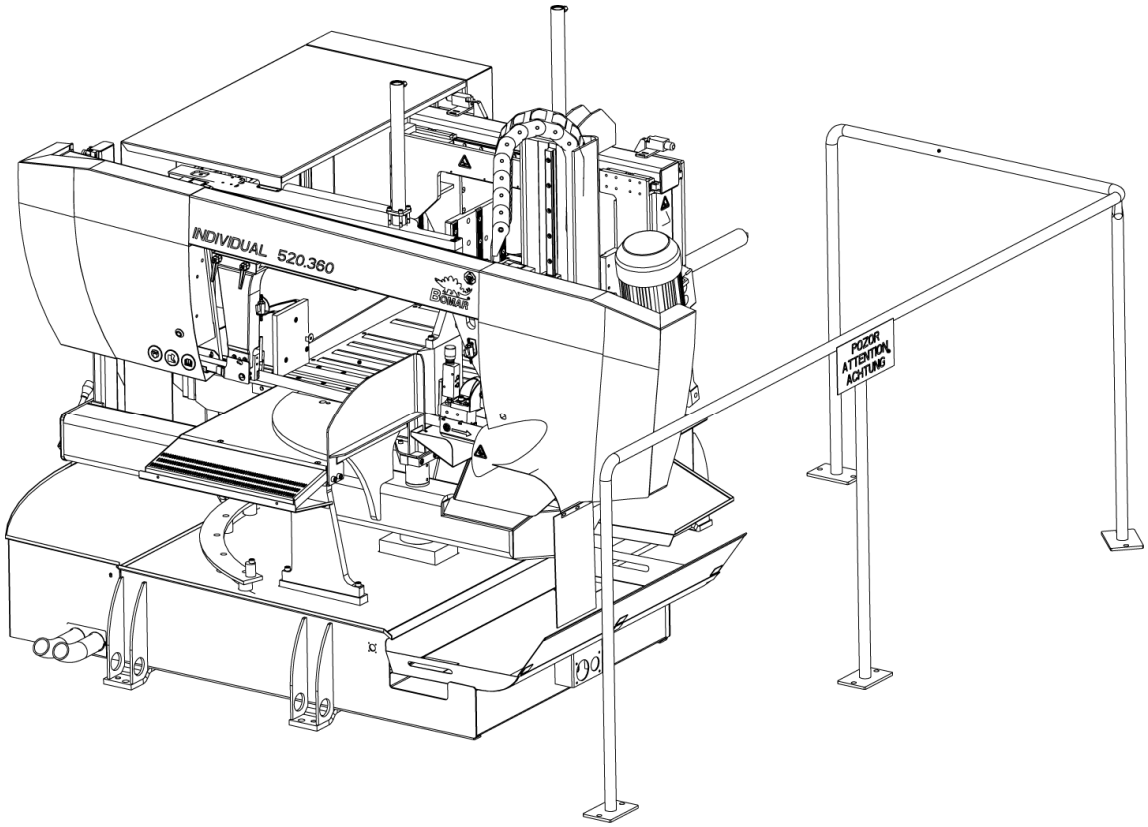
Series **Individual Automatic**



Individual 520.360 GANC

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:

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We are available:	
Mondays to Fridays	7^{00} – 16^{00}
Version:	
1.00 / May 2010 rev. 1	

Content

1. Safety notes

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Bezpečnostní pokyny
Sicherheitshinweise
Safety notes

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 **Individual 520.360 GANC** is determined for cutting and shortening of rolled bars and drawn bars and profiles from steels, stainless steels, non-ferrous metals and plastics **with cutting angle** from 0° to 60°.

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.

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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!

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

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!

1.3. Safety notes for machine operator

Machine can be operated only by one person. Machine operator is responsible for presence of other persons by the machine.

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

- Do not hold the material for clamping to the vice and for cutting!

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

- 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!

After push ***TOTAL STOP*** button is shown warning message on LCD.

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.

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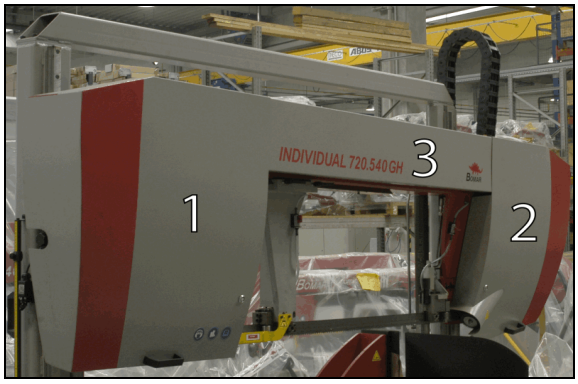
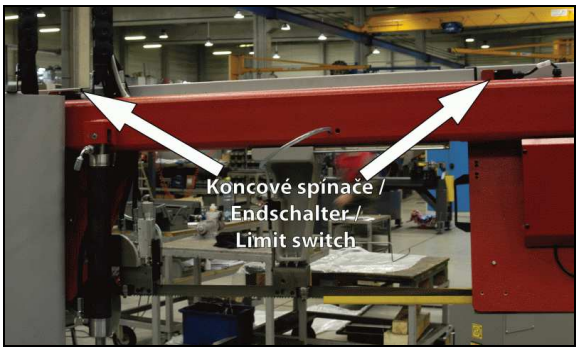
Right cover – It covers driving wheel. If the cover is opened during operation, the limit switch is opened and the band saw is stopped. The band saw is not possible start in set mode.

Central cover – It covers band saw.



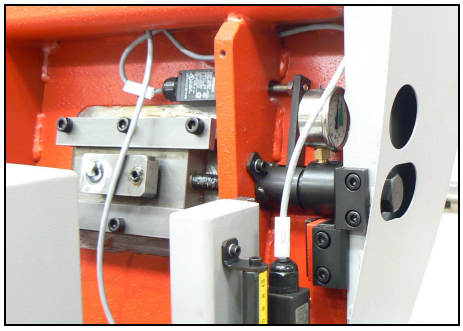
The band saw is stated to the operation, when the covers is closed!



Two limit switches on saw arm control if cowers are open or not.

1.5.3. Saw band stretching and rupture inspection

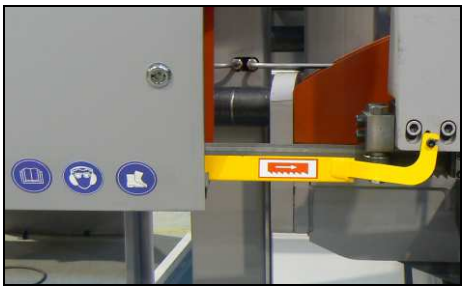
This device checks the saw band stretching and causes immediate machine shut – down in the event the band ruptures.



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

1.5.4. Band saw cover

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



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

1.6. 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.

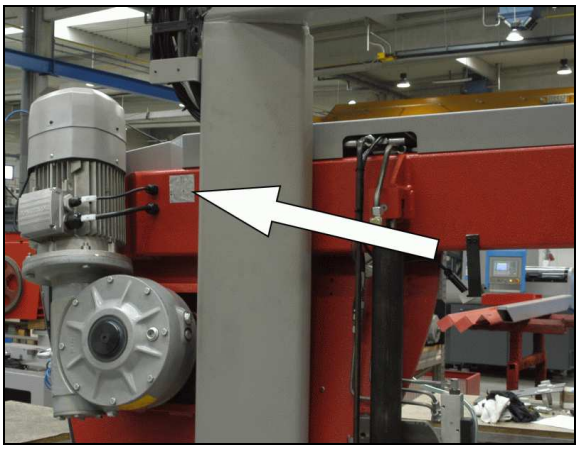
1.6.2. Safety information for the chip remover

The chip remover is auxiliary equipment, following information applies only for equipment with this conveyor.

Attention!
It is forbidden to enter the swarf conveyor area if the saw is in operation. All maintenance and other works on the swarf conveyor could be done only on equipment which has been switched off.

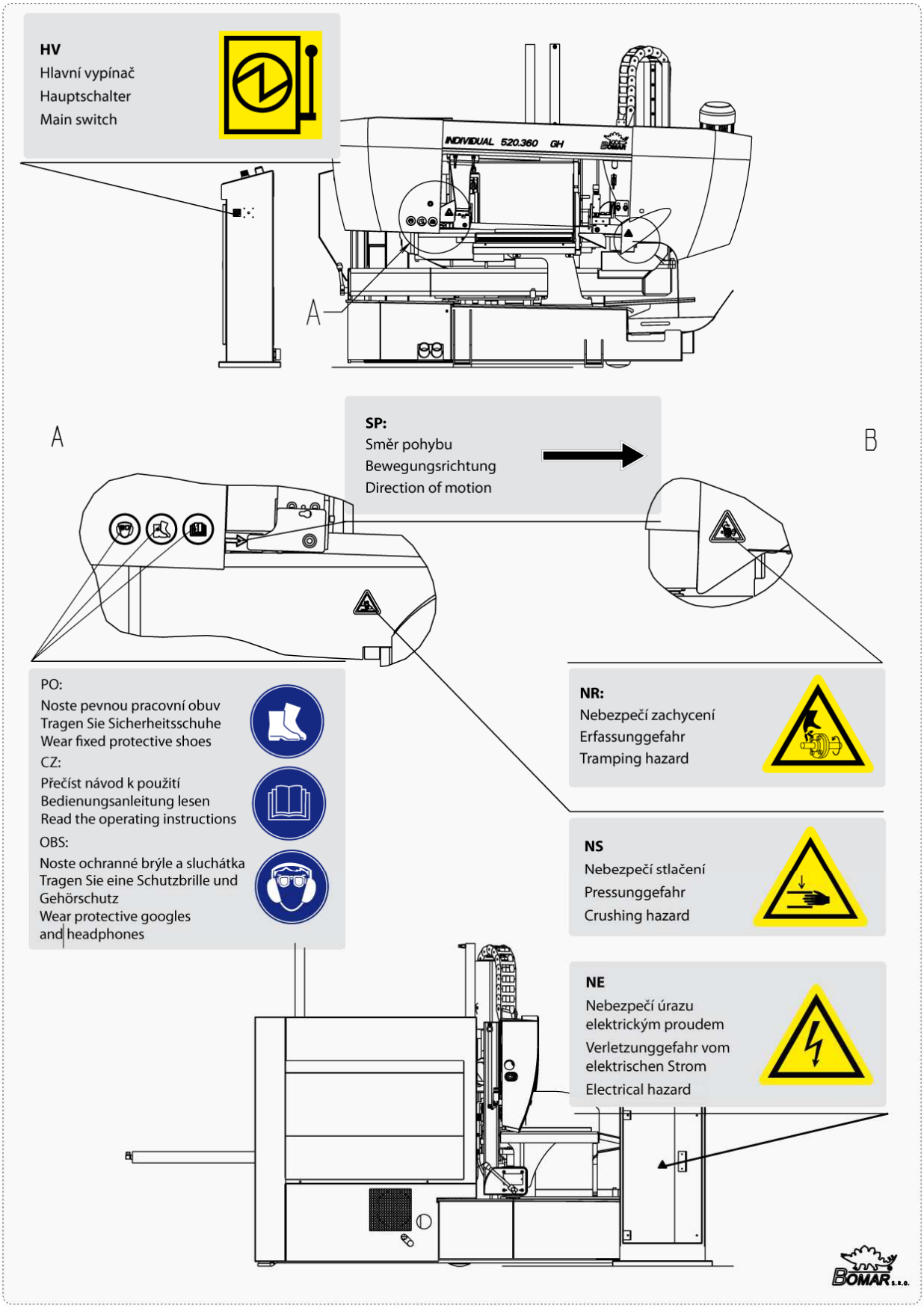
If the machine is switched on, operate it only using the control panel (see Chapter 3 Machine control).

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



The machine label is located on the saw frame, between pillar and band drive.

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



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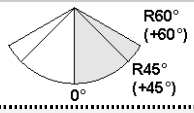
2. Machine documentation

2.1. Technická data / Technische Daten / Technical data

Hmotnost stroje / Maschinengewicht / Machine weight:	
• Hmotnost / Gewicht / Weight	1800 kg
Rozměry stroje / Maschinengröße / Machine size :	
• Délka / Länge / Lenght	3350 mm
• Šířka / Breite / Width	2390 mm
• Výška / Höhe / Height	1770 mm/max. 2100 mm
Elektrické vybavení / Elektrische Ausrüstung / Electical equipment:	
• Napájení / Versorgungsspannun / Supply voltage	~ 3×400 V, 50 Hz, TN-C-S/TN-C
• Příkon / Gesamptschlusswert / Total Input	6,7 kW
• Max.jištění / Max. Vorschaltsicherung / Max. Fuse	16 A
• Krytí / Schutzart / Protection	IP 54
Akustický tlak / Schalldruckpegel / Acoustic pressure:	
• Individual 520.360 GANC	L_{Aeqv} = 76,3 dB
Pohon / Atrieb / Drive:	
• Typ / Typ / Type	JMC 71 2/4 B14
• Napájení / Versorgungsspannun / Supply voltage	~ 3×400 V, 50 Hz
• Výkon / Leistung / Output	3 kW
• Jmenovité otáčky / Motornenndrehzahl / Nominal speed	1420 m.min^{-1}
Hydraulické zařízení / / Hydraulic equipment	
• Typ / Typ / Type	3COA4-12
• Výkon / Leistung / Output	35 dm3
Chladící zařízení / Kühlmiteleinrichtung / Cooling equipment:	
• Typ / Typ / Type	3COA4-12
• Obsah nádrže / Volumen vom Kühlmittel / Capacity	35 dm3
• MICRONISER	na přání / möglich / optional -
Rozměr pásu / Sägebanddimension / Band size:	
4780×34×1,1 mm	
Řezná rychlost / Schnittgeschwindigkeit / Cutting speed:	
20-120 m/min	
Jeden Zdvih / Vorschublänge Einfachhub / One Upstroak:	
750 mm	
Max. Délka podání / Max. Vorschublänge / Max. feed:	
9999 mm	
Řezné rozsahy / Schnittbereiche / Cutting size:	

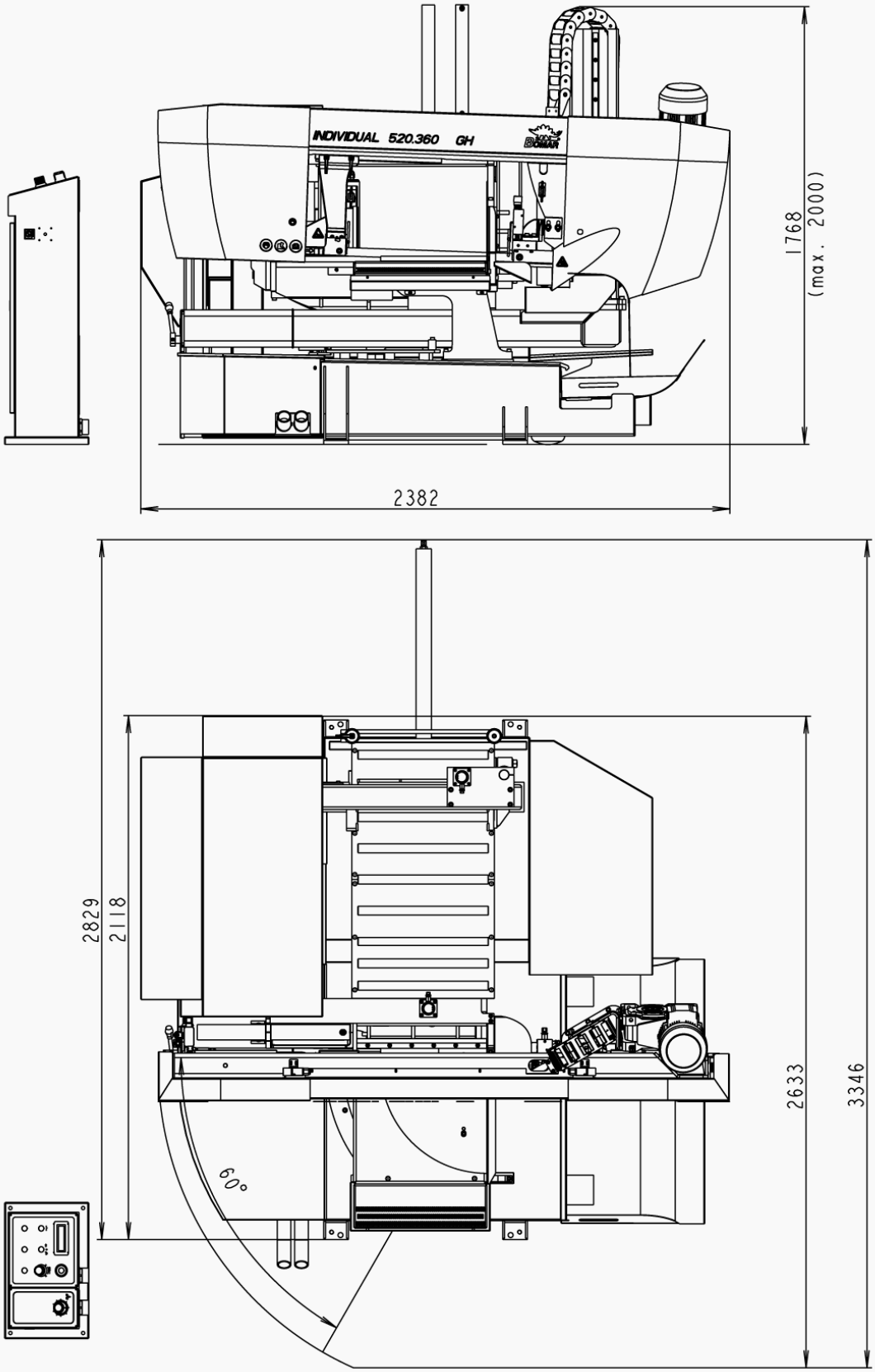


0°	Ø360 mm	520×360 mm	360×520 mm	360×360 mm
R 45°	Ø360 mm	360×325 mm	360×315 mm	350×350 mm
R 60°	Ø240 mm	325×235 mm	360×215 mm	235×235 mm

Acoustic pressure level:

The equivalent level of the acoustic pressure A (noise) in the position of the operator is L_{Aeqv}= 76,3 dB. The values are indicating the emission levels and may not present safety working levels. Among the factors, which influence the real values of the operator exposure, are properties of the workshop room, cut material and used saw bands – which may significantly influence the exposure levels.

2.2. Rozměrové schéma / Aufstellzeichnung / Installation diagram



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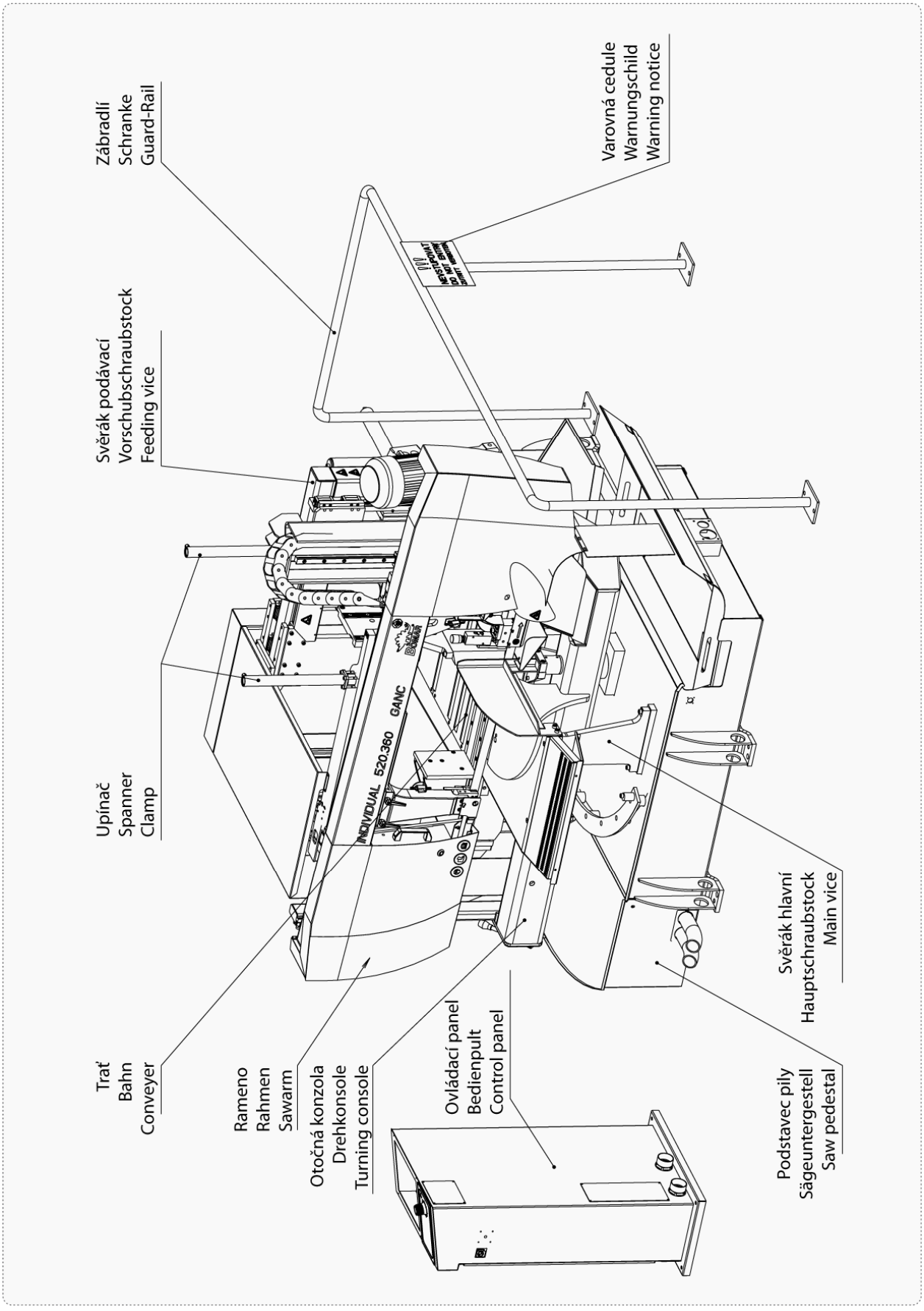
2.3. Popis / Beschreibung / Description



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.

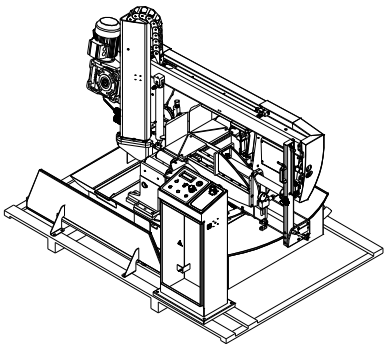
Fasten all loose parts securely to the machine.

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.

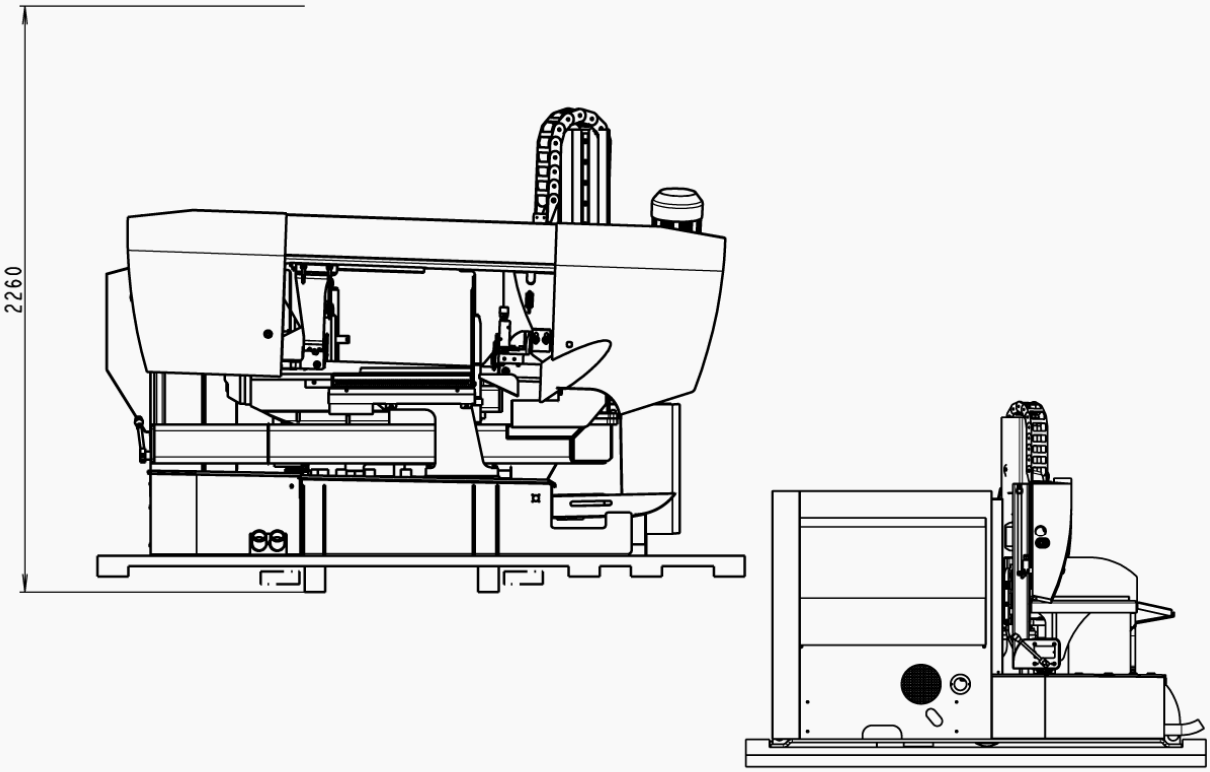
2.4.3. Transport and stocking

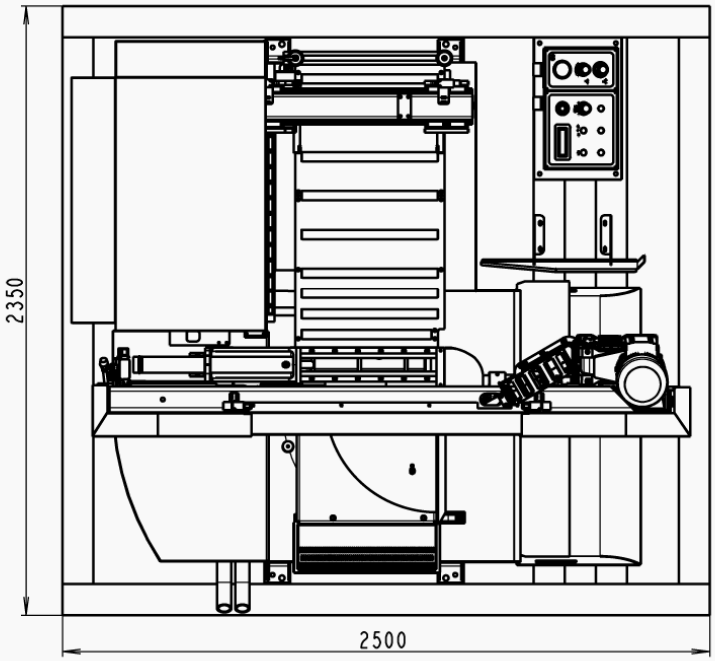
The machine must be secured during transportation. Screw on the palette to the floor of the van or the trailer. Be careful that the machine is not damaged during transportation. Store the machine only under conditions mentioned in the manual, to avoid damage of the machine.



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





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 – Individual 520.360 GANC – 1800 kg

+ weight of accessories

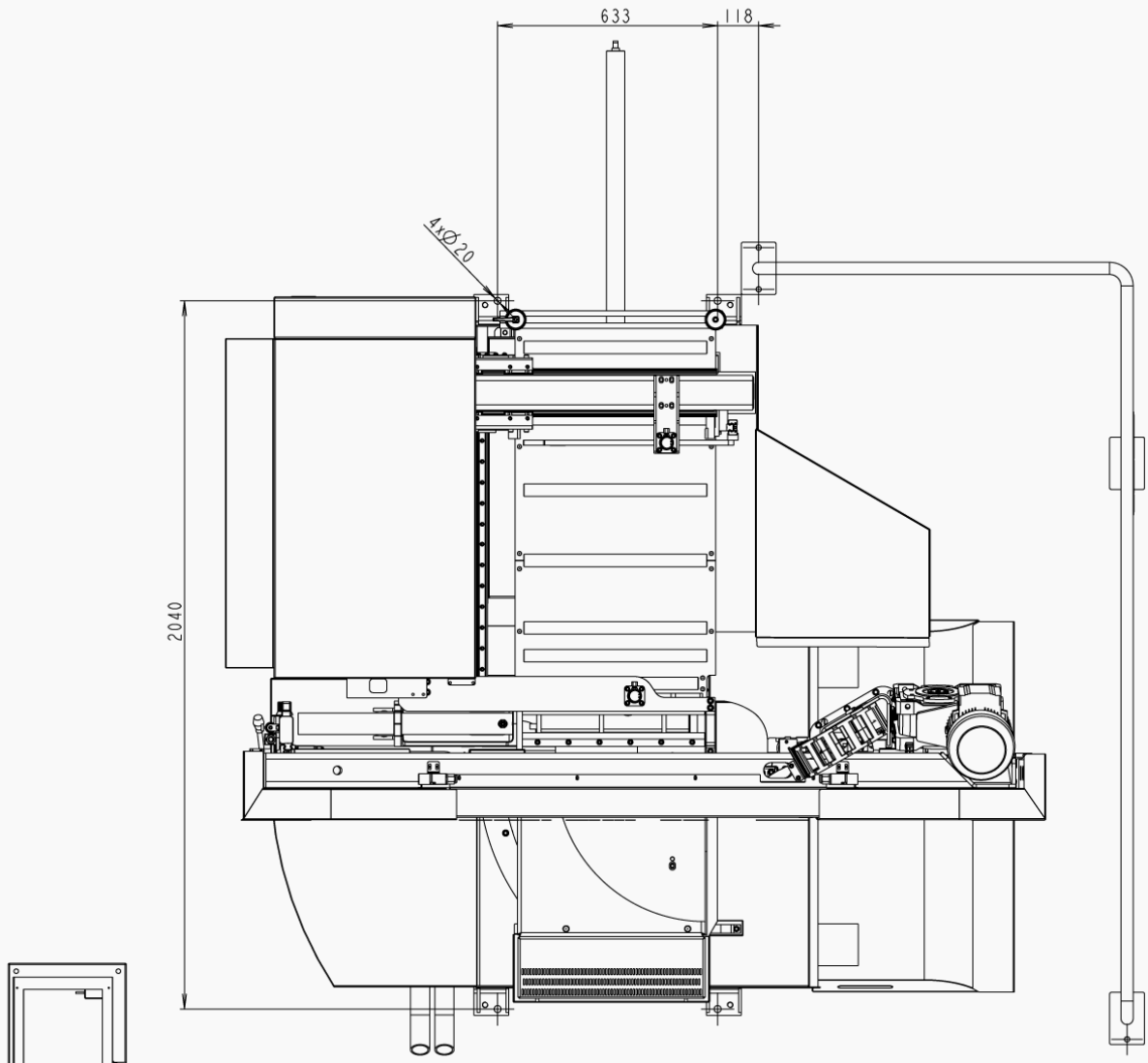
+ maximum weight of material

- 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



Kotvící materiál / Verankerungsmaterial / Grouding material

- 4× Hmoždina / Dübel / Plug – ø18 mm
- Vrtáno do hloubky / In die Tiefe gebohrt / Drilled to – 140 mm
- Šrouby / Schraube / Screws – M16

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 (min. 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: 6,7 kW / 16 A

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

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.

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

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

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

4780×34×1,1 mm

2.10.2. Selection of the saw band tooth system

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

BOMAR for recommended Variable tooth system for band saw.

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

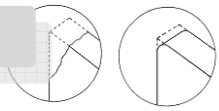
32 S – number „32“ means 32 teeth on one inch (that means constant tooth system), letter „S“ marks teeth with zero angle of the tooth.

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.

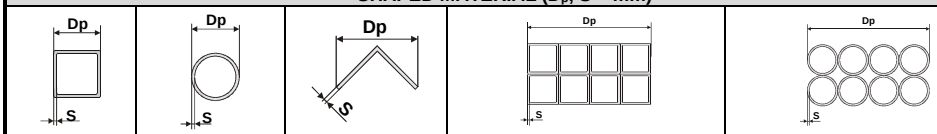
Note: *Run regrinding saw bands too.*



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.

2.10.4. Tables for teeth selection

SHAPED MATERIAL (D_p, S = mm)



Note: Table shows tooth system selection for cutting one piece of the profile. For cutting of more pieces of the profiles (bundle), you must think of the size of the wall as double size of the wall of one profile (that means, size „S“ equates to 2×S). In table, there are tooth systems constant and variable.

Size of the wall S [mm]	Tooth system (Z_pZ) Outer diameter of the profile D_p [mm]					
	20	40	60	80	100	120
2	32 S	24 S	18 S	18 S	14 S	14 S
3	24 S	18 S	14 S	14 S	10–14 S	10–14 S
4	24 S	14 S	10–14 S	10–14 S	8–12 S	8–12 S
5	18 S	10–14 S	10–14 S	8–12 S	6–10 S	6–10 S
6	18 S	10–14 S	8–12 S	8–12 S	6–10 S	6–10 S
8	14 S	8–12 S	6–10 S	6–10 S	5–8 S	5–8 S
10	-	6–10 S	6–10 S	5–8 S	5–8 S	5–8 S
12	-	6–10 S	5–8 S	5–8 S	4–6 K	4–6 K
15	-	5–8 S	5–8 S	4–6 K	4–6 K	4–6 K
20	-	-	4–6 K	4–6 K	4–6 K	3–4 K
30	-	-	-	3–4 K	3–4 K	3–4 K
50	-	-	-	-	-	3–4 K

Size of the wall S [mm]	Tooth system (Z_pZ) Outer diameter of the profile D_p [mm]					
	150	200	300	500	750	1000
2	10–14 S	10–14 S	8–12 S	6–10 S	5–8 S	5–8 S
3	8–12 S	8–12 S	6–10 S	5–8 S	4–6 K	4–6 K
4	6–10 S	6–10 S	5–8 S	4–6 K	4–6 K	4–6 K
5	6–10 S	5–8 S	4–6 K	4–6 K	4–6 K	3–4 K
6	5–8 S	5–8 S	4–6 K	4–6 K	3–4 K	3–4 K
8	5–8 S	4–6 K	4–6 K	3–4 K	3–4 K	3–4 K
10	4–6 K	4–6 K	4–6 K	3–4 K	3–4 K	2–3 K
12	4–6 K	4–6 K	3–4 K	3–4 K	2–3 K	2–3 K
15	4–6 K	3–4 K	3–4 K	2–3 K	2–3 K	2–3 K
20	3–4 K	3–4 K	2–3 K	2–3 K	2–3 K	2–3 K
30	3–4 K	2–3 K	2–3 K	2–3 K	1,4–2 K	1,4–2 K

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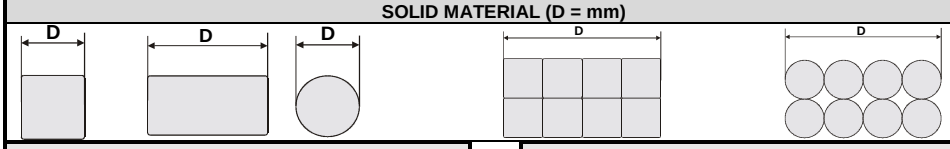
50	2–3 K	2–3 K	2–3 K	1,4–2 K	1,4–2 K	1,4–2 K
75	-	2–3 K	1,4–2 K	1,4–2 K	1,4–2 K	0,75–1,25 K
100	-	-	1,4–2 K	0,75–1,25 K	0,75–1,25 K	0,75–1,25 K
150	-	-	-	0,75–1,25 K	0,75–1,25 K	0,75–1,25 K
200	-	-	-	0,75–1,25 K	0,75–1,25 K	0,75–1,25 K

SOLID MATERIAL (D = mm)



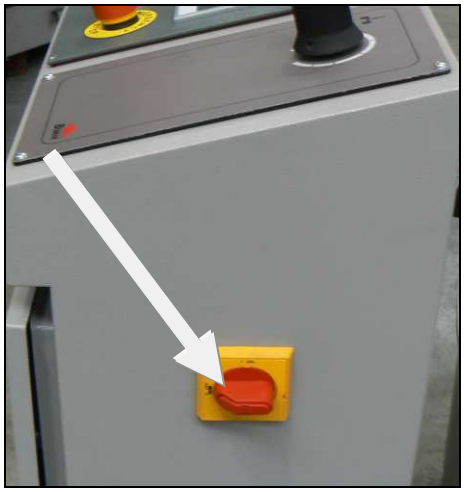
Constant tooth system	
length of the cut D	**tooth system (Z_pZ)**
to 3 mm	32
to 6 mm	24
to 10 mm	18
to 15 mm	14
15–30 mm	10
30–50 mm	8
50–80 mm	6
80–120 mm	4
120–200 mm	3
200–400 mm	2
300–800 mm	1,25
700–3000 mm	0,75

Variable tooth system	
length of the cut D	**tooth system (Z_pZ)**
to 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

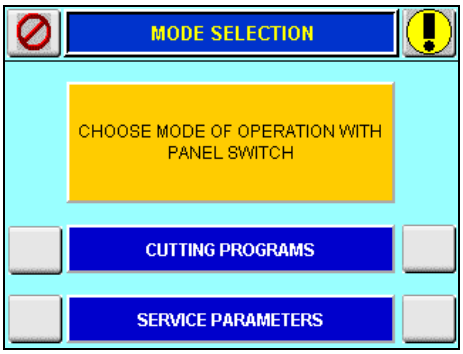
3. Machine control

Manual version: 1.00 / May 2010
Manual rev.: 1

3.1. Saw band start



1. Turn the main switch of the saw into ***position 1 – ON***. The main switch in on side of the control panel (right side from the point of view of operator standing behind the panel), see arrow.

