



Ergonomic 290.258 DGANC

Operating instructions

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

Service and information

Your BOMAR dealer:

Direct BOMAR contact:

BOMAR spol. s r.o.

Těžební 1236/1
62700 Brno
Czech Republic, EU

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

We are available:

Mondays to Fridays

7⁰⁰ – 16⁰⁰

Version:

1.18 / September 2025
rev. 1

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EC/EU Declaration of Conformity

1) 2) We: **BOMAR, spol. s r.o.**

Těžební 1236/1

627 00 Brno, Czech Republic

Id. No: 48908827

declare herewith

that the following designated device based on its conception and construction as well as the design launched by us meets the relevant basic safety requirements of the decrees of the government.

This statement applies exclusively to the machine device in conditions in which it was brought to the market. It does not apply to parts subsequently added by the end user or to modifications performed subsequently by the end user.

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

Name: **Band Saw**
Type : **Ergonomic 290.258 DGANC**
Serial number: 0011-100 000
Manufacturer **BOMAR, spol. s r.o., Těžební 1236/1, 627 00 Brno**

Product data

Determination: for cross dividing and cutting of rolled and towed bars and profiles made of steel, stainless steel, non-ferrous metals and plastics

Description: Stand, table, cutting unit with the saw band and drive, clamping device, cooling system, el. switch board with control panel.

Technical data:
Pneumatic ☒ NO ☐ YES ☐ Hydraulic ☐ NO ☒ YES ☐ Control system ☐ NO ☒ YES ☐
Cutting rate 20-120 m.min-1
Cutting angle 0° bis 60° R, 0° bis 45° L
Characteristic cutting range 290 x 258 mm

Documentation:

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

The device meets relevant requirements of the given directives: **2006/42/EC**
2014/30/EU

The applied harmonized standards, National standards and technical specifications:

ČSN EN ISO 12100:2011	ČSN EN ISO 16093:2018	ČSN EN ISO 13857:2022
+ Opr.1:2020 + Opr.2 :2021		ČSN EN 60204 -1 ed.3:2019
ČSN EN ISO 4413:2011		ČSN EN IEC 61000-6-4 ed.3:2019
ČSN EN 55011 ed.4:2017	ČSN EN 61000-6-2 ed.4:2019	
+ A1: 2017+ A11:2020 + A2:2021		

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

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

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

Brno, 29.08.2022

Point of issue, datum



Alfred Pichlmann, Managing Director

Name and function of the responsible subject, signature

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

2) Person authorized to complete the technical documentation

!

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

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1. **Bezpečnostní pokyny / 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!

Attention!

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

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!

1.1. Machine determination

The band saw **Ergonomic 290.258 DGANC** 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 angles from -45° 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!**

Attention!

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

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.

1.2. Protective suit and personal safety

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

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

Attention!

Gloves you can use only at working material replacement (saw band)! The machine and accessories must be inactive!

If the machine is running, you must not wear gloves! It is dangerous, because some parts of the machine can catch gloves!

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

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

Always wear ear protections! Most of the machines emit up to 80 dB and may damage your hearing.

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

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

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

*Attention!
Consider the safety signs on the machine. Do not remove or damage them! Keep these labels still readable!*

1.3. Safety notes for machine operator

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

Machine can be operated only by one person.

Machine operator is responsible for presence of other persons by the machine.

The person, which is controlling the machine using control equipments of the machine (control panel or another control equipment) mustn't oneself or with help of another persons manipulate with the machine or with the cutted or another way processed material.

*Keep instructions and orders about work safety!
Read the operating instructions, before you start to work on the machine! Keep the operating instructions in good condition!*

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

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

- Check that the power cables are not damaged.
- Do not hold the material for clamping to the vice and for cutting!
- Do not operate with the buttons and the switches on the control panel, when you have gloves!
- For machine starting take care, that there is nobody in the working area of the machine (it means in the working area of the vice, the saw band, the saw arm etc.).
- In no circumstances touch the rotating elements.
- Work on the machine only when the machine is in good condition!
- Check at least once in a shift, if the machine is not damaged. If the machine is damaged, you must bring the machine in order and you must inform your superior!
- Keep your working area clean!

- Ensure sufficient lighting in the working area.
- Take off the spilt water or the oil from the floor and dry it.
- Do not touch the cooling liquid with bare hands!
- Do not set the nozzle of the cooling liquid, when the machine is started on!
- Do not remove the chips from the working area of the machine, when the machine is started on!
- Do not use the compressed air for the machine cleaning or for the chips removing!
- Use the protective instruments for chips removal!

1.4. Safety notes for the servicing and repairs

Attention!

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

Switch off the main switch and lock it, before you start service work! If you have the Practix type of machine, disconnect it from electrical network. This way you eliminate a possibility of starting the machine accidentally.

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

Always adhere to the safety instructions!

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

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

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

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

If the machine is rebuilt or any change is made at the machine arbitrarily, the warranty on the machine becomes invalid and the company BOMAR, spol. s r.o. accepts no responsibility for any resulting damage!

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

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

Caution!

Repairs and maintenance of the hydraulic system may only be carried out by a qualified and authorized person, who has sufficient knowledge of the hydraulic circuit to perform specific tasks within the given mandate. If you do not have sufficient knowledge, do not intervene in the hydraulic circuit, but contact the manufacturer or a professional service authorized by the manufacturer.

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

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

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

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

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

1.5. Safety instructions for laser radiation sources

Laser radiation sources may be used on the machine.

Warning signs and information about the corresponding laser class are placed near each laser source.

It is forbidden to look into the laser beams!

Depending on the design and optional equipment of the saw, laser radiation sources can be located in particular:

- on the saw feeder
- before the main vice of the band saw
- on a safety fence (laser barrier)
- on the section line projection device



Commonly used laser safety classes:

- 1 (laser barriers)
- 1M (laser barriers)
- 3R (Laser-Liner)

Attention!

It is necessary for correct functionality of a laser to regularly check the patency of the laser ray on the sensor and to clean the laser from impurities (clean rag + spirit) after each shift. Be careful during the cleaning in order the laser was not been scratched and broken!.

1.6. Safety notes for the cooling

Attention!

- *When handling the coolant, follow the safety regulations and the instructions of the coolant manufacturer!*
- *When handling cooling agents always wear hazardous fluid-proof gloves!*
- *Wear protective goggles!*
- *Cooling liquid can get in contact with your eyes and*

1.6.1. Instructions for first help

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

1.7. Safety machine accessories

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

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.

1.7.1. Emergency Stop Switch

Emergency Stop Switch is used for emergency switching – off the machine in case defect or health hazard. By pressing **Emergency Stop Switch** will immediately stop all dangerous machine movements.

If any damages or fault appears, immediately press Emergency Stop Switch!

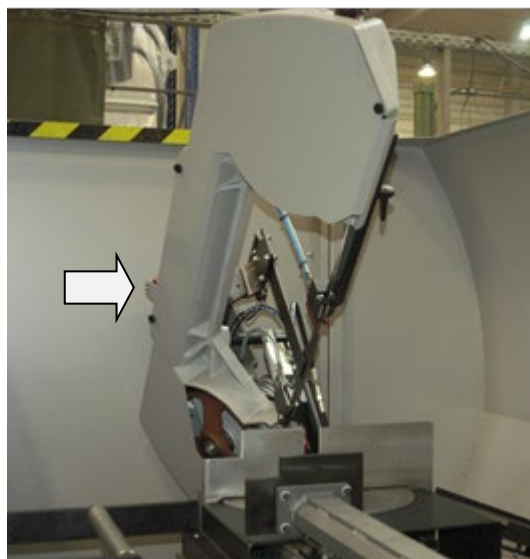
It is possible to release the pressed button by twisting of the upper part of the button.

The **Emergency Stop Switch** is placed at the control panel of the machine.



1.7.2. Saw arm covers

If the cover is opened during operation, the limit switch is disconnected and the band saw is stopped. The band saw is impossible to start in set mode.



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

1.7.3. Saw band stretching and rupture inspection

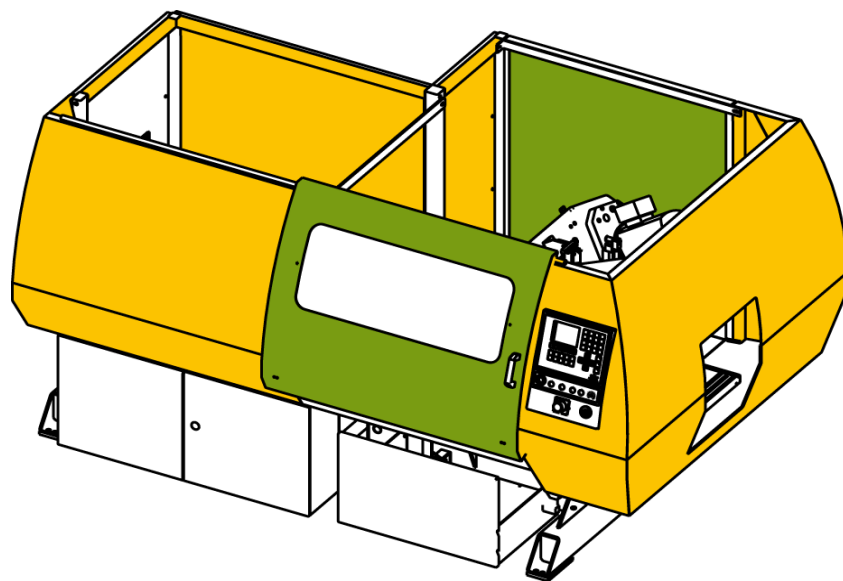
This device checks the saw band tension and causes immediate machine stop if the band incidentally ruptures.



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

1.7.4. Safety covers

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



- Kryt pily / Sägeabdeckung / Saw covers
- Dveře, otevíratelné kryty / Aufmachende Tür / Door, openable doorSaw covers

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

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

NR:

Nebezpečí říznutí
Schnittgefahr
Cutting or severing hazard



NS

Nebezpečí stlačení
Pressungsgefahr
Crushing hazard



NR:

Nebezpečí říznutí
Schnittgefahr
Cutting or severing hazard



NSS

Nebezpečí stlačení svěrákem
Pressungsgefahr
Crushing hazard by vice



PO:

Noste pevnou pracovní obuv
Tragen Sie Sicherheitsschuhe
Wear fixed protective shoes



CZ:

Přečíst návod k použití
Bedienungsanleitung lesen
Read the operating instructions



OBS:

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



Štítek stroje
Maschinenschild
Machine label

HV

Hlavní vypínač
Hauptschalter
Main switch

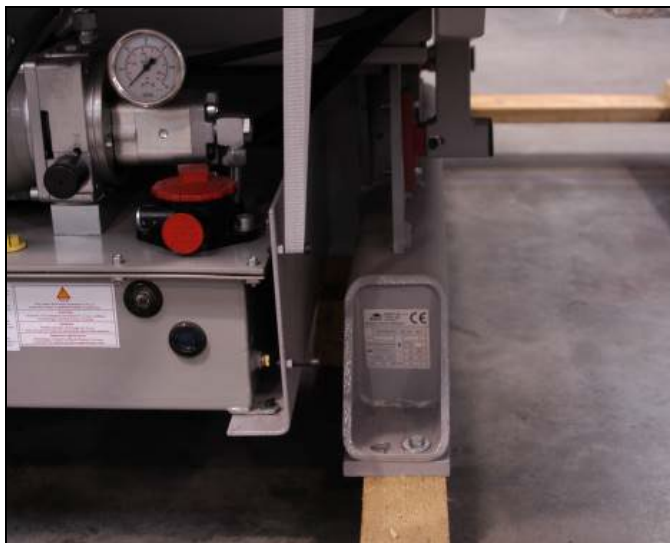


NR:

Nebezpečí zachycení
Erfassungsgefahr
Tramping hazard



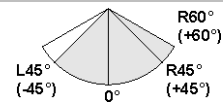
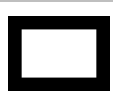
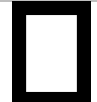
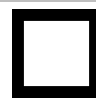
**1.9. Umístění štítku stroje /
Maschinenschild position /
Position of machine label**



The machine's label is located under the pedestal on the foot of the machine in the space under the control panel.

2. **Dokumentace stroje / Dokumentation der Maschinen / Machine documentation**

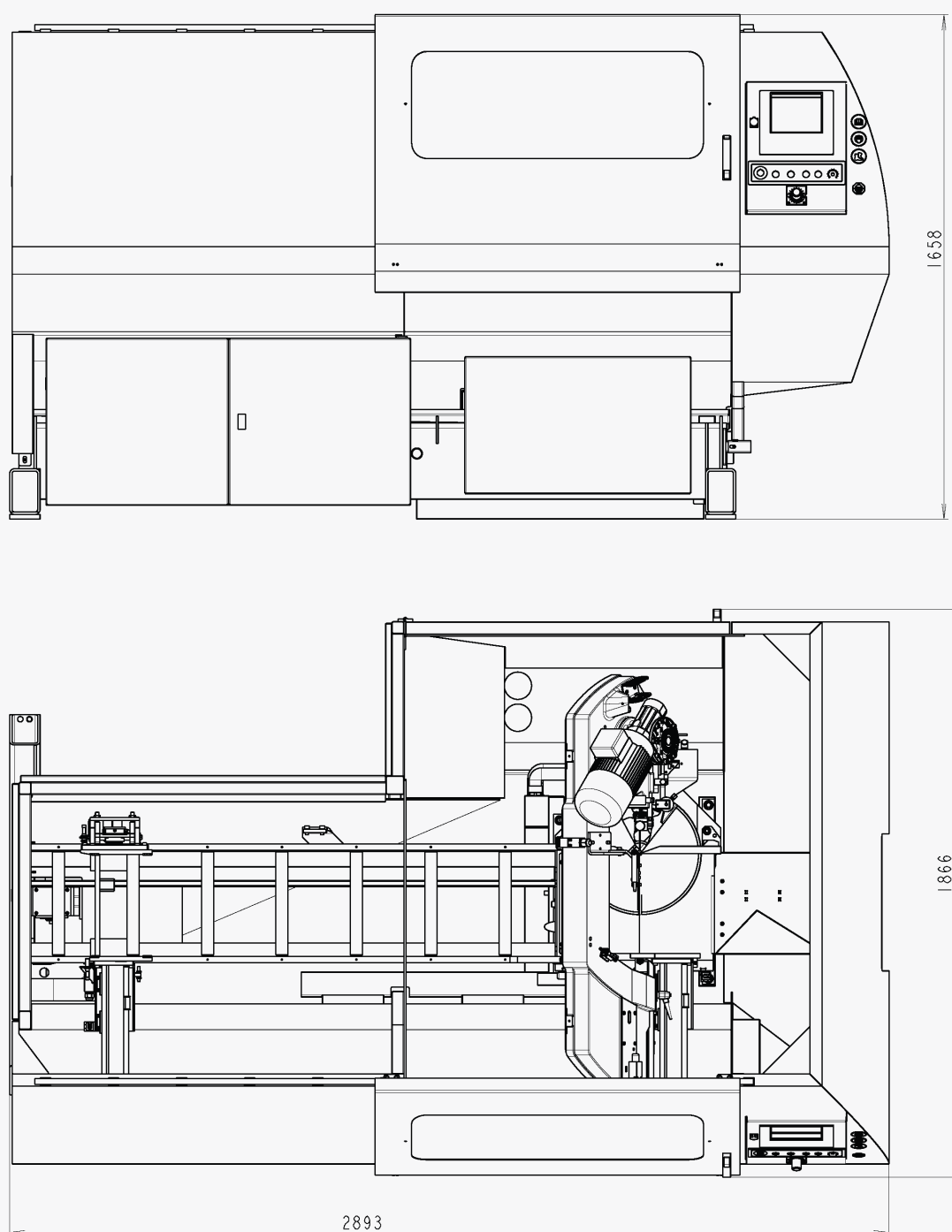
2.1. Technická data / Technische Daten / Technical data

Hmotnost stroje / Maschinengewicht / Machine weight:				
• Hmotnost / Gewicht / Weight	1500 kg			
Rozměry stroje / Maschinengröße / Machine size :				
• Délka / Länge / Lenght	2900 mm			
• Šířka / Breite / Width	1850 mm			
• Výška / Höhe / Height	1650 mm			
Elektrické vybavení / Elektrische Ausrüstung / Electical equipment:				
• Napájení / Versorgungsspannun / Supply voltage	~ 3x400 V, 50 Hz, TN-C-S			
• Příkon / Gesamtschlusswert / Total Input	4 kW			
• Max. jistění / Max. Vorschaltsicherung / Max. Fuse	16 A			
• Krytí / Schutzart / Protection	IP 55			
Akustický tlak / Schalldruckpegel / Acoustic pressure:				
• Ergonomic 290.258 DGANC	L _{Aeqv} = 65 dB			
Pohon / Atrieb / Drive:				
• Typ / Type / Type	TM 90-2/2S B5			
• Výkon / Leistung / Output	1,5 kW			
Hydraulické zařízení / Hydraulieinrichtung / Hydraulic equipment:				
• Typ / Type / Type	870-1922/SMA 03-48/13.0-S11			
• Výkon / Leistung / Output	0.55 kW/4 MPa			
Chladicí zařízení / Kühlmiteleinrichtung / Cooling equipment:				
• Typ / Type / Type	2COP-1-17H P1			
• Výkon / Leistung / Output	0,05 kW			
• Obsah nádrže / Volumen vom Kühlmittel / Capacity	80 dm ³			
Rozměr pásu / Sägebandedimension / Band size:				
2910×27 (25)×0,90 mm				
Řezná rychlost / Schnittgeschwindigkeit / Cutting speed:				
20–120 m/min.				
Minimální řezaná délka / Minimale Schnittlänge / Minimal cutted material size:				
20 mm				
Nejmenší řezaná výška / Kleinste Schnitthöhe / Minimum cut height:				
5 mm				
Min. podávací délka polotovaru / Min. Vorschublänge des Werkstückes / Min. feeding length:				
L45° – 570 mm / 0° – 280 mm / R45°– 280 mm / R60° – 620 mm				
Řezné rozsahy / Schnittbereiche / Cutting size:				
				
0°	Ø258 mm	325 x 180 mm	250 x 258 mm	258 x 258 mm
R 45° (+45°)	Ø210 mm	215 x 100 mm	180 x 250 mm	195 x 195 mm
L 45° (-45°)	Ø180 mm	235 x 80 mm	145 x 245 mm	165 x 165 mm
R 60° (+60°)	Ø125 mm	135 x 100 mm	115 x 125 mm	125 x 125 mm

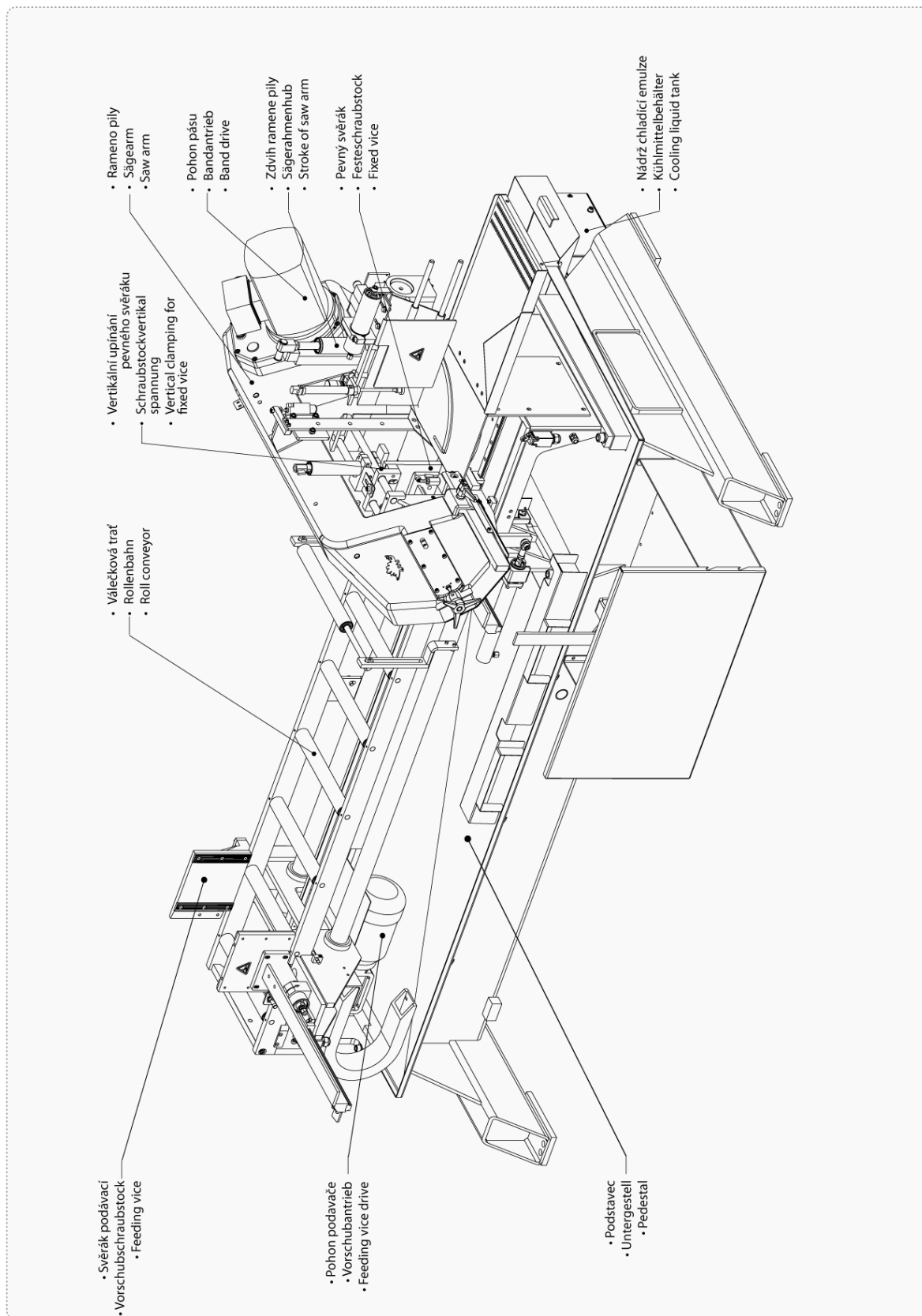
Level of acoustic pressure:

Equivalent level of acoustic pressure A (noise) at operator position are $L_{Aeq} = 65$ dB. Mentioned values are levels of emission which doesn't have to represent safe levels. Factors which influence real level of acoustic pressure on machine operator are: working place characteristics, cut material, saw band. These factors have significantly influence on acoustic pressure.

2.2. Rozměrové schéma /Aufstellzeichnung / Installation diagram



2.3. Popis /Beschreibung /Description



2.4. Transportation and stocking

2.4.1. Conditions for transportation and stocking

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

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

2.4.2. Transport and stocking preparations

Close the vice and thoroughly oil all blank surfaces.

Lower the saw frame to the lowest position.

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

Fasten all loose parts securely to the machine.

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

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

2.4.3. Transport and stocking

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

.Make sure that the hand pallet truck; the forklift truck or the crane and the suspension cables had sufficient capacity. Use only shackles with appropriate capacity..

Make sure that the van or the trailer had sufficient capacity.

The machine must be properly secured during transport, to not tip over or fall from the transport vehicle.

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

Be careful that the machine is not damaged during transportation.

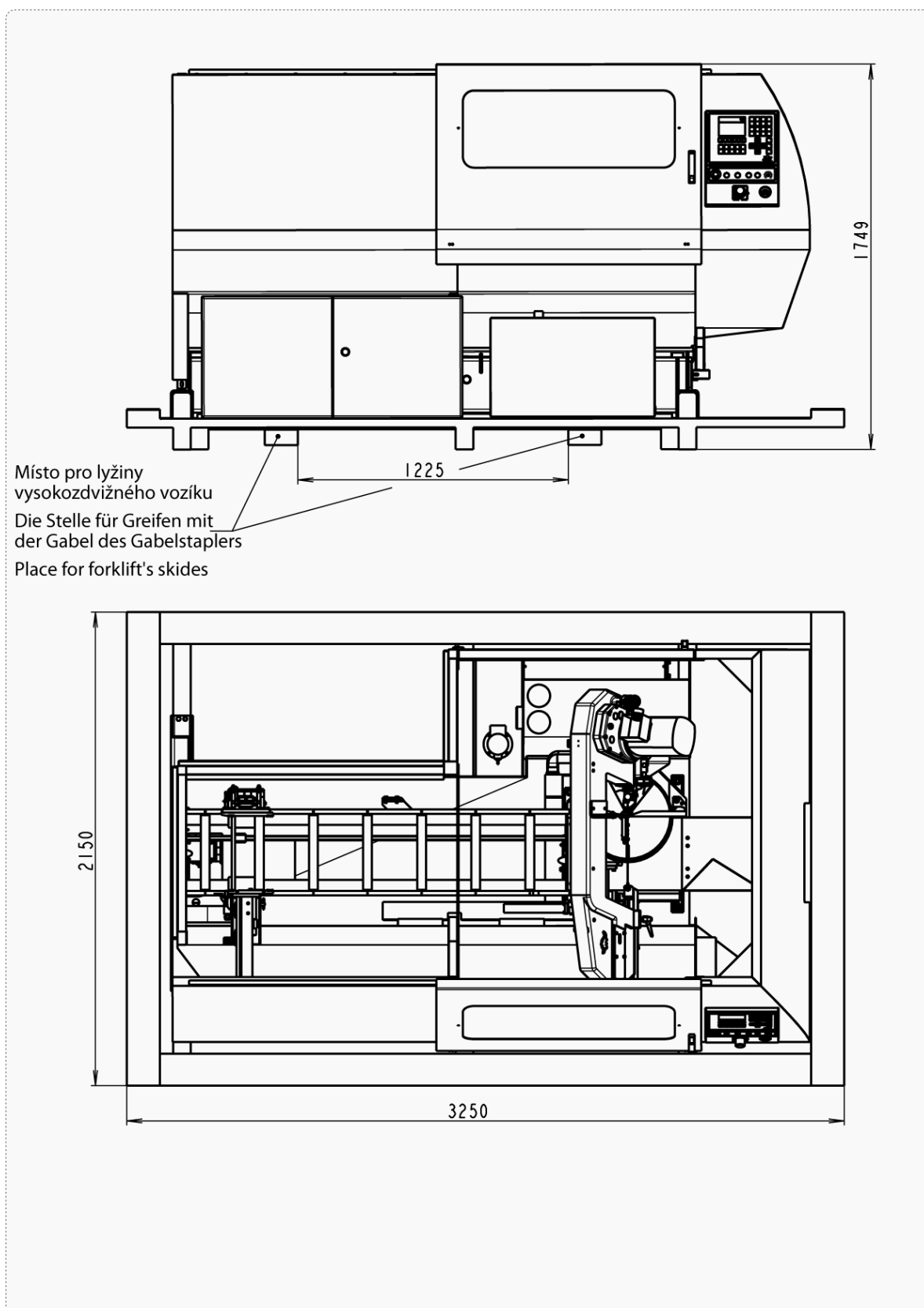
It is forbidden to handle the machine any other way (for example by, lifting by the saw frame of the band saw), than it is written in this operating instructions, the machine can be damaged!

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



Store the machine only under the conditions specified in this manual to prevent damage to the machine

2.4.4. Transportní schéma / Transport schéma / Transport schneme



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 **10°C to 40°C**, the temperature average during 24 hours must **not exceed over 35°C**.
- At relative dampness of the air in the extend from 30% to 95% (not concentrate). Altitude lower than 1000 metres.
- Do not expose the machine to the radiation (for example microwave radiation, ultra-violet radiation, laser radiation, x-ray radiation). Radiation can cause problems with the machine function and deteriorating condition of the isolation.

Attention!

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

2.5.2. Band saw unpacking and assembling

Remove the packing from the machine and unpack all parts.

Attention!

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

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

2.5.3. 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 – Ergonomic 290.258 DGANC – 1500 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.

2.5.4. First run of the power pack

Before the first run check:

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

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

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

2.5.5. Filling the reservoir with hydraulic oil

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

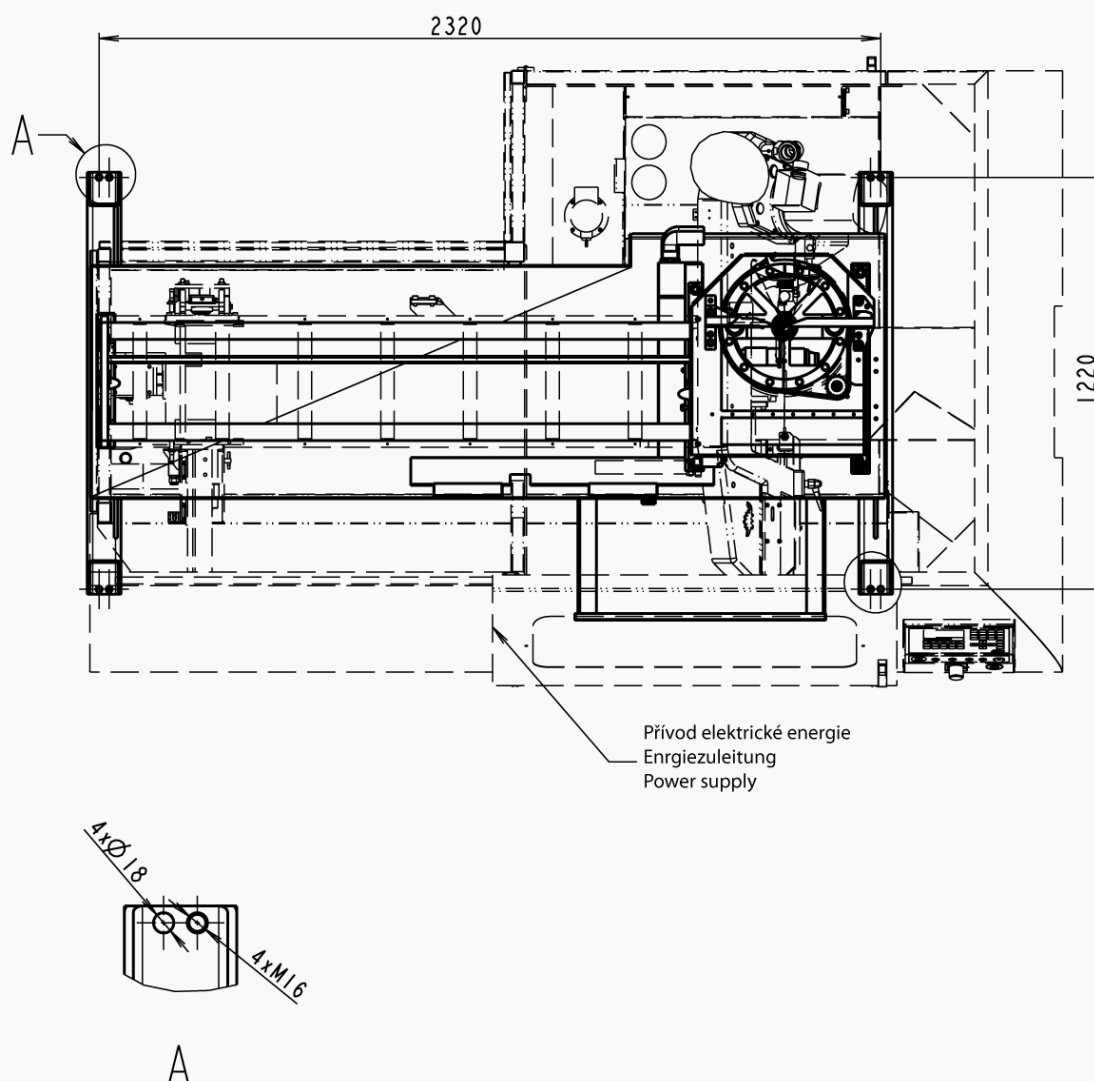
Power packs have to be filled up with clean, pre-filtered oil! The purity of the hydraulic fluid must correspond to the class 10 NAS 1638 (reachable with filter $\beta = 75$)!

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

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

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

2.5.6. Kotevní plan /Verankerungsplan / Grounding plan



Kotvící materiál / Verankerungsmaterial / Grounding material

- 4x Hmoždina / Dübel / Plug – $\varnothing 14$ mm
- Vrtáno do hloubky / In die Tiefe gebohrt / Drilled to – 140 mm
- Šrouby / Schraube / Screws – M16 a 4xM14

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

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

± 10 mm / 1 m

2.5.7. Electrical connection

Attention!

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

Electrical parameters of the machine:

- Service voltage: $\sim 3 \times 400 \text{ V}$, 50 Hz, TN-C-S
- Total input 4 kW
- Max. fuse: 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! Cross section of the supply line must respond with the 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 kVA.

The input line is equipped with a 16 A socket for connection of the machine to the electric supply line.

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

Attention!

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

2.5.8. 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.

2.5.9. Check machine connection into electrical network



Attention!
When you connect the machine to the electrical network observe correct connection of all phases!
ENGINE IN IN HYDRAULIC AGGREGATE CANNOT BE OPERATED WITH REVERSE TURNING MORE THEN 10 SECONDS!!!



2.5.10. 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.

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

2.5.11. Connecting to the compressed air supply (For Micronizer and guide for short pieces – optional accessories)

Connect the machine to the compressed air supply by means of the G1/4 screwing.

Compressed air must satisfy conditions:

- Roughly cleaned and partly dry
- $p_{\min} = 0,4 \text{ MPa}$
- $p_{\max} = 0,6 \text{ MPa}$

2.6. Check machine function

Before starting the check machine functions, you must read the chapter „**Machine operation**“. Do not carry out check machine functions, if you do not comprehend meaning of all buttons and all machine functions.

Check, if the machine or some parts of the machine were not damaged during transport. Check, if all covers are installed and functional. Check 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.

Check the motors and systems (saw band drive, hydraulic pump, cooling pump, chips conveyor). Open and close the main vice and the feeding 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. Drive the front feeder from the front position to the rear position. . 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..

2.7. 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.

Packaging material also dispose in accordance with valid directives.

Packaging and machine parts that contain secondary raw materials can be recycled.

2.8. Saw band

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



2.8.1. Saw band size

2910×27 (25)×0,90 mm

2.8.2. Selection of the saw band tooth system

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

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

BOMAR recommended Variable tooth system for band saw.

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

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

Footnotes:

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

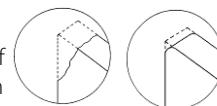
Examples of the tooth system marking:

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.

2.8.3. Saw band running-in

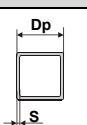
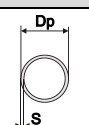
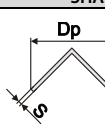
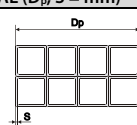
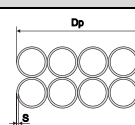
Running-in: Cut the material with the frame lowering reduced to 50% only. When vibrations occur increase or decrease the band speed.

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

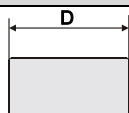
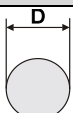
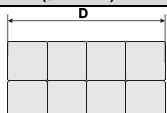
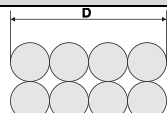


Note: Run regrinding saw bands too.

2.8.4. Tables for teeth selection

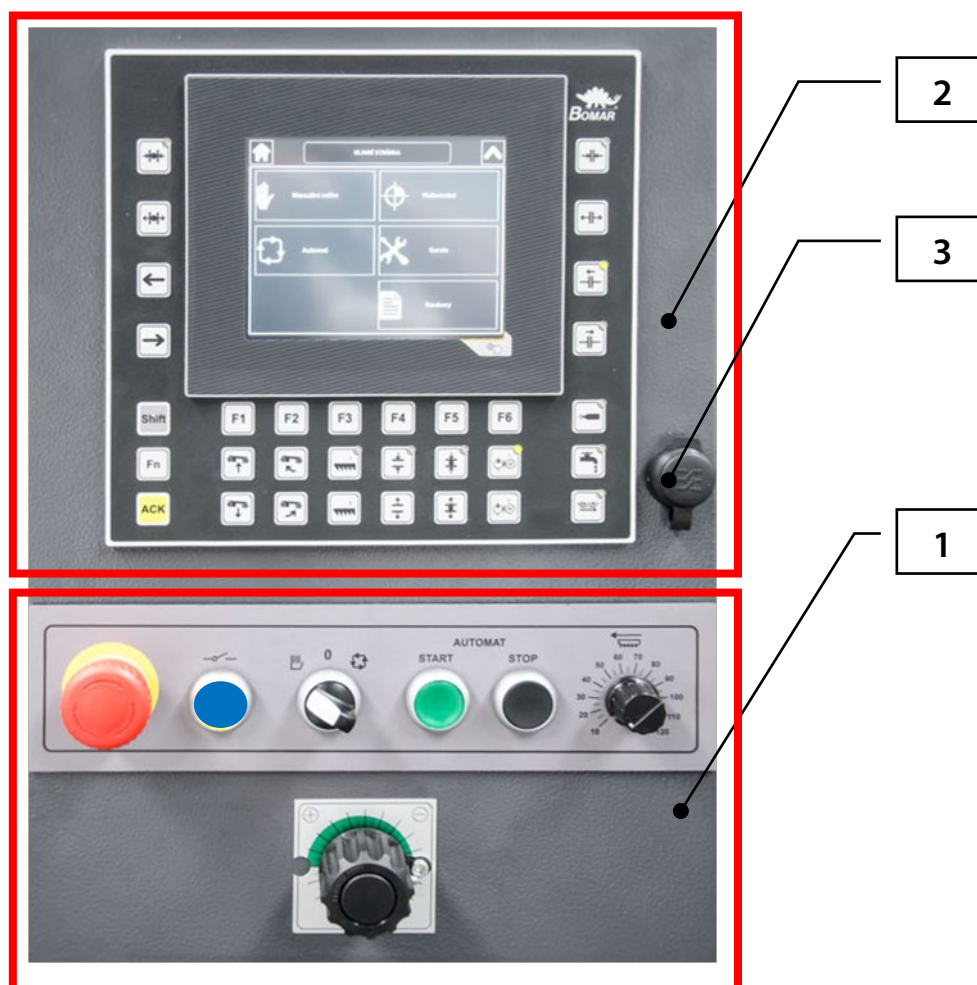
SHAPED MATERIAL ($D_p, S = \text{mm}$)						
						
Note: Table shows tooth system selection for cutting one piece of the profile. For cutting of more pieces of the profiles (bundle), you must think of the size of the wall as double size of the wall of one profile (that means, size „S“ equates to 2xS). In table, there are tooth systems constant and variable.						
Size of the wall S [mm]	Tooth system ($Z_p Z$) Outer diameter of the profile D_p [mm]					
	20	40	60	80	100	120
2	32 S	24 S	18 S	18 S	14 S	14 S
3	24 S	18 S	14 S	14 S	10–14 S	10–14 S
4	24 S	14 S	10–14 S	10–14 S	8–12 S	8–12 S
5	18 S	10–14 S	10–14 S	8–12 S	6–10 S	6–10 S
6	18 S	10–14 S	8–12 S	8–12 S	6–10 S	6–10 S
8	14 S	8–12 S	6–10 S	6–10 S	5–8 S	5–8 S
10	-	6–10 S	6–10 S	5–8 S	5–8 S	5–8 S
12	-	6–10 S	5–8 S	5–8 S	4–6 K	4–6 K
15	-	5–8 S	5–8 S	4–6 K	4–6 K	4–6 K
20	-	-	4–6 K	4–6 K	4–6 K	3–4 K
30	-	-	-	3–4 K	3–4 K	3–4 K
50	-	-	-	-	-	3–4 K

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

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

3. **Ovládání stroje / Bedienung der Maschine / Machine control**

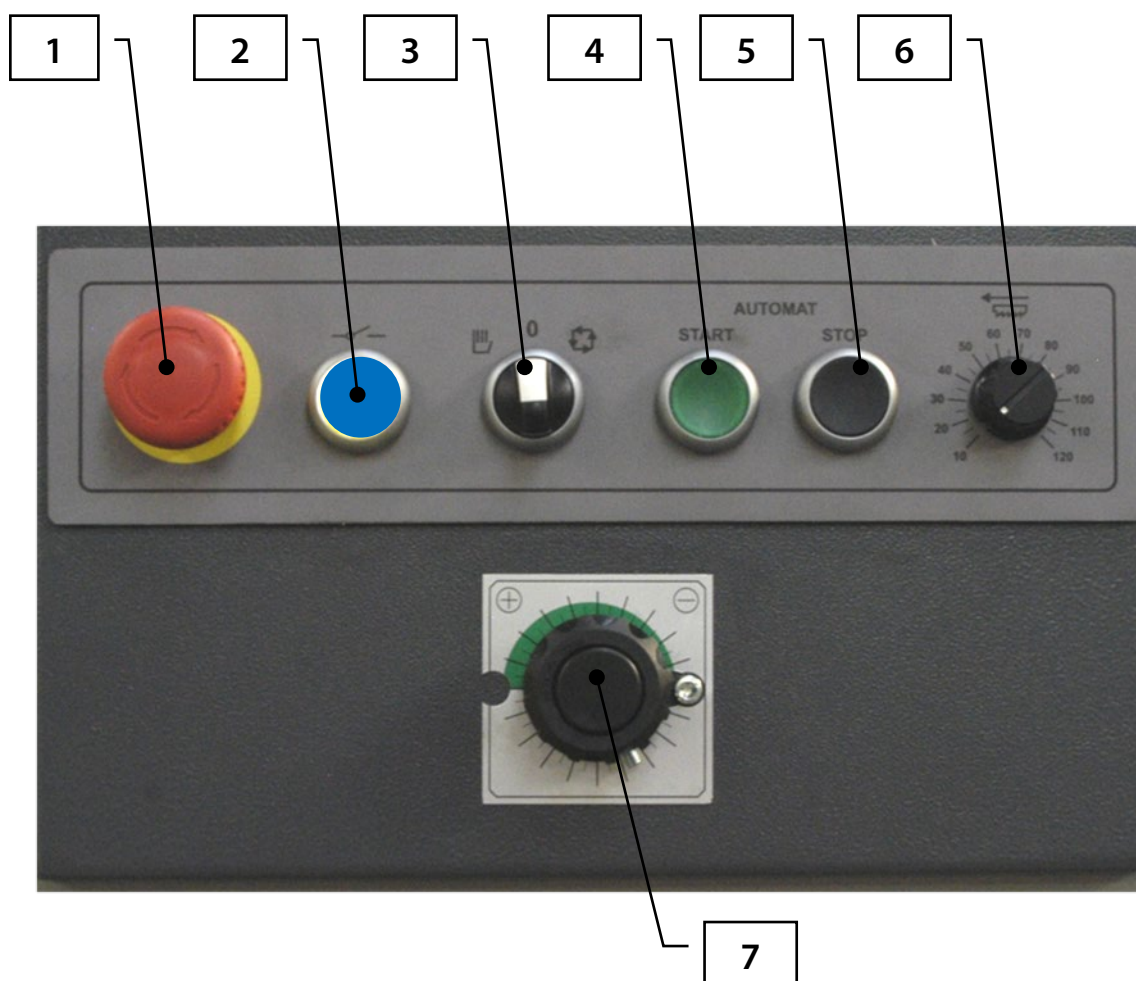
3.1. Control panel



1	Control panel – part 1
2	Control panel – part 2
3	USB Connector (optional accessory)

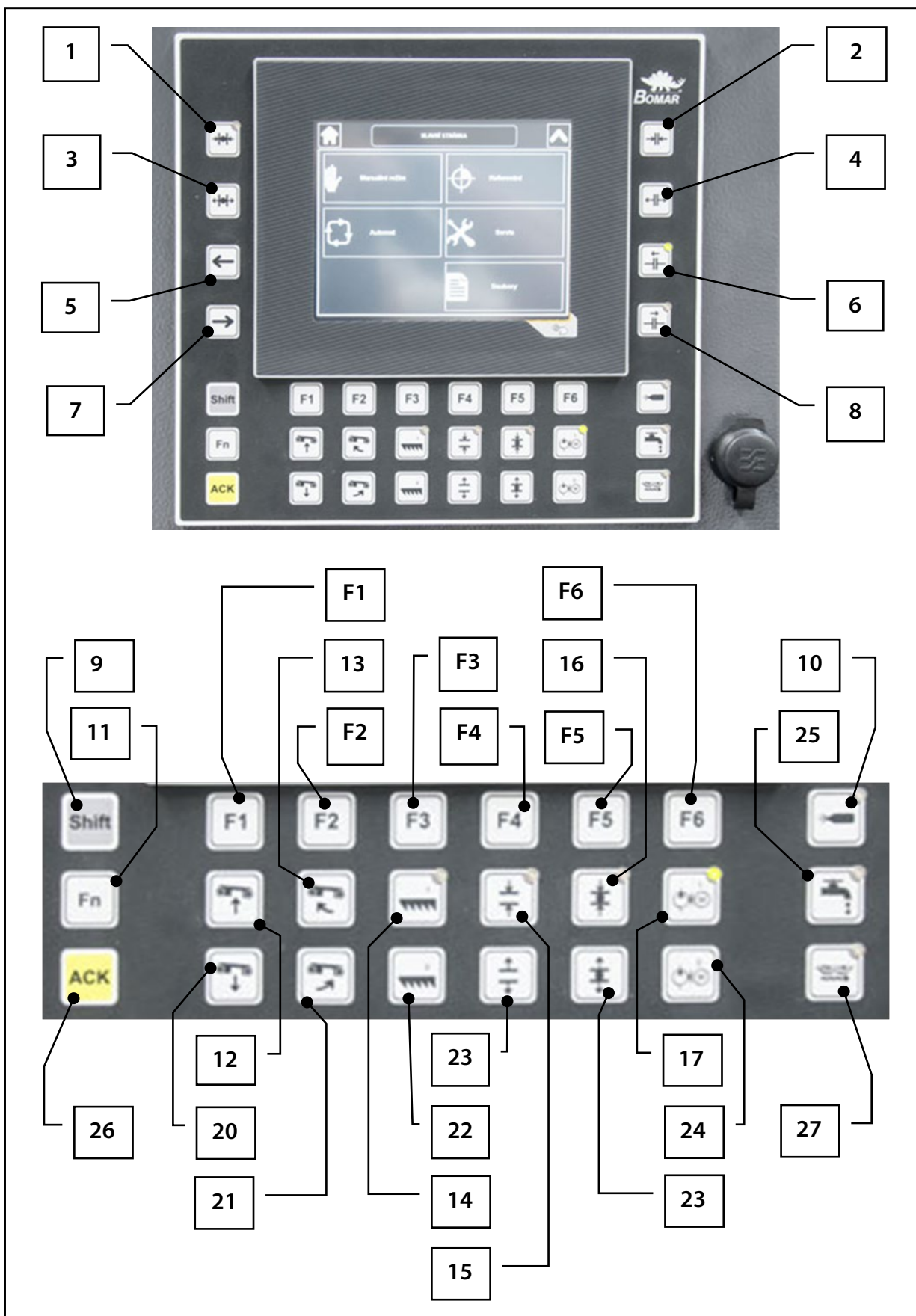
3.1.1. Control panel – part 1

Ovládání stroje
Bedienung der Maschine
Machine control



- 1 **Emergency Stop Switch**
Safety key for emergency shutdown in case of machine failure or a health risk.
- 2 **Power-on the control circuits**
Button switch on the control circuits of control system. Switching control circuit is indicated by signal light up the button.
- 3 **Saw's operating mode**
Switch to the left select manual mode 
switch to the right select automatic mode 
In the middle position "0" can be Machine referenced or performed maintenance tasks.
- 4 **START button**
Starts automatic/semiautomatic cycle.
- 5 **STOP button**
Stops automatic/semiautomatic cycle.
- 6 **Frequency converter, the choice of the speed band saw**
Frequency converter sets the speed of saw band in the range of 20 – 120 m.min⁻¹
- 7 **Governing valve**
Adjust the speed of the arm sinking to the cut by governing valve.
Notice: If you keep closing the throttle valve too tightly, the valve seat may wear off which causes its leakage. Therefore, close the valve always gently.

