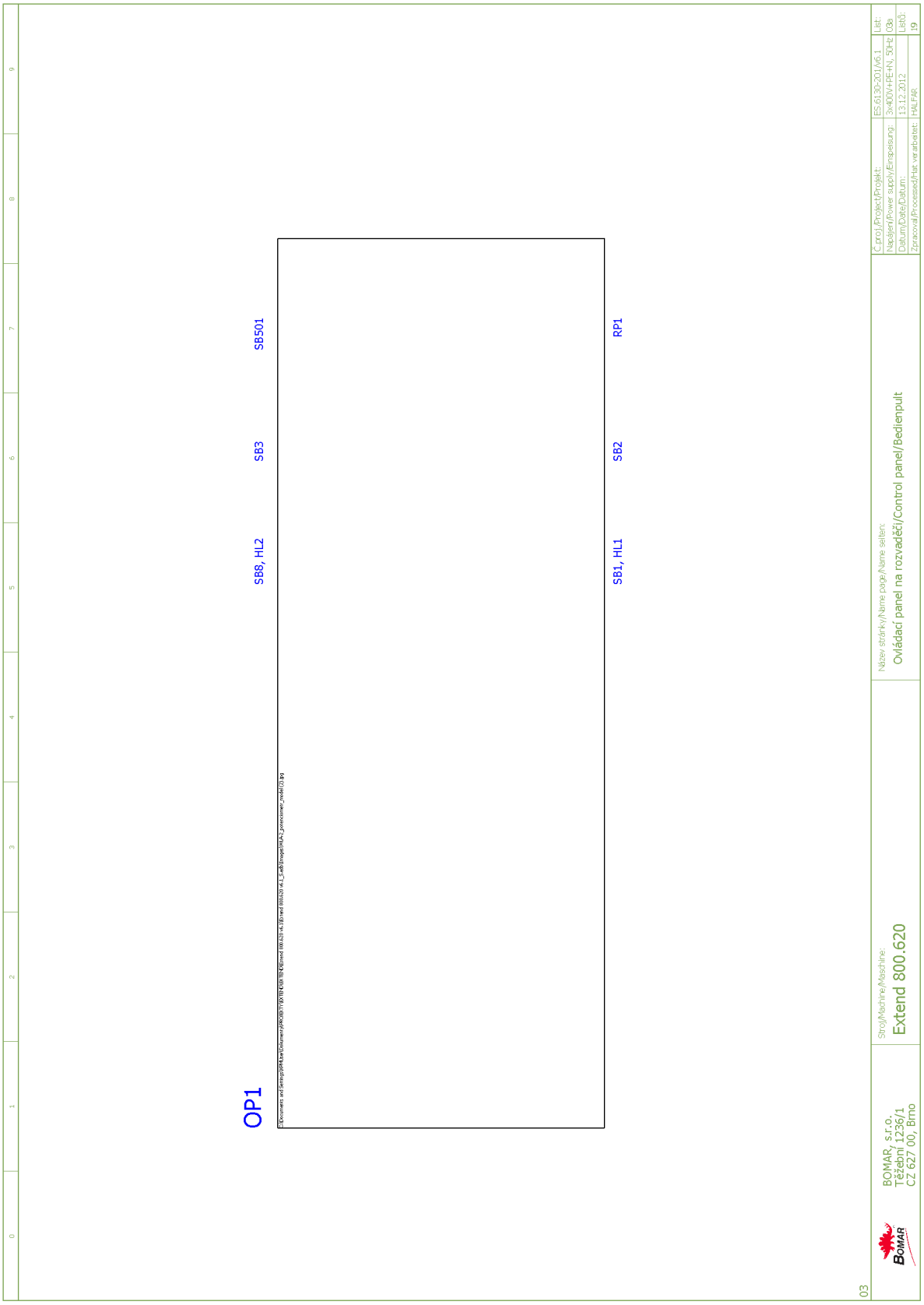
19


OP1
SB8, HL2
SB3
SB501
SB1, HL1
SB2
RP1
BOMAR, s.r.o.
Těžební 1236/1
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Č.proj./Project/Projekt:
ES.6130-2011/V6.1
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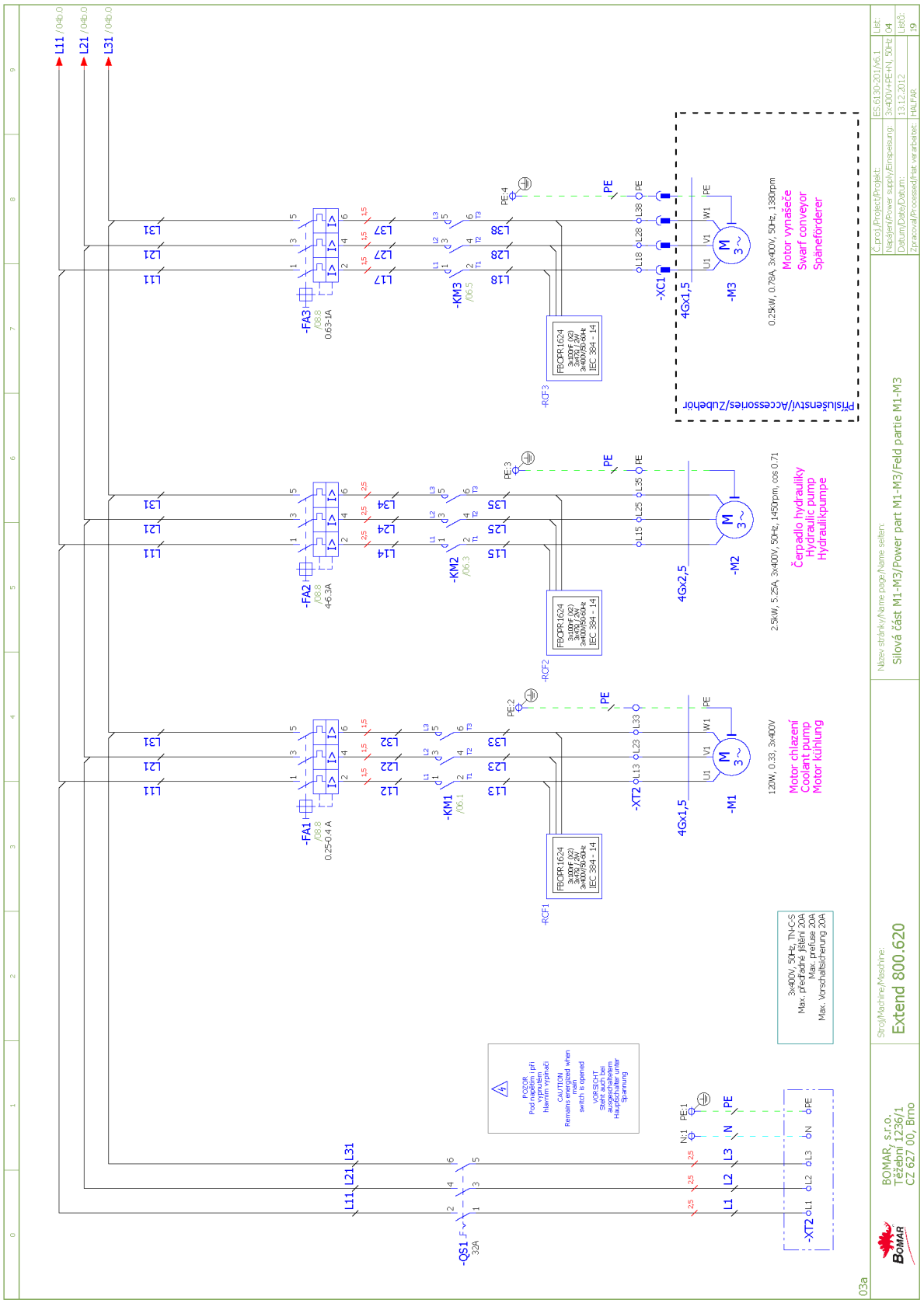
L11 /04b.0
L21 /04b.0
L31 /04b.0
-FA3
-KM3
-XC1
4Gx1,5
-M3
Motor vynašeče
Swarf conveyor
Späneförderer
0.25kW, 0.79A, 3x400V, 50Hz, 1380rpm
Příslušenství/Accessories/Zubehör
-RCF3
-FA2
-KM2
-M2
4Gx2,5
Čerpadlo hydrauliky
Hydraulic pump
Hydraulikpumpe
2.5kW, 5.25A, 3x400V, 50Hz, 1450rpm, cos 0.71
-RCF2
-FA1
-KM1
-XT2
-M1
Motor chlazení
Coolant pump
Motor kühlung
120W, 0.33, 3x400V
-RCF1
-QS1
32A
-XT2
3x400V, 50Hz, TN-C-S
Max. předřadné jištění 20A
Max. preifuse 20A
Max. Vorschaltsicherung 20A
BOMAR, s.r.o.
Třebíčská 1236/1
CZ 627 00, Brno
Stroj/Machine/Maschine:
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Č.proj./Projekt/Projekt:
ES 6130-201/V6.1
Napájení/Power supply/Einspeisung:
3x400V+PE+N, 50Hz
Datum/Date/Datum:
13.12.2012
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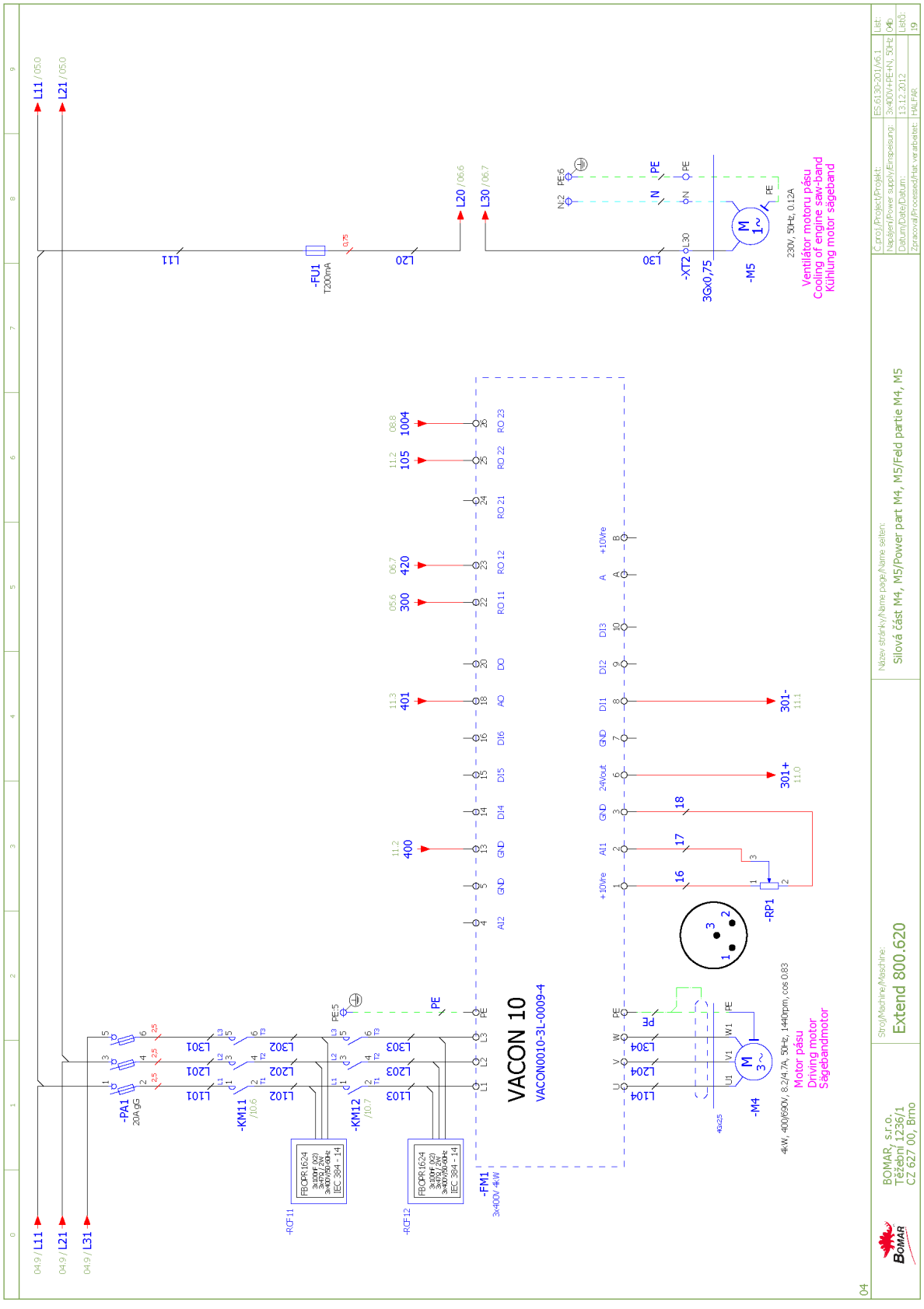
VACON 10
VACON0010-3L-0009-4
-FM1
-PA1
20A gG
-KM11
-KM12
-RCF11
-RCF12
-FU1
T200mA
-XT2
3Gx0,75
-M5
230V, 50Hz, 0,12A
Ventilátor motoru pásu
Cooling of engine saw-band
Kühlung motor sägeband
-M4
4kW, 400/690V, 8,2/4,7A, 50Hz, 1440rpm, cos 0,83
Motor pásu
Driving motor
Sägebandmotor
-RP1
Silová část M4, M5/Power part M4, M5/Feld partie M4, M5
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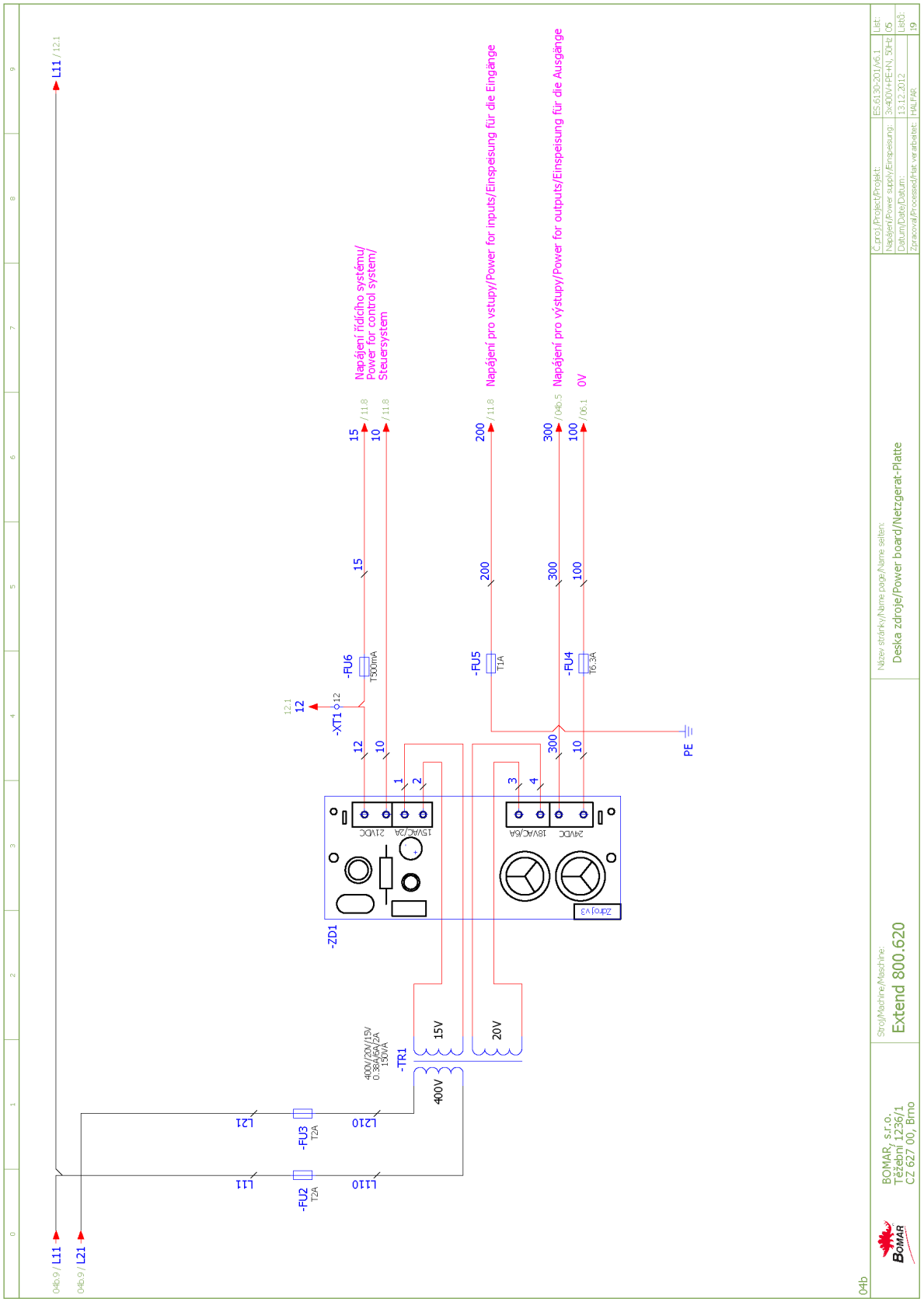
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno


L11 /12.1
L21
Napájení řídícího systému/
Power for control system/
Steuersystem
Napájení pro vstupy/Power for inputs/Einspeisung für die Eingänge
Napájení pro výstupy/Power for outputs/Einspeisung für die Ausgänge
0V
PE
-XT1
-FU6 T500mA
-FU5 T1A
-FU4 T6.3A
-FU3 T2A
-FU2 T2A
-TR1
400V/220V//15V
0.38A/64/2A
150VA
15V
20V
400V
-ZD1
15VAC/2A
21VDC
18VAC/6A
24VDC
Deska zdroje/Power board/Netzgerat-Platte
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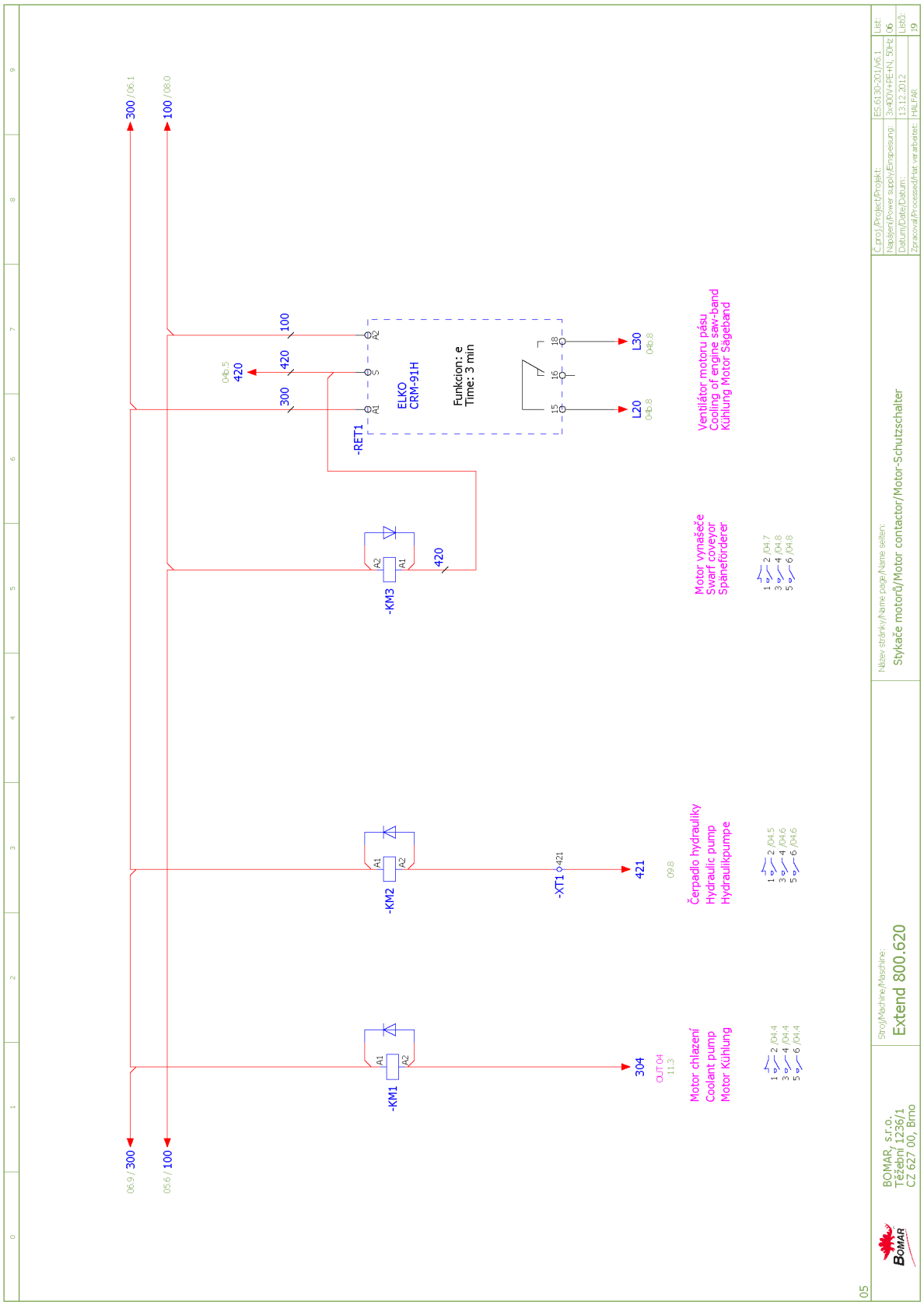
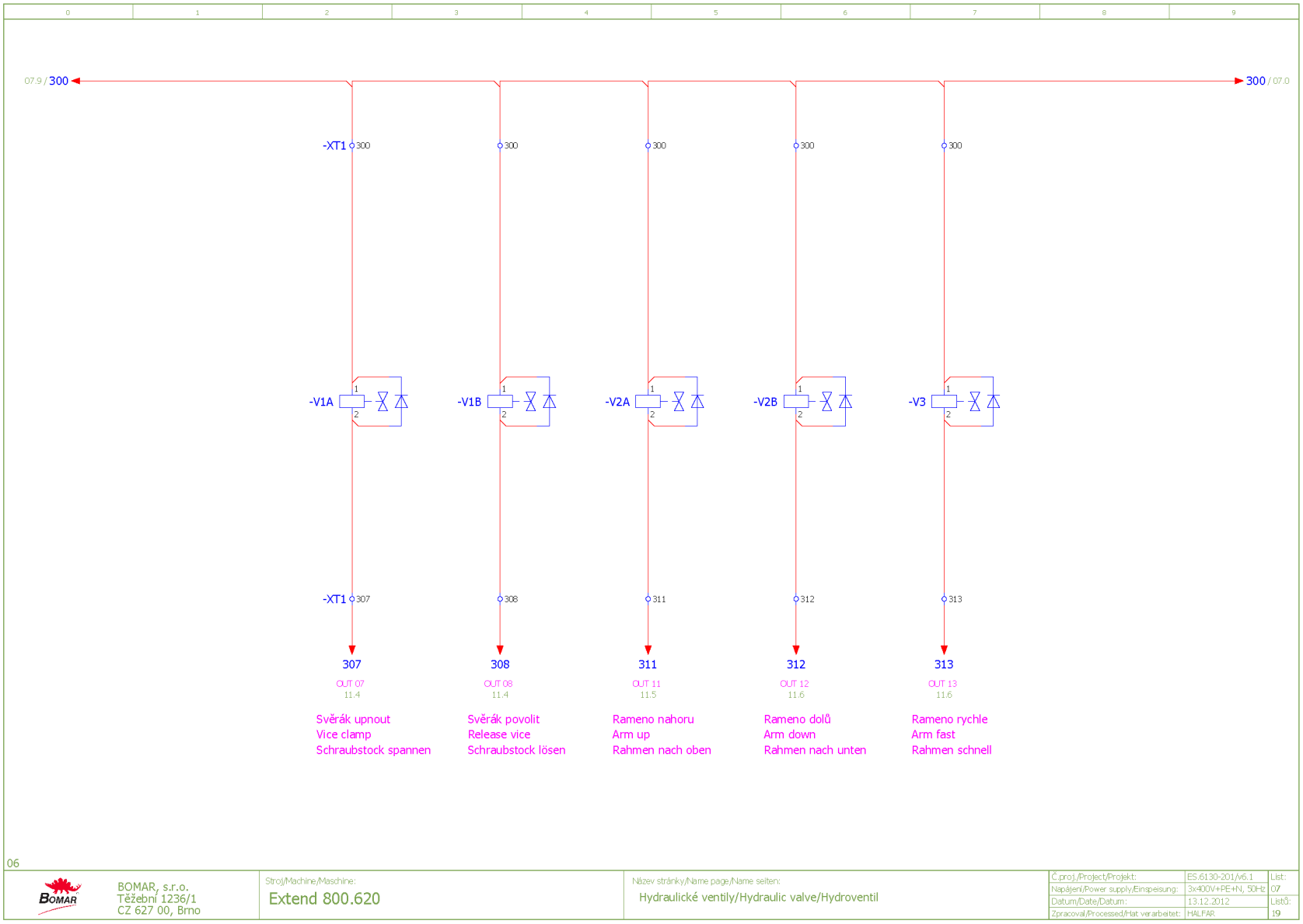
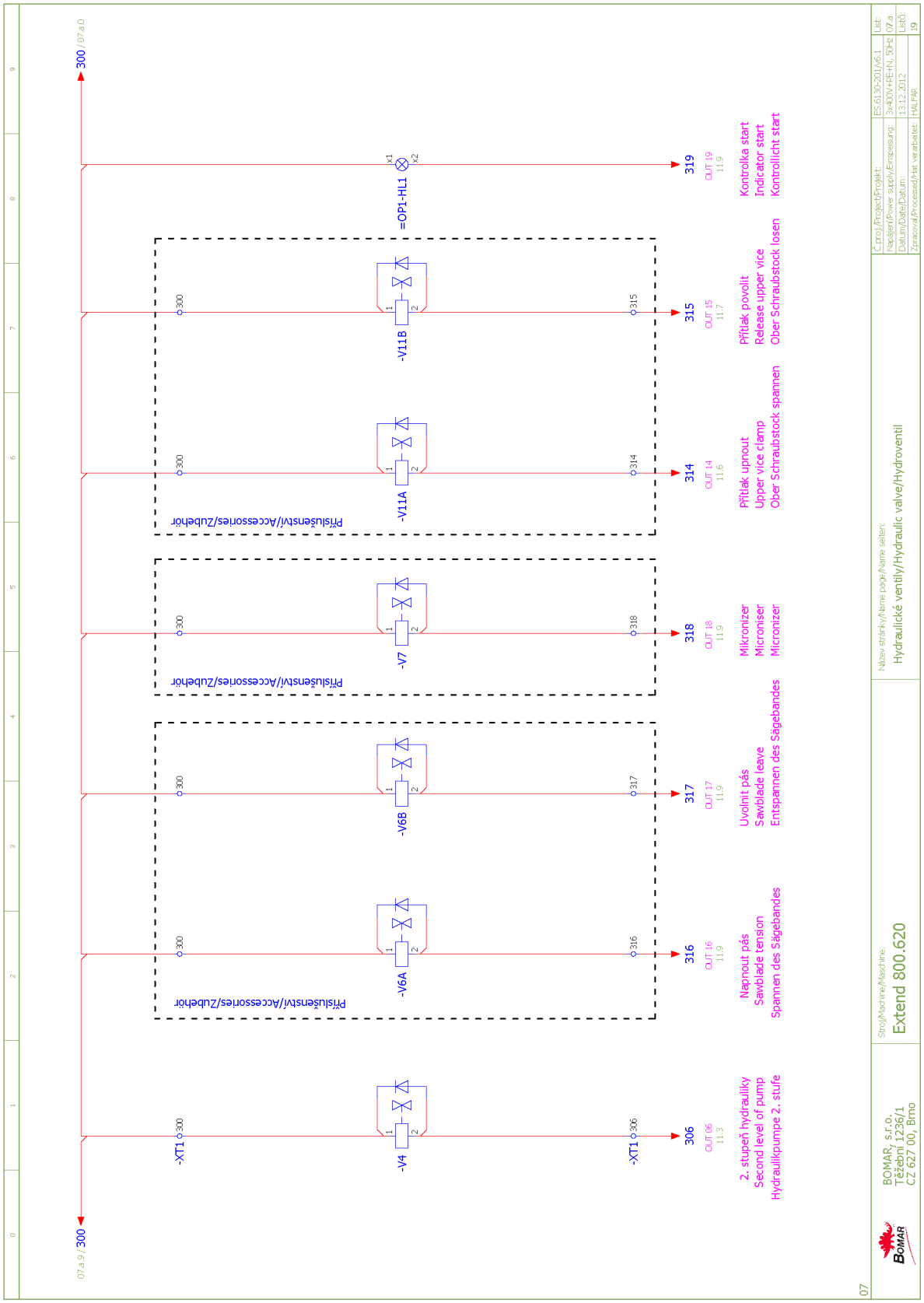
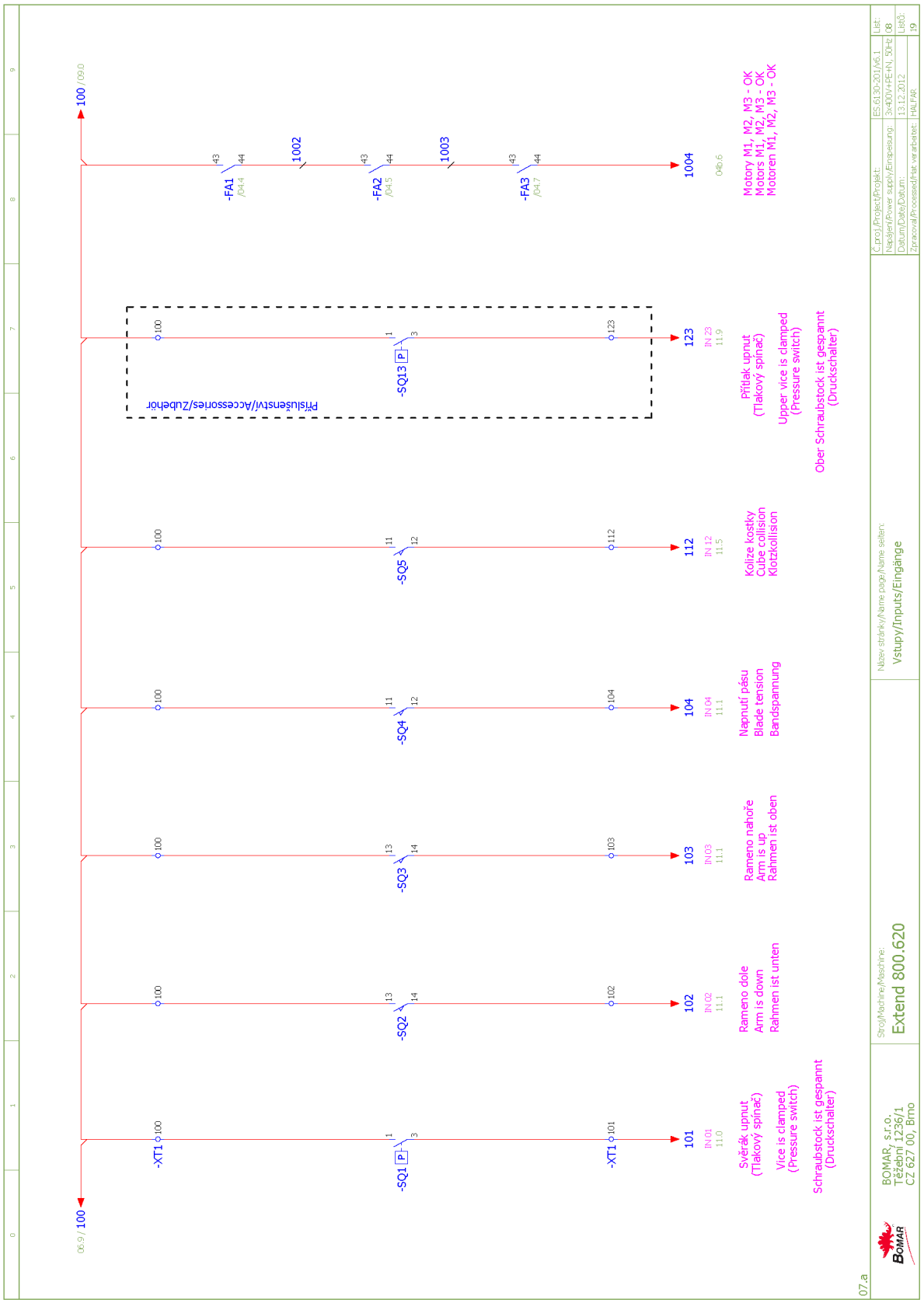
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno

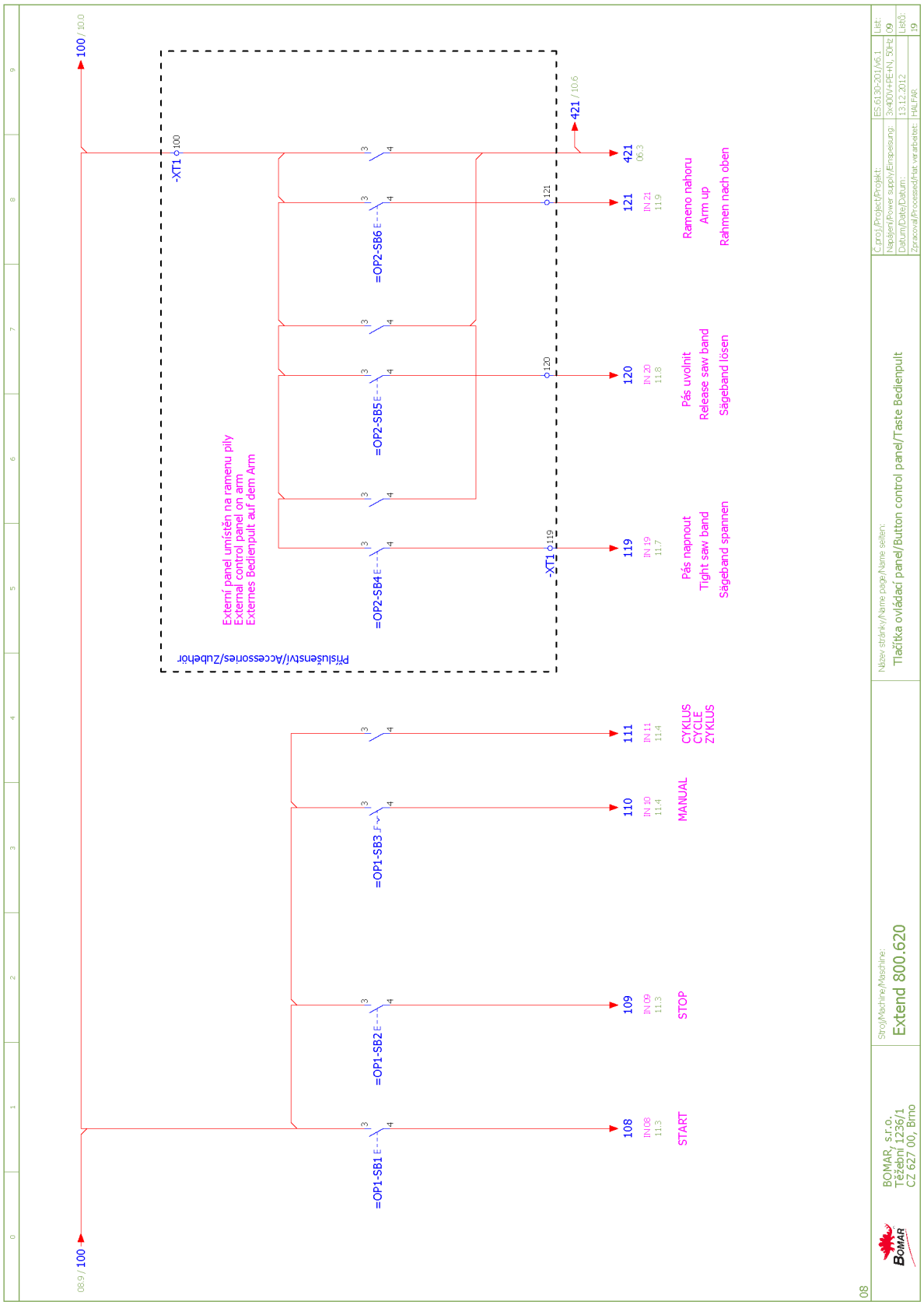

300 / 06.1
100 / 08.0
06.9 / 300
05.6 / 100
-KM1
-KM2
-KM3
-RET1
-XT1
ELKO
CRM-91H
Funkcion: e
Time: 3 min
304
421
420
100
300
L20
L30
Motor chlazení
Coolant pump
Motor Kühlung
Čerpadlo hydrauliky
Hydraulic pump
Hydraulikpumpe
Motor vynašeče
Swarf conveyor
Spänefördere
Ventilátor motoru pásu
Cooling of engine saw-band
Kühlung Motor Sägeband
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno
Stroj/Machine/Maschine:
Extend 800.620
Název stránky/Name page/Name seiten:
Stykače motorů/Motor contactor/Motor-Schutzschalter
05

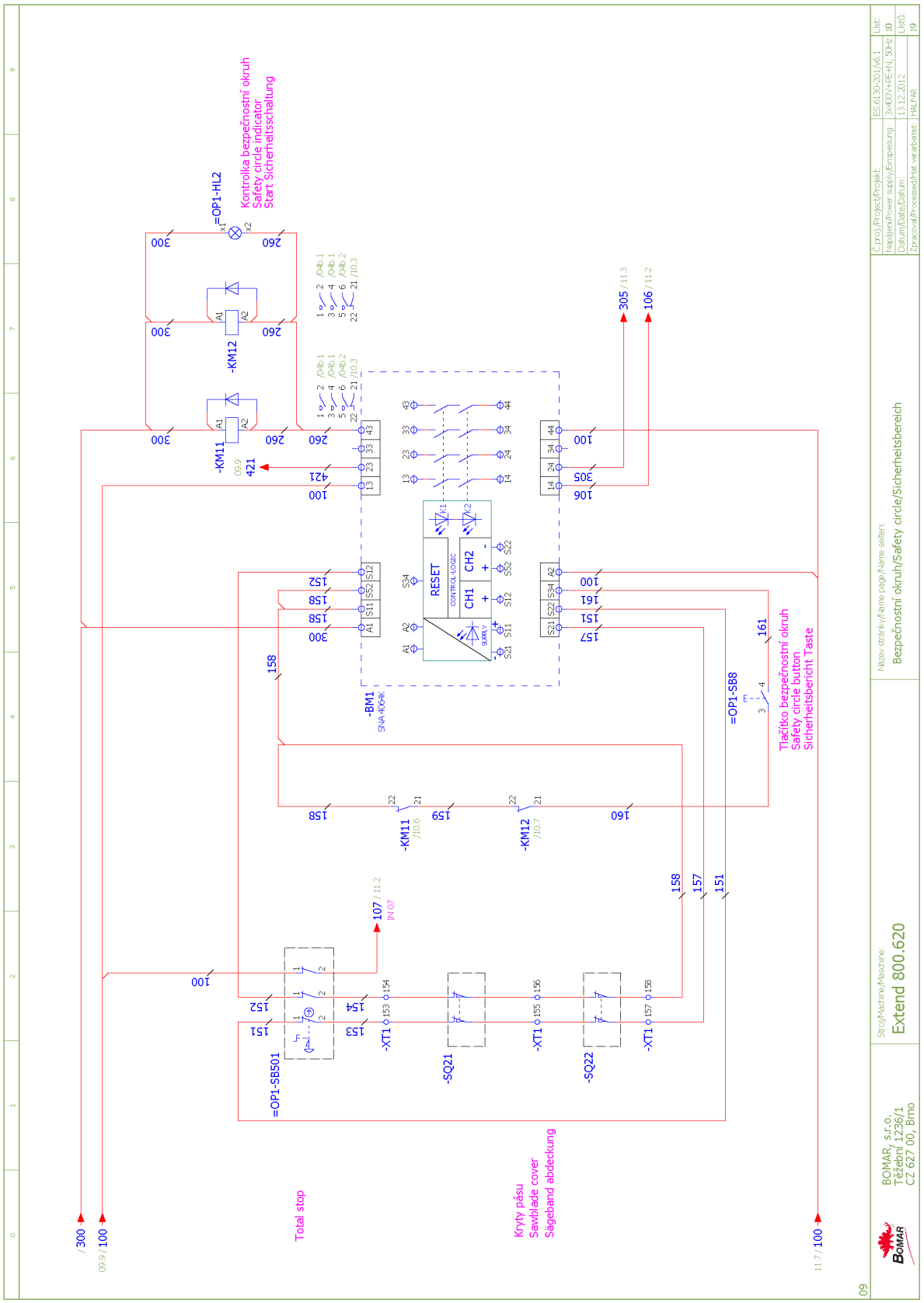


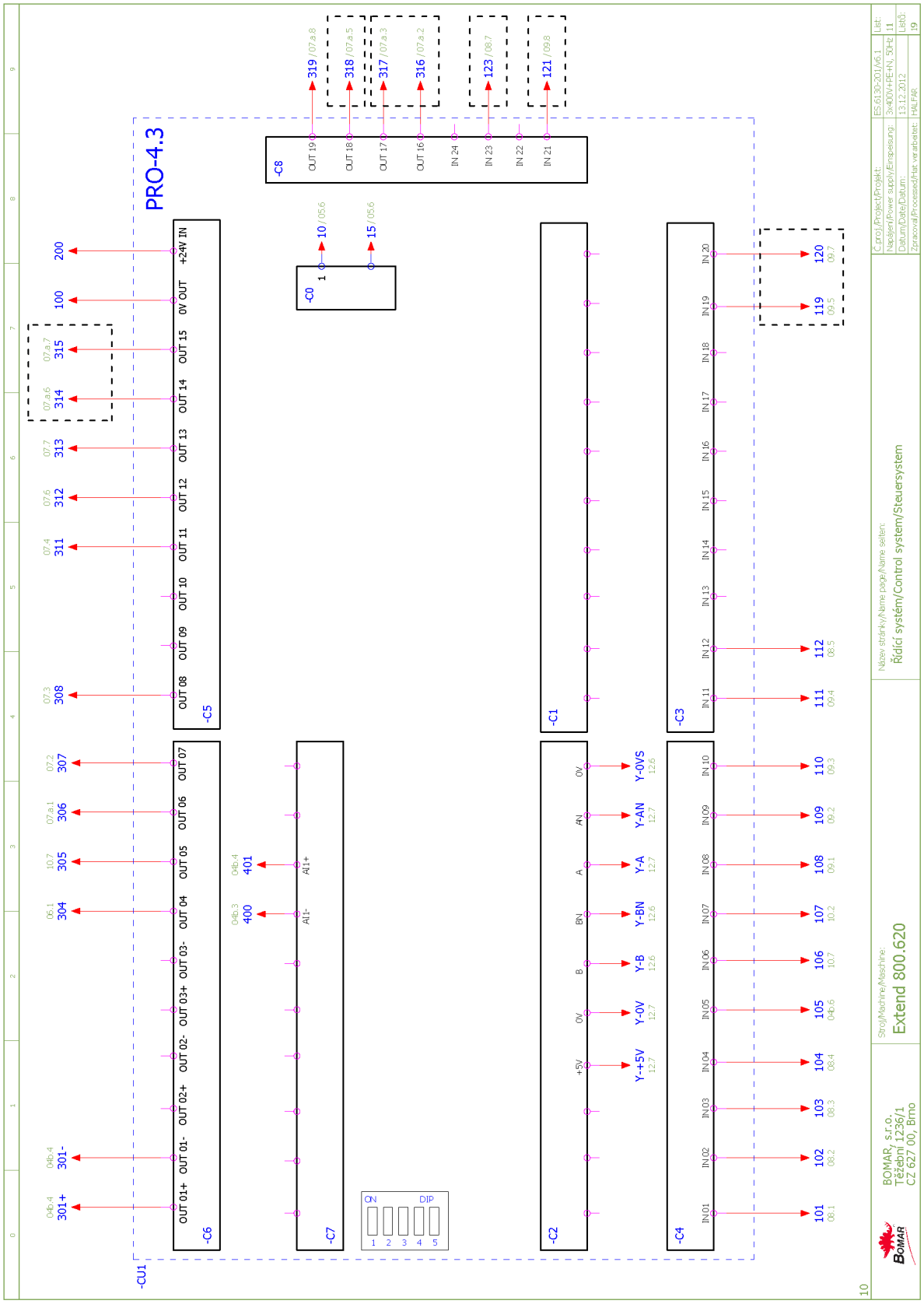
Schémata
Schemas
Schematics

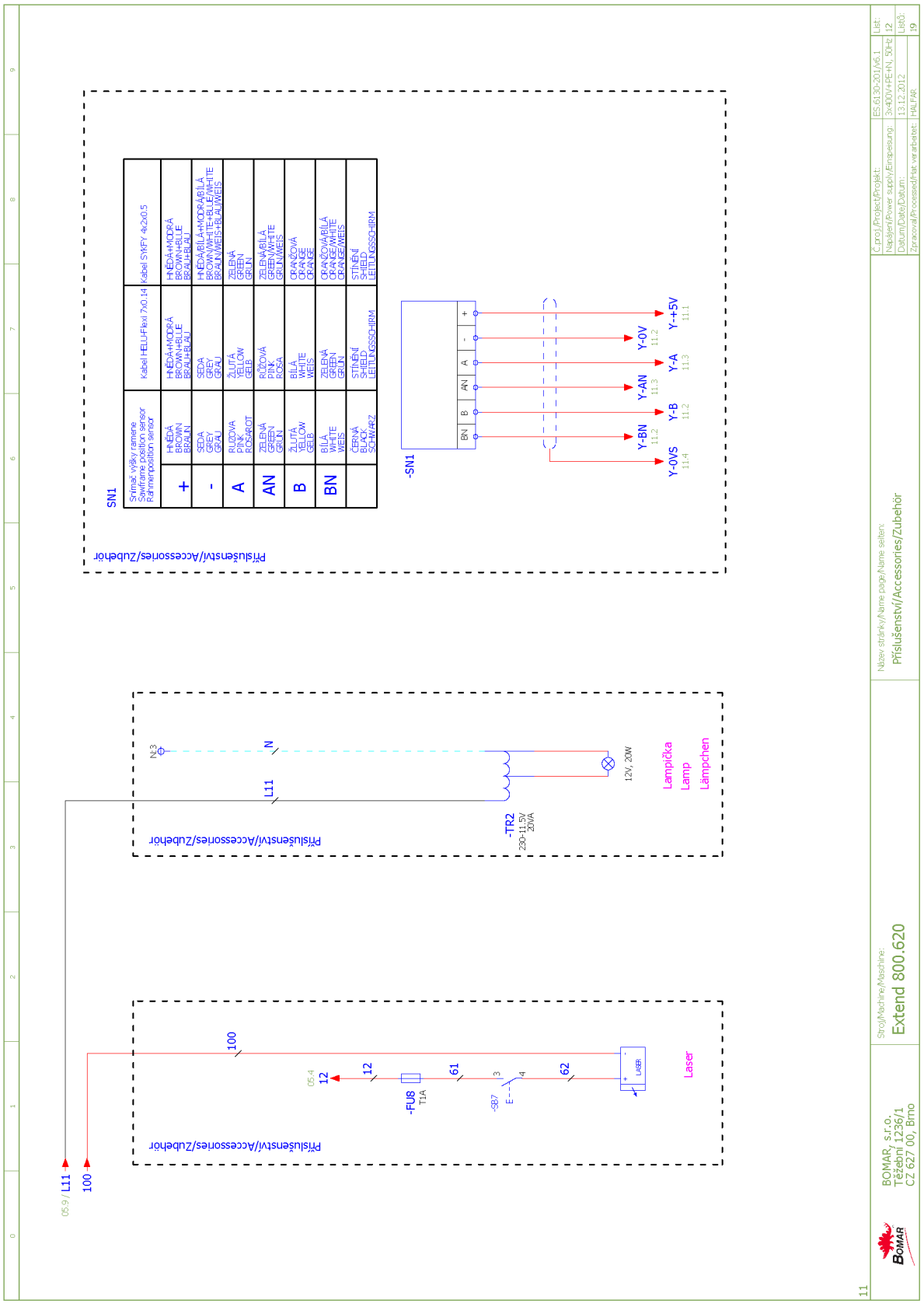

07.a.9 /300
300 / 07.a.0
-XT1
-V4
-V6A
-V6B
-V7
-V11A
-V11B
=OP1-HL1
Příslušenství/Accessories/Zubehör
306
316
317
318
314
315
319
2. stupeň hydrauliky
Second level of pump
Hydraulikpumpe 2. stufe
Napnout pás
Sawblade tension
Spannen des Sägebandes
Uvolnit pás
Sawblade leave
Entspannen des Sägebandes
Mikronizer
Microniser
Micronizer
Přítlak upnout
Upper vice clamp
Ober Schraubstock spannen
Přítlak povolit
Release upper vice
Ober Schraubstock losen
Kontrolka start
Indicator start
Kontrollicht start
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno
Stroj/Machine/Maschine:
Extend 800.620
Název stránky/Name page/Name seiten:
Hydraulické ventily/Hydraulic valve/Hydroventil
ES.6130-201/V6.1
3x400V+PE+N, 50Hz
13.12.2012
HALFAR
07.a
19