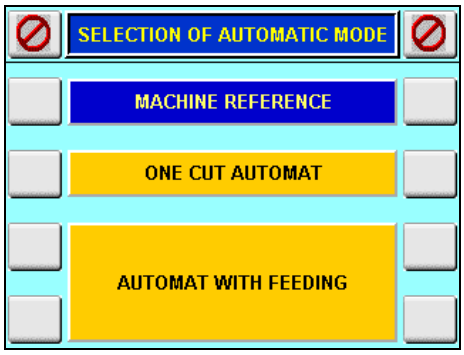


2. After start of the control system the initial window appears on LCD. The operator may select:

1.	Select ***machine operation with key switch***, see next point
2.	Make changes in ***the cutting modes***, see chapter ***Machine control***
3.	Make changes in the maintenance parameters, see Maintenance parameters chapter.

3. Select the machine mode by the key on the control panel (control panel, pos. 9)

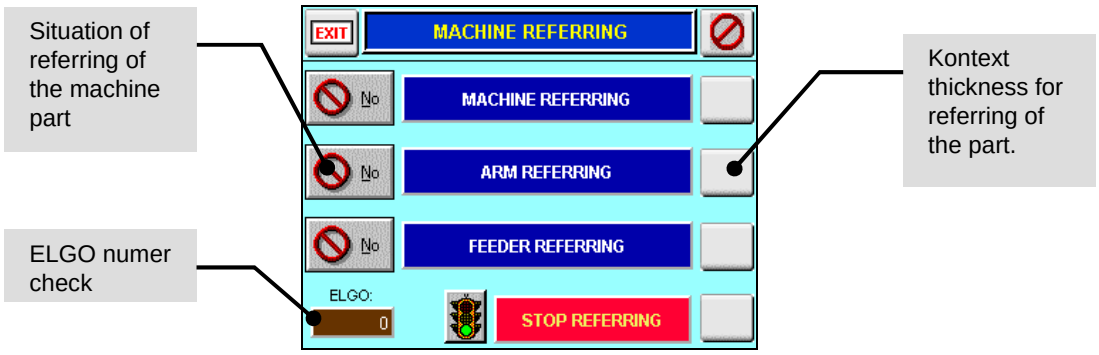
1.	Switch to ***position 1*** to enter ***machine set up*** mode
2.	Switch to ***position 2*** to turn machine ***into operational mode***



4. Machine referring (see chapter Machine referring) must be made before One-cut automat or Feeder automat mode is used.
5. After the machine is referred one of the machine operation modes may be used.

3.1.1. Machine referring

Machine referring is necessary for correct operation of the saw in automatic mode.

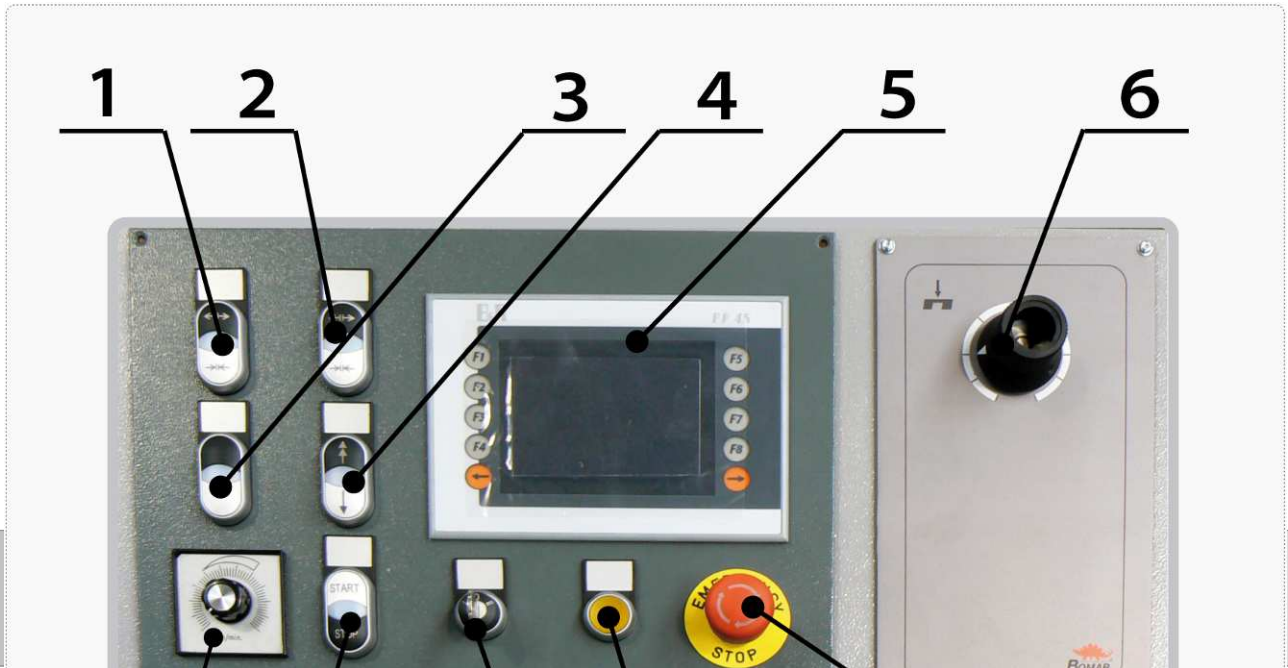


Function buttons – press to automatically perform the referring process. Select any item to automatically start referring of all parts of the machine. After correct referring the indication in the left part of the display turns to YES.

Referring stop – press to stop the referring process

ELGO – linear sensor on the feeder chek; does not measure any particular value, just checking the sensor operation.

3.2. Control panel – description

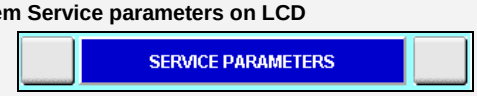


1	**Feeder vice** Buttons to tighten / release the feeder vice jaws
2	**Main vice** Buttons to tighten / release the main vice jaws
3	**Feeder movement** Feeder movement to / from saw
4	**Frame up / down** If both buttons are pressed at the same time, the frame moves faster
5	**Touch screen LCD** Displays current state of the operation. Function keys F1 to F10 are located along both sides of LCD.
6	**Regulation valve** Regulation valve sets the lowering speed of the frame into the cut. The speed is limited by the adjustment of the pressure regulation in the cut on the guiding cubes. ***Note:*** *If the throttle valve is closed too tightly, the valve seat may be damaged and may start to leak. Tighten the valve lightly.*
7	**Frequency changer** Turn to change to speed of the saw band.
8	**STOP button** Interrupts the cycle, to restart press ***8 – START*** button. **START button** Press to start the work cycle. Press **8 – STOP** to stop the cycle.
9	**Machine mode selection** • ***1 – Adjustment mode*** • ***2 – Machine operation mode*** • ***0 – Machine setting mode***
10	**Safety circuit** Press button to start the safety circuit
11	**TOTAL – STOP button** Immediately stops the machine in emergency.

Attention!
Wrong setting of following parameters may damage the machine. ***Change the values reasonably!***

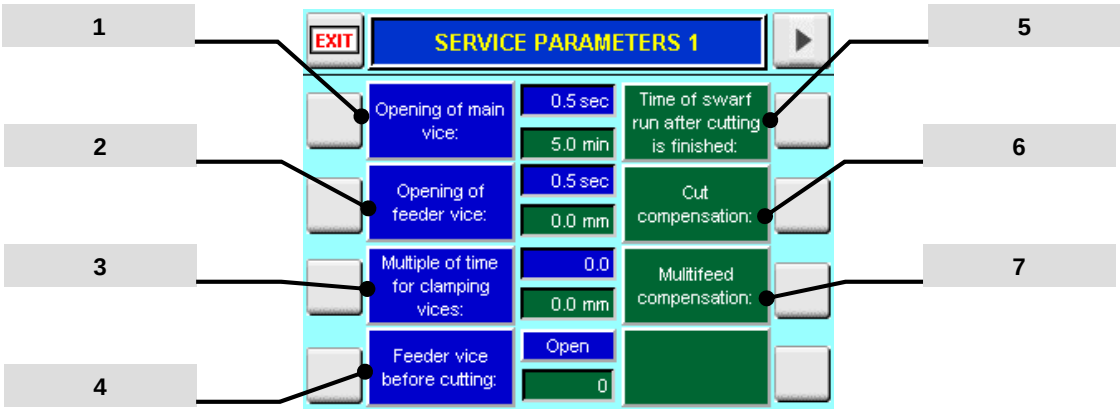
3.3. Service parameters

Enter the service parameters menu:

1.	**Turn the key switch into position 0** 
2.	**Select the item Service parameters on LCD** 

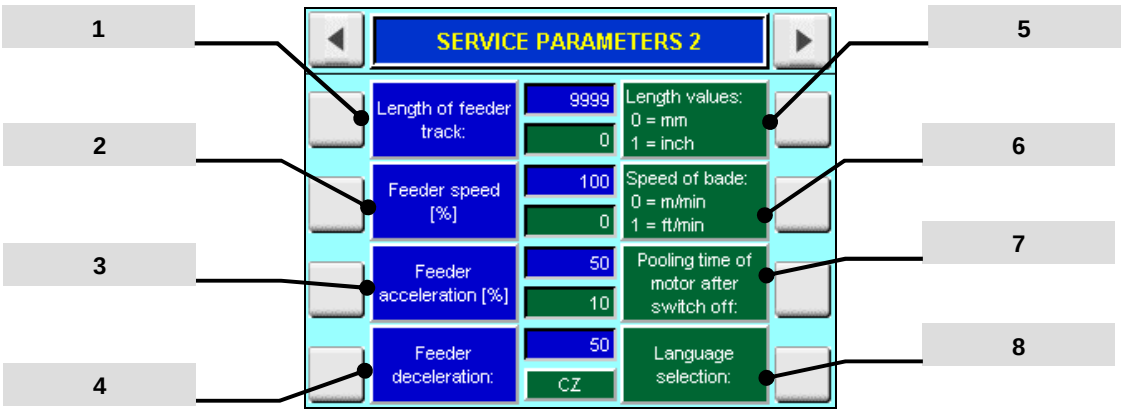
3.	**To leave the menu:** • Turn the key switch to different position • Press EXIT button

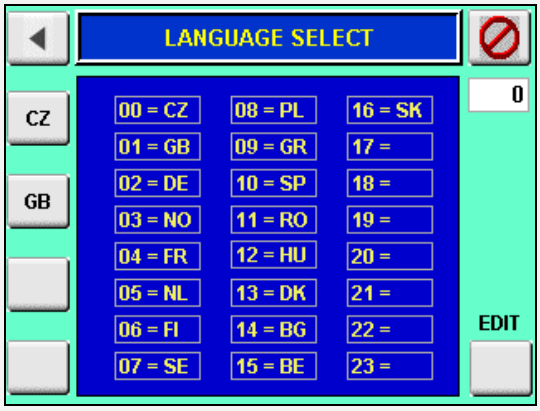
3.3.1. Service parameters 1



Pos.	Function
1.	**Main vice opening time –** vice opening time. The vice opens only for this period of time, does not opens fully to save the time.
2.	**Feeding vice opening time –** Guarding time of the hydraulics to open the feeding vice.
3.	**Multiple time factor for vice clamping –** Check time for vice clamping. The time factors correspond with multiple check time on the pressure switch. ***1*** – is detected as clamped if during the certain time interval (100% of the time interval) no change of the pressure is detected on the pressure switch. ***e.g. 1,2*** – the vice will be detected as clamped if no pressure change will be detected on the pressure switch for 100% × 1,2 time interval (i.e. for 20% longer time period).
4.	**Feeding vice prior to cutting –** Setting of the feeding vice prior to cutting – open / closed.
5.	**Operation time of the remover after cutting** – Time of operation of the remover after the cut has been finished. ***Note:*** Chip remover is auxiliary accessory.
6.	**Offcut correction –** width of the saw band, important value for calculation of the lengths in automatic mode.
7.	**Correction of multiple feeding –** correction for correct operation of the feeder.

3.3.2. Service parameters 2



Pos.	Function
1.	**Feeder travel length –** parameter of the maximum feeder length for multiple feeds.
2.	**Feeder speed –** maximum speed of feeder
3.	**Feeder acceleration –** value of the feeder acceleration. The parameter is suitable for feeding heavy and unstable material (due to base shape and dimensions). These values are used only for movement with loaded feeder.
4.	**Feeder deceleration –** value of the feeder deceleration (breaking). The parameter is suitable for feeding heavy and unstable material (due to base shape and dimensions). These values are used only for movement with loaded feeder.
5.	**Selection of the units for length** in control system – • metric (mm) • imperial (inches)
6.	**Selection of the units for speed** in control system • $m.min^{-1}$ • $ft.min^{-1}$
7.	**Selection of electromotor pooling time after cut** – Drive of saw blade will run for a fixed period and will be cooled
8.	**Language selection** – displays following selection of the control software languages. 

3.3.3. Service parameters 3

Pos.	Function
1.	Switch off the hydraulic system of the machine after certain period: • **ANO** – the system switches off after selected period • **NE** – the hydraulic circuit will run until the machine is switched off
2.	The parameter sets the time for hydraulic system switch of.

3.4. Machine operation – one cut automatic mode

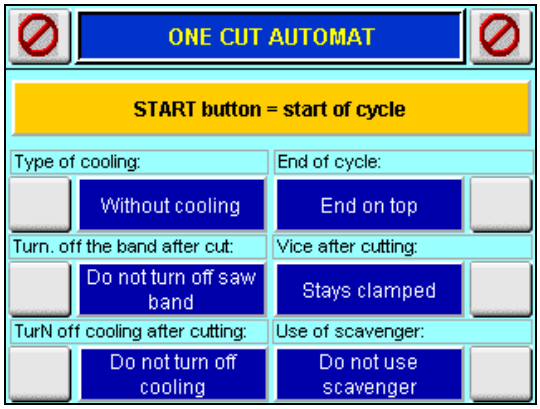
Poloautomatic cycle = automatic mode for one cut

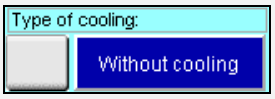
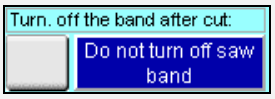
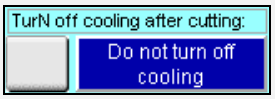
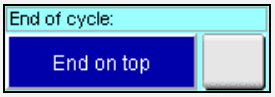
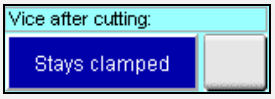
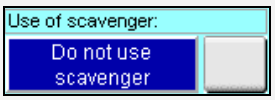
To enter the one cut automatic mode:

1.	**Turn the key switch into position 2 – Working mode** 
2.	**Select One cut automatic mode on LCD** 
3.	**Enter the parameters for One cut automatic mode in the following menu.**

Preparation before cutting:

Enter the parameters for cutting in “One cut automat” mode in this system menu.



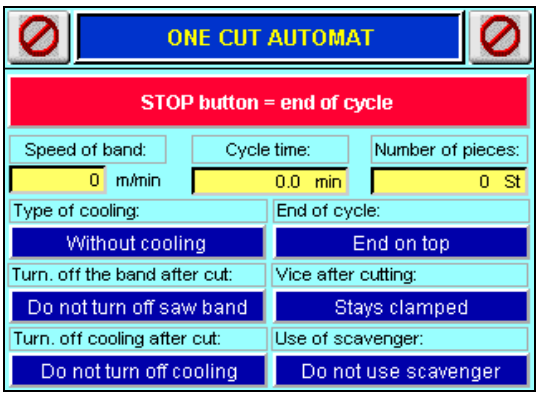
Option	Description
	Cooling method during cutting: • Cooling liquid • Micronization (optional accessory) • No cooling
	Switch off the saw band drive after cut – **Switch off the band / do not switch off the band**.
	Switch off the cooling pump after cut – **Switch off the pump / do not switch off the pump**.
	After the cut the frame: • ends up, drive to upper limit switch position • drive over the material
	After the cut the main vice: • stays clamped • releases the clamped material
	Use the chip remover during cutting – **YES/NO**.

3.4.1. Cutting procedure in One cut automatic mode

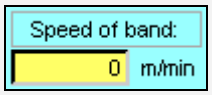
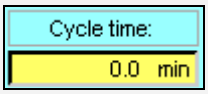
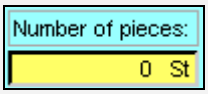
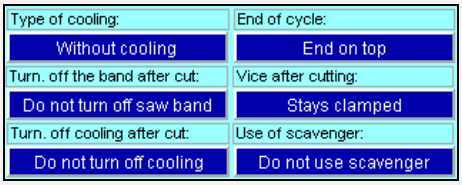
Cutting progress in "One cut automatic mode":

1.	Prepare the cutting material, load it to the saw and clamp into vice
2.	Set the One cut automatic mode, see previous text – ***Preparation before cutting***.
3.	Press ***START*** button to start.
4.	The following menu appears on LCD, the frame starts to descend into the cut – the semiautomatic cycle starts.
5.	End the One cut automatic mode by turning the key switch into other position.

Window showing progress of the semiautomatic cycle:



Item	Description

Item	Description
	Saw band speed set by frequency changer – control panel, position 7
	Total time of the One cut automatic mode duration.
	Number of pieces cut in the One cut automatic mode.
	Individual parameters set in menu **Preparation before cut**.

3.5. Machine control – automatic cycle

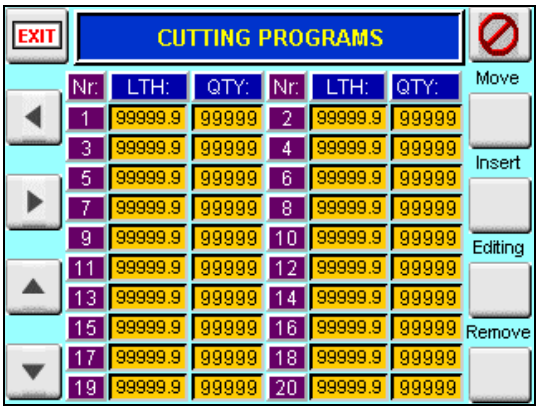
3.5.1. Cutting programs

The cutting programs are important part of the automatic cycle. It is possible to define up to 20 programs. It is always started from program no. 1. All sequence of the programs is performed, until the first program without any parameters set (both values are zero).

To enter the cutting parameters selection mode:

1.	**Turn the key switch into position 0 – machine adjustment.** 
2.	**Select Cutting modes item on LCD**  List of 20 programs is displayed; see section below ***Setting of the cutting parameters***.
3.	**The other way to display the Cutting parameters selection mode is to use Preset item in automatic cycle selection.** 

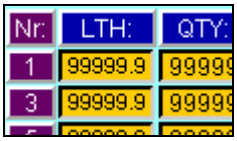
Entering of the cutting parameters:



Function keys for Cutting programs selection:

Button	Description
	To move left in the values of Cutting programs table.
	To move right in the values of Cutting programs table.
	To move up in the values of Cutting programs table.
	To move down in the values of Cutting programs table.
	To move any program to different position in the list.
	To enter the program to a new place in the list.
	To edit the values of the program.
	To remove any program (reset the values).

The active field in the program list is displayed in red.



Two values are set for each program:

- Length of individual pieces
- Number of individual pieces

3.5.2. Automatic cycle

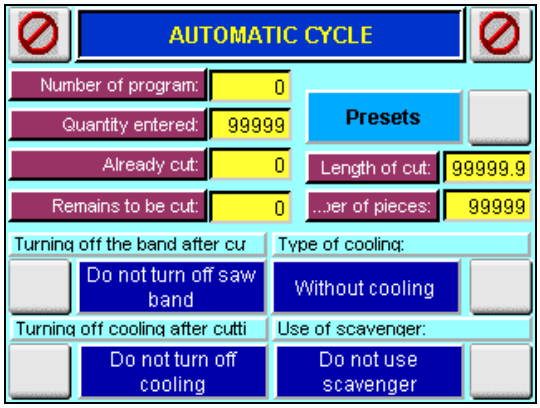
To enter the automatic cycle:

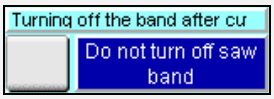
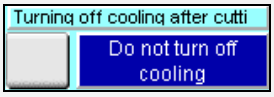
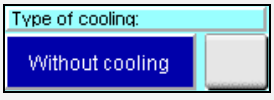
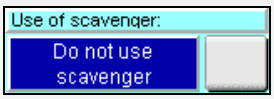
1.	**Turn the key switch into position 2 – Working mode** 
2.	**Select the item Automat with feed on LCD** 
3.	**The menu to enter the new values for automatic cycle or menu allowing proceeding with started automatic mode follows.**

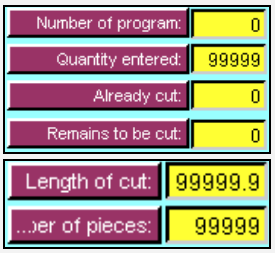
Preparation before start of the automatic mode:

This menu allows entering the start program and parameters adjusting the automatic mode.

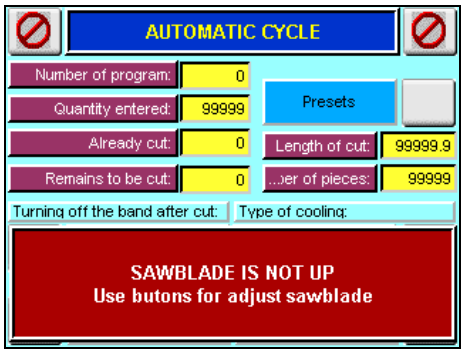
Select the menu item ***Presets*** to enter the Cutting mode, see previous chapter ***Cutting modes.***



Button	Description
	Switch off the saw band drive after cut – **Switch off the band / do not switch off the band**.
	Switch off the cooling pump after cut – **Switch off the pump / do not switch off the pump**.
	Cooling method during cutting: • Cooling liquid • Micronization (optional accessory) • No cooling
	Use the chip remover during cutting – **YES/NO**.
	Enter **the cutting parameters**

Button	Description
	**Parameters:** • Program no. – number of the start program • Set number – loads the numbed of pieces from program(s) • Finished cut – number of pieces cut before the last interruption of the program • Remains to be cut – number of pieces remaining to be cut • Cut length – length of one piece • Number of pieces – already cut

If the measurement frame (for detection of clamped material for cutting) is not installed, the operator is before the start of the automatic mode requested to set the saw frame into its highest position to the upper limit switch.



Adjust position to the upper limit switch by buttons on the control panel in position **7**.

Procedure for One cut automatic cutting:

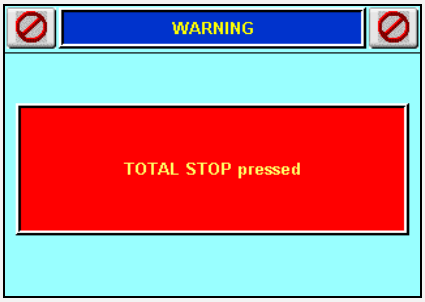
1.	Prepare the cut material
2.	Set the automatic cycle, see ***Preparation before start of the automatic cut***
3.	After ***START*** button is pressed, the software asks if the material in the first cut should be cut.
4.	The following menu appears on LCD, the frame starts to descend to the cut – semiautomatic cycle starts.

3.5.3. Work cycle interruption

Attention!
When STOP button is pressed during movement of some parts of the machine (frame, feeder...), the operation is finished and after that the machine is stopped. ***For emergency stop use TOTAL-STOP button.***

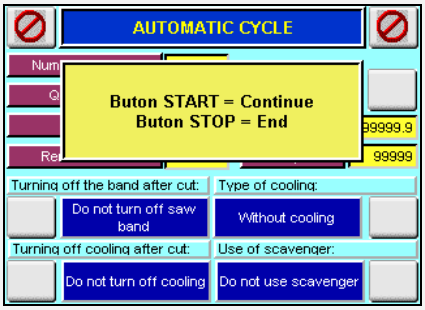
Possibilities for stopping:

» ***Stopping of the automatic cycle by TOTAL-STOP***



TOTAL-STOP button activation is indicated on LCD.

» ***Interruption of the automatic cycle by STOP:***



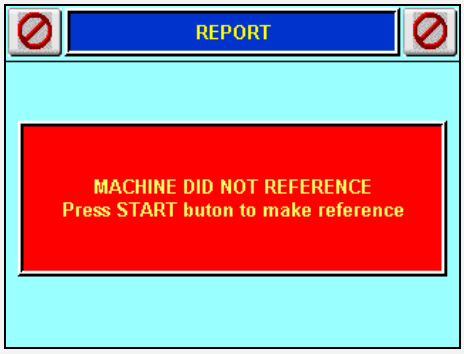
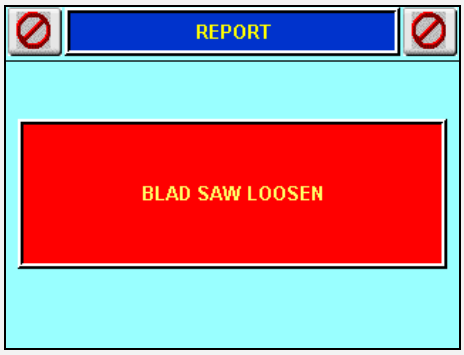
If the operator presses the ***STOP*** button, the cutting process is stopped. When ***START*** button is pressed, the cutting continues. Repeated pressing of ***STOP*** button stops the automatic cycle.

» ***Continue in automatic cycle***

The process interrupted in this way can be continued – if the operator returns to the Automatic mode, the following menu is displayed. Press the function button ***Continue*** to continue with the automatic cycle from the position of interruption. Select item ***Stop*** to finish the automatic process; the operator may start the new process with new values.

3.6. System error messages

Error message	Description
	**Safety circuit** • The safety circuit is not switched on; the machine cannot be used. • Press the safety circuit button on the control panel (pos. 10)

Error message	Description
	**Machine reference** • The machine cannot start without referencing – see chapter Referencing of the machine. • Proceed according to directions in message –turn the key to position 0 and select Machine referencing in the menu.
	**Saw band** • The system monitoring saw band stretching level detected insufficient stretching. • Stretch the band to recommended level.
	**Total Stop** • ***TOTAL-STOP*** has been pressed.

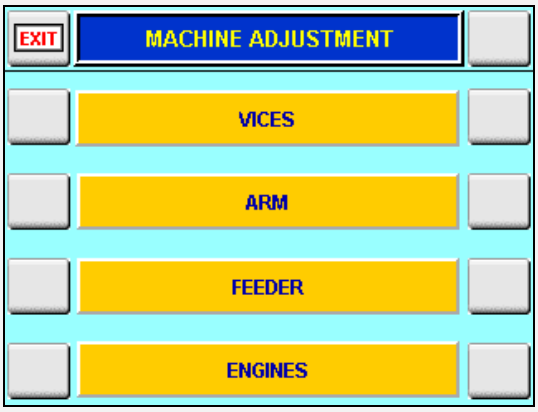
3.7. Band saw adjustment

The machine is able to perform the special adjustment code, which allows the operator to test and set the main peripherals of the machine.

Further setting of the band saw, like setting of the cutting angle and others, is performed in the machine itself without the control software.

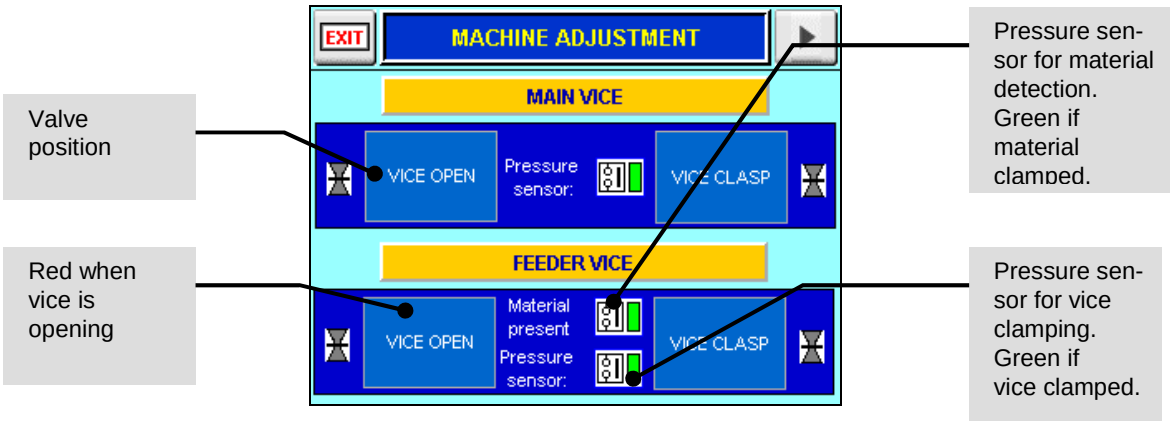
Entry to the Machine adjustment mode:

1.	**Turn the key switch to position 1 – Machine adjustment.** 

2.	**LCD panel shows the following menu with four parts of the band saw.**  ***Machine adjustment*** mode allows operators to test parts of the machine, e.g. after replacement of parts or adjustments.
3.	**To leave the menu:** • **Turn the key switch to other position** • **Press EXIT button**

3.7.1. Vice adjustment

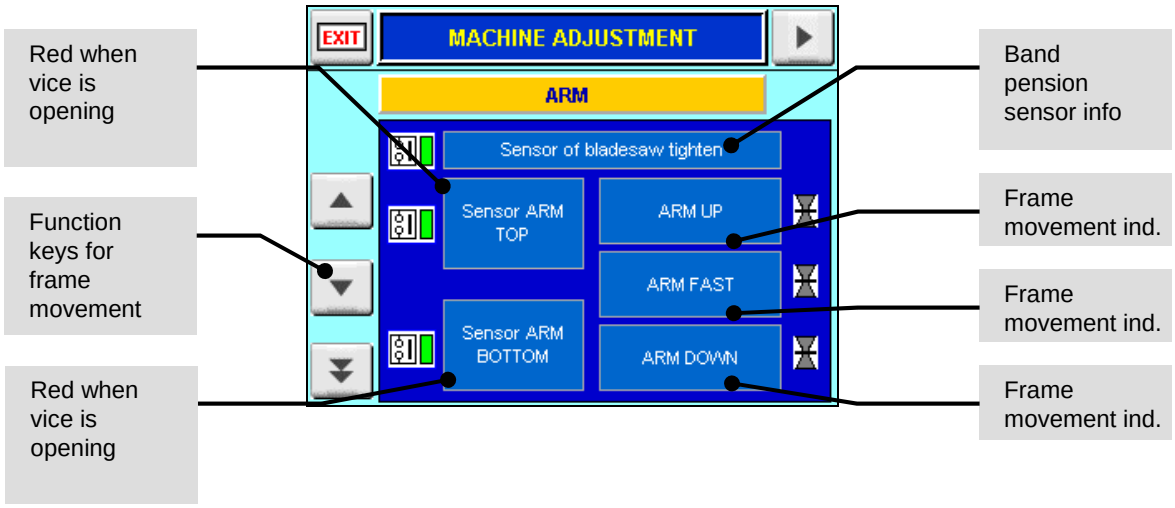
This menu allows testing both vices of the saw Individual 520.360 GANC.



Vice movement is controlled by the respective buttons on the control panel (positions ***1*** and ***2.)***.

3.7.2. Frame adjustment

This menu allows to check the band saw frame movement. The menu ***Frame parameters*** is also suitable for testing of the limit positions of the frame and adjustment of the limit switches.



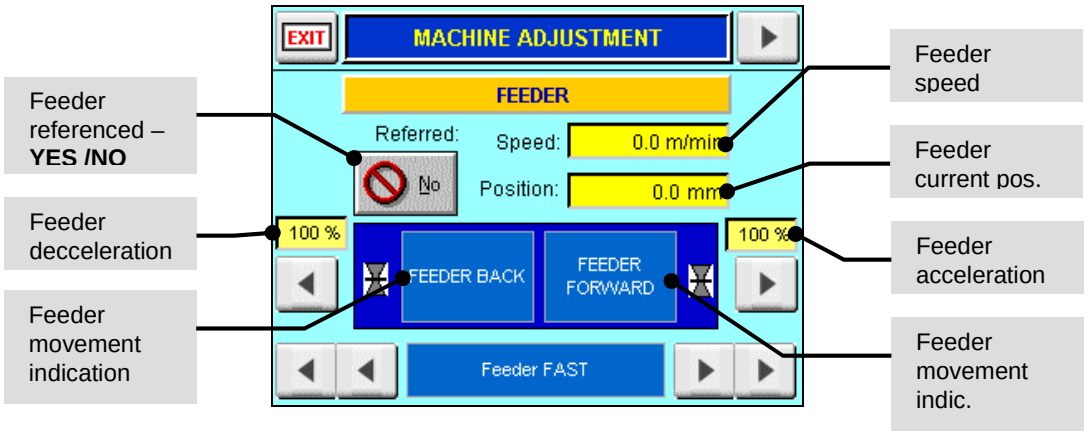
Function keys for frame movement:

Button	Description
	***Frame movement up***, the same movement is initiated by black part of the button on position 4 on the control panel.
	***Frame movement down***, the same movement is initiated by white part of the button on position 4 on the control panel.
	***Frame movement fast down***, the same movement is initiated by both buttons on position 4 on the control panel.