3.1.2. Control panel –part 2



1		Clamping feeder vice – pushing the button clamps jaws of the feeder vice.
2		Clamping main vice – pushing the button clamps jaws of the main vice
3		Releasing feeder vice – pushing the button releases jaws of the feeder vice
4		Releasing main vice – pushing the button releases jaws of the main vice
5		Feeder leftward For the time the button is pushed the feeder is moving from the saw.
6		Pushing the button moves the vice leftwards Pushing the button moves the vice leftwards During movement, the button need not be kept pushed.. The button function is only active if the machine is not referenced. When this button is pushed together with Shif button – it is possible to control of the ledge for guiding of short pieces.(optional accessory).
7		Feeder rightward For the time the button is pushed the feeder is moving towards the saw.
8		Main vice rightward Pushing the button moves the vice rightwards During movement, the button need not be kept pushed. The button function is only active if the machine is not referenced. If the machine is referenced, the vice is moving fully automatically according to the saw position. When this button is pushed together with Shif button – it is possible to control of the ledge for guiding of short pieces.(optional accessory).
F1 – F6		Soft key The function is assigned according to the current LCD menu
9	Shift	Without function
10		Micronization (optional equipment) Button for saw band cooling on/off by means of micronization.

11		Without function
12		Arm movement Pushing the button moves the arm – 12 for upward movement and 20 for downward movement. To move the arm, the button must be kept pushed.
20		
13		Saw arm rotation Pushing 13 rotates the arm leftwards (negative angles). Pushing 21 rotates the arm rightwards (positive angles).
21		
14		Saw band drive Pushing button 22 switches off the band drive in the manual mode. Pushing 14 switches the saw band drive on.
22		
15		Control of the upper thrust of the bundler (optional equipment) Button 15 for the upper clamping hydraulic cylinder, which is fixed to the main vice and moves with it. Button 23 controls the upper thrust pneumatic cylinder, which holds the cut-off material The bundler is an optional device, not standard equipment of the machine.
23		
16		Without function
17		Hydraulic pump Pushing 17 switches on (or 24 switches off) the hydraulic pump.
24		
25		Belt emulsion cooling By pushing the button, you switch on/off the cooling emulsion pump.
26	ACK	ACK key Quitting – confirmation of faults; if a fault is not confirmed, the machine working cycle cannot be started. Next functions – see chapter Machine referencing – feeder releasing.

27



Chip remover (optional equipment)

Chip remover drive on/off

3.2. Machine control elements

3.2.1. The basic description of the screens of the control software

Pay increased attention when operating the touch panel. Make your selection by slightly touching the display with a bare finger or stylus designed for touch screen control. By no means use sharp objects or other tools!



(Picture for information only)

Meaning of icons on the touch screens:

1 –return to the main screen

2 – icon indicating errors – if this icon is lit on the display , an error has occurred on the machine. By touching the icon, you can hide the error message and activate control screens..

3 –selected menu name

4 –return to the nearest higher screen in the hierarchy

5 –parameter setting window

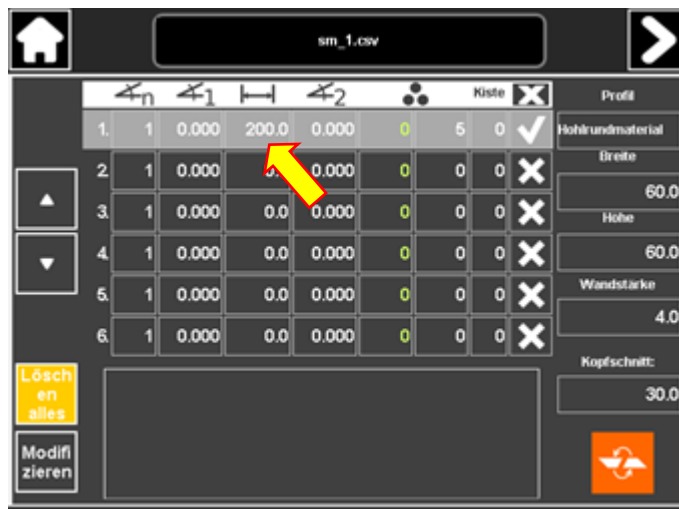
6– browsing between screens at the same hierarchical level (e.g., if parameter control or setting is divided into several screens or if there are more elements controlled or more units to set service parameters)

The individual options on the touch screen can be chosen by **direct touch on the pertinent icon.**

To fill in numeric values or letters, the parameter setting window is used – see, for example, No. 5.

If the window is coloured, it is active for entry of parameters.

Touching of the parameter filling window activates a keyboard which appears on the display.



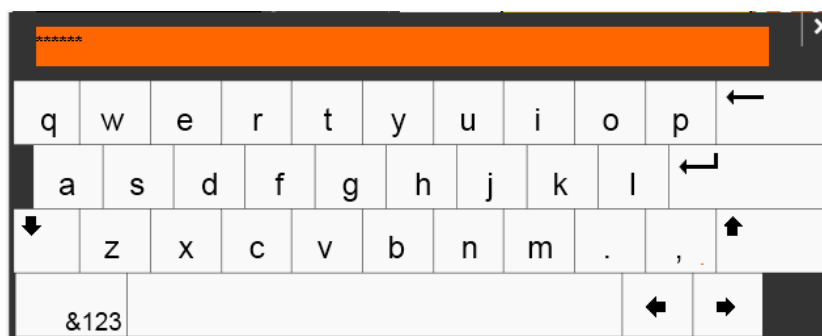
3.2.2. Touch screen keyboard

Keyboard types:

- a) If only numeric values can be entered in the window, (such as in the window for recipe setting), only the **numeric keyboard** appears:



- b) If both figures and text can be entered in the window, the **combined keyboard** appears:



The combined keyboard enables choice whether to display:

- **numeric keyboard – selection 0-9**



- **or a pertinent part of the alphabetic keyboard (A-P or Q-Z)**

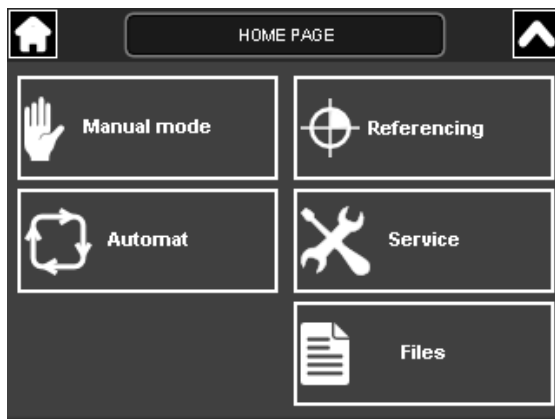


Position	Function
	Keyboard closing without saving the data entered
	Deletion of data entered in the keyboard window
	Keyboard closing with saving the data entered (confirmation of the value entered)
	Shift function (capital letters and upper case)
	Caps Lock Function

3.2.3. Hlavní obrazovka ovládacího software, režimy stroje

It is possible to initialize the main screen using the selection  from any screen of control software.

The main screen of the control software shows the basic menu for selection of working modes, setting modes and machine referencing modes.



Working modes:

- **Manual mode** – used to control the individual machine functions manually
- **Semiautomatic mode** – used to execute one cut according to the given conditions (accessible from the manual mode)
- **Automatic mode** – used to execute the entire cutting cycle automatically according to the recipe entered

Referencing mode:

- **Referencing** – used to reference the machine – that is, after setting the machine in the operating state.

Setting modes:

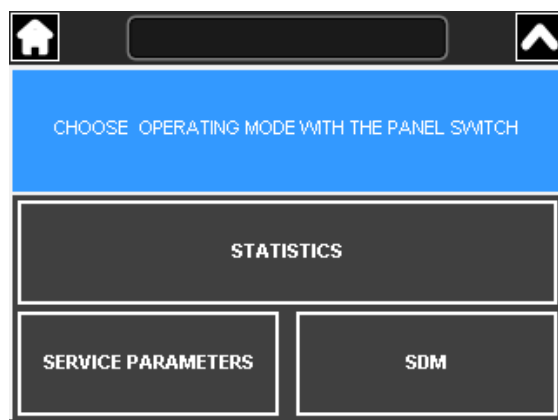
- **Service** – used to set the machine parameters
- **Files** – used to set the recipes for the course of the automatic mode

3.2.4. Auxiliary screen of the control software

The auxiliary screen appears after the machine start-up if the mode selector is in the "0" position.

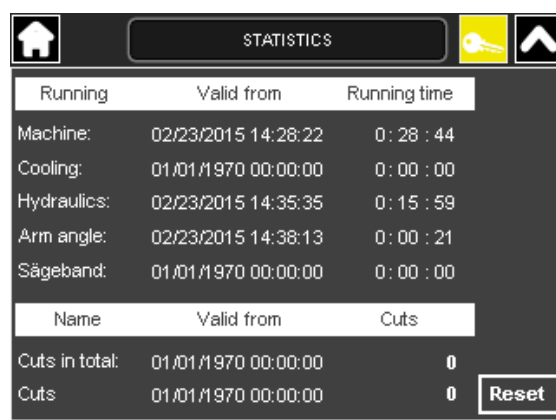
This screen provides access to the machine diagnostics.

This screen also enables opening of the menu screen for setting of service parameters.



Position	Function
CHOOSE OPERATING MODE WITH THE PANEL SWITCH	Instructions for further procedure
STATISTICS	Statistic data of the machine
SERVICE PARAMETERS	Setting and modification of service parameters for the cutting process.
SDM	Management diagnostic system – system of the device diagnostics, used for service only

Statistic data of the machine



Running	Valid from	Running time
Machine:	02/23/2015 14:28:22	0 : 28 : 44
Cooling:	01/01/1970 00:00:00	0 : 00 : 00
Hydraulics:	02/23/2015 14:35:35	0 : 15 : 59
Arm angle:	02/23/2015 14:38:13	0 : 00 : 21
Sägeband:	01/01/1970 00:00:00	0 : 00 : 00
Name	Valid from	Cuts
Cuts in total:	01/01/1970 00:00:00	0
Cuts	01/01/1970 00:00:00	0

Reset

3.3. Complete working cycle of the machine

The complete working cycle of the machine consists of the following steps:

1. Switching on the machine and safety circuits (see chapter "Switching on the machine and safety circuits")
 2. Referencing the machine (see chapter "Machine referencing")
 3. Setting service parameters (see chapter "Setting service parameters")
 4. Adjusting the band saw (see chapter "Adjusting the band saw")
 5. Executing
 - the cut in the semiautomatic mode (see chapter "Semiautomatic mode")
 - or
 - the cutting cycle in the automatic mode (see chapter "Automatic mode" and the "Recipes" chapter)
 6. Executing another cut or cutting cycle, or end of cutting and switching the machine off
- Manual control of the individual machine elements – see chapter "Manual mode".

3.4. Starting the machine and safety circuits

1. Turn the main switch into position 1 –ON.



The main switch is located on the side of the switchboard at the material input side (left side in respect to the control panel).

2. Switch on the Safety circuit of the saw. The safety circuit will run a check on all safety switches..

Switching on of the safety circuit of the saw is signalized with orange light at the button for the safety circuits switching on.



Unless the safety circuits have been activated, no mode of the machine can be started

3.5. Machine referencing

Caution !

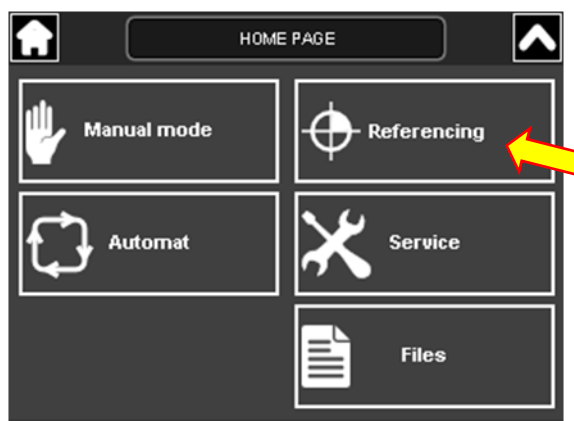
Before starting the referencing, remove all material from the saw and feeder. Do not reference the machine, if there is any material clamped in any of the vices..

If a material is laid on the feeder track, open the feeder vice sufficiently in the manual mode before starting the referencing, so that the material is not caught by it..

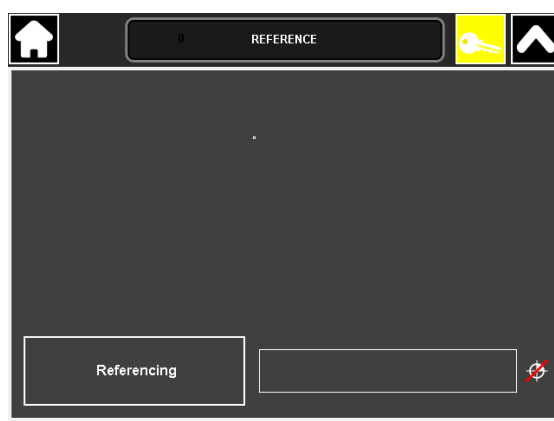
1. Turn the **mode selector** to the manual mode position  or to the automatic mode position. .

Referencing will not be done if the mode selector is in the "0" position!

2. In the main screen of the control menu, choose the **Referencing** option.



3. This screen appears to display the referencing process:



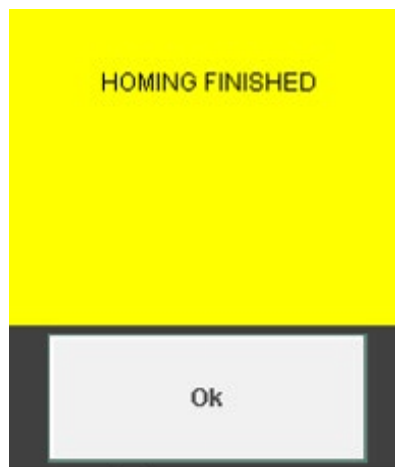
Position	Function
	Start of referencing process.
	Status bar Referencing process course initialization When referencing is completed, the status bar returns to the beginning.
	Referenced
	Not referenced

4. By pushing the **"Referencing"** option, start the referencing process.



Referencing will be executed as a sequence of movements of the individual saw units which will be set from the current positions to their reference ones.

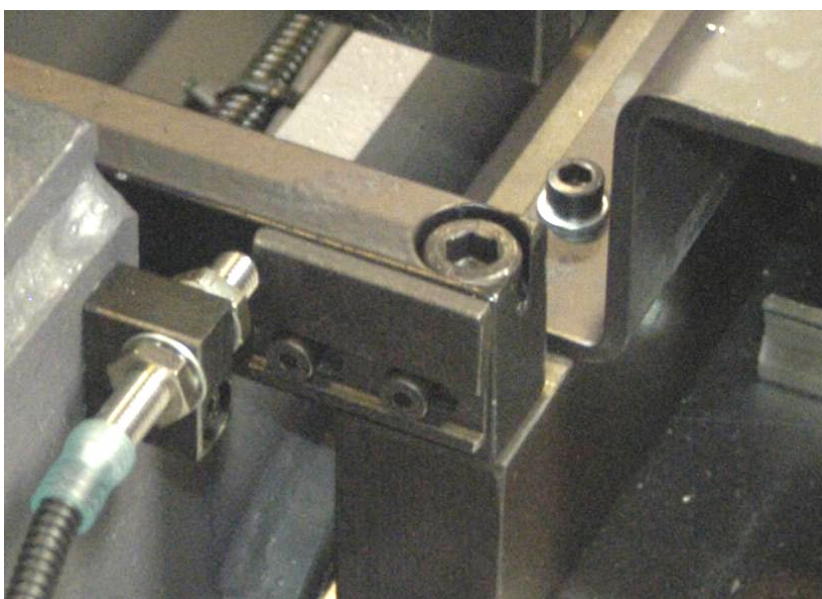
Successful end of referencing is indicated by a notice on the control panel display



If referencing of any unit fails, first check the state of the reference position limit switch and the switching counterpart.

3.5.1. Machine referencing – feeder releasing

The detection position of the switch of the inductive sensor for detection of the feeder limit positions for both limit positions is located on the edge of the stop plate (the sensor counterpart).

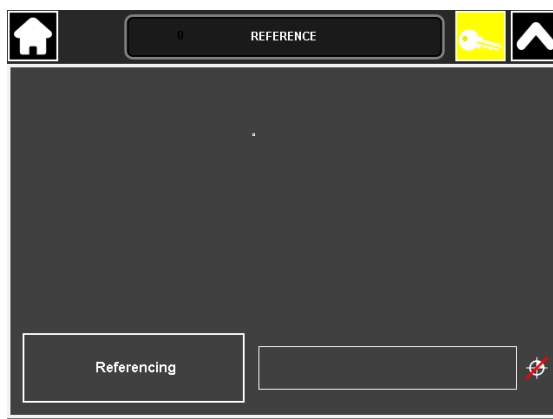


The inertia forces or vibrations may cause the inductive switch sensor to get into an undesirable position above the stop plate area. In this case, the feeder movement is locked.

The feeder, the movement of which has been locked as a result of the above described cause, can be released in the following way:

1. Turn the **mode switch** to the manual mode position .
2. Remove all material from the machine.
3. Raise the arm to the uppermost position.

4. Browse up the **screen showing the referencing process.**



5. Push the ACK button on the machine control panel and hold it for the entire referencing period.
6. Reference the machine.

3.6. Manual mode

3.6.1. Machine control in the manual mode

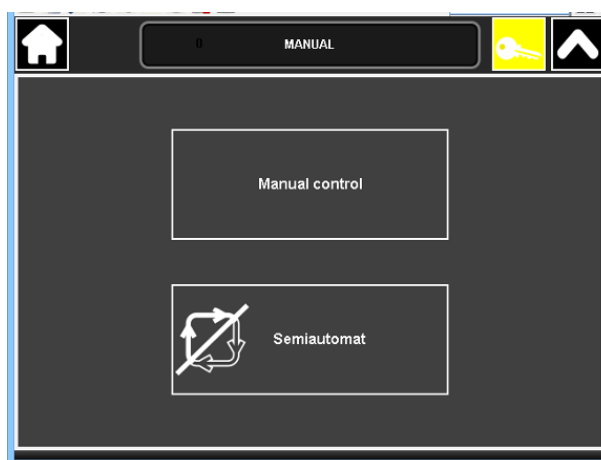
The manual mode is intended for manual control of the individual machine elements.

Caution!
Pay increased attention when moving the material towards the saw, there is the risk of collisions particularly during manual operation!

1. To switch the machine into the manual mode, turn the **mode selector to the manual mode position.** 

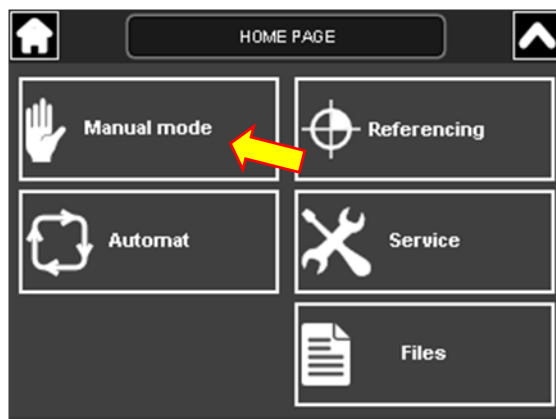
2. A screen with the options appears:

- „Manual control“ – to control the saw functions
- „Semiautomat“ – to control the saw in the semiautomatic mode



Note:

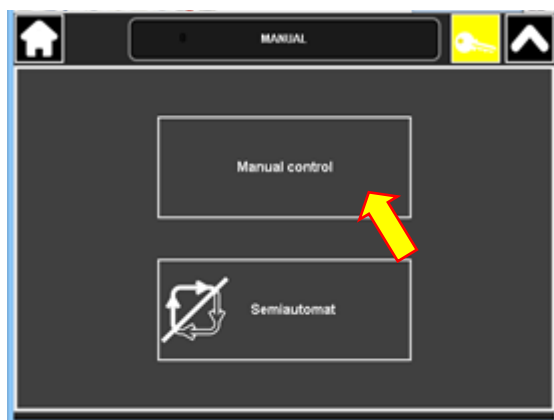
To display this screen, you can also choose the option for manual mode initiation on the main screen of the control software:



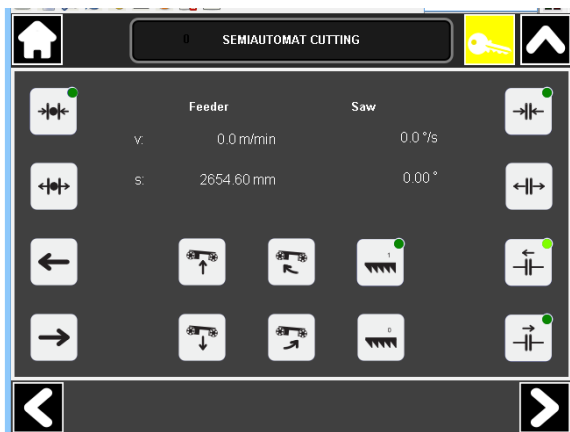
However control elements are not functional if the mode selector is not in the position

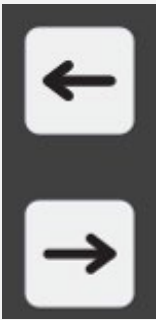
for manual mode  !

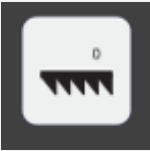
3. To control the machine manually, **choose the „Manual control“ option on this screen**



4. The following screen is used for **manual control of the saw:**



Position	Function
	Open / close the feeder vice Vice clamping is indicated by lighting the green lamp at the icon. 
	Feeder movement from / to the saw
	Main vice open / close Vice clamping is indicated by lighting the green lamp at the icon. 
	Vice table movement Setting of the vice table to the end position is indicated by lighting the green lamp at the pertinent icon.
	Arm upward movement. The button must be pushed continually for the movement time. If the button is released, the movement stops.
	Arm downward movement The button must be pushed continually for the movement time. If the button is released, the movement stops.

Position	Function
	Arm rotation by a positive angle (counter-clockwise round the rotation axis)
	Arm rotation by a negative angle (clockwise round the rotation axis)
	Rotate the saw band Rotation of the saw band is indicated by lighting the green lamp at the icon.
	Stop the band motor
Feeder 0.0 m/min 2654.60 mm	Course of feeder movement – current speed
Feeder 0.0 m/min 2654.60 mm	Course of feeder movement – current position
Saw 0.0 °/s 0.00 °	Course of arm rotation – current speed of arm rotation

Position	Function
	Course of arm rotation – current angle

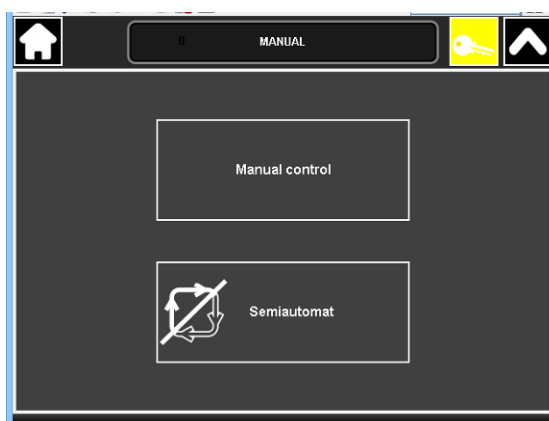
3.7. Semiautomatic mode

3.7.1. Cutting execution in semiautomatic mode

1. In the manual mode, **move the arm all the way up**
2. In the manual mode, **open the saw vice and feeder vice sufficiently** with regard to the width of the material loaded.
3. To switch the machine to the semiautomatic mode, turn the mode selector to the manual mode position. 

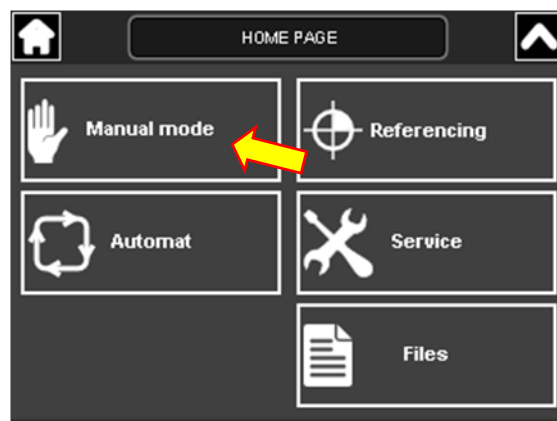
4. **This screen with the options appears:**

- „Manual control“ – to control the saw functions
- „Semiautomat“ – to control the saw in the semiautomatic mode



Note:

To display this screen, you can also choose the option for manual mode initiation on the main screen of the control software:



However control elements are not functional if the mode selector is not in the position

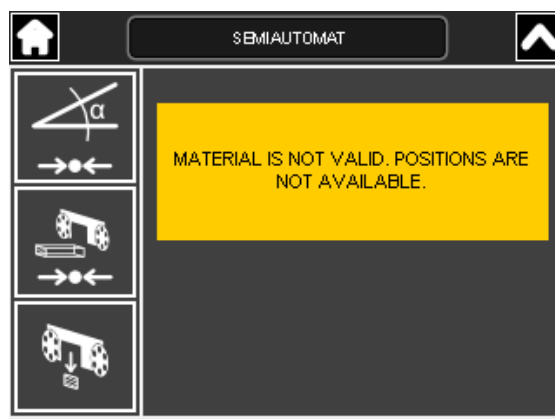
for manual mode  !

5. To initiate the semiautomatic mode, choose the “Semiautomat” option in this screen



6. The screen appears for control of the machine in the semiautomatic mode, in one of the following variants, a) or b):

- a) Invalid material

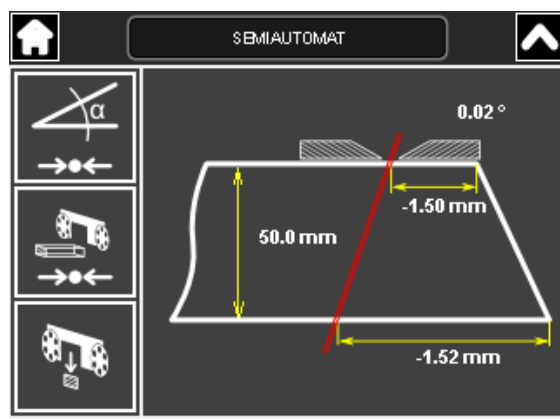


Position

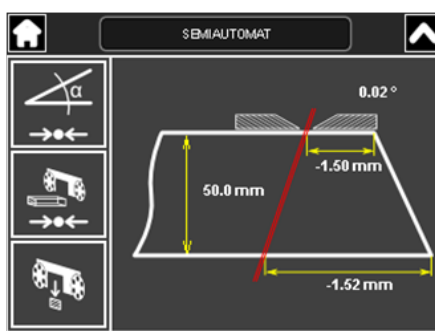
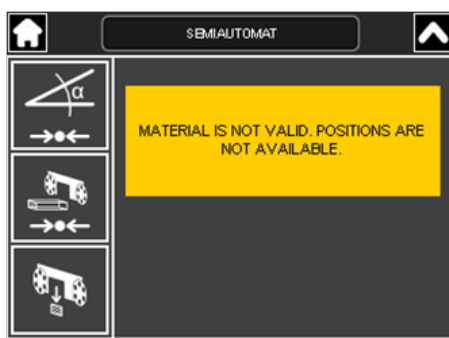
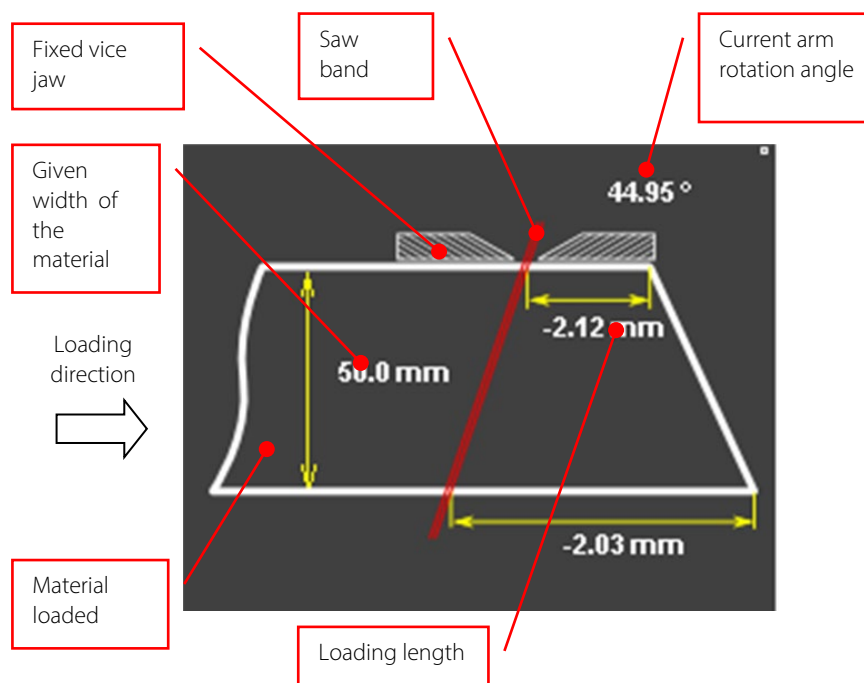
Function

Position	Function
	Information that the machine has no information on the material face position: Without a valid material, the semiautomatic mode enables: - entry of parameters - rotation of the arm by the given angle - cutting of material without a length entered To load the given material length in the semiautomatic mode, the material must be valid. Before loading the required material length, cut the material in!

b) valid material



If the material is valid, a sketch of the current state is shown in the box on the right side of the screen



Position	Function
	Option for setting the arm rotation angle
	Option for length loading
	Semiautomatic cut setting

Options in the left screen column – options for setting the arm rotation angle, length loading and initiation of the screen for cutting start – they are only accessible if the mode selector is in the manual mode position

7. Turn the arm to the required angle.

Arm swivel to the required angle in semiautomatic mode, see chapter "Semiautomatic arm swivel".

8. Insert material

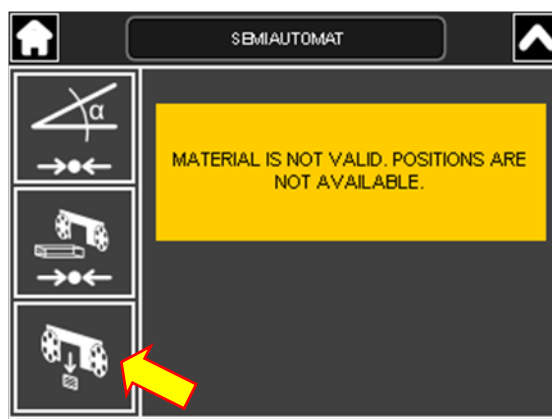
The material can be loaded

- with a manually controlled feeder – to the estimated length.
After loading, the material must be clamped in the main vice by means of the manual control
- with an automatically controlled feeder to the given length – see chapter "Loading the required material length in the semiautomatic mode"

9. Set the material width and cooling method.

The material width and cooling method can be set in the semiautomatic-setting screen which appears:

- after you choose the option for setting the semiautomatic cut in the screen for the machine control in the semiautomatic mode



- or automatically, after turning the arm to the required angle in the semiautomatic mode

Screen for setting the semiautomatic cut



Position	Function
Set cutting speeds	
Band speed	Set band speed
Arm speed *	Set speed of the arm descent to cut
Pressure to cut *	Set thrust to cut
Cooling	
	Cooling method You can choose the cooling methods by repeatedly pushing.  - liquid cooling  - Micronizer cooling *  - without cooling
Arm	
	Selection of arm position after cut Pushing repeatedly, you can choose between the arm positions after cut  - After cutting, the arm remains at the bottom and the band drive is switched off  - After cutting, the arm moves up and the band drive is switched off

Position	Function
Material	
Width	Enter the real width of the material cut with the accuracy of the given decimal positions. Attention! Accuracy of the given material width has an effect on the cut length accuracy!

* The option is only functional for a machine with the given equipment

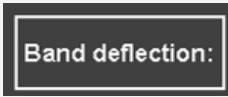
10. Setting of the arm starting position above the material to start cutting

As standard, the machine is equipped with a device for detection of the arm position above the material. In the automatic mode, the arm runs up above the material to the height given by the equipment setting (for details, see the chapter Equipment for detection of the arm position above the material).

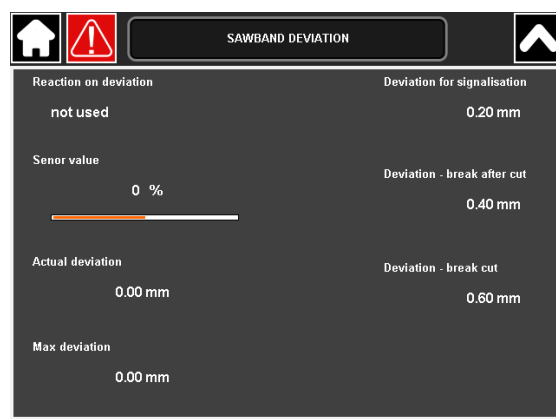
11. By means of the potentiometer on the saw control panel, **set the required cutting speed**
12. By means of the valve on the saw control panel, **set the speed of the arm descent to cut**
13. By pushing the **START** button on the control panel, **start cutting**.
14. **After pushing START:**
 - a) If the vice is a wrong position with regard to the set arm rotation speed, it moves to the correct position automatically.
 - b) If a material is clamped in the vice, it will automatically be released before the vice is moved, and then clamped again.
 - c) The saw band starts up and the arm starts feeding to cut.
 - d) While the arm is descending to cut or even during cutting, you can adjust the saw band speed and speed of arm descent to cut by means of the control elements on the machine control panel.
 - e) On the control panel display, a screen appears with information on the cutting process.

Screen with information on the semiautomatic cut process



Position	Function
Cutting parameters	
Set	
Band speed	Set band speed*
Current	
Band speed	Current band speed*
Arm speed	Current speed of the arm descent to cut*
	Option for viewing the parameters of the band deviation The belt deviation monitoring device is optional equipment. If the device is not installed on the machine or not functional, the option for display of belt deviation parameters does not appear. After you push the "Band deflection" option in the screen showing the automatic cycle process, a screen with viewing the parameters of the band deviation appears. Setting of the parameters of the device for measurement of the saw band deviation – see Service parameters

Screen with viewing the parameters of the band deviation



If the indication value is exceeded and an option of the machine response to the band deviation is chosen, except for "Not used"

- a) Exceeding of the admissible value is indicated by the beacon flashing; the machine responds according to the option chosen

On the screen showing the band deviation parameters, a button appears to reset the



- b) Having removed the cause which has led to exceeding of the admissible deviation limit, the operator resets the measured deviation with the reset button displayed

The deviation is deleted and the beacon stops flashing

Resetting interrupts deviation measurement until the cut is completed. When the next cut is started, deviation measurement is renewed.

15. After **cutting in the semiautomatic mode is completed:**

- The arm automatically returns to the position from which the cut was started or remains in the cut – according to the choice made in the screen for setting the semiautomatic mode; band movement stops
- Completion of cutting in the semiautomatic mode is indicated by a message on the control panel display that the cut has been completed.

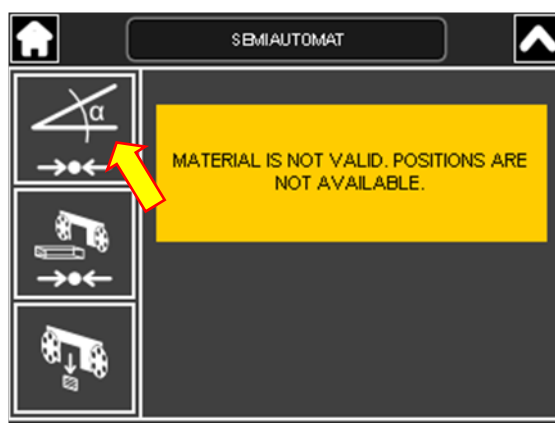
16. **Remove the cut-off.** Now you can repeat the entire procedure.

3.7.2. Semiautomatic arm swivel

In the semiautomatic mode, you can swivel the arm by the given angle.

In the semiautomatic cycle, the main vice will also be moved automatically with the arm rotation.

1. Choose the option for setting the arm rotation angle.



The arm can be rotated even if the machine reports an invalid material.

The arm cannot be swivelled, unless the machine is referenced.

2. The screen appears for setting the arm rotation angle and the START button starts flashing.



Position	Function
	The field for insertion of requested arm rotation angle.
	Instructions for further procedure
	Actual angle of the armrotation

3. In the parameter entry window in the screen for setting the arm rotation angle, enter the required arm rotation angle.
4. Push the **START** button
5. After you push the **START** button:
 - the saw arm is automatically adjusted to the desired position
 - the main vice automatically moves to the position according to the angle set.

Attention!

The main vice is moved automatically only if no material is clamped in the vice during automatic setting of the arm angle!

6. When the automatic arm angle setting is completed, the screen for cut start appears on the display automatically (see below)

3.7.3. Loading the required material length in the semiautomatic mode

The required material length cannot be loaded, unless the machine is referenced.

Attention!

Size of burr and unevenness of the material face has an effect on the precision of the length loaded by the feeder!

Attention!

To load the given length, the material must be valid – that is, the machine should have information on the material beginning position!

Information on the material beginning position is kept even if the semiautomatic cycle follows on the automatic cycle and the material has remained clamped in at least one of the vices.

1. If the machine reports invalid material before starting to load material to the required length in the semiautomatic mode:



- **Make trim cut of the material**

To make trim cut before loading of the length in the semiautomatic mode, proceed as follows:

- a) load the material under the saw band manually
- b) start the cut in the semiautomatic mo

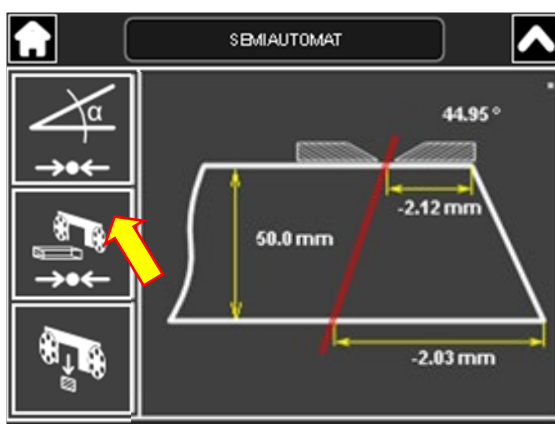
Attention!

To keep the information on the material position, the material must remain clamped in the feeder vice after the cut-in!

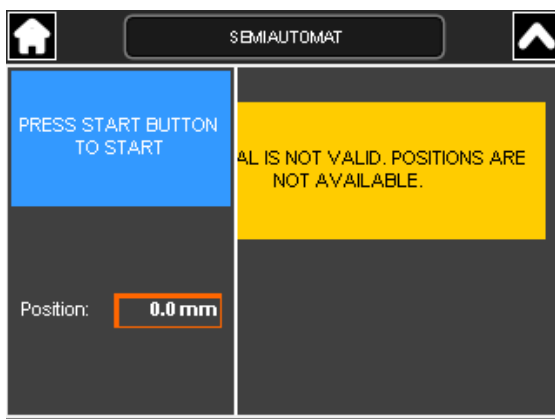
Attention!

After the cut-in, open the main vice manually so that the feeder can handle the material in order to load the length!

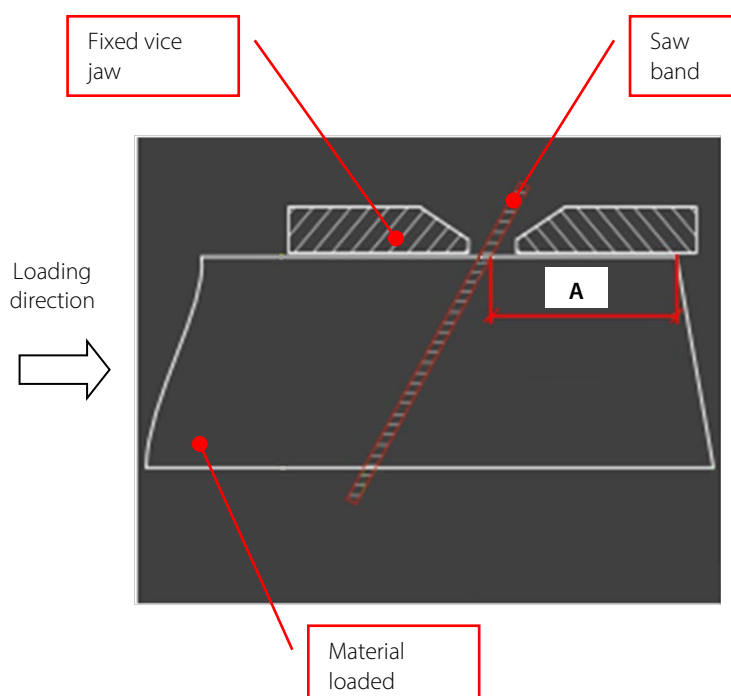
2. If the material is valid, choose the option for length loading and the START button starts flashing.



3. The screen appears for entry of the required material length to be loaded



Position	Function
	Window for entry of the required length to be loaded. The length will be measured from the inlet end of the material to the outlet edge of the band – see Fig. 1 - dimension A.
	Instructions for further procedure



Picture no.1

4. Enter the required length in the window for setting parameters on the screen for entry of the desired length to be loaded.
5. Push the **START** button to start loading of the material.

Caution!

Before the loading starts, the main vice must be opened sufficiently so that the material loaded does not collide with the vice jaw!

Caution!

Upper clamping can only be used at zero turning of the arm.

6. After the Start button is pushed to start loading of the material :
 - the feeder clamps the material in the position in which it is currently and loads it to the desired length
 - After loading, the material is automatically clamped by the main vice

3.7.4. Semiautomatic sequence interruption

3.7.4.1. With the STOP button

1 push - interruption of the executed sequence of the „pause“ type

This interruption is only possible if the cut has not been started.

After the Start button is pushed, the interrupted sequence (material loading to the given length, arm rotation to the given angle) is resumed from the interruption place.

2 pushes – complete stop and finish of the sequence or cut executed

If cutting was started in the semiautomatic mode, the machine does not respond to 1 push; only after the 2nd push of the STOP button, the cut is stopped.

Double-push of the STOP button can also be used to finish another sequence started in the semiautomatic mode.

The interrupted sequence cannot be resumed; it must be restarted from the beginning.