100 /09.0
06.9 / 100
-XT1
-SQ1
-SQ2
-SQ3
-SQ4
-SQ5
-SQ13
-FA1
-FA2
-FA3
1002
1003
101
102
103
104
112
123
1004
Příslušenství/Accessories/Zubehör
Svěrák upnut
(Tlakový spínač)
Vice is clamped
(Pressure switch)
Schraubstock ist gespannt
(Druckschalter)
Rameno dole
Arm is down
Rahmen ist unten
Rameno nahoře
Arm is up
Rahmen ist oben
Napnutí pásu
Blade tension
Bandspannung
Kolize kostky
Cube collision
Klotzkollision
Přítlak upnut
(Tlakový spínač)
Upper vice is clamped
(Pressure switch)
Ober Schraubstock ist gespannt
(Druckschalter)
Motory M1, M2, M3 - OK
Motors M1, M2, M3 - OK
Motoren M1, M2, M3 - OK
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno
Stroj/Machine/Maschine:
Extend 800.620
Název stránky/Name page/Name seiten:
Vstupy/Inputs/Eingänge
07.a


100 / 10.0
-XT1 Φ100
Externí panel umístěn na ramenu pily
External control panel on arm
Externes Bedienpult auf dem Arm
Příslušenství/Accessories/Zubehör
=OP1-SB1 E---
=OP1-SB2 E---
=OP1-SB3 F---
=OP2-SB4 E---
=OP2-SB5 E---
=OP2-SB6 E---
-XT1 Φ119
-XT1 Φ120
-XT1 Φ121
421 / 10.6
108 IN 08 11.3 START
109 IN 09 11.3 STOP
110 IN 10 11.4 MANUAL
111 IN 11 11.4 CYKLUS CYCLE ZYKLUS
119 IN 19 11.7 Pás napnout Tight saw band Sägeband spannen
120 IN 20 11.8 Pás uvolnit Release saw band Sägeband lösen
121 IN 21 11.9 Rameno nahoru Arm up Rahmen nach oben
421 06.3
06.9 / 100
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno
Stroj/Machine/Maschine:
Extend 800.620
Název stránky/Name page/Name seiten:
Tlačítka ovládací panel/Button control panel/Taste Bedienpult
C.proj./Projekt/Projekt: ES.6130-201/V6.1
Napájení/Power supply/Einspeisung: 3x400V+PE+N, 50Hz
Datum/Date/Datum: 13.12.2012
Zpracoval/Processed/Hat verarbeitet: HALPAR
List: 09
Listů: 19
08


=OP1-HL2
Kontrolka bezpečnostní okruh
Safety circle indicator
Start Sicherheitsschaltung
-KM12
-KM11
-BM1
SNA 4064K
RESET
CONTROL-LOGIC
CH1
CH2
=OP1-SB501
=OP1-SB8
Tlačítko bezpečnostní okruh
Safety circle button
Sicherheitsbericht Taste
-XT1
-SQ21
-SQ22
Total stop
Kryty pásu
Sawblade cover
Sägeband abdeckung
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno
Stroj/Machine/Maschine:
Extend 800.620
Název stránky/Name page/Name seiten:
Bezpečnostní okruh/Safety circle/Sicherheitsbereich


PRO-4.3
-CU1
-C0
-C1
-C2
-C3
-C4
-C5
-C6
-C7
-C8
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno
Stroj/Machine/Maschine:
Extend 800.620
Název stránky/Name page/Name seiten:
Řídicí systém/Control system/Steuersystem
Řídicí systém/Control system/Steuersystem
ES 6130-2011/V6.1
3x400V+PE+N, 50Hz
13.12.2012
HALPAR
DIP
ON
1 2 3 4 5


SN1
Snímač. výšky ramene
Sawframe position sensor
Rahmenposition sensor
Kabel HELU-Flexi 7x0.14
Kabel SYKFY 4x2x0.5
+ HNĚDÁ BROWN BRAUN HNĚDÁ+MODRÁ BROWN/BLUE BRAUN+BLAU
- SEDÁ GREY GRAU
A RUŽOVÁ PINK ROSAROT
AN ZELENÁ GREEN GRUN
B ŽLUTÁ YELLOW GELB
BN BÍLÁ WHITE WEIS
ČERNÁ BLACK SCHWARZ
STÍNĚNÍ SHIELD LEITUNGSSCHIRM
HNĚDÁ+BÍLÁ+MODRÁ BROWN/WHITE/BLUE BRAUN/WEIS+BLAU
ZELENÁ GREEN GRUN
ZELENÁ+BÍLÁ GREEN/WHITE GRUN/WEIS
ORANŽOVÁ ORANGE ORANGE
ORANŽOVÁ+BÍLÁ ORANGE/WHITE ORANGE/WEIS
STÍNĚNÍ SHIELD LEITUNGSSCHIRM
-SN1
BN B AN A - +
Y-BN Y-B Y-AN Y-A Y-0V Y-+5V
Y-0VS
Příslušenství/Accessories/Zubehör
N.3
N
L11
-TR2
230-11.5V
20VA
12V, 20W
Lampička
Lamp
Lämpchen
100
05.4
12
-FU8
T1A
61
-S87
62
LASER
Laser
05.9 / L11
100
Příslušenství/Accessories/Zubehör
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno
Stroj/Machine/Maschine:
Extend 800.620
Název stránky/Name page/Name seiten:
Příslušenství/Accessories/Zubehör
Č.proj./Projekt/Projekt:
ES 6130-201/V6.1
Napájení/Power supply/Einspeisung:
3x400V+PE+N, 50Hz
Datum/Date/Datum:
13.12.2012
Zpracoval/Processed/Hat verarbeitet:
HALFAR
List:
12
Listů:
19
11

Parts list

Device tag	Device type	Type number	Manufacturer	Part number	Quantity	Page
-RCF1	RCF filter	FBOPR1624		91.041.015	1	/04.3
-RCF2	RCF filter	FBOPR1624		91.041.015	1	/04.4
-RCF3	RCF filter	FBOPR1624		91.041.015	1	/04.7
-RCF11	RCF filter	FBOPR1624		91.041.015	1	/04b.0
-RCF12	RCF filter	FBOPR1624		91.041.015	1	/04b.0
-RP1	Potentiometer 5k	TP195 4x7/N20A		91.283.015	1	/04b.3
=OP1-SB501	Emergency-stop mushroom push-button + 3xNC	YW1B-V4E02R		91.060.084	1	/10.2
-ZD1	Power supply unit - 15VAC/24VDC; 20VAC/28VDC	ZDR-03	Bomar	265.915	1	/05.2
-KM1	Contactor - 4kW, 9A, 3NO+1NC, 24VDC	DILEM-01-G(24VDC)	EATON	91.040.024	1	/06.1
-KM2	Contactor - 4kW, 9A, 3NO+1NC, 24VDC	DILEM-01-G(24VDC)	EATON	91.040.024	1	/06.3
-KM3	Contactor - 4kW, 9A, 3NO+1NC, 24VDC	DILEM-01-G(24VDC)	EATON	91.040.024	1	/06.5
-KM11	Contactor - 5,5kW, 12A, 3NO+1NC, 24VDC	DILM12-01(24VDC)	EATON	91.040.025	1	/10.6
-KM12	Contactor - 5,5kW, 12A, 3NO+1NC, 24VDC	DILM12-01(24VDC)	EATON	91.040.025	1	/10.7
=OP1-HL1	Green light for Eaton adapter	M22-LED-G	EATON	91.061.023	1	/07.a.8
=OP1-HL2	White light for Eaton adapter	M22-LED-W	EATON	91.061.034	1	/10.8
=OP1-SB1	Green translucent switch head	M22-DL-G	EATON	91.060.031	1	/09.1
=OP1-SB1	Attaching adapter + NO contact	M22-AK10	EATON	91.061.021	1	/09.1
=OP1-SB2	Attaching adapter + NO contact	M22-AK10	EATON	91.061.021	1	/09.2
=OP1-SB2	Black switch head	M22-D-S	EATON	91.060.035	1	/09.2
=OP1-SB3	Head of 3 positional switch	M22-WRK3	EATON	91.060.051	1	/09.3
=OP1-SB3	NO contact for Eaton adapter	M22-K10	EATON	91.061.022	1	/09.3
=OP1-SB3	Attaching adapter + NO contact	M22-AK10	EATON	91.061.021	1	/09.3
=OP1-SB8	Attaching adapter + NO contact	M22-AK10	EATON	91.061.021	1	/10.4
=OP1-SB8	Yellow translucent switch head	M22-DL-Y	EATON	91.060.053	1	/10.4
-FU1	Tube fuse - 200mA/250V, slow, 5x20	T200mA/250V	ESKA	91.230.037	1	/04b.8
-FU2	Tube fuse - 2A/250V, slow, 5x20	T2A/250V	ESKA	91.230.001	1	/05.0
-FU3	Tube fuse - 2A/250V, slow, 5x20	T2A/250V	ESKA	91.230.001	1	/05.1
-FU4	Tube fuse - 6,3A/250V, slow, 5x20	T6,3A/250V	ESKA	91.230.002	1	/05.4

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Parts list

Device tag	Device type	Type number	Manufacturer	Part number	Quantity	Page
-FU5	Tube fuse - 1A/250V, slow, 5x20	T1A/250V	ESKA	91.230.003	1	/05.4
-FU6	Tube fuse - 500mA/250V, slow, 5x20	T500mA/250V	ESKA	91.230.011	1	/05.4
-FU8	Tube fuse - 1A/250V, slow, 5x20	T1A/250V	ESKA	91.230.003	1	/12.1
-M1	Pump - 120W, 230/400V	4C0A4-12H	EmP	91.020.015	1	/04.4
-TR1	Toroidal transformer - 0-230-400V/20V/15V, 0.65-0.38A/6A/2A, 150VA	1502304002015	KARBAN s.r.o.	91.080.026	1	/05.1
-SQ21	Safety limit switch, 2xNC	QKS8	KEDU	91.173.012	1	/10.2
-SQ22	Safety limit switch, 2xNC	QKS8	KEDU	91.173.012	1	/10.2
-PA1	Fuse case for cylindric fuse 10x38mm - 3P, size 10	OPV10/3	OEZ	91.241.002	1	/04b.1
-PA1	Cylindric fuse - 20A, 10x38, fast, gG charakteristic	PV10 20A gG	OEZ	91.230.038	3	/04b.1
-SQ2	Limit switch - 1NC+1NO, M20, slow	D4N-4A31	OMRON	91.173.007	1	/08.2
-SQ3	Limit switch - 1NC+1NO, M20, slow	D4N-4A31	OMRON	91.173.007	1	/08.3
-SQ4	Limit switch - 1NC+1NO, M20, slow	D4N-4A32	OMRON	91.173.010	1	/08.4
-SQ5	Limit switcher - 1NO + 1NC, large adjustable roller, M2, snap action	FR 555-M2	PIZZATO	91.173.018	1	/08.5
-FA1	Motor-overcurrent circuit breaker 0.25-0.4A	GZ1M03	SCHNEIDER	91.235.022	1	/04.4
-FA1	Auxiliary contact of MOCB - 1xNO+1xNC	GZ1AN11	SCHNEIDER	91.046.004	1	/04.4
-FA2	Motor-overcurrent circuit breaker 4-6.3A	GZ1M10	SCHNEIDER	91.235.026	1	/04.5
-FA2	Auxiliary contact of MOCB - 1xNO+1xNC	GZ1AN11	SCHNEIDER	91.046.004	1	/04.5
-FA3	Motor-overcurrent circuit breaker 0.63-1A	GZ1M05	SCHNEIDER	91.235.023	1	/04.7
-FA3	Auxiliary contact of MOCB - 1xNO+1xNC	GZ1AN11	SCHNEIDER	91.046.004	1	/04.7
-QS1	Main switch 3P, 32A	VCF1-32A	SCHNEIDER	91.170.012	1	/04.0
-BM1	Safety relay - 4xNO	SNA 4064K	WIELAND	91.051.026	1	/10.4
-CU1	PRO-4.3	PRO-4.3	Bomar	265.917	1	/11.0
-FM1	Frequency converter - 4kW, 3x400V	VACON0010-3L-0009-4	VACON	91.012.062	1	/04b.1
-RET1	Multifunction time relay - 12-240V, 10 functions	CRM-91H/UNI	ELKO	91.051.027	1	/06.6
-FU1	Fuse case	WK4/THSi5...U	WIELAND	91.251.102	1	/04b.8
-FU2	Fuse case	WK4/THSi5...U	WIELAND	91.251.102	1	/05.0
-FU3	Fuse case	WK4/THSi5...U	WIELAND	91.251.102	1	/05.1
-FU4	Fuse case	WK4/THSi5...U	WIELAND	91.251.102	1	/05.4

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

Stroj/Machine/Maschine: Extend 800.620

Název stránky/Name page/Name seiten: Kusovník artiklů/ Parts list/ Artikelstückliste

Č.proj./Project/Projekt:	ES.6130-201/v6.1	List:
Napájení/Power supply/Einspeisung:	3x400V+PE+N, 50Hz	13.a
Datum/Date/Datum:	13.12.2012	Listů:
Zpracoval/Processed/Hat verarbeitet:	HALFAR	19

Parts list

Device tag	Device type	Type number	Manufacturer	Part number	Quantity	Page
-FU5	Fuse case	WK4/THSi5...U	WIELAND	91.251.102	1	/05.4
-FU6	Fuse case	WK4/THSi5...U	WIELAND	91.251.102	1	/05.4
-FU8	Fuse case	WK4/THSi5...U	WIELAND	91.251.102	1	/12.1
-M5	Cooling ventilator - 230V, 50Hz, 0.12A	RAH1278B1-C	XFAN	91.015.105	1	/04b.8

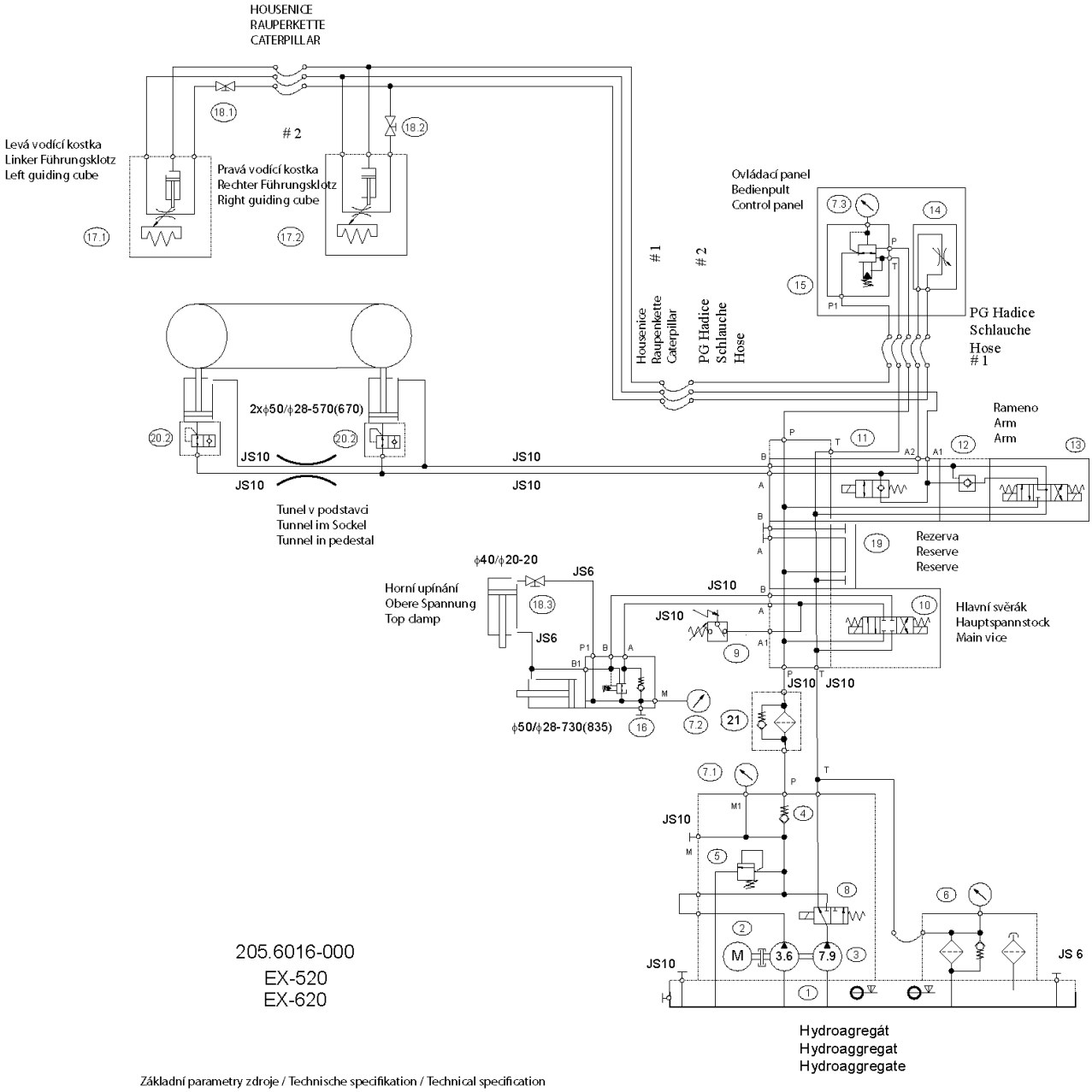
BOMAR, s.r.o.
Těžební 1236/1
CZ 627 00, Brno

Stroj/Machine/Maschine:
Extend 800.620

Název stránky/Name page/Name seiten:
Kusovník artiklů/ Parts list/ Artikelstückliste

Č.proj./Project/Projekt:	ES.6130-201/v6.1	List:
Napájení/Power supply/Einspeisung:	3x400V+PE+N, 50Hz	13.b
Datum/Date/Datum:	13.12.2012	Listů:
Zpracoval/Processed/Hat verarbeitet:	HALFAR	19

6.2. Hydraulické schéma / Hydraulikschema / Hydraulic diagram



205.6016-000
EX-520
EX-620

Základní parametry zdroje / Technische specifikation / Technical specification

p	6,5 Mpa
Q	10,6+4,9 dm3/min
n	1425 ot./min
P	2,2 kW

Manual version: 2.06 / Feb. 2013
Manual rev.: 1

Poz.	Název položky		ks
Pos.	Bezeichnung		Menge
Pos.	Item		Pcs.
1	Nádrž / Behälter / Tank	N30-BO	1
2	Elektromotor / Elektromotor / Electromotor	MA-AL100L 400/230V 50 Hz	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 / Bypaßventil / By pass valve	VPP2-04/S-10S	1
6	Zpětný filtr / Filter / Filter	FR 043-166/0 10um	1
7	Manometr / Manometer / Manometer	Ø68 0-10 MPa	3(2)
8	Rozváděč / Schaltschrank / Switchboard	SD2E-A3/H2D21	1
9	Tlakový spínač / Druckschalter / Pressure switch 92.201.001	166411031043	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	1
15	Redukční ventil / Reduktionventil /	VRN2-06/S-6R	1
16	Redukční ventil / Reduktionventil /	VRN2-06/S-6R	1(0)
17	Kostka regulace / Regulationklotz /		2
18	Kulový ventil /Kugelventil / Globe valve		3(2)
19	Krycí deska / Schutzplatte / Cover platte	DK 1-04/32-2	1
20	Pojistný ventil / Sicherungventil / Safety valve	VPNH 1/4	2
21	Tlakový filtr / Druckfilter / Pressure filter	D 420153+V3,0510-03	1

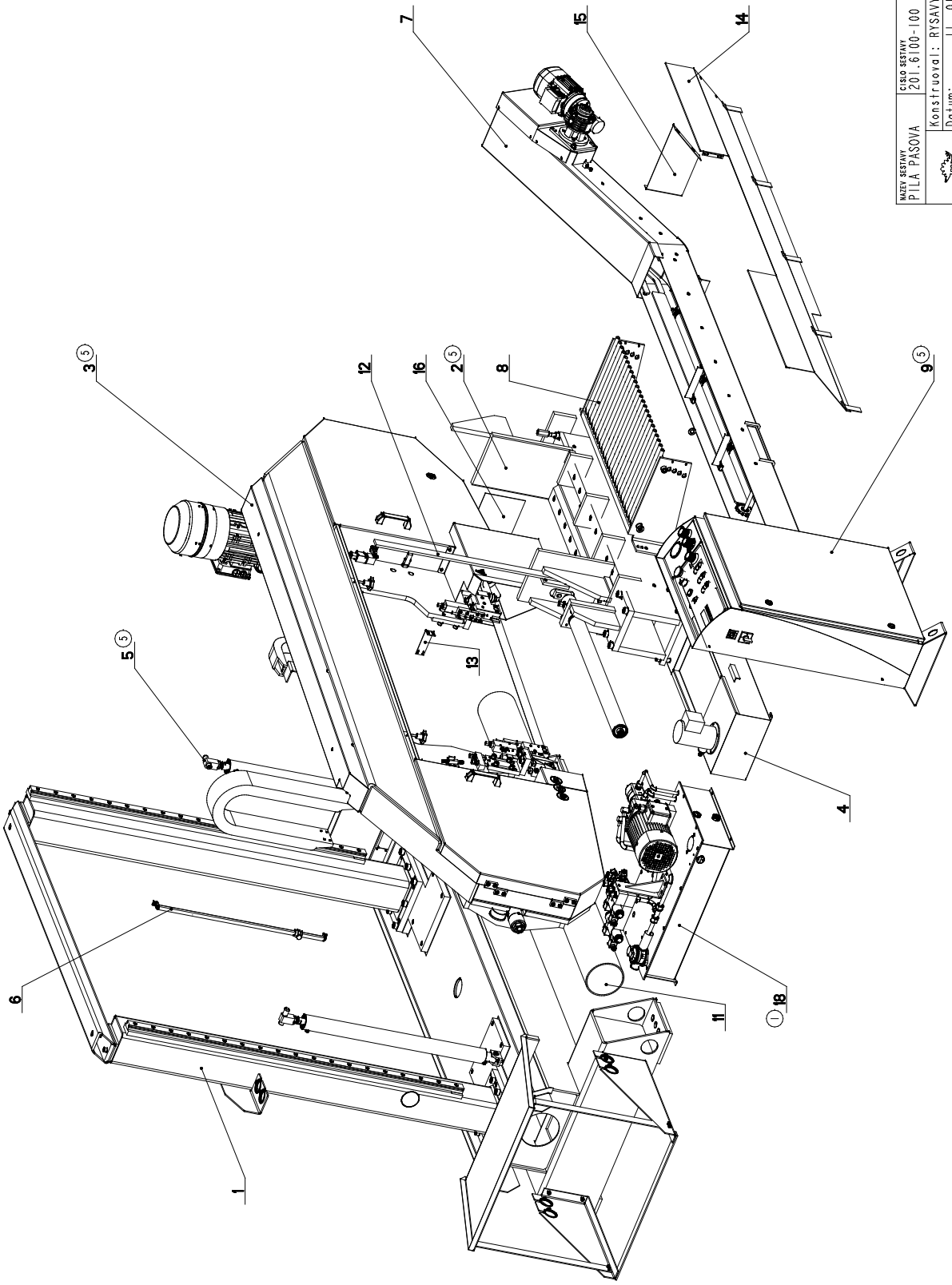
7. Výkresy sestav pro objednání náhradních dílů / Zeichnungen für Bestellung der Ersatzteile / Drawing assemblies for spare parts order

- Při objednávání náhradních dílů vždy uvádějte: typ stroje (např. practix Extend 800.620) , výrobní číslo (např. 125) a rok výroby (např. 1999).