3.7.3. Feeder adjustment

This menu shows all parameters concerning the machine feeder. The operator can test all possible movements of the feeder either by function keys on LCD or by buttons for feeder movement on the control panel – position 3.

During feeder movement its speed and position is displayed as well as information about its correct referencing.



Function keys for feeder movement:

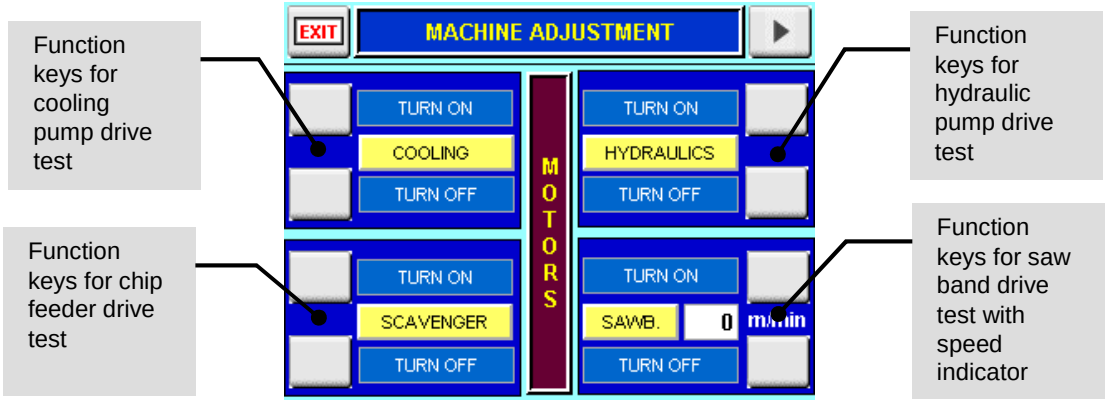
Button	Description
	***Normal speed feeder movement***.
	***Higher speed feeder movement***

3.7.4. Drive adjustment

The last item of the Machine adjustment menu allows to test individual drives.

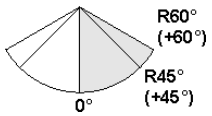
The drives are as follows:

- Cooling pumps
- Hydraulic aggregates (hydraulic pump)
- Chip remover movement (chip remover is optional part of the machine)
- Band saw movement



3.7.5. Cutting angle setting

Band saw **Individual 520.360 GANC** allows to make cuts in angles between **0°** to **60°**. For easy setting of the positions **0° – 45° – 60°** the machine is equipped with stops.



1. Release the fastening lever.
2. Swivel the frame to the desired angle by pulling the saw arm. Angle is shown on scale
3. After cutting angle setup tighten securing lever.

Electronic measuring and display of the cutting angle is optional accessory and is not standard part of the machine.

Attention!
Moving parts of the vice must be moved when saw arm has zero angle of rotation and closed vice jaws.
Moving vice jaw of vice must be in endmost position otherwise there is a danger of collision saw arm with vice.

Electronic admeasurement (252.178/252.177) – optional acessories:

Desired cutting angle is shown on LCD. How to use electronic admeasurement is described in special instruction manual.

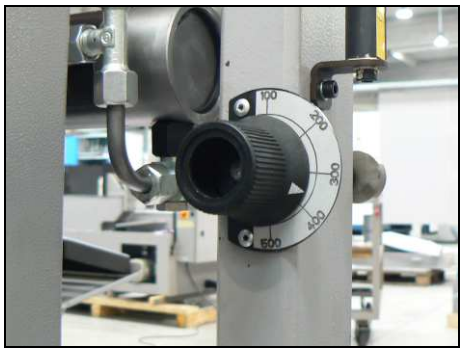
3.7.6. Setting of the cutting speed

The speed of the saw band can be gradually adjusted from 20 to 120 m.min^{-1}. Set the speed as follows:

- Set the switch of the frequency changer **7** to required speed. The band speed is displayed during ***semiautomatic cycle (one cycle automatic).***

3.7.7. Frame bottom stop position setting

The bottom stop position of the frame limits the lowest position of the frame. This position must be checked once per month. In case of wrong setting the vice may be cut or the material is not cut completely.



Setting of frame bottom stop position is made by adjustable excenter on the frame beam.

3.7.8. Setting of optimum distance of the guiding cubes

In order to maintain stable cut and sufficient precision, it is necessary to place the left guiding cube as close to the cut material as possible.

1. Press ***STOP*** 5 button for 2 seconds to switch off the hydraulics.
2. Release guiding listel lever.
3. Move left part of the guiding so the edge of the left guiding cube is as close to the cut material as possible.
4. Tighten the levers and check position of the guiding cube.

3.7.9. Setting of the frame lowering speed

Frame lowering speed is set using control **6** – control panel.

- Turn clockwise to decrease frame lowering speed.
- Turn counterclockwise to increase frame lowering speed.

Note:
If the throttle valve is closed too tightly, the valve seat may be damaged and may start to leak. Tighten the valve lightly.

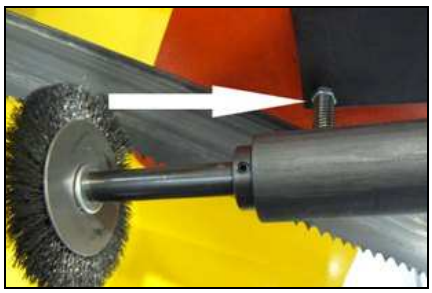
3.7.10. Saw frame lift stop setting

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

1. Lift the saw arm to the upper position.
2. Insert a material into the vice. Carefully lower the saw arm to the material.
3. Stop the saw arm 10mm above the material.
4. The lift stop setting is sensed by the limit switch.

3.7.11. Brush setting

The brush influence the cutting power, lifetime of the saw band, circular wheels, hardmetal guides and precision of the cutting. Replace the brush each shift.



5. Release the tightening bolt of the brush (see arrow) so the brush can be moved.
6. Set the brush to the saw band. Ends of the brush bristles should not touch the saw band teeth.
7. Tighten the bolt.
8. If the brush is not rotating properly (brush drive wheel slips on the saw band drive wheel) press down the wheel using the bolt to the saw band drive wheel.

3.7.12. Material insertion

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

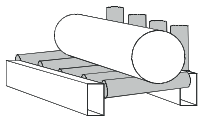
3.7.13. Handling agent selection

- 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!

3.7.14. 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

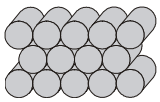
Make sure the conveyor is long enough and the material cannot tip off the conveyor.



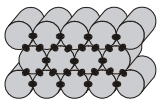
Be especially careful with round materials that it always stays on two vertical rollers and that it cannot fall off the conveyor!

3.7.15. Bundle material cutting

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

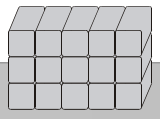


Round material bundle: Take care especially with round material that the bars are put according to the picture. If the bars are put differently, you may have problems with movement.



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!



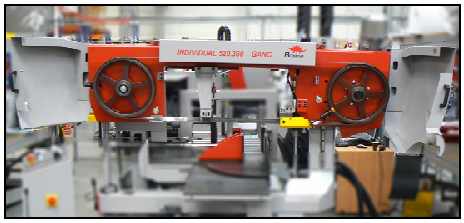
Square material bundle:

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 maintenance

4.1. Saw band dismantling

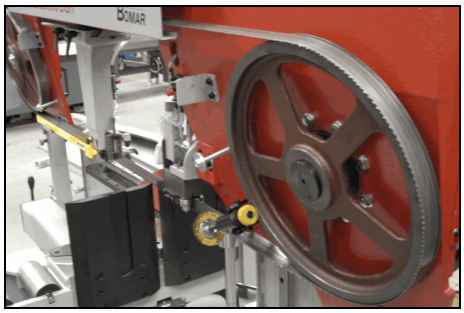
1. Press button **8** to lift the saw arm to maximum position.
2. ***STOP hydraulic*** with button **5**.



3. Open all three covers on the saw arm.

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. Turn by stretching star to the left side, release saw band stretching and pull down the saw band from the wheels.



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.*

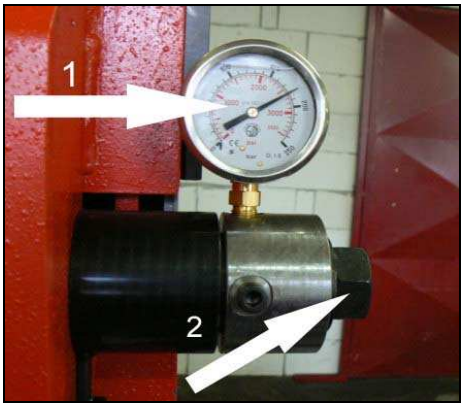
2. Insert new saw band in the guide cubes. Make sure the saw band runs between both guide rollers and it is pushed all the way to the top.
3. Put the saw band on both guide wheels. Make sure that the saw band ridge fits tightly to the wheel rim. Then push the saw band as far back as possible.
4. Stretch 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

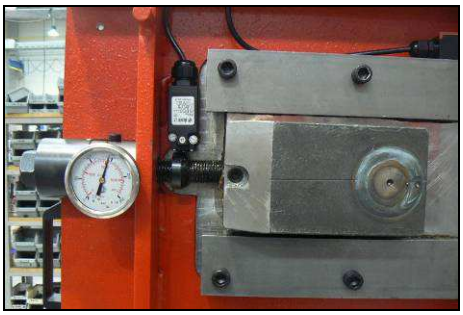
Saw band run is set with screw (arrow) in the stretching cube on the saw arm. Right distance rear part of the saw band from wheel rim is **1 – 3 mm**.

- 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.

4.3.4. 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.

4.4. Cooling agents and chips disposal

The quality of the cooling agent will deteriorate due to:	If the solution is too weak:	If the solution is too strong:
• 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

4.4.1. Coolant device inspection

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

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

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

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

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

* According to manufacturers' instructions

4.4.2. Chips disposal

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

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

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Manual rev.: 1

4.5. Hydraulic, Greases and oils

4.5.1. Gearbox oils

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

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

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

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

Band saw	Gearbox oil	Capacity
Individual 520.360 GANC	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

4.5.2. Lubricant greases

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

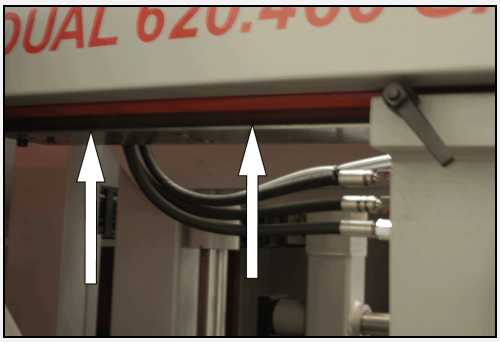
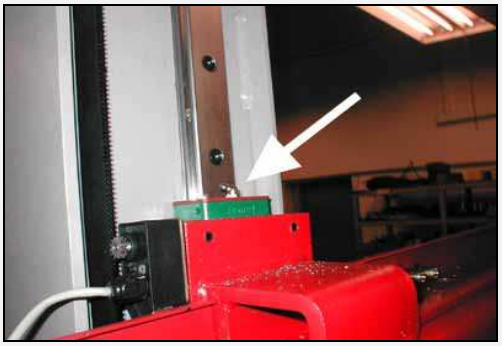
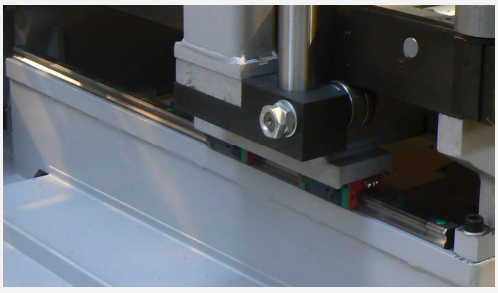
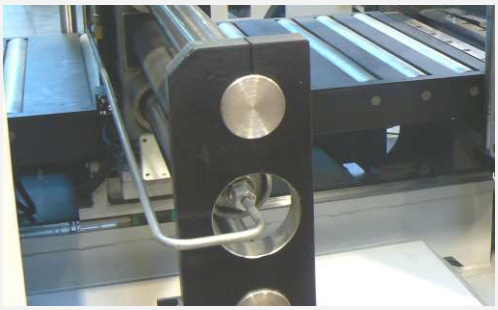
Comparative table of the lubricant greases:

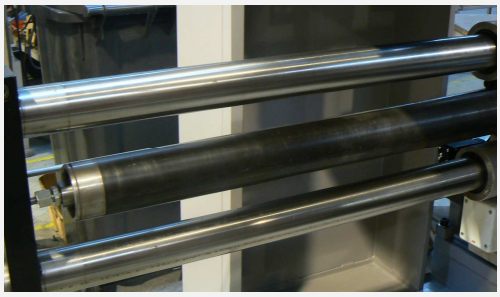
Manufacturer	Type of the lubricant grease
BP	Energrease LS - EP
DEA	Paragon EP1
Esso	FETT EGL 3144
	Beacon EP 1
	Beacon EP 2
FINA	FINA LICAL M12
Klüber	Microlube GB0
	Staburags NBU8EP
	Isoflex Spezial
Optimol	Optimol Longtime PD 0, PD1, PD2

Manufacturer	Type of the lubricant grease
Shell Aseol AG	ASEOL Litea EP 806-077
Texaco	Multifak EP1

4.5.3. Lubrication

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

Lubrication place	Lubrication
	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.
	The linear guiding – 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.
	The linear guiding – 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.

Lubrication place	Lubrication
	Grease guiding if feeding vice.

4.5.4. Hydraulic oils

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

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!

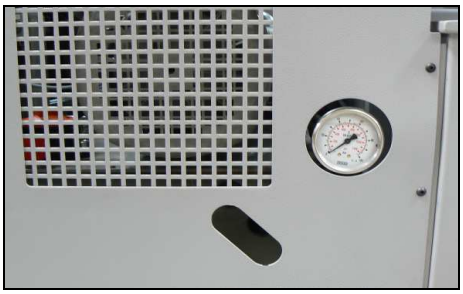
Use oils with specification DIN 51524-HLP, ISO 6743-4 and viscosity grade ISO VG 46 in hydraulic aggregates. Hydraulic oils quantity – see chapter **Hydraulic oil level check**.

Comparative table of the hydraulic oils

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

4.5.5. Hydraulic 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.

4.6. Machine cleaning

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

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

4.7. Worn pieces replacement

4.7.1. Pushing bearing replacement

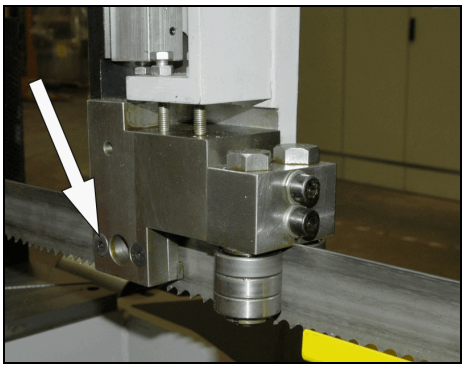
If it is impossible to adjust the bundle gripping assembly and the pushing bearing is worn, it needs to be replaced.

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.

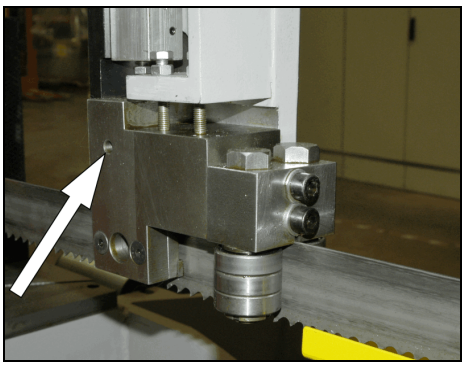
If the bearing is worn, there is a visible channel on it.

Bearing replacement:

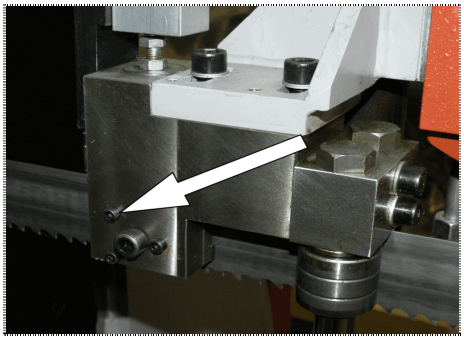
1. Dismantle the saw band.



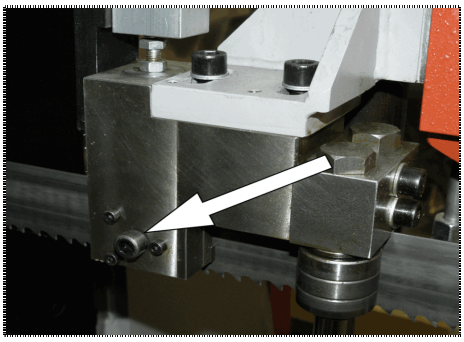
2. Release 2 Screws from hardmetal plate.



3. Release fixing screw with IMBUS (see arrow).



4. Release all 3 screws (see arrow).



5. Release center M10 screw after remove retaining ring. Remove hardmetal holder and bearing from bottom

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

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

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

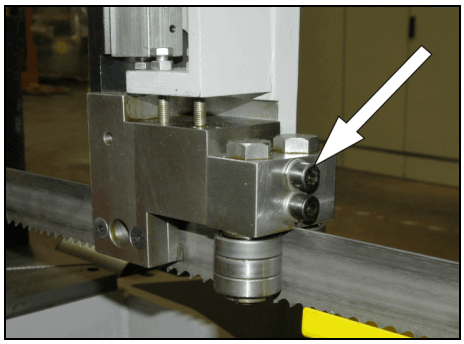
Attention:
The vice has aluminium jaws, eventually, there has to be an aluminium agent to protect the pivot from damage.

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

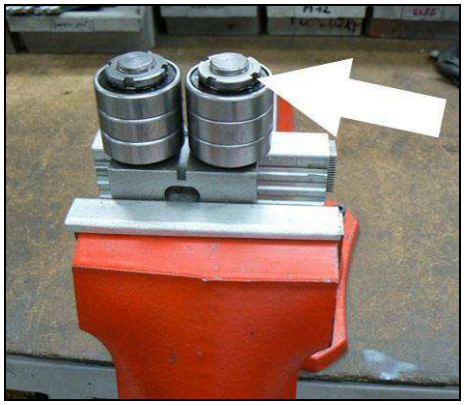
4.7.2. Saw band guiding pulleys replacement

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!



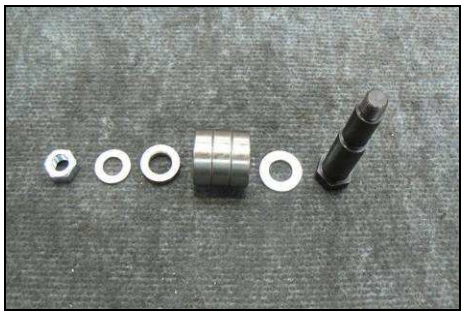
1. Release rear holder with 2 screws (see arrow). Dismantle the guiding cube of the saw band.



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

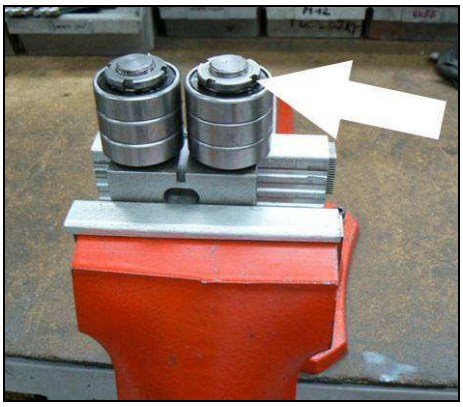
Attention:
Mark both eccentrics placing and components on the eccentric! Eccentrics must not be replaced with each other!

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.

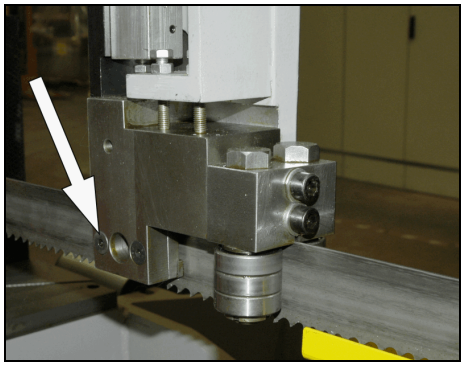
10. Tighten nuts on both eccentrics.
11. Remove the testing piece of saw band from the cube lead. Install the guiding cube on the machine.

4.7.3. Hard metal guides replacement

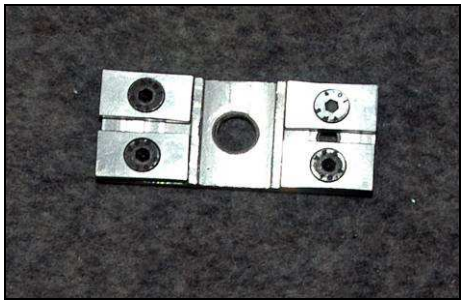
If the hard metal guides cannot be adjusted, they have to be replaced.

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

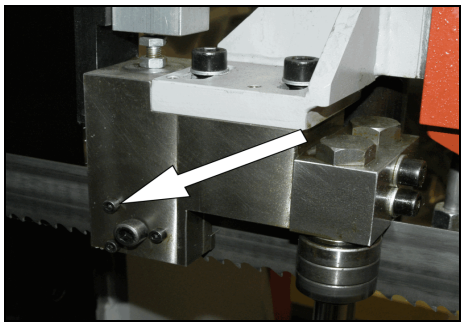
1. Disconnect the hose from the cooling agent.



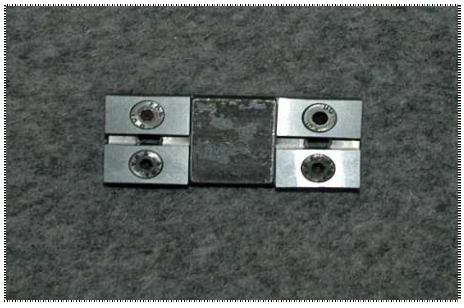
2. Release 2 screws.



3. Remove fix hardmetal guidepost.



4. Release all 3 screws (see arrow).
5. Release center M10 screew after remove retaining ring.



6. Remove moveable hardmetal guide.

7. From both hardmetal guides screw out worn hardmetals and change them with new ones.
8. Both hardmetals guides incl. press springs mount back. With 3 screws and aux. saw band setup optimal play between guides.

4.7.4. Brush replacement

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

1. Hold shaft of the brush by wrench.

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

5. Troubleshooting

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Schémata
Schemas
Schematics

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

Problem	Possible causes	Repair
		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“
	- 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.

Problem	Possible causes	Repair
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.
	- 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	- Wrong connection of electrical	The phases must be switched. Only service

Problem	Possible causes	Repair
aggregate is switched on but the saw arm or the main vice is not functional	supply. The electrical phases are connected conversely.	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.

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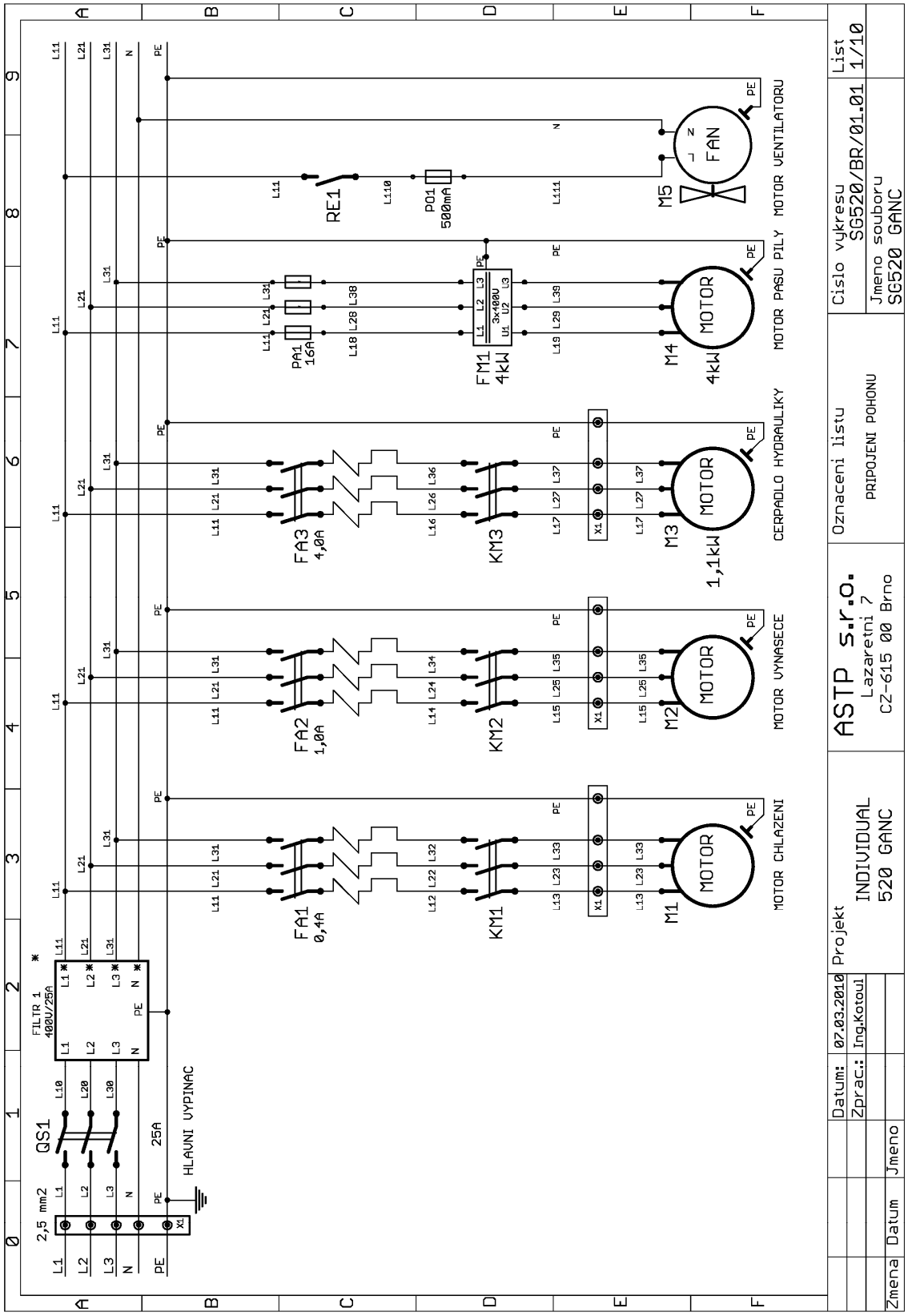
6. Schémata / Schemas / Schematics

6.1. Elektrické schema / Elektroschema / Wiring diagrams



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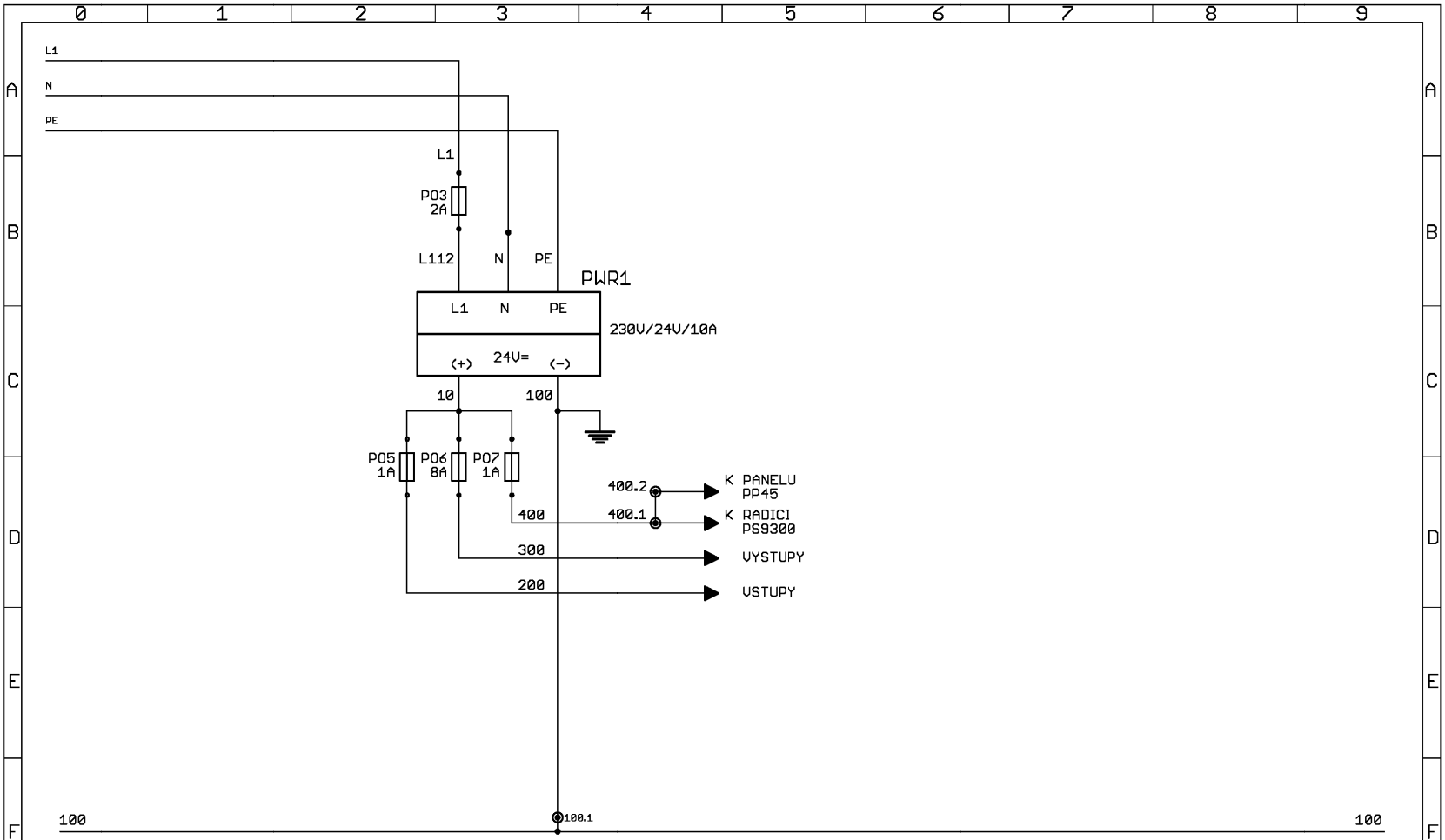

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Schémata
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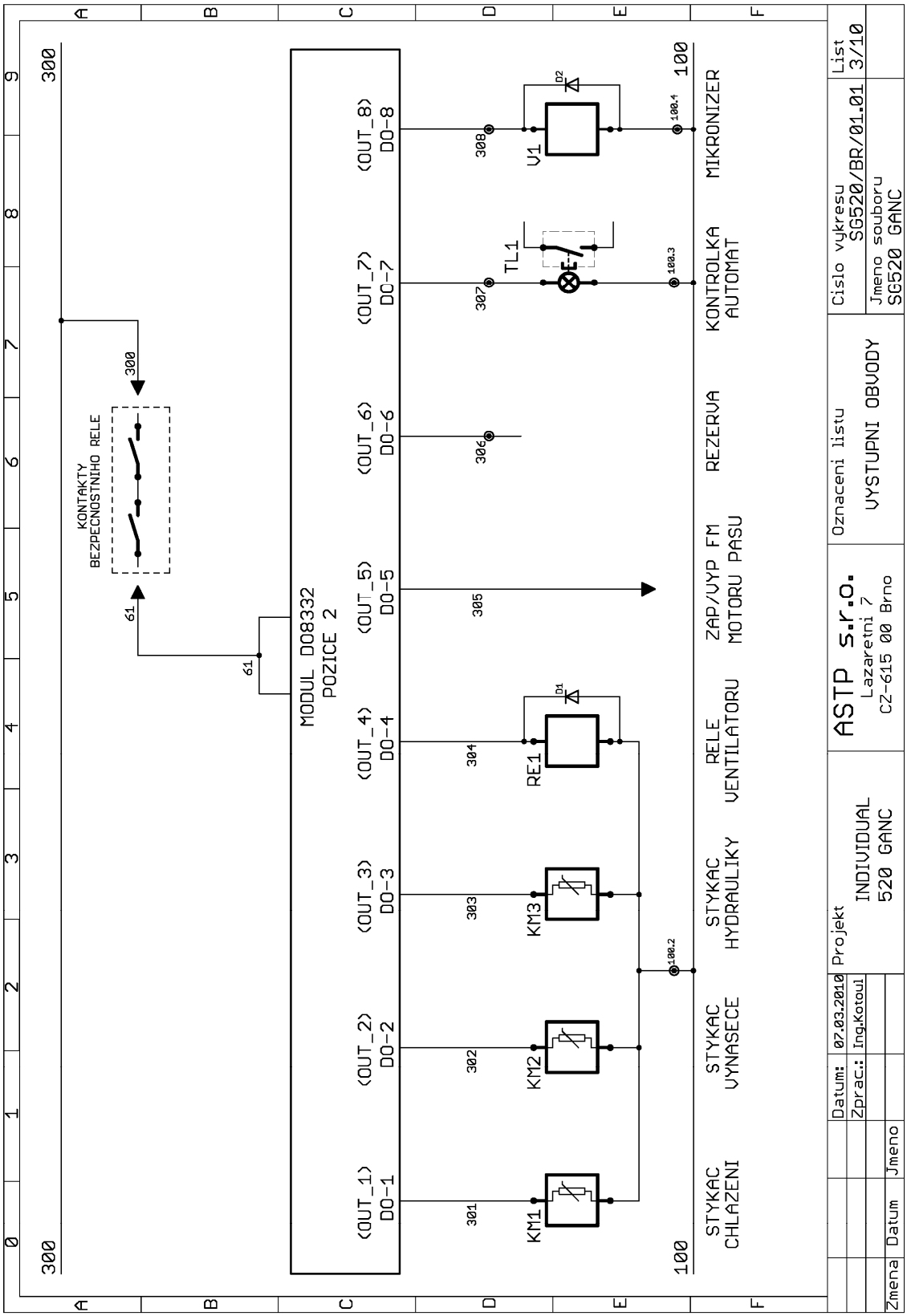
Schematics