3.7.4.2. With the Emergency Stop Switch

In emergency cases, push the **Emergency Stop Switch** button on the control panel.

1 push - interruption of safety circuits

- complete stop and finish of the sequence executed

The interrupted sequence cannot be resumed; the safety circuits must be switched on again and the interrupted sequence restarted from the beginning.

3.7.4.3. Interruption of safety circuits

The interrupted sequence cannot be resumed; you must restart the safety circuits and start the interrupted sequence again from the beginning.

3.8. Automatic mode

In the automatic mode on this machine:

- **cutting** is executed in **automatic cycles**;
- **cutting of required lengths of final pieces is controlled by predefined plans – called “recipes”.**

Recipes are software plans controlling the cutting procedure for final pieces of various lengths in the automatic cycle;

- **necessary intervention of operators within one automatic cycle are only limited to material handling** – that is, loading semi-products and handling cut-up and residual pieces.

One automatic cycle is controlled by one recipe and used for cutting of final pieces from one or more bar semi-products or one or more bundles of bar semi-products.

All semi-products loaded to be cut within one automatic cycle:

- **must have identical section parameters**;
- **can have identical or different length parameters.**

This machine enables execution of the automatic cycle of two types:

1. **“PIECES” type automatic cycle (“Pieces” automat)**

In the “Pieces” type automatic cycle, final pieces are cut in continuous sequence by the recipe, **as long as further required length can be loaded.**

If the material is too short so that the next required length cannot be loaded any more, loading of another semi-product is required.

2. **“RODS” type automatic cycle (“Rods” automat)**

In the “RODS” type automatic cycle, final pieces are cut in batches precisely defined by the recipe, being specified in the recipe for every individual semi-product piece. By the customer's requirements, batches of final pieces can be specified either individually for one semi-product piece or by means of a uniform specification common to the entire batch of semi-products.

Another semi-product must be loaded:

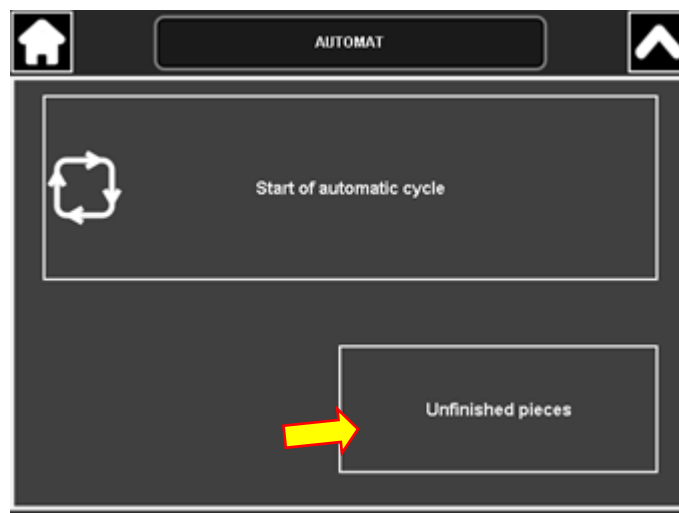
- either after cutting up the batch of final pieces specified for the given semi-product piece – if a semi-product is loaded in a defined length which must be sufficient to cut up all of the pieces specified;
- or after another required length cannot be loaded – if a semi-product is loaded in a length not sufficient for cutting of all specified pieces.

Cutting in the RODS type automatic cycle enables a residual piece of a predefined minimum length to be preserved from every standard length bar so that this residual piece can be utilized for further processing.

Note:

If a semi-product of insufficient length for cutting of all specified pieces is inserted in the "BARS" type automatic cycle, insertion of another semi-product is required as soon as the material length is not enough for cutting the next specified piece - similarly to the "PIECES" automatic cycle.

However, uncut pieces from the short semi-product will not be cut from the next semi-product; they will just be registered in the table of unfinished pieces.



Another semi-product loaded within the same automatic cycle will be cut precisely according to the pertinent batch of final pieces specified, regardless of whether or not all pieces of the previous semi-product have been cut up according to its recipe.

The automatic cycle executed on this machine can be controlled:

- **by means of a recipe created on this machine directly** – that is, by the software included in this machine.

The software included in this machine enables creation of recipes:

- for the **"PIECES"** type automatic cycle
- for the **"RODS"** type automatic cycle
- **by means of an imported recipe created on a computer by the Saw Manager software** (software for creation of recipes with optimized use of material, supplied by Bomar spol.s.r.o.)

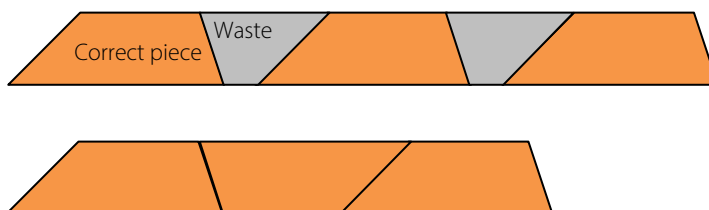
From the Saw Manager software, recipes are imported:

- for the **"RODS"** type automatic cycle

Cooperation between the machine and Saw Manager software is subject to purchase of a Saw Manager software license. For information on purchase of the licensed software, please contact the sales department of the Bomar spol.s.r.o. company.

3.8.1. Angle cuts optimization

If the material section is symmetric, it is suitable to choose the cutting variant with minimum remnant. If pieces with different angles are cut, the angle sequence will alternately rotate so that there is no waste between the pieces. This variant cannot be used if the cut material section is not symmetric (e.g., L-angle section).



Attention!

During optimization, the shape will not be turned in a way which would prevent its cutting (for example, due to violation of the conditions of safe clamping, etc.)!

For setting of conditions and selection of cut optimization, see the "Recipes" chapter.

3.8.2. Automatic cycle preparation and execution

Caution!

Short pieces which the feeder cannot feed to the main vice cannot be cut in the automatic mode!
Imminent risk of collisions!

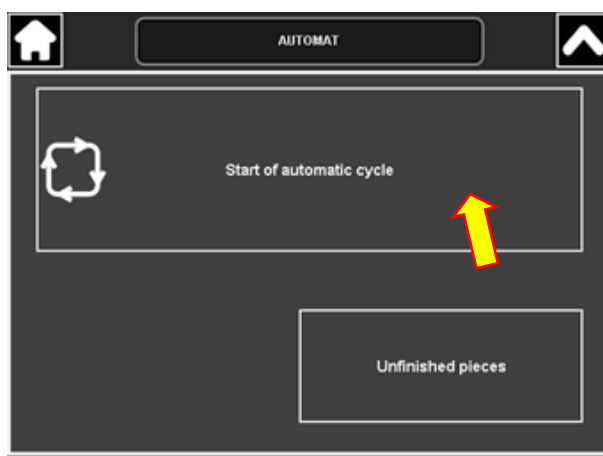
Caution!

Size of burr and unevenness of the material face has an effect on the precision of the length loaded by the feeder!

1. Turn the mode selector to the automatic mode position .

A screen appears for entry into the automatic cycle settings.

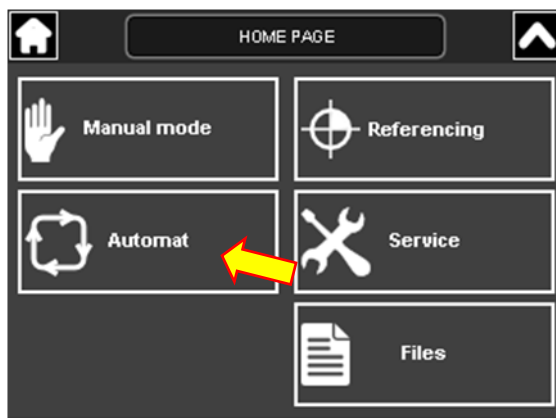
Select the "Start of automatic cycle" option at this screen:



Position	Function
Undefined pieces	See the "Undefined pieces" chapter.

Note:

To display this screen, you can also choose the option for automatic mode initiation on the main screen of the control software.

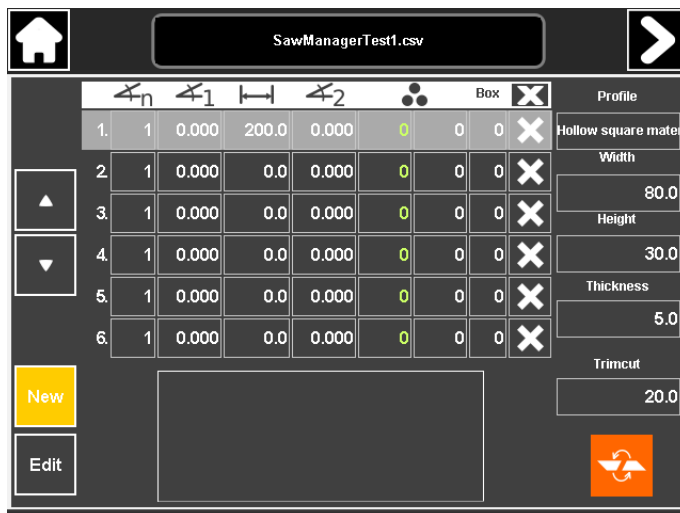


However control elements are not functional if the mode selector is not in the position

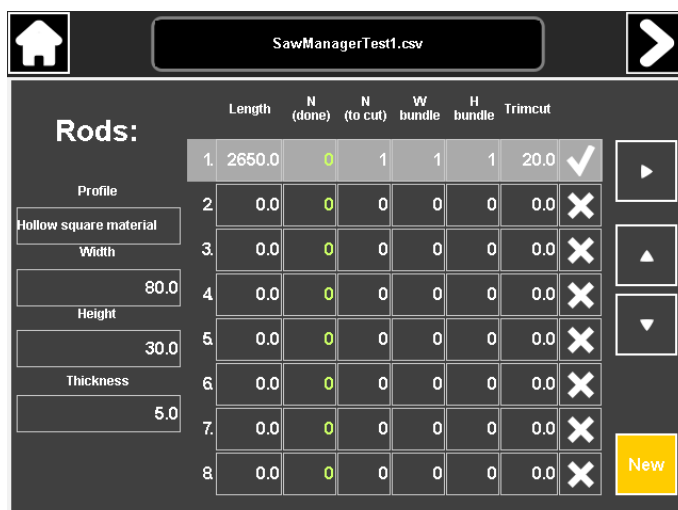
for **automatic mode** .

2. After you push the option for entry in the automatic cycle settings, the first screen of the currently loaded recipe appears in one of the following forms:

Recipe screen for the "PIECES" type automatic cycle (PIECES automat)



Recipe screen for the "RODS" type automatic cycle (RODS automat)



	Length	N (done)	N (to cut)	W bundle	H bundle	Trimcut	
1.	2650.0	0	1	1	1	20.0	✓
2.	0.0	0	0	0	0	0.0	✗
3.	0.0	0	0	0	0	0.0	✗
4.	0.0	0	0	0	0	0.0	✗
5.	0.0	0	0	0	0	0.0	✗
6.	0.0	0	0	0	0	0.0	✗
7.	0.0	0	0	0	0	0.0	✗
8.	0.0	0	0	0	0	0.0	✗

The recipe displayed in this step, which is the currently loaded recipe, will control the automatic cycle which is set up by this procedure and which will be started by means of the START button.

In this step you can:

- load another current recipe
- modify the current recipe without saving

For further work with recipes, see the "Recipes" chapter..

3. Po nastavení potřebné receptury přejděte pomocí volby pro listování mezi

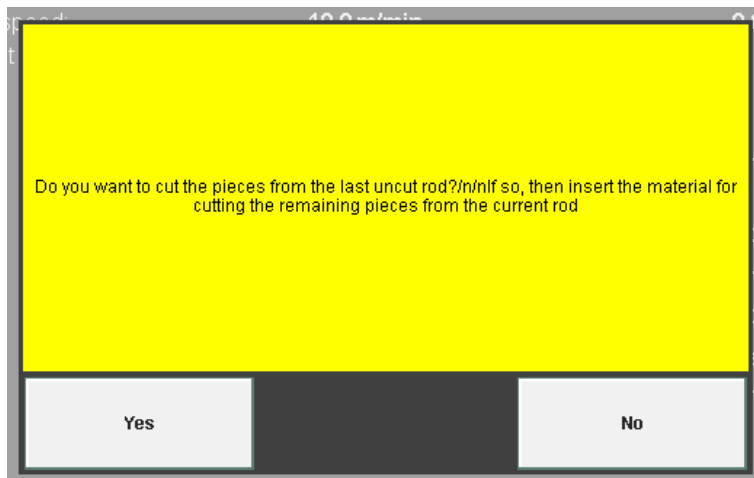
obrazovkami  na další obrazovku:

- a) **If the previous automatic cycle has not been completed, a screen with options to continue in the unfinished automatic cycle** appears first in this step

On this screen, the operator can choose whether to continue with the unfinished automatic cycle or start up another automatic cycle.



If the automatic cycle was interrupted at a moment when the entire semi-product was not yet cut up, after you choose "YES", another screen appears on the screen with options to continue in the unfinished automatic cycle, with the inquiry **whether the operator wants to continue cutting the semi-product in progress:**

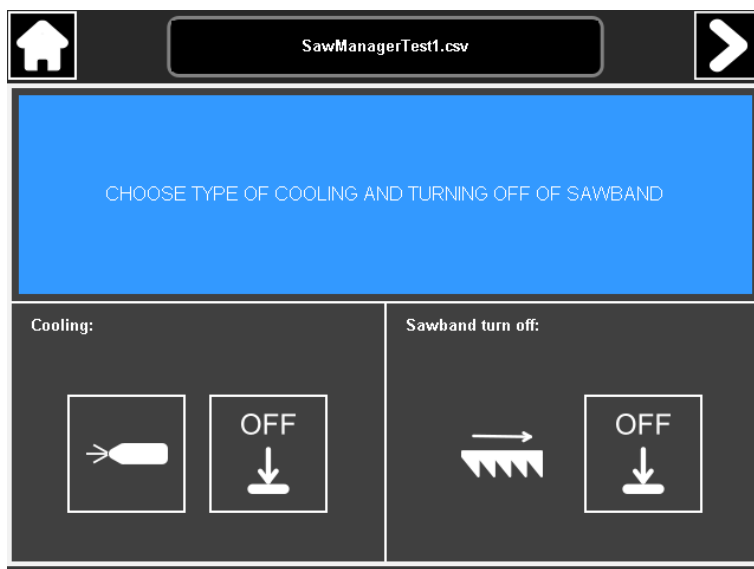


Caution!

The operator must consider the option on this screen, particularly if the BARS type automatic cycle was interrupted! If the operator leaves the unfinished semi-product in the machine and resumes the BARS type automatic cycle, the unfinished semi-product will be cut as a new piece and can be deteriorated unwillingly.

For details on the individual "YES" and "NO" options, see also the chapter on completion and interruption of the automatic cycle.

- b) If the previous automatic cycle has been completed properly or one of the Yes/No options pushed on the screen with options for automatic cycle interruption, a screen appears for selection of cooling and switching off the band



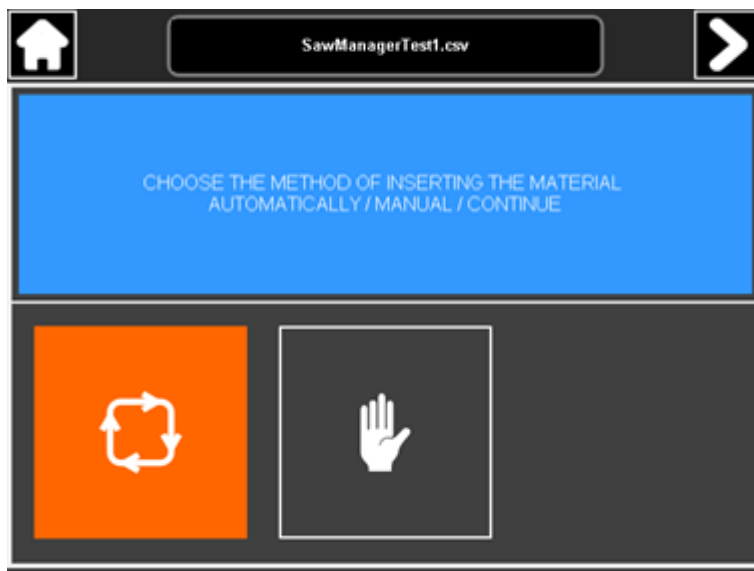
Position	Function
  	Cooling method You can choose the cooling methods by repeatedly pushing.  - liquid cooling  - Micronizer cooling *  - without cooling
	Selection of the cooling switch-off method By repeated touch, you can choose the methods of cooling switch-off.  - switch-off if the arm is down  - switch-off if the arm is up
	State display  - band running  - band off
	Selection of the saw band switch-off method By repeated touch, you can choose the methods saw band switch-off.  - switch-off if the arm is down  - switch-off if the arm is up

* The option is only functional for a machine with the given equipment

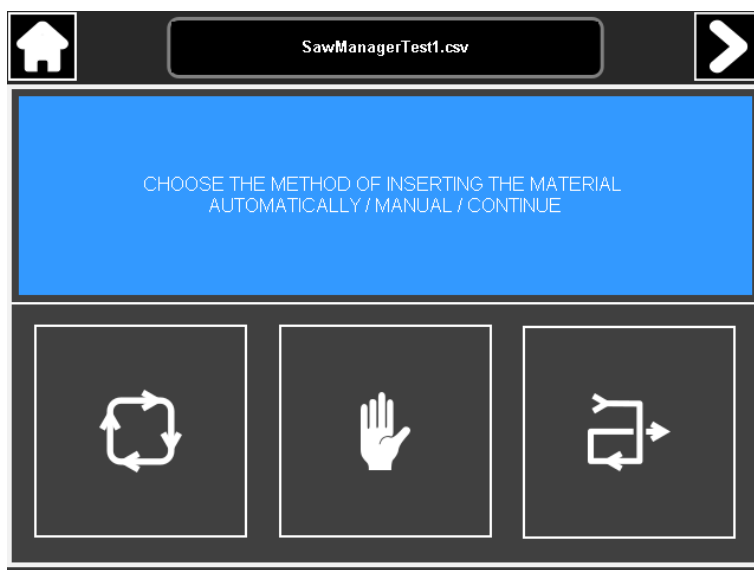
4. By means of the browsing option  move from the screen for selection of cooling and switching off the band to the screen for **selection of the method of material loading into the saw.**

The screen may appear in one of two variants:

a) **Invalid material**



b) **Valid material**



Choose the pertinent option by touching the icon.

The selected icon will be colour highlighted.

Choose the material loading method on the displayed screen for selection of the method of material loading into the saw.

Position	Funktion
	Automatic material loading - the material will be loaded to the feeder either manually by the operator or by means of an external loading system. - the feeder will load the material to the saw vice. The cut-in length is set automatically according to the value preset in the recipe.
	Manual loading of material - the material will be loaded manually by the operator to the saw vice The cut-in length is preset manually by the operator, with precision corresponding to estimate or measurement precision of the operator. Optimally, the cut-in length corresponds to the value entered in the recipe. Otherwise there is a risk that the material may not be sufficient for cutting of all anticipated pieces.
	Familiar material is loaded in the saw This option only appears if the machine software has information on the material face position; that is, if the material remained clamped in at least one saw vice after the previous cut (familiar material). If this option is selected, automatic cut-in of the material is not carried out (even if specified in the recipe).

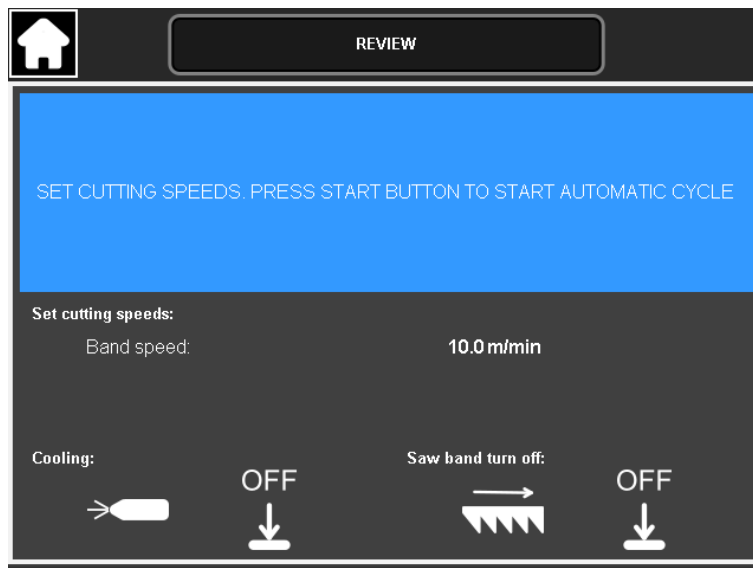
5. After setting all parameters, shift to the screen for the **automatic cycle start**.

The screen for the automatic cycle start can be found by means of the browsing option



from the screen for entry of the cut-in parameters.

The screen for start of automatic cycle



Position	Function
	Instructions for further procedure
	Entered parameters display

When this screen appears, the **START** button starts flashing.

6. By means of the potentiometer on the saw control panel, **set the required cutting speed**.
7. By means of the valve on the control panel, **set the arm sinking speed to cut**.
8. **Push the START button**.

9. Material loading

The following activities of the operator and machine during material loading depend on:

- the currently chosen method of material loading and
- whether the saw is equipped with an external device for material loading.



Familiar material is loaded in the saw

If the "Familiar material is loaded in the saw" option is selected:

- **if a familiar material has remained clamped in the saw vice, cutting will start immediately after the first push of the START button (see previous step);**
- **if a familiar material has remained clamped in the feeder vice, after the first push of the START button (see previous step),** the feeder loads the first required length of the final piece in the given circumstances, the saw vice clamps the material and cutting will start.

Under the circumstances, the cut:

- starts a new automatic cycle,
- starts continuation of the interrupted automatic cycle.

Caution!

If this option is selected, automatic cut-in of material is not carried out (even if preset in the recipe).

If you need to cut in the face of the valid material:

- switch the machine to the semiautomatic mode,
- clamp the material in the feeder vice,
- then release the material from the main vice,
- perform semiautomatic loading of material to the given cut-in length,
- execute semiautomatic cut.

If this procedure is observed, the machine will not lose information on cut and uncut pieces.



Manual loading of material without an external loading device

If manual loading of material is selected:

- After the first push of the START button (see previous step), a prompt appears for material insertion in the saw vice.**

INSERT MATERIAL IN THE SAW CONFIRM BY PUSHING THE START BUTTON			
Material:			
Width:	80	Bundle width:	1
Height:	80	Bundle height:	1
		Trimcut:	20.0

- b) The operator loads the material to the saw vice manually and pushes the START button again.
- c) **After the second push of the START** button, the saw vice clamps the material and cut is started.

Under the circumstances, this cut:

- starts a new automatic cycle,
- starts continuation of the interrupted automatic cycle.



Manual loading of material with an external loading device

If the saw is equipped with an external loading device, it is only possible to load manually: the first piece before start of the new automatic cycle.

The first piece is loaded in the same way as described in the previous paragraph.

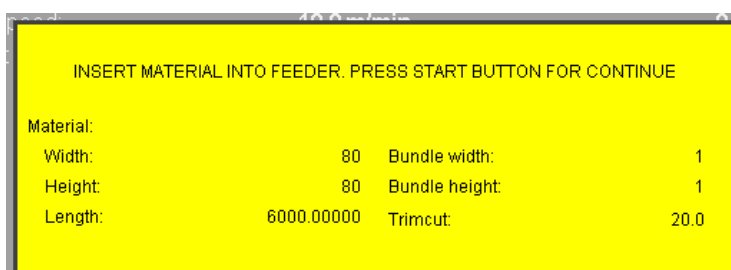
All the other semi-product pieces in the given cycle will be loaded automatically.



Automatic loading of material without an external loading device

If automatic loading of material is selected and the saw IS NOT equipped with an external device for automatic loading of material:

- a) **The feeder moves to the position for material loading** after the first push of the START button (see the previous step).
- b) A prompt appears to load material in the feeder vice.



- c) The operator loads material in the feeder vice manually and pushes the START button again.
- d) **After the second push of the START button** the feeder locates the material face, then clamps and loads the material under the saw band to the given length.
- d) The saw vice clamps the material, cut is started.

Under the circumstances, this cut:

- starts a new automatic cycle,
- starts continuation of the interrupted automatic cycle.



Automatic loading of material with an external loading device

If automatic loading of material is selected and the saw IS equipped with an external device for automatic loading of material:

- a) The feeder moves to the position for material loading **after the push of the START button (see the previous step).**
- b) The external device for material loading loads the material to the saw feeder.
- c) When the material is detected by the feeder laser, the feeder locates the material face, then clamps the material and loads the material under the saw band to the given length.
- d) The saw vice clamps the material, cut is started.

Under the circumstances, this cut:

- starts a new automatic cycle,
- starts continuation of the interrupted automatic cycle.

Note:

Setting of the arm starting position above the material to start the cut.

To reduce the time necessary for cutting the given semi-product section, it is suitable if the arm is set at the optimum starting position (height) before cutting. The optimum starting position of the arm depends on the section height of the semi-product loaded.

As standard, the machine is equipped with a device for detection of the arm position above the material. In the automatic mode, the arm runs up above the material to the height given by the equipment setting (for details, see chapter Equipment for detection of the arm position above the material)

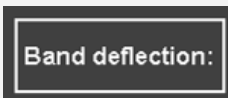
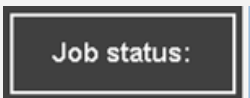
10. After starting a new automatic cycle or resuming the interrupted automatic cycle, a screen appears, showing the course of the automatic cycle

AUTOMAT RUNNING			
Band speed:	10.0 m/min		0.0 m/min
Current angle:			-45.00°
		Band deflection:	
		Material:	
		Job status:	
		Unfinished pieces:	
Box:	0		
Cut:	0 : 0 : 0		-1.0%
Piece:	0 : 0 : 0		-1.0%
Automat:	0 : 8 : 55		0.0%

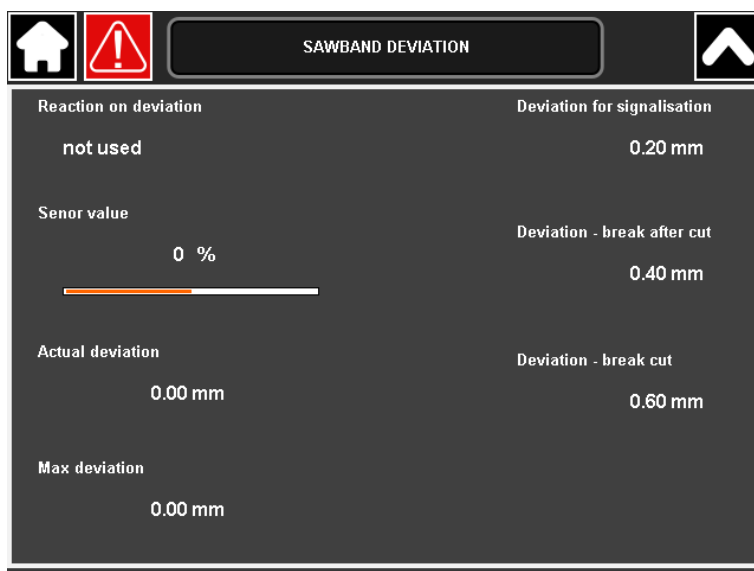
The set parameter values are displayed in the left-hand column at the top of the screen; current parameter values are in the right-hand column.

Information on the course of cutting is at the bottom of the screen.

The right bottom part of the screen contains the following options:

Position	Function
	Option for viewing the parameters of the band deviation The belt deviation monitoring device is optional equipment. If the device is not installed on the machine or not functional, the option for display of belt deviation parameters does not appear. After you push the "Band deflection" option in the screen showing the automatic cycle process, a screen with viewing the parameters of the band deviation appears. Setting of the parameters of the device for measurement of the saw band deviation – see Service parameters
	Option for the material position display After you push the "Material" option in the screen showing the automatic cycle process, a screen showing the material position appears.
	Option for viewing the current order state After you push the "Job status" option in the screen showing the automatic cycle process, a screen showing the current order state appears.
	If all final pieces according to the recipe for the "BARS" type automatic cycle could not be cut up, this option appears. For details, see chapter "Unfinished pieces".

Screen with viewing the parameters of the band deviation



If the indication value is exceeded and an option of the machine response to the band deviation is chosen, except for "Not used"

- Exceeding of the admissible value is indicated by the beacon flashing; the machine responds according to the option selected.

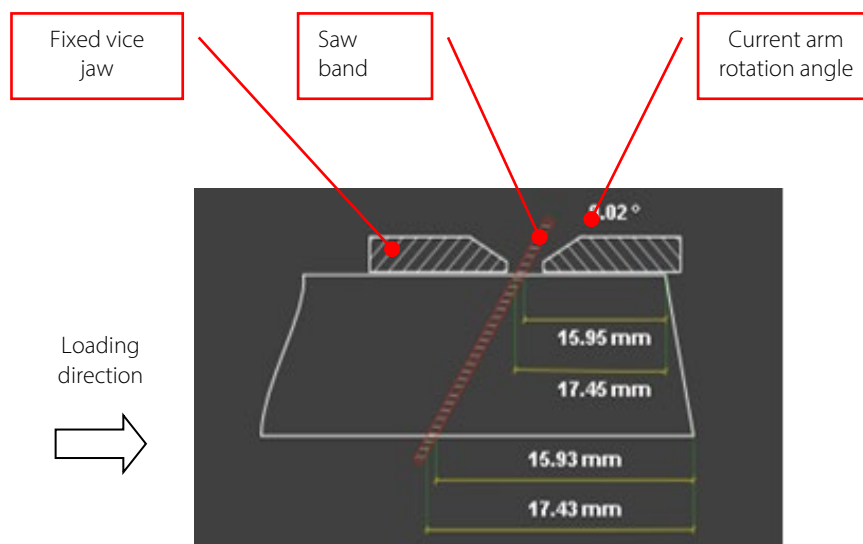
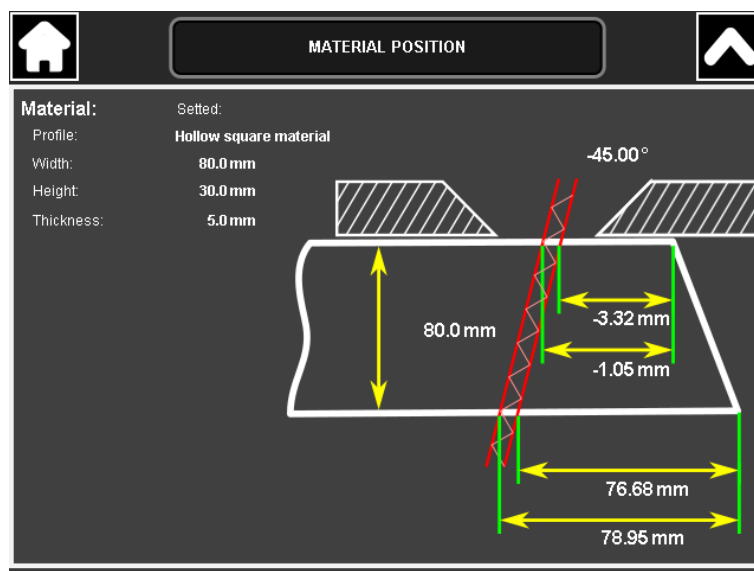
On the screen showing the band deviation parameters, a button appears for resetting the deviation

- b) Having removed the cause which led to exceeding of the admissible deviation limit, the operator resets the deviation measured by means of the reset button displayed.

The deviation will be deleted and beacon stops flashing

Resetting interrupts deviation measurement until the cut is completed. When the next cut is started, deviation measurement is renewed.

The screen showing the material position



The horizontal dimensions indicate the distance of the material edges from the band edges at the fixed and moving vice jaw – see the illustration in the screen.

Screen showing the current order state

SawManagerTest1.csv							
	Length	N (done)	N (to cut)	W bundle	H bundle	Trimcut	
Profile	1. 2650.0	0	1	1	1	20.0	▶
Hollow square material	2. 0.0	0	0	0	0	0.0	
Width 80.000	3. 0.0	0	0	0	0	0.0	▲
Height 30.000	4. 0.0	0	0	0	0	0.0	▼
Thickness 5.000	5. 0.0	0	0	0	0	0.0	
	6. 0.0	0	0	0	0	0.0	
	7. 0.0	0	0	0	0	0.0	
	8. 0.0	0	0	0	0	0.0	

SawManagerTest1.csv							
	4n	41	42	43	Box		
1.	1	0.000	600.000	0.000	0	1	0
2.	1	0.000	500.000	0.000	0	2	0
3.	1	0.000	0.000	0.000	0	0	0
4.	1	0.000	0.000	0.000	0	0	0
5.	1	0.000	0.000	0.000	0	0	0
6.	1	0.000	0.000	0.000	0	0	0

Edit

Ovládání stroje
Bedienung der Maschine
Machine control

Position	Function
 	Browsing between lines
 	Browsing between recipe screens
	By means of this option, you can open a screen showing the shape of the piece currently cut according to the recipe - see Fig. 1.

Position	Function																																			
	Currently loaded order The colour highlighting corresponds to the state of the given current recipe line.																																			
	The line already cut: <table><tr><td>1.</td><td>2000.0</td><td>0</td><td>2</td><td>1</td><td>1</td><td>20.0</td></tr></table>	1.	2000.0	0	2	1	1	20.0																												
1.	2000.0	0	2	1	1	20.0																														
	The line being currently cut: <table><tr><td>1.</td><td>1</td><td>0.000</td><td>600.000</td><td>0.000</td></tr></table>	1.	1	0.000	600.000	0.000																														
1.	1	0.000	600.000	0.000																																
<table><tr><td>1.</td><td>1</td><td>0.000</td><td>600.000</td><td>0.000</td></tr><tr><td>2.</td><td>1</td><td>0.000</td><td>500.000</td><td>0.000</td></tr><tr><td>3.</td><td>1</td><td>0.000</td><td>0.000</td><td>0.000</td></tr><tr><td>4.</td><td>1</td><td>0.000</td><td>0.000</td><td>0.000</td></tr><tr><td>5.</td><td>1</td><td>0.000</td><td>0.000</td><td>0.000</td></tr><tr><td>6.</td><td>1</td><td>0.000</td><td>0.000</td><td>0.000</td></tr></table>	1.	1	0.000	600.000	0.000	2.	1	0.000	500.000	0.000	3.	1	0.000	0.000	0.000	4.	1	0.000	0.000	0.000	5.	1	0.000	0.000	0.000	6.	1	0.000	0.000	0.000	The line to be cut (ticked off ) <table><tr><td>2.</td><td>1</td><td>0.000</td><td>500.000</td><td>0.000</td></tr></table>	2.	1	0.000	500.000	0.000
1.	1	0.000	600.000	0.000																																
2.	1	0.000	500.000	0.000																																
3.	1	0.000	0.000	0.000																																
4.	1	0.000	0.000	0.000																																
5.	1	0.000	0.000	0.000																																
6.	1	0.000	0.000	0.000																																
2.	1	0.000	500.000	0.000																																
	The line not to be cut (marked with a cross ) a cross <table><tr><td>3.</td><td>1</td><td>0.000</td><td>0.000</td><td>0.000</td></tr></table>	3.	1	0.000	0.000	0.000																														
3.	1	0.000	0.000	0.000																																
	Currently browsed line: <table><tr><td>4.</td><td>1</td><td>0.000</td><td>0.000</td><td>0.000</td></tr></table>	4.	1	0.000	0.000	0.000																														
4.	1	0.000	0.000	0.000																																

Fig. 1

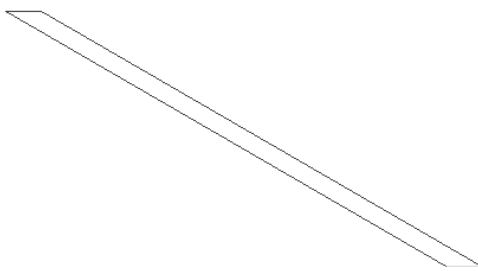



SawManagerTest1.csv



Number of angles: 1 

Angle	Length
1 60.00000	1 11.00000
2 60.00000	2 11.00000



Width
80.00000

11. Replenishment of material during the automatic cycle

Replenishment of material takes place from the beginning to the completion of the entire automatic cycle.

For details, see the chapter on replenishment of material during the automatic cycle.

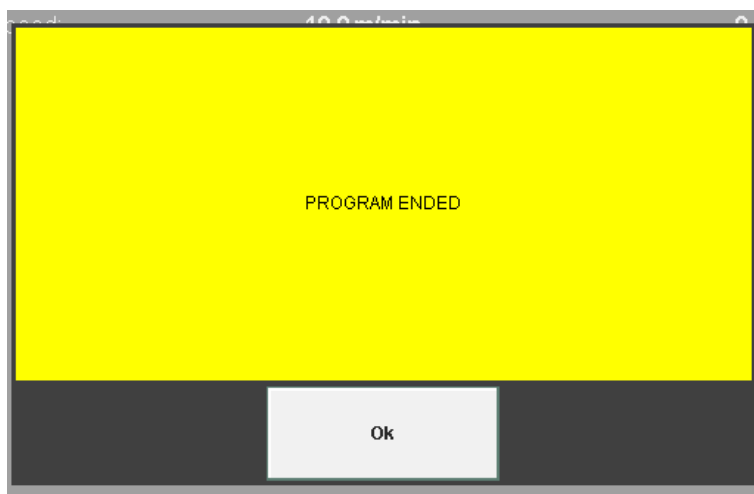
12. End of automatic cycle

The automatic cycle is completed automatically according to the type:

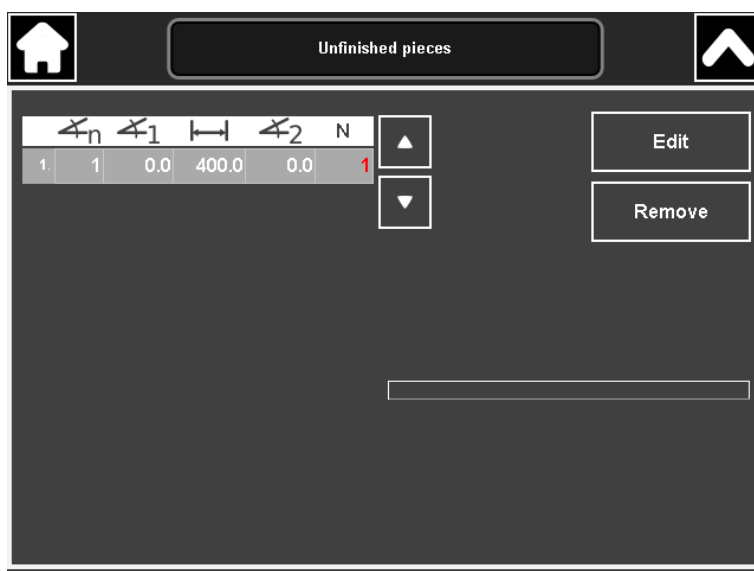
- after all final pieces have been cut as given in the recipe ("PIECES" type automatic cycle)
- after all semi-products have been cut as given in the recipe ("BARS" type automatic cycle)

At the end of the automatic cycle:

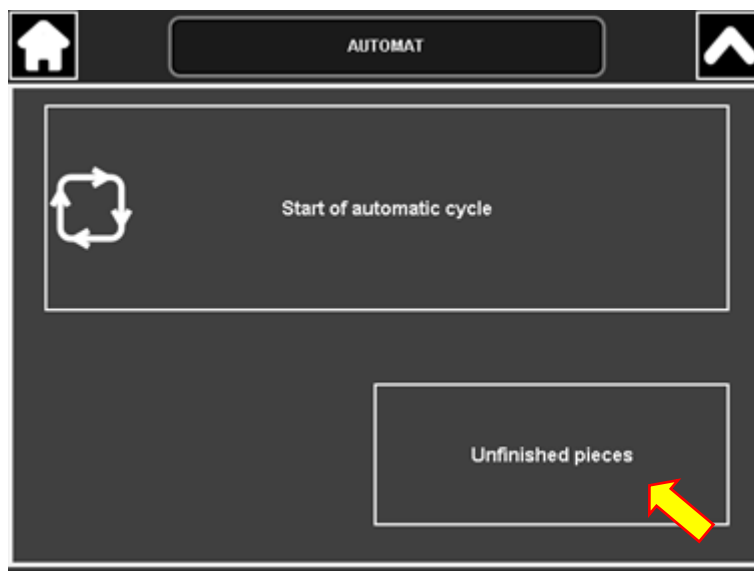
- The arm automatically returns to the position in which the cut started.
- Completion of the cycle is reported on the screen.



If not all final pieces could be cut according to the recipe for the "BARS" type automatic cycle, after you push the OK option on the screen with the report on completion of the automatic cycle, the table with unfinished pieces appears:



In the same table, the operator can also check unfinished pieces by means of the "Unfinished pieces" option.



for details, see chapter "Unfinished pieces").

13. **After the automatic cycle ends, remove the last cut piece and the residual piece from the machine, if necessary.**
14. **Now you can repeat the entire procedure.**

3.8.3. Replenishment of material during the automatic cycle

Caution!

When handling the material, observe all safety regulations given in this manual and other general regulations regarding manufacturing conditions on the specific workplace.

In the PIECES type automatic cycle, another semi-product must be loaded in the saw:

- if the semi-product cut is short and another length for cutting cannot be loaded by the feeder (- if the external loading device is not installed);
- if there is no more material to be loaded in the saw available in the external loading device (- if the external loading device IS installed).

In the BARS type automatic cycle, another semi-product must be loaded in the saw:

- either after the batch of final pieces has been cut up, as specified for the given semi-product piece - if a semi-product is loaded of the given length, which must be sufficient for cutting of all specified pieces);
- or after it is no longer possible to load another required length - if a semi-product is loaded without sufficient length for cutting of all specified pieces (... if the external loading device IS NOT installed).

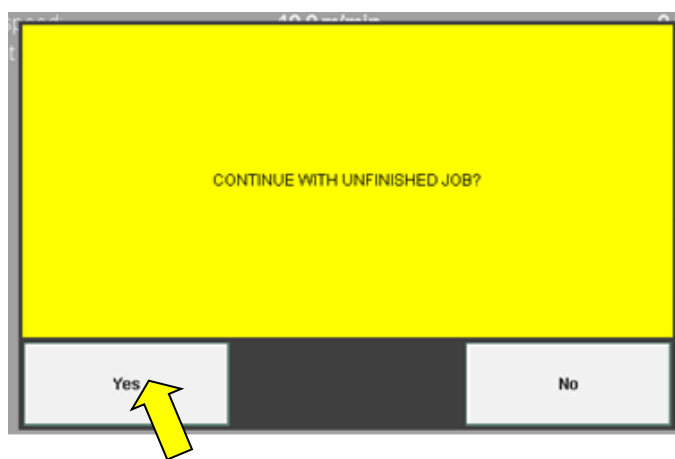
- if there is no more material available in the external loading device to be loaded in the saw (- if the external loading device IS installed)

Caution!

If the automatic cycle is interrupted for any reason, it is always possible to:

- replenish missing material;
- preserve in the machine memory information on the recipe point at which the automatic cycle was interrupted (which will enable automatic continuation in the unfinished cycle from the cut-off piece on);
- preserve information in the unfinished pieces table;

...if the operator chooses "YES" on the screen with the enquiry whether to continue with the unfinished job.



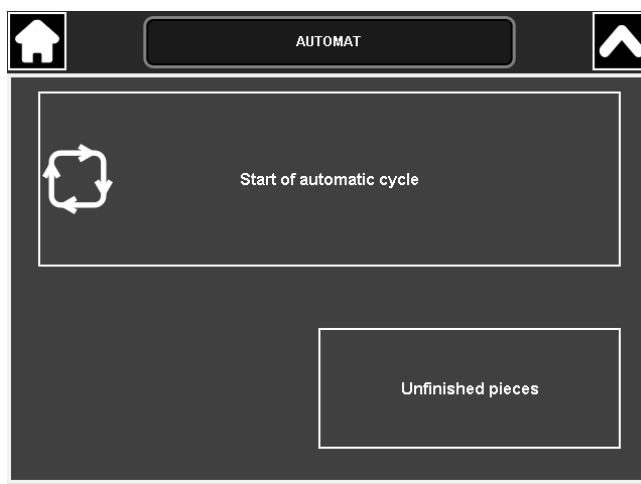
3.8.4. Material replenishment in the PIECES automatic cycle and the BARS automatic cycle

If it is necessary to load another semi-product, the saw display shows, under circumstances:

- report that the material is short;
- or an error message that there is no material on the external loading device.

Material replenishment procedure:

1. The operator confirms the report by the OK option.
2. The screen appears:



3. Before loading a new material, the operator removes the residual piece from the previous cutting from the machine.
4. Before and during loading a new semi-product piece in the saw, the operator follows the above procedure for preparation and execution of the cutting cycle in the automatic mode, from entry in the automatic mode up to the start of the automatic cycle.