- In die Bestellung der Ersatzteile führen Sie immer an: Maschinentyp (z. B. Extend 800.620), 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 800.620), serial number (for example 125, see cover page) and year of construction (for example 1999).

7.1. Extend 800.620



Manual version: 2.06 / Feb. 2013
Manual rev.: 1

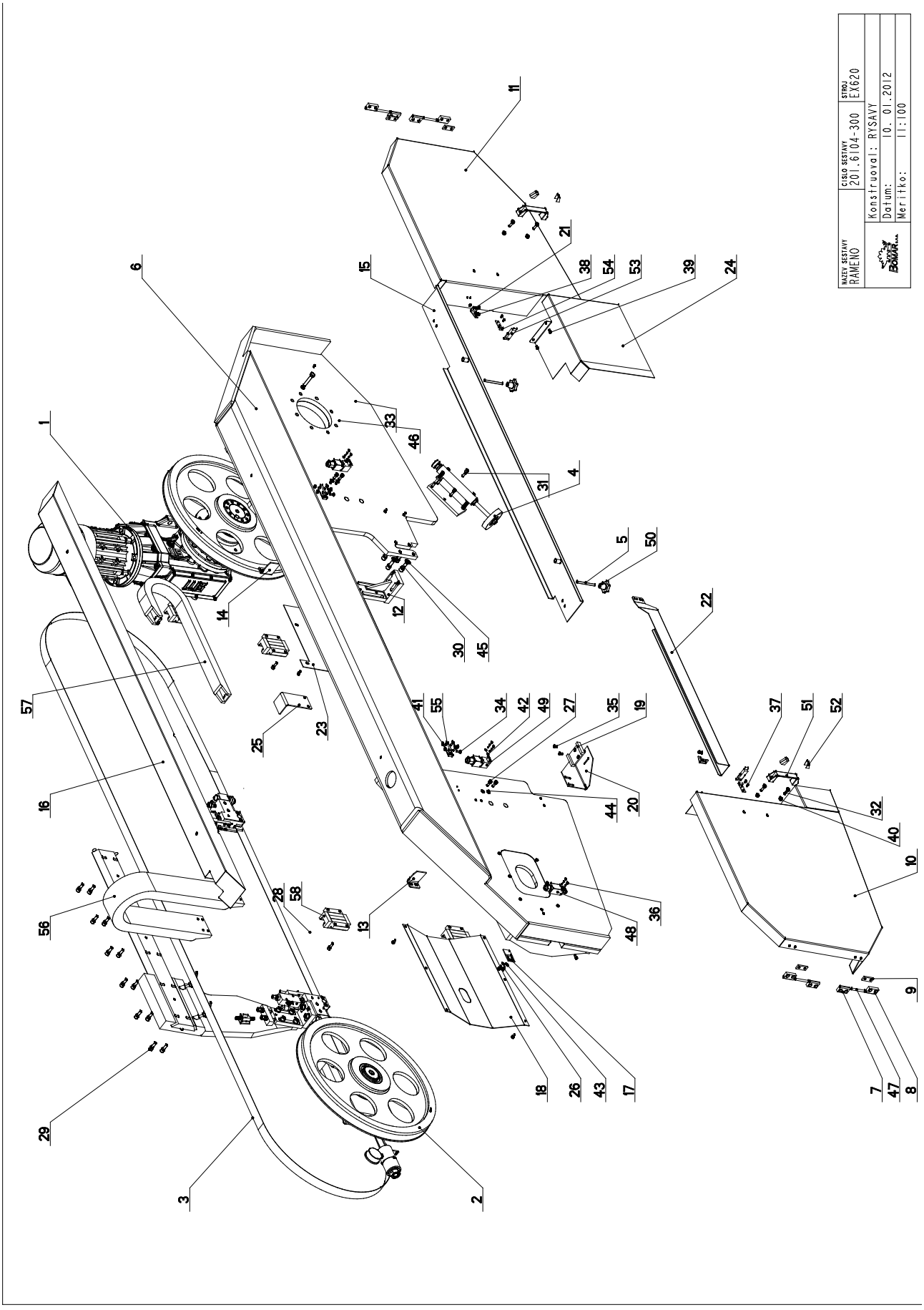
Cislo Sestavy	Ver.	Nazev sestavy
201.6100-100	5	PILA PASOVA/BAND SAW/BANDSÄGE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.6101-100	2	PODSTAVEC / BASE / UNTERSATZ		1
2	201.6103-150 (5)	0	SVERAK / VICE / SCHRAUBSTOCK		1
3	201.6104-300 (5)	0	RAMENO / SHOULDER / SÄGERAHMEN		1
4	201.6106-000	1	CHLAZENI / COOLING / KÜHLUNG		1
5	201.6107-600 (5)	1	VALEC ZVEDACI / LIFTING CYLINDER / HEBEZYLINDER		2
6	201.6114-020	0	ODMEROVANI / MEASURING / GEHRUNGSMESSUNG		1
7	201.6117-100	4	VYNASEC TRISKOVY / CHIP EXTRACTOR / SPANABFÜHRUNG		1
8	201.6118-100	0	ROST / GRILL / GITTER		1
9	201.Y430-000 (5)	0	OVLADACI PANEL / CONTROL PANEL / BEDIENPULT		1
10	202.6120-100 (3)	4	PRISLUSENSTVI / /		1
11	30.6101-109	1	TRUBKA / TUBE / ROHR	D 150	1
12	30.6103-110	1	LISTA DORAZOVA / STOP BAR / ANSCHLAGLEISTE	HR.40x10	1
13	30.6104-006	0	DRZAK / HOLDER / HALTER	P3x35	1
14	30.6114-154	0	KRYT / COVER / ABDECKUNG		1
15	30.6114-156	0	KRYT / COVER / ABDECKUNG	P 2x382	1
16	30.6114-160	0	CLONA / CURTAIN / SCHÜRZE	2x180	1
17	31.6199-001	0	STITEK / LABEL / SCHILD	P 0.5x65	1
18	92.001.048	0	AGREGAT HYDRAULICKY / HYDRAULIC GENERATOR / HYDRAULIKAGGREGAT		1
19	99.900.039 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER	NEBEZP.STLACENI	1
20	99.900.040 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER		1
21	99.900.043 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER		1
22	99.900.045 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER		1
23	99.900.046 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER		1
24	99.900.047 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER		1
25	99.900.048 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER		1
26	99.900.049 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER		1
27	99.900.050 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER		2
28	99.900.053 (2)	0	SAMOLEPKA / STICKER / AUFKLEBER		2
29	99.901.032 (5)	0	SAMOLEPKA / STICKER / AUFKLEBER	CETIFIKACNI SAMOLEPKA	1

1.ZMENA AGREGATU,ZRUSENA POLOZKA 92.001.046 A NAHRAZENA POLOZKOU 92.001.048. ZM371 15.12.2006 RYSAVY
2.PRIDANY DO KUSOVNIKU BEZPECNOSTNI SAMOLAPKY . 150/ZM178 26.4.2007 RYSAVY
3.PRIDANO PRISLUSENSTVI 202.6120-100. ZM288 25.6.2007 RYSAVY
4.VYMENA RAMENE ,ZRUS.SOUC.201.6104-100 A NAHR.201.6104-200. 452/ZM452 13.12.2007 SLEZACKOVA
5.PRIDANA CERTIFIKACNI ZNACKA 99.901.032. 040/ZM226-3 . 24.8.2010 SLEZACKOVA
5.ZRUS.RAMENO 201.6104-200 A NAHR.201.6104-300,ZRUS.SVERAK 201.6103-100 A NAHR.201.6103-150,ZRUS.ROZVADEC 201.6030-400 A NAHR.201.Y430-000. 220/ZM004 11.1.2012 SLEZACKOVA

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

7.3. Rameno / Sägerahmen / Saw arm - 1

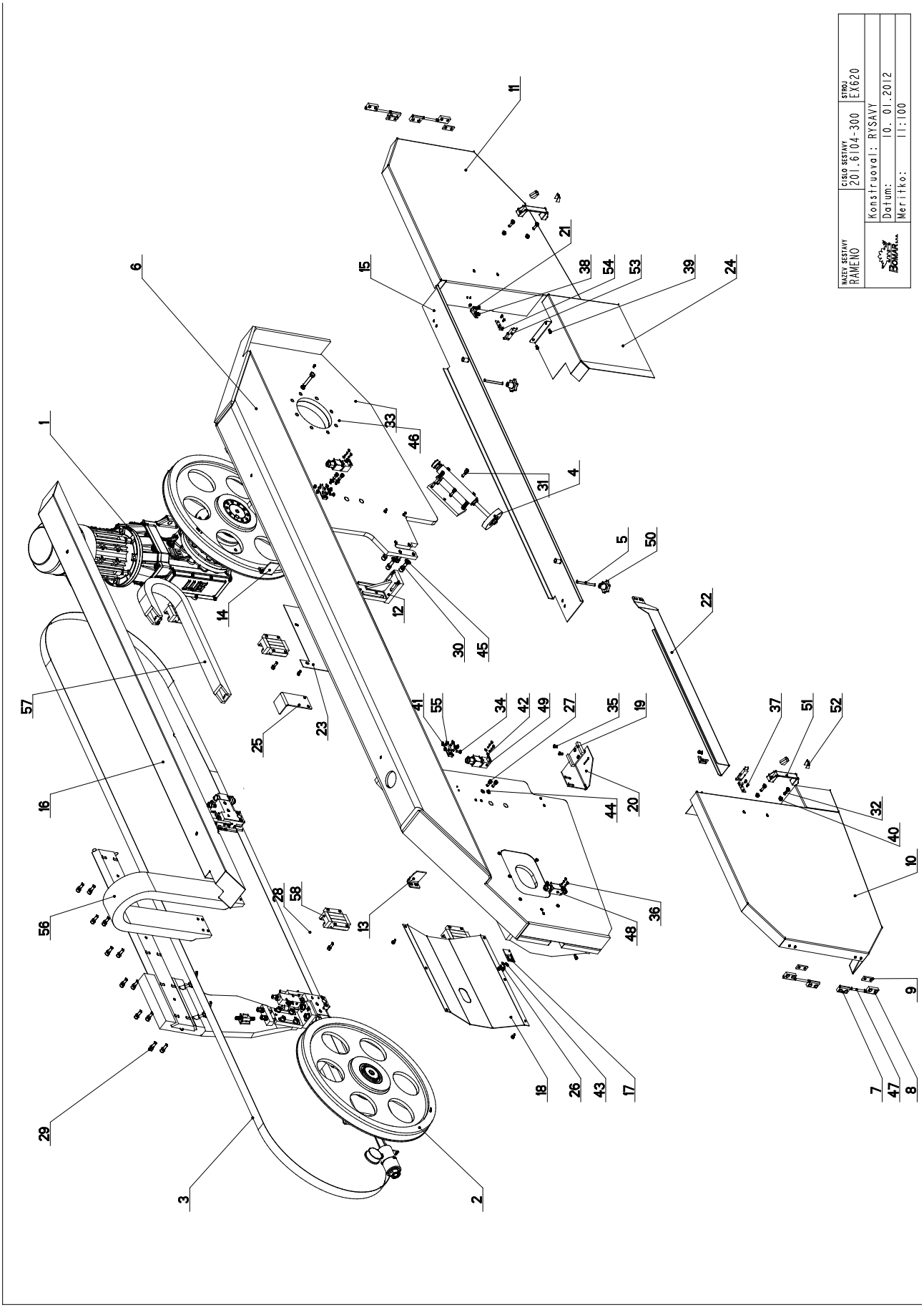


Cislo Sestavy	Ver.	Nazev sestavy
201.6104-300	0	RAMENO/SHOULDER/SÄGERAHMEN

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.6105-250	0	POHON / DRIVE / ANTRIEB		1
2	201.6108-100	2	NAPINANI / TENSIONING / SPANNUNG		1
3	201.6110-500	4	VEDENI PASU / BELT GUIDE / SÄGEBANDFÜHRUNG		1
4	201.6114-100	0	KARTAC / BRUSH / BÜRSTE		1
5	30.0203-005	0	SROUB / BOLT / SCHRAUBE	M8	2
6	30.601-301	0	RAMENO / SHOULDER / SÄGERAHMEN		1
7	30.6014-109.1	1	DESKA / /	HR 30x12	4
8	30.6014-110	1	PANT / HINGE / TÜRBAND	HR 30x12	4
9	30.6014-111	0	DESKA / BOARD / PLATTE	HR 20x6	4
10	30.6104-205	1	DVERE / DOOR / TÜR		1
11	30.6104-206	1	DVERE / DOOR / TÜR		1
12	30.6110-126	2	DRZAK / HOLDER / HALTER		1
13	30.6114-123	0	DRZAK / HOLDER / HALTER	P 4 - 55	1
14	30.6114-124	1	DRZAK / HOLDER / HALTER	P 4 - 55	1
15	30.6114-139	1	KRYT / COVER / ABDECKUNG		1
16	30.6114-140	2	KRYT RAMENE / SHOULDER COVER / RAHMENABDECKUNG	P 1.5x244x2360	1
17	30.6114-143	1	DRZAK / HOLDER / HALTER	P3-35	1
18	30.6114-144	0	KRYT NAPINANI / TENSIONING COVER / BANDSPANNUNGSABDECKUNG	P2-460	1
19	30.6114-145	0	KLUZAK / GLIDER / GLEITER	TYC 60x15	1
20	30.6114-146	2	DRZAK / HOLDER / HALTER	P3-150x199	1
21	30.6114-147	0	DRZAK / HOLDER / HALTER	P 3x30x60	2
22	30.6114-150	0	KRYT PASU / BELT COVER / BANDABDECKUNG	P 2 - 177x951	1
23	30.6114-152	2	KRYT KARTACKU / BRUSH COVER / BÜRSTENABDECKUNG	P 2x 410	1
24	30.6114-153	0	KRYT KARTACKU / BRUSH COVER / BÜRSTENABDECKUNG	P 2x557x600	1
25	30.6114-158	0	DRZAK / HOLDER / HALTER	P 4x70x190	1
26	90.001.25.016	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X12	12
27	90.001.25.032	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x20	4
28	90.001.25.033	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x25	16
29	90.001.25.048	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X30	12
30	90.001.25.059	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X35	4
31	90.001.55.083	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X30	2
32	90.005.55.016	0	SROUB / BOLT / SCHRAUBE	M8x25	4
33	90.005.55.055	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M12X60	8
34	90.011.27.006	0	ZAPUSTNY IMBUS / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M6X20	8

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

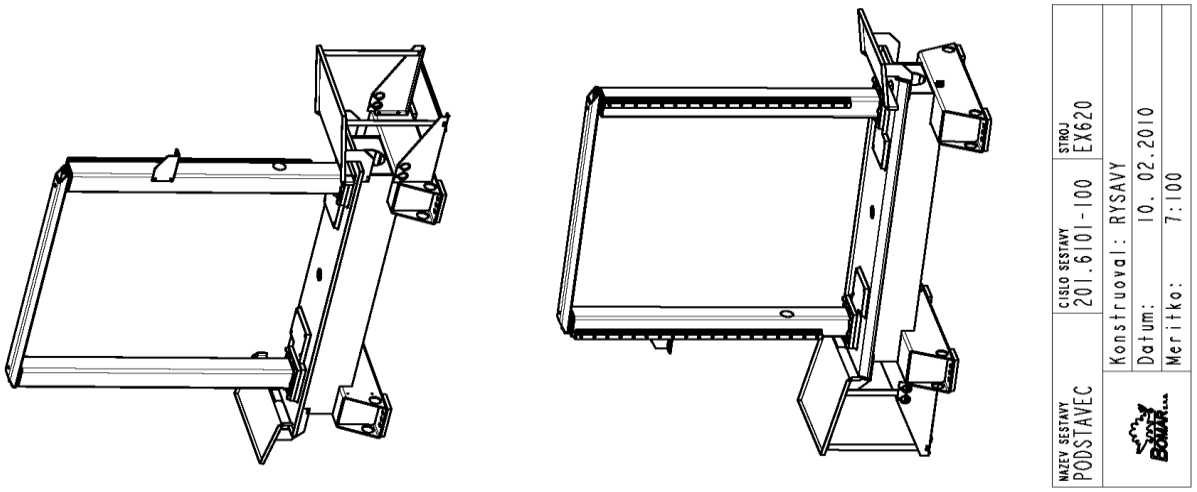
7.5. Rameno / Sägerahmen / Saw arm - 2

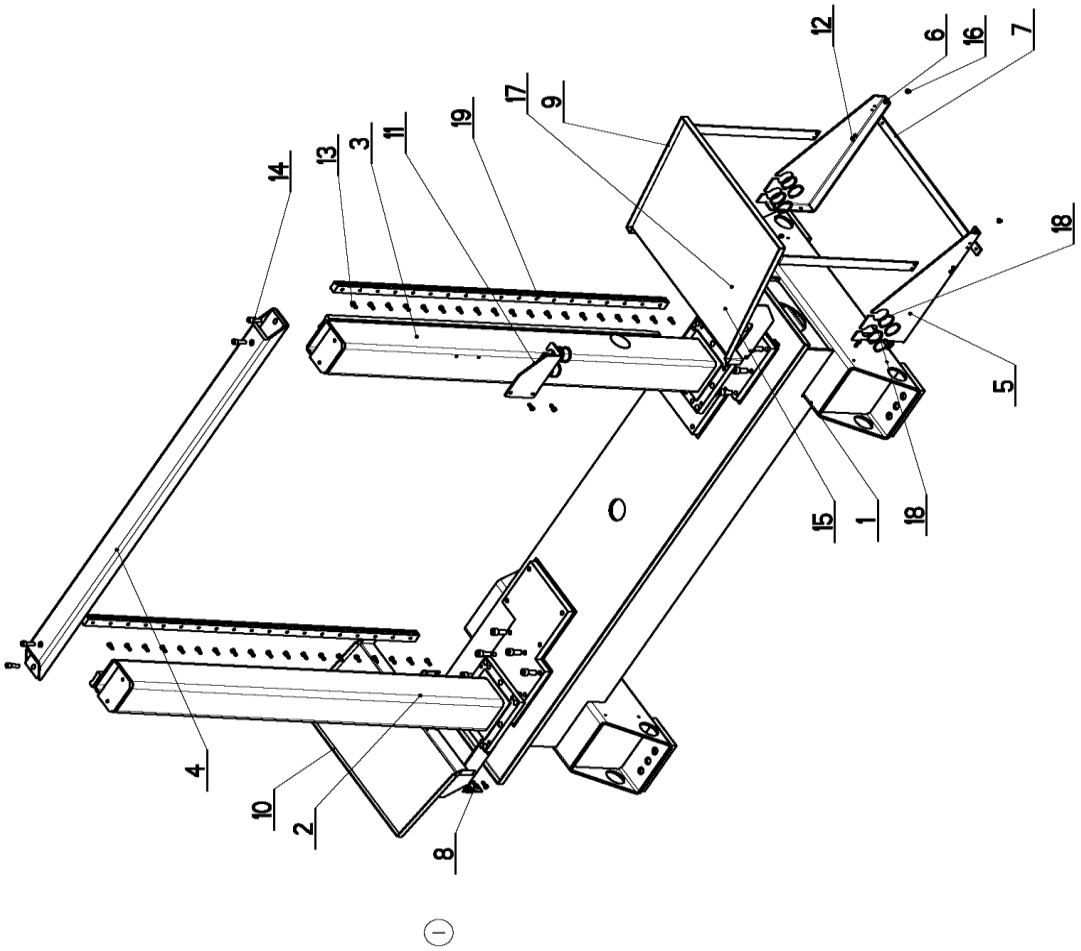


35	90.011.27.017	0	ZAPUSTNY IMBUS / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M6X16	2
36	90.012.50.007	0	SROUB / ROLLER BOLT / ZYLINDERSCHRAUBE	SROUB M4X30	6
37	90.013.27.001	0	SROUB / BOLT / SCHRAUBE	M4x8	8
38	90.013.27.002	0	SROUB PULKULATY / HALF ROUND BOLT / HALBRUNDSCHRAUBE	M5X6	6
39	90.013.27.007	0	SROUB PULKULATY / HALF ROUND BOLT / HALBRUNDSCHRAUBE	M6X10	2
40	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE _ M8	4
41	90.101.55.008	0	MATICE / NUT / MUTTER	MATICE M6	4
42	90.150.50.002	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 4,3	6
43	90.150.50.004	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 6,4	2
44	90.150.50.005	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	A 8	4
45	90.150.50.007	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 13	4
46	90.158.50.009	0	PODLOZKA PRUZNA / SPRING WASHER / FEDERSCHEIBE	PODLOZKA 12	8
47	90.300.0Z.017	0	KOLIK VALC. KAL. / CYLINDRICAL PIN TEMPERED / ZYLINDERSTIFT GEHARTET	KOLIK 8X70	4
48	91.173.009	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER		1
49	91.173.012	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	QKS8-2xNC	2
50	94.003.001	0	HLAVICE / HEAD / KOPF		2
51	94.012.001	0	RUKOJET / HANDLE / GRIFF		2
52	94.012.002	0	KRYT / COVER / ABDECKUNG		4
53	99.100.003	0	ZAMEK / LOCK / SCHLOSS		2
54	99.100.004	0	ZAMEK / LOCK / SCHLOSS	D13-00	2
55	99.100.007	0	PANT / HINGE / TÜRBAND		2
56	99.170.001	0	RETEZ ENERGII / ENERGY BELT / ENERGIEKETTE	0555.030.075.100	1
57	99.170.015	0	RETEZ ENERGII / ENERGY BELT / ENERGIEKETTE	MP 3002R95	1
58	99.201.002	0	VOZIK LINEARNIHO VEDENI / LINEAR GUIDE CART / LINEARFÜHRUNGSWAGEN	HGW35HC	4