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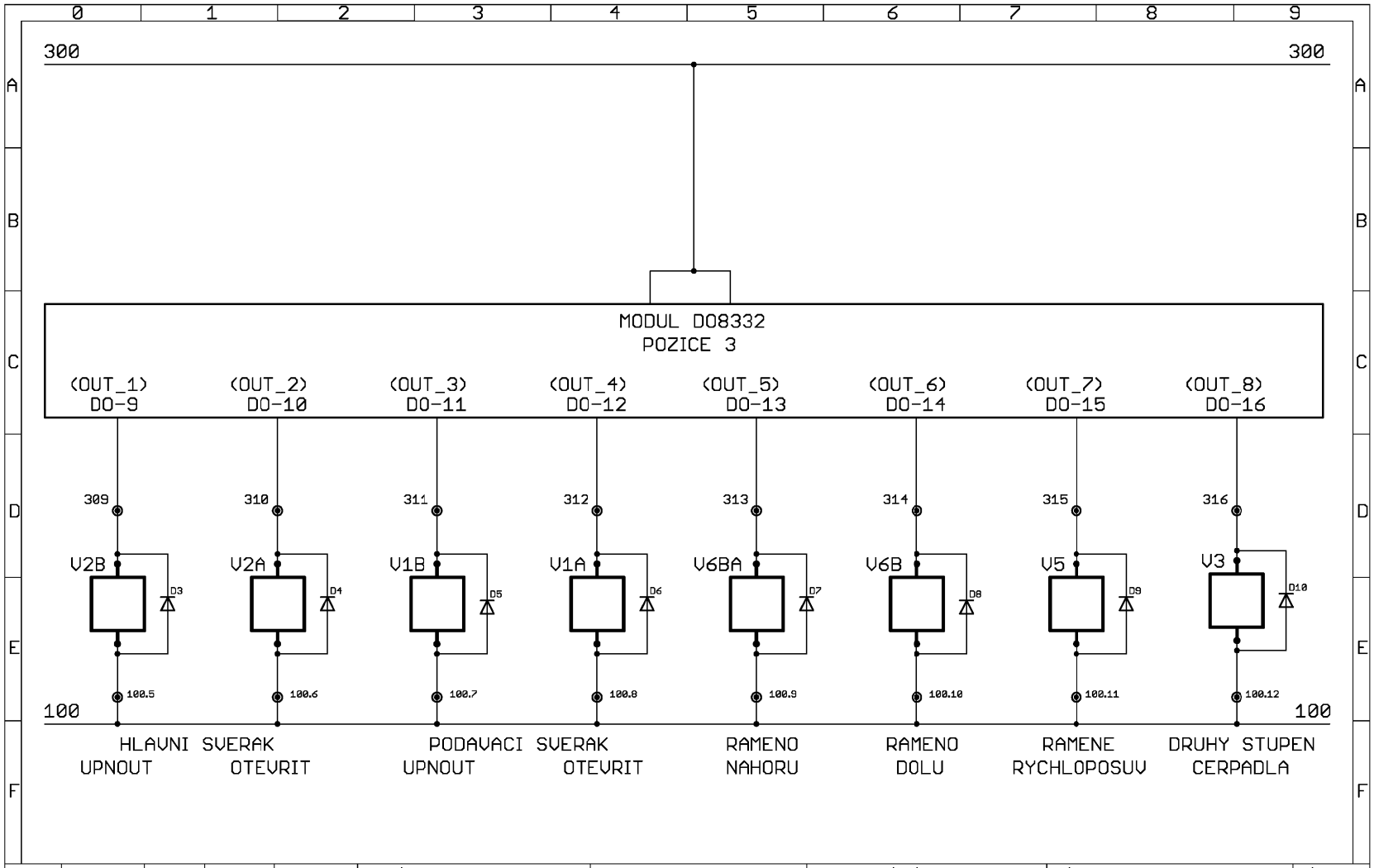
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(OUT_3) DO-11
(OUT_4) DO-12
(OUT_5) DO-13
(OUT_6) DO-14
(OUT_7) DO-15
(OUT_8) DO-16
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V1A
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SVERAK OTEVRIT
PODAVACI UPNOUT
SVERAK OTEVRIT
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RAMENO DOLU
RAMENE RYCHLOPOSUV
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Zprac.: Ing.Kotoul
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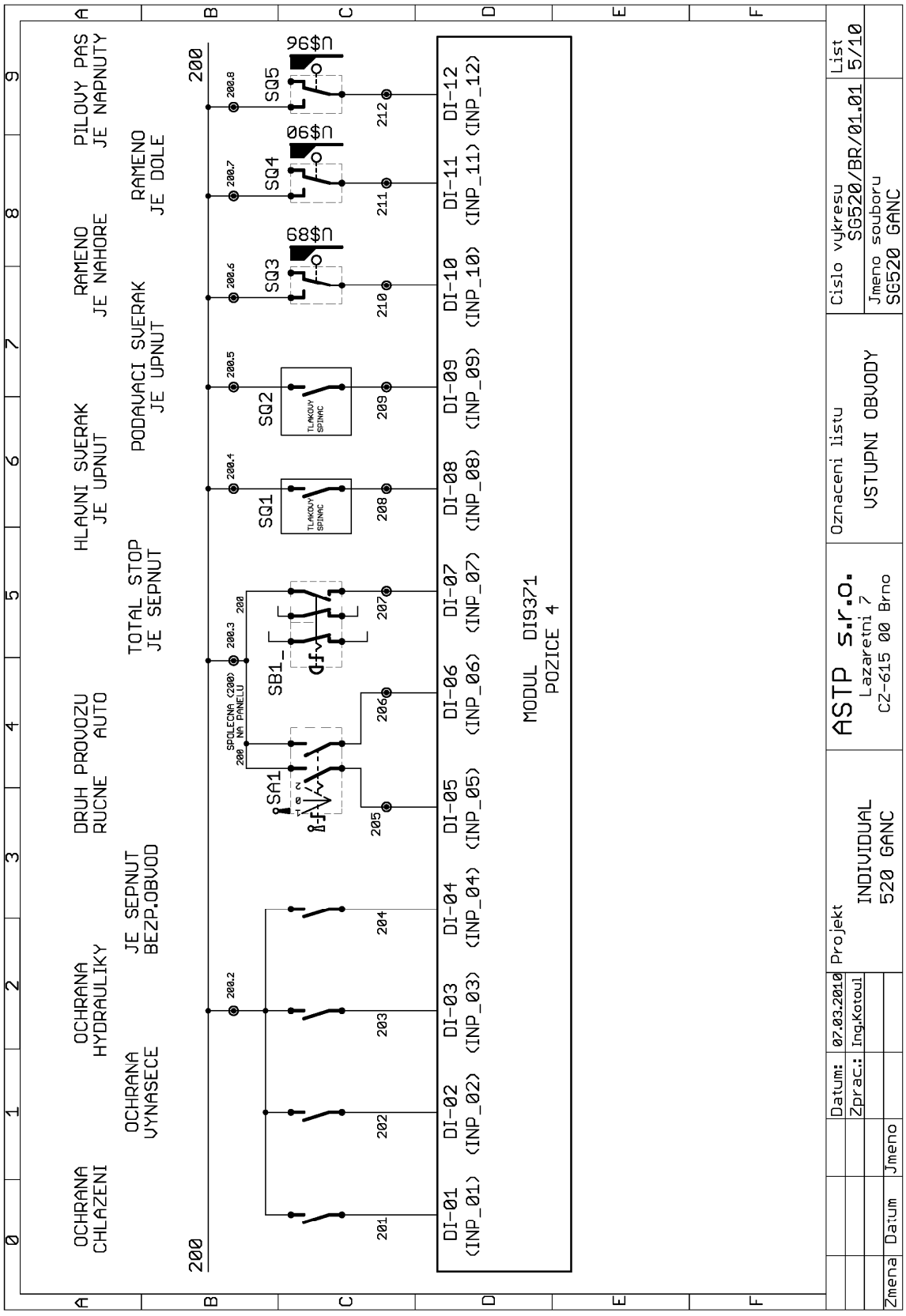
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OCHRANA HYDRAULIKY
OCHRANA VYNASECE
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DRUH PROVOZU RUCNE AUTO
TOTAL STOP JE SEPNUT
HLAVNI SVERAK JE UPNUT
PODAVACI SVERAK JE UPNUT
RAMENO JE NAHORE
RAMENO JE DOLE
PILOVY PAS JE NAPNUTY
SPOLECNA (200) NA PANELU
SA1
SB1
SQ1
SQ2
SQ3
SQ4
SQ5
TLAKOVY SPINAC
MODUL DI9371
POZICE 4
DI-01 (INP_01)
DI-02 (INP_02)
DI-03 (INP_03)
DI-04 (INP_04)
DI-05 (INP_05)
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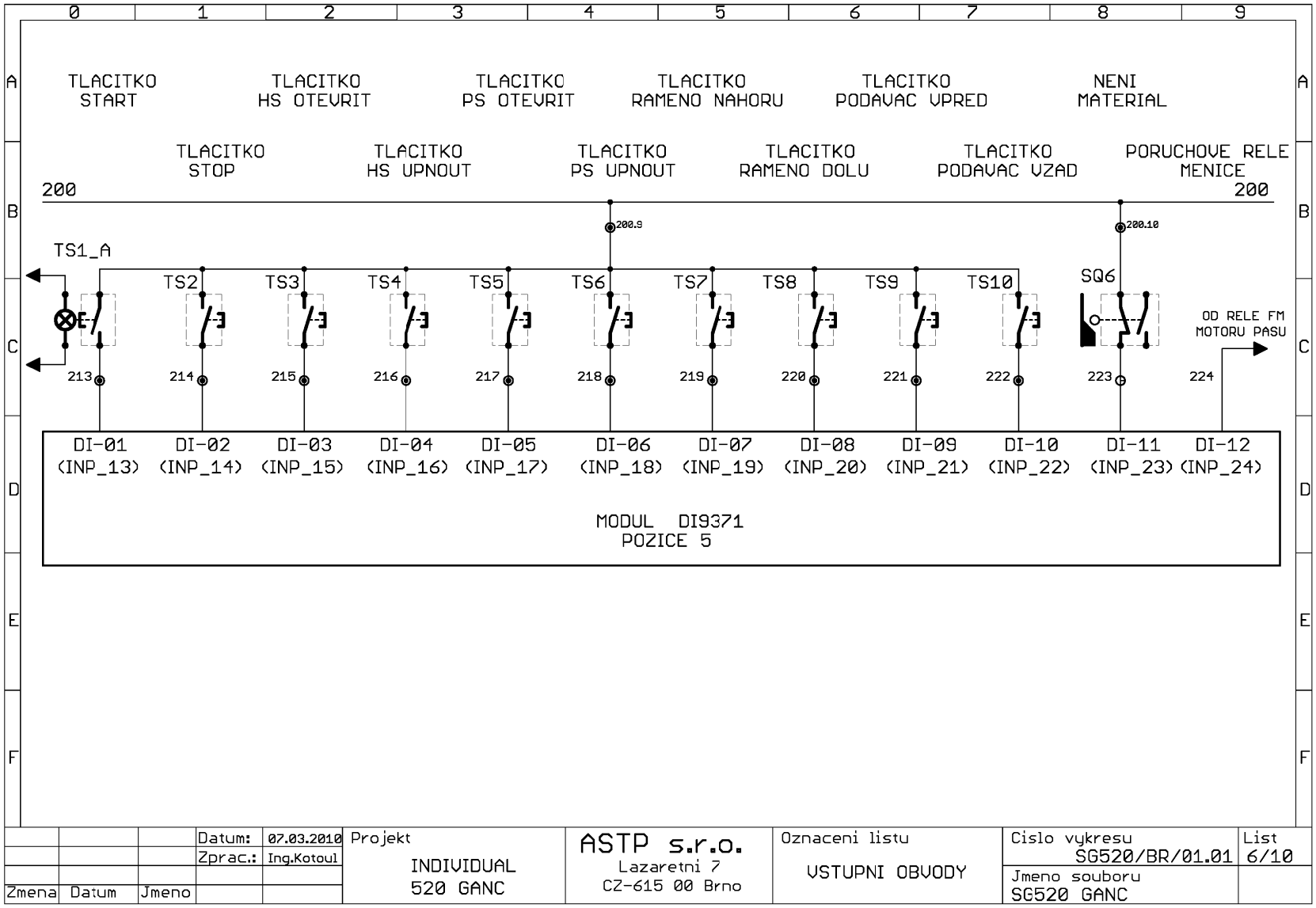
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TLACITKO PS OTEVRIT
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NENI MATERIAL
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TLACITKO PODAVAC VZAD
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200.9
200.10
TS1_A
TS2
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TS5
TS6
TS7
TS8
TS9
TS10
SQ6
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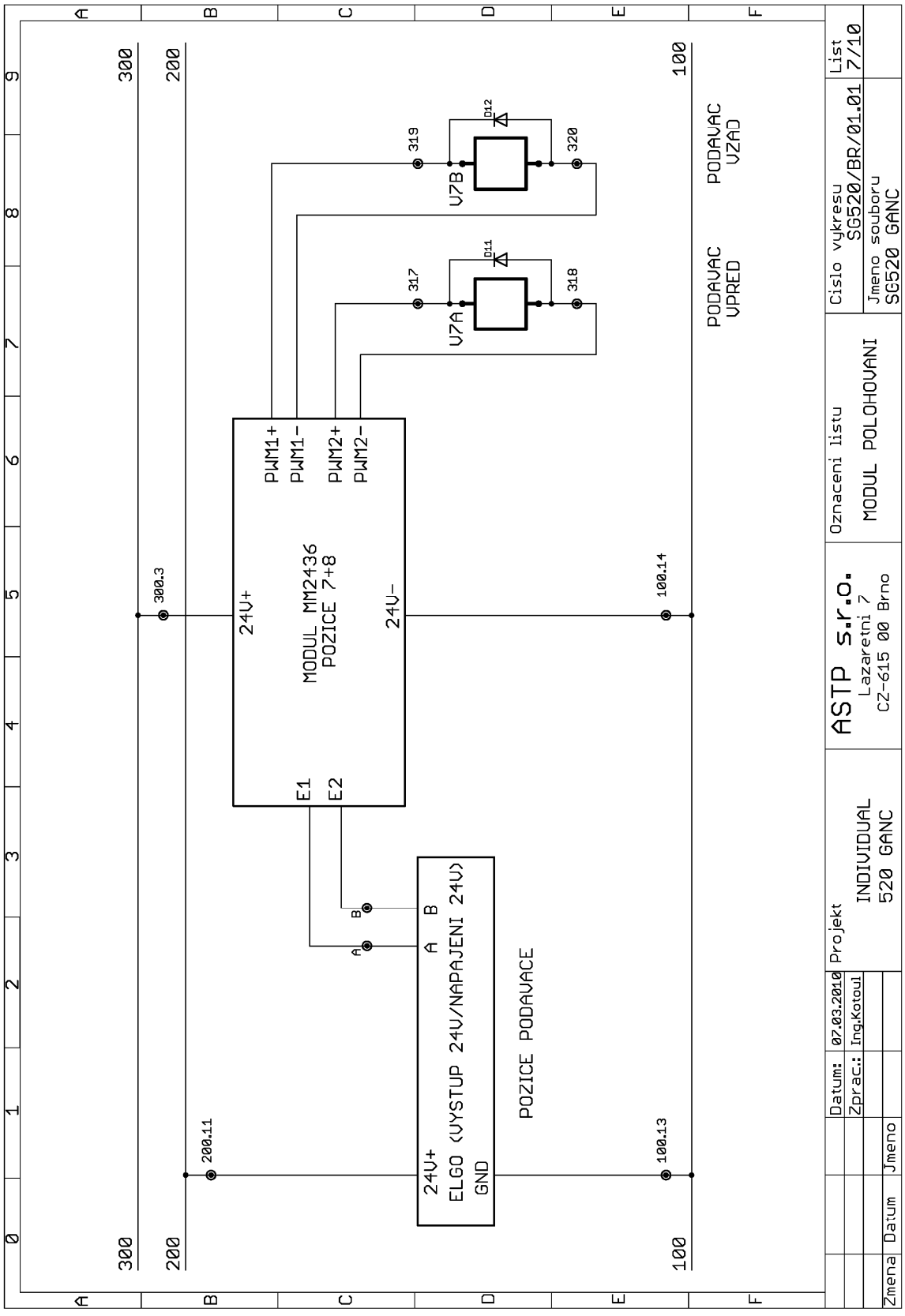

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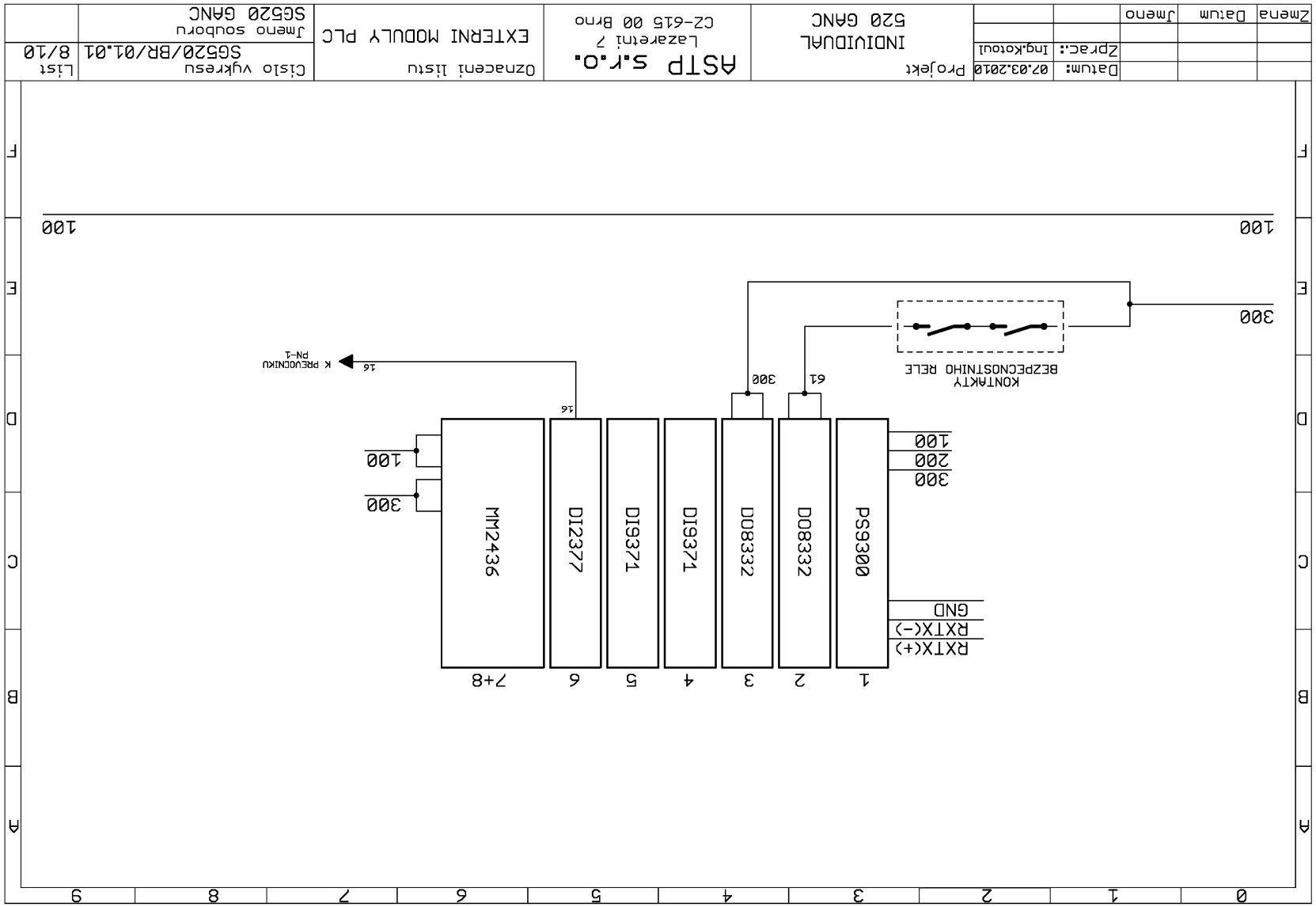
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300
100
300
KONTAKTY
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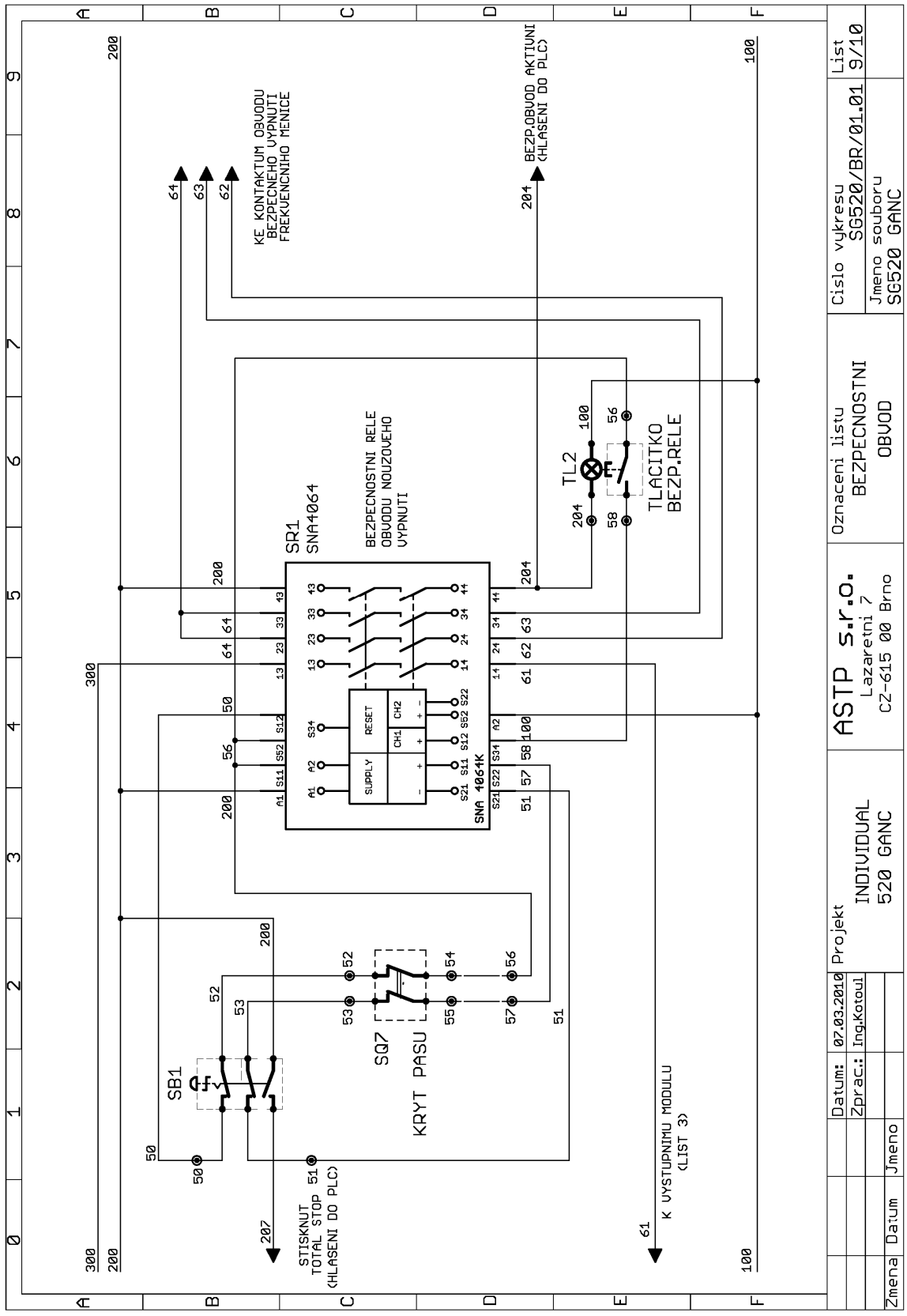
K PREVODNIKU
PN-1
100
100



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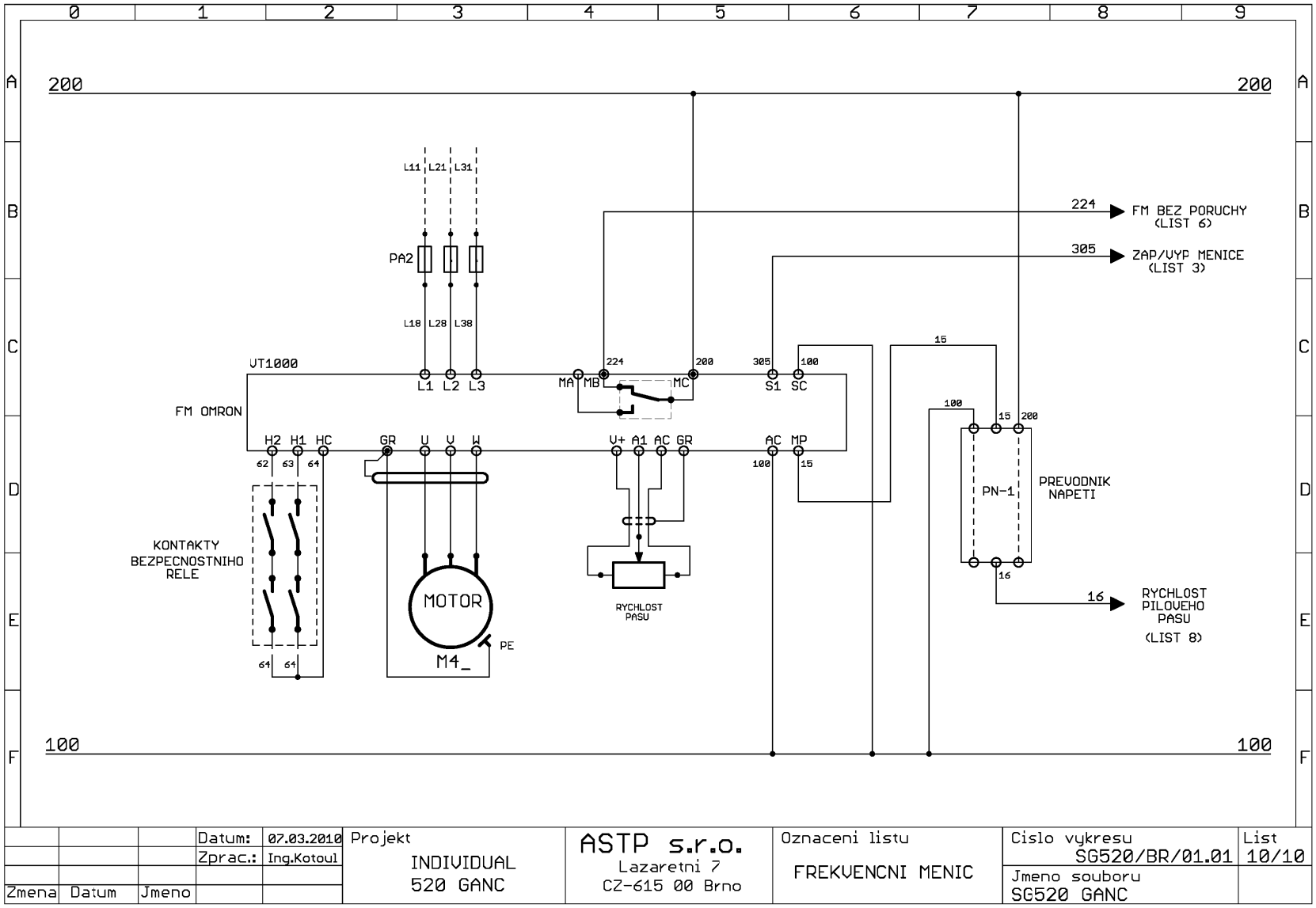
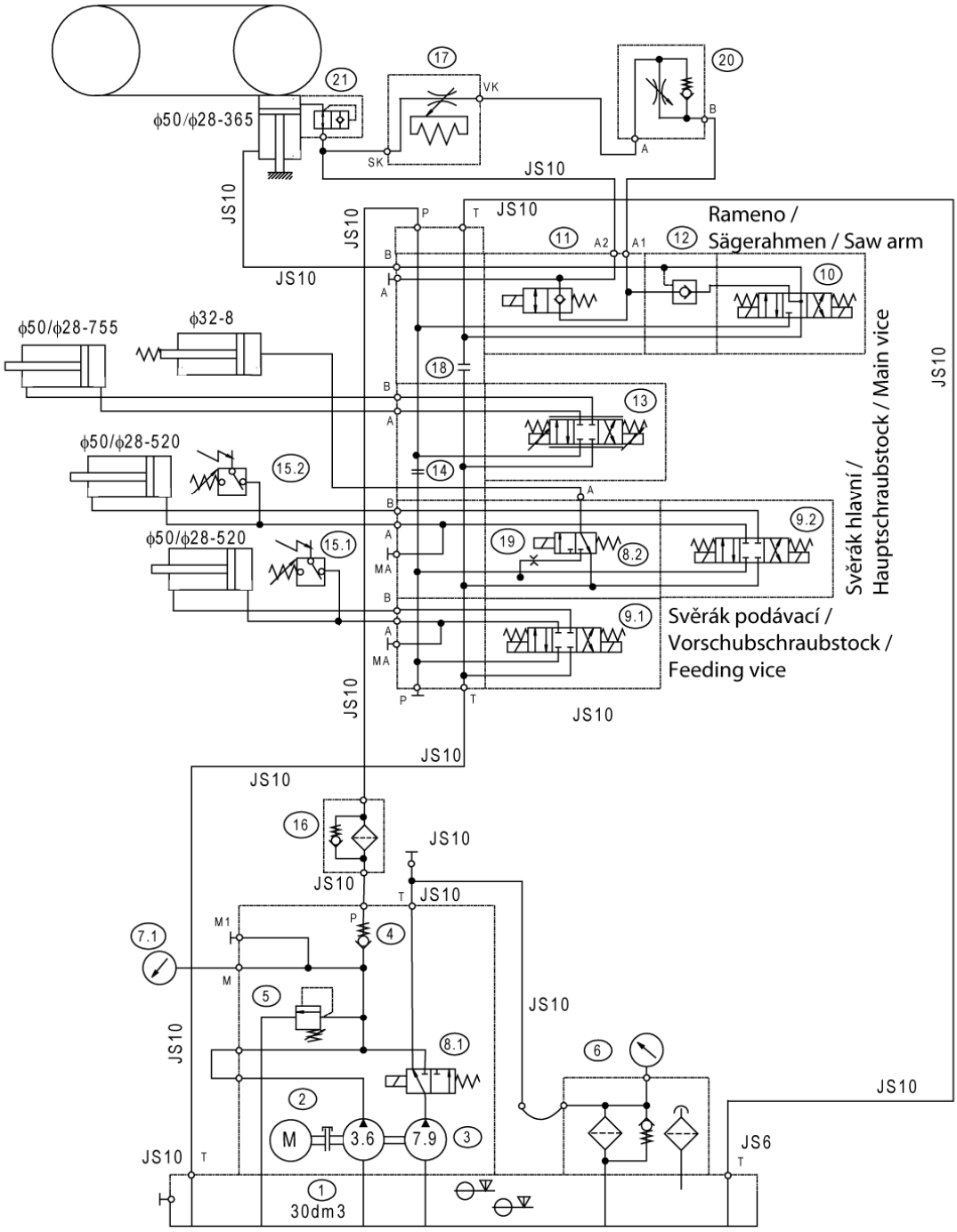


			Datum:	07.03.2010	Projekt	ASTP s.r.o.	Oznaceni listu	Cislo vykresu	List
			Zprac.:	Ing.Kotoul	INDIVIDUAL 520 GANC	Lazaretni 7 CZ-615 00 Brno	FREKVENCNI MENIC	SG520/BR/01.01	10/10
Zmena	Datum	Jmeno						Jmeno souboru SG520 GANC	

Schémata
Schemas
Schematics

6.2. Hydraulické schéma / Hydraulikschema / Hydraulic diagram



Základní technické parametry
Technische Spezifikation
Technical specification

Typ / Type / Type	Individual 520.360 GANC
Hydraulický agregát / Hydroaggregat Hydro aggregat	SMA03-79, 36/17.O-SDPO-V30M.0 92.001.064
Neuvedené světlosti / Unerwähnt Lichtbreite Unlisted inside diameters	JS6
Výstupní šroubení / Ausgangschraubung Output screwing	G1/4"
p_{max}	6,5 Mpa
Q	10,6 + 4,9 dm^3/min
n	1425 ot./min
P	2,2 kW

(TIN7) PR0690
205.Y316-250

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Poz.	Název	Typ	Počet
1	Nádrž / Behälter / Tank	N30-B0-II 30 dm^3	1
2	Elektromotor / Elektromotor / Electromotor	MA-AL100L 2,2 kW 400/230V,50Hz, 5,07 A	1
3	Hydrogenerátor / Hydraulikgenerator / Hydrogenerator	P 23-7,9/3,6 L.65334 7,9/3,6 cm^3/ot.	1
4	Jednosměrný ventil / Einwegventil / One-way valve	V J01-06/S G-1	1
5	Přepouštěcí ventil / Bypaßventil / By pass valve	VPP2-04/S-10S 6,5 MPa	1
6	Zpětný filtr / Filter / Filter	FR043-166/0 (10 µm) 92.153.101 /.039	1
7	Manometr / Manometer / Manometer	∅68 S GLYCERINEM 0-6 M P a	1
8	Rozvaděč / Verteilungsventil / Distributor	S D2E -A 3/C2D 21 408-0328.003	2
9	Rozvaděč / Verteilungsventil / Distributor	RPE3-043Z 11/02400E 1K 1 92.101.010	2
10	Rozvaděč / Verteilungsventil / Distributor	RPE3-043Y 11/02400E 1K 1 92.101.005	1
11	Blok rychloposuvu / Eilgangsblock / Speed shift block	729-0084 92.153.006	1
12	Hydraulický zámek / Hydraulisches Schloß / Hydraulic lock	VJR1-04/MA 92.103.002	1
13	Rozvaděč / Verteilungsventil / Distributor	RPM2-043Z11/04-24M IKRO 92.101.024	1
14	Zátka / Einfüllspund / Fill stopper	M6	1
15	Tlakový spínač / Druckschalter / Pressure switch	166415031059 20-50bar 92.201.003	2
16	Tlakový filtr / Druckfilter / Pressure filter	D042-153 (3 µm) 92.153.102 /.055	1
17	Kostka regulace / Regulationklotz / Regulation cube		1
18	Zátka / Einfüllspund / Fill stopper		1
19	Clona / Schürze / Shield	∅0,8 92.153.022	1
20	Škrtící ventil / Drosselventil / Throttle-valve	V S 01-04/R2,5-O 92.152.001	1
21	Ventil pojistný / Sicherungsventil / Retaining valve	VPNH 1/4" 92.151.001	1

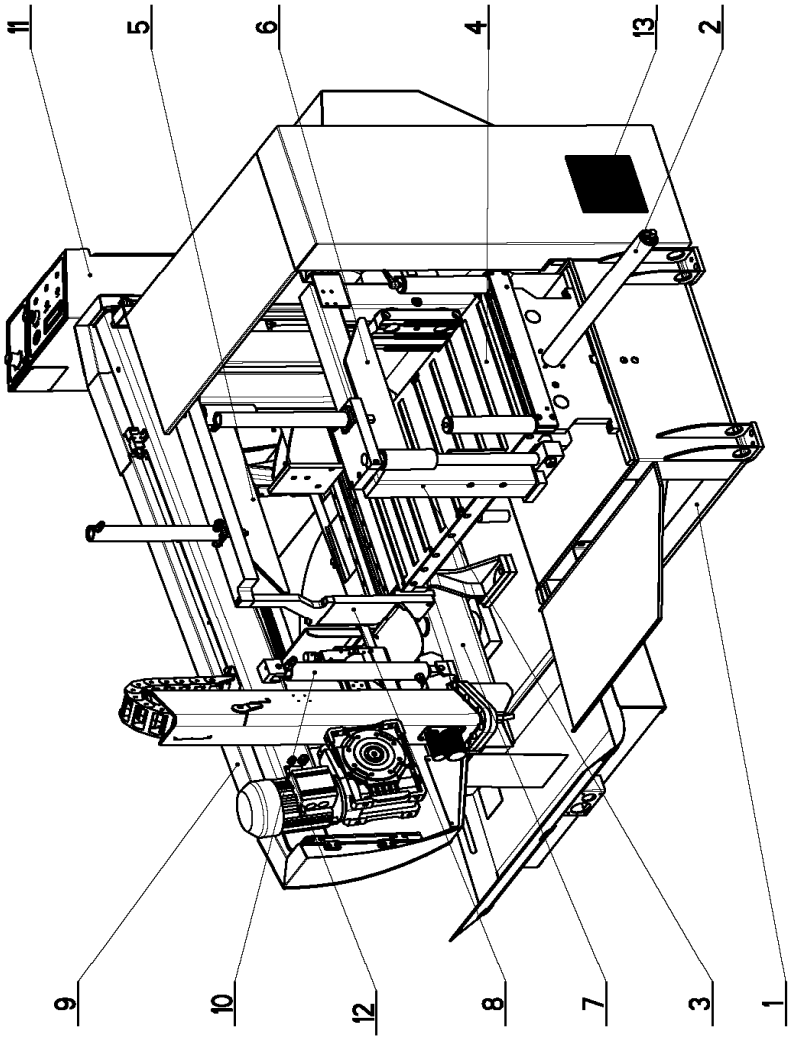
7. Výkresy sestav pro objednání náhradních dílů / Zeichnungen für Bestellung der Ersatzteile / Drawing assemblies for spare parts order

- Při objednávání náhradních dílů vždy uvádějte: typ stroje (např. practix Individual 520.360 GANC) , výrobní číslo (např. 125) a rok výroby (např. 1999).