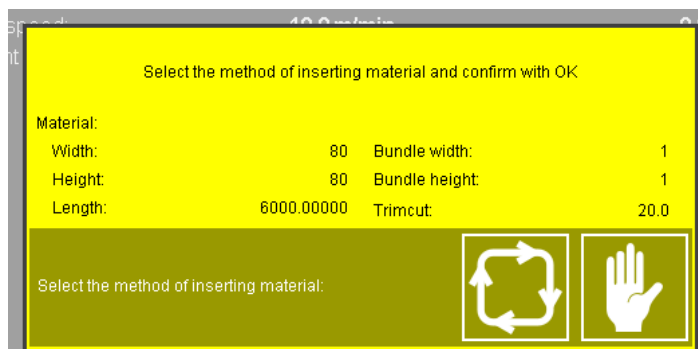
Cutting parameters and options for loading and cutting conditions can be changed as necessary during the automatic cycle preparation.

Caution!

If an external control device is installed at the machine, the procedure of material replenishment in the BARS type automatic cycle is different - see the chapter on material replenishment during the BARS type automatic cycle, if an external device for material loading is not installed.

3.8.4.1. Material replenishment during the "BARS" type automatic cycle if an external device for material loading is not installed

The demand for material loading appears on the control panel display as the report:



Material replenishment procedure:

1. On the screen, choose the option corresponding to the intended method of material loading in the saw.

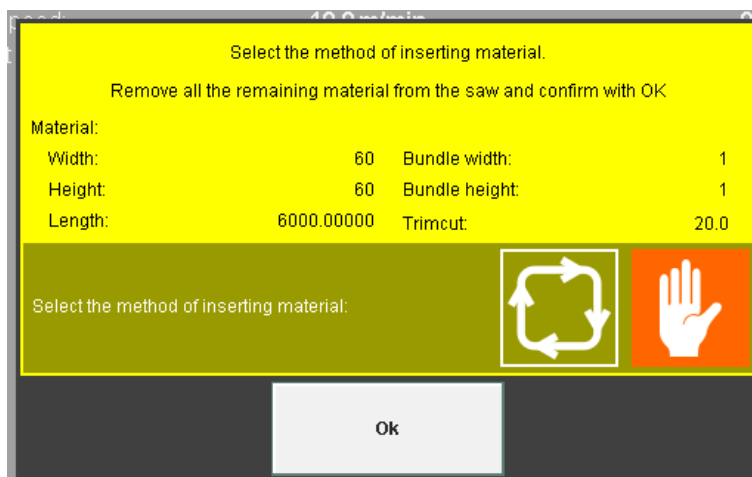


... material will be loaded in the feeder

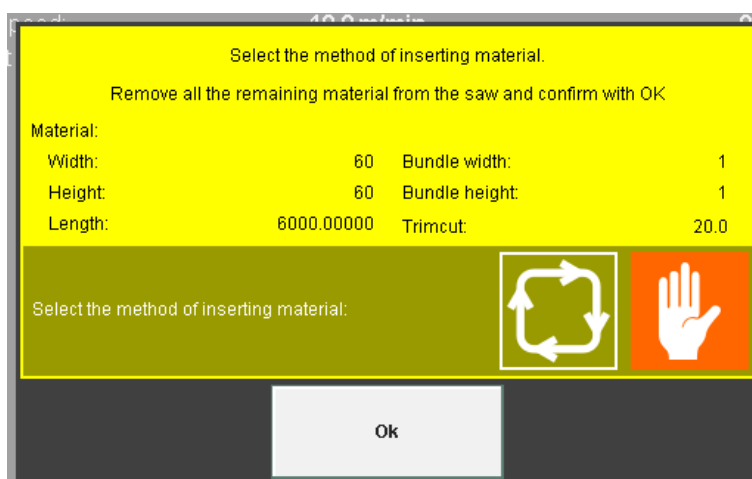


... material will be loaded in the saw vice

2. The selected option is colour highlighted and a prompt for removal of the residual piece from the machine appears on the screen.



3. Remove the residual piece from the machine.
4. According to the selected option, load material in the saw vice or feeder.
5. Confirm loading of material with the OK button.



6. Then the saw performs movements analogous to the procedure described above in the "Material loading" step in the chapter on preparation and starting of the automatic cycle.

After the saw vice has clamped the material, the automatic cycle will be resumed from the point at which it was interrupted owing to lack of material.

Information in the table of unfinished pieces will remain preserved.

3.8.5. Forced cutting of the short residual piece

If the length of the residual piece that is clamped in the saw feeder is no longer enough to push the previous cut piece out of the saw, a message is displayed that the material has run out and the automatic cycle is interrupted.

If the operator wants to continue cutting the clamped short residual piece, he must consider whether the cutting of the residual piece is safe even under the condition that the cut pieces remain in the saw.

If cutting of the residual piece is safe, the operator can select the option for forced cutting of the residual piece on the screen for setting the service parameters "Accessories":



ACCESSORIES




SLE

Timeout

120.0 s

GSP

Timeout

120.0 s

Position 1

900.0 mm

Safe length:

1000.0 mm

Position 2

1300.0 mm

Force cutting the rest ☒

Position 3

2520.0 mm




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Manual rev.: 1

If this option is checked, it is possible to cut next pieces even if the length of the residual piece that is clamped in the feeder is no longer enough to push the cut pieces out of the saw.

The piece or pieces that cannot be pushed out of the band saw remain inside the band saw.

At the discretion of the operator, these pieces can then be pushed out of the saw only after another piece with a sufficiently long length has been loaded to the feeder or can be removed manually.

Caution!

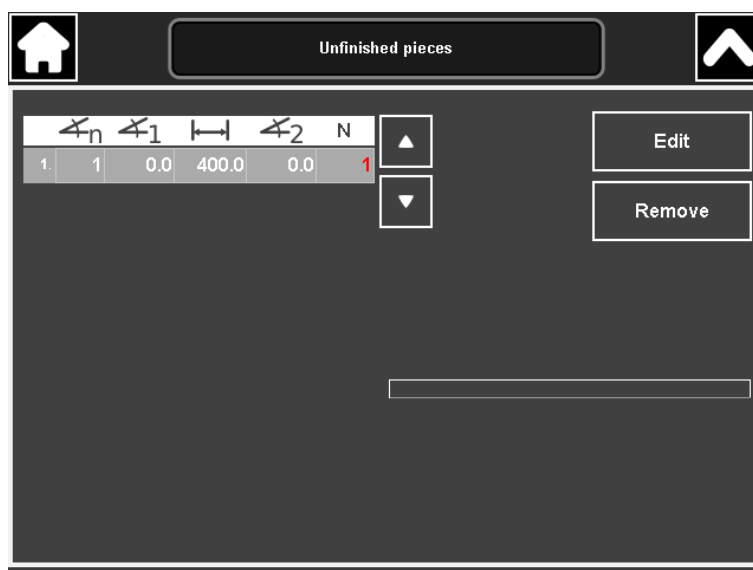
There is a risk of a collision between the cut pieces that remain in the saw and parts of the band saw or the material being handled. Therefore, before checking the option for forced cutting of the residual piece, the operator must consider whether these risks can be avoided and, if necessary, take the necessary measures to prevent collisions!

3.8.6. Unfinished pieces

If during the "RODS" type automatic cycle a semi-product is loaded in insufficient length for cutting of all specified pieces, loading of another semi-product is demanded.

Unfinished pieces from a batch specified for incorrectly loaded semi-product will not be finished from the next semi-product, only registered in the table of unfinished pieces.

The table of unfinished pieces appears at the end of the "RODS" type automatic cycle in which not all pieces have been cut.



	$\angle_n$	$\angle_1$	$\angle_2$	N	
1.	1	0.0	400.0	0.0	1

If the operator repeats the same cycle continually, the table data will not be deleted. Therefore, after repeated execution of the same automatic cycles, data from all executed cycles will be cumulated in the table.

The table of unfinished pieces is automatically deleted:

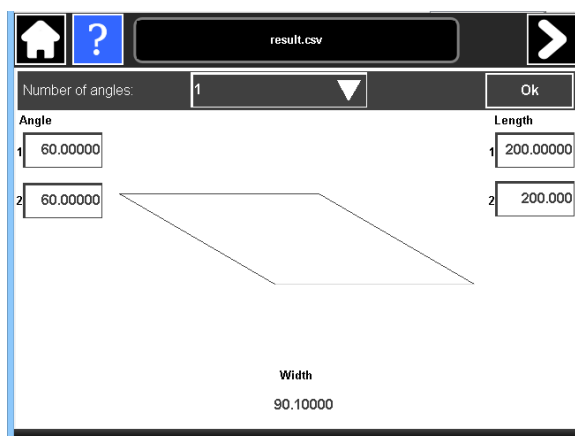
- if preparation of another automatic cycle with another recipe is started;
- if the NO option is chosen at interruption of the automatic cycle – that is, the unfinished job is not continued.

The table can be deleted with the “Remove” command

Remove

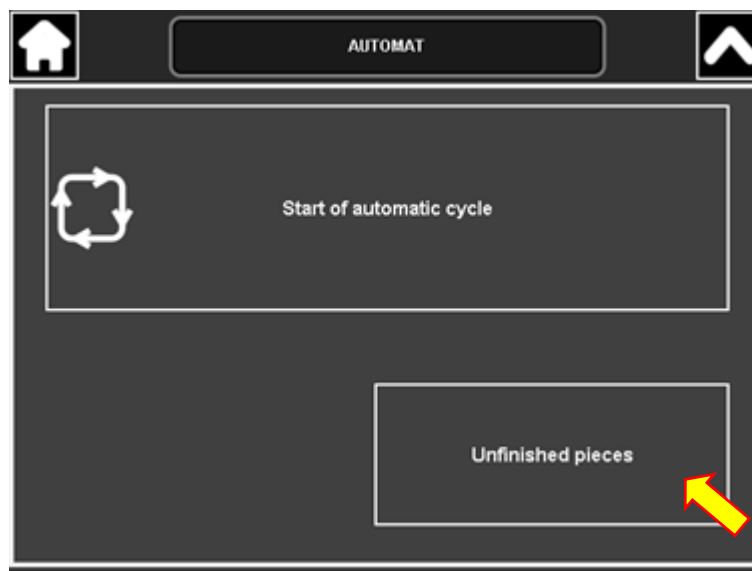
Edit

By means of the **Edit** command, the shape of unfinished pieces can be displayed in the pertinent line.



Note:

The table of unfinished pieces can also be browsed up from the **screen for entry in the automatic cycle settings ...**



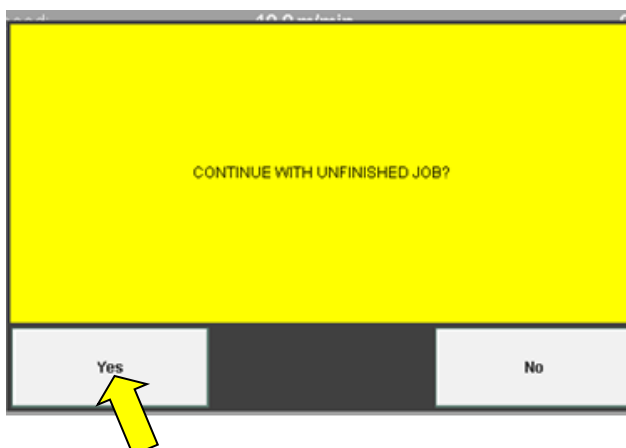
...or from the screen for the automatic cycle preparation::



3.8.7. Automatic cycle interruption and ending

3.8.7.1. Automatic cycle interruption

- In a standard situation, if the automatic cycle is interrupted, it is always possible to:
 - preserve information in the machine memory on the recipe point at which the automatic cycle was interrupted (information on the number of already cut pieces), which enables automatic continuation in the unfinished cycle, from the last cut-off piece on;
 - preserve information archived in the table of unfinished pieces for the BARS type automatic cycle, which enables evaluation of the state of unfinished pieces after automatic finish of the automatic cycle;
 - continue in the interrupted cycle from the point at which it was interrupted, either automatically (Pause type interruption) or after check and adjustment of the automatic cycle settings (other types of interruption).
- If the operator wants to utilize the option mentioned during the cycle interruption, the automatic cycle must not be finished simultaneously during the interruption, that is:
 - another recipe must not be selected;
 - on the screen with enquiry whether to continue in the unfinished job, "YES" must be selected.



- **Caution!**

If the automatic cycle is interrupted and you clearly want to continue with the interrupted automatic cycle without cutting in the currently loaded material, take care that the machine does not lose information on the material position – that is, the material must remain clamped in at least one of the two vices ("familiar material")!

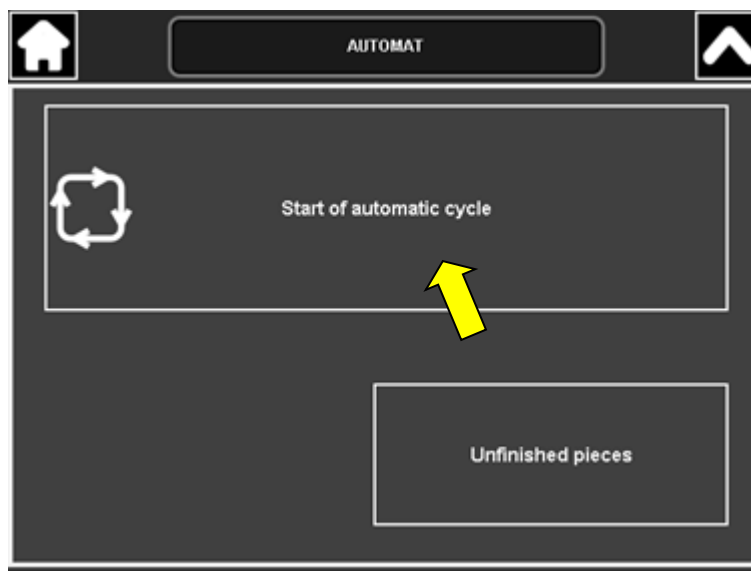
3.8.7.2. Standard procedure of resuming the interrupted automatic cycle

1. Eliminate the cause of the automatic cycle interruption
2. Set the machine in the operating state.

If the EMERGENCY STOP SWITCH button is pushed, release it by turning.

If the safety circuits are interrupted, switch them on by the button on the control panel.

3. Confirm the reports shown on the control display.
4. After you confirm the last report, the screen appears:

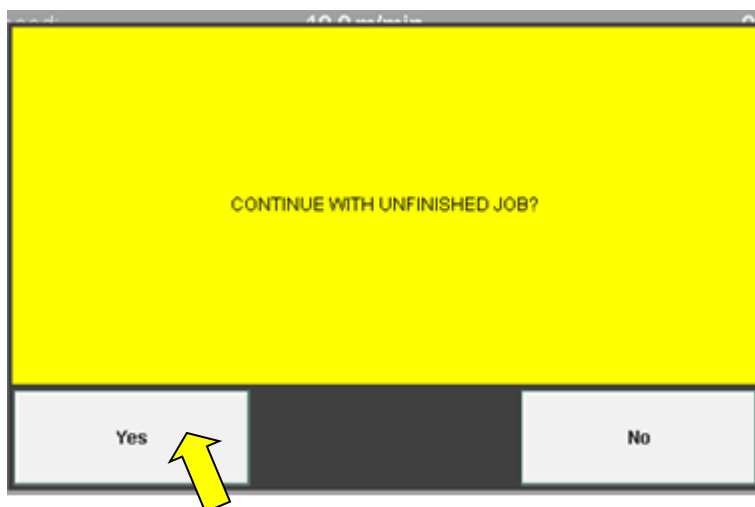


On this screen, select the option for entry in the automatic cycle settings.

5. Pass through the automatic cycle settings to the step in which continuation of the automatic cycle is started by pushing START.

Caution!

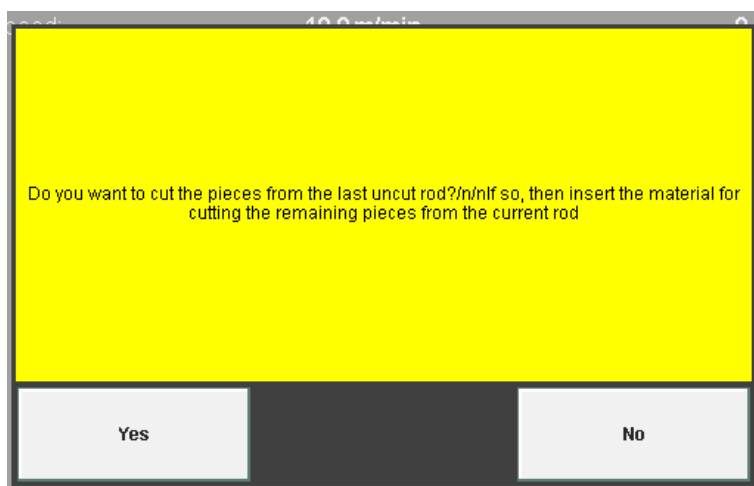
On the screen with enquiry whether to continue in the unfinished job, the operator must select "YES".



Caution!

Before resuming the interrupted automatic cycle, pay special attention to the state of the material in the machine – that is, consider further steps if material has remained in the machine after interruption.

If there is information in the machine that not the entire semi-product was cut up at interruption, then after you choose the YES/NO option on the screen with options for continuation in the unfinished automatic cycle, another screen appears with the enquiry **whether the operator wants to continue cutting the unfinished semi-product:**



If the operator selects "YES" the material really loaded in the machine will be cut.

Caution!

In the case of ill-considered resuming of the automatic cycle, the loaded material may be impaired.

If the cycle was interrupted by double pushing of the STOP button at the moment when cut was started and if there remained a valid material in the machine, then the interrupted cut will be finished immediately after the interrupted cycle is resumed – that is, another specified length will not be loaded immediately.

If an invalid material is loaded in the machine, it will be grasped by the feeder and loaded to the first required length.

If the operator chooses **NO**, the machine will require loading of material in next steps.

- If the material face is damaged after cut interruption and you want to continue cutting this damaged material, consider whether the face should be cut in before further cutting – the face cut-in procedure for a familiar material is described in the text on material loading, in the paragraph



Familiar material is loaded in the saw

3.8.7.3. Automatic cycle interruption methods

- **Automatic interruption - material depleted**

The machine control software evaluates that the material has run out if not all final pieces in the "PIECES" automatic cycle have been cut or if all blanks in the "BARS" automatic cycle have not been cut and the saw cannot continue cutting further pieces.

The saw cannot continue cutting other pieces if any of the following circumstances occur:

- it is not possible to cut another required length from the remaining length of the piece which is clamped in the feeder and at the same time it is not possible to feed another piece of material into the feeder for cutting by means of an external weighing system.
- the length of the remaining piece that is clamped in the feeder will not be enough to push the cut piece out of the saw

In the case of **ad a)**, the machine stops automatically and **the ongoing automatic cycle is interrupted**.

In the case of **ad b)**, depending on the circumstances and the choice of the operator, **it is either possible to cut the rest even further or the machine will also stop and the automatic cycle will be interrupted**.

The procedure for continuing the interrupted cycle after material replenishment is described in the chapter on material replenishment in the automatic cycle of the PIECE type and in the automatic cycle of the ROD type.

The procedure for cutting a short residual piece is described in the chapter "Forced cutting of the short residual piece".

- **With the STOP button**

- **Push once - interruption of the "Pause" type automatic cycle.**

If the operator pushes STOP once before cutting is started, the automatic cycle is interrupted immediately.

If the operator pushes STOP once while cutting is already in progress, the automatic cycle is only interrupted when the saw has finished cutting.

After the automatic cycle has been interrupted by pushing STOP once, the machine is set to the "Pause" mode.

The "Pause" mode can be exited **by pushing the START button** and the cycle interrupted with the pause will automatically continue from the point of interruption.

- **Push twice - automatic cycle interruption**

Double push of the STOP button can be used to interrupt the automatic cycle.

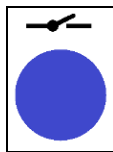
To continue in the cycle, follow the **standard procedure to resume the interrupted automatic cycle** – as described above.

- **With the emergency stop switch**

To continue in the cycle, follow the **standard procedure to resume the interrupted automatic cycle** – as described above.

- **By interrupting the safety circuits**

To switch the safety circuits of the saw, use the button on the control panel of the saw



To continue in the cycle, follow the **standard procedure to resume the interrupted automatic cycle** – as described above..

3.8.7.4. Automatic cycle ending

- **It will no longer be possible to resume the ended automatic cycle from the step at which it was interrupted.**

When the automatic cycle is ended, information on the number of cut up pieces is always deleted and the machine loses information on the step in which the system was before being ended.

If the operator wants to resume the interrupted cycle from the step in which it was interrupted, s/he must adapt the recipe so that the machine gets information on from where cutting should be resumed or s/he must compile a special recipe for the rest of the cycle.

If the operator wants to adapt the recipe, s/he can mark with cross the lines which you do not want to cut or modify the number of pieces in the line which has not been finished.

If the adapted recipe is not saved, the corrected data will only be entered until they are adapted again or until another recipe is opened.

- **If the BARS type automatic cycle is ended during the cycle, all information in the table of unfinished pieces will be deleted automatically.**
- **If the BARS type automatic cycle is ended automatically after the cycle has been completed, information in the table of unfinished pieces will be preserved.**

3.8.7.5. Methods of automatic cycle ending

- **Automatic ending - after the cycle is completed**

The automatic cycle ends after its completion – that is, after all final pieces have been cut in the "PIECES" type automatic cycle or after all semi-products in the "BARS" type automatic cycle have been cut up.

After automatic ending of a completed automatic cycle, a report on completion of the automatic cycle always appears on the control display.

- **By opening a new recipe**

- if after interrupting the current automatic cycle in progress the operator opens a recipe different from that by which the interrupted cycle was executed.

After opening a new recipe, if the operator passes through the automatic cycle preparation and pushes the **START button - a new automatic cycle will be started from the first step according to the new recipe.**

- By the "NO" option on the screen with enquiry whether s/he wants to continue in the unfinished job:



If the operator chooses "NO":

- it will not be possible to continue in the interrupted automatic cycle from the step in which it was interrupted;
- if the operator passes through the automatic cycle preparation and pushes the **START button** - **the interrupted automatic cycle will start from the beginning again – that is, from the first checked non-zero line of the recipe.**

4. **Receptury / Rezepturen / Recipes**

4.1. Recipes

- Recipes are software plans controlling the cutting procedure for final pieces of various lengths in the automatic cycle.

- **One automatic cycle is controlled by one recipe** and used to cut final pieces from bar semi-products or bundles of semi-products which have:

- **identical section parameters**
- **identical or different length parameters**

If you need to cut material with different section parameters, it is necessary to create a specific recipe for every section and cut every section in a specific automatic cycle.

Note:

Everything stated below for "bar semi-products" also applies to "bundles of bar semi-products".

- **The machine software enables two types of recipes to be created on the machine directly:**
 - recipes for the "PIECES" type automatic cycle
 - recipes for the "RODS" type automatic cycle
- **Another option for creation of recipes for this machine is use of the independent Saw Manager software (supplied by Bomar spol. s.r.o.).**

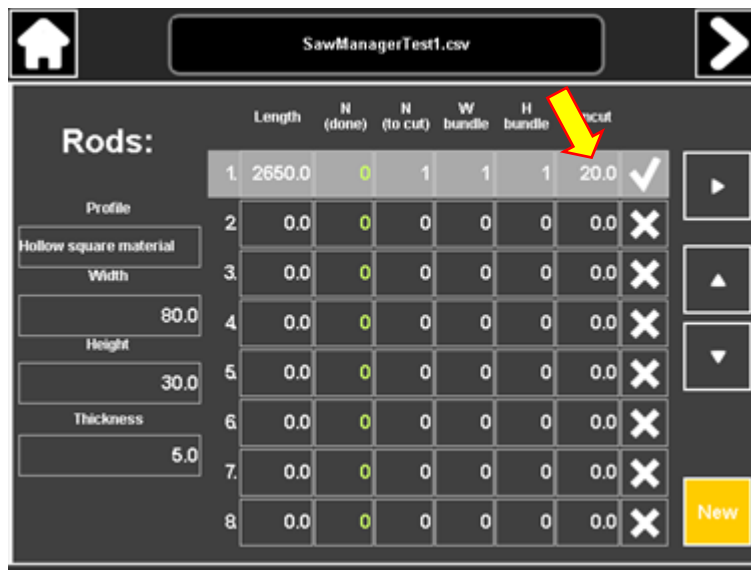
The Saw Manager software is used to create recipes with optimized material; **recipes for the "RODS" type automat** are created by means of it.

A recipe created in Saw Manager is put together on computer (independently of the machine) and can be imported to this machine memory via network connection or USB connector by the procedure described in the chapter on work with recipe files.

Cooperation between the machine and Saw Manager software is subject to purchase of a Saw Manager software license.

- **The machine software also enables the loaded (current) recipe to be modified and saved with the changes made.**

- To enter parameters on all recipe screens, you can touch the field in which you want to enter the parameter to activate a numeric keyboard with which you can enter and confirm the given value.



	Length	N (done)	N (to cut)	W bundle	H bundle	cut
1	2650.0	0	1	1	1	20.0 ✓
2	0.0	0	0	0	0	0.0 ✗
3	0.0	0	0	0	0	0.0 ✗
4	0.0	0	0	0	0	0.0 ✗
5	0.0	0	0	0	0	0.0 ✗
6	0.0	0	0	0	0	0.0 ✗
7	0.0	0	0	0	0	0.0 ✗
8	0.0	0	0	0	0	0.0 ✗

- By means of ticks and crosses at the line ends, you can also operatively modify the given recipe configuration additionally:

Mark the lines to be executed in the given automatic cycle with a tick 

Mark the lines not to be executed in the given automatic cycle with a cross 

- Procedures of work with recipe files – see chapter "Recipe files administration".

- Caution!**

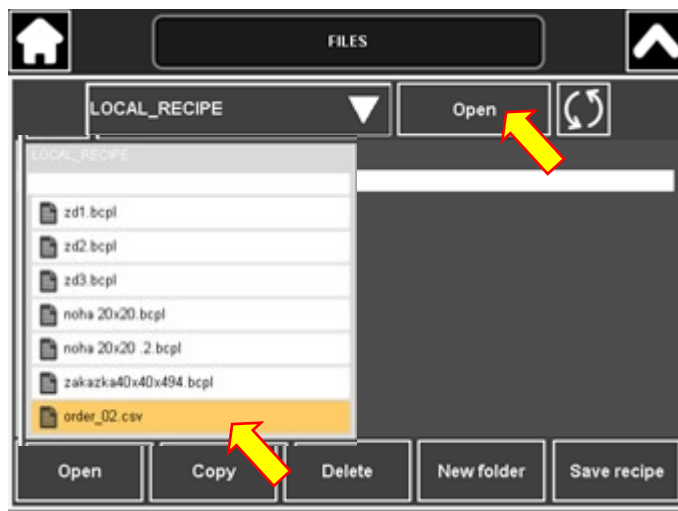
If you do not save the modified or newly entered recipe by the procedure described in chapter "Recipe files administration":

- unsaved data entered in the recipe will only be automatically saved in the machine temporary storage, after you choose the icon for transfer

to the next screen  at the screen where changes were made

The machine will adhere to these data at each automatic cycle started in future; that is, the cycle or cycles will be executed according to the modified, but not properly saved current recipe.

- at the moment of opening another recipe, the data in the temporary storage will be lost and it will not be possible to return to the unsaved data.



4.2. Modification of currently loaded recipe

On the currently loaded recipe screens, you can modify the currently loaded recipe to any extent.

If the modifications should be preserved so that you can use them permanently, you must save the modified recipe by the procedure described in chapter "Work with recipe files".

Modification procedure:

1. As necessary, modify the required parameters in the individual recipe fields.

2. By checking off  or crossing , modify the current recipe configuration so that:

- checked off  non-zero lines will be executed;
- crossed  non-zero lines will not be executed.

The automatic cycle always starts with the first non-zero line checked off and continues stepwise with all the following non-zero lines checked off in the sequence of numbers with which the lines are marked.

3. As necessary, you can delete the record on the number of cut pieces by means of the "Delete cut" option.
4. As necessary, save the modified recipe - for procedure, see the chapter on work with recipe files.

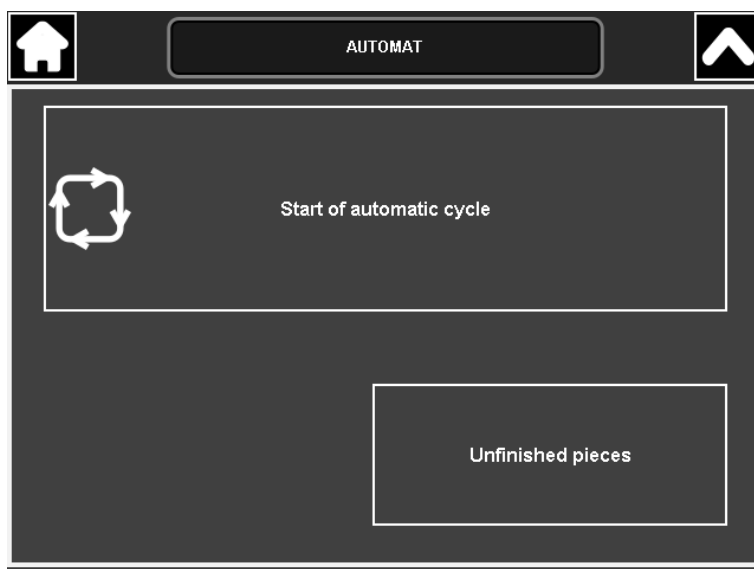
4.3. Recipe type selection during creation of a new recipe on the machine

Because the machine software enables execution of the automatic cycle by two different recipe types, it is necessary to choose the **type of the created recipe before its creation**.

1. Switch the mode selector to the automatic mode  position and choose the option to initiate the automatic mode on the main screen of the control software:

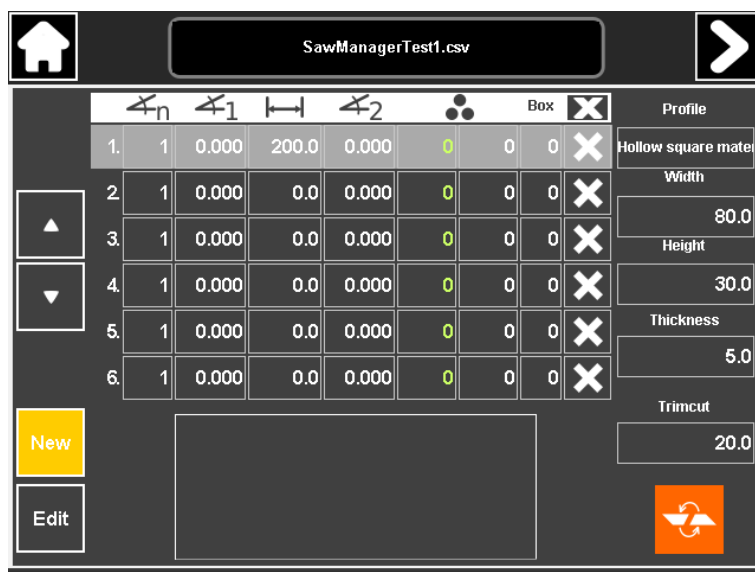


2. A screen will appear for entry in the automatic cycle settings.



3. After you push the option for entry in the automatic cycle settings, the first screen of the currently loaded recipe appears.

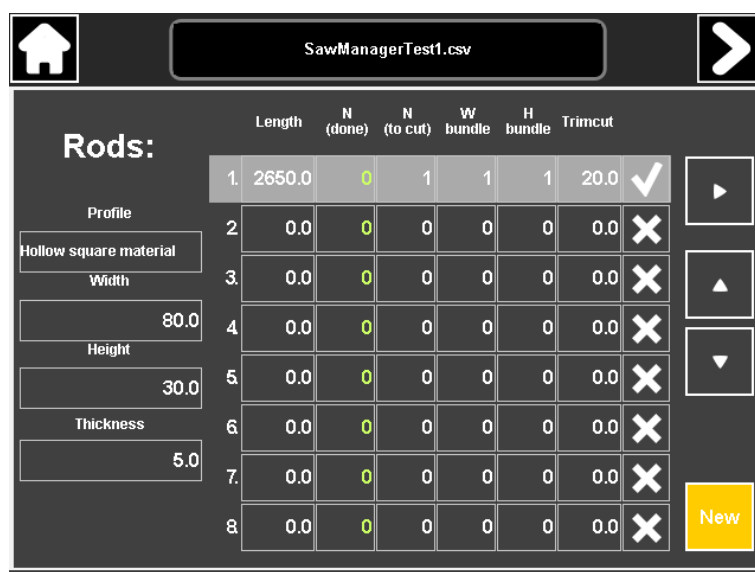
Recipe screen for the "PIECES" type automatic cycle ("PIECES" automat)



	$\varnothing_n$	$\varnothing_1$	$\varnothing_2$	Box	
1.	1	0.000	200.0	0.000	0
2.	1	0.000	0.0	0.000	0
3.	1	0.000	0.0	0.000	0
4.	1	0.000	0.0	0.000	0
5.	1	0.000	0.0	0.000	0
6.	1	0.000	0.0	0.000	0

Profile
 Hollow square material
 Width: 80.0
 Height: 30.0
 Thickness: 5.0
 Trimcut: 20.0

Recipe screen for the "RODS" type automatic cycle ("RODS" automat)

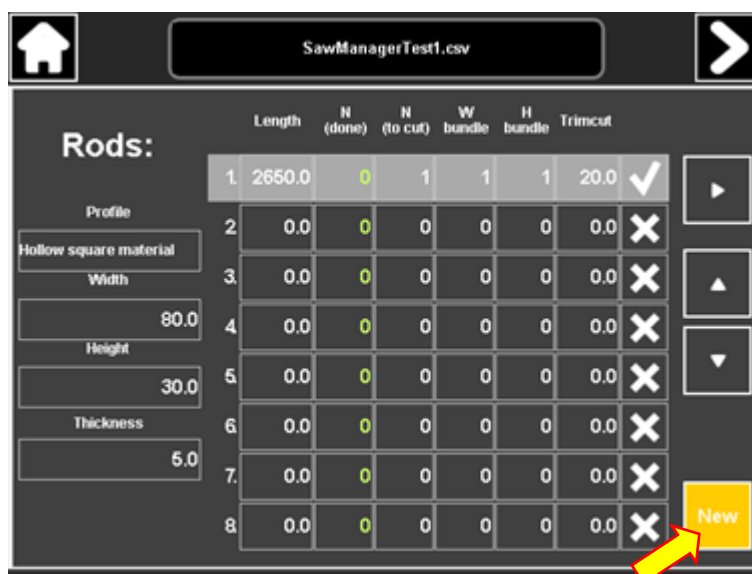


Rods:

	Length	N (done)	N (to cut)	W bundle	H bundle	Trimcut
1.	2650.0	0	1	1	1	20.0
2.	0.0	0	0	0	0	0.0
3.	0.0	0	0	0	0	0.0
4.	0.0	0	0	0	0	0.0
5.	0.0	0	0	0	0	0.0
6.	0.0	0	0	0	0	0.0
7.	0.0	0	0	0	0	0.0
8.	0.0	0	0	0	0	0.0

Profile
 Hollow square material
 Width: 80.0
 Height: 30.0
 Thickness: 5.0

4. On the pertinent screen of the currently loaded recipe, choose the "New" option.

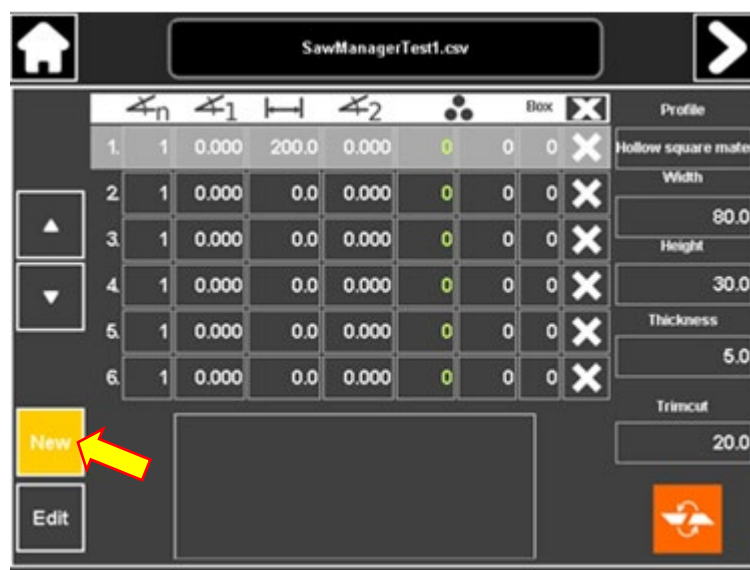


Rods:

	Length	N (done)	N (to cut)	W bundle	H bundle	Trimcut	
1	2650.0	0	1	1	1	20.0	✓
2	0.0	0	0	0	0	0.0	✗
3	0.0	0	0	0	0	0.0	✗
4	0.0	0	0	0	0	0.0	✗
5	0.0	0	0	0	0	0.0	✗
6	0.0	0	0	0	0	0.0	✗
7	0.0	0	0	0	0	0.0	✗
8	0.0	0	0	0	0	0.0	✗

Profile:
 Hollow square material
 Width: 80.0
 Height: 30.0
 Thickness: 5.0

New



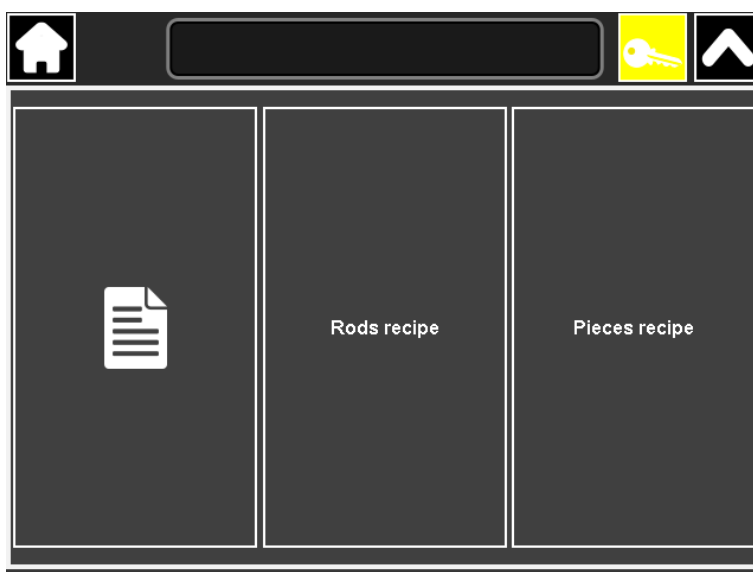
New

	Length	N (done)	N (to cut)	W bundle	H bundle	Trimcut	
1	1	0.000	200.0	0.000	0	0	✗
2	1	0.000	0.0	0.000	0	0	✗
3	1	0.000	0.0	0.000	0	0	✗
4	1	0.000	0.0	0.000	0	0	✗
5	1	0.000	0.0	0.000	0	0	✗
6	1	0.000	0.0	0.000	0	0	✗

Profile:
 Hollow square material
 Width: 80.0
 Height: 30.0
 Thickness: 5.0
 Trimcut: 20.0

Edit

5. After you push the "New" option, a screen appears for selection of the automatic cycle type for which the new recipe will be intended:



Position	Function
PIECES	Entry in the menu enabling creation of a recipe for the "PIECES" type automatic cycle.
RODS	Entry in the menu enabling creation of a recipe for the "RODS" type automatic cycle.
	Entry in the menu for administration of recipe files. It is recommended to use this option only to load a saved recipe as the current recipe. Caution! This option is not used to save a newly created recipe! For details, see chapter "Administration of recipe files".

4.4. Recipe creation on the machine for the "PIECES" type automatic cycle

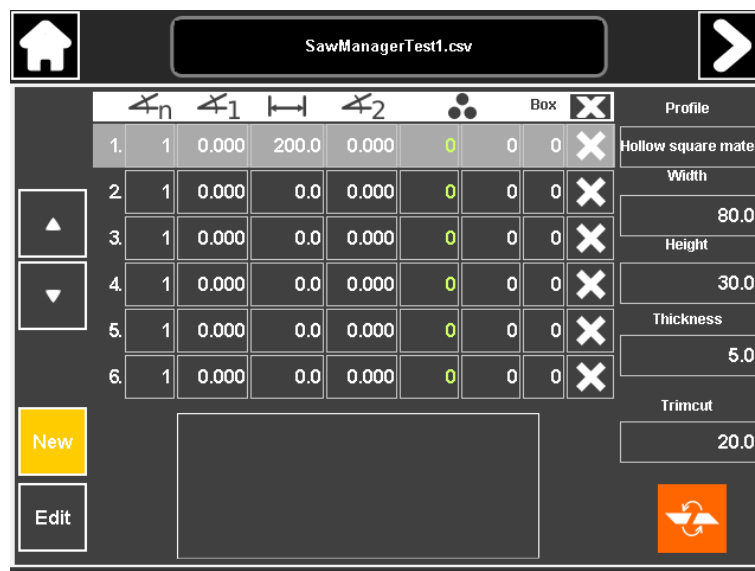
4.4.1. Entry in the menu for recipe creation for the "PIECES" type automat

1. On the screen for selection of the automat types, choose the "PIECES" automat type.



2. The first recipe screen appears

This screen is used to enter information on lengths, quantities and cutting sequence of final pieces



	$\angle_n$	$\angle_1$	$\angle_2$		Box		
1.	1	0.000	200.0	0.000	0	0	X
2.	1	0.000	0.0	0.000	0	0	X
3.	1	0.000	0.0	0.000	0	0	X
4.	1	0.000	0.0	0.000	0	0	X
5.	1	0.000	0.0	0.000	0	0	X
6.	1	0.000	0.0	0.000	0	0	X

New

Edit

Profile

Hollow square mater

Width

80.0

Height

30.0

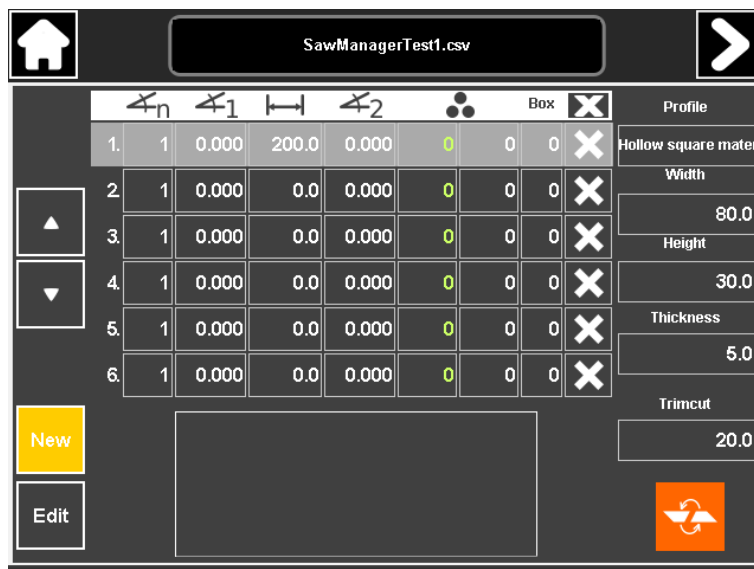
Thickness

5.0

Trimcut

20.0

4.4.2. Description of the recipe creation screen for the "PIECES" type automat



	$\angle_n$	$\angle_1$	$\angle_2$	$\angle_3$	$\angle_4$	$\angle_5$	$\angle_6$
1.	1	0.000	200.0	0.000	0	0	0
2.	1	0.000	0.0	0.000	0	0	0
3.	1	0.000	0.0	0.000	0	0	0
4.	1	0.000	0.0	0.000	0	0	0
5.	1	0.000	0.0	0.000	0	0	0
6.	1	0.000	0.0	0.000	0	0	0

Profile: Hollow square material

Width: 80.0

Height: 30.0

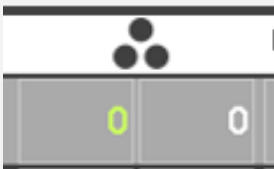
Thickness: 5.0

Trimcut: 20.0

New

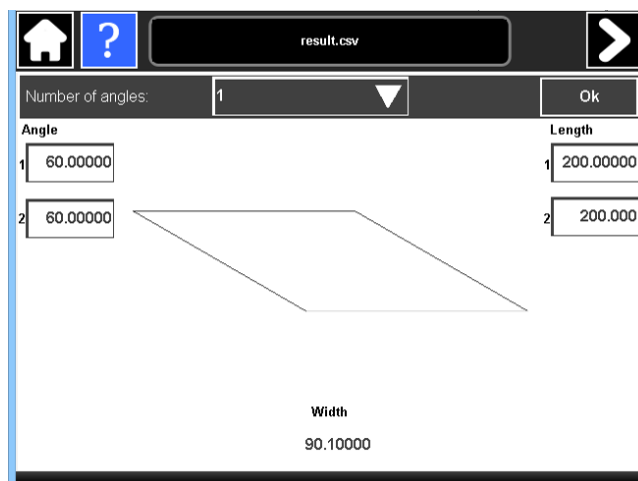
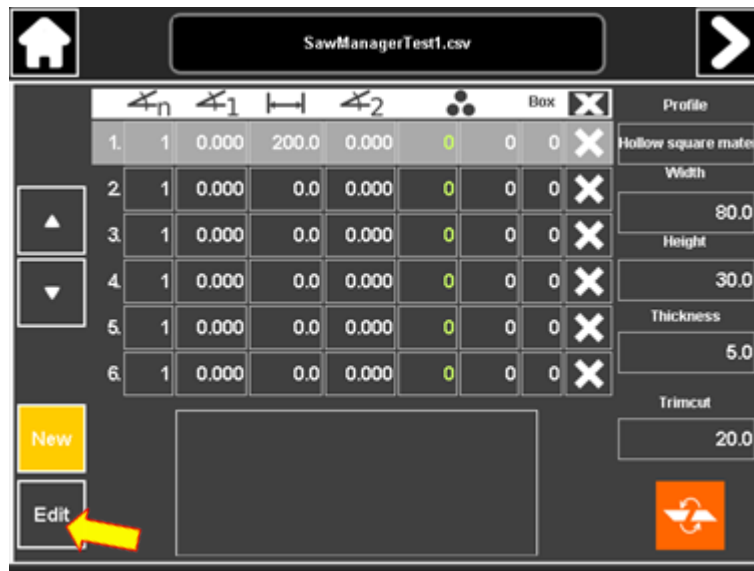
Edit

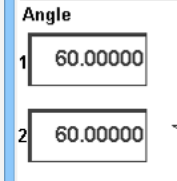
Position	Function
	Recipe name
	Browsing between screens
	Browsing between lines The chosen line is highlighted in a colour frame.
	New – The icon is used to load a new recipe
	This option enables opening of a screen on which you can modify the shape of the currently entered piece – see information in Note No. 1
	Line number = number of the batch of final pieces, to which parameters entered in the given line apply. If more than 1 piece is entered in the field for the required number of pieces, all pieces of this batch will be cut in immediate succession.
	Angle number at the front edge

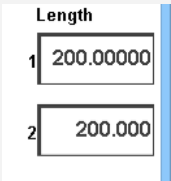
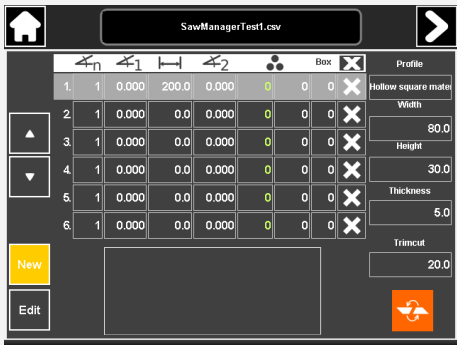
Position	Function
	Angle at the front edge If the Angle number at the front edge = 1, this angle can be directly set in the recipe line. If the Angle number at the front edge is higher than 1, the angles can only be set in the screen for modification of the recipe line.
	Cut piece length
	Angle at the back edge
	Number of already cut final pieces of the given length from the batch entered in the given line / Required number of final pieces of the given length in the batch entered in the given line
Box	If there is the GSP belt outlet conveyor installed at the saw, you can enter in this column where the removed piece should be located. For the data in this column to be valid, you should check off the option in service parameters that optional equipment has been installed: ☒ GSP For details, see chapter "Entry of position for removal on the GSP outlet belt conveyor".
	☒ - cut the given recipe line ☐ - not cut the given recipe line
Profile	Select the section which corresponds to the semi-product. If you cannot choose a corresponding section, choose the most similar one.
Width Height	Enter the semi-product section dimensions.
Thickness	For hollow semi-products, enter the actual wall thickness. If a solid semi-product is selected in the "Section" field, no entered value will be taken into account.
Trimcut	Length of the piece to be cut off to align the material face.