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

7.7. Podstavec / Untersatz / Base





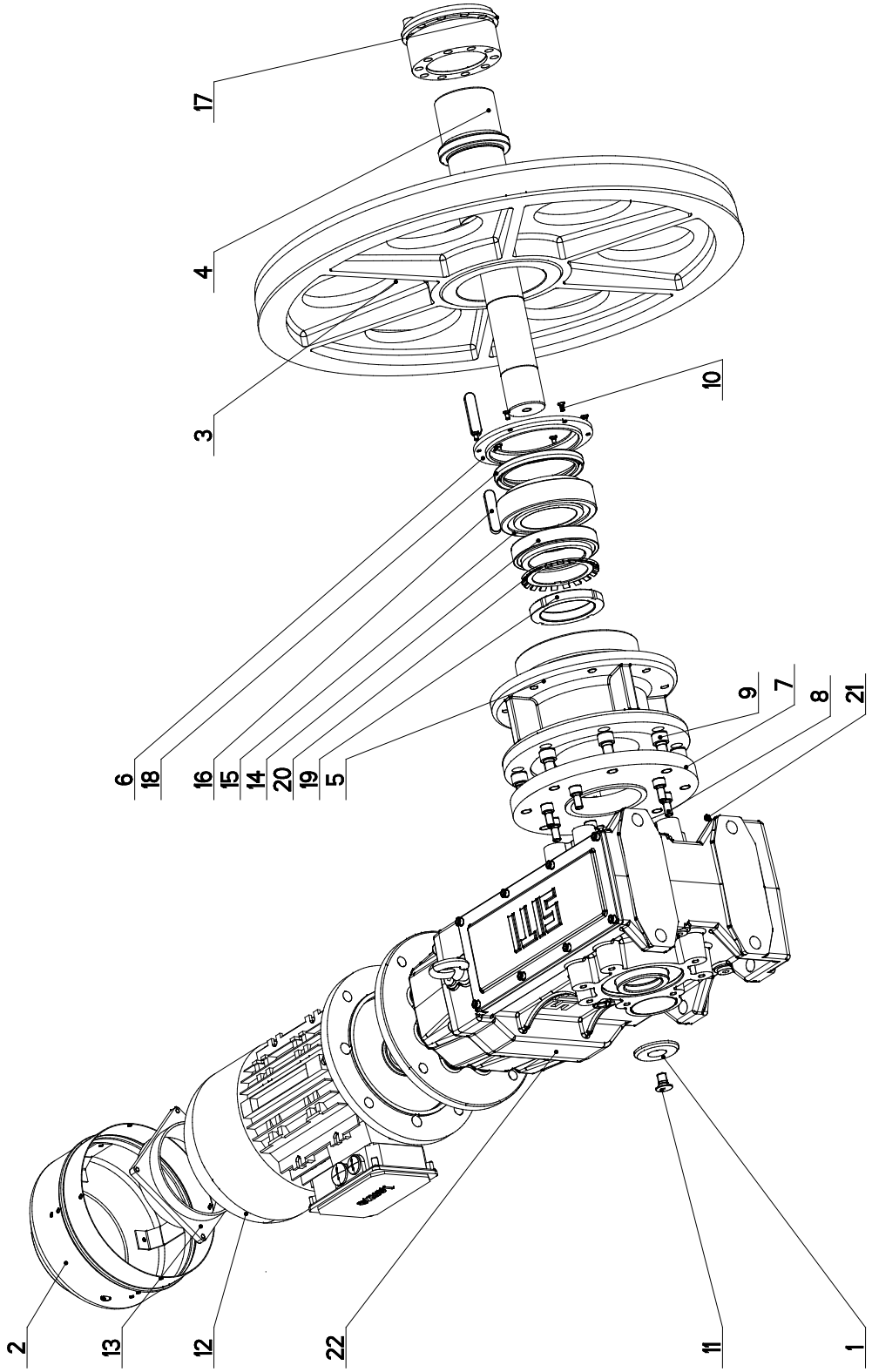
Manual version: 2.06 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.6101-100	1	PODSTAVEC/BASE/UNTERSATZ

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.6101-101	2	PODSTAVEC / BASE / UNTERSATZ		1
2	30.6101-102	0	SLOUP / POLE / SÄULE		1
3	30.6101-103	2	SLOUP / POLE / SÄULE		1
4	30.6101-104	0	NOSNIK / CARRIER / TRÄGER		1
5	30.6101-105	1	DRZAK / HOLDER / HALTER	P 4x273x582	1
6	30.6101-106	1	DRZAK / HOLDER / HALTER	P 4x 273	1
7	30.6101-108	0	VZPERA / PROP / STREBE	HR 30x5	1
8	30.6101-111 (1)	0	DRZAK / HOLDER / HALTER	PROFIL 40x40x4	1
9	30.6114-131	0	OKAP / GUTTER CHANNEL / BLECH		1
10	30.6114-134	0	OKAP / GUTTER CHANNEL / BLECH		1
11	30.6114-136	1	DRZAK / HOLDER / HALTER	P5x210	1
12	90.001.25.017	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X16	4
13	90.001.25.032	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x20	48
14	90.001.25.060	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X40	4
15	90.001.25.086	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M16X40	16
16	90.011.27.007	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M8X12	2
17	90.011.27.012	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M8X16	4
18	95.800.019	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 52	12
19	99.200.076	0	VEDENI LINEARNI / LINEAR GUIDE / LINEARE FÜHRUNG	LGR 35R	2

1 PRIDANA SOUCAST 30.6101-111 ZM-098 7.3.2007 RYSAVY

7.9. Pohon / Antrieb / Drive



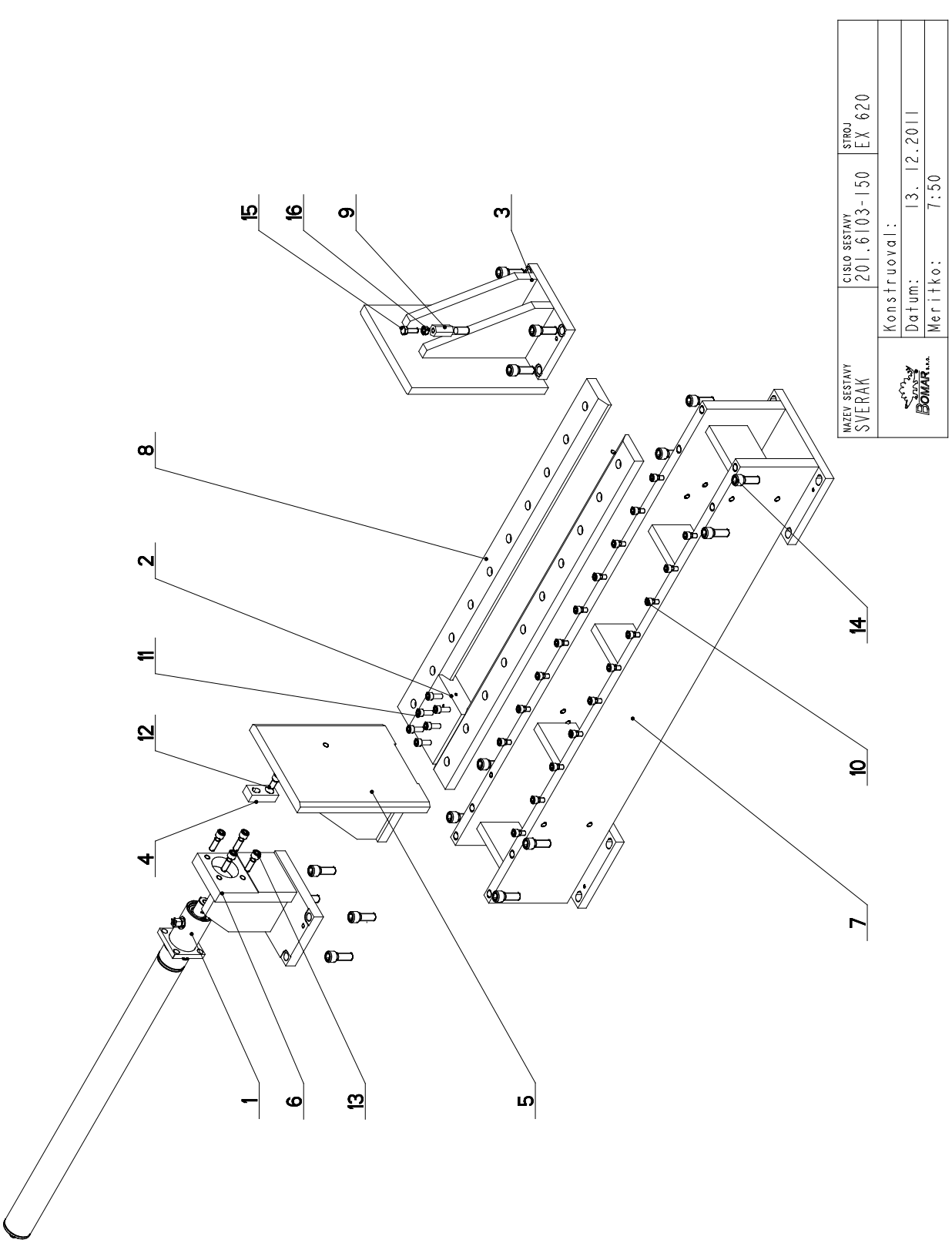
Manual version: 2.06 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.6105-250	0	POHON/DRIVE /ANTRIEB

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0804-009	2	PODLOZKA / WASHER / UNTERLEGSCHEIBE	d 60	1
2	30.4304-018	3	VENTILATOR / VENTILATOR / VENTILATOR		1
3	30.6105-015	5	KOLO HNACI / DRIVE WHEEL / ANTRIEBSRAD	ODLITEK	1
4	30.6105-251	0	HRIDEL / SHAFT / WELLE	d 100	1
5	30.Y605-001	1	PRIRUBA / FLANGE / FLANSCHE		1
6	30.Y605-006	0	VIKO / COVER / DECKEL	P 15 -160	1
7	30.Y605-103	0	KROUZEK DISTANCNI / DISTANCE RING / DISTANZRING	P 25x250	1
8	90.001.25.046	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X20	7
9	90.001.25.107	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M14X35	8
10	90.011.27.003	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M5X10	6
11	90.011.27.009	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M12X20	1
12	91.001.117	0	ELEKTROMOTOR / ELECTRIC MOTOR / ELEKTROMOTOR	4kW 4P B5 112	1
13	91.015.100	0	VENTILATOR / VENTILATOR / VENTILATOR		1
14	95.300.028	0	LOZISKO KUZELIK / BEARING / LAGER	32015AX	1
15	95.300.029	0	LOZISKO KUZELIK / BEARING / LAGER	33215A	1
16	95.810.032	0	PERO TESNE / SPRING / FEDER	PERO 14X9X60	2
17	95.825.001	0	POUZDRO UPINACI / FIXING SLEEVE / SPANNHÜLSE	KTR210- 80x120	1
18	95.830.047	0	GUFERO / GIT SEAL / DICHTUNG	GUFERO 95X120X12	1
19	95.850.015	0	MATICE KM / KM NUT / KM-MUTTER	MATICE KM15	1
20	95.855.016	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	POJISTNA PODLOZKA MB15	1
21	95.860.001	0	HLAVICE MAZACI / HEAD / KOPF	KM5	1
22	99.003.021	0	PREVODOVKA KUZELOCEL / CONICAL TRANSMISSION / KEGELRADGETRIEBE	MBH100C PAM112	1

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

7.11. Svěrák / Schraubstock / Vice

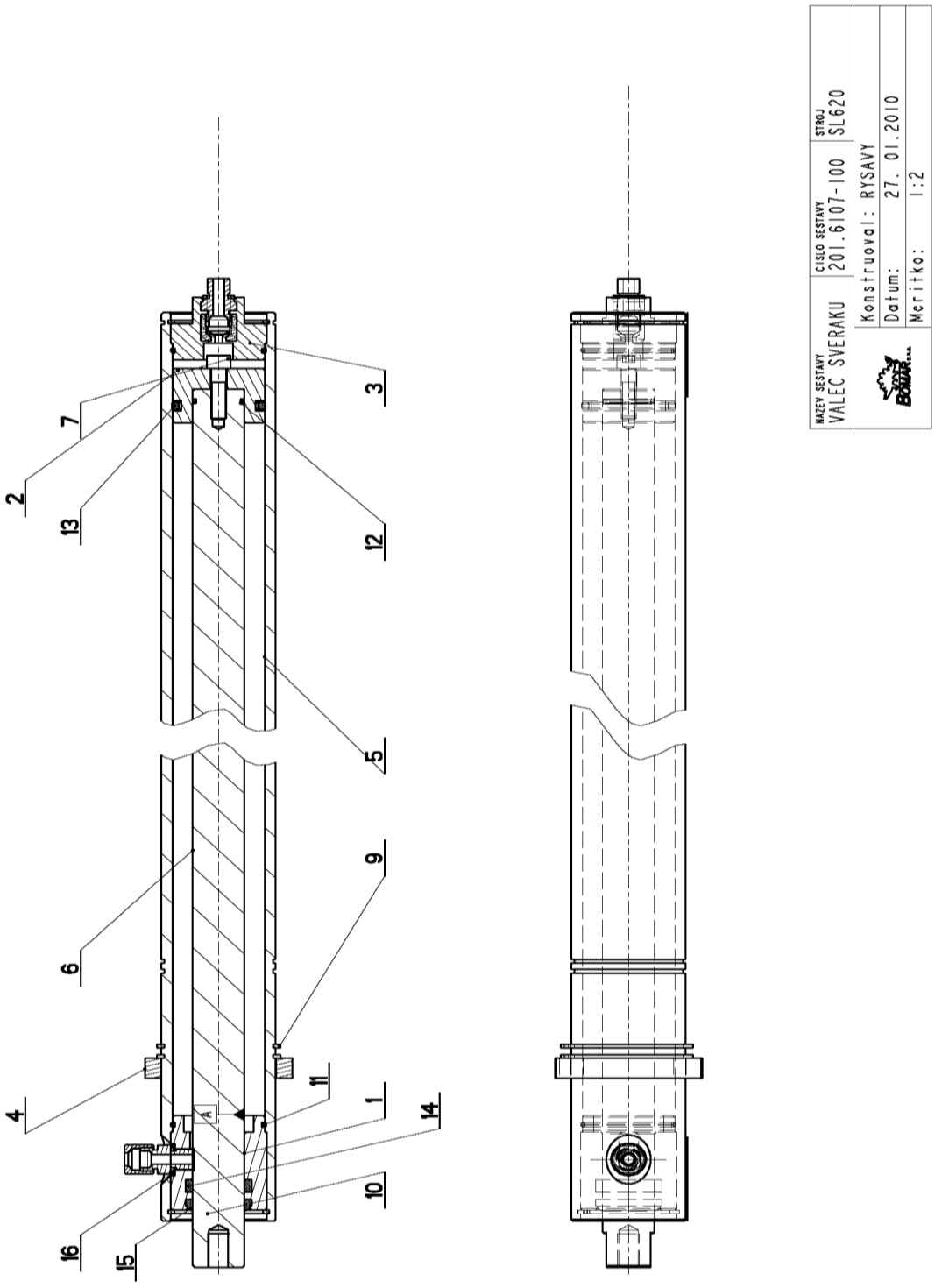


Cislo Sestavy	Ver.	Nazev sestavy
201.6103-150	1	SVERAK/VICE/SCHRAUBSTOCK

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.6107-100	1	VALEC SVERAKU / VICE CYLINDER / SCHRAUBSTOCKZYLINDER		1
2	30.6003-552	0	KLUZAK / GLIDER / GLEITER	HR 130x50	1
3	30.6103-001	3	CELIST PEVNA / SOLID JAW / FESTE BACKE		1
4	30.6103-005	0	DRZAK / HOLDER / HALTER	HR 30x20	1
5	30.6103-102	3	CELIST POHYBLIVA / MOVING JAW / BEWEGLICHE BACKE		1
6	30.6103-108	1	KONZOLA / CONSOLE / KONSOLE		1
7	30.6103-109	6	PODSTAVEC SVERAKU / VICE BASE / SCHRAUBSTOCKUNTERSATZ		1
8	30.6103-151	0	LISTA SVERAKU / VICE TRIM / SCHRAUBSTOCKLEISTE	HR 82x27	2
9	30.6203-111	0	DORAZ / STOP PIECE / ANSCHLAG	TYC 6HR 22	1
10	90.001.25.048	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X30	20
11	90.001.25.054	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X60	6
12	90.001.25.057	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12x25	1
13	90.001.25.060	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X40	4
14	90.001.25.074	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M16X45	16
15	90.005.55.025	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M10X30	1
16	90.100.55.006	0	MATICE / NUT / MUTTER	MATICE _ M10	1

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

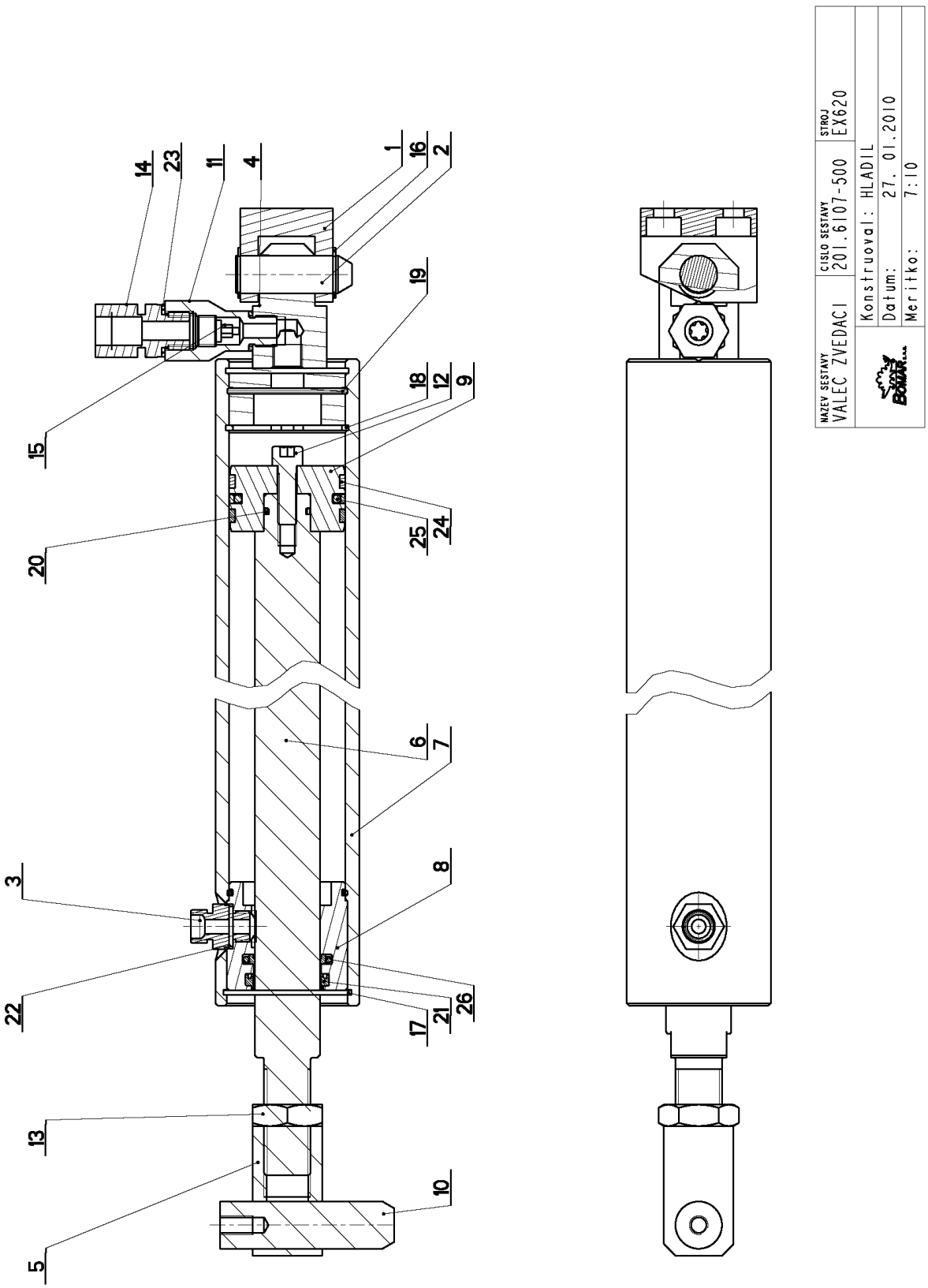
7.13. Válec svěráku / Schraubstockzylinder / Vice cylinder



Cislo Sestavy	Ver.	Nazev sestavy
201.6107-100	0	VALEC SVERAKU/VICE CYLINDER/SCHRAUBSTOCKZYLINDER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.1807-104	2	VIKO / COVER / DECKEL	TYC 55	1
2	30.2007-302	0	PIST / PISTON / KOLBEN	d 55	1
3	30.2007-304	0	VIKO / COVER / DECKEL	d 55	1
4	30.6007-107	0	PRILOZKA / STRAP / LASCHE	HR 80x12	1
5	30.6107-101	4	VALEC SVERAKU / VICE CYLINDER / SCHRAUBSTOCKZYLINDER	TRUBKA 62/50	1
6	30.6107-102	2	PISTNICE / PISTON ROD / KOLBENSTANGE	d 28	1
7	90.001.25.034	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X30	1
8	92.002.101	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG		2
9	95.800.021	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 62	2
10	95.801.009	0	KROUZEK POJIST.VNITR / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 52	2
11	96.001.013	0	KROUZEK O STATICKY / STATIC O RING / O-RING STATISCH	45X2	2
12	96.002.011	0	KROUZEK O DYNAMICKY / DYNAMIC O RING / O-RING DYNAMISCH	24X2	1
13	96.020.005	0	KROUZEK TESNICI / SEAL RING / DICHTUNGSRING	39.2X5.33	1
14	96.041.003	0	TESNENI / SEALING / DICHTUNG	601-28x36x7.1	1
15	96.060.003	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	KROUZEK STIRACI 28	1
16	96.082.002	0	TESNENI / SEALING / DICHTUNG	KROUZEK CU 13/17	2