- In die Bestellung der Ersatzteile führen Sie immer an: Maschinentyp (z. B. Individual 520.360 GANC), Serien Nr. (z. B. 125) und Baujahr (z. B. 1999).

- For spare parts order, you must always to allege: type of machine (for example Individual 520.360 GANC), serial number (for example 125, see cover page) and year of construction (for example 1999).

7.1. Individual 520.360 GANC



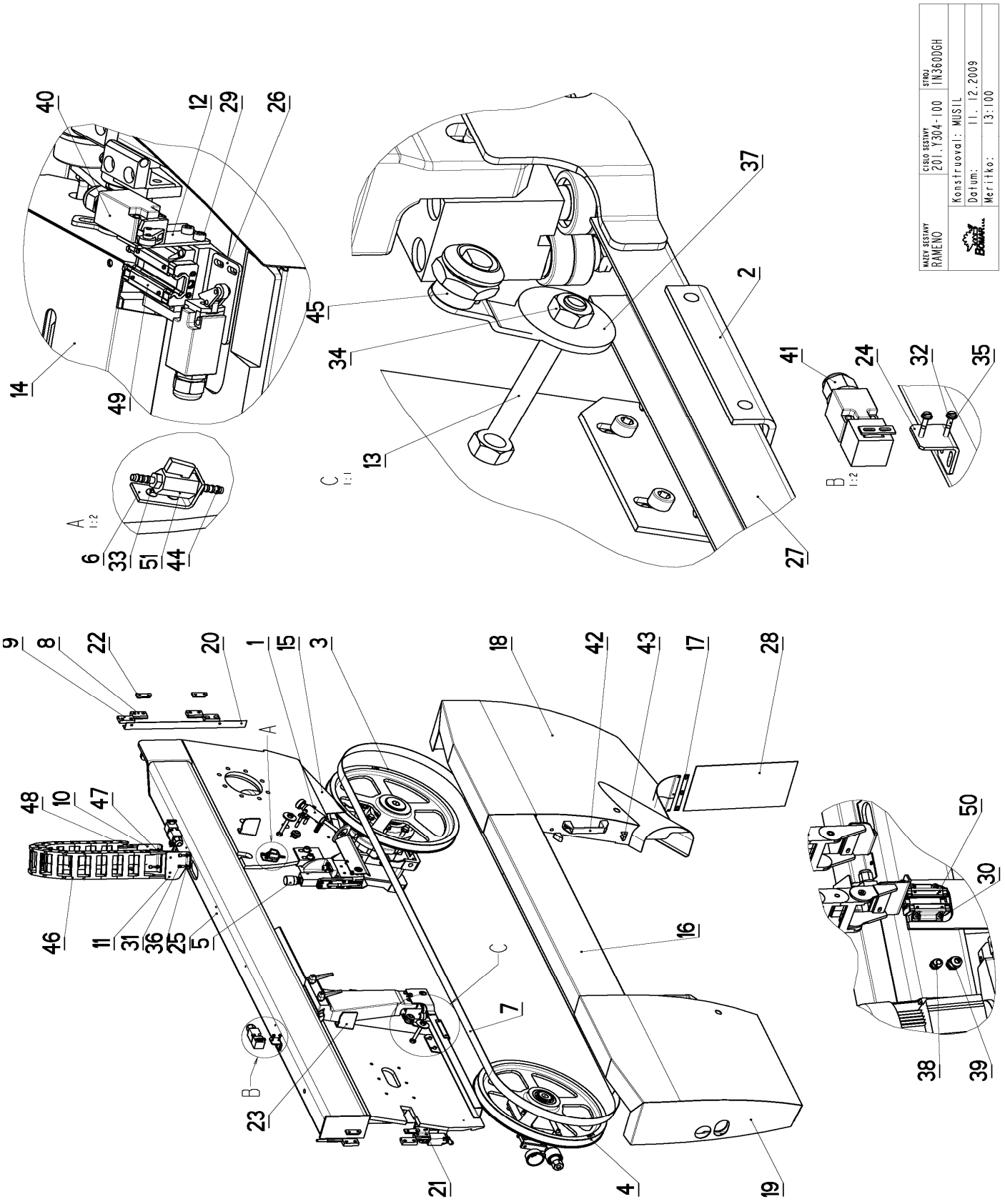
NAZEV SESTAVY PILA PASOVA	CISLO SESTAVY 201.D300-000	STROJ
	Konstruoval:	
	Datum: 12. 12.2009	
	Meritko: 7:100	

Cislo Sestavy	Ver.	Nazev sestavy
201.9114-300	0	KARTAC/&NAZEV_EN/&NAZEV_DE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0814-204	0	KOLECKO / WHEEL / ROLLE	SESTAVA	1
2	30.0814-207	0	KROUZEK / RING / RING	d 25	2
3	30.9114-301	0	HRIDEL / SHAFT / WELLE	d 12	1
4	30.9214-301	1	DRZAK / HOLDER / HALTER		1
5	31.0305-211	0	PRUZINA / SPRING / FEDER	2x12x50x15,5	1
6	31.0814-208	0	KARTAC / BRUSH / BÜRSTE		1
7	31.1506-115	0	PRUZINA / SPRING / FEDER	1.6x12x25x7.5	2
8	90.001.25.038	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X50	1
9	90.001.25.095	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X70	2
10	90.003.20.001	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M5X6	3
11	90.100.55.005	0	MATICE DIN 934 / NUT / MUTTER	MATICE _ M8	1
12	90.150.50.005	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 8,4	1
13	95.001.005	0	LOZISKO / BEARING / LAGER	6001 2RS	2

1 POZ. 30.9114-301 NAHRAVUJE 30.0814-206 23.1.03 STASTNA

7.3. Rameno / Sägerahmen / Saw arm



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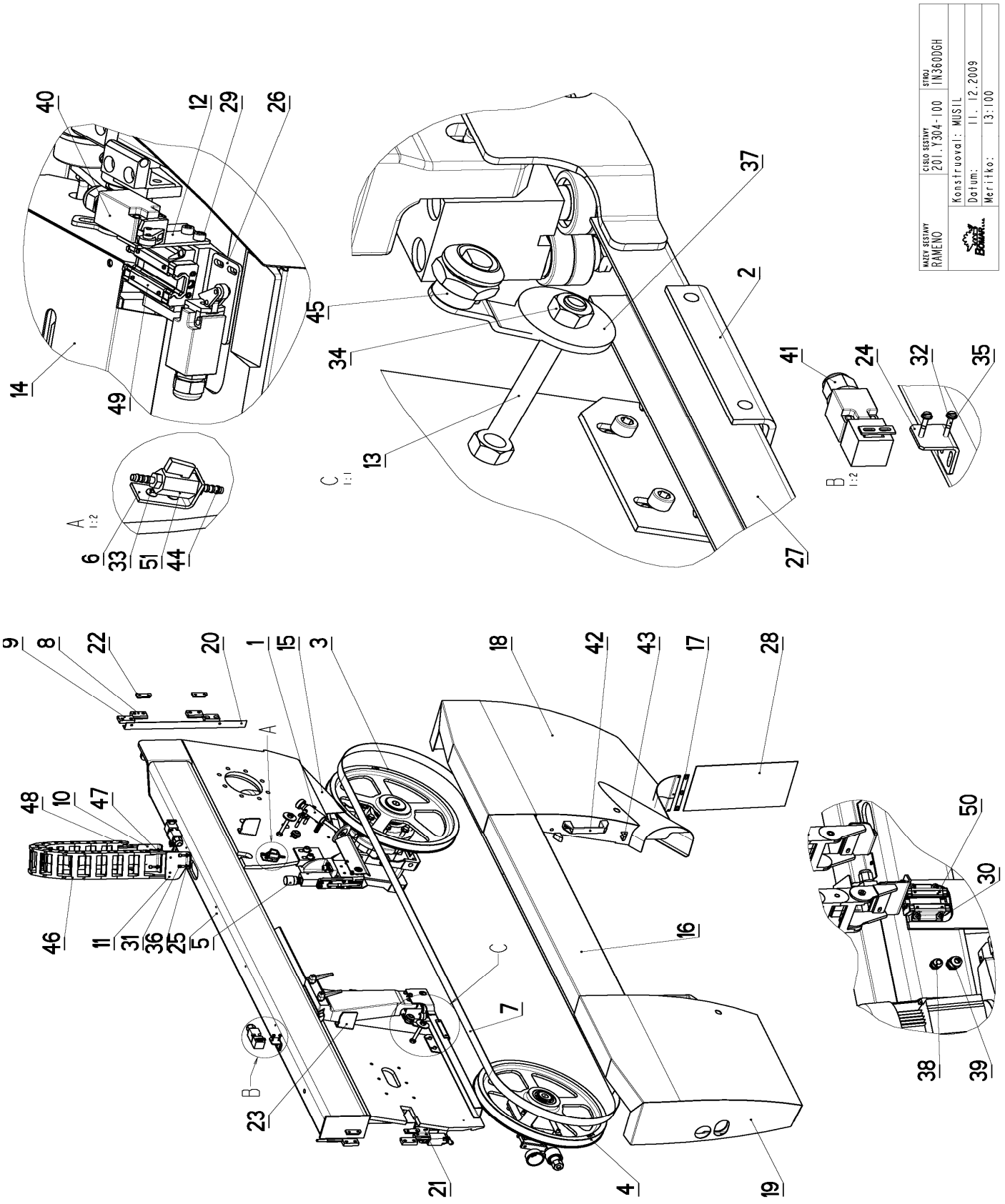
Cislo Sestavy	Ver.	Nazev sestavy
201.Y304-100	2	RAMENO/&NAZEV_EN/&NAZEV_DE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.9114-300	0	KARTAC / BRUSH / BÜRSTE		1
2	201.Y304-010	0	VEDENI / GUIDE / BACKENFÜHRUNG	VEDENI KRYTU	1
3	201.Y305-000	0	POHON / DRIVE / ANTRIEB	POHON PASU	1
4	201.Y308-000	0	NAPINANI / TENSIONING / SPANNUNG		1
5	201.Y310-000	1	VEDENI PASU / BELT GUIDE / SÄGEBANDFÜHRUNG		1
6	30.1814-011	0	DRZAK / HOLDER / HALTER	P 3- 76	1
7	30.2904-913	0	PAS PILOVY / SAW BELT / SÄGEBAND	4780x32(4)x0.90	1
8	30.6014-109	1	PANT / HINGE / TÜRBAND		4
9	30.6014-110	1	PANT / HINGE / TÜRBAND	HR 30x12	4
10	30.7114-142	1	DRZAK / HOLDER / HALTER	P 4 -100	1
11	30.T304-014	0	DRZAK / HOLDER / HALTER	P 4-100	1
12	30.Y304-013	0	DRZAK / HOLDER / HALTER	P3-30	1
13	30.Y304-018	0	TYC ZAVITOVA / THREADED POLE / GEWINDESTANGE	M10	2
14	30.Y304-023	0	KRYT NAPINANI / TENSIONING COVER / BANDSPANNUNGSABDECKUNG	P 1,5 - 279	1
15	30.Y304-027	0	KRYT / COVER / ABDECKUNG	P2 - 114	1
16	30.Y304-029	0	KRYT PASU / BELT COVER / BANDABDECKUNG		1
17	30.Y304-030	0	PLECH / PLATE / BLECH	P 1-15	1
18	30.Y304-031	1	KRYT RAMENE / SHOULDER COVER / RAHMENABDECKUNG		1
19	30.Y304-032	0	KRYT RAMENE / SHOULDER COVER / RAHMENABDECKUNG		1
20	30.Y304-033	1	DRZAK / HOLDER / HALTER	L 20x30	1
21	30.Y304-034	1	DRZAK / HOLDER / HALTER	L 20x30	1
22	30.Y304-035	0	DESKA / BOARD / PLATTE	HR 20x5	4
23	30.Y304-038	0	ZAMEK / LOCK / SCHLOSS	P4 - 67	2
24	30.Y304-039	0	DRZAK / HOLDER / HALTER	P3 - 34	2
25	30.Y304-101	2	RAMENO / SHOULDER / SÄGERAHMEN	SVARENO	1
26	30.Y304-107	0	DRZAK / HOLDER / HALTER	P 3 - 40	1
27	30.Y304-109	1	KRYT PASU / BELT COVER / BANDABDECKUNG		1
28	31.PK02-054	0	GUMA / RUBBER / GUMMI	G2 - 206	1
29	90.001.25.015	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X10	2
30	90.001.25.034	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X30	8
31	90.001.25.092	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X14	4
32	90.012.50.007	0	SROUB / BOLT / SCHRAUBE	SROUB M4X30	4
33	90.013.27.003	0	SROUB / BOLT / SCHRAUBE	M5X10	2
34	90.100.55.006	0	MATICE DIN 934 / NUT / MUTTER	MATICE _ M10	6

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



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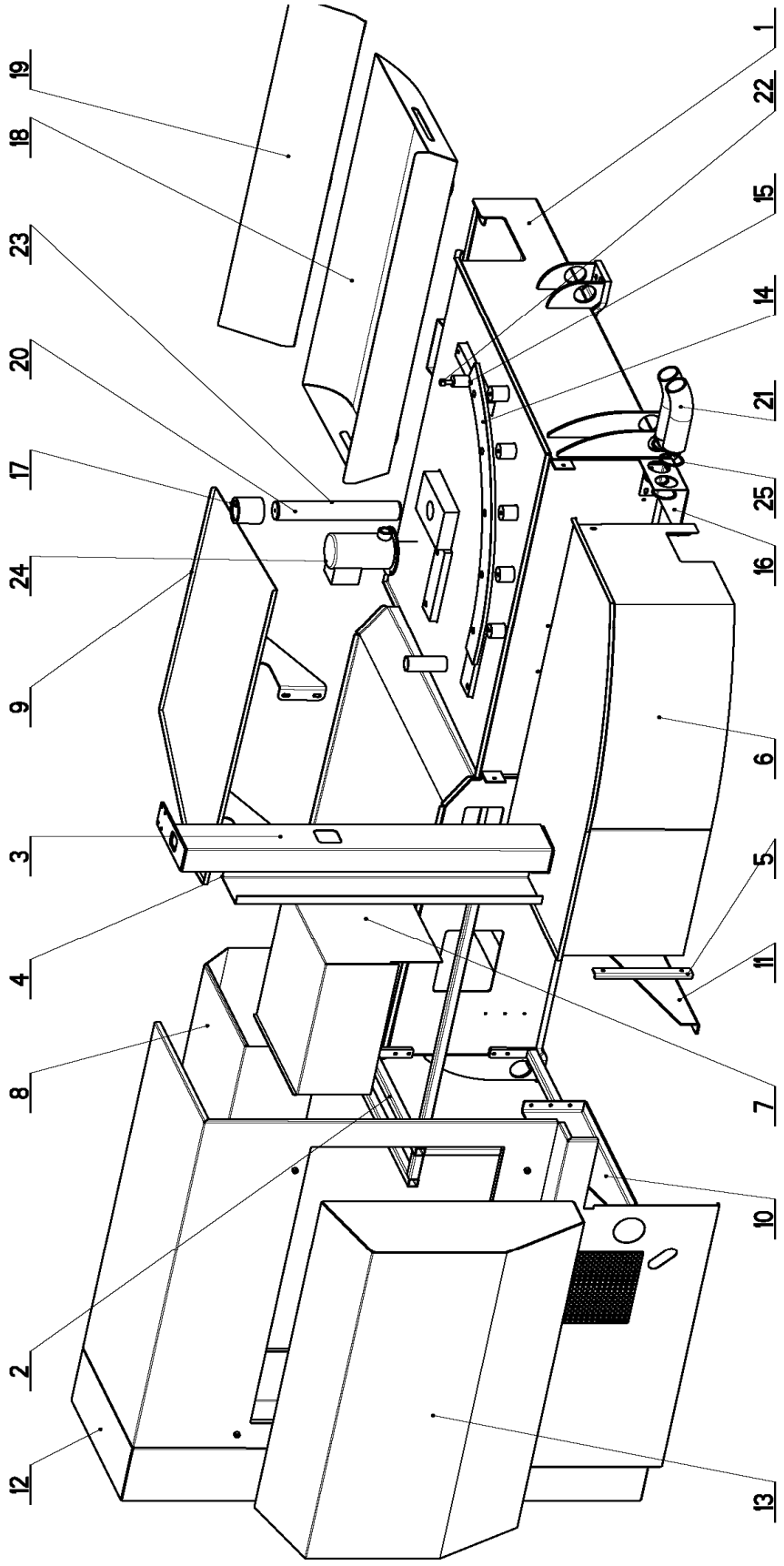
35	90.150.50.002	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 4,3	4
36	90.150.50.004	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 6,4	4
37	90.151.50.002	0	PODLOZKA VELKOPL. / WASHER / UNTERLEGSCHEIBE	PODLOZKA 12	2
38	91.070.011	0	VYVODKA / BUSHING / TÛLLE	M16x1.5	1
39	91.070.012	0	VYVODKA / BUSHING / TÛLLE	M20x1.5	1
40	91.173.009	0	SPINAC KONC.S KLADK. / END SWITCH WITH PULLEY / ENDSCHALTER MIT ROLLE	PZ-FR605-M2	2
41	91.173.012	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	QKS8-2xNC	2
42	94.012.001	0	RUKOJET / HANDLE / GRIFF		2
43	94.012.002	0	ZATKA / PLUG / STOPFEN		4
44	94.202.002	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	REDUKCE 6/R1/4"	2
45	99.104.002	0	ZAMEK / LOCK / SCHLOSS	ZAMEK CINSKY	2
46	99.170.001	0	RETEZ ENERGII / ENERGY BELT / ENERGIEKETTE	0555.030.075.100	14
47	99.173.001	0	RETEZ ENERGII / ENERGY BELT / ENERGIEKETTE	KONCOVKA VNEJ	1
48	99.173.002	0	RETEZ ENERGII / ENERGY BELT / ENERGIEKETTE	KONCOVKA VNIT	1
49	99.201.025	0	VOZIK LINEARNIHO VEDENI / LINEAR GUIDE CART / LINEARFÜHRUNGSWAGEN	HSR20B SS C1	1
50	99.201.027	0	VOZIK LINEARNIHO VEDENI / LINEAR GUIDE CART / LINEARFÜHRUNGSWAGEN	HSR30B SS C1	2
51	99.260.003	0	VENTIL / VALVE / VENTIL	1/4"	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

7.7. Podstavec / Untersatz / Base



NÁZEV SESTAVY PODSTAVEC	ČÍSLO SESTAVY 201.D301-000	STROJ IN360GH	
	Konstruoval: HLADIL		
	Datum: 11. 12.2009		
	Měřítko: 1:10		

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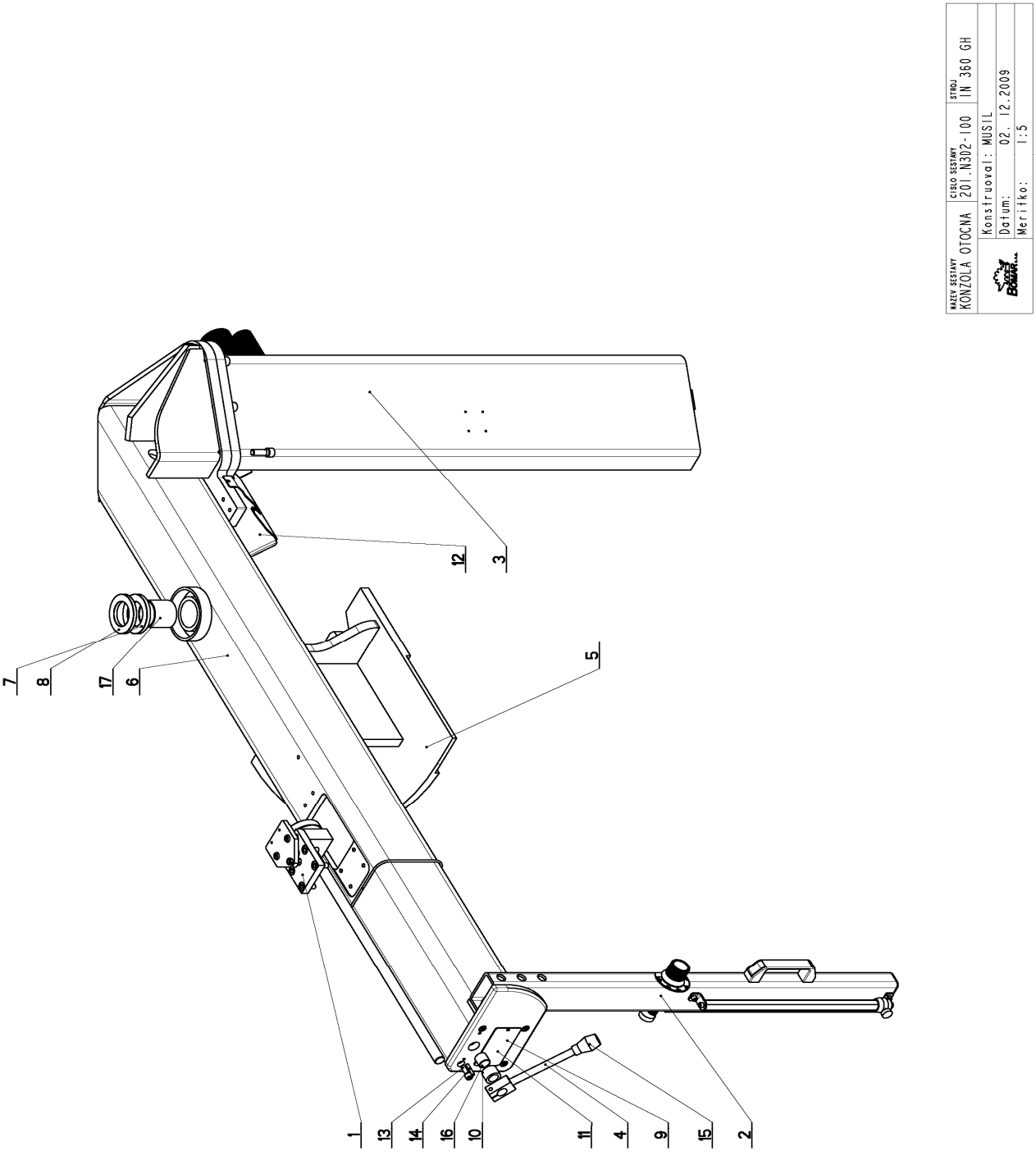
Cislo Sestavy	Ver.	Nazev sestavy
201.D301-000	0	PODSTAVEC/BASE/UNTERSATZ

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.D301-001	0	PODSTAVEC / BASE / UNTERSATZ		1
2	30.D301-004	0	RAM / FRAME / RAHMEN		1
3	30.D301-005	0	KRYT / COVER / ABDECKUNG		1
4	30.D301-006	0	KRYT / COVER / ABDECKUNG	P2-176	1
5	30.D301-008	0	DRZAK / HOLDER / HALTER	P3 - 39	1
6	30.D301-010	0	KRYT / COVER / ABDECKUNG		1
7	30.D301-011	0	KRYT HYDRAULIKY / HYDRAULIC COVER / HYDRAULIKABDECKUNG	P 1.5 - 732	1
8	30.D301-012	0	KRYT HYDRAULIKY / HYDRAULIC COVER / HYDRAULIKABDECKUNG	P 1.5 - 633	1
9	30.D301-016	0	OKAP / GUTTER CHANNEL / BLECH		1
10	30.D301-017	0	KONZOLA / CONSOLE / KONSOLE	P4-187	1
11	30.D301-018	0	KONZOLA / CONSOLE / KONSOLE	P4-187	1
12	30.D314-009	0	KRYT PODAVACE / FEEDER COVER / VORSCHUBABDECKUNG		1
13	30.D314-010	0	KRYT PODAVACE / FEEDER COVER / VORSCHUBABDECKUNG		1
14	30.M301-002	0	SEGMENT / SEGMENT / SEGMENT	P 12- 201	1
15	30.M301-005	0	EXCENTR / CAM / EXZENTER	d 30	1
16	30.M301-010	0	DRZAK / HOLDER / HALTER	P3 - 234	1
17	30.M301-013	0	KROUZEK / RING / RING	TR 70x12,5	1
18	30.Y301-019	0	VANA / TANK / WANNE		1
19	30.Y301-020	0	SKLUZ / SLIDE / RUTSCH		1
20	30.Y401-103	0	CEP / LUG / BOLZEN	d 50 h6	1
21	41.001.006	0	HADICE / HOSE / SCHLAUCH	55/46	2
22	90.001.25.052	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X50	1
23	90.002.20.011	0	STAVECI S KUZEL / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M8X10	2
24	91.020.015	0	CERPADLO / PUMP / PUMPE	3CDA4-12	1
25	95.800.034	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 55	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

7.9. Konzola / Konzole / Console



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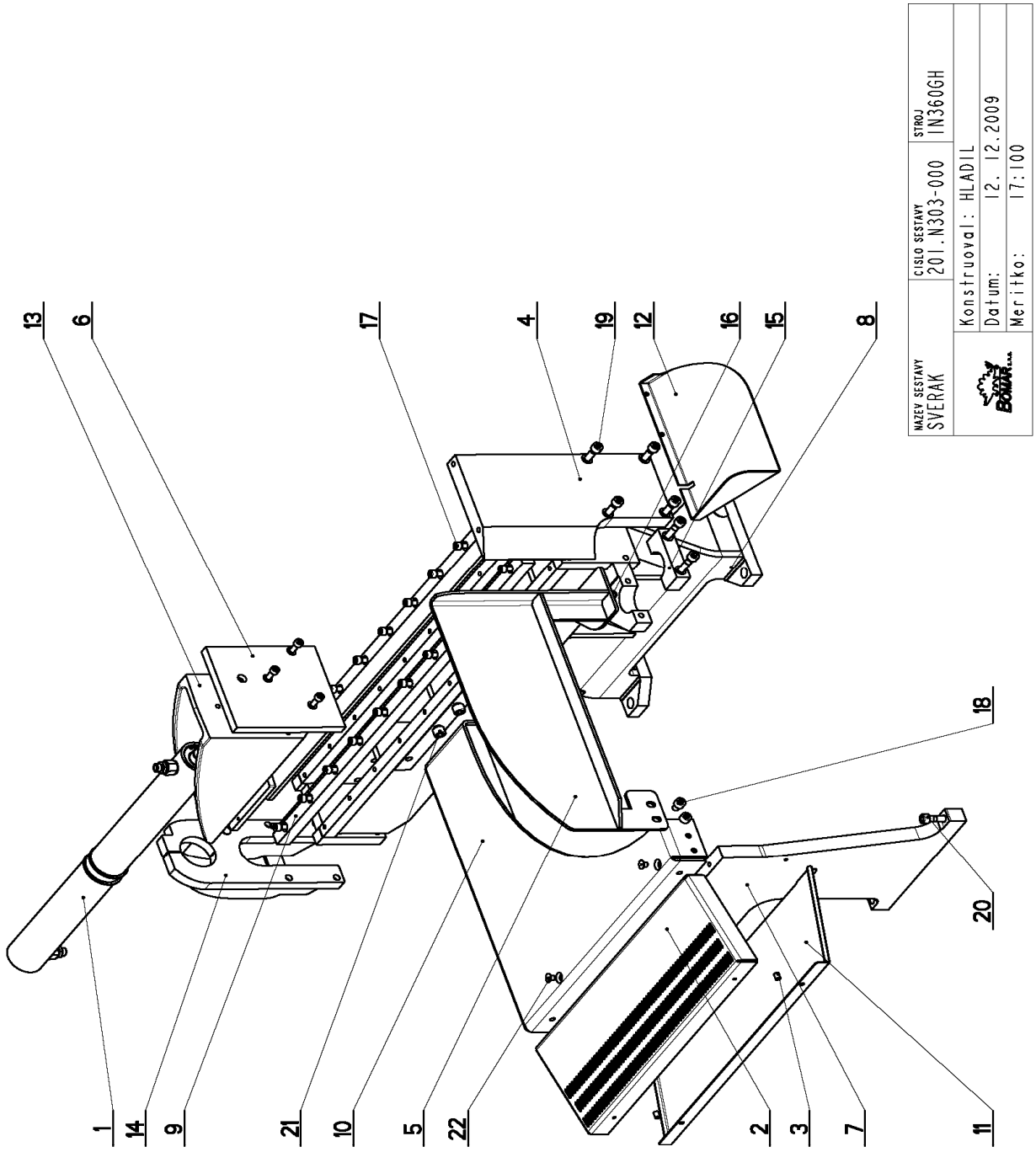
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.N302-100	0	KONZOLA OTOCNA/TURNABLE CONSOL/DREHKONSOLE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.Y302-120	0	BRZDA / BRAKE / BREMSE		1
2	201.Y302-150	1	SLOUP / POLE / SÄULE	SESTAVA	1
3	201.Y302-160	3	SLOUP / POLE / SÄULE	SESTAVA	1
4	30.8602-514	0	PAKA / LEVER / HEBEL		1
5	30.N302-004	0	SEGMENT / SEGMENT / SEGMENT	P 20 - 430	1
6	30.N302-101	0	KONZOLA / CONSOLE / KONSOLE	SVARENO	1
7	30.Y302-006	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	d 80	1
8	30.Y302-007	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	d 85	1
9	30.Y302-203	1	DESKA / BOARD / PLATTE	P15-150	1
10	30.Y302-204	0	DISTANC / DISTANCE / DISTANZ	TR 30x5	1
11	30.Y302-205	0	ZASLEPKA / PLUG / BLINDFLANSCH	P 1,5x60	1
12	30.Y314-301	0	SKLUZ / SLIDE / RUTSCH	P1-235	1
13	90.001.25.033	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x25	4
14	90.300.0Z.XXX	0	KOLIK / PIN / BOLZEN	KOLIK 5X30	2
15	94.002.001	0	MADLO / HANDLE / RAIL / HANDGRIFF		1
16	95.700.004	0	POUZDRO / SLEEVE / BÜCHSE	20X20	1
17	95.720.002	0	POUZDRO / SLEEVE / BÜCHSE	50x50x55	2

7.11. Svěrák / Schraubstock / Vice

7.12.