Note No. 1

By means of the "Edit" option on the screen for recipe entry, **browse up the screen for entry of shape of cut pieces on the browsed line.**



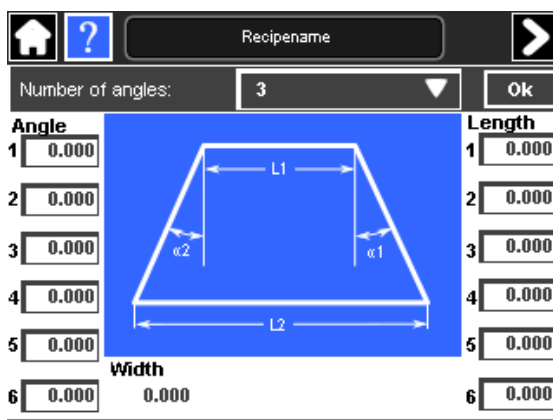
Position	Function
	Angle number at the front edge
	Angle at the front edge Number of displayed windows for angle setting= selected angle number at the front edge + one angle option on the back side. The number at the setting window indicates the set angle number – see also Help.
	Entered material width.

Position	Function
	Cut piece length The number of windows displayed for length settings corresponds to the selected number of angles at the front edge. Which length is set – see Help.
	Illustration of the shape set in the browsed up line If the piece setting is incorrect – that is, it cannot be cut off or it is unfeasible geometrically, the pattern contours are red.
	Confirmation of values set in the line and return to the recipe screen.
	Help
	Return to the screen for creation and edition of the recipe 

After you choose Help, a screen appears with a sketch showing what is set in the box of the pertinent number.

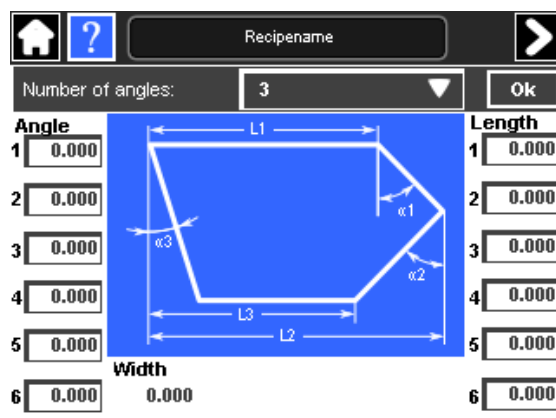
The illustration is adapted to the selected number of angles on the front side.

Examples of help display **(the displayed shape cannot be modified on this screen):**



The screenshot shows a software interface for recipe management. At the top, there's a 'Recipe name' field and a 'Number of angles' dropdown set to '3'. Below this, a table lists parameters for 6 different pieces. The 'Angle' column shows values for angles α_1 and α_2 . The 'Length' column shows values for L_1 and L_2 . The 'Width' column shows a value of 0.000. A central diagram illustrates a trapezoid with these dimensions and angles. The 'Length' column also includes a 'Trimcut' value of 20.0.

Angle	Length	Width	Trimcut
1 0.000	1 0.000	0.000	20.0
2 0.000	2 0.000	0.000	
3 0.000	3 0.000	0.000	
4 0.000	4 0.000	0.000	
5 0.000	5 0.000	0.000	
6 0.000	6 0.000	0.000	



Angle	Length
1 0.000	1 0.000
2 0.000	2 0.000
3 0.000	3 0.000
4 0.000	4 0.000
5 0.000	5 0.000
6 0.000	6 0.000

Width 0.000

4.4.3. Procedure of recipe creation for the "PIECES" type automatic cycle

During recipe composition, the following rules must be taken into account:

- The recipe for the "PIECES" type automatic cycle requires entry of information on:
 - required length of final pieces
 - number of angles on the front edge
 - angle values on the front and back edge
 - required number of final pieces
- Enter information in the individual lines **in the sequence in which final pieces will be cut successively**.
- One or more pieces with the same length and the same cutting angles can be entered in a single line on the recipe screen.
- After parameters of final pieces have been entered fully, you can still additionally adapt configuration of final pieces by ticking off the lines which should really be executed in the given automatic cycle.

On the recipe screen:

Mark the pieces (lines) to be cut in the given cycle with a tick

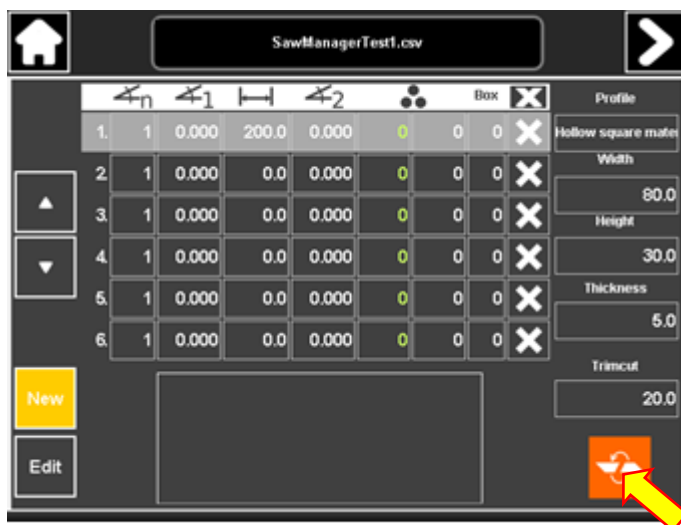


Mark the pieces (lines) not to be cut with a cross

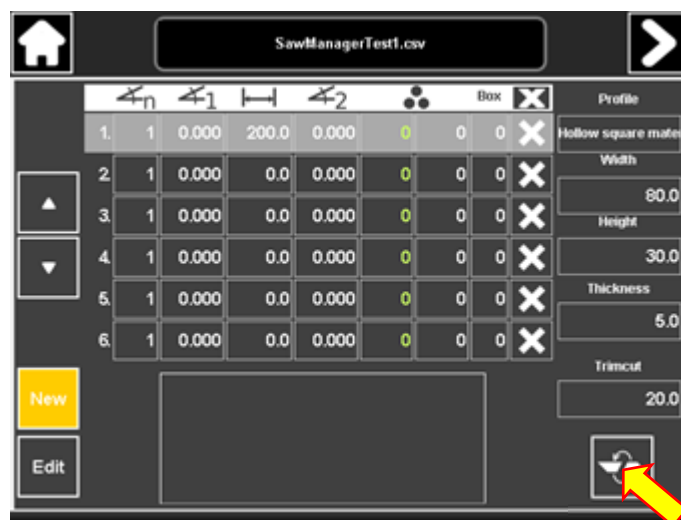


4.4.4. Optimization of angle cuts in the "PIECES" type automatic cycle

If you want the cut to be optimized automatically in the given automatic cycle, select the option for cut optimization on the recipe screen:



If you want to cancel the command for cut optimization, touch the icon again:



If optimization is possible, the machine automatically selects the axis around which the optimized shape will be turned.

For the optimization principle of angle cuts, see chapter "Optimization of angle cuts" in section "Automatic cycle".

4.4.5. Cutting by recipe for the “PIECES” type automatic cycle

- The “PIECES” type automatic cycle starts cutting according to the pertinent recipe of the “PIECES” type from the first non-zero line ticked off.
- All pieces in the current line are always cut in immediate succession; only then the cycle continues with the next line.
- Loading of another material is required whenever it is no longer possible to load the required cutting length specified according to the current recipe

4.5. Recipe creation on the machine for the “RODS” type automatic cycle

4.5.1. Cutting plan

Before creation of a recipe for the “BARS” type automatic cycle, it is necessary to prepare a cutting plan, in which all required final pieces will be arranged on the individual semi-products so that a rest is left from each semi-product with the minimum length required by the machine user.

If a recipe for the “RODS” type automatic cycle is created by means of the independent Saw Manager software (**recommended procedure**), the above mentioned cutting plan is created automatically by means of this software; the output of the Saw Manager software is a completed recipe for control of the “RODS” type automatic cycle on the machine.

If a recipe for the “BARS” type automatic cycle is created by means of software on this machine, the mentioned plan must be created by a pre-appointed user person and only then the recipe entered pursuant to this plan.

Caution!

The required minimum residual length must not be lower than the length of the minimum technological remainder for the given machine with the given equipment (the residual length is affected by the upper clamping – for example).

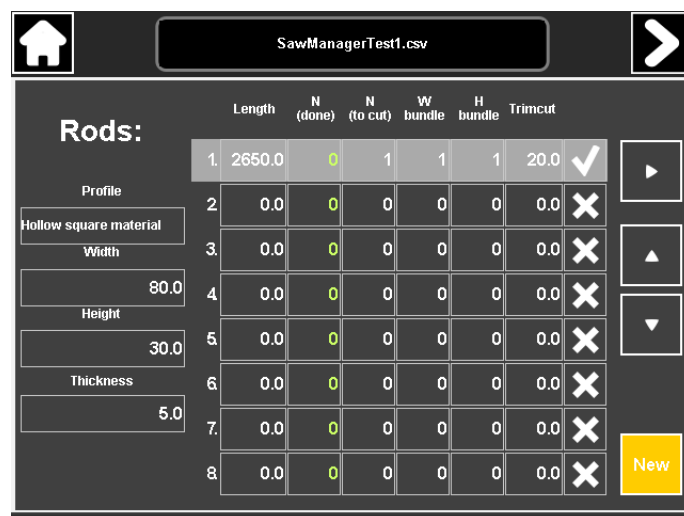
4.5.2. Entry in the menu for recipe creation for the “RODS” type automat

1. On the automat type selection screen, choose the “RODS” automat type.



2. After you push the "RODS" option, the first recipe screen appears.

The first recipe screen is always used to enter information on parameters and sequence of bar semi-product batches as they are to be successively loaded in the machine during the automatic cycle.



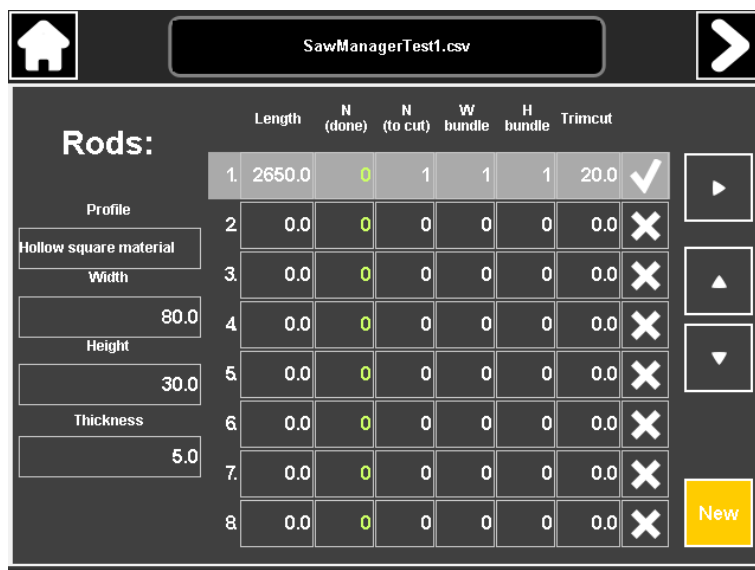
4.5.3. Description of screens for the "RODS" type automat

Common icons

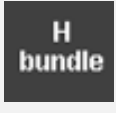
Position	Function
	Recipe name
	Browsing between software screens
 	Browsing between recipe screens
 	Browsing between lines The chosen line is highlighted in a colour frame
 	 - cut the given recipe line  - not cut the given recipe line

Opening recipe screen (Bars)

The screen used for entry of information on bar semi-product batches ("BARS" screen) appears as the first (opening) recipe screen:

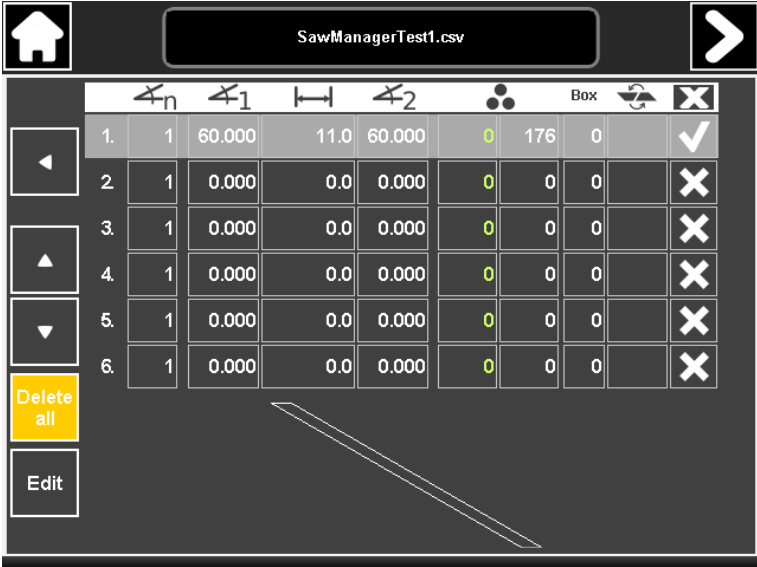


Position	Funkcion
Rods:	BARS – information that bar semi-product information can be entered on the given screen.
Profile	Select the section which corresponds to the semi-product. If you cannot select a corresponding section, choose the most similar one.
Width Height	Enter the semi-product section dimensions.
Thickness	For hollow semi-products, enter the actual wall thickness. If a solid semi-product is selected in the "Section" field, no entered value will be taken into account.
	Line number = identification number of the given aggregate batch of bar semi-products
Length	Length of bar semi-products in the given batch
N (to cut)	Total number of bars to be loaded in the given batch
N (done)	Number of already cut up bars from the given batch

Position	Funkcion
	Number of bars in the bundle per the total width
	Number of bars in the bundle per the total height
	Length of the piece to be cut off to align the material face.
 	 - cut the given recipe line  - not cut the given recipe line
	New – icon used for work with recipes (creation, saving, loading, deleting)

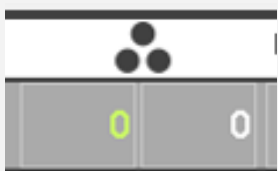
The second screen for every line - the Pieces screen.

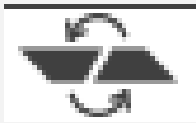
For every line of the opening "bars" screen, a screen can be displayed for entry of information on the layout of final pieces on semi-product bars ("PIECES" screen).



	$\angle_n$	$\angle_1$	$\angle_2$	Box	
1.	1	60.000	11.0	60.000	✓
2.	1	0.000	0.0	0.000	✗
3.	1	0.000	0.0	0.000	✗
4.	1	0.000	0.0	0.000	✗
5.	1	0.000	0.0	0.000	✗
6.	1	0.000	0.0	0.000	✗

Buttons: Delete all, Edit

Position	Funkcion
	Option to delete the number of finished pieces
	By means of this option you can open a screen on which the shape of the piece currently cut by the recipe is displayed – see Note.1 at the "PIECES" type recipe.
	Line number = number of the batch of final pieces, to which parameters entered in the given line apply. If more than 1 piece is entered in the field for the required number of pieces, all pieces of this batch will be cut in immediate succession.
	Angle number at the front edge
	Angle at the front edge If the Angle number at the front edge = 1, this angle can be directly set in the recipe line. If the Angle number at the front edge is higher than 1, the angles can only be set in the screen for modification of the recipe line.
	Cut piece length
	Angle at the back edge
	Počet již nařezaných finálních kusů dané délky z dávky uvedené na daném řádku / Počet požadovaných finálních kusů dané délky v dávce uvedené na daném řádku
Box	If there is the GSP belt outlet conveyer installed at the saw, you can enter in this column where the removed piece should be located. For the data in this column to be valid, you should check off the option in service parameters that optional equipment has been installed: GSP  For details, see chapter "Entry of position for removal on the GSP outlet belt conveyer".

Position	Funkcion
	Optimization of angle cuts
	 - cut the given recipe line  - not cut the given recipe line

4.5.4. Procedure of recipe creation for the "BARS" type automatic cycle

- In one automatic cycle, semi-products of different lengths can be loaded; each different length must be indicated in a separate line on the BARS opening screen.

One recipe line on the BARS screen contains one cutting batch of bar semi-products of identical length.

- In the individual recipe lines** on the BARS screen, enter data on bar semi-product batches **in the sequence in which these batches will be loaded into the machine successively.**
- For every line created on the "BARS" screen, a separate specification must then be created, defining arrangement of final pieces on each bar of the given batch.**

All bars from one line on the "BARS" screen will be cut according to this single recipe created for the given line specifically.

Specification of arrangement of final pieces can be entered on the screen which you

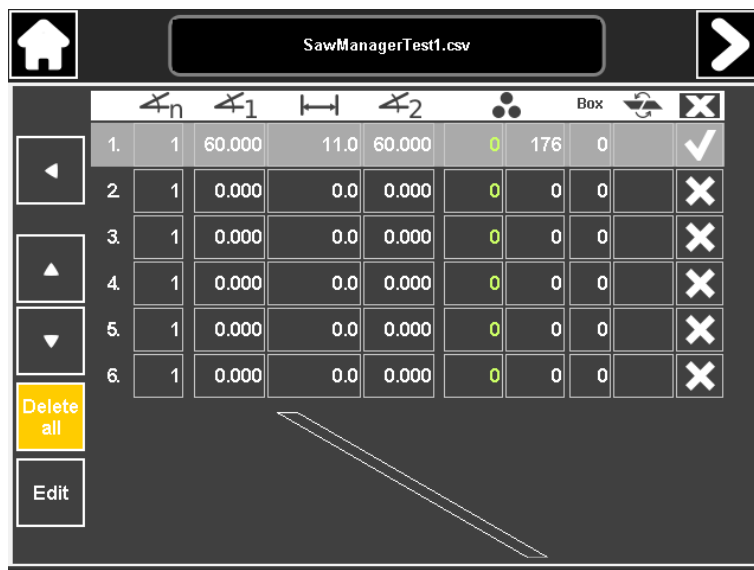


can browse up by means of the icon for switching between recipe screens

- One line on the screen used for entry of information on layout of final pieces on bars is therefore intended for entry of information on a single continuous series of final pieces which:**
 - have identical length;
 - and will be cut immediately after each other.
- Fill in the lines on the PIECES screen in the order in which final pieces will be arranged and cut successively on each semi-product bar from the given cutting batch.**

4.5.5. Optimization of angle cuts in the "BARS" type automatic cycle

In the column before the end of the line, you can choose the optimization which the operator wants to apply to cutting of the given final pieces.



Position	Function
	Turnover round the material axis perpendicular to the material feeding direction By repeated touch, choose whether the option will be active (the window colour-backlit) or not (grey window). 
	Turnover round the material axis parallel with the material feeding direction. By repeated touch, choose whether the option will be active (the window colour-backlit) or not (grey window). 
	Slewing round both axes
	No optimization will take place If no symbol is selected – that is, an empty field is selected - optimization of angle cuts will not take place.

For optimization principle of angle cuts, see chapter "Optimization of angle cuts" in section "Automatic cycle".

4.5.6. Cutting by a recipe for the “RODS” type automatic cycle

- **The automatic cycle of the “RODS” type starts cutting by the pertinent recipe so that:**
 - It starts from the first non-zero line ticked off on the “RODS” screen.
 - On the first bar in this line, it cuts all pieces entered on the pertinent “PIECES” screen created for this line.
 - If more bar semi-products are entered in the cutting batch of bar semi-products on the “RODS” screen, the same configuration of all final pieces is repeatedly cut on every bar according to the same “RODS” screen.
 - After all bar semi-products in the given line have been cut, the cycle passes on the next line on the “RODS” screen and again cuts the first and all the other rods in the given line according to the uniform specification created on the “PIECES” screen which belongs to this line.
- **If bar semi-products of sufficient length are loaded, loading of another material is required any time when the whole configuration entered on the “PIECES” screen has been cut on one loaded bar.**
- **If a bar is loaded with insufficient length for cutting the whole entered batch, loading of another piece is required as soon as it is no longer possible to load another length for cutting.**

Unfinished pieces of the given semi-product will then not be cut from the next semi-product; they will just be registered in the table of unfinished pieces (see chapter “Unfinished pieces”).

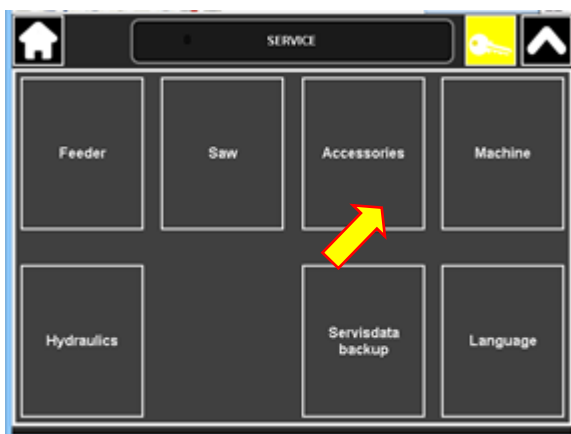
The new loaded material will be cut from the beginning precisely according to the given semi-product specification created on the “PIECES” screen.

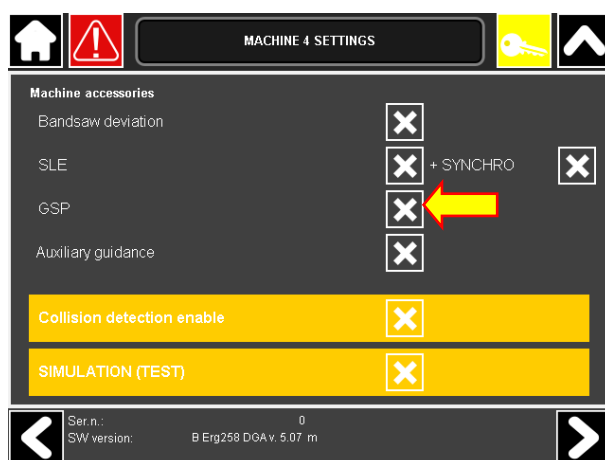
4.5.7. Setting the position for removal on the removal GSP belt conveyor

The saw can be equipped with the removal GSP belt conveyer (optional equipment), which enables sorting of the parts removed.

In the pertinent field of the GSP column in the recipe, you can enter where the GSP conveyer should locate the part removed.

- a) **If the removal GSP belt conveyor is not installed at the saw or if the operator does not want to use the installed GSP conveyor in the automatic cycle:**
- on the screen for selection of optional equipment in the service menu, you should cross the option that the GSP is not to be used;

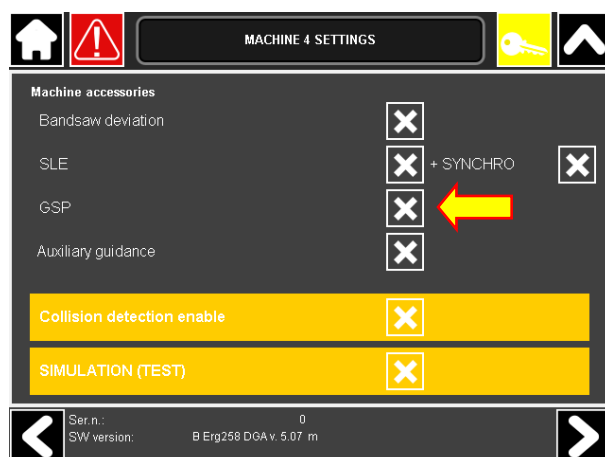




- setting in the pertinent recipe column will be ignored. **The recommended value is 0.**

b) If the removal GSP belt conveyor is installed at the saw with one side ejection position, which the operator wants to use in the automatic cycle:

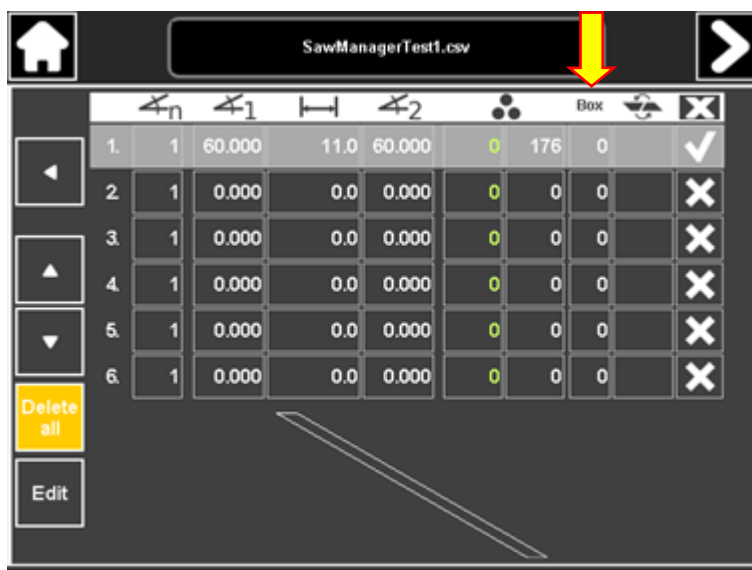
- on the screen for selection of optional equipment in the service menu, you should check the option that GSP is to be used;



- in the pertinent recipe column, you should enter a number indicating where the removed part is to be located:

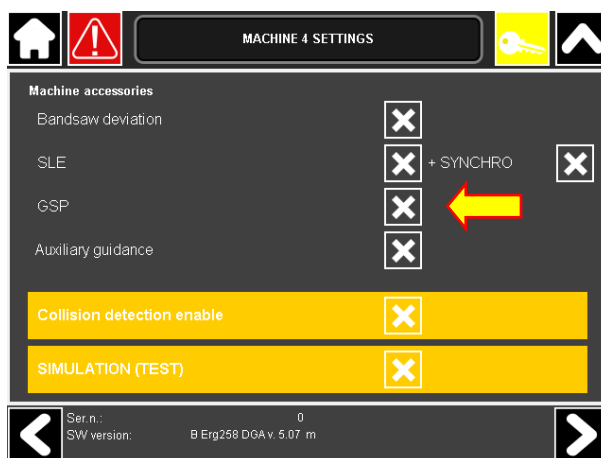
0 – removed part will get to the end of the GSP conveyor and fall over into a box

1 – removed part will be pushed sideward by the ejector



c) If the removal GSP belt conveyor is installed at the saw with two or more side ejection positions, which the operator wants to use in the automatic cycle:

- on the screen for selection of optional equipment in the service menu, you should check the option that GSP is to be used;



- in the pertinent recipe column, you should enter a number indicating where the removed part is to be located:

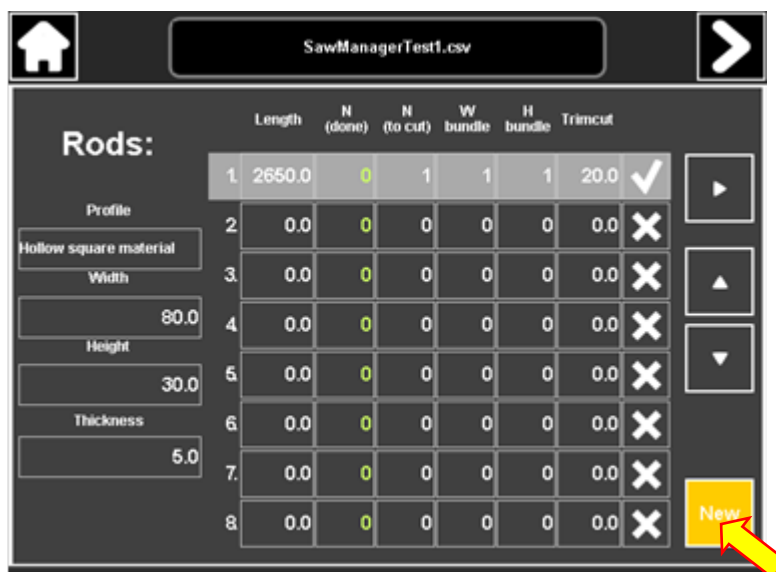
0 - removed part will get to the end of the GSP conveyor and fall over into a box

1, 2, 3... – removed part will be pushed sideward to the preset position by the ejector



4.6.2. Administration of recipe files

A new file with a completely new recipe can only be created by the "New" command on the opening screen of the currently loaded recipe.



	Length	N (done)	N (to cut)	W bundle	H bundle	Trimcut	
1	2650.0	0	1	1	1	20.0	✓
2	0.0	0	0	0	0	0.0	✗
3	0.0	0	0	0	0	0.0	✗
4	0.0	0	0	0	0	0.0	✗
5	0.0	0	0	0	0	0.0	✗
6	0.0	0	0	0	0	0.0	✗
7	0.0	0	0	0	0	0.0	✗
8	0.0	0	0	0	0	0.0	✗

Rods:

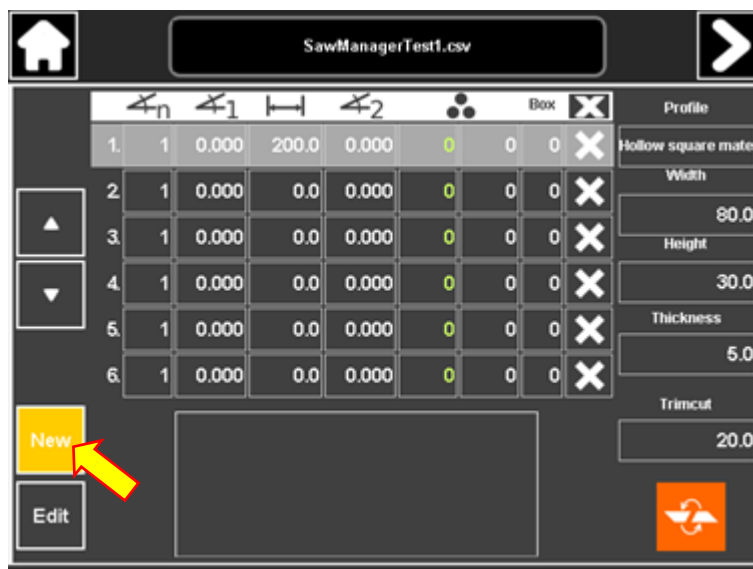
Profile: Hollow square material

Width: 80.0

Height: 30.0

Thickness: 5.0

New



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.	1	0.000	200.0	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.	1	0.000	0.0	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3.	1	0.000	0.0	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4.	1	0.000	0.0	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	1	0.000	0.0	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6.	1	0.000	0.0	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Box

Profile: Hollow square material

Width: 80.0

Height: 30.0

Thickness: 5.0

Trimcut: 20.0

New

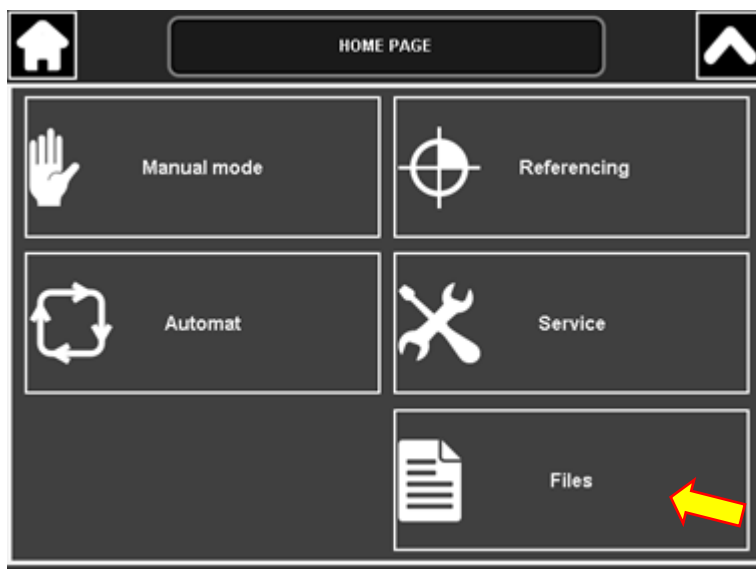
Edit

The administration of recipe files includes:

- saving of newly created recipes
- saving of modified, currently loaded recipes
- opening of already saved recipes
- deleting of saved recipes

The opening screen for administration of recipe files can be displayed:

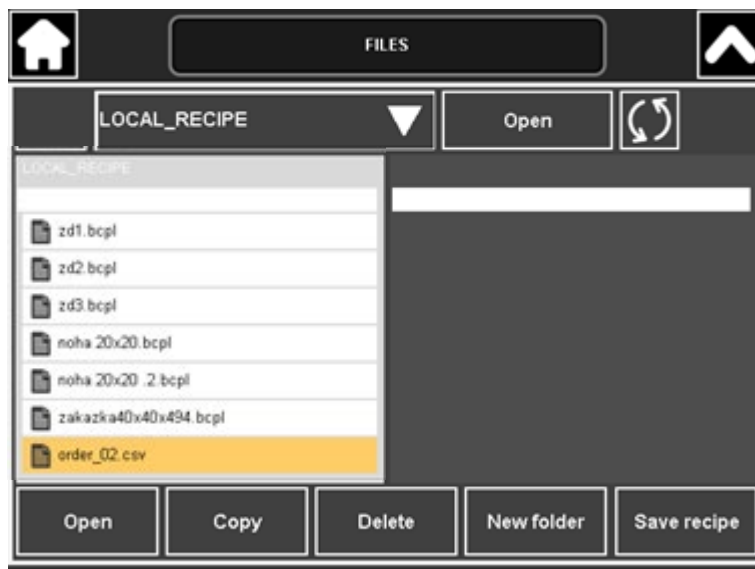
- by means of the "Files" option on the main screen of the control software:



- By means of the **"Files" option on the screen with recipe type selection.**



After you push the pertinent option, a screen appears for saving and loading of recipes.

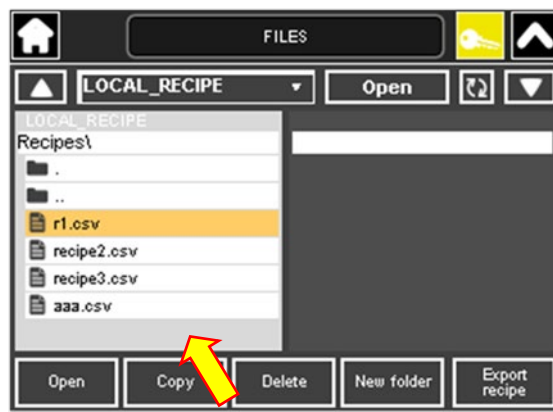


Position	Function
Open	open the marked folder or marked file
Copy	copy the marked folder or marked file
Delete	delete the marked folder or marked file
New folder	create a new folder
Export recipe	export the marked folder or marked file
	Pull-down menu for selection of disk (memory) for loading or saving By default, the Topline 510.350 DGANC machine only allows you to save in the internal memory of the machine.
	Open disk (memory) – selected in the pull-down menu
	Load USB By default, the Topline 510.350 DGANC machine only allows you to save in the internal memory of the machine.
	Browsing / marking a file / folder

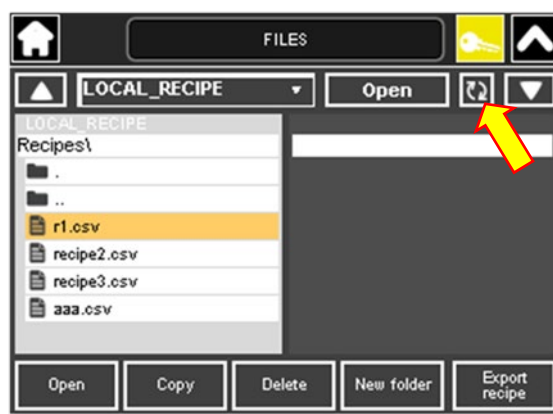
4.6.3. Saving the created recipe

If the created (modified) recipe is not saved, the entered data will be deleted when another recipe is loaded.

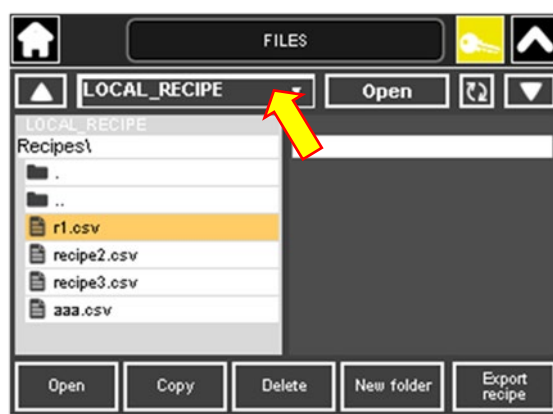
1. By touching, choose the active side of the window to view the memory in which you are to save – the screen is backlit in light grey



2. If you want to save a recipe to USB, insert the USB to the connector on the control panel and load the USB selecting the option (see arrow)



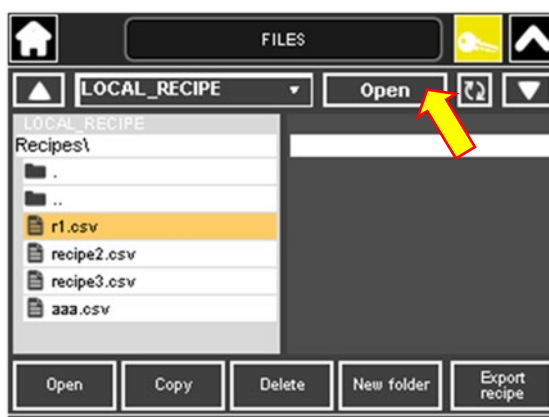
3. In the pull-down menu select the location (disc) you want to save to:
LOCAL_RECIPE – saving to the machine's memory
USB – save to USB



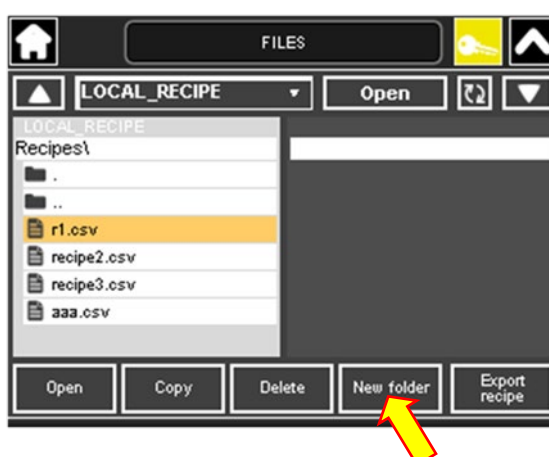
If you selected the option for saving to USB but had forgotten to insert an USB, a prompt will be displayed:



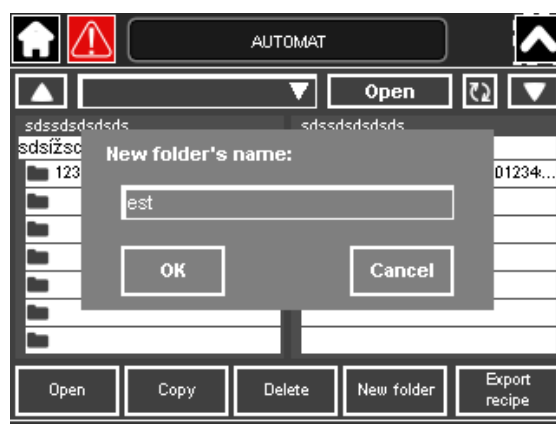
4. Open the selected disc location (Open-upper part of the screen) – its contents will be displayed in the active (gray) window



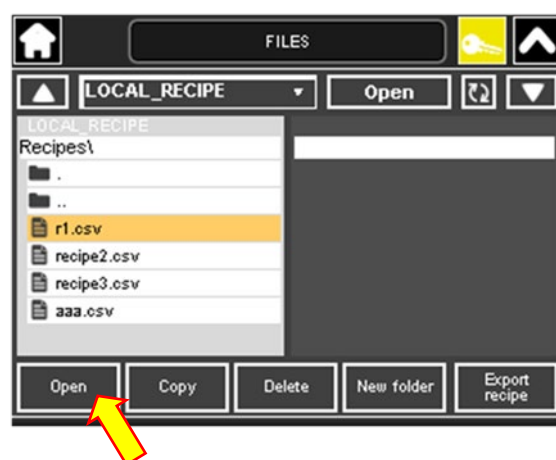
5. Select the option "New folder" to create a folder for insertion of the recipe sequence on the selected disc.



When creating a new folder, you will be asked to enter its name. The name can be entered after touching the coloured window with the keyboard on the display.

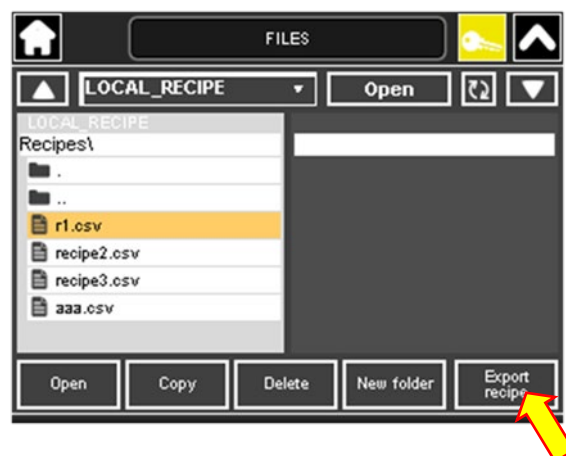


6. If saving in the folder, mark the pertinent folder; to open it, choose the Open option in the bottom left-hand corner.

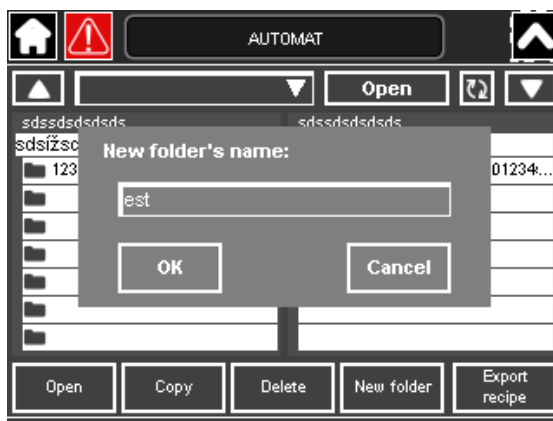


Otherwise the given sequence will be saved as a file in the memory directly.