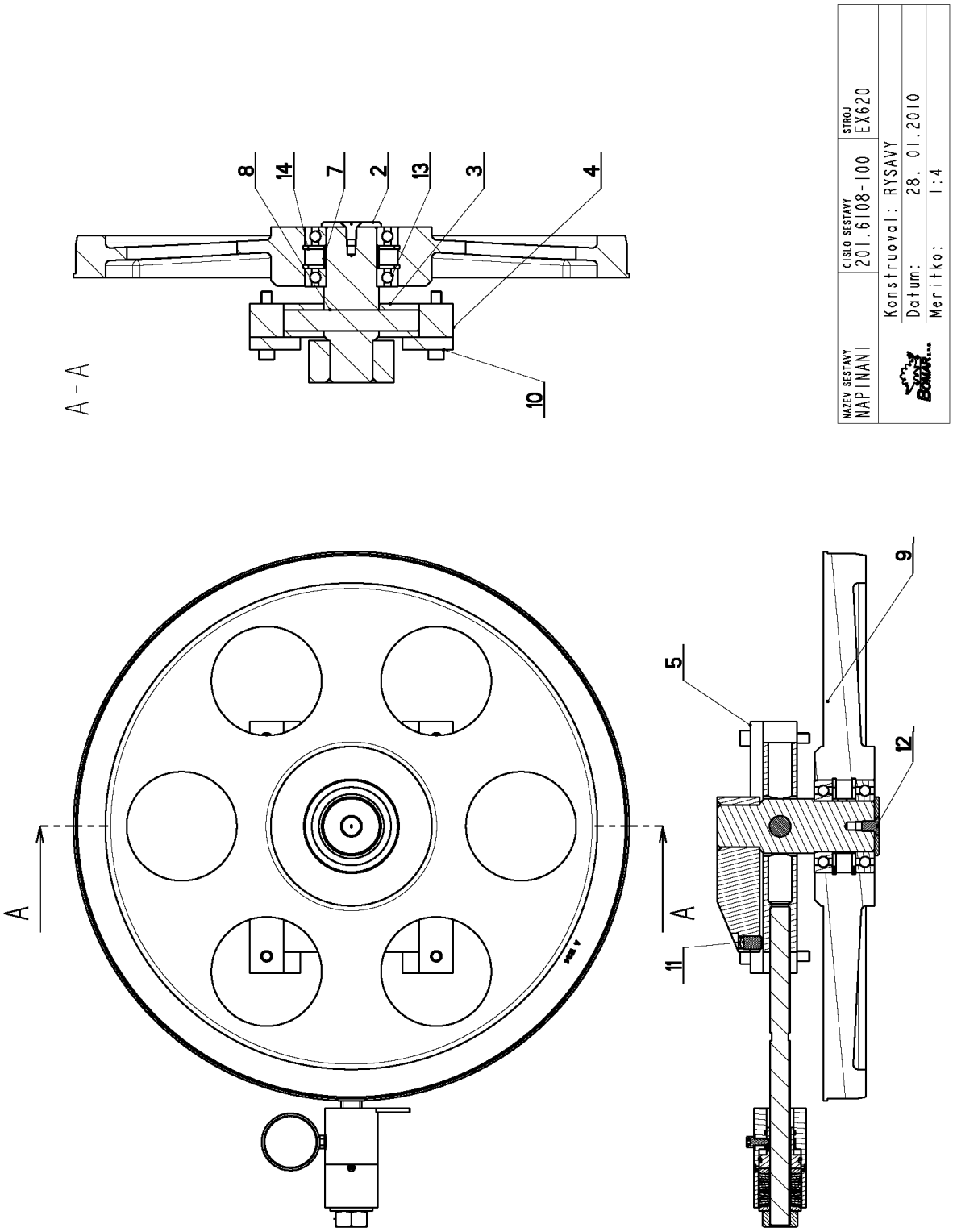
7.15. Válec zvedací / Hebezylinder / Lifting cylinder



Cislo Sestavy	Ver.	Nazev sestavy
201.6107-500	2	VÁLEC ZVEDACI/LIFTING CYLINDER/HEBEZYLINDER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0807-008	1	DRZAK / HOLDER / HALTER	HR 40x40	1
2	30.0807-009	1	CEP / LUG / BOLZEN	d 16h9	1
3	30.2807-109	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG		1
4	30.4107-003	2	VIKO / COVER / DECKEL	TYC 50	1
5	30.4707-206	0	DRZAK / HOLDER / HALTER	HR 30x30	1
6	30.6107-002	0	PISTNICE / PISTON ROD / KOLBENSTANGE	TYC 28	1
7	30.6107-501	0	VALEC / ROLLER / ZYLINDER	TRUBKA 62/50	1
8	30.6107-502	0	VIKO / COVER / DECKEL	TYC 55	1
9	30.6107-504	1	PIST / PISTON / KOLBEN	d 55	1
10	30.6107-505	0	CEP / LUG / BOLZEN	d 20	1
11	30.6107-510	1	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	6HR 22	1
12	90.001.25.033	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x25	1
13	90.101.55.007	0	MATICE / NUT / MUTTER	MATICE M20X1,5	1
14	92.002.114	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG	G 3/8	1
15	92.151.001	0	VENTIL POJISTNY / SAFETY VALVE / SICHERUNGSVENTIL	VPNH1_4	1
16	95.800.007	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 16	2
17	95.801.009	0	KROUZEK POJIST.VNITR / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 52	1
18	95.801.018	0	KROUZEK POJIST.VNITR / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 30	2
19	96.001.013	0	KROUZEK O STATICKY / STATIC O RING / O-RING STATISCH	45X2	2
20	96.002.007	0	KROUZEK O DYNAMICKY / DYNAMIC O RING / O-RING DYNAMISCH	16X2	1
21	96.061.009	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	WD2200280	1
22	96.082.002	0	TESNENI / SEALING / DICHTUNG	KROUZEK CU 13/17	2
23	96.082.012	0	KROUZEK / RING / RING		1
24	96.084.001	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING		2
25	96.900.013	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG	PT0200500	1
26	96.900.021	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG	RSK200280	1

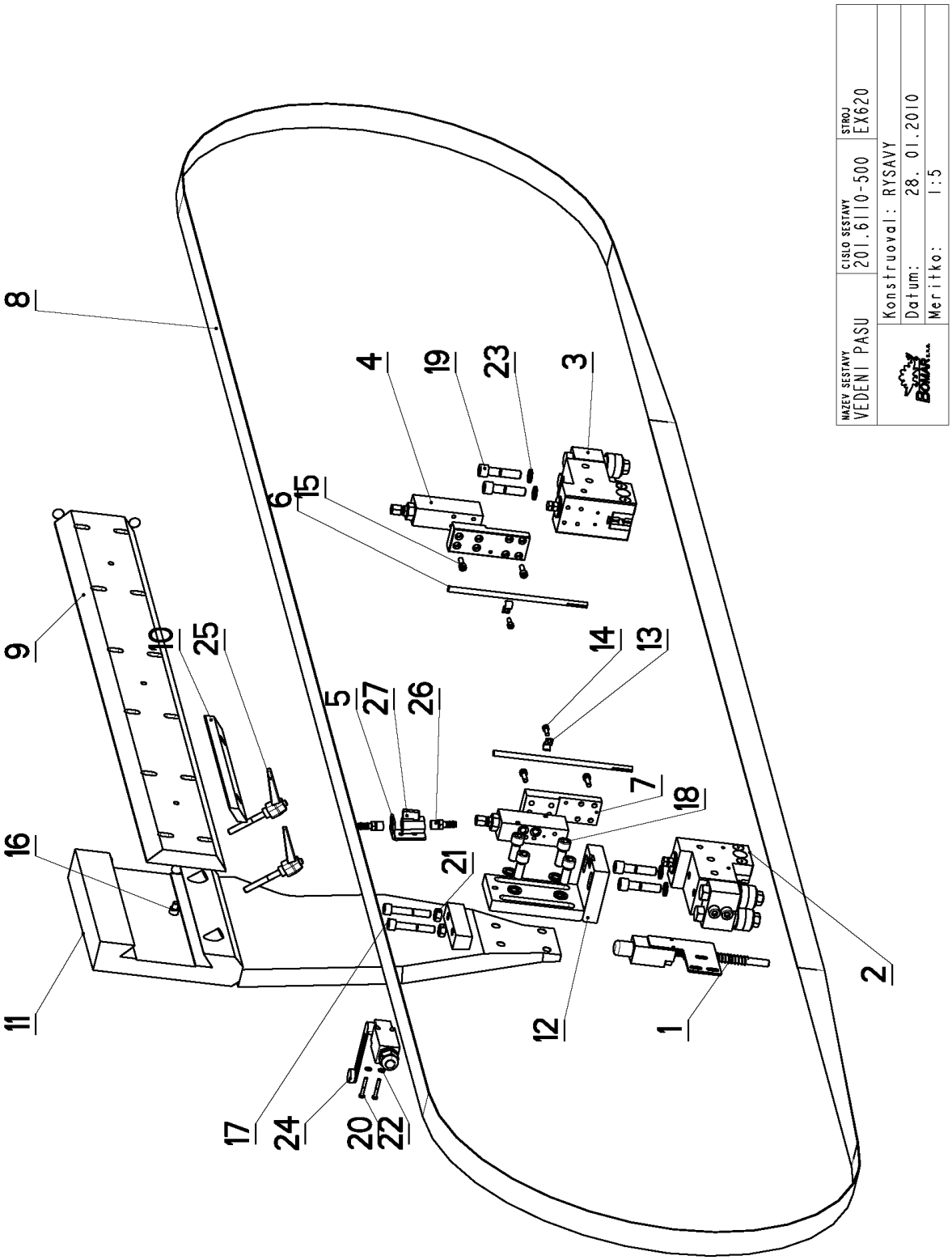
7.17. Napínání / Spannung / Tensioning



Cislo Sestavy	Ver.	Nazev sestavy
201.6108-100	2	NAPINANI/TENSIONING/SPANNUNG

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.6107-350	2	VALEC / ROLLER / ZYLINDER	SESTAVA	1
2	30.1804-010	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	d 70	1
3	30.6008-001	0	KOSTKA NAPINANI / TENSIONING CUBE / BANDSPANNUNGSWÜRFEL	HR 160x40	1
4	30.6008-002	0	LISTA VODICI / LEAD TRIM / FÜHRUNGSLEISTE	HR 40x40	2
5	30.6008-003	0	LISTA VODICI / LEAD TRIM / FÜHRUNGSLEISTE	HR 60x15	2
6	30.6008-004	1	NAPINANI / TENSIONING / SPANNUNG		1
7	30.6008-009	0	KROUZEK DISTANCNI / DISTANCE RING / DISTANZRING	Tr 65x5	1
8	30.6008-014	1	CEP NAPINANI / TENSIONING LUG / SPANNUNGSBOLZEN	d 25 h6	1
9	30.6108-006	1	KOLO NAPINACI / TENSIONING WHEEL / UMLENKRAD		1
10	90.001.25.064	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X70	6
11	90.002.2D.028	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M16x1,5x25	1
12	90.011.27.009	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M12X20	1
13	95.001.031	0	LOZISKO / BEARING / LAGER	6212A	2
14	95.801.022	0	KROUZEK POJIST.VNITR / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 110	2

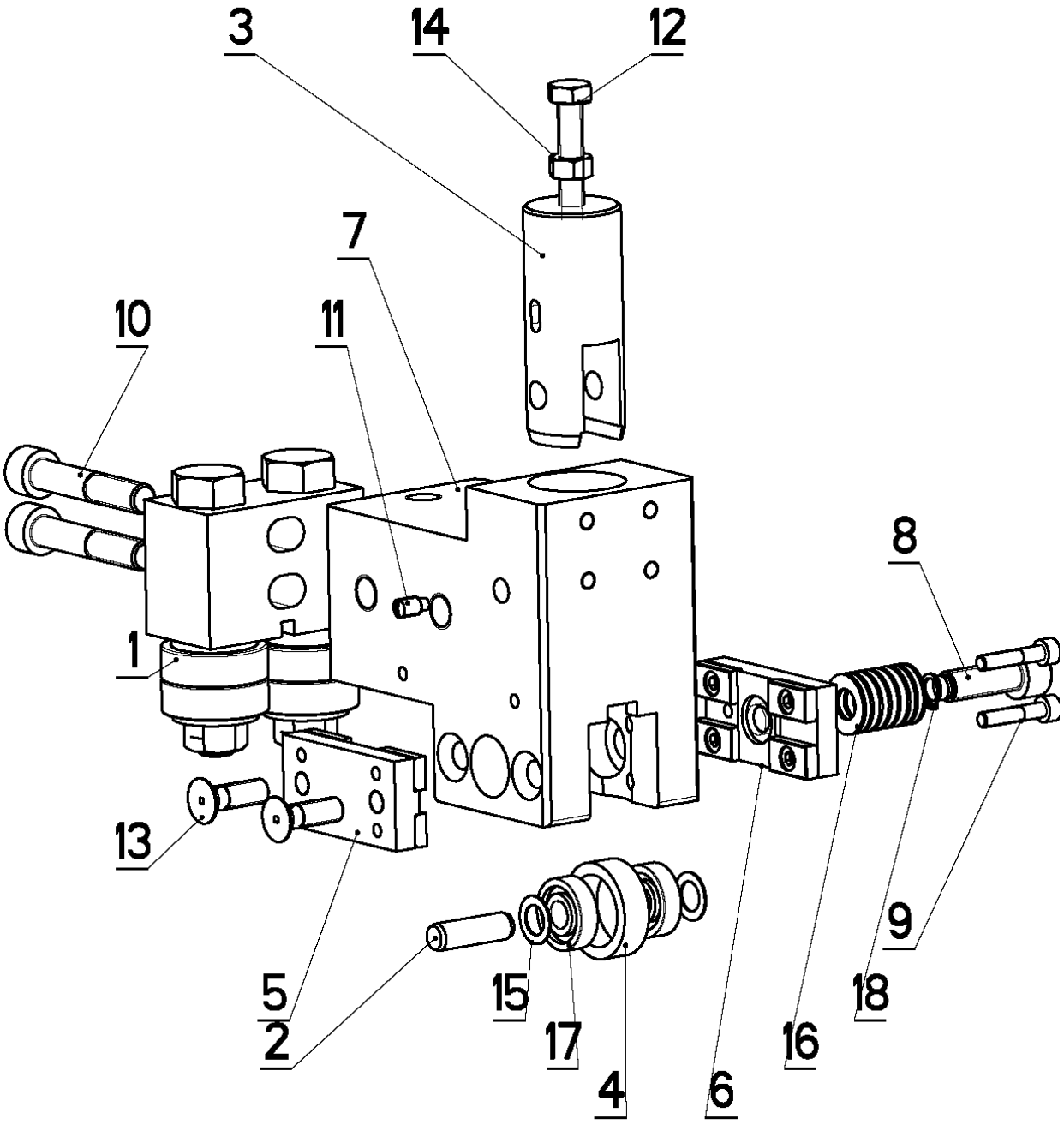
7.19. Vedení pásu / Sägebandführung / Belt guide



Cislo Sestavy	Ver.	Nazev sestavy
201.6110-500	4	VEDENI PASU/BELT GUIDE/SÄGEBANDFÜHRUNG

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.6110-020	1	DORAZ / STOP PIECE / ANSCHLAG		1
2	201.6110-550	3	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ		1
3	201.6110-610	3	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ		1
4	201.6816-100	0	KOSTKA REGULACE / REGULATION CUBE / REGELUNGSWÜRFEL		2
5	30.1814-011	0	DRZAK / HOLDER / HALTER	P 3- 76	1
6	30.6010-315	0	TRUBKA / TUBE / ROHR	TR 8x 1	2
7	30.6016-002	0	DESKA / BOARD / PLATTE	HR 40x20	2
8	30.6104-901	0	PAS PILOVY / SAW BELT / SÄGEBAND	PAS M42 4|x1,3; 4/6 TPI	1
9	30.6110-002	1	LISTA / TRIM / LEISTE	TYC 120x25	1
10	30.6110-004	2	LISTA TRECI / FRICTION TRIM / FRIKTIONSLEISTE	TYC 35x12	1
11	30.6110-108	1	DRZAK / HOLDER / HALTER		1
12	30.6110-125	1	DRZAK / HOLDER / HALTER		1
13	30.9010-003	0	DRZAK / HOLDER / HALTER	P1.5x10	2
14	90.001.25.009	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X16	2
15	90.001.25.018	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X20	16
16	90.001.25.028	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X10	2
17	90.001.25.054	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X60	2
18	90.001.25.058	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X30	4
19	90.001.25.062	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X50	4
20	90.012.50.007	0	SROUB / BOLT / SCHRAUBE	SROUB M4X30	2
21	90.100.55.006	0	MATICE / NUT / MUTTER	MATICE _ M10	2
22	90.150.50.002	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 4,3	2
23	90.163.00.003	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	NORD-LOCK	8
24	91.173.018	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	PZ-FR55-M2	1
25	94.008.004	0	PAKA / LEVER / HEBEL	M8x40	2
26	94.202.008	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION		2
27	99.260.003	0	VENTIL / VALVE / VENTIL	1/4"	1

7.21. Vodící kostka / Führungsklotz / Guiding cube - 1

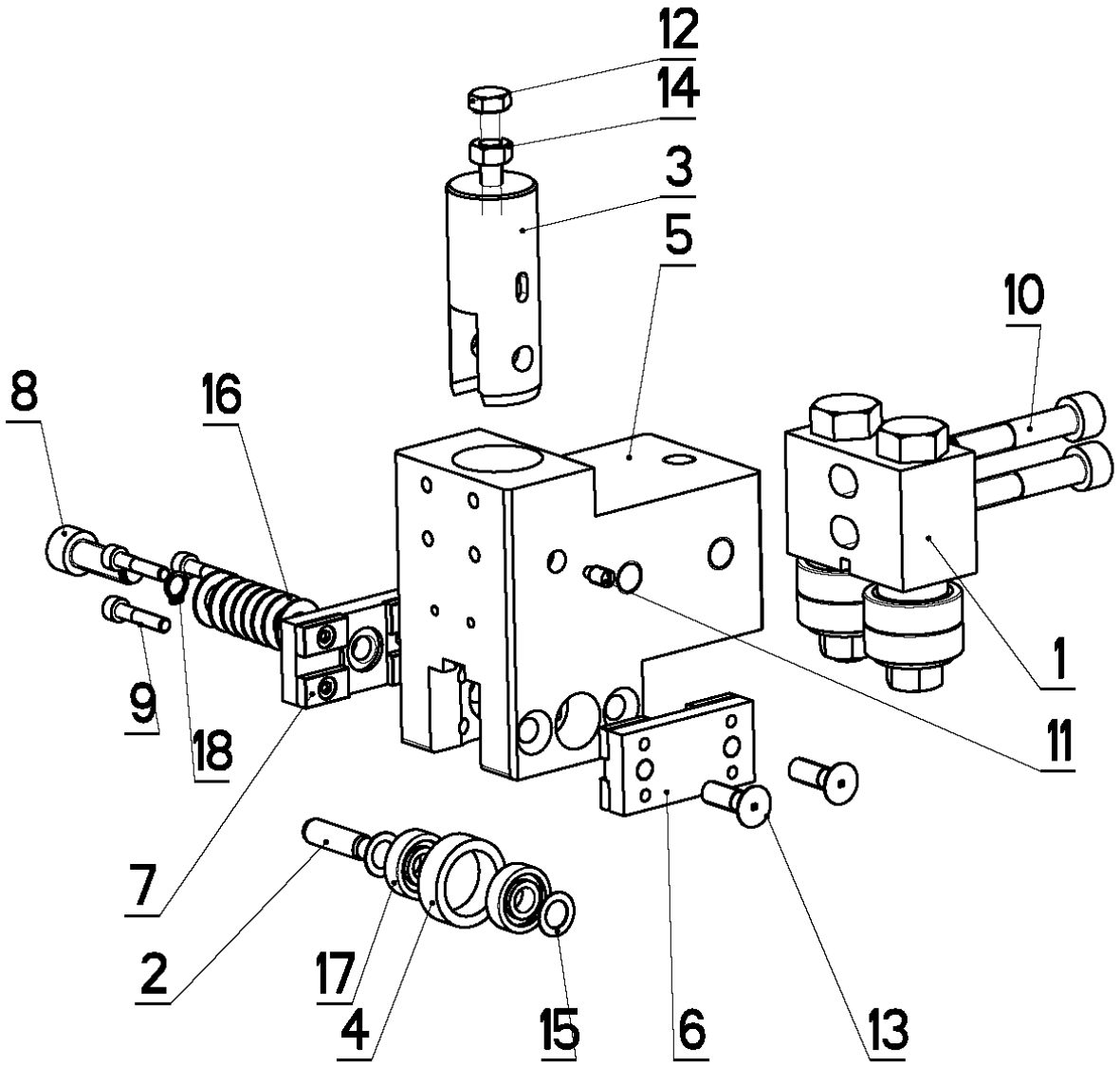


NAZEV SESTAVY	CISLO SESTAVY	STROJ
KOSTKA VODICI	201.6110-550	IN440
	Konstruoval: HLADIL	
	Datum: 27. 01.2010	
	Meritko: 3:5	

Cislo Sestavy	Ver.	Nazev sestavy
201.6110-550	3	KOSTKA VODICI/LEAD CUBE/FÜHRUNGSKLOTZ

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.6110-510	0	VEDENI / GUIDE / BACKENFÜHRUNG		1
2	30.6710-108	1	KOLIK / PIN / BOLZEN	TYC 10	1
3	30.6710-109	0	PIST / PISTON / KOLBEN	d 32	1
4	30.6710-110	1	KROUZEK / RING / RING	LH 2403210	1
5	30.Y410-110	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
6	30.Y410-120	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
7	30.Y410-201	1	KOSTKA VODICI LEVA / LEAD CUBE / FÜHRUNGSKLOTZ	HR 110x70	1
8	30.Y610-503	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X30	1
9	90.001.25.011	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X25	3
10	90.001.25.053	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X55	2
11	90.004.2D.002	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M6X12	1
12	90.005.55.019	0	SROUB GHRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8X40	1
13	90.011.27.016	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M8X25	2
14	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE _ M8	1
15	90.154.50.003	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	10x16x0.50	2
16	90.350.0Z.005	0	PRUZINA TALIROVA / DISC SPRING / TELLERFEDER	20X10.2X1.1	8
17	95.001.044	0	LOZISKO / BEARING / LAGER	609 2RS	2
18	95.800.002	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 8	1