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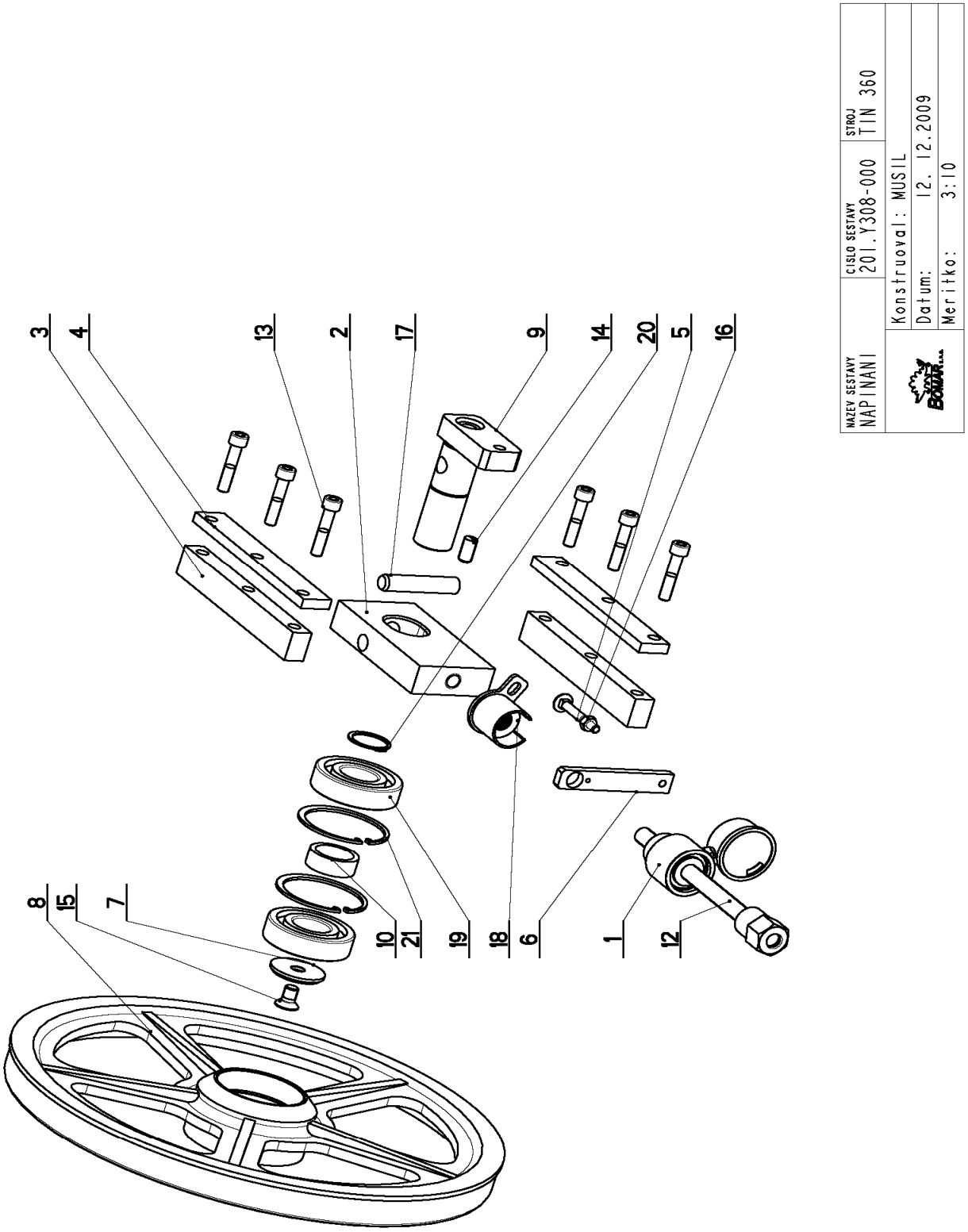
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.N303-000	0	SVERAK/VICE/SCHRAUBSTOCK

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.Y307-030	0	VALEC SVERAKU / VICE CYLINDER / SCHRAUBSTOCKZYLINDER		1
2	30.2903-012	1	ROST / GRILL / GITTER	P3 - 240	1
3	30.3509-015	1	KROUZEK DISTANCNI / DISTANCE RING / DISTANZRING	TR 8x1	2
4	30.N303-004	0	CELIST PEVNA / SOLID JAW / FESTE BACKE	P30-195	1
5	30.N303-006	0	BOCNICE / SIDE PLATE / SEITENTEIL		1
6	30.N303-009	0	CELIST / JAW / BACKE	HR 200x16	1
7	30.N303-013	0	NOHA / LEG / STÄNDER	P25 - 394	1
8	30.N303-101	0	TELESO SVERAKU / VICE BODY / SCHRAUBSTOCKKÖRPER		1
9	30.N303-102	0	LISTA VODICI / LEAD TRIM / FÜHRUNGSLEISTE	HR 40x25	2
10	30.N303-110	0	STUL / TABLE / TISCH		1
11	30.N303-112	0	SKLUZ / SLIDE / RUTSCH	P1,5-272	1
12	30.N314-002	0	SKLUZ / SLIDE / RUTSCH	P1,5-180	1
13	30.Y303-005	1	CELIST / JAW / BACKE		1
14	30.Y303-104	1	DRZAK / HOLDER / HALTER		1
15	30.Y309-008	0	PRILOZKA / STRAP / LASCHE	HR 40x25	1
16	90.001.25.029	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X12	2
17	90.001.25.032	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	6x20	24
18	90.001.25.043	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X12	2
19	90.001.25.048	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X30	4
20	90.001.25.050	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X40	4
21	90.001.25.056	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12x20	2
22	90.011.27.010	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M8X10	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

7.13. Napínání / Spannung / Tensioning



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

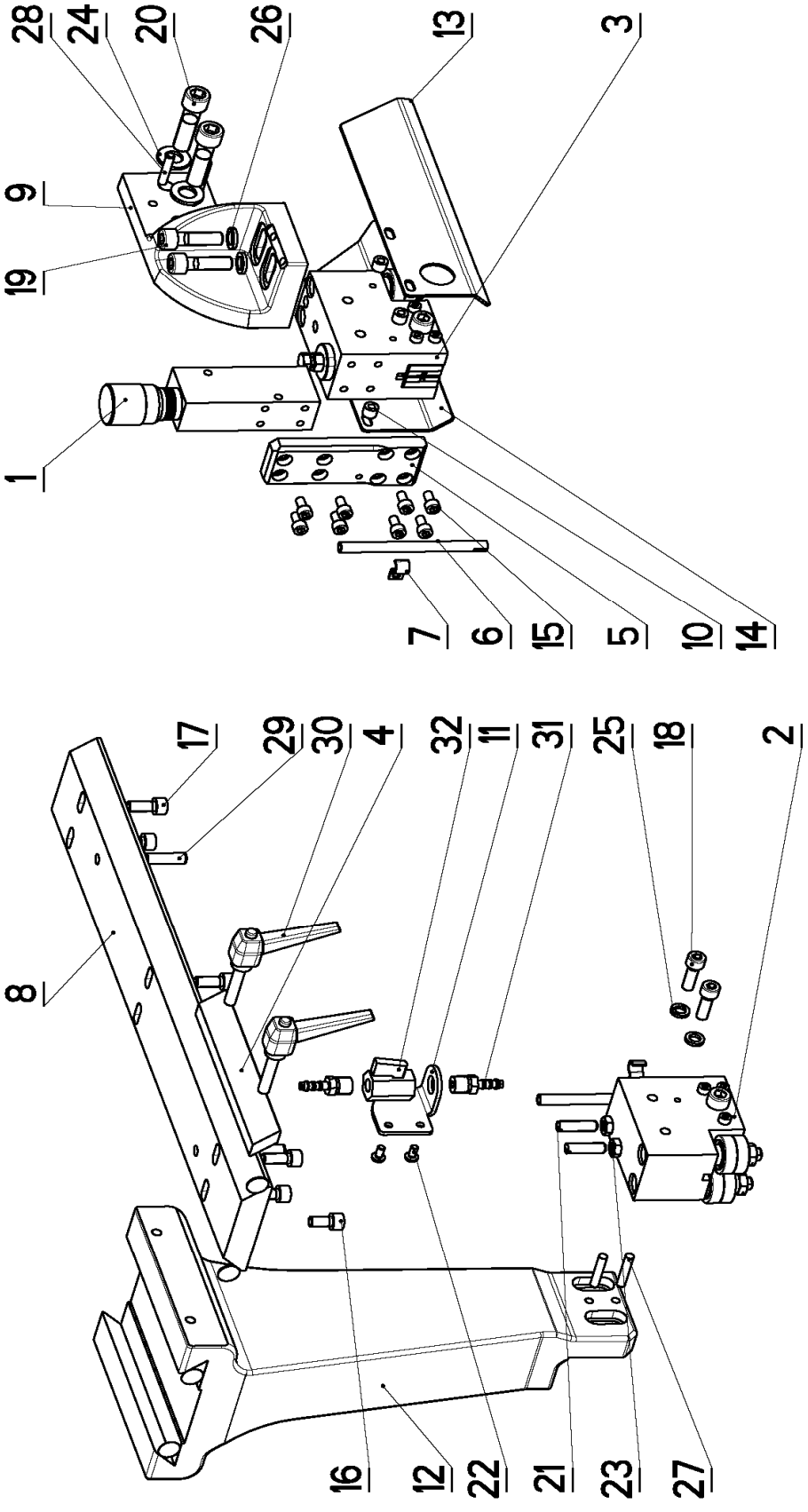
Číslo Sestavy
201.1308-000

Ver.
0

Název sestavy
NAPÍNÁNÍ/TENSIONING/SPANNUNG

Poz.	Objednací číslo	Ver.	Název položky	Rozmer	Ks
1	202.2912-100	1	INDIKATOR NAPÍNÁNÍ / POWER INDICATOR / SPANNUNGSINDIKATOR	SESTAVA	1
2	30.0808-001	1	KOSTKA NAPÍNÁNÍ / TENSIONING CUBE / BANDSPANNUNGSWÜRFEL	80x30	1
3	30.0808-002	1	LIŠTA VODÍCÍ / LEAD TRIM / FÜHRUNGSLEISTE	30x20	2
4	30.0808-006	1	LIŠTA / TRIM / LEISTE	HR 30x10	2
5	30.0808-007	0	ŠROUB / BOLT / SCHRAUBE	M8x60	1
6	30.1708-004	3	DRŽÁK / HOLDER / HALTER	HR 20x8	1
7	30.2908-001	0	PODLOŽKA / WASHER / UNTERLEGSCHEIBE	d 50	1
8	30.2908-103	2	KOLO NAPÍNACÍ / TENSIONING WHEEL / UMLENKRAD	ODLITEK	1
9	30.4808-101	2	ČEP NAPÍNÁNÍ / TENSIONING LUG / SPANNUNGSBOLZEN		1
10	30.4808-103	1	KROUŽEK DISTANČNÍ / DISTANCE RING / DISTANZRING	d 45	1
11	30.6908-102	1	DRŽÁK / HOLDER / HALTER		1
12	30.7308-001	0	ŠROUB NAPÍNACÍ / TENSION BOLT / SCHRAUBE BANDSPANNUNG		1
13	90.001.25.052	0	ŠROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X50	6
14	90.002.20.013	0	STAVĚCÍ Š KUŽEL / ADJUSTMENT BOLT / STELLSCHRAUBE	ŠROUB M12X25	1
15	90.011.27.009	0	ŠROUB ZÁPUSTNÝ / COUNTERSINK BOLT / SENKSCHRAUBE	ŠROUB M12X20	1
16	90.100.55.005	0	MATICE DIN 934 / NUT / MUTTER	MATICE - M8	1
17	90.300.02.003	0	KOLÍK / PIN / BOLZEN	KOLÍK 16X80	1
18	90.350.02.002	0	PRUŽINA TALÍŘOVÁ / DISC SPRING / TELLERFEDER	35,5X16,3X2,6X2,6	9
19	95.001.026	0	LOŽISKO KUL. 1 RADE / BEARING / LAGER	6307 2RS	2
20	95.800.014	0	KROUŽEK POJIST.VNEJŠ / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNÝ KROUŽEK 35	1
21	95.801.013	0	SEGR DÍRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNÝ KROUŽEK 80	2

7.15. Vedení pásu / Sägebandführung / Belt guide



NÁZEV SESTAVY: VEDENÍ PÁSU	ČÍSLO SESTAVY: 201.Y310-000	STROJ: IN360DGH	
	Konstruoval: MUSIL		
	Datum: 12. 12.2009		
	Měřítko: 33:100		

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

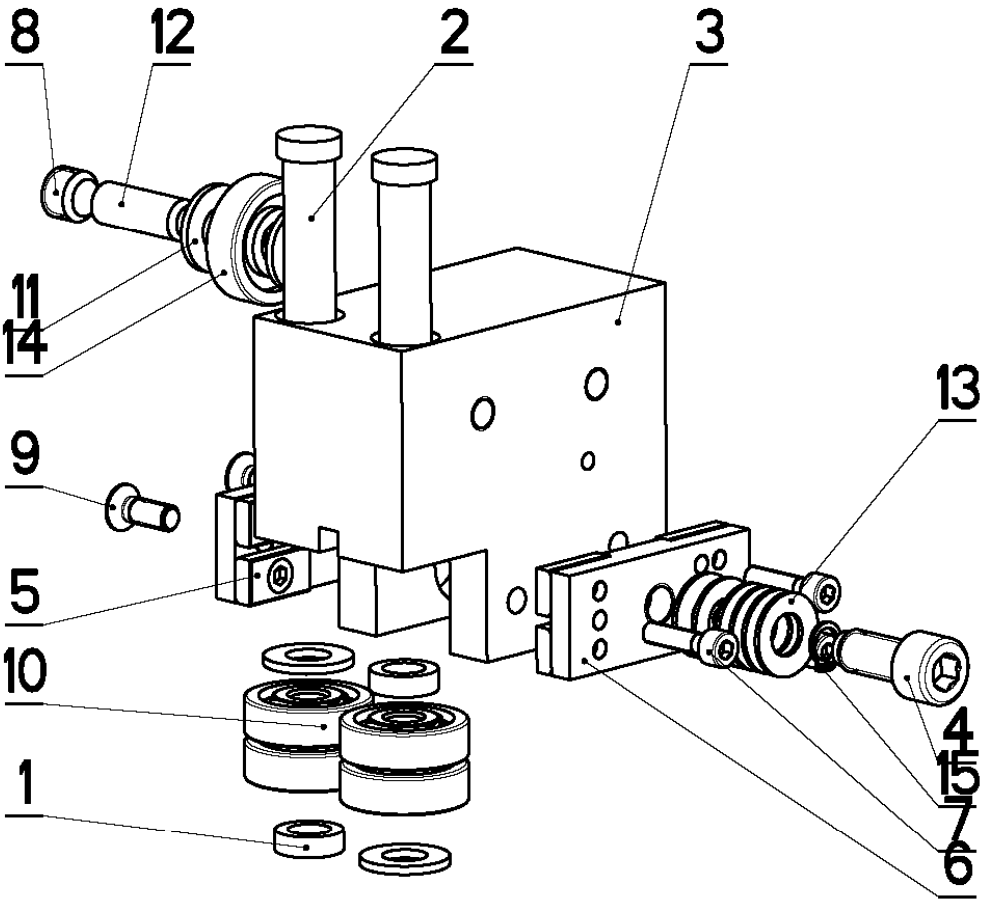
Číslo Sestavy
201.Y310-000

Ver.
1

Název sestavy
VEDENÍ PÁSU/BELT GUIDE/SÄGEBANDFÜHRUNG

Poz.	Objednací číslo	Ver.	Název položky	Rozmer	Ks
1	201.2016-000	0	REGULACE PRITLAKU / PRESSURE REGULATION / SCHNITTDRUCKREGULATION		1
2	201.Y310-300	0	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ		1
3	201.Y310-400	0	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ		1
4	30.0810-011	0	LISTA TRECI / FRICTION TRIM / FRIKTIONSLEISTE	HR 30x10	1
5	30.2010-006	0	DESKA / BOARD / PLATTE	HR 40x12	1
6	30.3510-004	1	TRUBKA / TUBE / ROHR	TR 8x 1	2
7	30.9010-003	0	DRZAK / HOLDER / HALTER	P1.5x10	2
8	30.9210-002	1	LISTA VODICI / LEAD TRIM / FÜHRUNGSLEISTE	HR 90x20	1
9	30.Y310-003	0	DRZAK / HOLDER / HALTER		1
10	30.Y310-007	0	KROUZEK / RING / RING	TR 10x2,5	4
11	30.Y310-008	0	DRZAK / HOLDER / HALTER	P3-50	1
12	30.Y310-104	0	KONZOLA / CONSOLE / KONSOLE		1
13	30.Y410-006	0	KRYT PASU / BELT COVER / BANDABDECKUNG	P2-70	1
14	30.Y410-009	0	KRYT PASU / BELT COVER / BANDABDECKUNG	P2-70	1
15	90.001.25.016	0	SROUB IMBUS / ALLEN HEAD BOLT / INBUSSCHRAUBE	M6X12	8
16	90.001.25.031	0	SROUB IMBUS CERNERY / ALLEN HEAD BOLT / INBUSSCHRAUBE	8x16	1
17	90.001.25.032	0	SROUB IMBUS CERNERY / ALLEN HEAD BOLT / INBUSSCHRAUBE	8x20	6
18	90.001.25.033	0	SROUB IMBUS CERNERY / ALLEN HEAD BOLT / INBUSSCHRAUBE	8x25	2
19	90.001.25.049	0	SROUB IMBUS / ALLEN HEAD BOLT / INBUSSCHRAUBE	M10X35	2
20	90.001.25.081	0	SROUB IMBUS / ALLEN HEAD BOLT / INBUSSCHRAUBE	M12X45	2
21	90.002.20.022	0	STAVECI S KUZEL / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M8X30	2
22	90.013.21.003	0	SROUB / BOLT / SCHRAUBE	M5X10	2
23	90.101.55.001	0	MATICE PR.NIZKA ZN / NUT / MUTTER	MATICE M8	2
24	90.150.50.007	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 13	2
25	90.163.00.001	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	M8 NORD-LOCK	2
26	90.163.00.004	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	NORD-LOCK	2
27	90.300.02.006	0	KOLIK / PIN / BOLZEN	KOLIK 6X32	2
28	90.301.02.013	0	KOLIK VALCOVY NEKRY / PIN / BOLZEN	KOLIK 6X30	2
29	90.302.02.002	0	KUZEL. KOLIK S ZAV. / TAPER PIN / KEGELBOLZEN	KOLIK 6X30	2
30	94.008.003	0	PAKA UPINACI / ATTACHMENT LEVER / SPANNHEBEL	M8x40	2
31	94.202.002	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	REDUKCE 3/8I/4"	2
32	98.260.003	0	VENTIL / VALVE / VENTIL	1/4"	1

7.17. Vodící kostka / Führungsklotz / Guiding cube

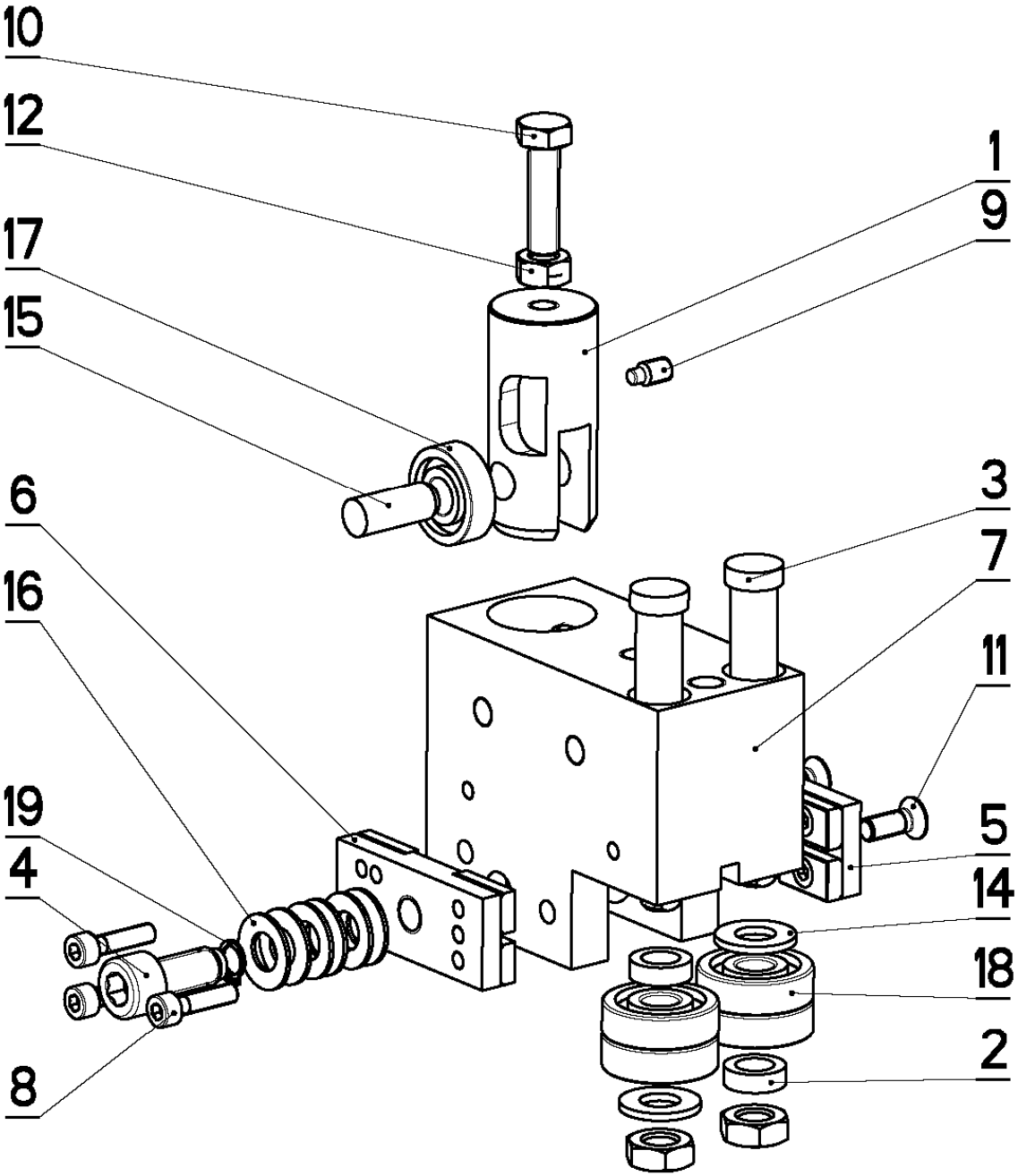


NAZEV SESTAVY	CISLO SESTAVY	STROJ
KOSTKA VODICI	201.Y310-300	IND360
	Konstruoval: HLADIL	
	Datum: 27. 11.2009	
	Meritko: 7:10	

Cislo Sestavy	Ver.	Nazev sestavy
201.Y310-300	0	KOSTKA VODICI/LEAD CUBE/FÜHRUNGSKLOTZ

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.C210-403		DISTANC / DISTANCE / DISTANZ	TR 16x3	2
2	30.Y310-212		EXCENTR / CAM / EXZENTER	d 15	2
3	30.Y310-301	0	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ	HR 80x50	1
4	30.Y310-306		SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x25	1
5	30.Y310-310	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
6	30.Y310-320	0	DRZAK TVRDOKOVU / POA HOLDER / HM-HALTER		1
7	90.001.25.010	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X20	3
8	90.002.2D.016	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M12X10	1
9	90.011.27.017	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M6X16	2
10	90.101.55.002	0	MATICE / NUT / MUTTER	MATICE M10	2
11	90.150.5D.006		PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 10,5	4
12	90.301.0Z.001	0	KOLIK / PIN / BOLZEN	KOLIK 10X28	1
13	90.350.0Z.005	0	PRUZINA TALIROVA / DISC SPRING / TELLERFEDER	20X10.2X1.1	6
14	95.001.014	0	LOZISKO / BEARING / LAGER	6200 2RS	5
15	95.800.002	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 8	1

7.19. Vodící kostka / Führungsklotz / Guiding cube

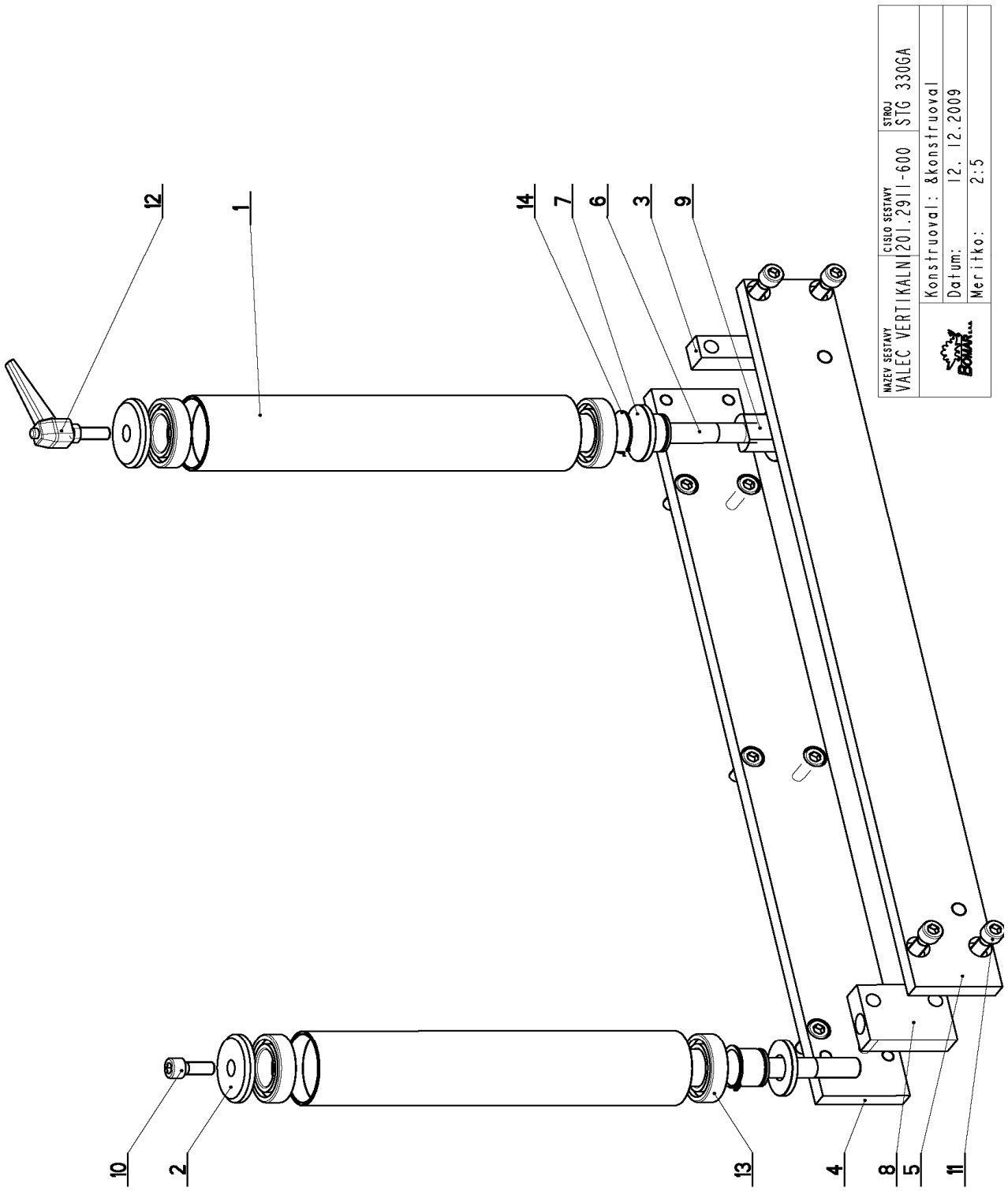


NAZEV SESTAVY	CISLO SESTAVY	STROJ
KOSTKA VODICI	201.Y310-400	IN360
	Konstruoval: HLADIL	
	Datum: 12. 12.2009	
	Meritko: 7:10	

Cislo Sestavy	Ver.	Nazev sestavy
201.Y310-400	0	KOSTKA VODICI/LEAD CUBE/FÜHRUNGSKLOTZ

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.1810-102	3	DRZAK / HOLDER / HALTER	TYC 28	1
2	30.C210-403	0	DISTANC / DISTANCE / DISTANZ	TR 16x3	2
3	30.Y310-212	0	EXCENTR / CAM / EXZENTER	d 15	2
4	30.Y310-306	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10x25	1
5	30.Y310-310	0	DRZAK TVRDOKOVU / POA HOLDER / HW-HALTER		1
6	30.Y310-320	0	DRZAK TVRDOKOVU / POA HOLDER / HW-HALTER		1
7	30.Y310-401	2	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ	HR 80x50	1
8	90.001.25.010	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M5X20	3
9	90.004.2D.002	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M6X12	1
10	90.005.55.017	0	6 HR SROUB ZIN / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8X30	1
11	90.011.27.017	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M6X16	2
12	90.100.55.005	0	MATICE DIN 934 / NUT / MUTTER	MATICE _ M8	1
13	90.101.55.002	0	MATICE PR.NIZKA ZN / NUT / MUTTER	MATICE M10	2
14	90.150.50.006	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 10,5	2
15	90.301.0Z.009	0	KOLIK VALCOVY MEKKY / PIN / BOLZEN	KOLIK 10X26	1
16	90.350.0Z.005	0	PRUZINA TALIROVA / DISC SPRING / TELLERFEDER	20X10.2X1.1	6
17	95.001.004	0	LOZISKO KUL 1 RADE / BEARING / LAGER	6000 2RS	1
18	95.001.014	0	LOZISKO KUL 1 RADE / BEARING / LAGER	6200 2RS	4
19	95.800.002	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 8	1

7.21. Válec vertikální / Vertikalzylinder / Vertical Cylinder



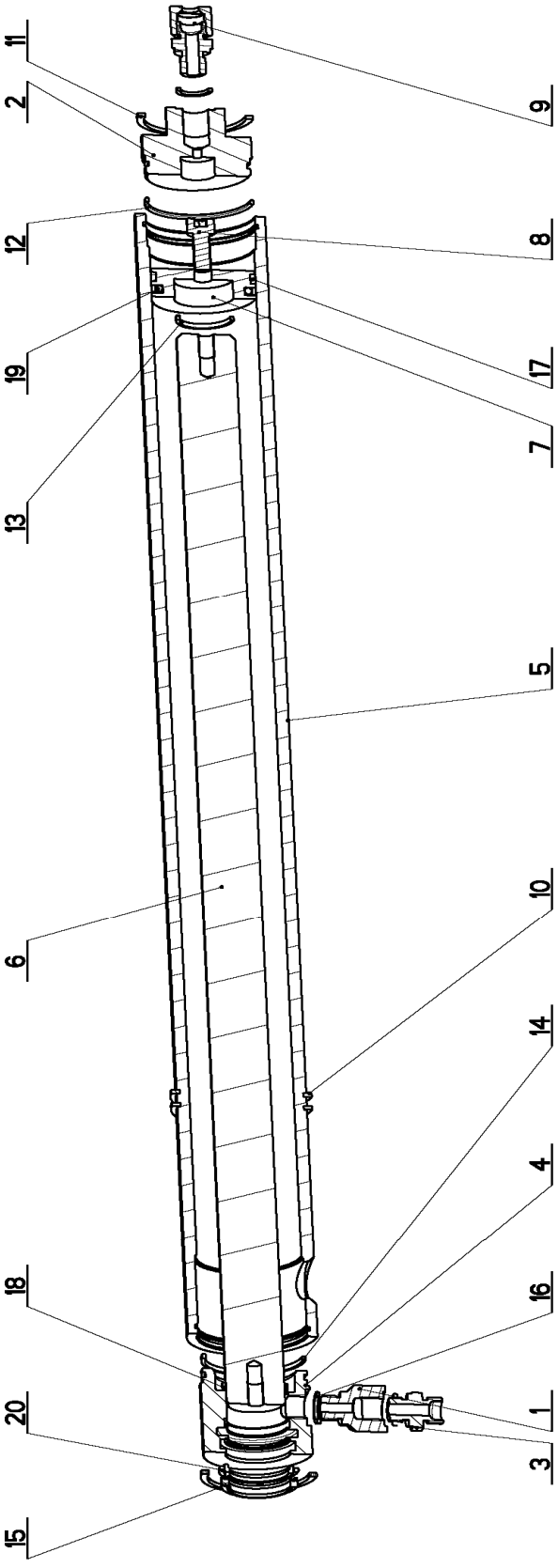
Manual version: 1.00 / May 2010
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.2911-600	I	VÁLEC VERTIKALNI/VERTICAL CYLINDER/VERTIKALZYLINDER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.1514-405	0	VALEC VERTIKALNI / VERTICAL CYLINDER / VERTIKALZYLINDER	TR 60x3	2
2	30.1804-006	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	d 55	2
3	30.2014-406	1	KOSTKA / CUBE / WÜRFEL	HR 20 x 20	1
4	30.2911-601	1	LISTA / TRIM / LEISTE	HR 70x15	1
5	30.2911-602	1	LISTA / TRIM / LEISTE	HR 70x15	1
6	30.2911-603	1	OSA / AXLE / ACHSE	d 30	2
7	30.2911-606	1	PODLOZKA / WASHER / UNTERLEGSCHEIBE	d 45	2
8	30.2911-608	0	KOSTKA / CUBE / WÜRFEL	HR 50x20	1
9	30.4311-605	0	MATICE / NUT / MUTTER	d 45	1
10	90.001.25.047	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X25	7
11	90.001.25.049	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X35	4
12	94.008.005	0	KLICKA / HANDLE / KURBEL	M10	1
13	95.001.009	0	LOZISKO KUL I RADE / BEARING / LAGER	6006 2RS	4
14	95.800.013	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 30	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

7.23. Válec svěráku / Schraubstockzylinder / Vice cylinder



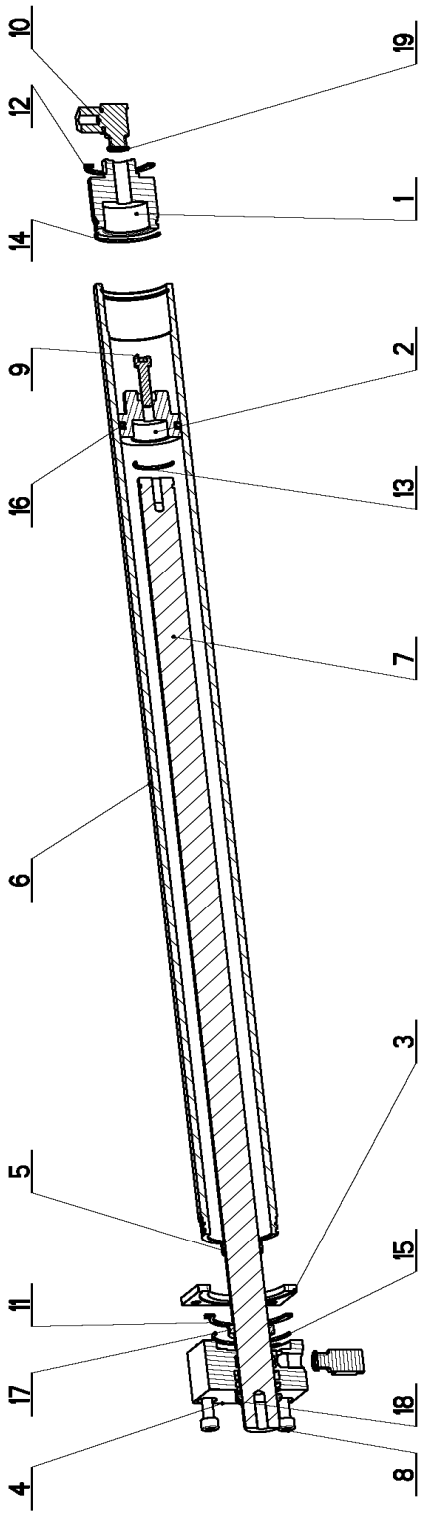
NÁZEV SESTAVY	ČÍSLO SESTAVY	STROJ
VÁLEC SVERÁKU	201.D307-000	1360
	Konstruoval: HLADIL	
	Datum: 11. 12.2009	
	Měřítko: 1:2	

Cislo Sestavy	Ver.	Nazev sestavy
201.D307-000	0	VÁLEC SVĚRAKU/VICE CYLINDER/SCHRAUBSTOCKZYLINDER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.1807-005	3	SROUBENI / BOLTING / VERSCHRAUBUNG	6-HR 22	1
2	30.2007-304	0	VIKO / COVER / DECKEL	d 55	1
3	30.2807-109	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG		1
4	30.C407-012	1	VIKO / COVER / DECKEL	d 55	1
5	30.D307-001	0	VALEC / ROLLER / ZYLINDER	TR 62/50	1
6	30.Y307-034	0	PISTNICE / PISTON ROD / KOLBENSTANGE	d 28 f8	1
7	30.Y307-035	0	PIST / PISTON / KOLBEN	d 55	1
8	90.001.25.032	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x20	1
9	92.002.101	0	SROUBENI PRIME KOMP / /		1
10	95.800.021	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 62	2
11	95.801.008	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 52	2
12	96.001.013	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	45X2	1
13	96.002.011	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	24X2	1
14	96.002.019	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	46X2	1
15	96.061.009	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	WD2200280	1
16	96.082.002	0	KROUZEK CU TESNICI / SEAL RING / DICHTUNGSRING	KROUZEK CU 13/17	3
17	96.084.001	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING		1
18	96.084.006	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING	GR4300280-T47	1
19	96.900.001	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG		1
20	96.900.021	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG	RSK200280	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