7. Now you can save the prepared recipe in the pertinent open folder or memory by means of the Save recipe option.



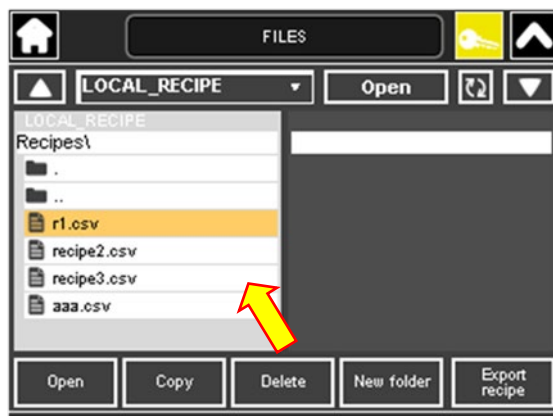
You will be asked to enter the file name under which the given recipe is to be saved.



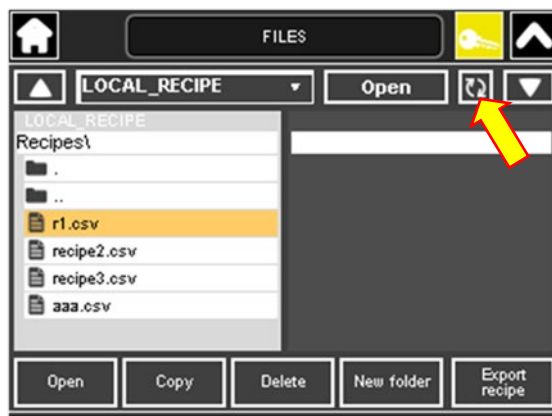
The prepared recipe will be saved in the selected place as a **file with the given name and the .csv extension**

4.6.4. Loading a saved recipe

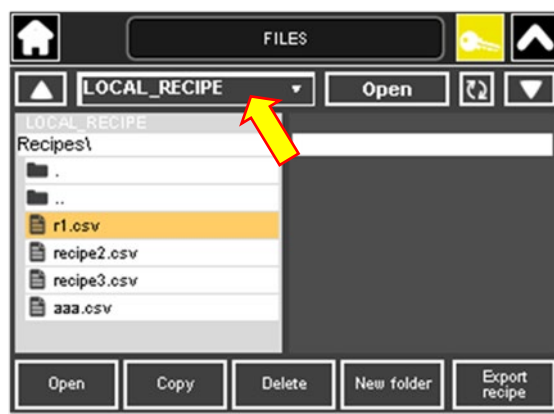
1. By touching, choose the window side which will be active to view the memory from which you want to load – the screen will be backlit in light grey



2. If you want to load from an USB, insert the USB to the connector on the left side of the control panel and load the USB by selecting the option for loading from USB.



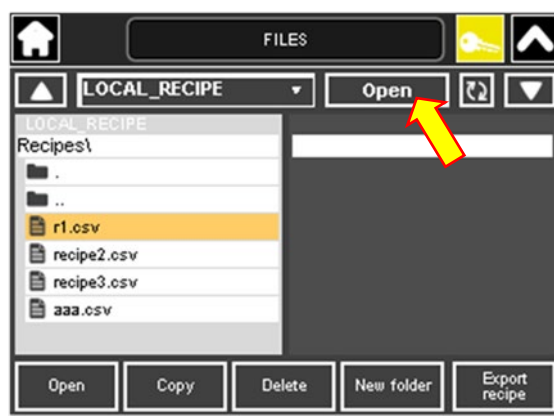
3. In the pull-down menu select the location (disc) you want to load from.
LOCAL_RECIPE – loading from the machine's memory.
USB – loading from an USB



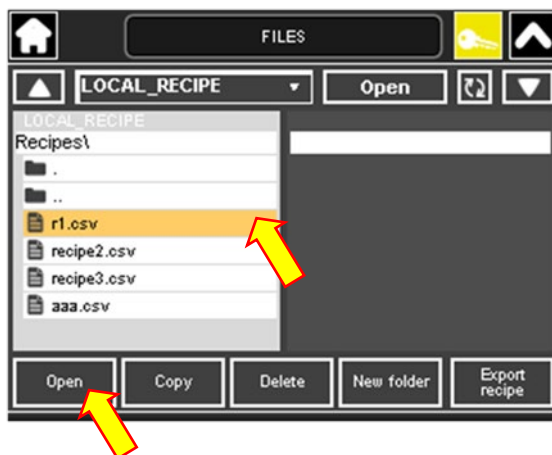
If you selected the USB option but had forgotten to insert a USB, a prompt will be displayed:



4. Open the selected disc location you want to load from (Open-upper part of the screen) – its contents will be displayed in the active (gray) window

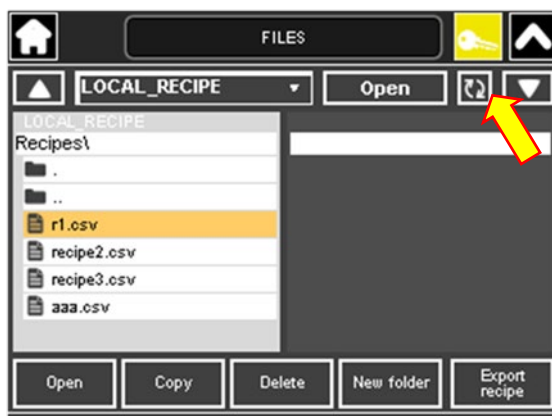


5. Browse up the pertinent recipe (.csv file) and open it with Open – left at the bottom.

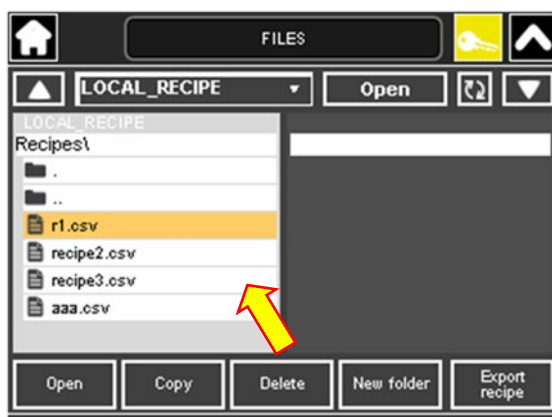


4.6.5. Copying USB / LOCAL_RECIFE

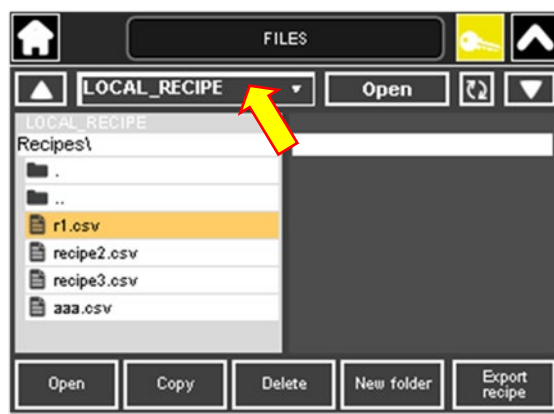
1. Insert the USB to the connector on the left side of the control panel and load the USB by selecting the option for loading from USB



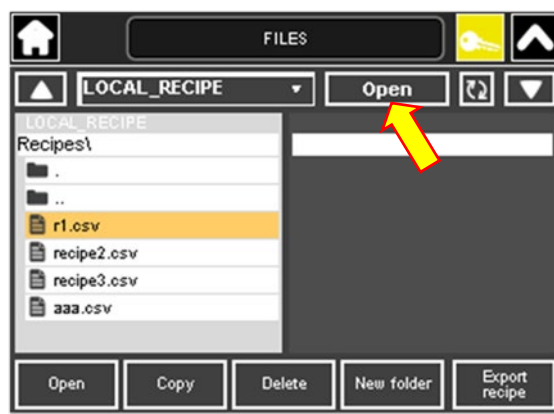
2. Select with touch the side of the window that will be active for displaying the location, you want to **copy from**.



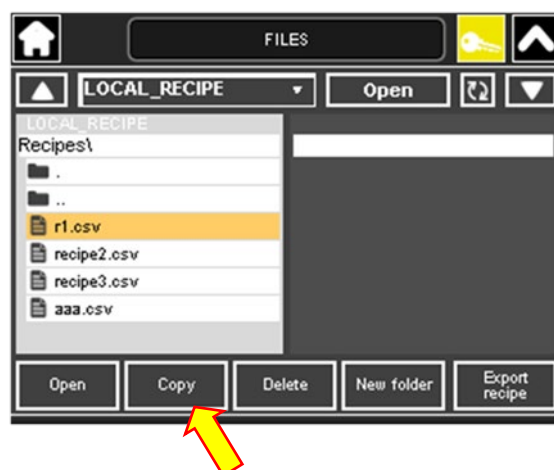
3. Select the memory (disc) in the pull-down menu you want to **copy from** (LOCAL_RECIFE / USB)



4. Open the selected disc location (Open-upper part of the screen) – its contents will be displayed in the active (gray) window

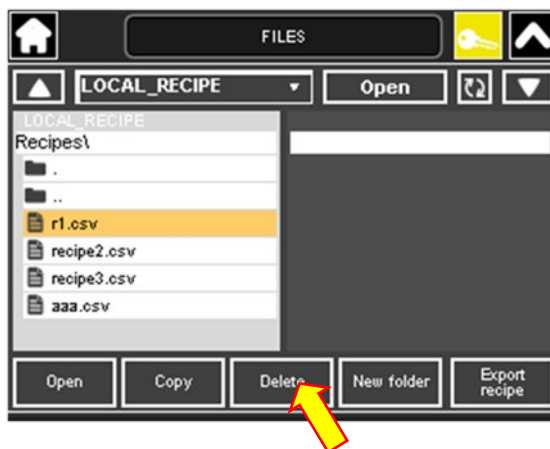


5. Repeat steps 2,3,4, on the other side of the window for memory, you want to **copy to**.
6. Find desired file or folder, select it and copy it using the option "Copy"



4.6.6. Deleting a recipe from the machine memory

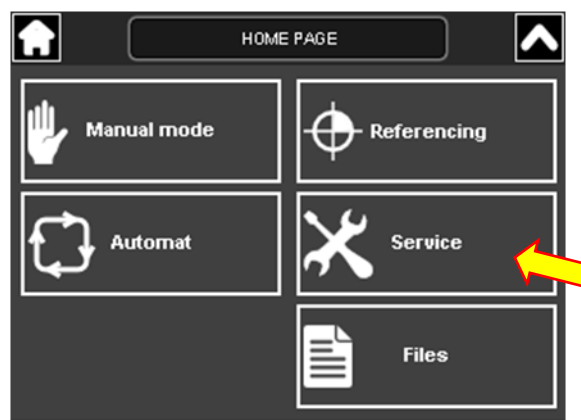
1. Open the selected memory in which you want to delete by analogical procedure – see above.
2. Browse up the pertinent file or folder, mark and delete it with the “Delete” option.



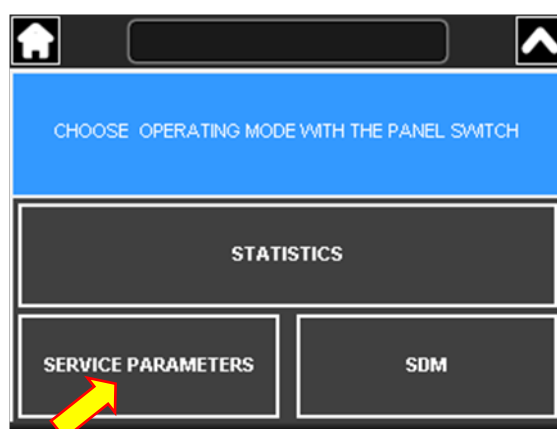
5. **Nastavení servisních parametrů/ Einstellung der Serviceparameter/ Setting of service parameters**

5.1. Setting of service parameters

1. Choose the option for setting of service parameters.
 - in the main screen of the control software:



- or in the screen which appears on the touch display after you switch the mode selector to the "0" position.



2. A screen appears with options for selection of setting units



5.2. Entering a password to insert service parameters

In the individual screens, it is only possible to set the parameters which are coloured immediately or after the password at the certain hierarchical level is entered. Parameters the boxes of which remain uncoloured can only be set at a higher hierarchical level.

The parameter setting options are protected by passwords at three hierarchical levels.

The password for the hierarchical level 1 is 1234

Parameters at the hierarchical level 2 can be set by a specially trained service engineer.

Parameters at the hierarchical level 3 can only be set by the manufacturer.

The icon for password entry appears at the top of the screen.

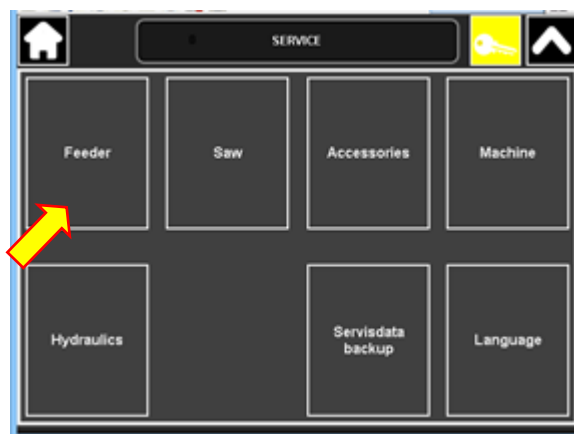


After touch, the menu for password entry opens up. The password can be entered any time during parameter setting.

Again, you can enter the password with the keyboard activated by touching in the box for password entry.

5.3. Setting the feeder service parameters

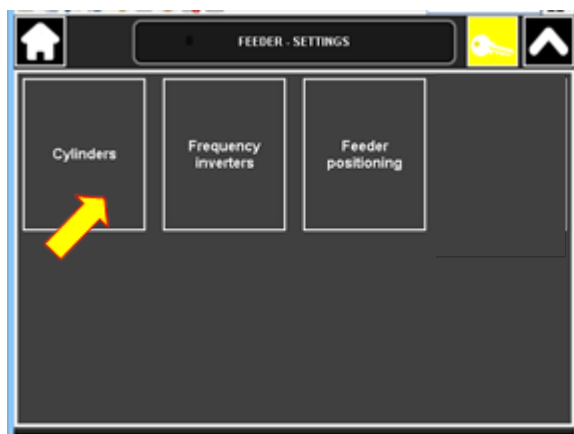
1. In the screen for selection of setting units, choose the "Feeder" option.



2. The next screen contains options for setting the feeder units

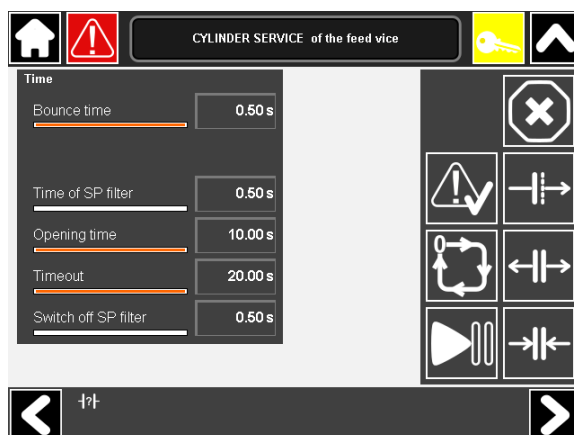


5.3.1. Feeder cylinder

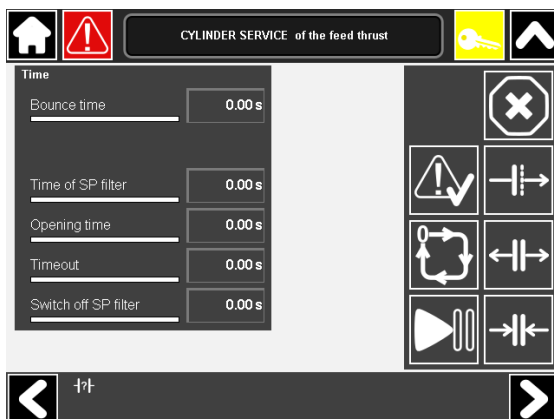


In the "Cylinders" service parameter under the service parameter settings, you can set the individual service parameters of hydraulic cylinders:

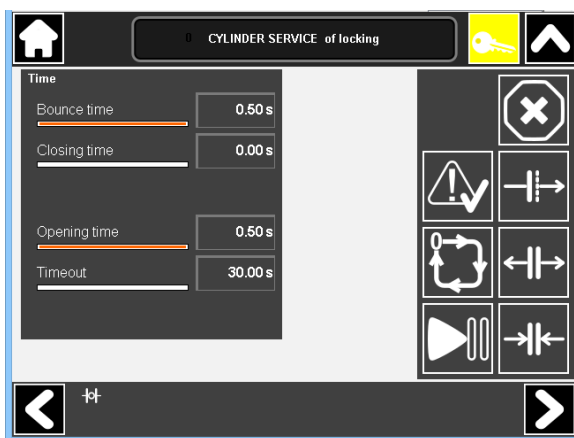
- jaw of feeder vice (hierarchical level 2)



- feed thrust (hierarchical level 2)



- bounce of jaw (hierarchical level 2)



Position	Function
Bounce time	Vice cylinder bounce-off time Caution! The maximum admissible bounce-off time is the time necessary for the bounce-off size of 20mm (the maximum permissible bounce-off size)! If the bounce-off time interval is longer, its size increases and there is a risk of collision!
Time of SP filter	Switching filter time, filter for attenuation of overswings at the limit switch during movement toward the limit switch.
Opening time	Vice opening time
Timeout	Time limit for opening and closing of the vice
Switch of SP filter	Switching filter time, filter for attenuation of overswings at the limit switch, when leaving position

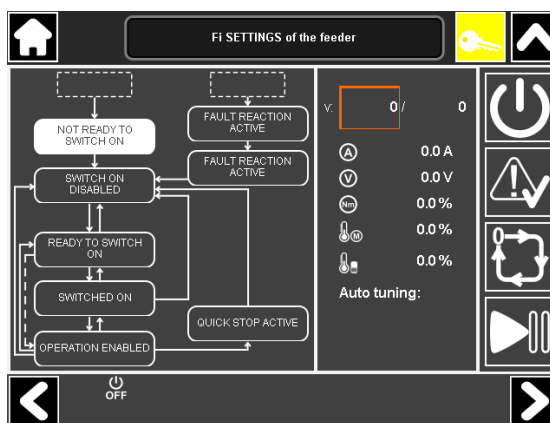
Position	Function
	Current state display  - vice is opening  - vice is closing  - unknown state
	Error message. If no error occurs, the error message box is empty.
	Error confirmation
	Restart, value settings remain.
	Interruption and restarting the line.
	Stop
	Vice bounce-off
	Release vice
	Clamp vice

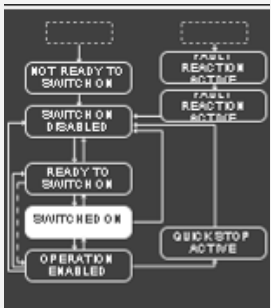
5.3.2. Feeder frequency converter diagnostics

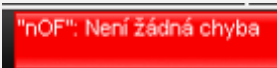


In the "Frequency converters" service parameter, parameters are displayed for diagnostics of the feeder frequency converter.

- Feeder frequency converter (hierarchical level 2)



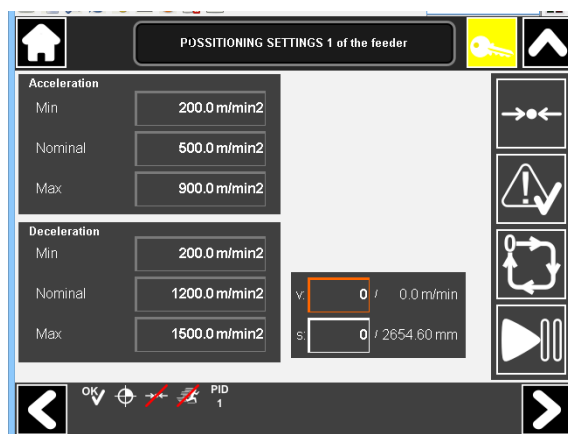
Position	Function
	State diagram of the current frequency converter
	- OK – start-up state of the frequency converter - Converter state: ON / OFF - Error message on the given frequency converter
	Entered / real converter speed 0.1 Hz or in rpm
	Current value of the current flowing to the motor

Position	Function
	Current voltage at the motor
	Current value of the motor torque, 0 to 100 %
	Thermal state of the motor
	Thermal state of the inverter
Auto tuning:	State of the „autotuning“ process
	Error message. If no error occurs, the error message box is empty.
	Switch on / off the converter
	Error confirmation
	Restart, value settings remain
	Converter stop and restart

5.3.3. Feeder positioning parameters setting

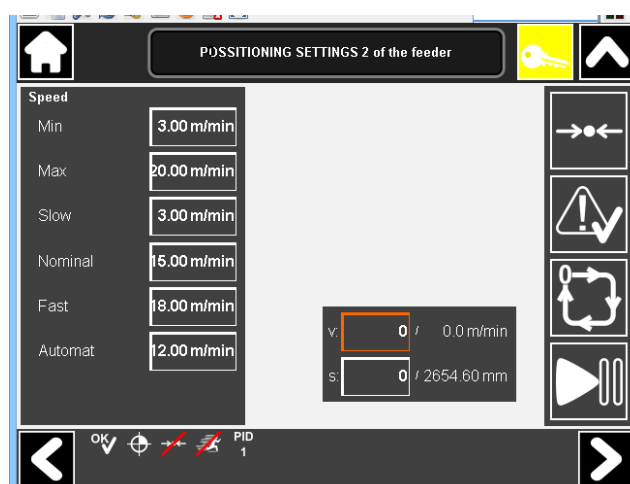


- Screen no.1 (hierarchical level 2)



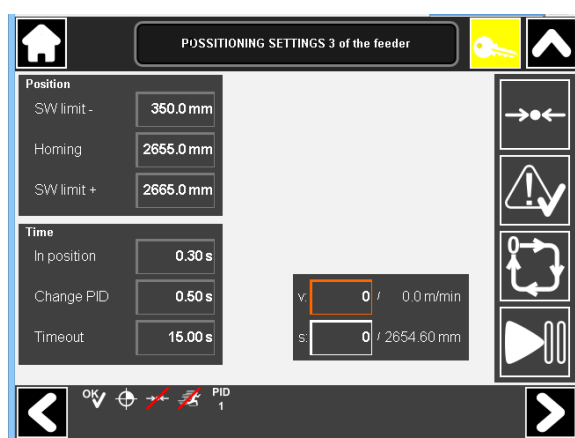
Position	Function
Acceleration Min 2 100.0 m/min² Nominal 2 1000.0 m/min² Max 2 2000.0 m/min²	Setting of unit movement acceleration in the given axis
Deceleration Min 2 100.0 m/min² Nominal 2 1000.0 m/min² Max 2 2000.0 m/min²	Setting of unit movement deceleration in the given axis

- Screen no. 2 (hierarchical level 2)



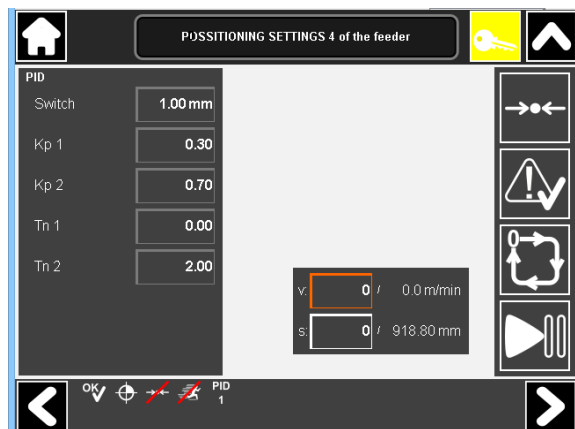
Position	Function
Speed Min 2 1.00 m/min Max 2 15.00 m/min Slow 2 5.00 m/min Nominal 2 15.00 m/min Fast 2 15.00 m/min Automat 2 10.00 m/min	Setting of positioning speed parameters • Minimum speed • Maximum speed • Low speed • Nominal speed • High speed • Speed in the automatic mod

- Screen no. 3 (hierarchical level 2)



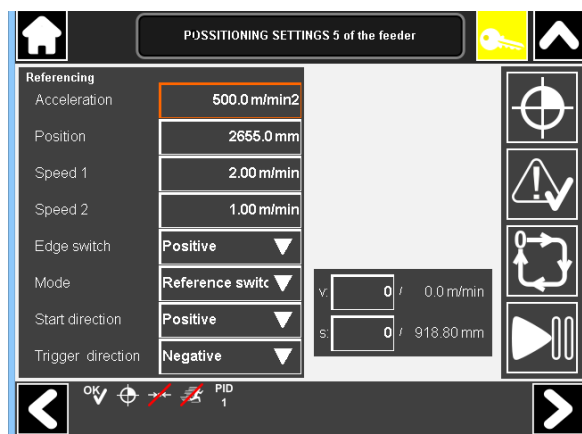
Position	Function
Position SW limit - 2 250.0 mm Homing 2 2555.0 mm SW limit + 2 2550.0 mm	Setting of minimum allowed unit position • Unit reference position • Maximum allowed unit position
Time In position 2 0.20 s Change PID 2 0.20 s Timeout 2 30.00 s	• The "in position" time value is the time for which the position must be in tolerance to finish the movement. • The "Change PID" time value is without function. • The "Timeout" time value is the time after which the regulator parameters are switched; after the double of the preset value, an error is reported, positioning is impossible.

- Screen no. 4 (hierarchical level 3)



Position	Function
PID Switch 3 0.30 mm Kp 1 3 0.50 Kp 2 3 0.70 Tn 1 3 0.00 Tn 2 3 0.00	PID regulator - Switch-over – position tolerance after switch-over of parameters - KP1 – parameter, proportional component 1 - Tn1 – parameter, integration component

- Screen no. 5



Position	Function
Acceleration (hierarchical level 2)	Unit acceleration at reference
Position (hierarchical level 2)	Unit reference position

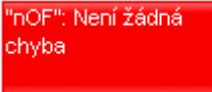
Position	Function
Speed 1 (hierarchical level 2)	Speed at search for reference switch
Speed 2 (hierarchical level 2)	Speed of running from reference position
Edge switch (hierarchical level 3)	Edge at which movement stops during search for reference switch
Mode (hierarchical level 3)	Reference type - Directly to the reference switch - To the limit switch
Start direction (hierarchical level 3)	Feeder direction at referencing start - Positive – from the saw - Negative – to the saw
Trigger direction (hierarchical level 3)	Feeder starting direction - Positive – from the saw - Negative – to the saw

- Screen no. 6 (hierarchical level 3)



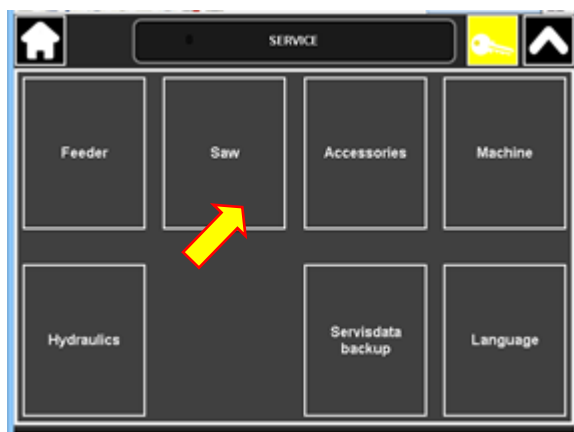
Position	Function
Units Encoder increments	Position measurement – used for measurement correction

Meaning of other symbols on the screens for positioning:

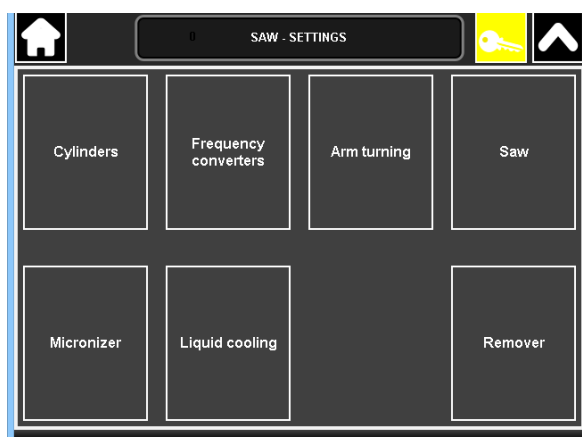
Position	Function
	Unit prepared
	The unit is / is not referenced
	The unit is / is not in position
	Currently used PID regulator settings
	Entered / real unit speed
	Entered / real unit position
	Unit travel to position
	Error confirmation
	Reset
	Stop and restart
	Error message. If no error occurs, the error message box is empty.

5.4. Setting of the saw service parameters

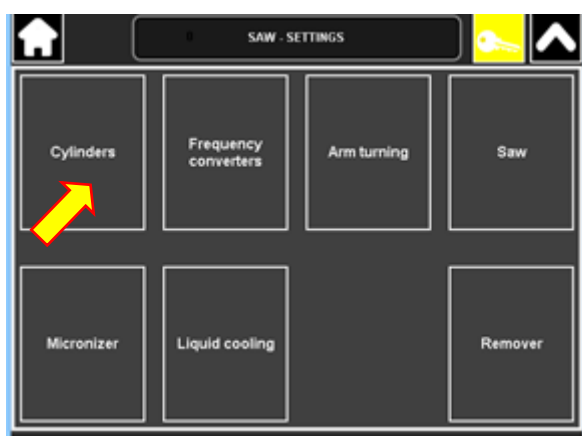
In the screen for setting unit selection, choose the "Saw" option



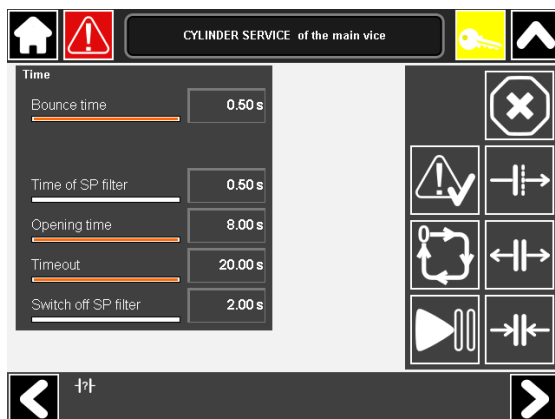
1. The following screen contains options for the saw unit settings



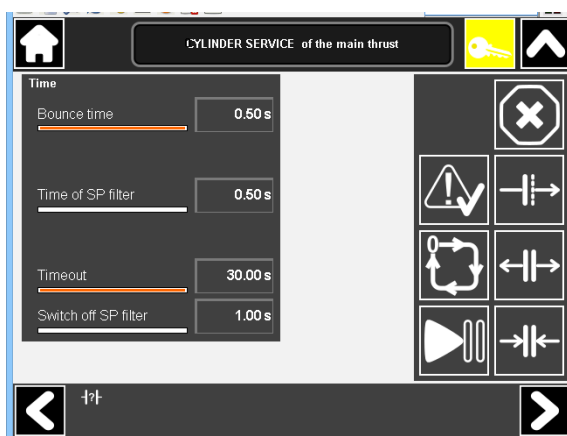
5.4.1. Service parameters of the saw hydraulic cylinders



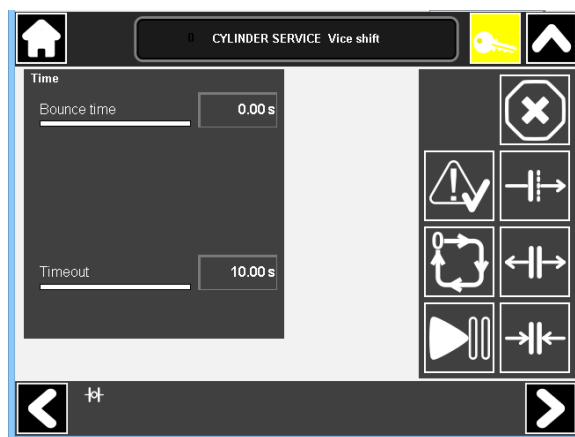
- Screen no.1 – service of the cylinder of the main vice (hierarchical level 2)



- Screen no.2 – service of the cylinder of the main upper clamping (hierarchical level 2)



- Screen no.3 - service of the cylinder of the vice shift (hierarchical level 2)

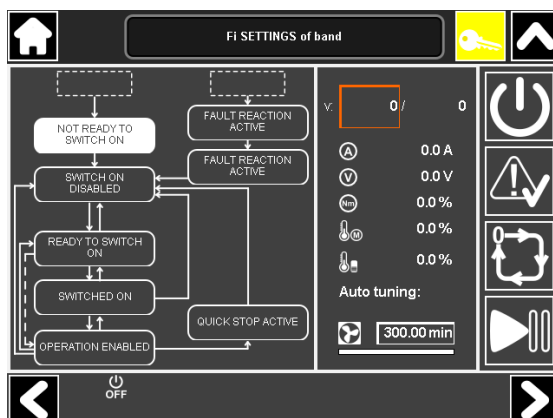
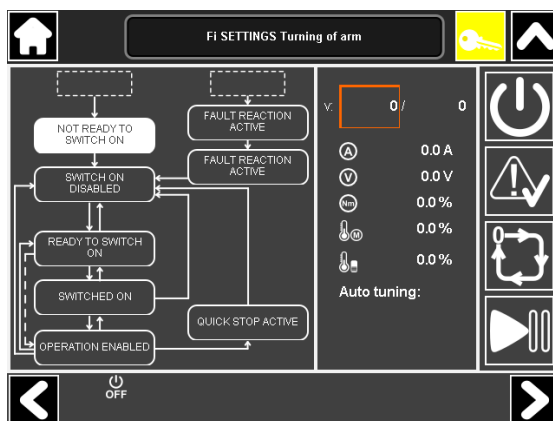
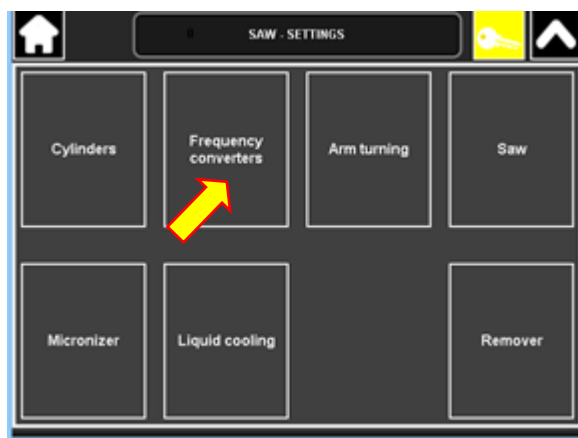


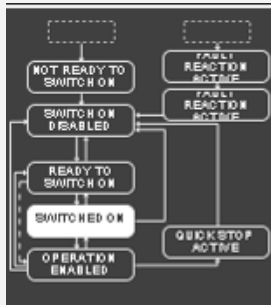
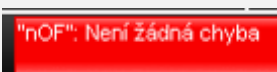
The description of the cylinder screens applies to all screens for setting of cylinder service parameters:

Position	Function
Bounce time	Vice bounce-off time
Time of SP filter	Switching filter time, filter for attenuation of overshings at the limit switch, during movement toward the limit switch
Timeout	Time limit for the vice opening and closing
Switch off SP filter	Switching filter time, filter for attenuation of overshings at the limit switch, during leaving position
	Current state display  - is opening  - vice is closing  - unknown state
	Error message. If no error occurs, the error message box is empty.
	Error confirmation
	Restart, value settings remain.
	Interruption and restarting the unit
	Stop
	Bounce-off
	Release
	Clamp

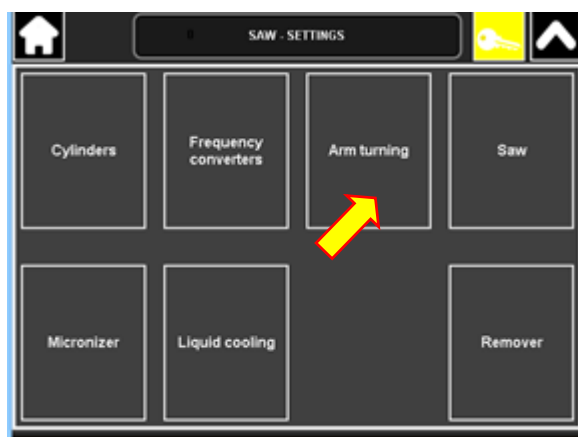
5.4.2. Diagnostics of the saw frequency converters

The "Frequency converters" service menu under the saw settings enables display of the individual service parameters of the frequency converters for setting the band speed and arm rotation speed

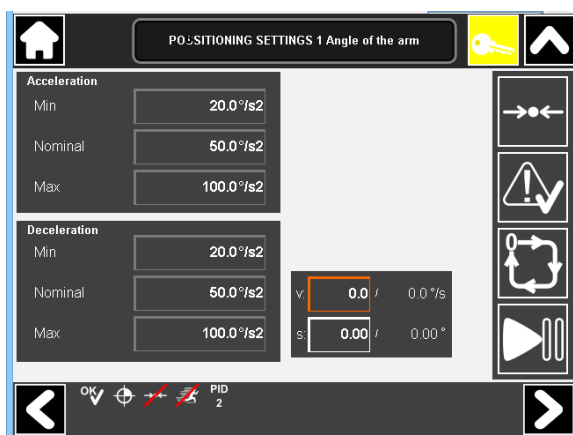


Position	Function
	State diagram of the current frequency converter
	- OK – start-up state of the frequency converter - Converter state: ON / OFF - Error message on the given frequency converter
	Entered / real converter speed 0.1 Hz or in rpm
	Current value of the current flowing to the motor
	Current voltage at the motor
	Current value of the motor torque, 0 to 100 %
	Thermal state of the motor
	Thermal state of the inverter
Auto tuning:	State of the „autotuning“ process
	Error message. If no error occurs, the error message box is empty.
	Switch on / off the converter
	Error confirmation
	Restart, value settings remain
	Converter stop and restart

5.4.3. Arm positioning parameters setting

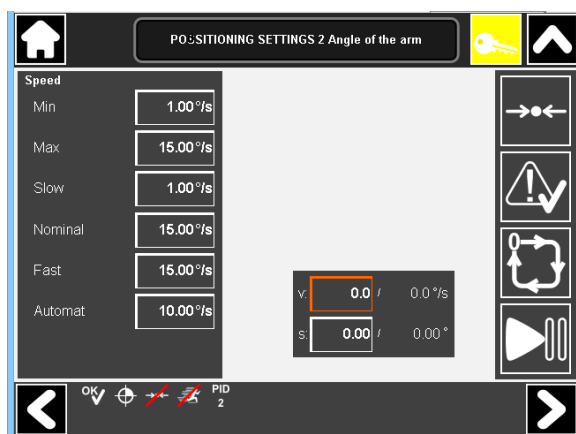


- Screen no.1 (hierarchical level 2)



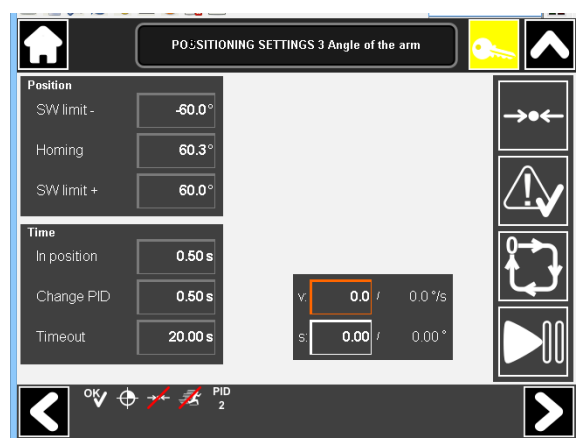
Position	Function
Acceleration Min 2 20.0 %/min² Nominal 2 50.0 %/min² Max 2 100.0 %/min²	Setting of unit movement acceleration in the given axis
Deceleration Min 2 20.0 %/min² Nominal 2 50.0 %/min² Max 2 100.0 %/min²	Setting of unit movement deceleration in the given axis

- Screen no.2 (hierarchical level 2)

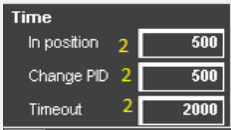


Position	Function
Speed Min 2 1.00 °/min Max 2 15.00 °/min Slow 2 1.00 °/min Nominal 2 15.00 °/min Fast 2 15.00 °/min Automat 2 10.00 °/min	Setting of positioning speed parameters - Minimum speed - Maximum speed - Low speed - Nominal speed - High speed - Speed in the automatic mode

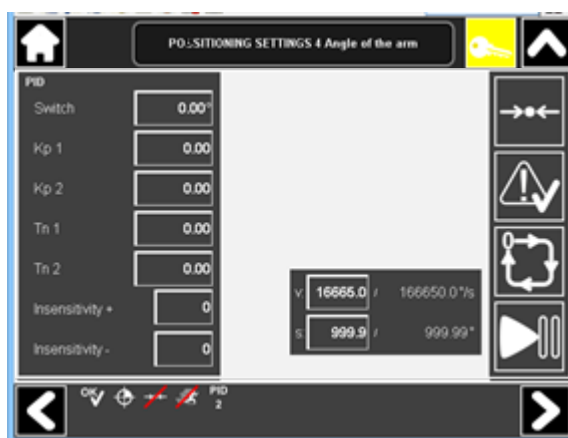
- Screen No.. 3 (hierarchical level 2)



Position	Function
Position SW limit - 2 -60.0 ° Homing 2 43.8 ° SW limit + 2 45.0 °	Setting of the minimum allowed unit position - Unit reference position - Maximum allowed unit position

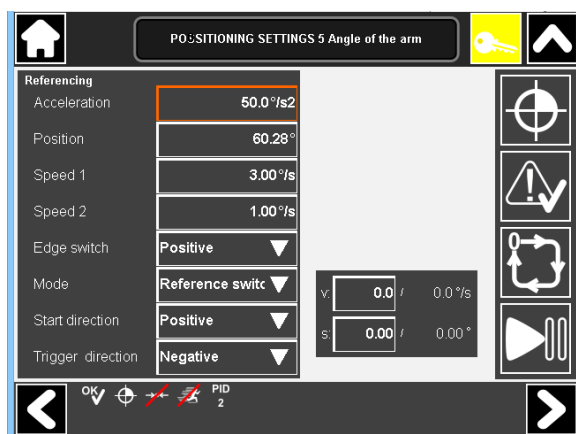
Position	Function
	- The "in position" time value is the time for which the position must be in tolerance to finish the movement - The "movement" time value is without function. - The "Timeout" time value is the time after which the regulator parameters are switched over; after the double of the preset value, an error is reported, positioning is impossible.

- Screen no. 4



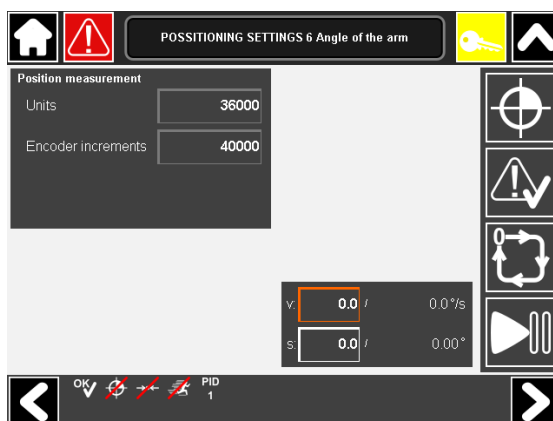
Position	Function
	PID regulátor - Switch-over – position tolerance after switch-over of parameters - KP1 – parameter, proportional component 1 - Tn1 – parameter, integration component - Insensitivity $\pm$ - parameters for correction of rotation of the saw arm

- Screen no. 5



Position	Function
Acceleration (hierarchical level 2)	Unit acceleration at reference
Position (hierarchical level 2)	Unit reference position
Seed 1 (hierarchical level 2)	Speed at search for reference switch
Speed 2 (hierarchical level 2)	Speed of running from reference position
Edge switch (hierarchical level 3)	Edge at which movement stops during search for reference switch
Mode (hierarchical level 3)	Reference type • Directly to the reference switch • To the limit switch
Start direction (hierarchical level 3)	Feeder direction at referencing start • Positive – from the saw • Negative – to the saw
Trigger direction (hierarchical level 3)	Feeder starting direction • Positive – from the saw • Negative – to the saw

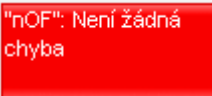
- Screen no. 6 (hierarchical level 3)



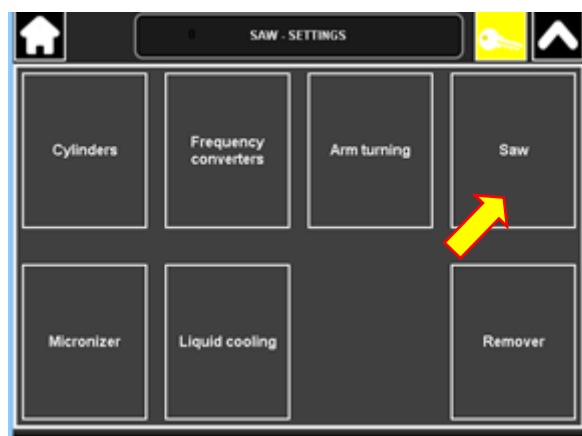
Position	Function
Units	Position measurement – used for measurement correction
Encoder increments	

Meaning of other symbols in the positioning screens

Position	Function
	Unit prepared
 	The unit is / is not referenced
 	The unit is / is not in position
	Currently used PID regulator settings
	Entered / real unit speed
	Entered / real unit position
	Unit travel to position
	Error confirmation
	Reset

Position	Function
	Converter stop and restart
	Error message. If no error occurs, the error message box is empty.