7.23. Vodící kostka / Führungsklotz / Guiding cube - 2

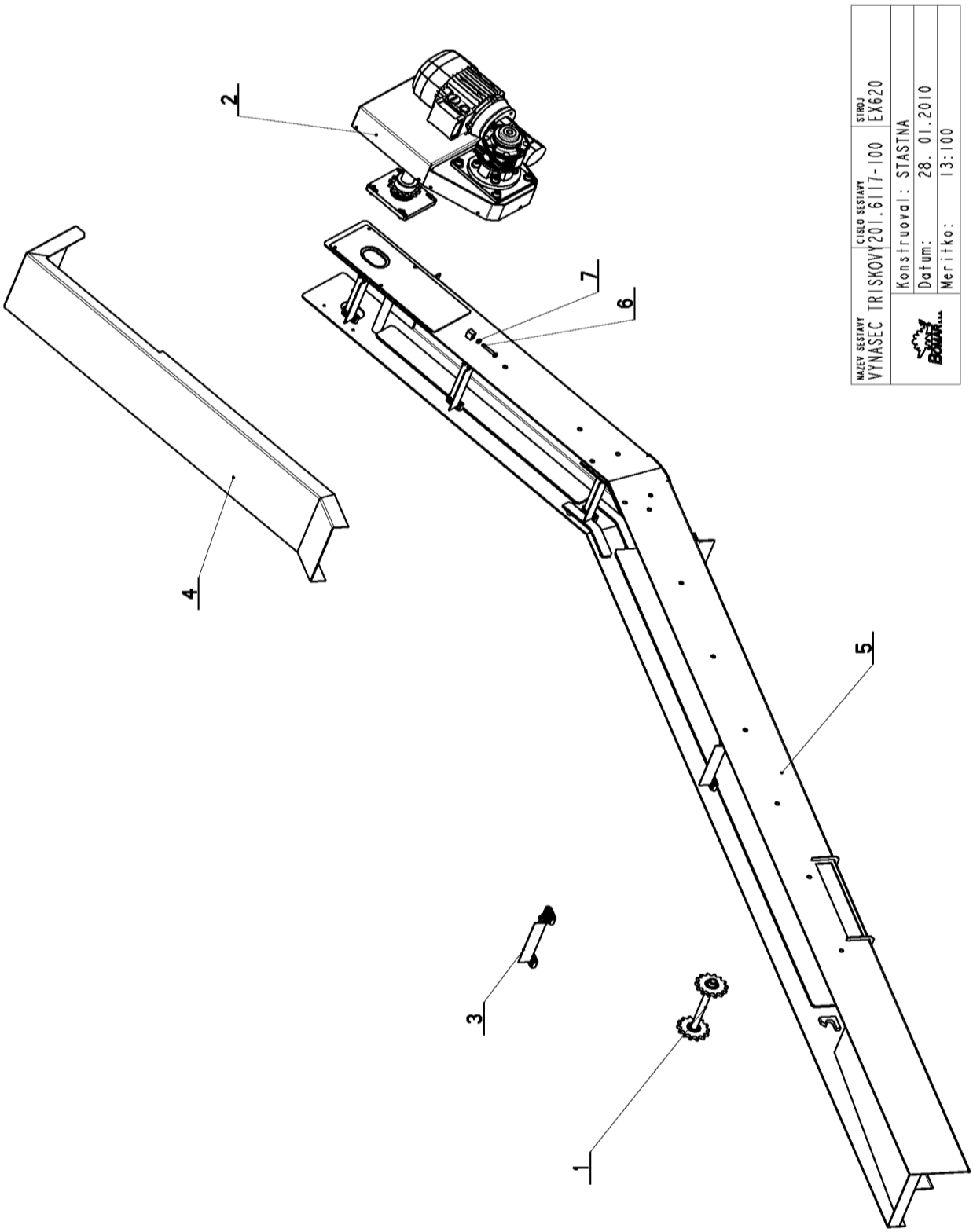


NAZEV SESTAVY	CISLO SESTAVY	STROJ
KOSTKA VODICI	201.6110-610	EX520
	Konstruoval: HLADIL	
	Datum: 27. 01.2010	
	Meritko: 1:2	

Cislo Sestavy	Ver.	Nazev sestavy
201.6110-610	3	KOSTKA VODICI/LEAD CUBE/FÜHRUNGSKLOTZ

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.6110-510	0	VEDENI / GUIDE / BACKENFÜHRUNG		1
2	30.6710-108	1	KOLIK / PIN / BOLZEN	TYC 10	1
3	30.6710-109	0	PIST / PISTON / KOLBEN	d 32	1
4	30.6710-110	1	KROUZEK / RING / RING	LH 2403210	1
5	30.Y410-101	1	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ	HR 110x70	1
6	30.Y410-110	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
7	30.Y410-120	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
8	30.Y610-503	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X30	1
9	90.001.25.011	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X25	3
10	90.001.25.053	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X55	2
11	90.004.2D.002	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M6X12	1
12	90.005.55.019	0	SROUB GHRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8X40	1
13	90.011.27.016	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M8X25	2
14	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE _ M8	1
15	90.154.50.003	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	10x16x0.50	2
16	90.350.0Z.005	0	PRUZINA TALIROVA / DISC SPRING / TELLERFEDER	20X10.2X1.1	8
17	95.001.044	0	LOZISKO / BEARING / LAGER	609 2RS	2
18	95.800.002	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 8	1

7.25. Třískový vynašeč / Spanabführung / Chip extractor



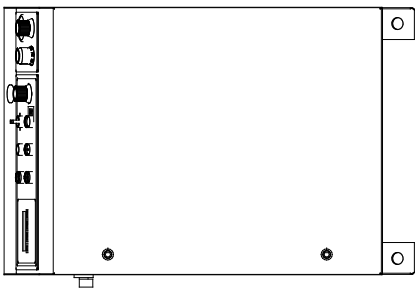
Manual version: 2.06 / Feb. 2013
Manual rev.: 1

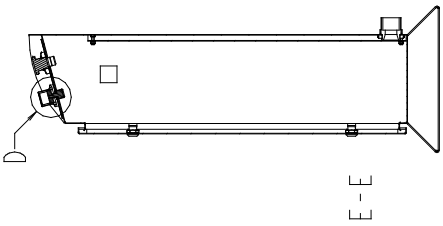
7.26. Kusovník / Stückliste / Piece list – Třískový vynašeč / Spanabführung / Chip extractor

Cislo Sestavy	Ver.	Nazev sestavy
201.6117-100	4	VYNASEC TRISKOVY/CHIP EXTRACTOR/SPANABFÜHRUNG

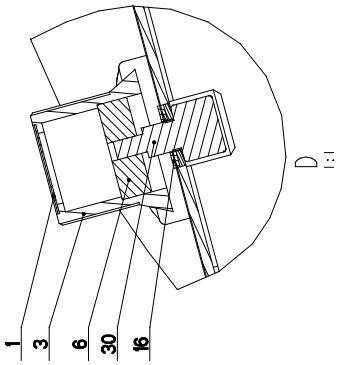
Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.6017-103	0	KOLO NAPINACI / TENSIONING WHEEL / UMLENKRAD		1
2	201.6017-250	1	POHON / DRIVE / ANTRIEB		1
3	201.6717-304	1	RETEZ / CHAIN / KETTE		8
4	30.6117-103	2	KRYT / COVER / ABDECKUNG		1
5	30.6117-201	0	KORYTO / CHANNEL / RINNE		1
6	90.005.55.012	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M6X40	2
7	90.100.55.004	0	MATICE / NUT / MUTTER	MATICE - M6	2

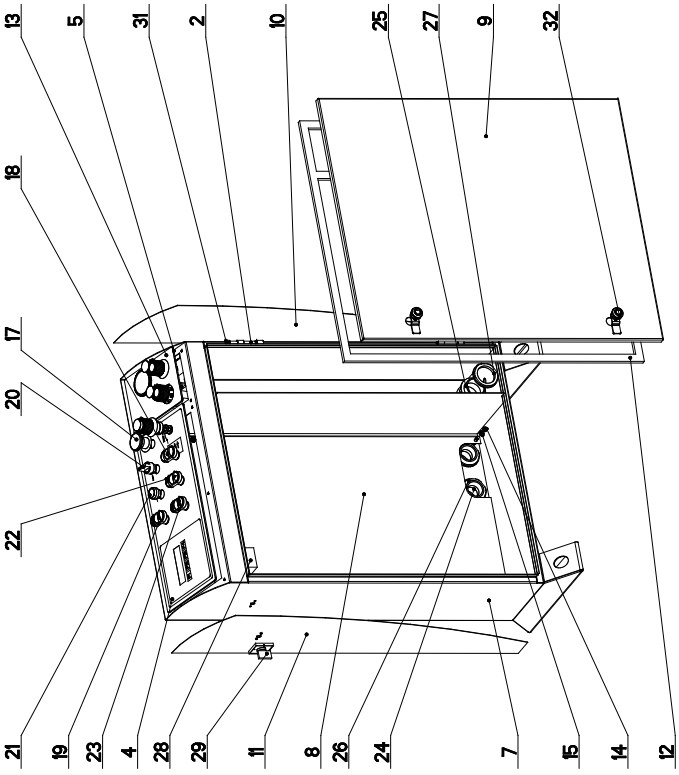
7.27. Ovladací pult / Bedienpult / Control panel





NÁZEV SESTAVY: OVLADAČ PANEL	ČÍSLO SESTAVY: 201.Y430-000	STROJ: IN460	
	Konstruoval: HLADIL		
	Datum: 12. 09.2011		
	Měřítko: 1:3:100		



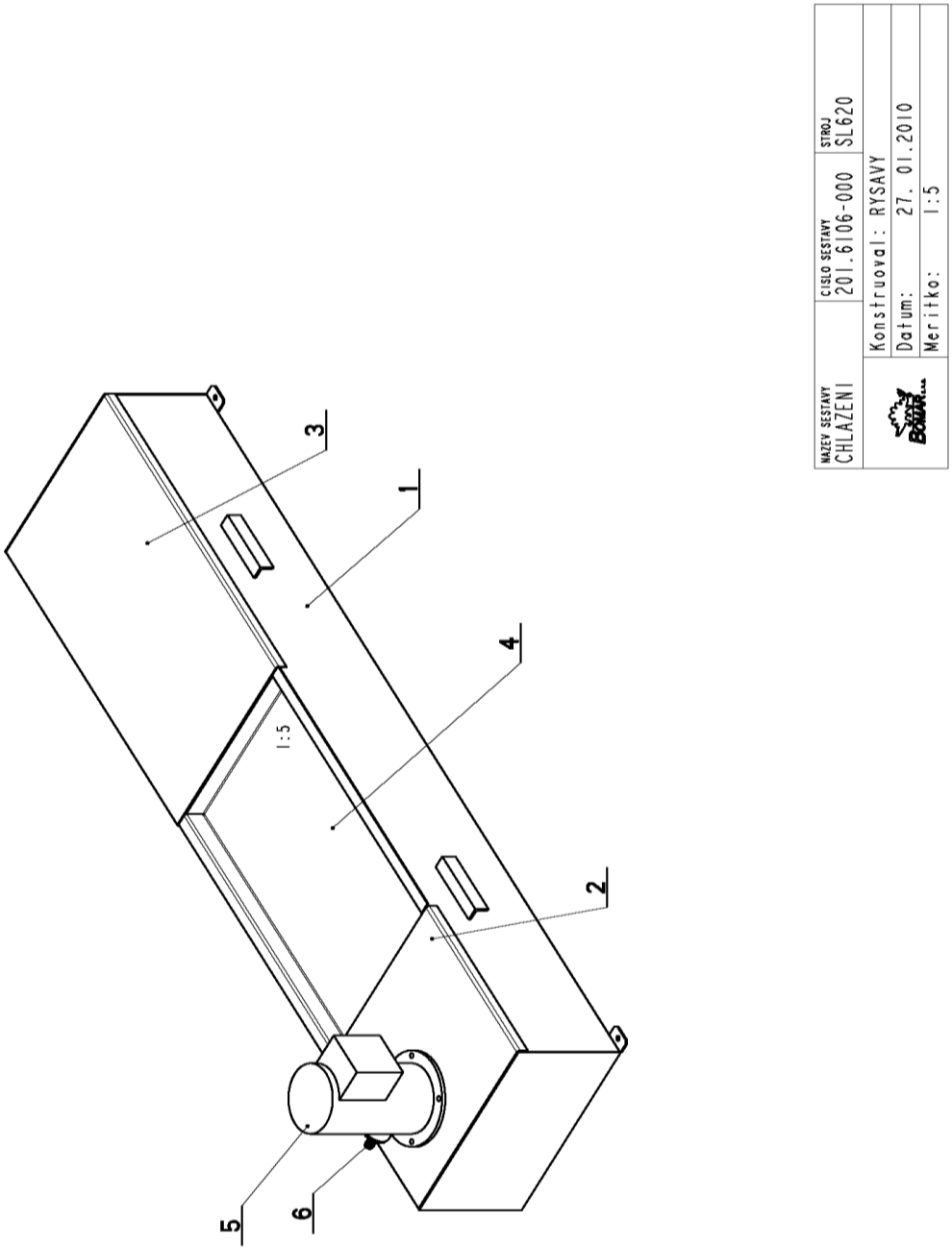


Cislo Sestavy	Ver.	Nazev sestavy
201.Y430-000	0	OVLADACI PANEL/CONTROL PANEL/BEDIENPULT

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.6130-012	0	VIKO / COVER / DECKEL	P 0.5x 30x30	3
2	30.7217-028	1	CEP / LUG / BOLZEN	7h9	2
3	31.6130-008	0	HLAVICE / HEAD / KOPF		1
4	251.654	0	PANEL ELEKTRO / ELECTRO PANEL / PANEL		1
5	201.R230-220	0	OVLADACI PANEL / CONTROL PANEL / BEDIENPULT		1
6	30.R230-010	0	MEZIKUS / INTERMEDIATE PIECE / PASSSTÜCK	d 32	1
7	30.R230-201	0	SKRIN / BOX / KASTEN		1
8	30.R230-202	0	PANEL / PANEL / PANEL	P 1.5x525	1
9	30.R230-203	0	VIKO / COVER / DECKEL		1
10	30.R230-204	0	PLECH / PLATE / BLECH	P 1x220	1
11	30.R230-206	0	PLECH / PLATE / BLECH	P 1x220	1
12	30.R230-209	0	TESNENI / SEALING / DICHTUNG	TESNENI 19x10	1
13	31.R230-211	0	SAMOLEPKA / STICKER / AUFKLEBER		1
14	90.100.55.004	0	MATICE / NUT / MUTTER	MATICE _ M6	4
15	90.150.50.004	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 6,4	4
16	90.150.50.006	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 10,5	2
17	91.060.030	0	HLAVICE TOTAL STOP / TOTAL STOP HEAD / TASTE TOTAL STOP		1
18	91.060.033	0	HLAVICE / HEAD / KOPF		1
19	91.060.034	0	HLAVICE / HEAD / KOPF	START/STOP	1
20	91.060.051	0	PREPINAC / SWITCH / UMSCHALTER		1
21	91.060.053	0	HLAVICE / HEAD / KOPF		1
22	91.060.054	0	HLAVICE / HEAD / KOPF	NAHORU/DOLU	1
23	91.060.055	0	HLAVICE / HEAD / KOPF	SV. ZAVR/OTEV	1
24	91.071.005	0	PRUCHODKA / LEADTHROUGH / DURCHFÜHRUNG		2
25	91.071.022	0	VYVODKA / BUSHING / TÜLLE		1
26	91.072.008	0	MATICE / NUT / MUTTER		2
27	91.072.016	0	MATICE / NUT / MUTTER		1
28	91.170.003	0	SPINAC VACKOVY / CAM SWITCH / SCHALTER	LE2-12-1763	1
29	91.180.001	0	DESKA SPINACE / ELECTRIC BOARD / PLATINE		1
30	91.283.015	0	POTENCIOMETR / POTENTIOMETER / POTENTIOMETER	TP 195 4K7/N 20A	1
31	95.802.003	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 5	2
32	99.104.002	0	ZAMEK / LOCK / SCHLOSS	ZAMEK CINSKY	2

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

7.29. Chlazení / Kühlung / Cooling

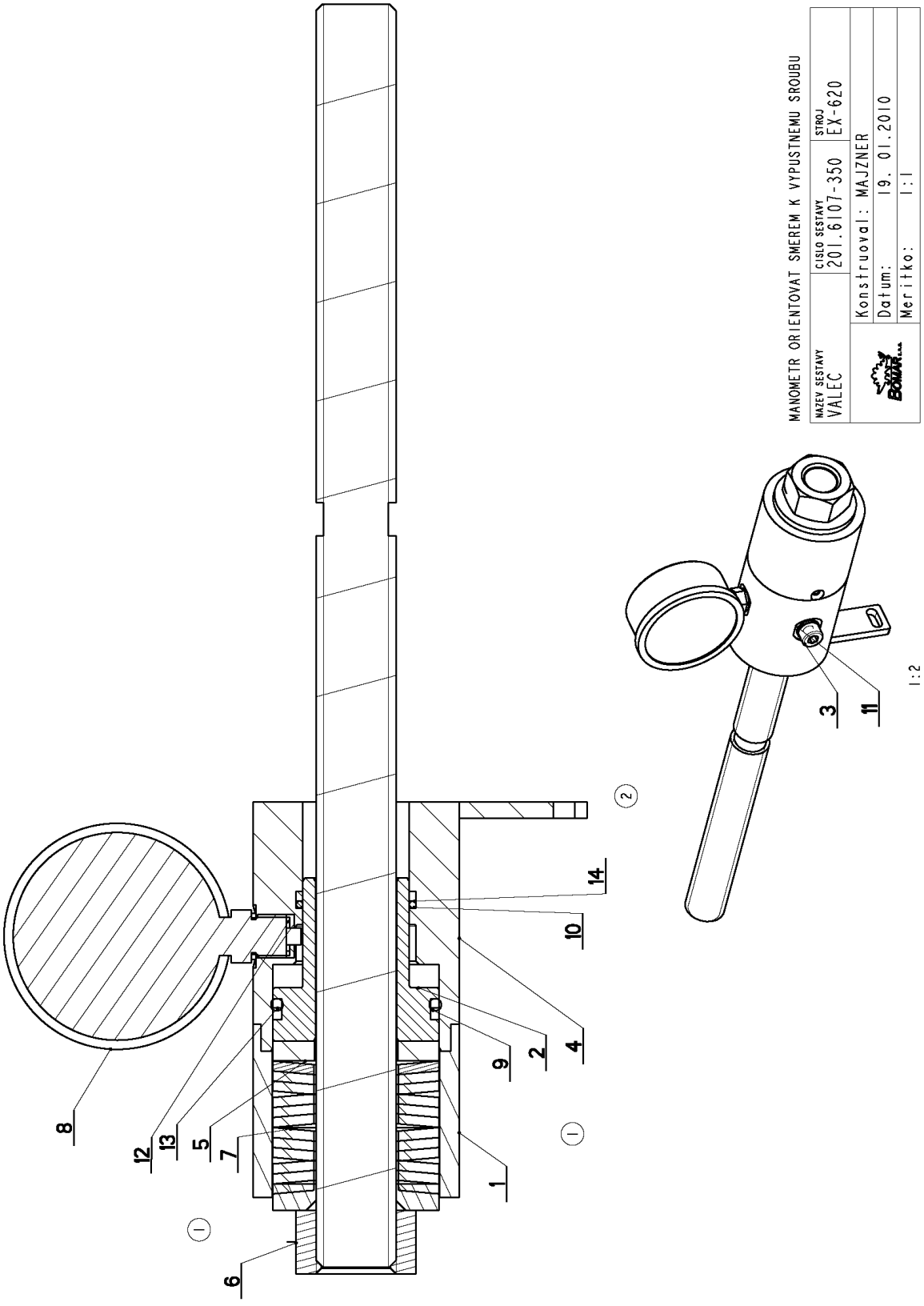


7.30. Kusovník / Stückliste / Piece list – Chlazení / Kühlung / Cooling

Cislo Sestavy	Ver.	Nazev sestavy
201.6106-000	1	CHLAZENI/COOLING/KÜHLUNG

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.6106-001	0	VANA / TANK / WANNE		1
2	30.6106-002	0	PLECH / PLATE / BLECH	P 1.5 - 327	1
3	30.6106-003	0	PLECH / PLATE / BLECH	P 1.5 - 519	1
4	30.6106-004	0	SITO / SIEVE / GITTERWERK	P 1 x352	1
5	91.020.XXX	0	CERPADLO CHLAZENI / COOLING PUMP / KÜHLMITTELPUMPE	3 COA 4-14	1
6	94.202.014	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	3/4"-10	1

7.31. Válec / Roller / Zylinder



Manual version: 2.06 / Feb. 2013
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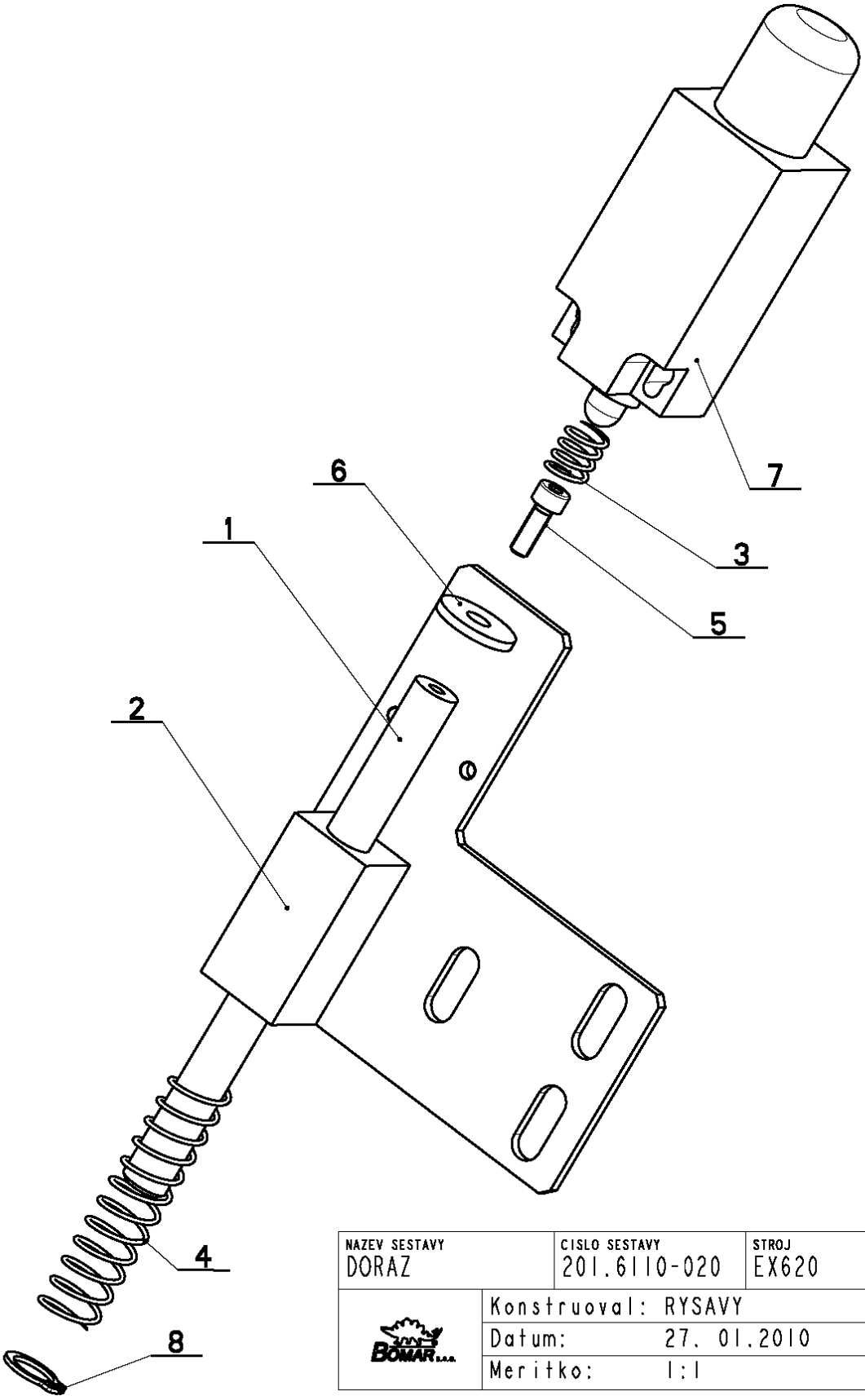
Cislo Sestavy	Ver.	Nazev sestavy
201.6107-350	2	VALEC/ROLLER/ZYLINDER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.6008-013	0	TRUBKA / TUBE / ROHR	TR 62x10	1
2	30.6107-352	0	PIST / PISTON / KOLBEN	d 55	1
3	30.6107-354	1	SROUB / BOLT / SCHRAUBE	M8X20	1
4	30.6107-358	0	VALEC / ROLLER / ZYLINDER		1
5	30.6107-359	1	DISTANC / DISTANCE / DISTANZ	d 50	1
6	30.6108-008	1	SROUB / BOLT / SCHRAUBE		1
7	90.350.02.004	0	PRUZINA TALIROVA / DISC SPRING / TELLERFEDER	50X25.4X3	12
8	92.080.004	0	MANOMETR / MANOMETER / MANOMETER	d 63 - 250bar	1
9	96.001.033	0	KROUZEK O STATICKY / STATIC O RING / O-RING STATISCH	ORAR00224-N70	1
10	96.002.063	0	KROUZEK O STATICKY / STATIC O RING / O-RING STATISCH	ORAR00125-N70	1
11	96.082.001	0	TESNENI / SEALING / DICHTUNG	KROUZEK CU 10/14	2
12	96.082.005	0	KROUZEK TESNICI / SEAL RING / DICHTUNGSRING	5x8.8x1	1
13	96.083.010	0	KROUZEK / RING / RING	BG2700446-PT00	1
14	96.083.011	0	KROUZEK / RING / RING	BU2000320-PT00	1