7.25. Válec svěráku / Schraubstockzylinder / Vice cylinder



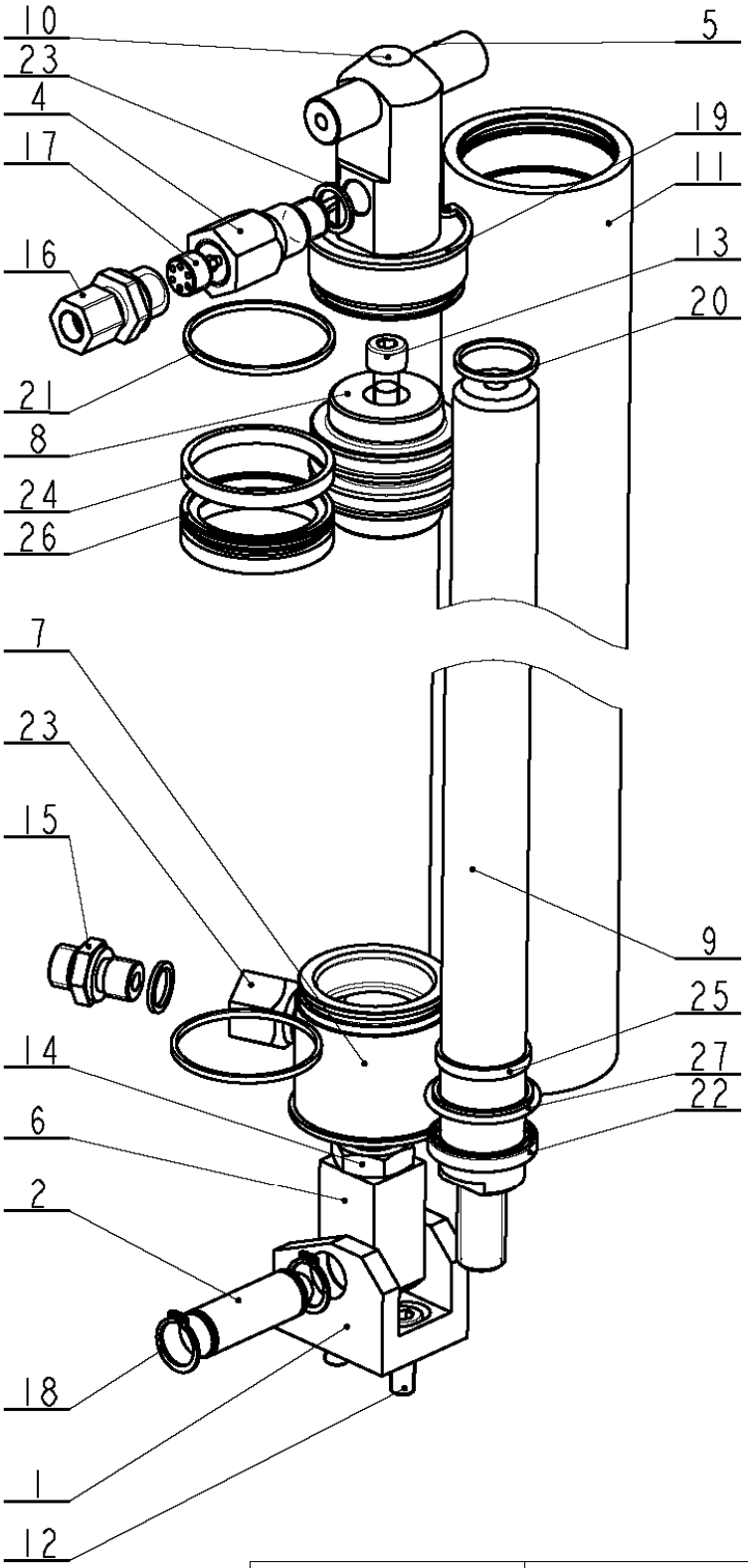
NÁZEV SESTAVY	ČÍSLO SESTAVY	STROJ
VÁLEC PODAVAČE	201.D307-100	IN360GA
	Konstruoval: HLADIL	
	Datum: 03. 12.2009	
	Měřítko: 3:10	

Cislo Sestavy	Ver.	Nazev sestavy
201.D307-100	0	VALEC PODAVACE/FEEDER CYLINDER/VORSCHUBWALZE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.1807-103	0	VIKO / COVER / DECKEL	d 55	1
2	30.1807-105	2	PIST / PISTON / KOLBEN	d 55	1
3	30.2007-103	0	PRILOZKA / STRAP / LASCHE	HR 80x 6	1
4	30.3507-103	1	VIKO / COVER / DECKEL	TYC 80x80	1
5	30.3507-104	0	VEDENI / GUIDE / BACKENFÜHRUNG	10x2-F87	1
6	30.D307-101	0	VALEC PODAVACE / FEEDER CYLINDER / VORSCHUBWALZE	TR 62/50H8	1
7	30.D307-102	0	PISTNICE / PISTON ROD / KOLBENSTANGE	d 28	1
8	90.001.25.041	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X65	4
9	90.001.55.035	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X35	1
10	92.003.001	0	SROUBENI UHLOVE / ANGLE BOLTING / WINKELVERSCHRAUBUNG	P-RSWS-08LR	2
11	95.800.020	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 60	1
12	95.801.009	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 52	1
13	96.001.007	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	25X2	1
14	96.001.013	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	45X2	1
15	96.001.014	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	55X2	1
16	96.020.005	0	Q-KROUZEK / SEAL RING / DICHTUNGSRING	39.2X5.33	1
17	96.041.003	0	TESNENI / SEALING / DICHTUNG	601-28x36x7.1	1
18	96.060.003	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	KROUZEK STIRACI 28	1
19	96.082.002	0	KROUZEK CU TESNICI / SEAL RING / DICHTUNGSRING	KROUZEK CU 13/17	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

7.27. Válec zvedací / Hebezylinder / Liftink cylinder

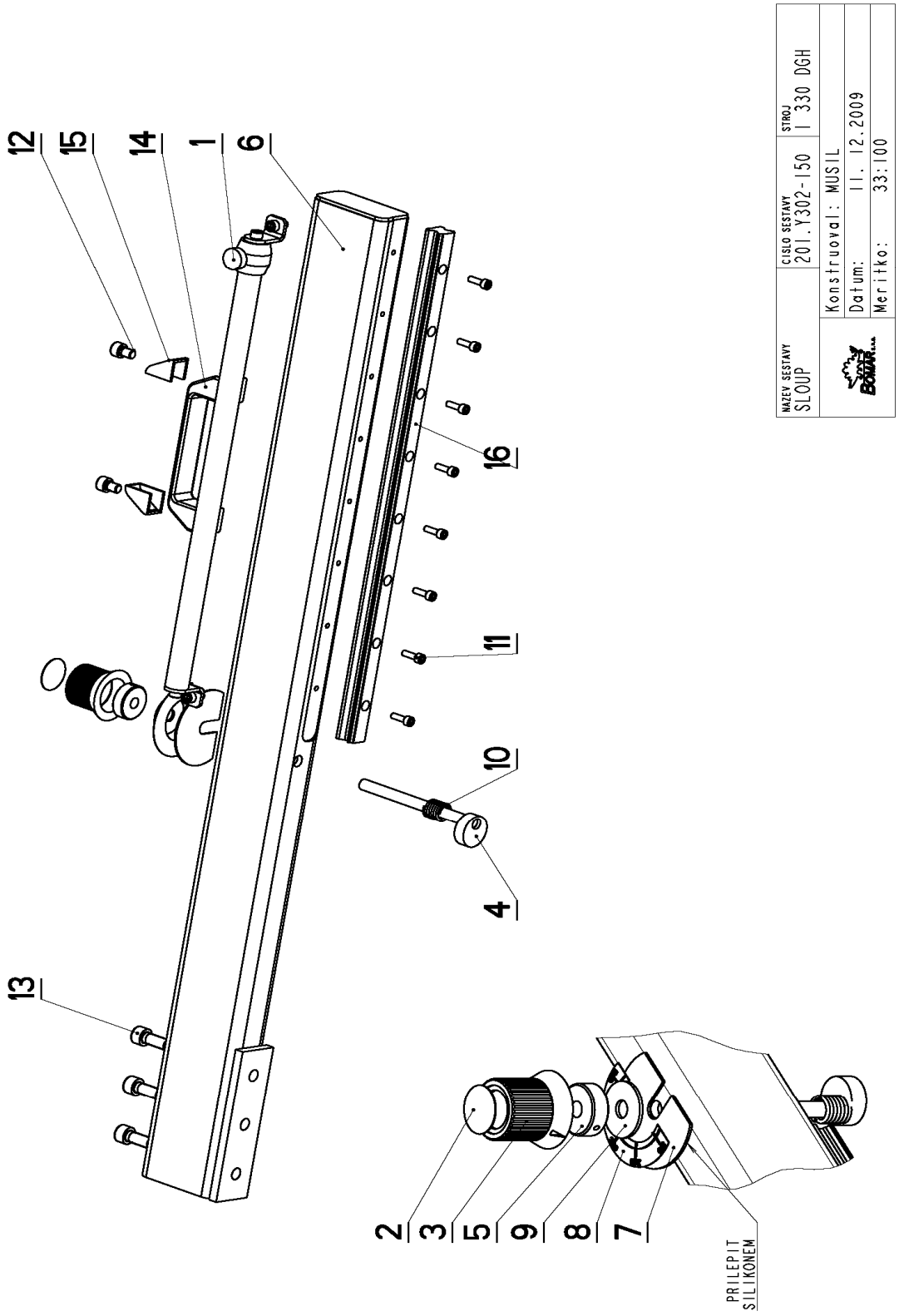


NAZEV SESTAVY	CISLO SESTAVY	STROJ
VALEC ZVEDACI	201.Y307-010	1360
	Konstruoval: MUSIL	
	Datum: 16. 11.2009	
	Meritko: 1:2	

Cislo Sestavy	Ver.	Nazev sestavy
201.Y307-010	0	VALEC ZVEDACI/LIFTING CYLINDER/HEBEZYLINDER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0807-008	0	DRZAK / HOLDER / HALTER	HR 40x40	1
2	30.0807-009	1	CEP / LUG / BOLZEN	d 16h9	1
3	30.1807-005	3	SROUBENI / BOLTING / VERSCHRAUBUNG	6-HR 22	1
4	30.6107-510	1	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	6HR 22	1
5	30.8307-205	0	CEP / LUG / BOLZEN	d 16h9	1
6	30.8607-001	0	DRZAK PISTNICE / /	HR 25x25	1
7	30.C407-012	1	VIKO / COVER / DECKEL	d 55	1
8	30.LM07-504	0	PIST / PISTON / KOLBEN	d 55	1
9	30.Y307-002	0	PISTNICE / PISTON ROD / KOLBENSTANGE	d 28 f8	1
10	30.Y307-005	1	VIKO / COVER / DECKEL	d 55	1
11	30.Y307-011	0	VALEC ZVEDACI / LIFTING CYLINDER / HEBEZYLINDER	TR 62/50	1
12	90.001.25.032	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / INBUSSCHRAUBE	8x20	2
13	90.001.25.034	0	SROUB IMBUS / ALLEN HEAD BOLT / INBUSSCHRAUBE	M8X30	1
14	90.101.55.003	0	MATICE / NUT / MUTTER	MATICE M16	1
15	92.002.001	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG	GES 08LR	1
16	92.002.005	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG	GES 08LR-3/8"	1
17	92.151.001	0	VENTIL POJISTNY / SAFETY VALVE / SICHERUNGSVENTIL	VPNHI_4	1
18	95.800.007	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 16	2
19	95.801.009	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 52	2
20	96.002.011	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	24X2	1
21	96.002.019	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	46X2	2
22	96.061.009	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	WD2200280	1
23	96.082.002	0	KROUZEK CU TESNICI / SEAL RING / DICHTUNGSRING	KROUZEK CU 13/17	3
24	96.084.001	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING		2
25	96.084.006	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING	GR4300280-T47	1
26	96.900.001	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG		1
27	96.900.021	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG	RSK200280	1

7.29. Sloup / Säule / Pole

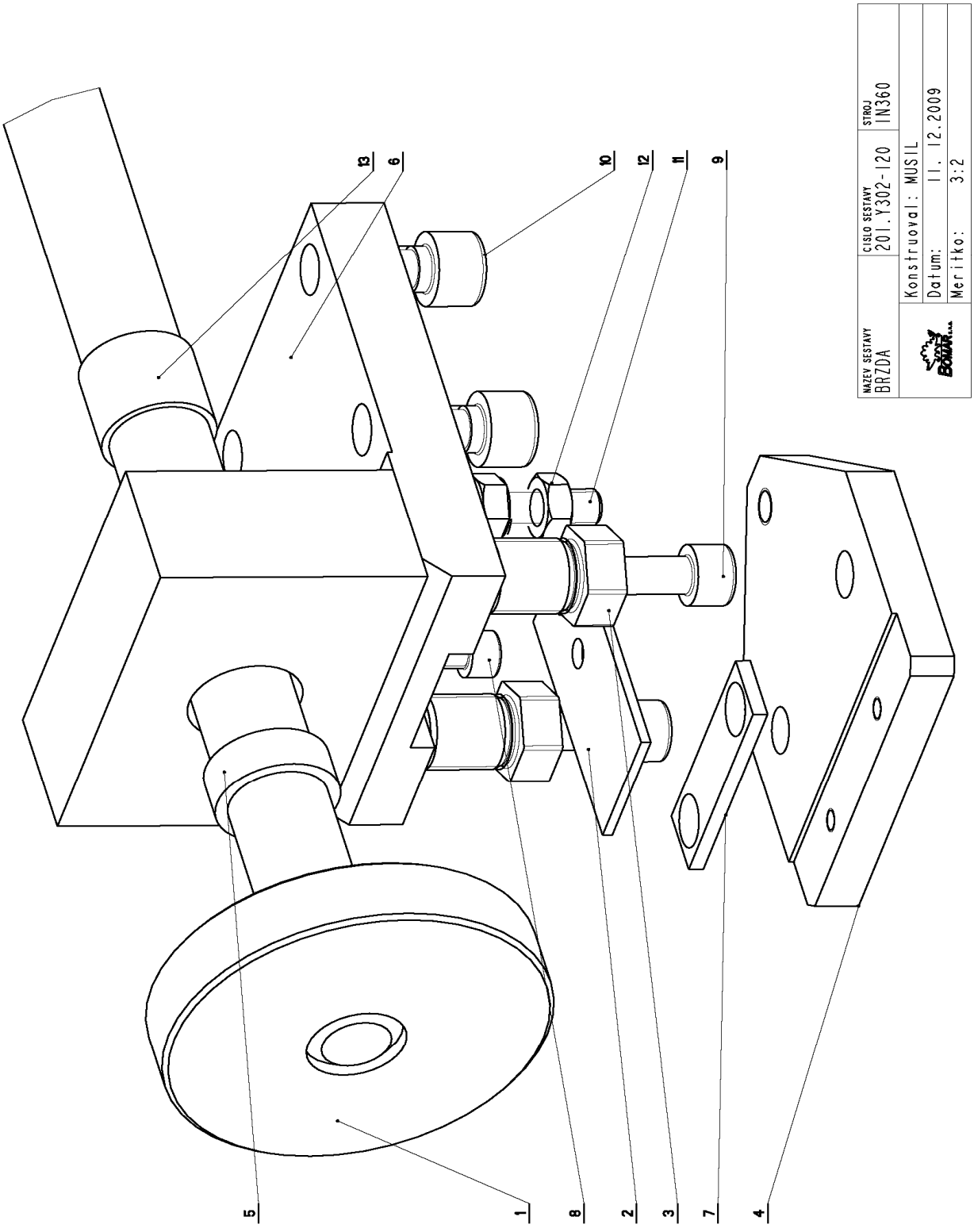


Cislo Sestavy	Ver.	Nazev sestavy
201.Y302-150	1	SLOUP/POLE/SÄULE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.Y302-070	0	JEDNOTKA ODMEROVANI / MEASURING UNIT / MESSEINHEIT	SESTAVA	1
2	30.6130-012	0	VIKO / COVER / DECKEL	P 0.5x 30x30	1
3	30.6130-020	0	OVLADANI / CONTROLS / STEUERUNG	VYLISEK	1
4	30.Y302-055	0	OSA / AXLE / ACHSE	SVARENO	1
5	30.Y302-058	0	VLOZKA / INSERT / EINLAGE	d 32	1
6	30.Y302-151	0	SLOUP / POLE / SÄULE	SVARENO	1
7	30.Y302-153	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	P1,5-72	1
8	30.Y302-154	0	STUPNICE / SCALE / SKALA	P1-41	1
9	30.Y302-157	0	GUMA / RUBBER / GUMMI	TL.2-35	1
10	31.T302-054	0	PRUZINA / SPRING / FEDER	d 2.24	1
11	90.001.25.009	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / INBUSSCHRAUBE	M5X16	8
12	90.001.25.029	0	SROUB IMBUS / ALLEN HEAD BOLT / INBUSSCHRAUBE	M8X12	2
13	90.001.25.047	0	SROUB IMBUS / ALLEN HEAD BOLT / INBUSSCHRAUBE	M10X25	3
14	94.012.001	0	RUKOJET / HANDLE / GRIFF		1
15	94.012.002	0	ZATKA / PLUG / STOPFEN		2
16	99.200.137	0	VEDENI LINEARNI / LINEAR GUIDE / LINEARE FÜHRUNG	HSR20,G=35	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

7.31. Brzda / Bremse / Break

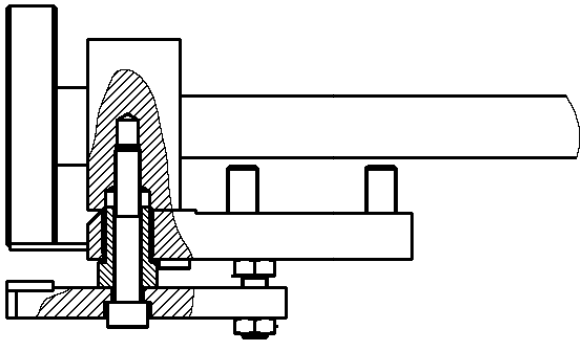


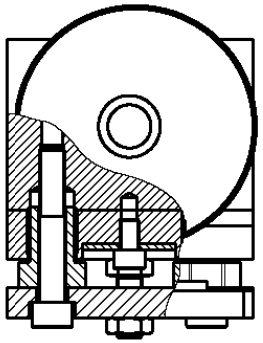
Manual version: 1.00 / May 2010
Manual rev.: 1

7.32. Kusovník / Stückliste / Piece list – Brzda / Bremse / Break

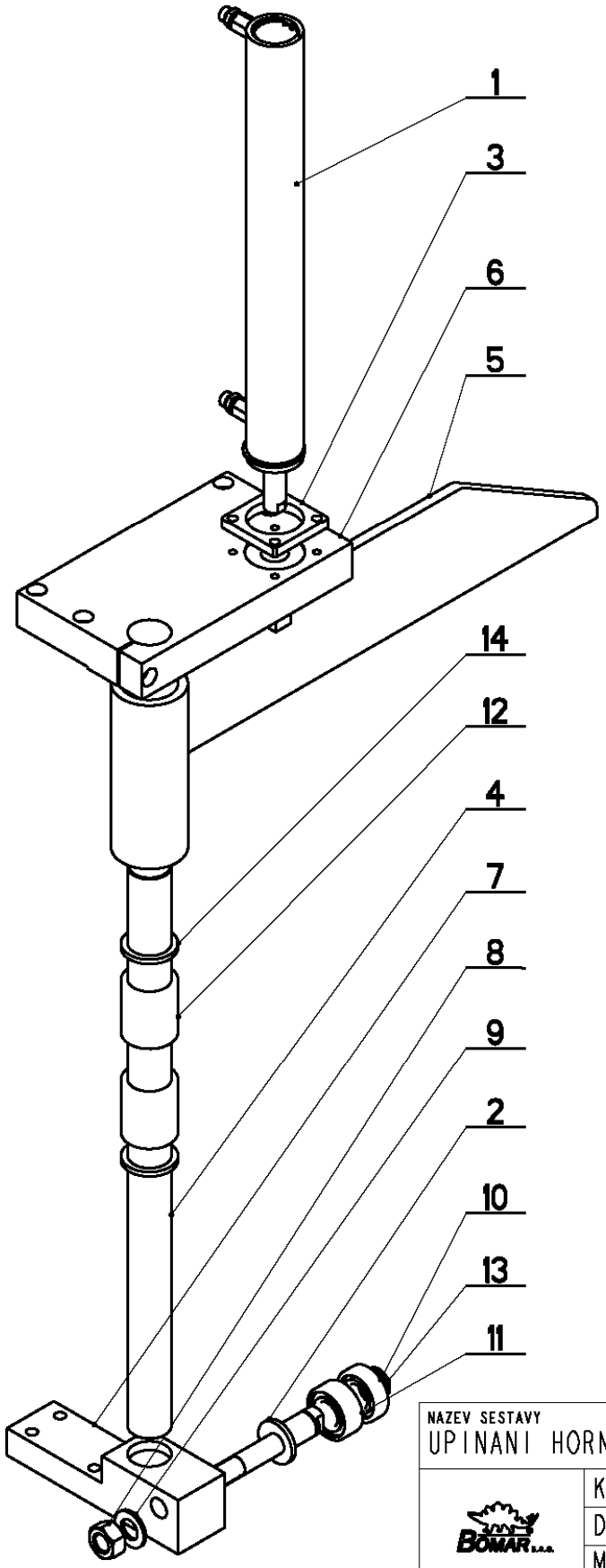
Cislo Sestavy	Ver.	Nazev sestavy
201.Y302-120	0	BRZDA/BRAKE/BREMSE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.Y302-125	0	EXCENTR / CAM / EXZENTER		1
2	30.Y402-022	0	DESKA / BOARD / PLATTE	P2-30	1
3	30.Y402-023	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	GHR 19	2
4	30.Y402-024	0	DESKA / BOARD / PLATTE	HR 80x10	1
5	30.Y402-027	0	KROUZEK / RING / RING	TR 25x5	1
6	30.Y402-028	0	TELESO / BODY / KÖRPER		1
7	30.Y402-029	0	DESKA / BOARD / PLATTE	P 3-15	1
8	90.001.25.015	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X10	2
9	90.001.25.038	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X50	2
10	90.001.25.046	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X20	4
11	90.005.55.015	0	6 HR SROUB ZIN / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8X20	1
12	90.101.55.001	0	MATICE PR.NIZKA ZN / NUT / MUTTER	MATICE M8	1
13	95.700.004	0	POUZDRO / SLEEVE / BÜCHSE	20X20	1





7.33. Upínání horní / Spannvorichtung oben / Top clamp



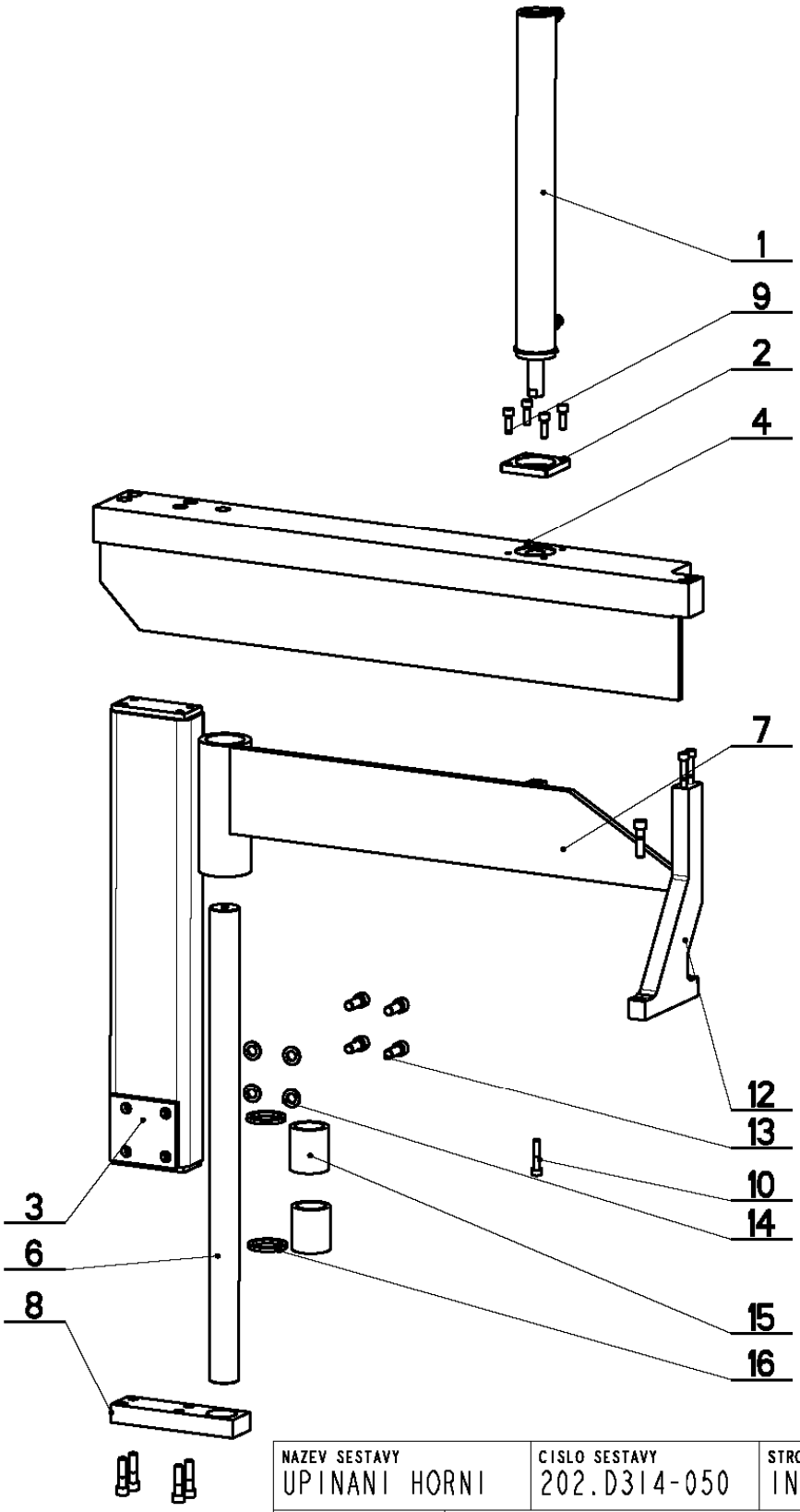
NAZEV SESTAVY	CISLO SESTAVY	STROJ
UPINANI HORNI	201.D314-100	
BOMAR	Konstruoval: HLADIL	
	Datum: 11. 12.2009	
	Meritko: 1:5	

Cislo Sestavy	Ver.	Nazev sestavy
201.D314-100	0	UPINANI HORNI/TOP CLAM/SPANNVORRICHTUNG OBEN

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.D307-050	0	VALEC UPINACI / FIXING CYLINDER / SPANNZYLINDER		1
2	30.2914-809	0	EXCENTR / CAM / EXZENTER	TYC 45	1
3	30.3511-009	0	PRILOZKA / STRAP / LASCHE	HR 70x10	1
4	30.D314-103	0	TYC VODICI / LEAD POLE / FÜHRUNGSSTANGE	40h6	1
5	30.D314-104	0	CELIST / JAW / BACKE		1
6	30.D314-105	0	DESKA / BOARD / PLATTE	HR 160 x 40	1
7	30.D314-106	0	ZAKLADNA / BASE / GRUNDLAGE	TYC 60x60	1
8	90.100.55.009	0	MATICE DIN 934 / NUT / MUTTER	MATICE _ M20	1
9	90.150.50.011	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 21	1
10	95.001.018	0	LOZISKO KUL I RADE / BEARING / LAGER	6205 2RS	1
11	95.500.013	0	LOZISKO / BEARING / LAGER	K. L. 2RADA KOSO	1
12	95.710.001	0	POUZDRO / SLEEVE / BÜCHSE	40x60 KH	2
13	95.800.012	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 25	1
14	96.040.003	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	40x52x5	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

7.35. Upínání horní / Spannvorichtung oben / Top clamp



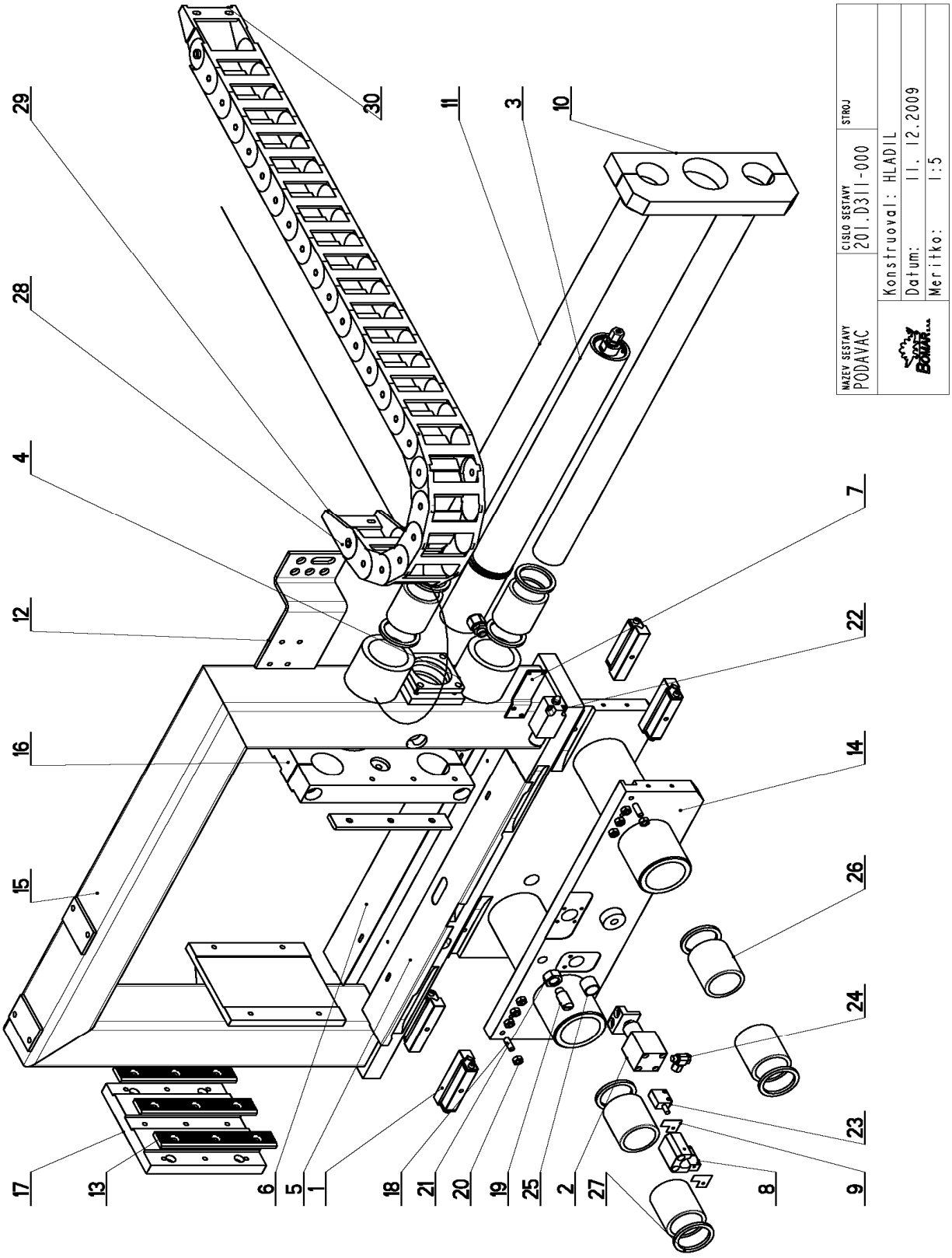
NAZEV SESTAVY	CISLO SESTAVY	STROJ
UPINANI HORNI	202.D314-050	IN460
	Konstruoval: MUSIL	
	Datum: 02. 12.2009	
	Meritko: 13:100	

Cislo Sestavy	Ver.	Nazev sestavy
202.D314-050	0	UPINANI HORNI/TOP CLAM/SPANNVORRICHTUNG OBEN

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.D307-050	0	VALEC UPINACI / FIXING CYLINDER / SPANNZYLINDER		1
2	30.3511-009	0	PRILOZKA / STRAP / LASCHE	HR 70x10	1
3	30.D314-051	0	SLOUP / POLE / SÄULE		1
4	30.D314-052	0	NOSNIK / CARRIER / TRÄGER		1
5	30.D314-053	0	SLOUP SVERAKU / VICE POLE / SCHRAUBSTOCKSÄULE	P25 - 165	1
6	30.D314-056	0	TYC VODICI / LEAD POLE / FÜHRUNGSSTANGE	40h6	1
7	30.D414-054	0	CELIST / JAW / BACKE		1
8	30.D414-055	0	DESKA / BOARD / PLATTE	HR 50x25	1
9	90.001.25.033	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x25	4
10	90.001.25.036	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X40	1
11	90.001.25.038	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X50	2
12	90.001.25.050	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X40	11
13	90.001.25.058	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X30	4
14	90.150.50.007	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 13	4
15	95.710.001	0	POUZDRO / SLEEVE / BÜCHSE	40x60 KH	2
16	96.040.003	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	40x52x5	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

7.37. Upínání horní / Spannvorichtung oben / Top clamp



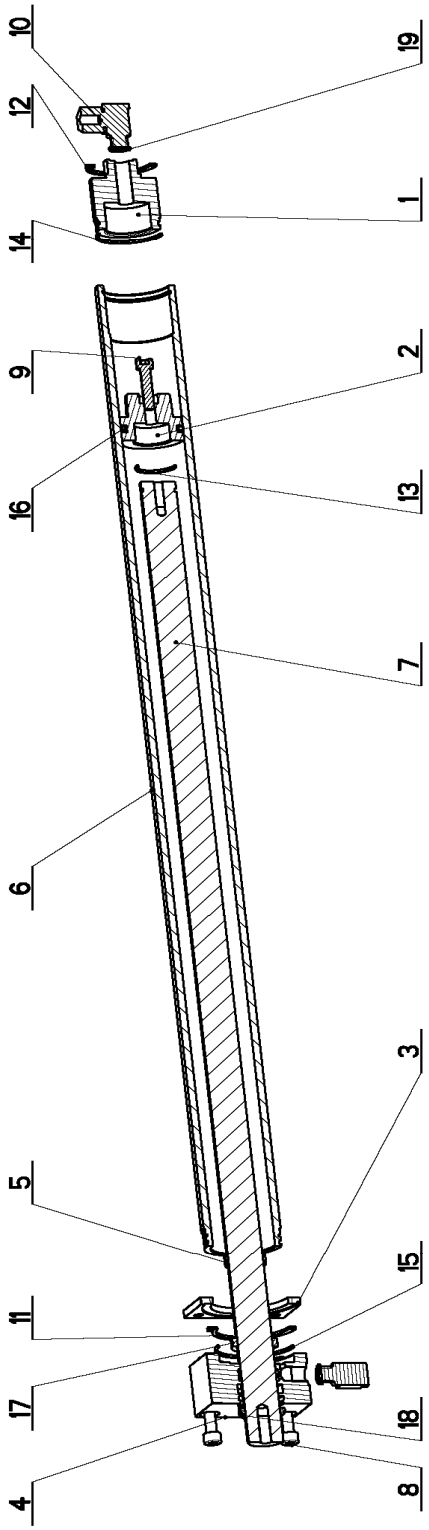
Manual version: 1.00 / May 2010
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.D311-000	0	PODAVAC/FEEDER/VORSCHUB

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.2911-200	0	LOZISKO / BEARING / LAGER		4
2	201.4307-500	0	VALEC POMOCNY / AUXILIARY CYLINDER / HILFSZYLINDER		1
3	201.D307-000	0	VALEC SVERAKU / VICE CYLINDER / SCHRAUBSTOCKZYLINDER		1
4	30.2011-010	0	PRILOZKA / STRAP / LASCHE	HR 80x10	1
5	30.2911-023	1	KRYT LOZISKA / BEARINGS COVER / LAGERABDECKUNG	P1 - 90	1
6	30.2911-024	1	KRYT LOZISKA / BEARINGS COVER / LAGERABDECKUNG	P1 - 90	1
7	30.2911-028	0	DRZAK / HOLDER / HALTER	P3 - 31	1
8	30.2911-029	2	DRZAK / HOLDER / HALTER	HR 50x50	1
9	30.2911-030	0	STERAC / WIPER / ABSTREIFER	P 0.2-26.5	2
10	30.5611-310	1	VEDENI / GUIDE / BACKENFÜHRUNG	TYC 110x30	1
11	30.6711-005	0	TYC VODICI / LEAD POLE / FÜHRUNGSSTANGE	TYC 50k6-798	2
12	30.6711-401	0	KONZOLA / CONSOLE / KONSOLE	HR 100x6	1
13	30.6903-110	0	LISTA CELISTI / JAW TRIM / BACKENLEISTE	HR 30x10	6
14	30.8611-001	0	ZAKLADNA / BASE / GRUNDLAGE		1
15	30.D311-010	0	SLOUP PODAVACE / FEEDER POLE / VORSCHUBSÄULE		1
16	30.D311-011	0	CELIST POHYBLIVA / MOVING JAW / BEWEGLICHE BACKE	HR 194 x 45	1
17	30.D311-012	0	CELIST PEVNA / SOLID JAW / FESTE BACKE	HR 200x25	1
18	90.002.2D.013	0	STAVECI S KUZEL / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M8X25	8
19	90.004.2D.019	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M16X40	1
20	90.100.55.005	0	MATICE DIN 934 / NUT / MUTTER	MATICE _ M8	8
21	90.100.55.008	0	MATICE DIN 934 / NUT / MUTTER	MATICE _ M16	1
22	91.173.007	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	-RIWK	1
23	91.270.006	0	SNINAC MAGNET. / MAGNETIC SENSOR / MAGNETSENSOR		1
24	92.003.104	0	SROUBENI UHLOVE / ANGLE BOLTING / WINKELVERSCHRAUBUNG	607002	1
25	95.700.004	0	POUZDRO / SLEEVE / BÜCHSE	20X20	1
26	95.710.002	0	VEDENI / GUIDE / BACKENFÜHRUNG	50x70	8
27	96.040.004	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	50x62x5	8
28	99.170.001	0	RETEZ ENERGII / ENERGY BELT / ENERGIEKETTE	0555.030.075.100	23
29	99.173.001	0	RETEZ ENERGII / ENERGY BELT / ENERGIEKETTE	KONCOVKA VNEJ	1
30	99.173.002	0	RETEZ ENERGII / ENERGY BELT / ENERGIEKETTE	KONCOVKA VNIT	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