5.4.4. Saw settings



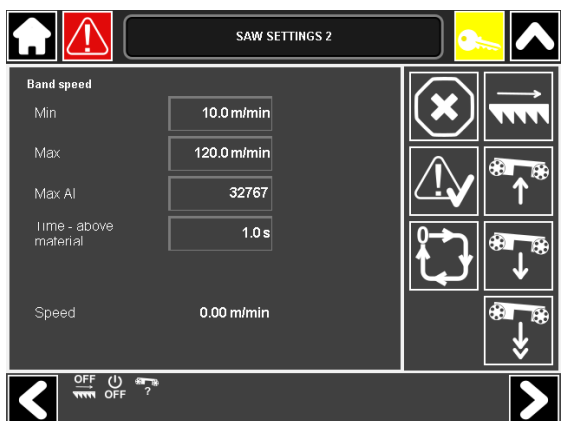
- Screen no.1



Position	Function
Transmission (hierarchical level 3)	Value for conversion of the detected motor frequency to speed in m/min
Min.v: (hierarchical level 2)	Minimum band speed Minimum recommended value Min v = 20; at a lower speed, there is a risk of the band stopping in the material.
Max.v: (hierarchical level 2)	Maximum band speed Maximum recommended value Max v = 120

Position	Function
Speed (hierarchical level 2)	Current band speed

- Screen no.2



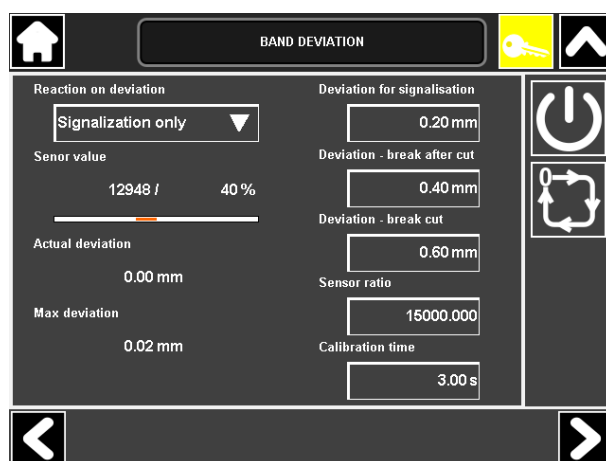
Position	Function
Min. (hierarch. Level 3)	Minimum band speed Minimum recommended value of Min v = 20; at lower speed, the band may stuck in the material
Max. (hierarch. Level 3)	Maximum band speed Maximum recommended value of Max v = 120
Max. AI hierarch. Level 2)	Maximum potentiometer range for the band speed. Factory setting Change the given setting upon consultation with the manufacturer only.
Time above material	Time interval from switching of the "hockey-stick" limit switch (device detecting the arm position above the material) to stopping of the arm upward movement
Speed	Current speed of the arm feed.

Meaning of other symbols in the screens for saw band settings:

Position	Function
	The saw band is / is not rotating
	The unit is / is not in position
	Start the saw band

Position	Function
	Stop the band
	Error confirmation
	Restart, value settings remain
	Arm upward movement. The button must be pushed continually during movement. If you release the button, the movement stops..
	Arm downward movement The button must be pushed continually during movement. If you release the button, the movement stops.
	Arm downward movement with fast feed The button must be pushed continually during movement. If you release the button, the movement stops.

- Screen no.3 – Band deviation



The screenshot shows the 'BAND DEVIATION' screen with the following settings and values:

- Reaction on deviation:** Signalization only (dropdown menu)
- Sensor value:** 12948 / 40 % (with a gauge bar)
- Actual deviation:** 0.00 mm
- Max deviation:** 0.02 mm
- Deviation for signalisation:** 0.20 mm
- Deviation - break after cut:** 0.40 mm
- Deviation - break cut:** 0.60 mm
- Sensor ratio:** 15000.000
- Calibration time:** 3.00 s

Navigation icons are visible at the top and bottom of the screen.

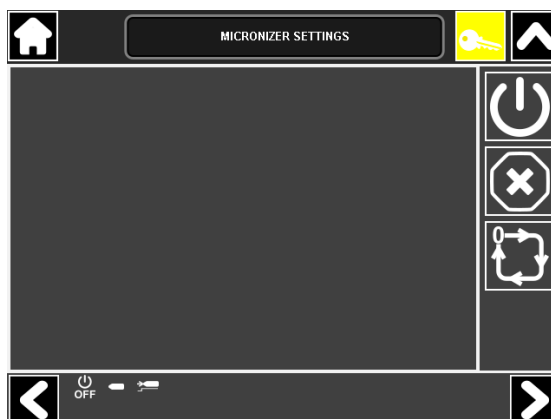
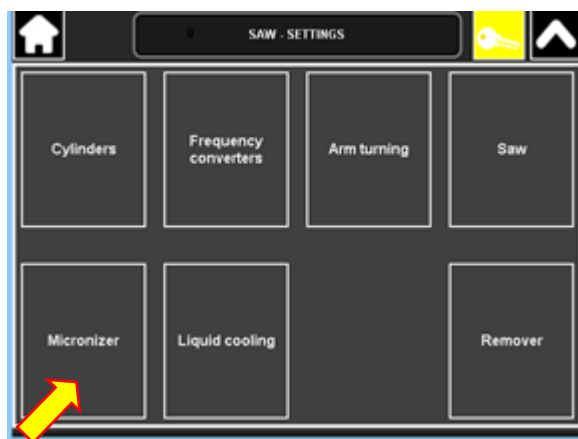
Position	Function
Reaction on deviation	Select the desired machine response in case the preset deviation limit is exceeded <i>Not used</i> – no response <i>Signal only</i> - just light indication <i>Finish cutting</i> – the ongoing cut will be finished and then the machine stopped <i>Interrupt cutting (Stop)</i> – the machine is stopped immediately

Position	Function
Sensor value	Current deviation in sensor units
Actual deviation	Current deviation in mm
Max. deviation	Maximum deviation measured during one measuring cycle
Deviation for signalisation Deviation – break after cut Deviation – break cut	Deviation values for the individual machine reactions
Sensor ratio	Machine transmission constant. The parameter has been factory set. Do not change the parameter value! The parameter affects the equipment accuracy.
Calibration time	Band running time to reset the deviation Recommended to keep the factory settings

The band deviation sensor is located in the holder of the adjustable cube guiding the saw band

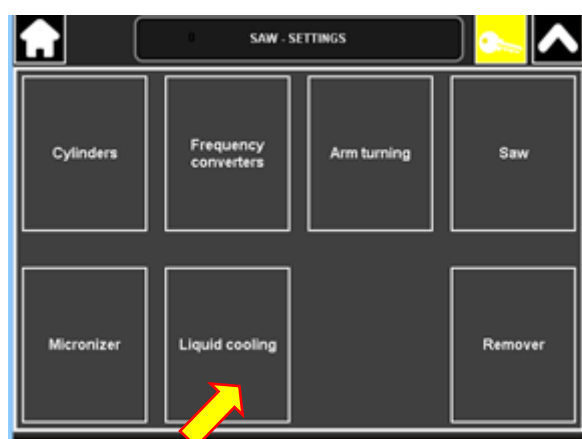
The signalling light to indicate exceeding of the band deviation is located on the upper cover wall above the outlet saw hole

5.4.5. Setting of Micronizer (hierarchical level 2)



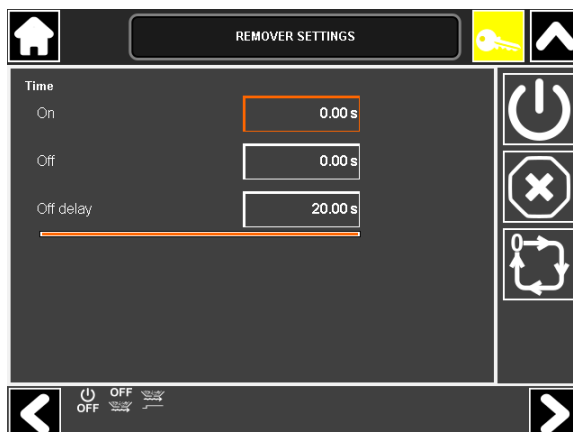
Position	Function
	Micronizer state: ON or OFF
	Micronizer is set without timing, continues to run.
	Switch on/off the Mikronizer
	Stop
	Restart, value settings remain.

5.4.6. Setting of the cooling



Position	Function
On	Cooling on + set timing
Off	Cooling off + set timing
	Cooling state: ON or OFF
	Cooling pump on state
	Cooling setting indication
	Switch on/off the cooling
	Stop
	Restart, value settings remain.

5.4.7. Chip remover settings - optional accessory

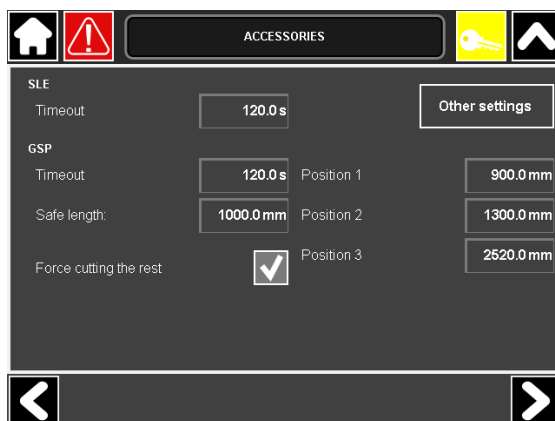


Positon	Function
On	Time, for which the remover motor is on
Off	Time duration of the interrupted cycle of chip removal
Off delay	Time in which the chip removing process is finished after the last cut is completed
	Remover state: ON or OFF
	Remover on state
	Remover setting indication
	Switch on/off the cooling
	Stop
	Restart, value settings remain.

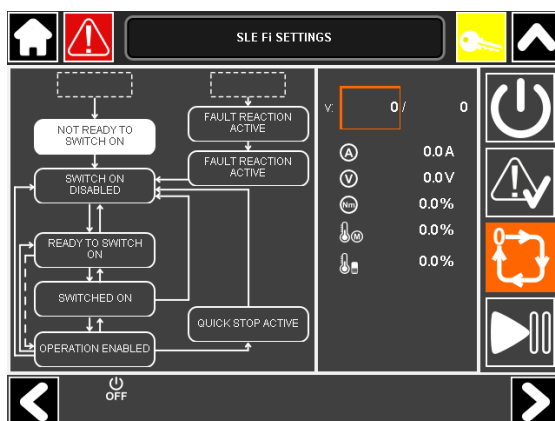
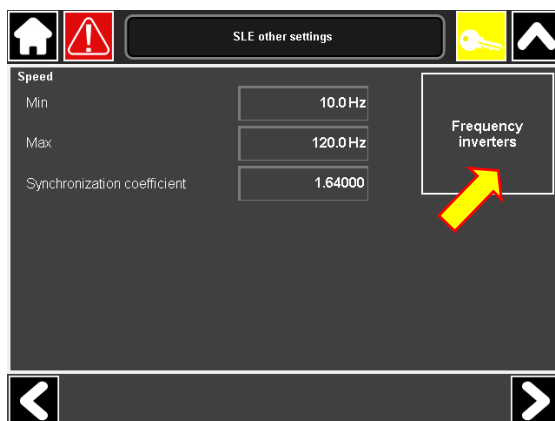
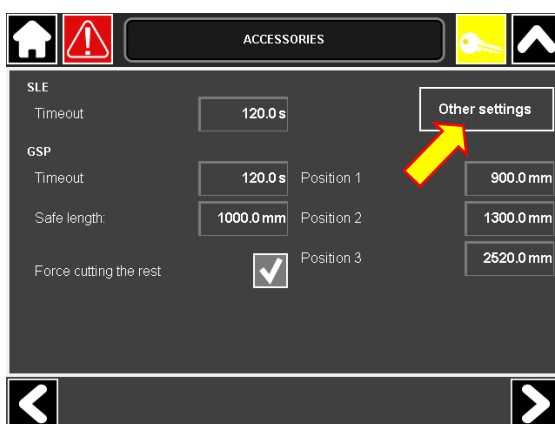
5.5. Accessories

On the screen for selection of setting units, choose the "Accessories" option





Option for **other settings**:



Position	Function
SLE	
Timeout	Time limit for which the saw is waiting for material from the loader before declaring an error
GSP	
Timeout	Time limit for which the saw is waiting for a signal that the material has been removed before declaring an error
Save lenght	Maximum piece length at which it is not necessary to wait for removal
Position 1 Position 2 Position 3	Position for ejection of pieces from GSP conveyer The entered values must correspond to the real parameters of the cooperating GSP conveyer

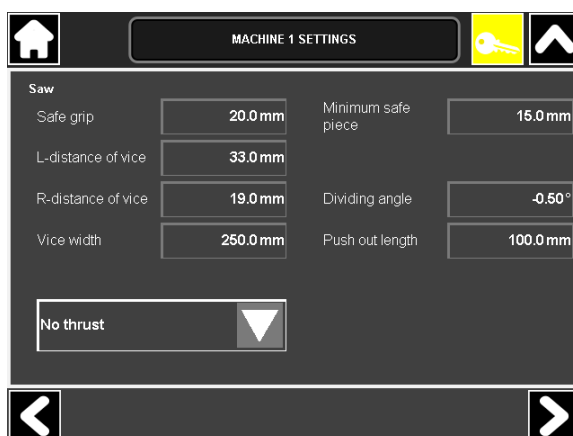
Position	Function
Force cutting the rest	Selection for forced cutting of the short residual piece If this option is checked, it is possible to cut nextl pieces even if the length of the residual piece that is clamped in the feeder is no longer enough to push the cut pieces out of the saw. The piece or pieces that cannot be pushed out of the band saw remain inside the band saw. At the discretion of the operator, these pieces can then be pushed out of the saw only after another piece with a sufficiently long length has been loaded to the feeder or can be removed manually. Caution! There is a risk of a collision between the cut pieces that remain in the saw and parts of the band saw or the material being handled. Therefore, before checking the option for forced cutting of the residual piece, the operator must consider whether these risks can be avoided and, if necessary, take the necessary measures to prevent collisions!

5.6. Setting of the machine service parameters

On the screen for selection of setting units, choose the "Machine" option



- Screen no.1



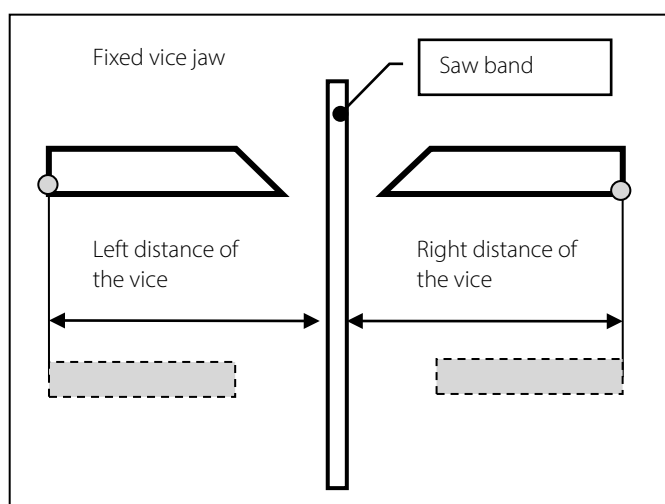
Position	Function
Safe grip (hierarchical level 2)	Minimum length beyond which the main vice can clamp the material safely.. If the resultant clamping length of the cut piece is shorter, the piece is evaluated as residual. See Note 1
L-distanceof vice (hierarchical level 2)	Left distance of the vice See Picture 1 If the vice table on the left of the band is set outside the set value during cutting, this position is evaluated as an error. See Note 1
R-distanceof vice (hierarchical level 2)	Right distance of the vice See Picture 1 If the vice table on the right of the band is set outside the set value during cutting, this position is evaluated as an error. See Note 1

Position	Function
Vice width (hierarchical level 2)	Vice width = width of the moving jaw of the vice
Minimum safe piece (hierarchical level 2)	Minimum safe piece for cutting See Note 1
Diving angle (hierarchical level 2)	Angle at which the saw control software decides to transfer the vice. The machine manufacturing deviations are also added to the zero angle. See Note 1
Push out lenght (hierarchical level 2)	Distance from the band at the 0° angle to the front edge of the material pushed out If the set material length to be cut is lower than the length pushed out, the feeder first moves the clamped and fed material forwards, in which way the cut piece is pushed out, and then the feeder returns the clamped and fed material to the initial position for length feeding. If the feeder contains a short piece which will no longer enable the material to be pushed out, the machine reports an error. If the set material length to be cut is higher than the length pushed out, the feeder only executes movement for length feeding.
Pull-down menu (hierarchical level 1)	
No thrust	Upper thrust disabling
1.Vice 2. Thrust	First the main vice is clamped, then the thrust.
1. Thrust 2. Vice	First the upper thrust is clamped, then the main vice.

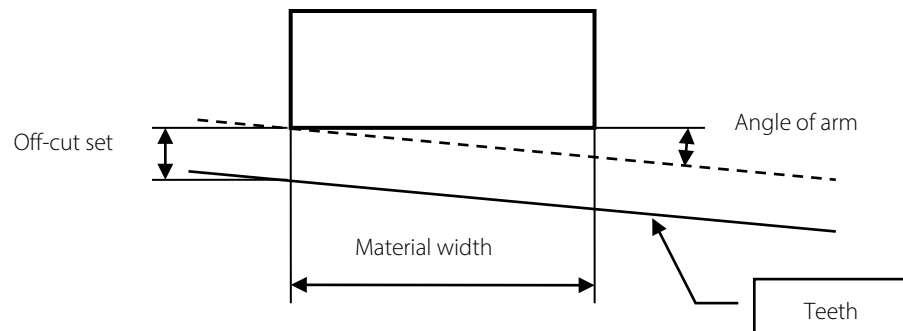
Notice 1

Caution! The set parameters are evaluated for simple cuts only! For multiple cuts, the parameters are not evaluated!

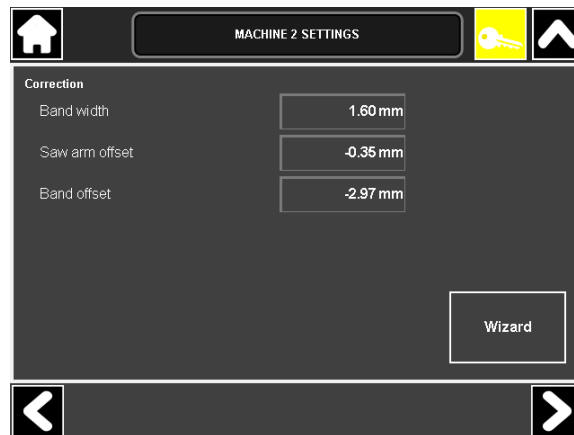
Picture 1 Left / right distance of the vice



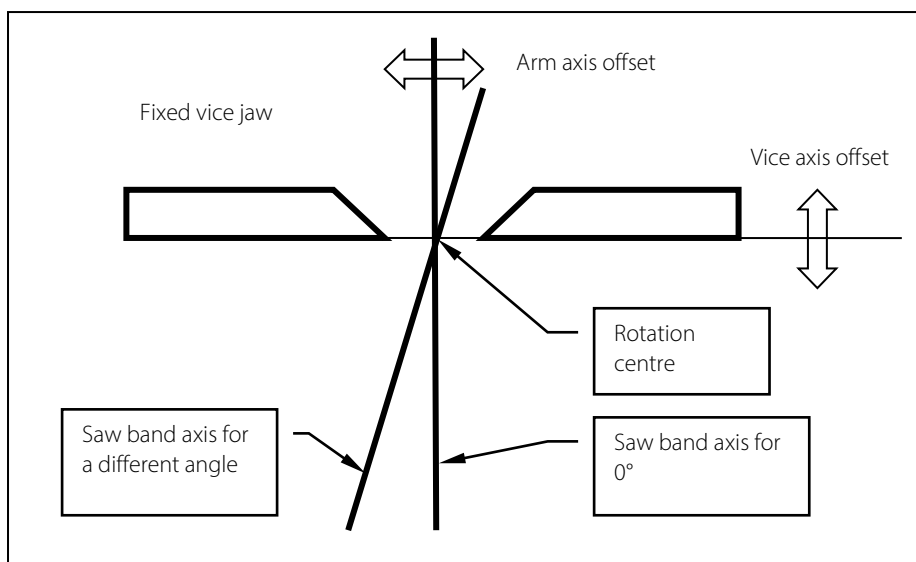
Picture.2 – Off-cut depth



- Screen no.2 (hierarchical level 2)



Position	Function
Band width	The value is either read from the Wizard correction belt or can be directly entered.
Saw arm offset	Saw arm axis offset from the ideal state In the ideal state, the arm rotation centre lies in the intersection of the vice area and the arm axis for rotation 0, which is identical with the axis of the gap in the fixed jaw of the vice. See Picture 3
Vice offset	Vice axis offset from the ideal state. See Picture 3
Wizard	Cut correction guide Menu for setting of correction parameters The correction parameters have an effect on the cut piece length accuracy.

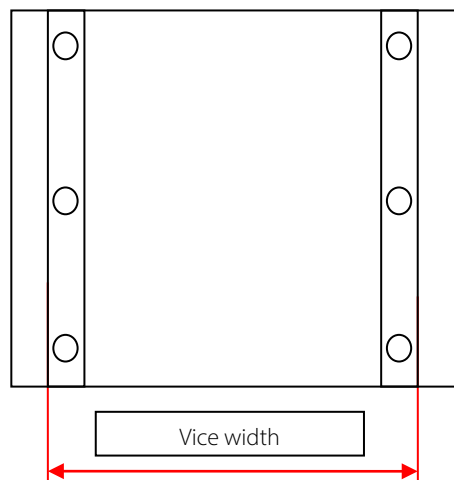


Picture 3

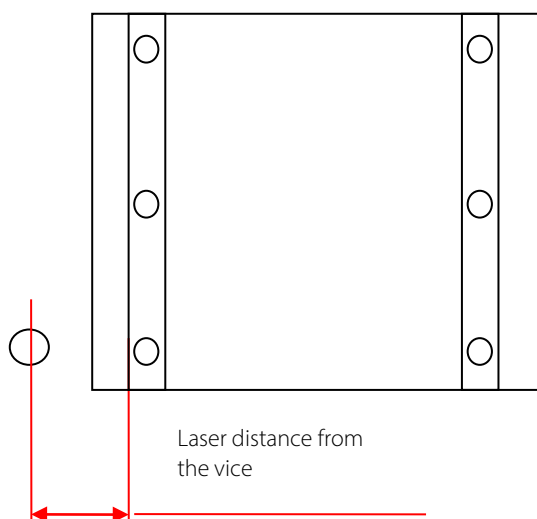
- Screen no.3 (hierarchical level 2)



Position	Function
Feeder	
Vice width	Feeder vice jaw width See Picture 1
Laser distance from the vice	Distance of the laser beam from the nearest edge of the feeder jaw See Picture 2
Safe grip	Minimum length beyond which the feeder vice can clamp the material safely. If the resultant clamping length on the cut piece is shorter, the piece will be evaluated as residual.
Aut. Loading feeder position	Position to which the feeder moves to clamp the material in the automatic mode with automatic material loading.

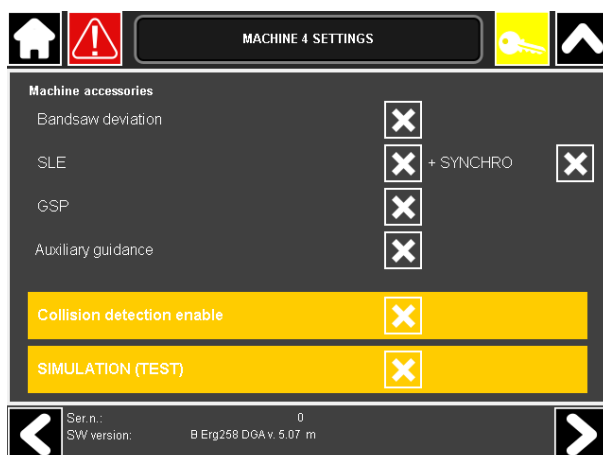


Picture 1
(for illustration)



Picture 2
(for illustration)

- Screen No.4 (hierarch. level 2)



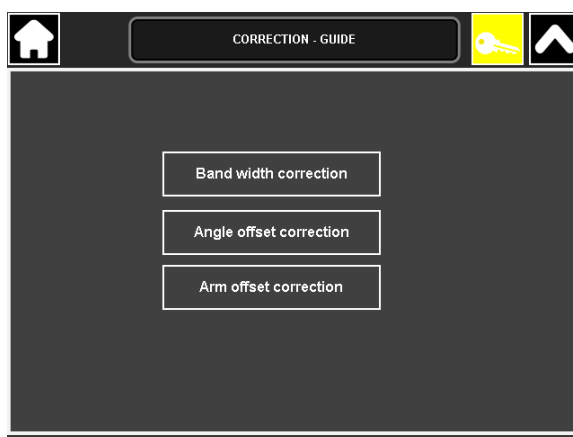
Position	Function
Machine accessories	List of optional accessories. Accessories installed on the machine are marked with a check. - Bandsaw deviation - SLE (+SYNCHRONisierung über Frequenzumrichter im SLE-Verteiler) - GSP - Auxiliary guidance
Collision detection enable (Hierarchical level 3)	Option for service purposes. Caution!! If this option is active, it is necessary that the operator takes heed of all collision states!
SIMULATION (TEST)	Option for starting the function test. The function test involves simulated automatic cycle according to the recipe loaded. The saw performs all actions except for cutting with simulated endless material.

5.6.1. Band correction guide (Wizard)

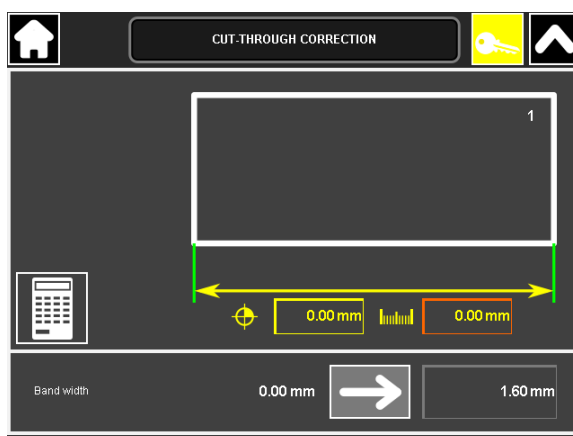
The band correction guide can be started in the screen No. 2 of the "Machine settings" service menu – the screen titled "Machine settings 2"



The menu enables setting of parameters for the band width correction, band axis offset correction and correction for the arm axis offset.



- **Band width correction (Cut-through correction)**

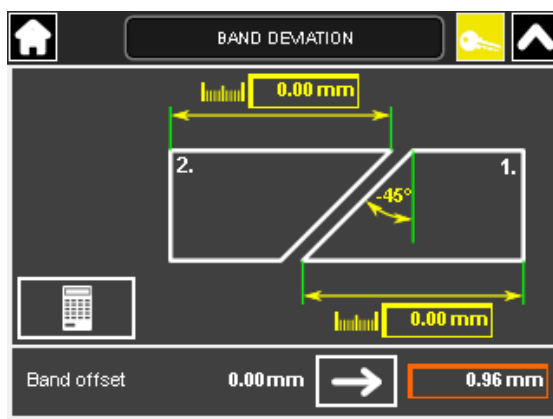


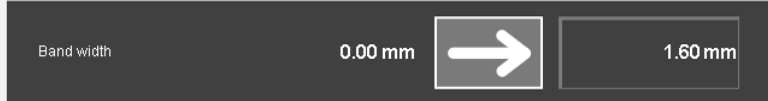
Position	Function
	Required piece length Enter the required (set) piece length
	Real piece length Enter the real (measured) piece length
	Option for correction calculation After entering the lengths, push to calculate the correction.
	
	Display of the correction calculation results
	Confirmation - confirmation of the correction calculation result displayed
	Saving - saving of the correction calculation result displayed

To perform the off-cut correction:

1. Cut **1 test piece of the material from one bar of the required length with both faces cut at the angle of 0°**
2. Measure the real length of the piece cut off.
3. Enter the required and really measured length of the test piece in the pertinent entry boxes in the screen for off-cut correction.
4. Push the option for correction calculation; the machine will determine the off-cut value.
5. The calculated off-cut value is displayed in the "Band width" box.
6. If you agree to the result displayed, confirm it; and the value will be saved in the machine memory. At the same time, it will appear in the box on the right of the confirmation option.

- **Band offset correction (Band deviation correction)**



Position	Function
	Real piece length Enter the real (measured) piece length
	Option for correction calculation After entering the lengths, push to calculate the correction.
	
	Display of the correction calculation results
	Confirmation - confirmation of the correction calculation result displayed
	Saving - saving of the correction calculation result displayed

To perform the band-offset correction:

1. Cut **2 test pieces of the material from one bar**, with the faces at the angles:

0° and - 45° (1st piece)

-45° and 0° (2nd piece)

- in conformity with the illustration in the screen for the band offset correction.

2. Measure the real lengths of both pieces – in conformity with the illustration in the screen for the band offset correction.

The measured values should be symmetrically distributed around the required value (e.g., if the required value is 100 mm, the resultant measured values should be approx. 95 mm and 105 mm).

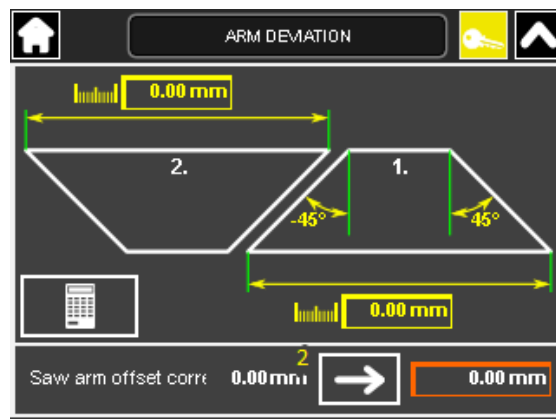
If the measured values are not symmetrical, the band deviation correction may have been executed incorrectly; therefore, check and, if necessary, correct the band deviation correction.

If the band deviation correction is correct and the resultant deviations are not symmetrical, consult the manufacturer.

If both the resultant deviations are symmetrical, enter both of the lengths measured in the pertinent entry boxes in the screen for off-cut correction.

3. Choose the calculation option; the machine will determine the off-cut value.
4. The calculated off-cut value is displayed in the "Band width" box.
5. If you agree to the result displayed, confirm it; and the value will be saved in the machine memory. At the same time, it will appear in the box on the right of the confirmation option.

- **Arm axis offset (Arm deviation)**



Position	Function
	Real piece length Enter the real (measured) piece length
	Option for correction calculation After entering the lengths, push to calculate the correction.
Band width 0.00 mm → 1.60 mm	
	Display of the correction calculation results
	Confirmation - confirmation of the correction calculation result displayed
	Saving - saving of the correction calculation result displayed

To perform the arm axis-offset correction:

1. Cut **2 test pieces of the material from one bar**, with the faces at the angles:

+45° and - 45° (1st piece)

-45° and +45° (2nd piece)

- identically to the illustration in the screen for the band offset correction..

2. Measure the real lengths of both pieces – identically to the illustration in the screen for the band offset correction.

The measured values should be symmetrically distributed around the required value (e.g., if the required value is 100 mm, the resultant measured values should be approx. 95 mm and 105 mm).

If the measured values are not symmetrical, this may have been caused by inaccurate material dimensions. Cut and evaluate material samples with accurate dimensions.

If the material dimensions are accurate, the band deviation correction may have been executed incorrectly; therefore, check and, if necessary, correct the band deviation correction.

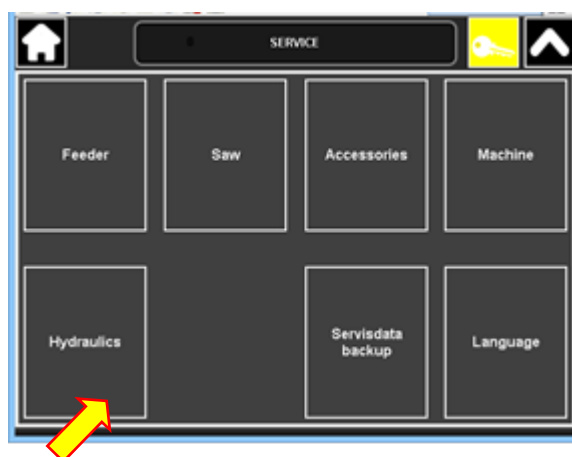
If the material dimensions and band offset corrections are all right, but the resultant deviations are not symmetrical, consult the manufacturer.

If both the resultant deviations are symmetrical, enter both of the lengths measured in the pertinent entry boxes in the screen for off-cut correction.

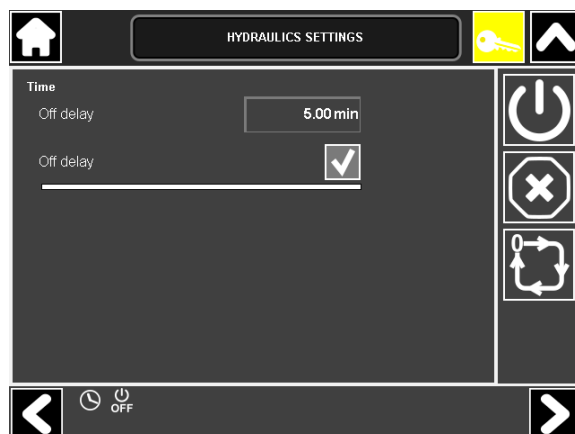
3. Choose the calculation option; the machine will determine the off-cut value.
4. The calculated off-cut value is displayed in the "Band width" box.
5. If you agree to the result displayed, confirm it; and the value will be saved in the machine memory. At the same time, it will appear in the box on the right of the confirmation option.

5.7. Setting the hydraulic service parameters

1. In the screen for setting units selection, choose the "Hydraulics" option"



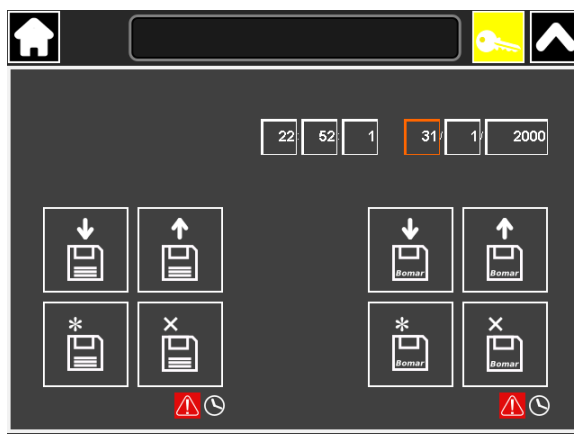
2. The screens appears for setting of hydraulic parameters. (**hierarchical level 2**)

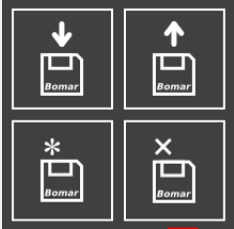


Position	Function
Off delay	Switch-off time of the hydraulic unit. If none of the following operations is executed for the preset time: - hydraulic cylinder movement - cut - positioning The hydraulic unit is witched off automatically in any of the working modes (manual, semiautomatic, automatic). After the hydraulic unit is switched off, the vice jaws may be released – the saw evaluates the release of the jaws as an error. If the hydraulic unit is switched off during the automatic mode, the automatic cycle must be resumed after the error message. In as much as the machine still remembers the material position even after spontaneous release of the vices (the operator must not release the vices!), the automatic cycle can be resumed by starting of the automatic with manual loading without cut-in.

5.8. Saving of service settings

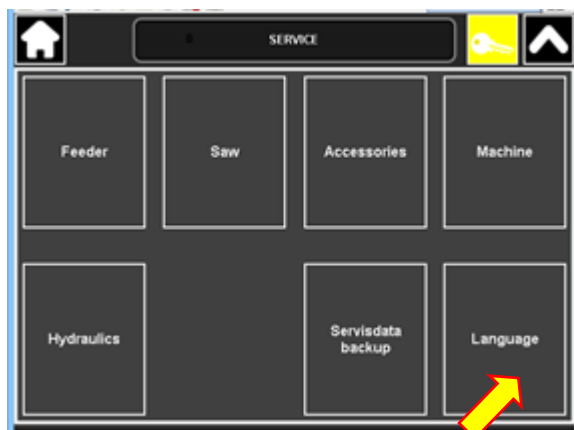




Position	Function
	Date and time
	Factory service data backup
	Free service data backup
	Save service parameters (hierarchical level 2)
	Load service parameters (hierarchical level 2)
	Create service parameters
	Delete service parameters

5.9. Language selection

1. On the screen for selection of setting units, choose the "Language" option



2. In the "Language" service parameter, you can set language mutations for control of the device.



6. **Seřízení pásové pily/ Einstellung der Bandsäge/ Machine adjustment**

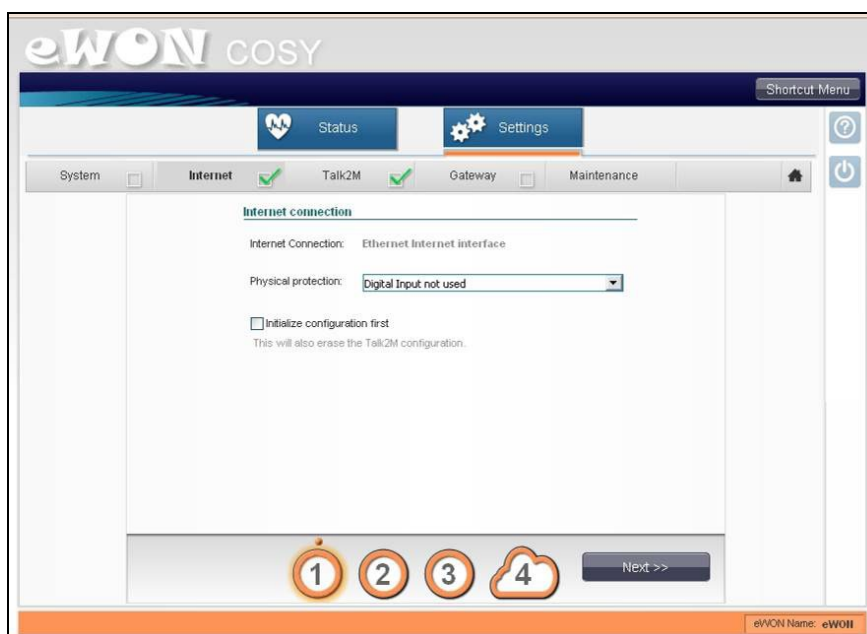
6.1. Remote control (optional accessory)

6.1.1. Connection for remote control - requests:

The speed of internet connection has to be at least 2 MB/s.

6.1.2. Setting of Ewon Router COSY

1. Connect private Laptop to one of the LAN port of our EWON router.
2. Set the IP address of laptop's network card to 192.168.77.100 (forbidden to use addresses 192.168.77.1– 99)
3. Open internet browser and write address 192.168.77.10 to address line.
4. Main screen appears -> Click on Settings and set user: adm and password: adm.
5. Click on folder Internet. Physical protection has to be set to **Digital Input not used**.



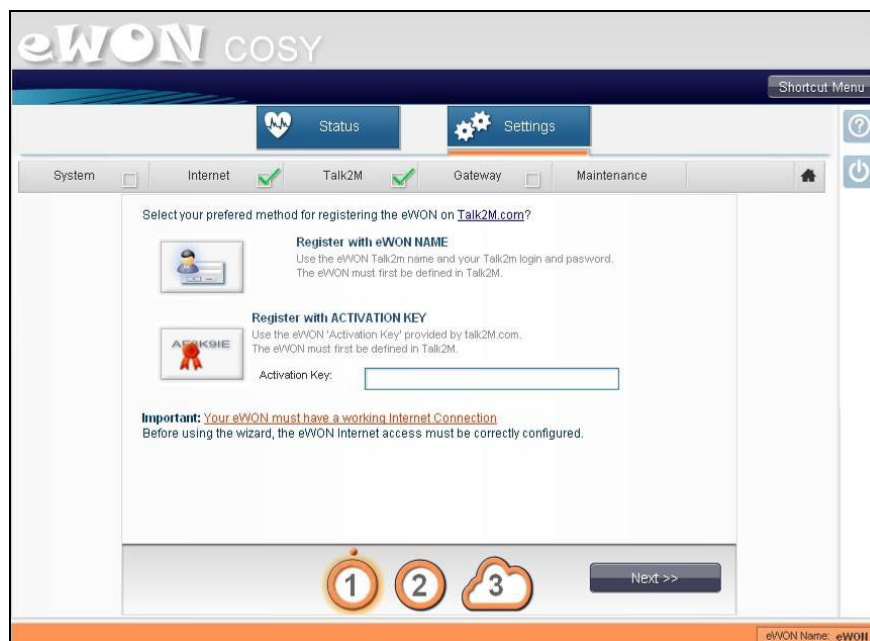
6. Click Next button and configure your WAN IP address according your internet provider.



7. Click Next and execute Test of internet connection. If test passed internet connection should be set properly.

Note: You can test it by connecting the ethernet cable to your laptop with same setting of network card like eWON has and you suppose to be able browse on internet.

8. After that click on Talk2M folder and choose Register with ACTIVATION KEY.



9. To column write the activation key from e-mail and click Next.
10. Execute Test. If test passed the setting is completed and we can test it from our site.

6.2. Set off the sleep mode of the display

The sleep mode can be set on the display. That means - if no touch is made on the display for a longer time, then after the time which was preset as a waiting period for switching of the touch screen into sleep mode, the display will be automatically switched to Sleep Mode - thus the preset background will be displayed on the touch screen.

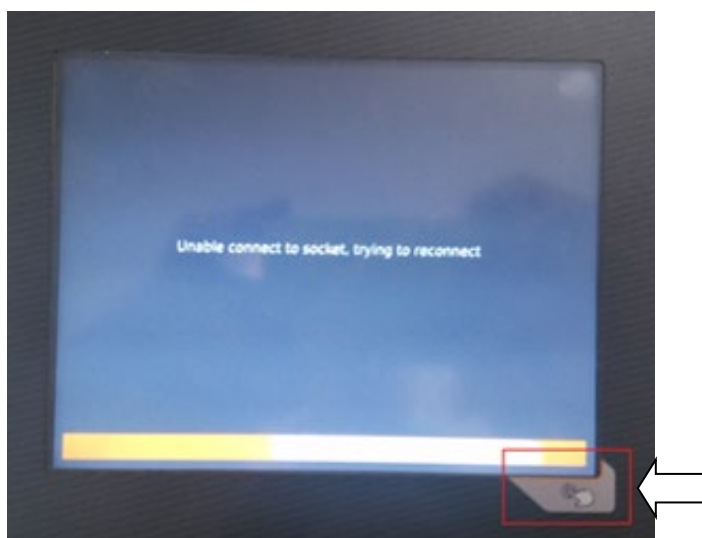
The display that was switched to the sleep mode can then be revived by a touch.