7.33. Doraz / Anschlag / Stop Piece

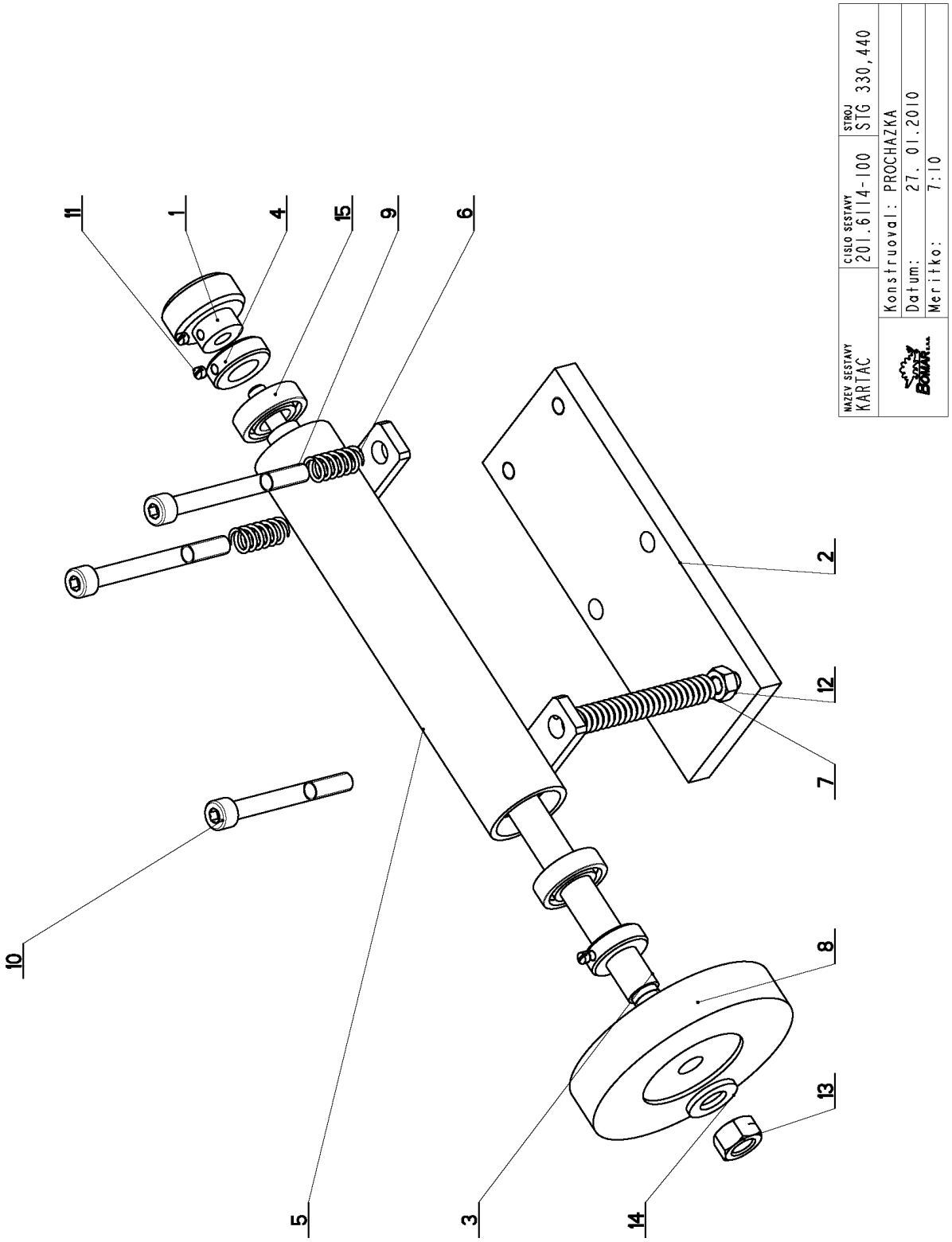


NAZEV SESTAVY	CISLO SESTAVY	STROJ
DORAZ	201.6110-020	EX620
	Konstruoval: RYSAVY	
	Datum: 27. 01.2010	
	Meritko: 1:1	

Cislo Sestavy	Ver.	Nazev sestavy
201.6110-020	1	DORAZ/STOP PIECE/ANSCHLAG

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	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	PRUZINA / SPRING / FEDER	1x9.5x12x4.0(0.8x9x10x6)	1
4	31.2801-014	0	PRUZINA / SPRING / FEDER	1x12.5x60x12	1
5	90.001.25.003	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M4X12	1
6	90.151.50.006	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 5	1
7	91.173.007	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	-RIWK	1
8	95.800.003	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 10	1

7.35. Kartáč / Bürste / Brush



Cislo Sestavy	Ver.	Nazev sestavy
201.6114-100	0	KARTAC/BRUSH/BÜRSTE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0814-204	0	KOLECKO / WHEEL / ROLLE	SESTAVA	1
2	30.6114-105	0	DESKA / BOARD / PLATTE	HR.70x12	1
3	30.6114-116	0	HRIDEL / SHAFT / WELLE	D 15	1
4	30.6114-119	1	KROUZEK / RING / RING	d 28	2
5	30.6114-128	0	DRZAK / HOLDER / HALTER		1
6	31.1506-115	0	PRUZINA / SPRING / FEDER	1.6x12x25x7.5	2
7	31.2107-206	0	PRUZINA / SPRING / FEDER		1
8	49.250.017	0	KARTAC / BRUSH / BÜRSTE	SPB 100x12	1
9	90.001.25.067	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X80	2
10	90.001.25.095	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X70	1
11	90.003.2D.001	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M5X6	3
12	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE _ M8	1
13	90.100.55.007	0	MATICE / NUT / MUTTER	MATICE _ M12	1
14	90.150.50.007	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 13	1
15	95.001.006	0	LOZISKO / BEARING / LAGER	6002 2RS	2

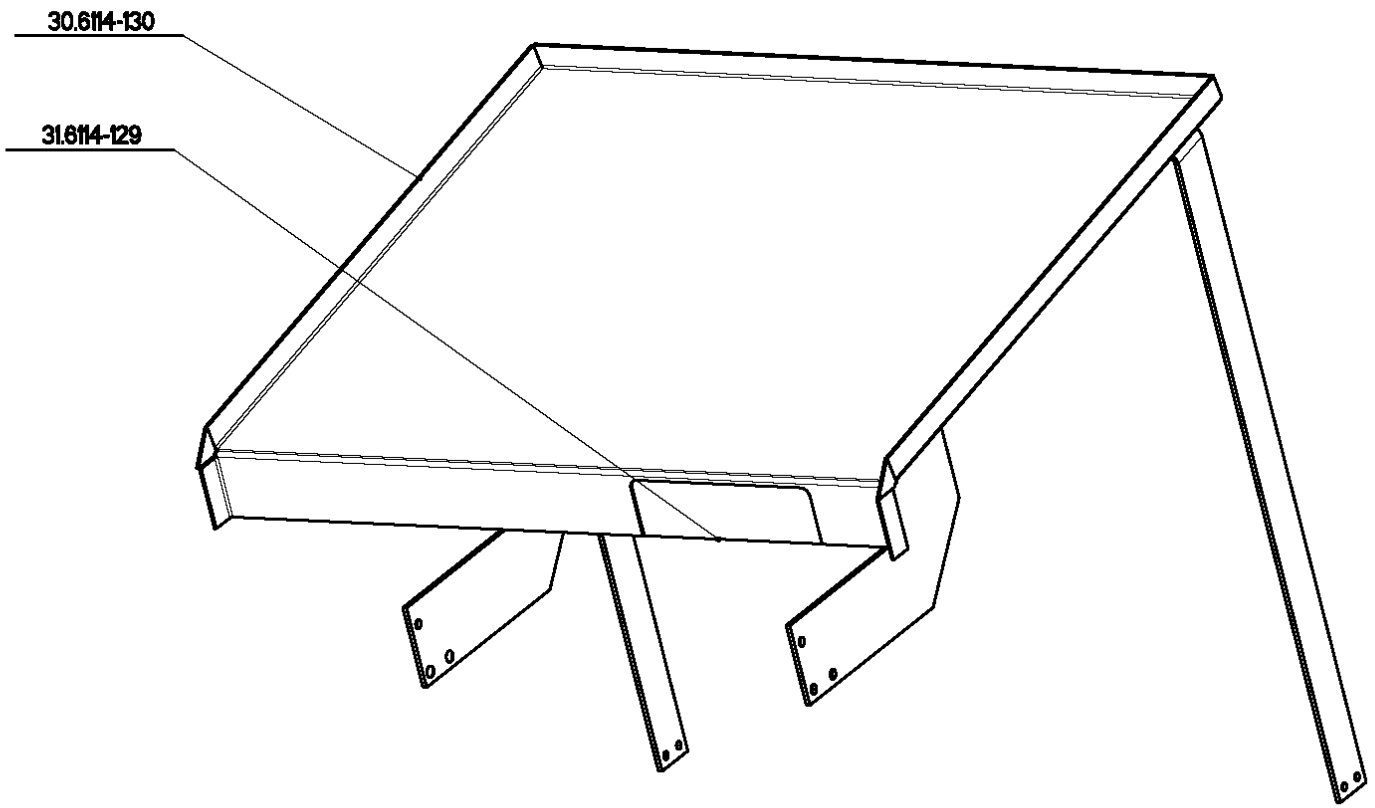
7.37. Odměřování / Gehrungmessung / Measuring

Cislo Sestavy	Ver.	Nazev sestavy
201.6114-020	0	ODMEROVÁNI/MEASURING/GEHRUNGSMESSUNG

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.2014-001	0	OBJIMKA / CLAMP / KLAMMERSTÜCK		1
2	30.6114-021	0	TYC / POLE / STANGE	d 20	1
3	30.6114-023	0	DRZAK / HOLDER / HALTER	P 3x20	2
4	90.001.25.092	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X14	4
5	94.007.001	0	SROUB / BOLT / SCHRAUBE	M5x10	1
6	99.120.002	0	PRAVITKO / RULER / SKALENBANDMAß		1

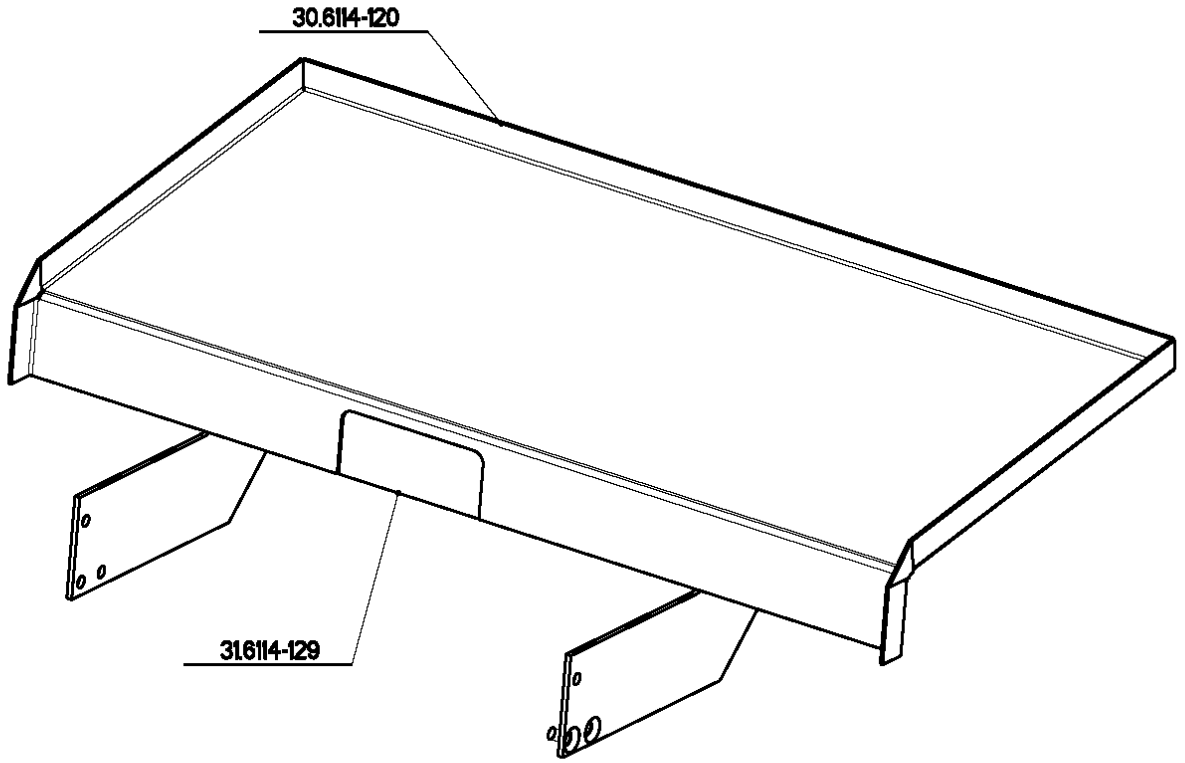
NAZEV SESTAVY		CISLO SESTAVY									STROJ
KRYT		30.6114-131			Datum: 27. 10.2006			1	KS/ST		EX620
					Zhotovil: RYSAVY						
cislo vykresu	nazev	rozmer	delka	mat.vych	mat.kon.	pov.upr.	c.hm	ks	pozice sklad	puvod	Poznamka
30.6114-130	ODKAP			SVARENO		LAKOVAT	11.0	1		EX620	
31.6114-129	CLONA	2x81	239	GUMA OLEJIZVDORNA			0.3	1		EX620	

GUMOVE TESNENI NALEPIT , PRI MONTAZI NARIZNOUT PODLE TRUBEK HYDRALIKY



NAZEV SESTAVY		CISLO SESTAVY									STROJ
KRYT		30.6114-134			Datum: 27. 10.2006			1		KS/ST	EX620
					Zhotovil: RYSAVY						
cislo vykresu	nazev	rozmer	delka	mat.vych	mat.kon.	pov.upr.	c.hm	ks	pozice sklad	puvod	Poznamka
30.6114-120	ODKAP			SVARENO		KOMAXIT	6.5	1		EX620	
31.6114-129	CLONA	2x81	239	GUMA OLEJIZVDORNA			0.3	1		EX620	

GUÁMOVE TESNENI NALEPIT, PRI MONTAZI NARIZNOUT PODLE TRUBEK HYDRAULIKY



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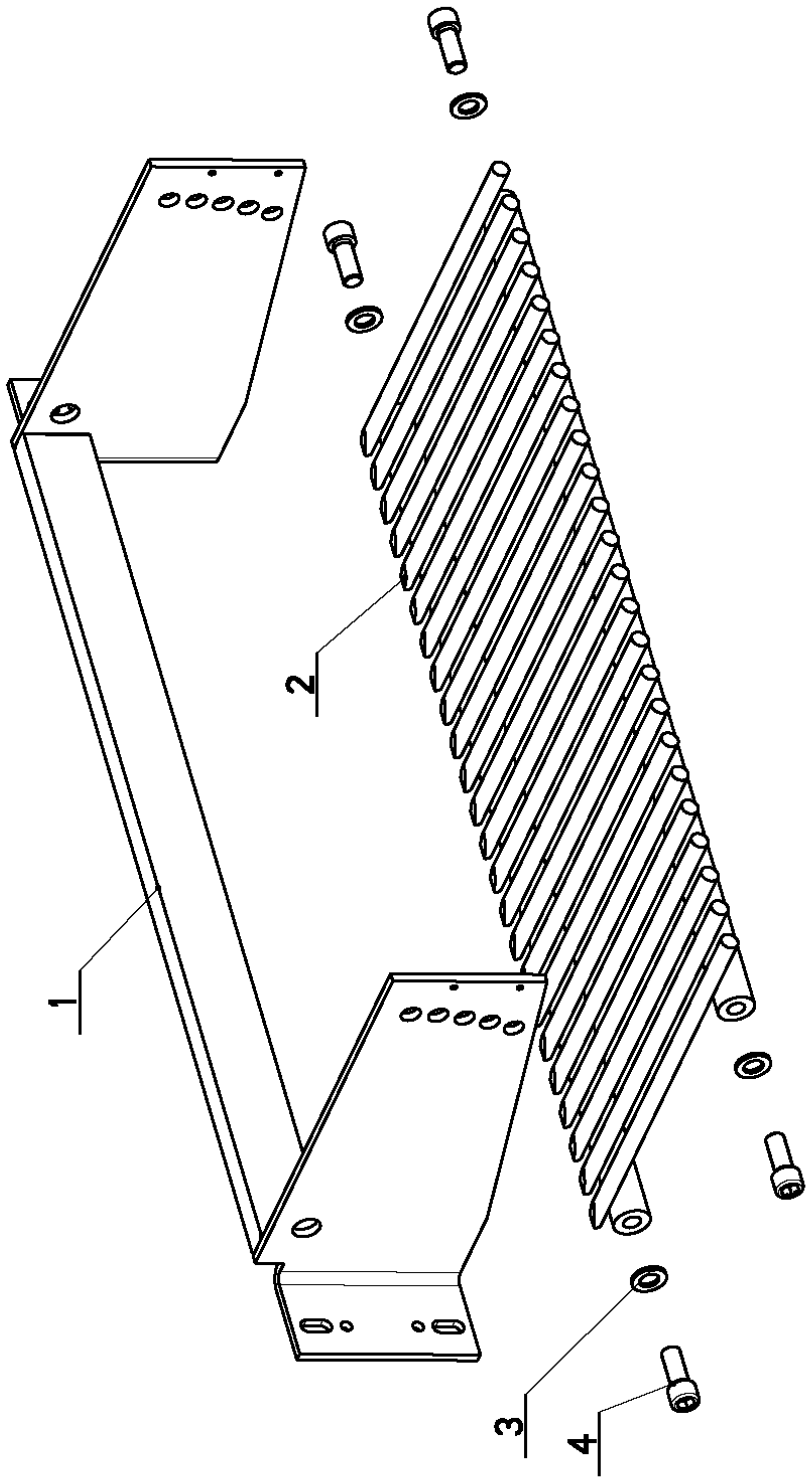
7.40. Rošt / Gitter / Grill

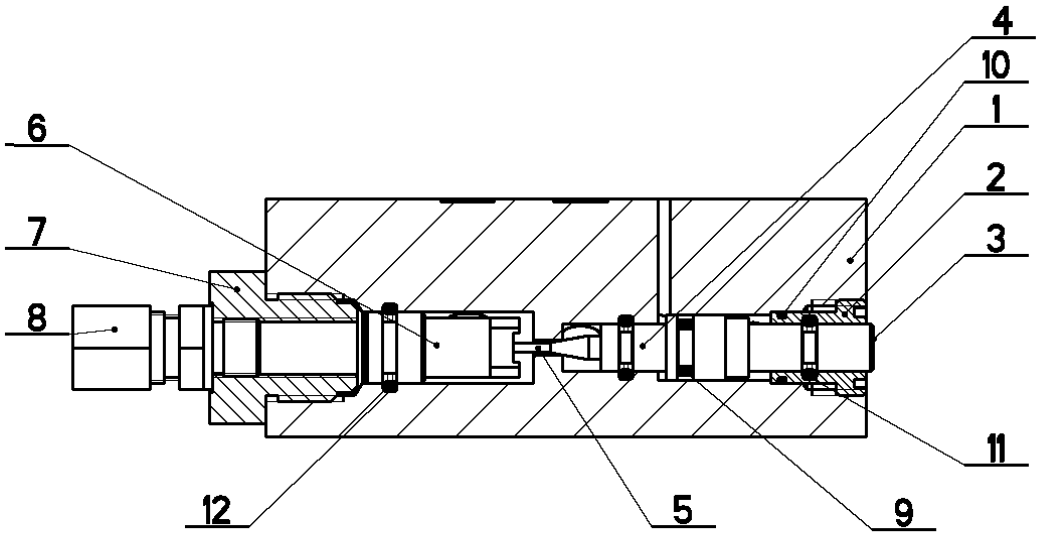
Cislo Sestavy	Ver.	Nazev sestavy
201.6118-100	0	ROST/GRILL/GITTER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.6118-101	0	DRZAK / HOLDER / HALTER		1
2	30.6118-102	1	ROST / GRILL / GITTER		1
3	90.150.50.009	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 17	4
4	90.001.25.086	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M16X40	4



Cislo Sestavy	Ver.	Nazev sestavy
201.6816-100	0	KOSTKA REGULACE/REGULATION CUBE/REGELUNGSWÜRFEL

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.6816-101	1	KOSTKA REGULACE / REGULATION CUBE / REGELUNGSWÜRFEL	TYC 40x40	1
2	30.6816-104	1	VIKO / 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	VIKO / COVER / DECKEL	TYC 22	1
8	92.002.102	0	SROUBENI / BOLTING / VERSCHRAUBUNG	S-GEV-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



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Manual rev.: 1

NAZEV SESTAVY		CISLO SESTAVY									STROJ
LASER-UKAZOVATKO		202.6121-000			Datum: 13. 09.2006			1 KS/ST			EX520,620,7
					Zhotovil: RYSAVY						
cislo vykresu	nazev	rozmer	delka	mat.vych	mat.kon.	pov.upr.	c.hm	ks	pozice sklad	puvod	Poznamka
30.6120-001	DRZAK	DRZAK LASERU		SVARENO	SVARENO	CERNIT	0.5	1		EX620	
202.5012-000	LASER-UKAZOVATKO			SESTAVA	SESTAVA		0.5	1		STG260