7.39. Upínání horní / Spannvorichtung oben / Top clamp



NÁZEV SESTAVY VÁLEC PODÁVACÍ	ČÍSLO SESTAVY 201.D307-100	STROJ IN360GA	
	Konstruoval: HLADIL		
	Datum: 03. 12. 2009		
	Měřítko: 3:10		

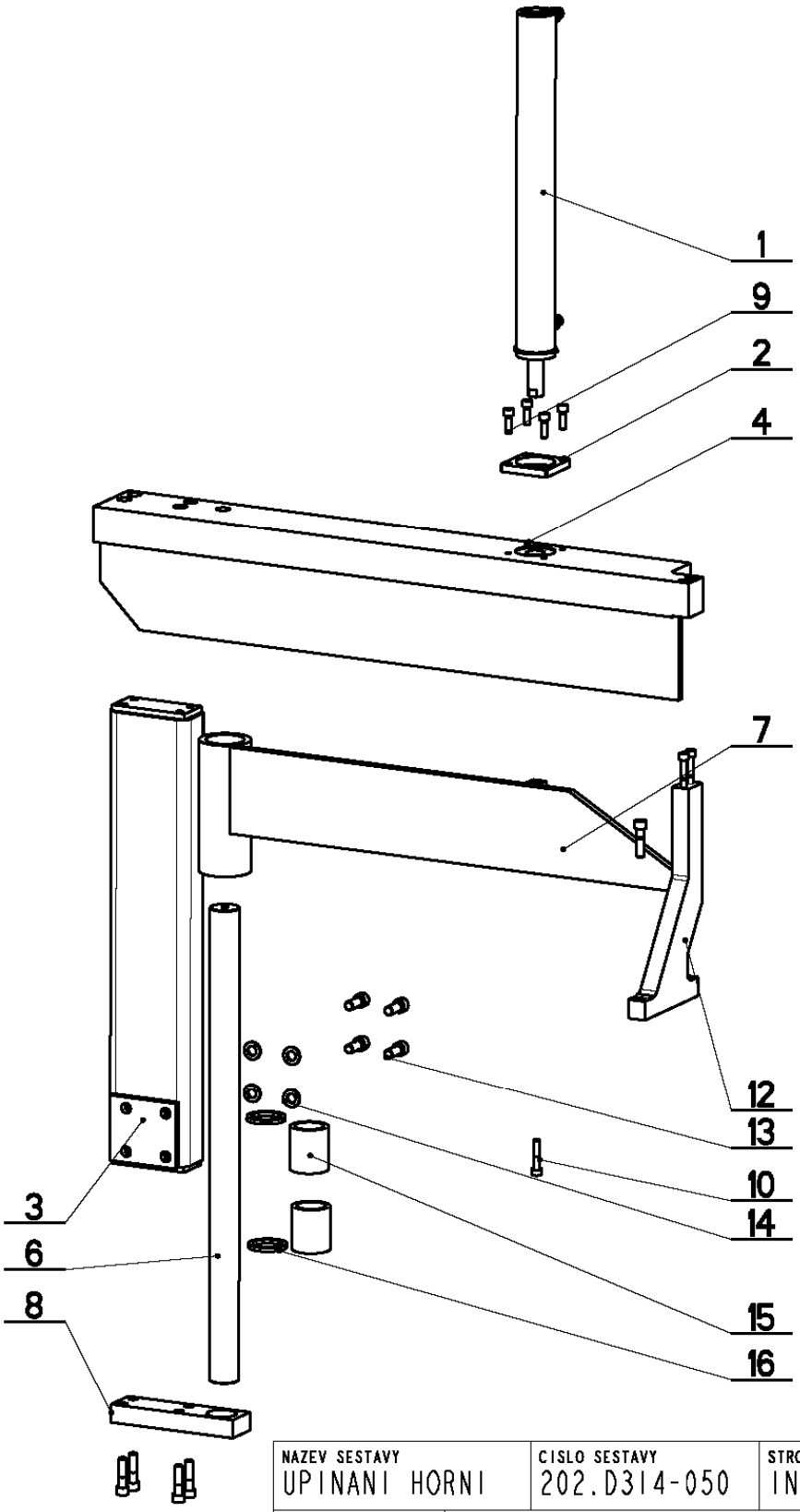
Manual version: 1.00 / May 2010
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.D307-100	0	VALEC PODAVACE/FEEDER CYLINDER/VORSCHUBWALZE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.1807-103	0	VIKO / COVER / DECKEL	d 55	1
2	30.1807-105	2	PIST / PISTON / KOLBEN	d 55	1
3	30.2007-103	0	PRILOZKA / STRAP / LASCHE	HR 80x 6	1
4	30.3507-103	1	VIKO / COVER / DECKEL	TYC 80x80	1
5	30.3507-104	0	VEDENI / GUIDE / BACKENFÜHRUNG	10x2-F87	1
6	30.D307-101	0	VALEC PODAVACE / FEEDER CYLINDER / VORSCHUBWALZE	TR 62/50H8	1
7	30.D307-102	0	PISTNICE / PISTON ROD / KOLBENSTANGE	d 28	1
8	90.001.25.041	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X65	4
9	90.001.55.035	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X35	1
10	92.003.001	0	SROUBENI UHLOVE / ANGLE BOLTING / WINKELVERSCHRAUBUNG	P-RSWS-08LR	2
11	95.800.020	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 60	1
12	95.801.009	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 52	1
13	96.001.007	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	25X2	1
14	96.001.013	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	45X2	1
15	96.001.014	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	55X2	1
16	96.020.005	0	Q-KROUZEK / SEAL RING / DICHTUNGSRING	39.2X5.33	1
17	96.041.003	0	TESNENI / SEALING / DICHTUNG	601-28x36x7.1	1
18	96.060.003	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	KROUZEK STIRACI 28	1
19	96.082.002	0	KROUZEK CU TESNICI / SEAL RING / DICHTUNGSRING	KROUZEK CU 13/17	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

7.41. Upínání horní / Spannvorichtung oben / Top clamp



NAZEV SESTAVY	CISLO SESTAVY	STROJ
UPINANI HORNI	202.D314-050	IN460
	Konstruoval: MUSIL	
	Datum: 02. 12.2009	
	Meritko: 13:100	

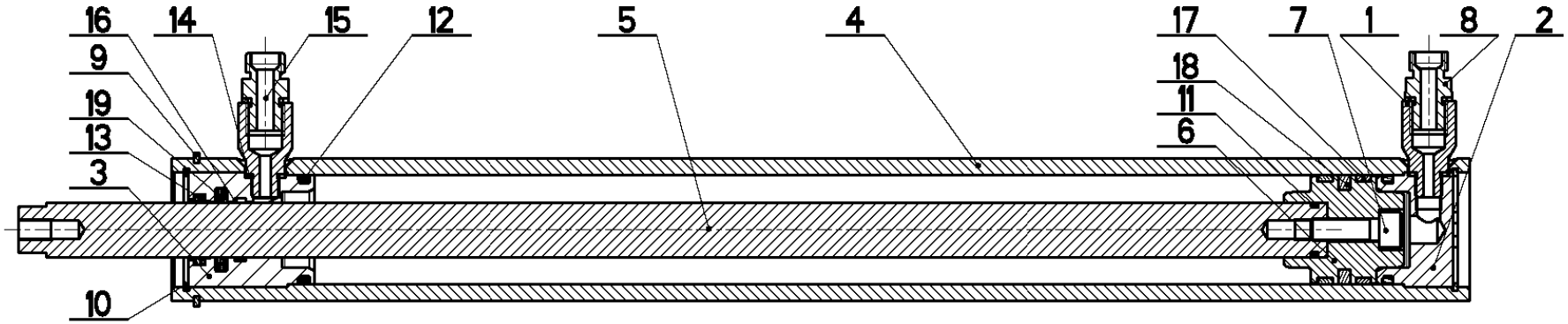
Cislo Sestavy	Ver.	Nazev sestavy
202.D314-050	0	UPINANI HORNI/TOP CLAM/SPANNVORRICHTUNG OBEN

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.D307-050	0	VALEC UPINACI / FIXING CYLINDER / SPANNZYLINDER		1
2	30.3511-009	0	PRILOZKA / STRAP / LASCHE	HR 70x10	1
3	30.D314-051	0	SLOUP / POLE / SÄULE		1
4	30.D314-052	0	NOSNIK / CARRIER / TRÄGER		1
5	30.D314-053	0	SLOUP SVERAKU / VICE POLE / SCHRAUBSTOCKSÄULE	P25 - 165	1
6	30.D314-056	0	TYC VODICI / LEAD POLE / FÜHRUNGSSTANGE	40h6	1
7	30.D414-054	0	CELIST / JAW / BACKE		1
8	30.D414-055	0	DESKA / BOARD / PLATTE	HR 50x25	1
9	90.001.25.033	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x25	4
10	90.001.25.036	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X40	1
11	90.001.25.038	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X50	2
12	90.001.25.050	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X40	11
13	90.001.25.058	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X30	4
14	90.150.50.007	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 13	4
15	95.710.001	0	POUZDRO / SLEEVE / BÜCHSE	40x60 KH	2
16	96.040.003	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	40x52x5	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

Cislo Sestavy	Ver.	Nazev sestavy
201.D307-050	0	VALEC UPINACI/FIXING CYLINDER/SPANNZYLINDER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.3407-103	1	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	TYC 17	2
2	30.C207-011	0	VIKO / COVER / DECKEL	d 45	1
3	30.C207-012	0	VIKO / COVER / DECKEL	d 45	1
4	30.D307-053	0	VALEC UPINACI / FIXING CYLINDER / SPANNZYLINDER	TR 52/40H8	1
5	30.D307-056	0	PISTNICE / PISTON ROD / KOLBENSTANGE	d 20 f8	1
6	30.D407-054	0	PIST / PISTON / KOLBEN	d 45	1
7	90.001.25.033	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x25	1
8	92.002.001	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG	G 1/4"	2
9	95.800.019	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 52	1
10	95.801.006	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 42	2
11	96.002.007	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	16X2	1
12	96.002.017	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	34X3	2
13	96.061.008	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	WD220200	1
14	96.082.001	0	KROUZEK CU TESNICI / SEAL RING / DICHTUNGSRING	KROUZEK CU 10/14	2
15	96.082.002	0	KROUZEK CU TESNICI / SEAL RING / DICHTUNGSRING	KROUZEK CU 13/17	2
16	96.084.006	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING	GR4300280-T47	1
17	96.084.010	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING	GP6500400-T47	2
18	96.900.015	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG	PT0200400-T46N	1
19	96.900.019	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG	RSK200200	1



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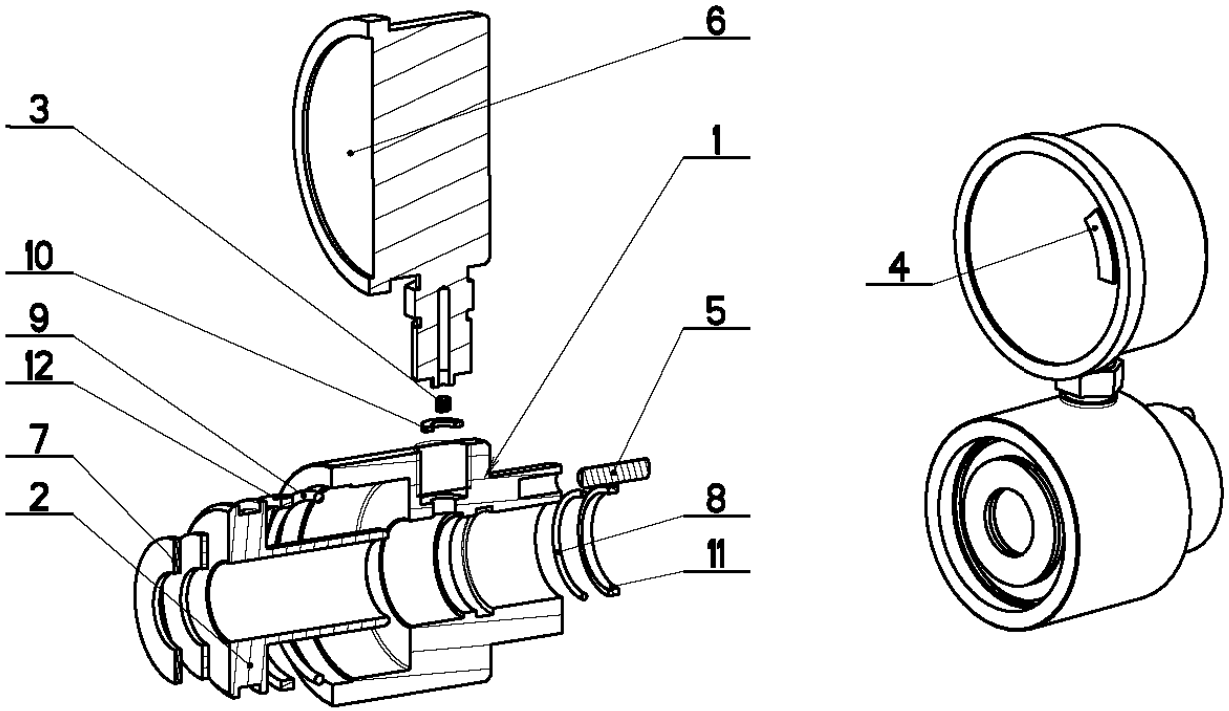
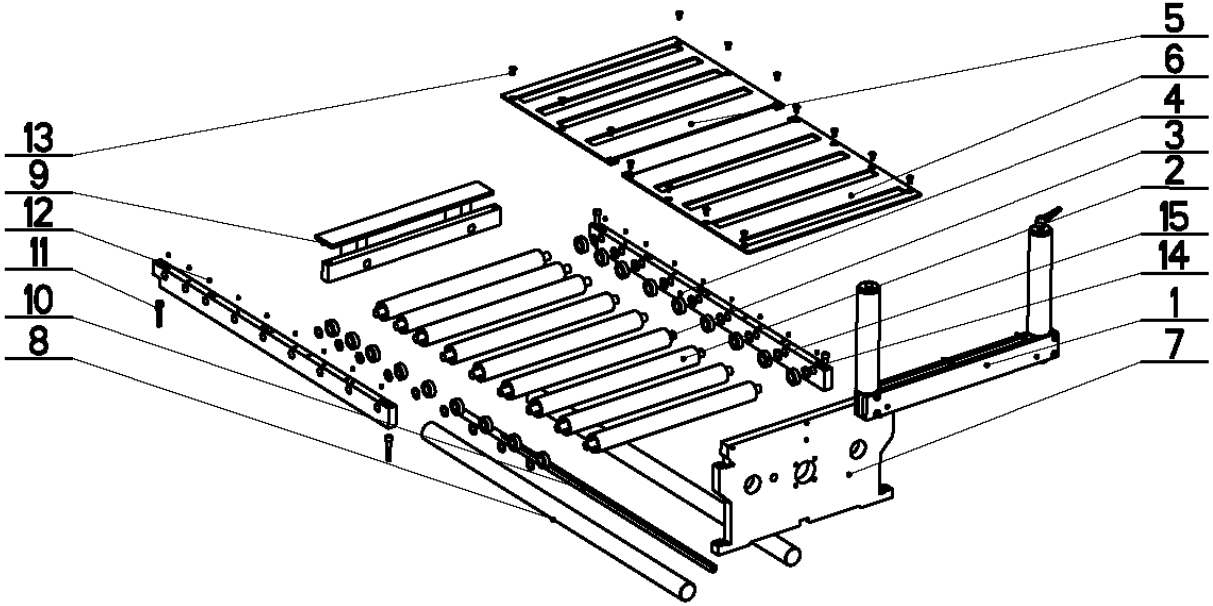
Cislo Sestavy	Ver.	Nazev sestavy
202.2912-100	1	INDIKATOR NAPINANI/POWER INDICATOR/SPANNUNGSINDIKATOR

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.2912-101	1	POUZDRO / SLEEVE / BÜCHSE	d 50	1
2	30.2912-102	1	POUZDRO / SLEEVE / BÜCHSE	d 42	1
3	30.T308-052	1	SROUB / BOLT / SCHRAUBE	M3x3	1
4	31.0512-103	0	SAMOLEPKA / STICKER / AUFKLEBER	SIPKA ZELENA	1
5	90.303.0Z.003	0	KOLIK PRUZNY / PIN / BOLZEN	KOLIK 4X16	1
6	92.080.005	0	MANOMETR / MANOMETER / MANOMETER	d 63 - 250bar	1
7	95.750.001	0	KROUZEK KU / KU RING / KU-RING	16x1	2
8	96.002.061	0	KROUZEK O DYNAMICKY / DYNAMIC O-RING / O-RING DYNAMISCH	ORAR00019-N70	1
9	96.002.062	0	KROUZEK O DYNAMICKY / DYNAMIC O-RING / O-RING DYNAMISCH	ORAR00126-N70	1
10	96.082.004	0	KROUZEK CU TESNICI / SEAL RING / DICHTUNGSRING	KROUZEK CU 5/9	1
11	96.083.008	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING	BU1300200-PT00	1
12	96.083.009	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING	BG2000360-PT00	1



Cislo Sestavy	Ver.	Nazev sestavy
201.D311-050	0	TRAT/TRACK/BAHN

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.2911-600	1	VALEC VERTIKALNI / VERTICAL CYLINDER / VERTIKALZYLINDER		1
2	30.2911-102	0	VALEC / ROLLER / ZYLINDER	TR 51x6.3	9
3	30.2911-103	1	OSA / AXLE / ACHSE	d 20	9
4	30.D311-051	0	LISTA / TRIM / LEISTE	HR 60x25	2
5	30.D311-052	0	ROST / GRILL / GITTER	P 5x483	1
6	30.D311-053	0	ROST / GRILL / GITTER	P 5x553	1
7	30.D311-055	0	CELO / HEAD / STIRN	P 30x243	1
8	30.D311-056	0	TYC VODICI / LEAD POLE / FÜHRUNGSSTANGE	d 50 h6	2
9	30.D311-057	0	STUL / TABLE / TISCH		1
10	30.D311-060	0	TYC / POLE / STANGE	d 20	1
11	90.001.25.054	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X60	4
12	90.002.2D.029	0	STAVECI S KUZEL / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M6X8	18
13	90.011.27.012	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M8X16	14
14	90.154.50.011	0	PODLOZKA VYMEZOVACI / /	20x28x1	18
15	95.001.007	0	LOZISKO KUL I RADE / BEARING / LAGER	6004 2RSA	18



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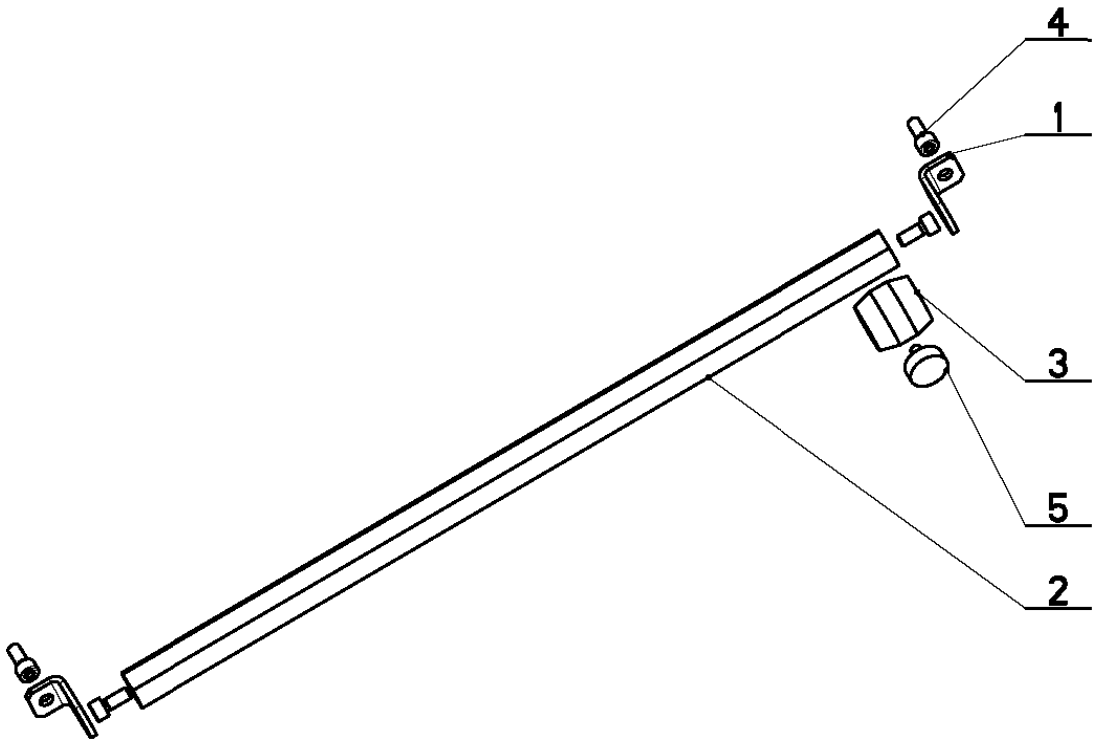
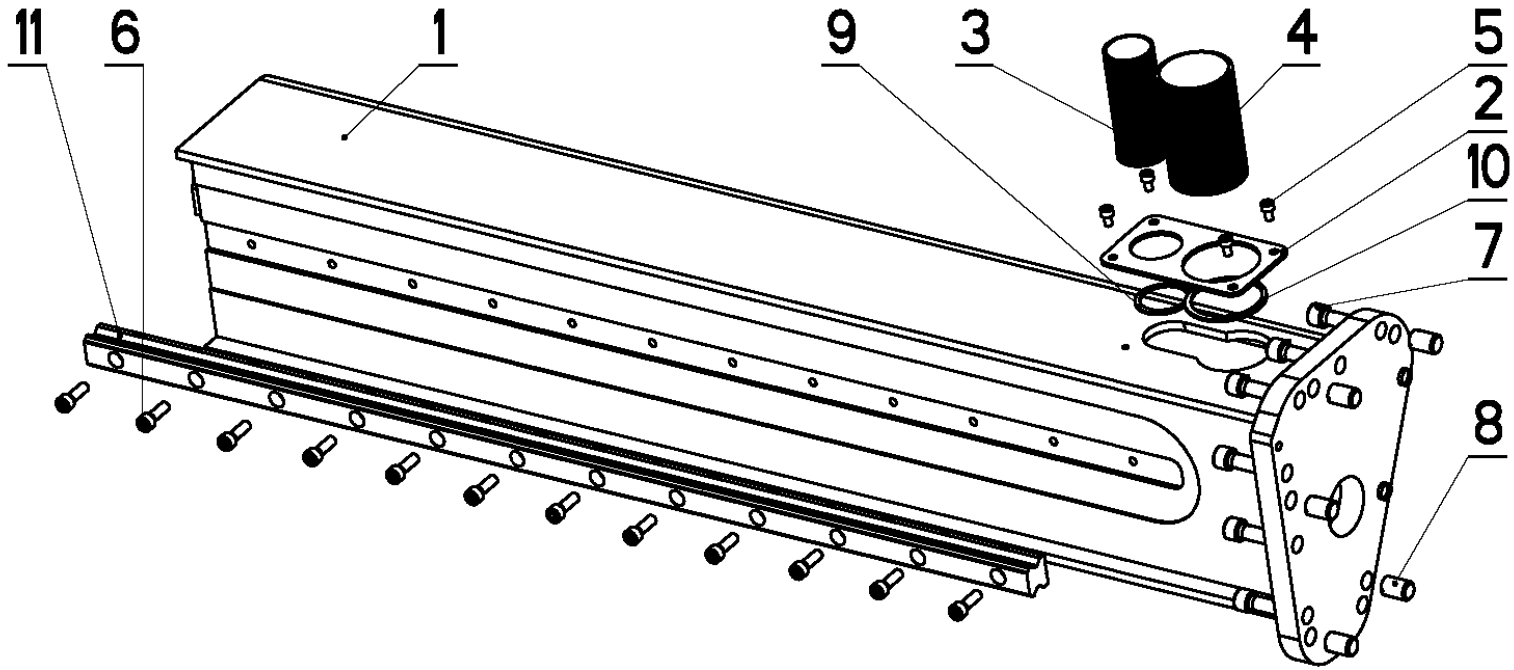
Cislo Sestavy	Ver.	Nazev sestavy
201.Y302-070	0	JEDNOTKA ODMEROVANI/MEASURING UNIT/MESSEINHEIT

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.6114-023	0	DRZAK / HOLDER / HALTER	P 3x20	2
2	30.Y302-071	0	TYC / POLE / STANGE	d 20	1
3	30.2014-001	0	KROUZEK / RING / RING		1
4	90.001.25.092	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X14	4
5	94.007.001	0	SROUB / BOLT / SCHRAUBE	M5x10	1



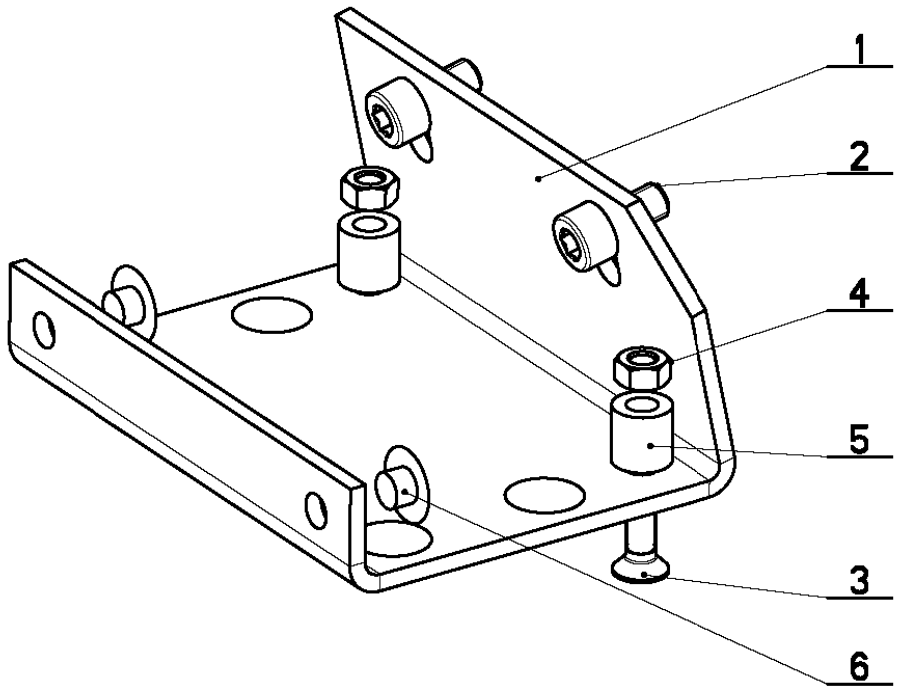
Cislo Sestavy	Ver.	Nazev sestavy
201.Y302-160	3	SLOUP/POLE/SÄULE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.Y302-161	2	SLOUP / POLE / SÄULE	SVARENO	1
2	30.Y502-162	0	UCHYTKA / CLIP / HALTER	P3-80	1
3	41.001.005	0	HADICE / HOSE / SCHLAUCH	PG36	1
4	41.001.006	0	HADICE / HOSE / SCHLAUCH	PG48	1
5	90.001.25.015	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X10	4
6	90.001.25.033	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x25	12
7	90.001.25.059	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X35	9
8	90.002.2D.028	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M16x1,5x25	5
9	95.800.016	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 42	1
10	95.800.021	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 62	1
11	99.200.138	0	VEDENI LINEARNI / LINEAR GUIDE / LINEARE FÜHRUNG	HSR30,G=30	1



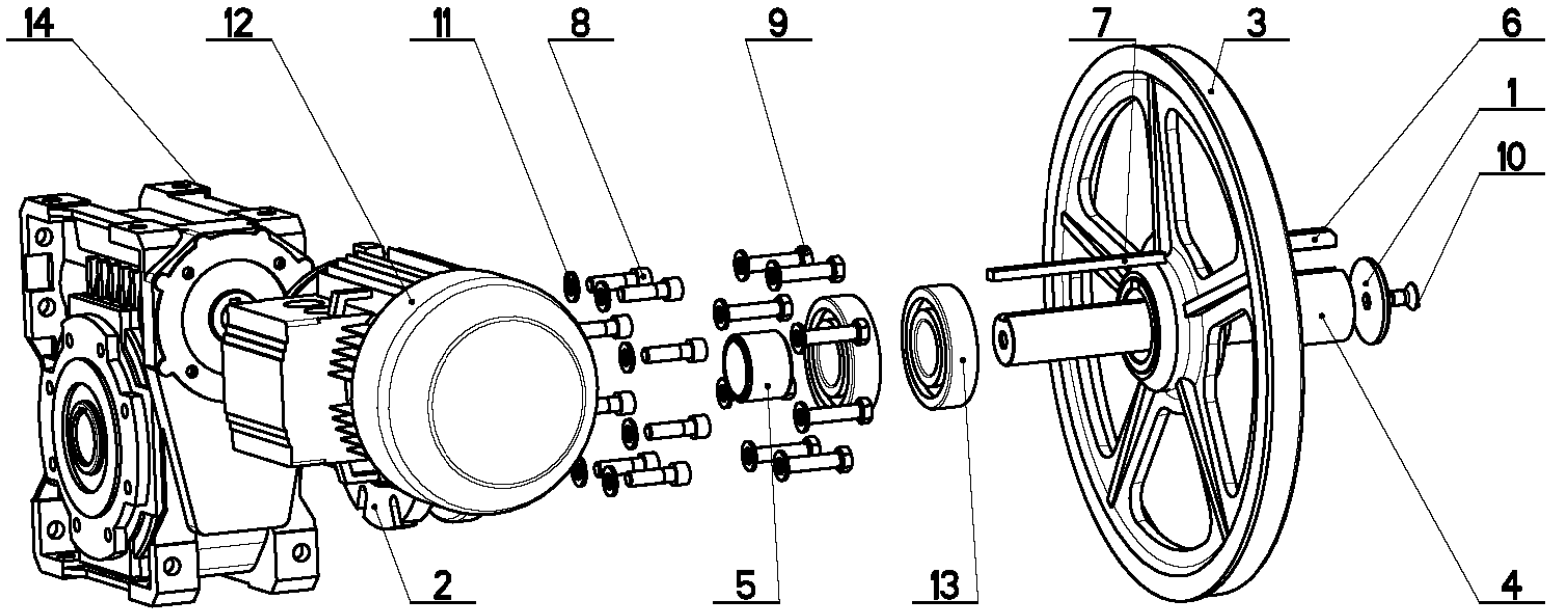
Cislo Sestavy	Ver.	Nazev sestavy
201.Y304-010	0	VEDENI/GUIDE/BACKENFÜHRUNG

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.Y304-011	0	DRZAK / HOLDER / HALTER	P3 - 100	1
2	90.001.25.016	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X12	2
3	90.011.27.024	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M5X20	2
4	90.100.55.003	0	MATICE DIN 934 / NUT / MUTTER	MATICE _ M5	2
5	90.163.00.006	0	DISTANC / DISTANCE / DISTANZ	TR 10/5.3	2
6	94.101.029	0	ZATKA / PLUG / STOPFEN	PRO IMBUS M8	6



Cislo Sestavy	Ver.	Nazev sestavy
201.Y305-000	0	POHON/DRIVE /ANTRIEB

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.1804-010	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	d 70	1
2	30.2904-002	0	PRIRUBA / FLANGE / FLANSCHE	ODLITEK	1
3	30.2904-003	3	KOLO HNACI / DRIVE WHEEL / ANTRIEBSRAD	ODLITEK	1
4	30.2904-004	1	HRIDEL / SHAFT / WELLE	d 65	1
5	30.2904-005	0	DISTANC / DISTANCE / DISTANZ	TR 55x8	1
6	30.2904-006	0	PERO / SPRING / FEDER	HR 14x14	1
7	30.2904-008	0	PERO / SPRING / FEDER	HR 12x8	1
8	90.001.25.060	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X40	8
9	90.005.55.045	0	6 HR SROUB ZIN / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M12X50	8
10	90.011.27.009	0	SROUB ZAPUSTNY / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M12X20	1
11	90.150.50.007	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 13	16
12	91.001.053	0	ELEKTROMOTOR / ELECTRIC MOTOR / ELEKTROMOTOR	MDERA 100-32pro	1
13	95.001.027	0	LOZISKO / BEARING / LAGER	6309 2RS	2
14	99.002.012	0	PREVODOVKA / TRANSMISSION / GETRIEBE	W110 U P100 B14	1



Cislo Sestavy	Ver.	Nazev sestavy
201.Y307-030	0	VALEC SVERAKU/VICE CYLINDER/SCHRAUBSTOCKZYLINDER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.1807-005		SROUBENI / BOLTING / VERSCHRAUBUNG	6-HR 22	2
2	30.2807-109	0	SROUBENI PRIME / DIRECT BOLTING / GERADE VERSCHRAUBUNG		2
3	30.C407-012	1	VIKO / COVER / DECKEL	d 55	1
4	30.C407-111		VIKO / COVER / DECKEL	d 55	1
5	30.Y307-033	0	VALEC SVERAKU / VICE CYLINDER / SCHRAUBSTOCKZYLINDER	TR 62/50	1
6	30.Y307-034	0	PISTNICE / PISTON ROD / KOLBENSTANGE	d 28 f8	1
7	30.Y307-035	0	PIST / PISTON / KOLBEN	d 55	1
8	90.001.25.032	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x20	1
9	95.800.021	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 62	2
10	95.801.009		SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 52	2
11	96.002.011	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	24X2	1
12	96.002.019	0	O-KROUZEK DYNAMIC / DYNAMIC O RING / O-RING DYNAMISCH	46X2	2
13	96.061.009	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	WD2200280	1
14	96.082.002		KROUZEK CU TESNICI / SEAL RING / DICHTUNGSRING	KROUZEK CU 13/17	4
15	96.084.001	0	KROUZEK VODICI / LEAD RING / FÜHRUNGSRING		1
16	96.084.006		KROUZEK VODICI / LEAD RING / FÜHRUNGSRING	GR4300280-T47	1
17	96.900.001	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG		1
18	96.900.021	0	TESNENI KOMBINOVANE / COMBINATION SEALING / KOMBIDICHTUNG	RSK200280	1