These parameters were adjusted for the sleep mode of the display by the producer:

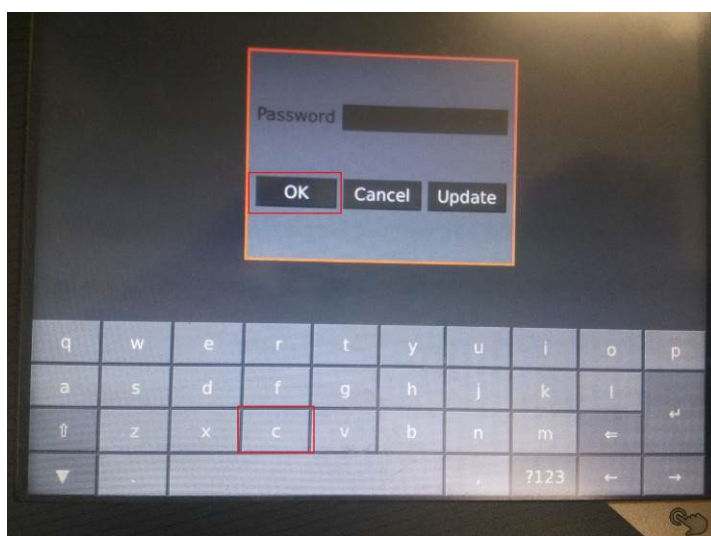
- Sleep Mode - active
- the time period for waiting before switching the display to the sleep mode – 30 min.
- standard image for the sleep mode is a black background

If you want to change the parameters which were preset by the producer follow these instruction:

1. Press the the button for the display setting and keep it pushed for a few seconds

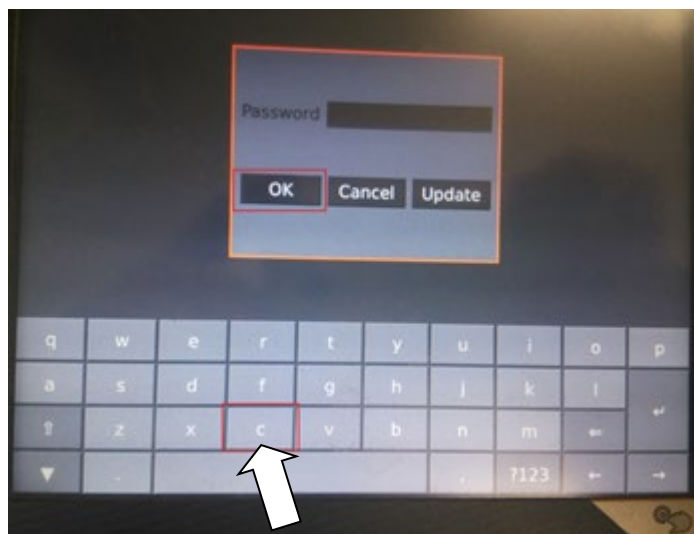


2. The keyboard and the appeal for the password insertion appear.

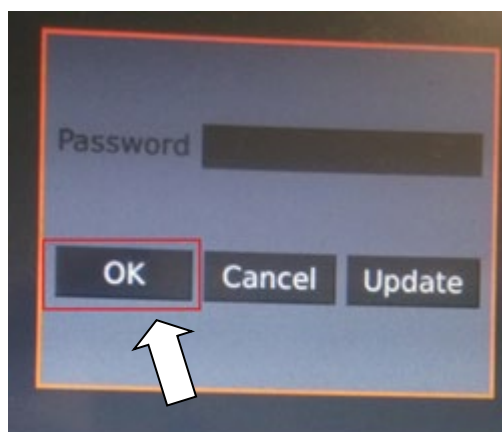


3. Insert the password - into the field for the password insertion

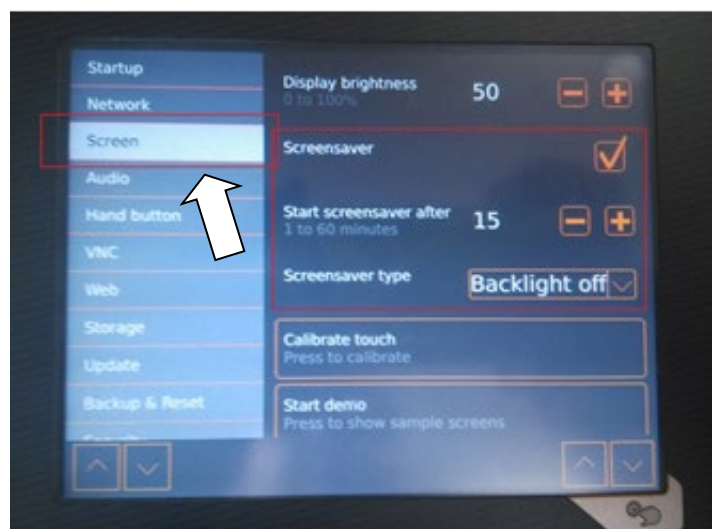
The password is: **c**



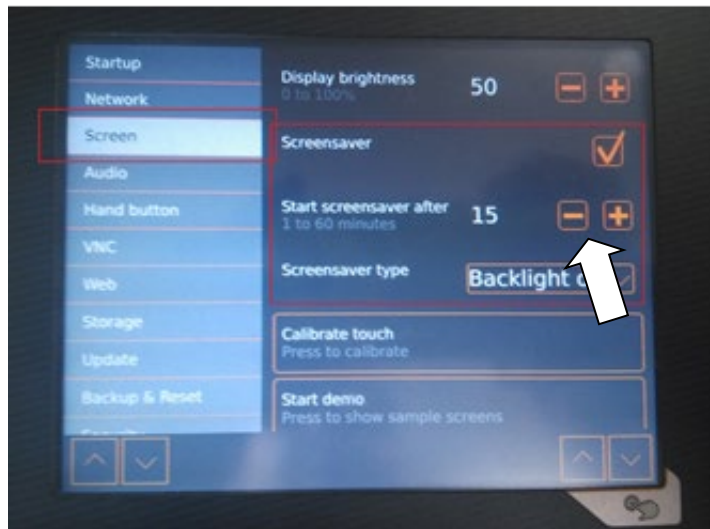
4. Confirm the inserted password with the selection OK.



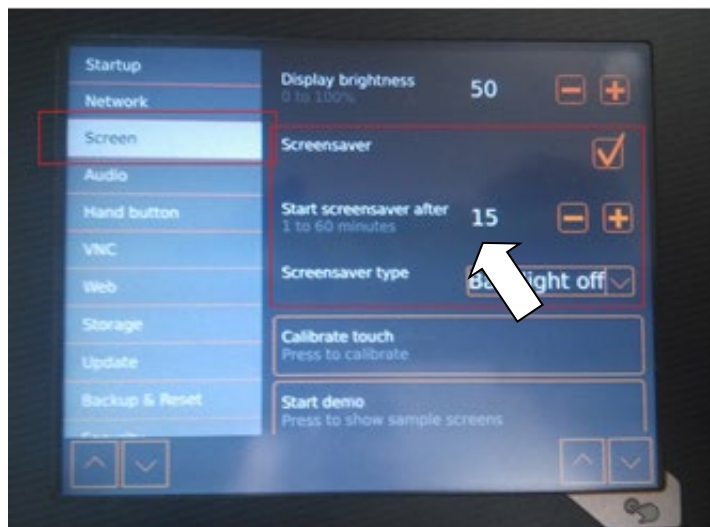
5. The screen with the menu for control of the display appears. Choose the selection „Screen” on this screen and the menu with offers for display setting appears.



6. It is possible to change the time period for waiting for display sleep mode in the field „Screensaver“. The period can be changed using symbols .



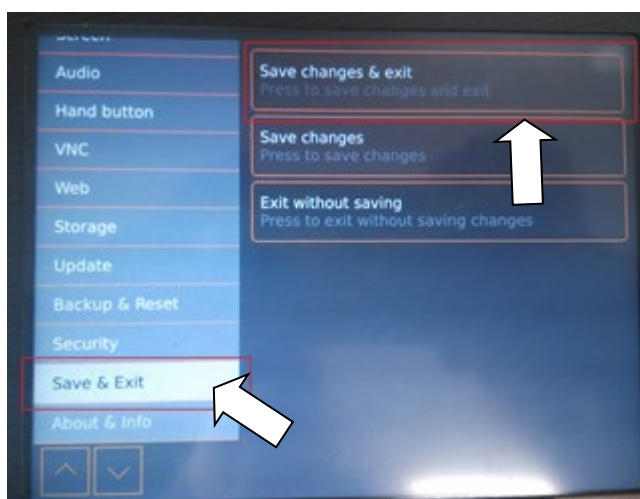
The set time is displayed next to the symbols  and it can be changed in the range of 0-60min.



7. After the time period is set, check if the selection for switching of the display to the sleep mode is checked.



8. To save the selections for switching of the display to the sleep mode choose the selection „Save & Exit“ and then choose „Save changes & Exit“ in the next displayed menu.



The adjusted selections will be saved and the display will be switched to the sleep mode.

6.3. Machine setting

6.3.1. Speed adjustment of the arm lowering

Set the speed of the arm lowering to the cut by control valve for Cutting pressure regulation **7** on control panel.



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

Notice:

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

6.3.2. Cutting speed adjustment

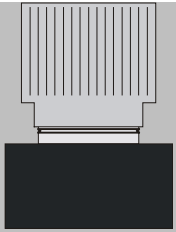
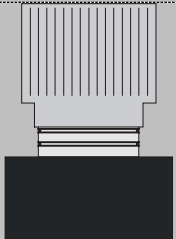
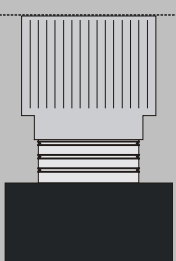
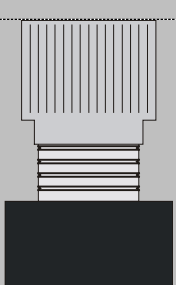
Picture	Description
	Use the frequency convertor 6 to adjust requested speed of the saw band.

6.3.3. Cutting pressure regulation

The band saw is equipped with cutting pressure regulation on the right guiding cube.



Pressure regulation is performed with regulation wheel on the guiding cube. Screw on the wheel – downfeed pressure is bigger. Screw off the wheel – downfeed pressure is smaller.

	1. One visible neck Solid material over Ø200 mm..
	2. Two visible necks Solid material from Ø100 to Ø200 mm.
	3. Three visible necks Pipes and shapes material with surface from 10 - 15 mm. I - shaped material from 200 - 500 mm. Solid material to Ø100 mm..
	4. Four visible necks Pipes and shapes material with surface to 10 mm. I - shaped material to 200 mm.

6.3.4. Optimal adjusting of the guide cubes span

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





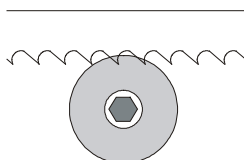
1. Release the lever of the left listel and move left part of the guide apparatus so that the left guide cube edge is as close to the cut material as possible.
2. Lower the frame to the lower position and check the position of the guide cube towards vice loading area. The guide cube must be a distance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

6.3.5. Brush adjustment

The brush has essential influence on cutting performance, saw band lifetime, lifetime of the wheels and hard metal guides and cutting accuracy. Therefore the brush has to be checked every shift.



3. Release the tightening screw of the brush so that it is possible to move the brush.



4. Adjust the brush to the saw band. **Its ends must not reach the saw band teeth bottoms.**
5. Tighten the screw again and turn on the band driver. If the chip removing brush is correctly fastened the brush turns smoothly with the saw band.

Attentionr!

Do not tighten the screw with brute force!

6.3.6. Device for regulation of clamping pressure (optional accessory)

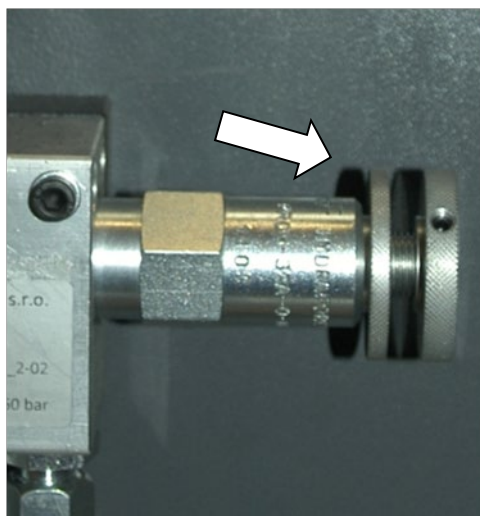
The hydraulic pressure device is determined for pressure setting on the main vice and feed vise.



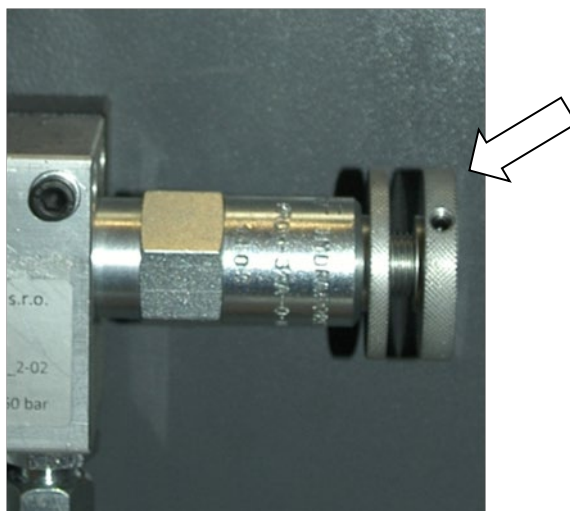
*Warning !
Because the hydraulic pressure equipment pressure 2,2 – 4 MPa, loosen the screws with caution!*

Instruction for adjustment of clamping pressure

1. Release the locknut of the control screw at the pressure valve



2. Adjust the clamping pressure to the required value using the control screw.



- When turning the pressure valve *clockwise the pressure increases.*
- When turning the pressure valve *counterclockwise lowers the pressure.*

The indicator at the manometer at the device for clamping pressure adjustment indicates the set value.

The recommended pressure value is between the values defined through the green arrows at the manometer at the device for controlling of the clamping pressure.



3. Tighten the locknut of the control screw at the pressure valve.

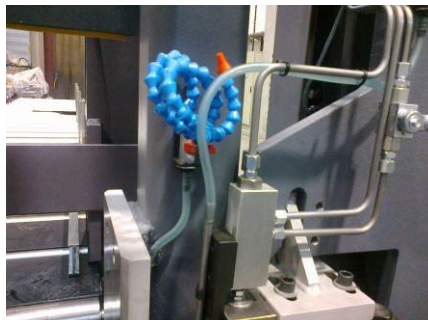
Attention:

It isn't necessary to adjust the hydraulic pressure of the whole saw in order to adjust the clamping pressure

6.3.7. Third cooling inflow (optional accessory)

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

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



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

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



When adjusting the nozzle, pay increased attention that the inlet hose does not stand in the way of the saw band.

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

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



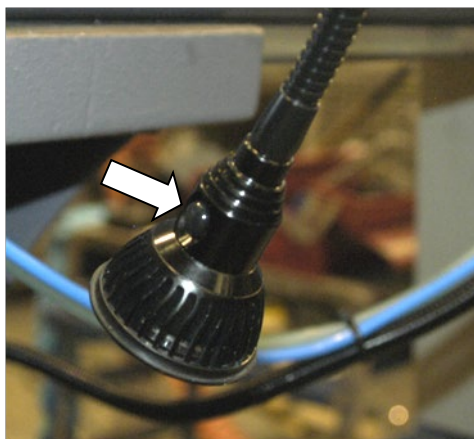
6.3.8. Halogen lighting of working area (optional accessory)

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

Proper lighting in your work area greatly enhances ergonomics machines

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

Turn on and off light switch is made directly to the halogen light.



Design lighting unit meets IP54 - Protection against water jets.

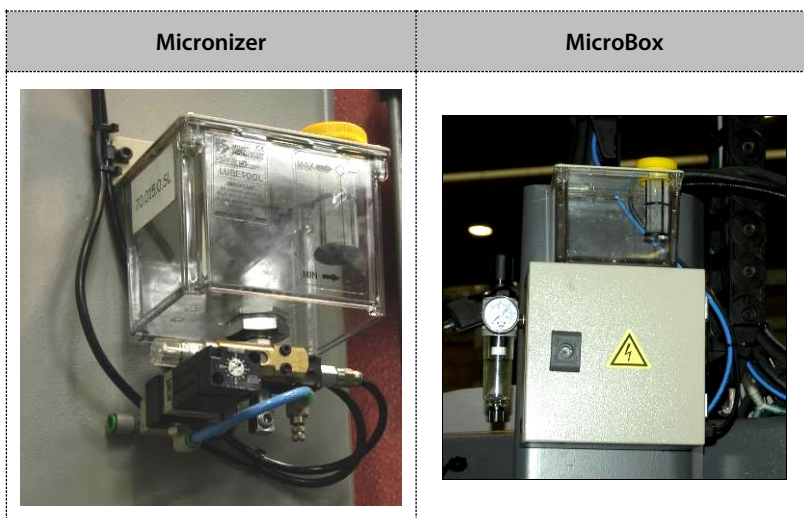
Technical data halogen light :

Supply voltage	230 V
Lenght flexible arm	300 mm
average	Ø 5,5 mm
lenght	80 mm

6.3.9. Mikroniser(box) – mist lubrication (optional accessory)

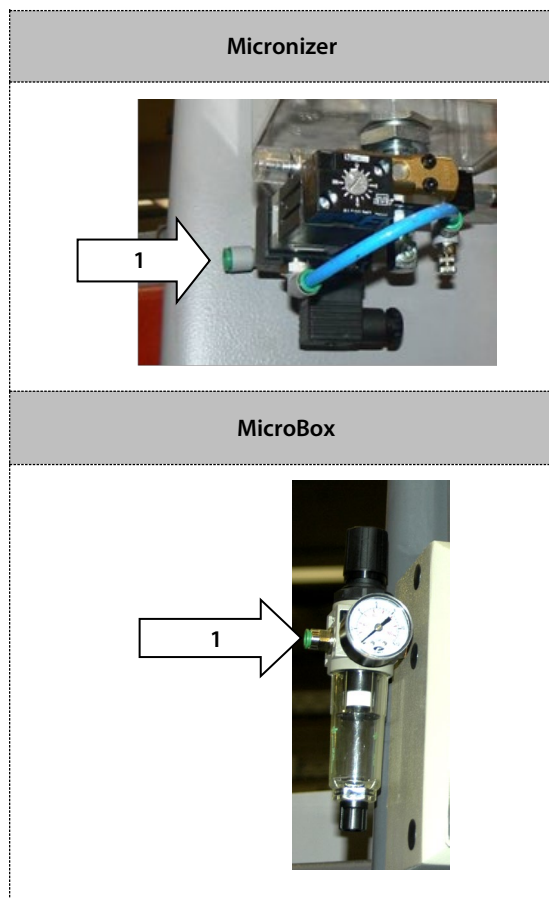
Next photos are for illustrative purposes only.

Microniser and MicroBOX are devices used to create a lubricating oil mist in precise doses of oil and air mixture, which is then applied directly to the saw band.

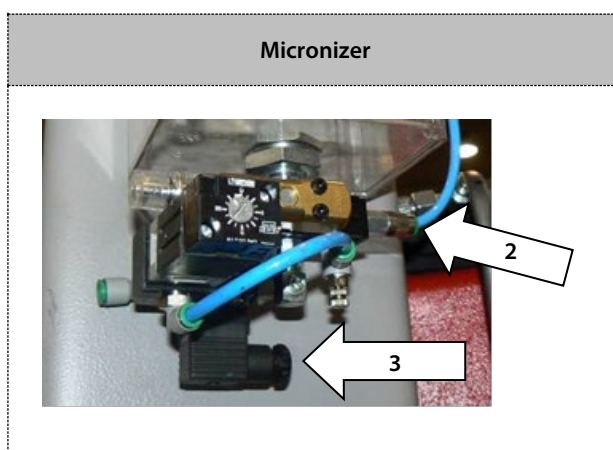


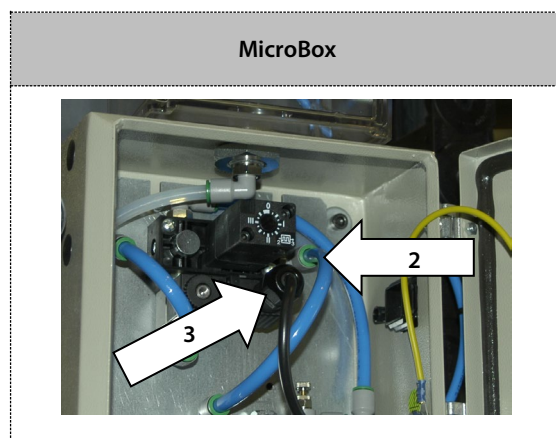
Microniser setting:

1. For proper function of the Microniser pressured air (in the range of 0.5 to 0.5 MPa (5-6 bar)) must supplied from the pneumatic system (dry, clean, free of particles) see - arrow **1**

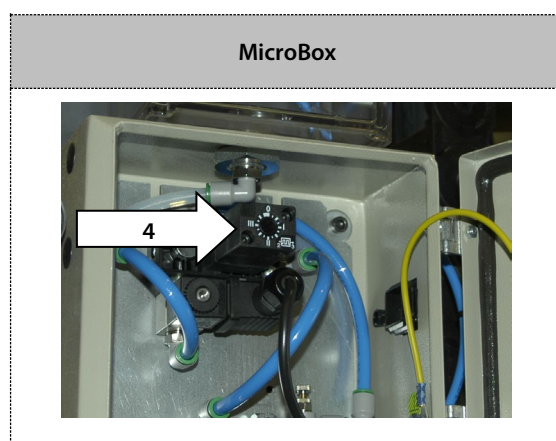
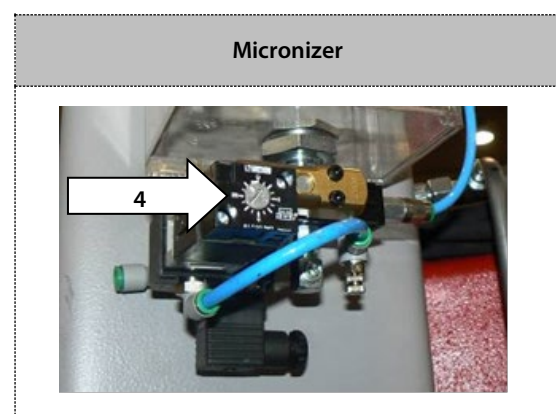


2. Arrow **2** - shows the output of the cooling medium (air + oil).
Arrow **3** - shows the inlet for the power supply cable.

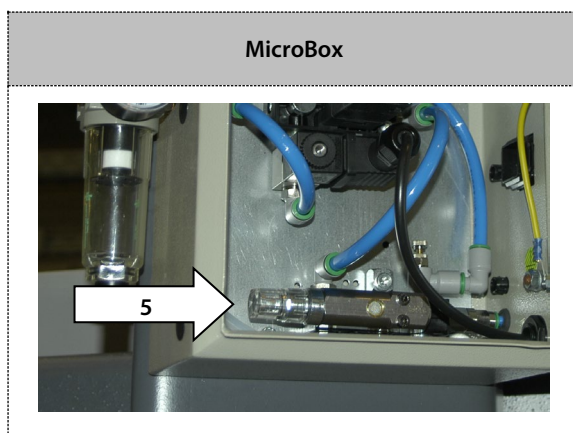
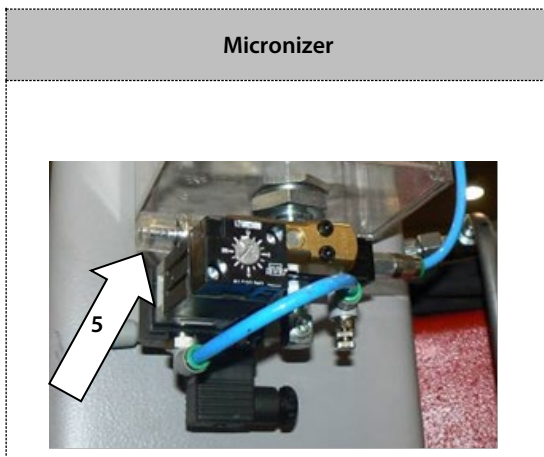




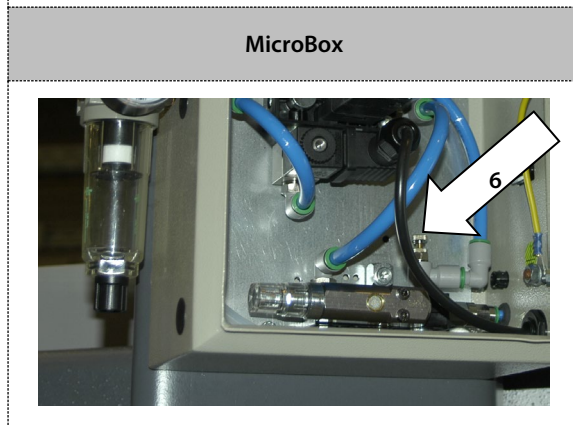
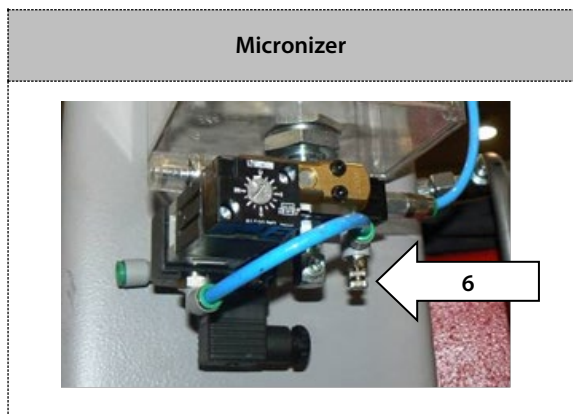
3. Set the interval of cutting oil dispersion on the Microniser- **arrow 4** (3-20 pulses / min.). Adjust this interval to the parameters of the saw band and cut material.



4. Adjust the amount of oil with a regulator - arrow **5**



5. Setting the air quantity using another regulator - arrow **6**



6. Switching on / off of the Microniser is depends on the control system of the machine it is installed on. See chapter "Machine control".

Recommended cutting oils for Micronisation:

Manufacturer	Cutting oil
Biona	Biocut
Paramo	Paramo cut 22

Featured are cutting oils with viscosity class 22.I

Adding of the coolant is possible after removing the filling cap. After the filling is finished the cap must be screwed in again.

Package Includes: a tank with regulators, connection 6m hose, diffuser.

6.3.10. Laserliner (optional accessory)

The device is used to ascertain exact position of the material cut before cutting.

The cut is indicated by the laser beam projected on the surface of the prepared material..



The switch for Laserliner is located on the control board.



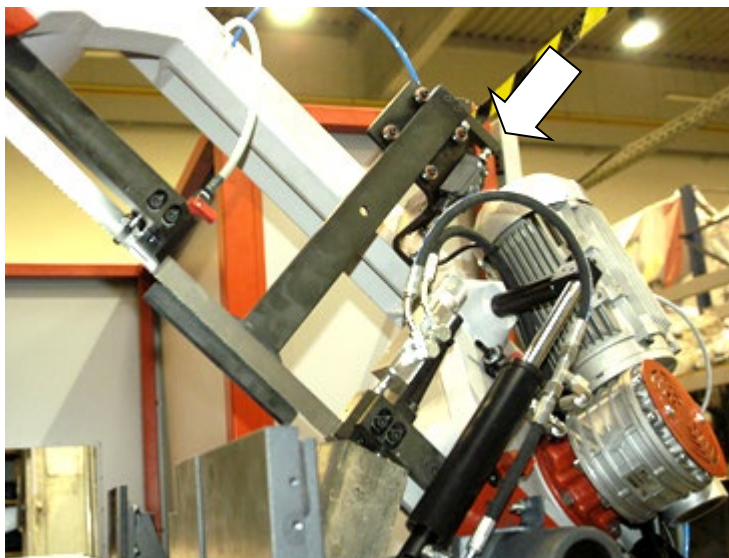
6.3.11. Device detecting the arm position above the material

The device is installed on the machine to detect the arm position above the material.



The device is used to adjust the arm lifting:

1. Before the first cut, lift the arm to the uppermost position.
2. Insert a material into the vice
3. If the arm is lowered to cut from a sufficient height above the material, the fast feed can be enabled automatically or manually.
4. If the device arm gets into contact with the material, the limit switch is activated and the arm movement slows down automatically to the preset speed of the arm feed to cut..



5. Then, in the automatic cycle, the arm is lifted only to the height above the material until the limit switch is reactivated.

The device is also used to control the arm lowering to cut:

1. After starting the cut, the arm moves with fast feed.
2. If the device arm touches the material, the speed is switched from fast feed to the preset speed of the arm lowering to cut.

The device has been adjusted by the manufacturer, do not interfere with the adjustment!

Regularly check the free running of equipment and keep sliding surfaces of guiding rods clean and lubricated!

In the event that the arm does not fall into the cut, check the status of the device, especially if it is not released limit switch or bent guide rod.

In case of a fault, contact the manufacturer!

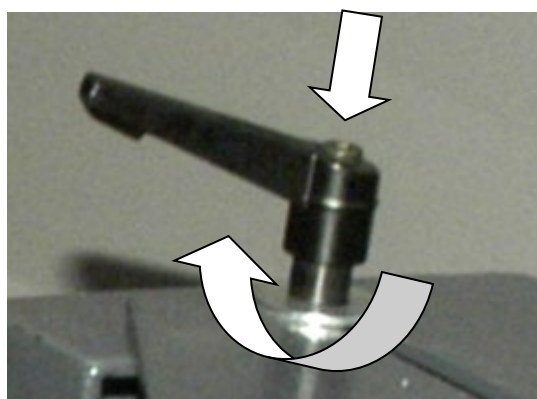
6.3.12. Guide rail for short pieces

The auxiliary guide rail is used to facilitate guiding of short pieces.



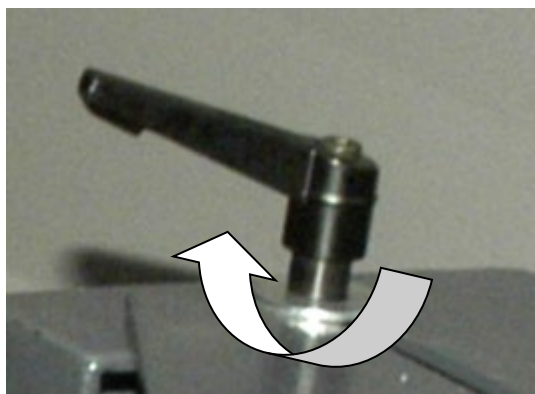
Before starting cutting, adjust the guide rail according to the material thickness.

1. Push the locking pin and release the jaw by turning the detent arm.



2. Move the jaw to the desired position.

3. Lock the jaw in the adjusted position by turning the detent lever.



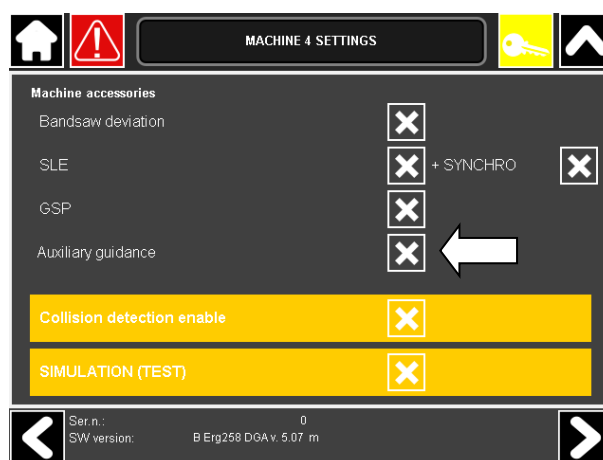
In the automatic mode, the guide rail runs out to the working position automatically according to the cut length and cutting angle, as specified in the recipe.

During square cutting of a small and short piece, the rail is in the rear position (toward the saw band). In the other cases, it is moved out toward the saw outlet...

For the automatic function of the guide rail, it is necessary to check off the option for use of the guide rail on the screen for accessories selection in the service parameters:



- Screen No. 4



In the manual mode, the rail can be controlled by pushing the button for the table

transfer  + Shift. oder  + Shift.

6.3.13. Saw manager

Saw Manager is independent software for creation of recipes with optimized use of material, supplied by Bomar spol.s.r.o.

Saw manager is software which, on the basis of entered parameters of input semi-products, required minimum length of residual pieces and required parameters of final pieces, compiles a **complete recipe for control of the "RODS" type automatic cycle**, optimally considering all of the given required parameters.

If using the Saw Manager software, you do not need to create a specific cutting plan as a basis for creation of a recipe for control of the "RODS" type automatic cycle created on the machine.

Optimization by means of Saw Manager enables division of the entire batch of pieces to be cut within a single automatic cycle into precisely specified partial batches, which will be cut from specific individual rods with regard to the required residual piece length.

By default, this machine is quipped for control of the automatic cycle by recipes created in the Saw Manager software; however, **cooperation between the machine and a recipe created in the Saw Manager software is subject to purchase of a Saw Manager software licence**. For detailed information, contact the sales department of the Bomar spol.s.r.o. company.

If you own the required licence for the Saw Manager software, you can import a recipe created in Saw Manager to the machine as a file with the .csv extension (for the procedure, see chapter "Recipes") and start the automatic cycle controlled by this recipe in a standard way.

6.4. Feeding Material

- Do not move under raised loads!
- Never get onto the roller conveyor!
- When fastening material to the vice, do not hold on to it or otherwise handle it!
The vice can cause serious injury!

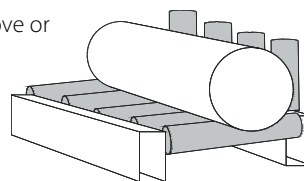
6.4.1. Choosing Handling Devices

- Use handling devices with sufficient bearing capacity when lifting and transferring material!
- If possible only handle material with a fork-lift truck or suspended ropes and a crane!
- Do not use a fork-lift truck or a crane if you are not authorized to do so!

6.4.2. Feeding

Feed material into the vice so that after tightening it cannot move or fall out of the vice.

If cutting long pieces of material (e.g. bars, tubes) use the roller conveyor to move them towards the band saw.



Ensure that the length and width of the roller conveyor is sufficient with regards to the dimensions of the material and whether the conveyor's load bearing capacity will handle the weight of the material .

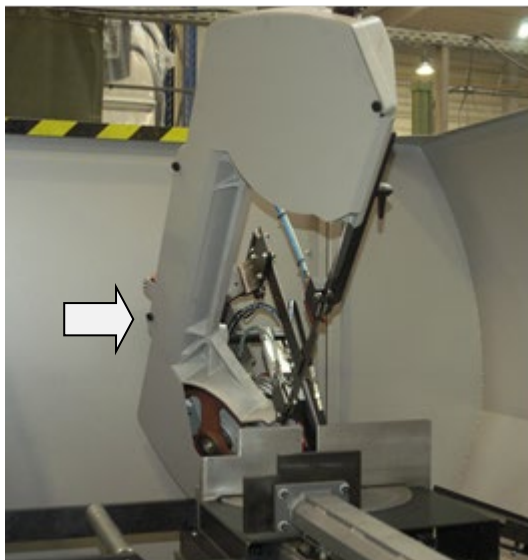
For round material make sure that it has been propped up by at least two vertical cylinders and it cannot fall off the roller conveyor.

7. **Údržba stroje / Wartung / Machine service**

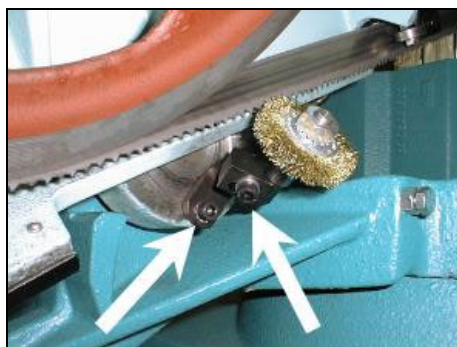
7.1. Saw band dismantling and installation

7.1.1. Saw band dismantling

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



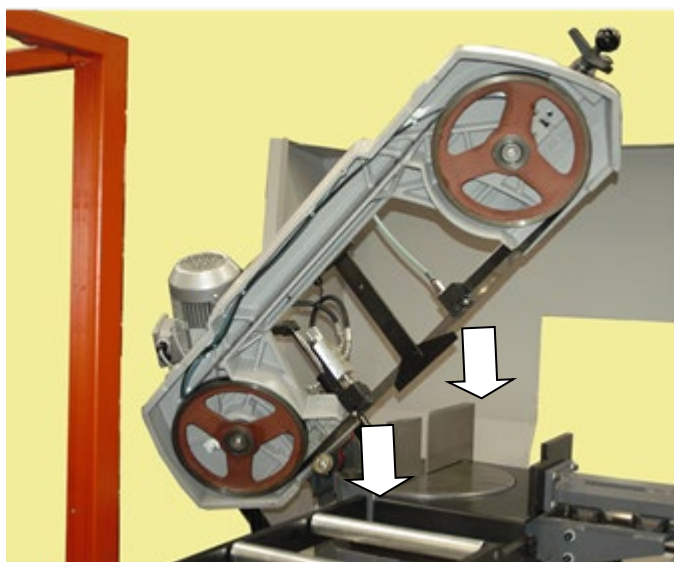
2. Dismantle back covering sheet metal of the saw frame. The covering sheet metal is clamped with screws with plastic head.



3. Release brush holder and turn it. The brush must not defend saw band dismantling.



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



5. Pull up the saw band from the guiding cubes.

7.1.2. 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. By turning the stretching star to the right you will stretch the saw band slightly. Remove the plastic cover of the saw band teeth.
5. Set the brush into the function position and screw up the holder.
6. **Direction of saw band movement must agree with the direction arrows on the belt.** Turn saw-band if not.

7.2. 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.

7.2.1. Saw band stretching

1. The saw band must not fall from the wheels after setting.



2. Install the Tenzomat on the saw band and secure it with screws.
3. Stretch the saw band until it is stretched to the recommended value.

If a hydraulic pressure gauge is installed for measuring of the band tightening (optimal accessory), switch on the hydraulic unit after mounting the saw band and check the pressure of the saw band tightening on the pressure gauge.

If the saw band is tightened correctly, the pressure gauge pointer is on the green arrow in the scale.



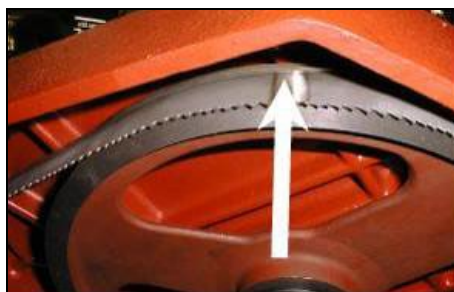
7.3. Saw band run adjustment on stretching wheel

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

7.3.1. Saw band run inspection

If the run is not correct, the following problems may occur:

- *The saw band falls off the wheel* – The saw band and protective cover can be damaged.
 - *The saw band runs on the wheel rim* – The saw band and wheel rim can be damaged.
1. Start and stop saw band drive.
 2. Stop the main switch!
 3. Open rear cover of the saw frame.
 4. Check saw band placing on the wheels.



- If the distance of the rear part of the saw band from wheel rim is **1 mm**, setting is right.
- If the distance is bigger than **1 mm**, or the saw band runs on the wheel rim, saw band run must be set.

7.3.2. Saw band setting

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



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

Check saw band run again after setting.

7.4. Check and tightening of the drive chain for the bracket rotation

Owing to wear, the play in the arm rotation mechanism may be loosened.

Increased play in the arm rotation mechanism may cause inaccurate swivelling of the arm to the entered cutting angles.

In particular, the increased plays result in loosening of drive chain used for the revolving bracket rotation. Therefore, it is necessary to check the chain tightening regularly.

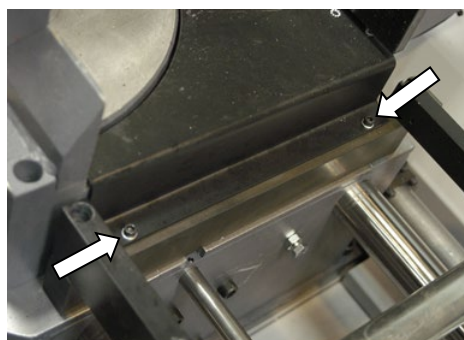
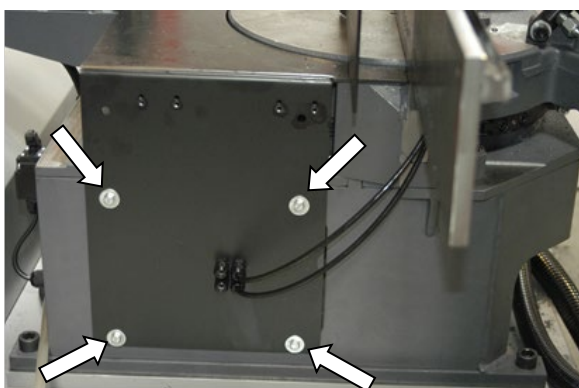
Perform the first check of the chain tightening after the first 200 operating hours.

Further, regularly check the chain tightening – the recommended interval is once a month.

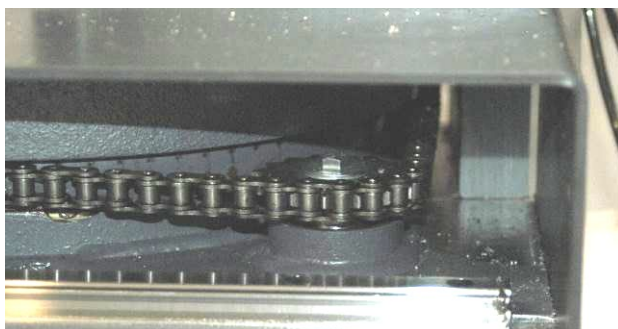
Also check the chain tightening if you find inaccuracies during angle cutting.

Check of chain tightening

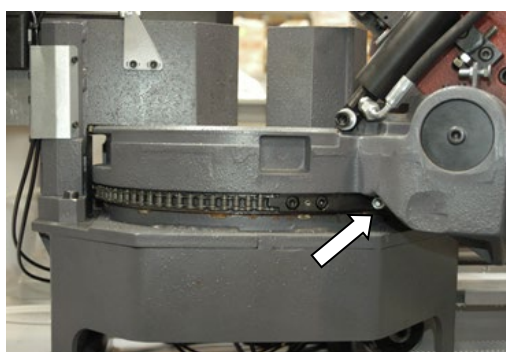
1. Remove the bracket cover.



2. Check tightening of the drive chain for the bracket rotation and seating of the chain on the drive wheel of the rotary mechanism.

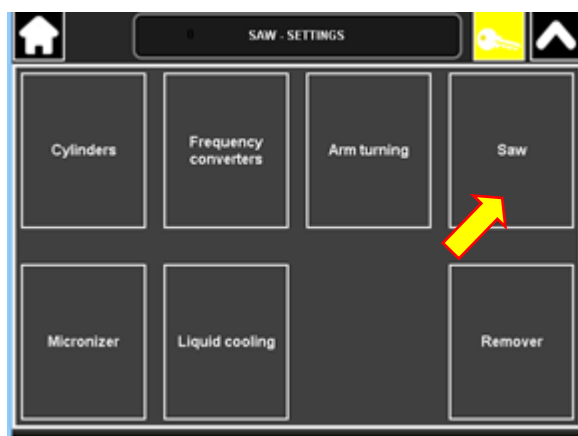


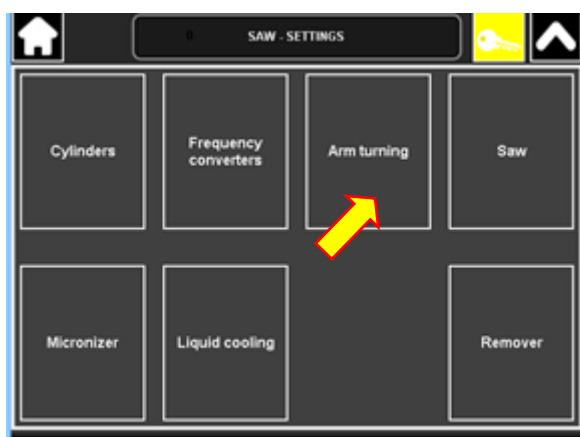
3. If the chain is loose, tighten it by means of the tightening mechanism so that it is fully tight, without any play.



5. After tightening the chain, check accuracy of the arm angle swivel. Supposedly, the arm swivel will not be totally accurate after the chain tightening has been corrected.
6. If you find inaccuracies in the angle swivel, you should contact the manufacturer, who will provide you information necessary for correction of service parameters according to the machine condition after the chain tightening.

According to the manufacturer's information, the parameters "Insensitivity +" and "Insensitivity -" on the screen will be adjusted:





Caution!

Before contacting the manufacturer, verify the following facts:

- whether the chain is really tightened;
- whether the arm is mounted firmly.

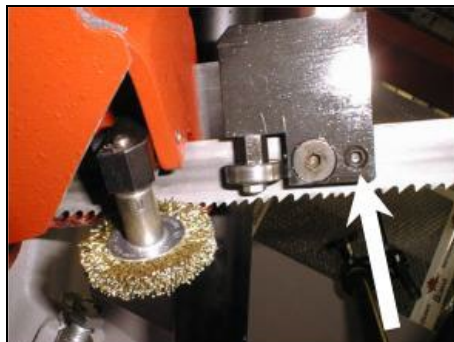
Check of the arm mounting:

- Raise the arm to the upper position.
- Push on the upper part of the arm and verify whether the arm is not moving freely in the mounting.
- Repeat the procedure for approx. 3 various angles.
- Inform the manufacturer of the fact ascertained before consulting the modification of parameters.

7.5. Saw band adjusting

7.5.1. Hard metal guides adjustment

Hard metal guides adjustment is one of the most important criterions which influences cutting accuracy and saw band life. Therefore it is essential to regularly check that hard metal guides adjustment is correct.



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

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

7.5.2. Guide cube adjustment

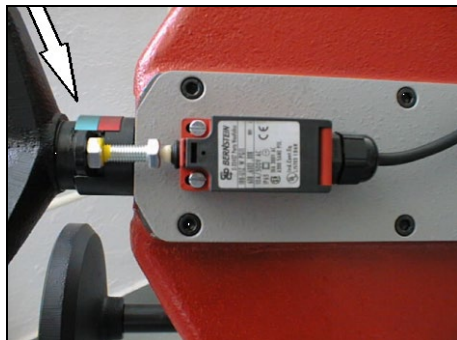
Cutting quality and saw band life is also dependent on guide cubes adjustment. Therefore this adjustment has to be checked periodically.



1. Loosen both tightening screws of the guide cubes and push it carefully to the band. Make sure the saw band is not bent; otherwise this cube will push on the band and damage it.
2. Fasten both tightening screws again.
3. If the guide cube is correctly adjusted, upper cube edge and the ruler are parallel.

7.5.3. Adjusting the limit switch of the saw band stretching

After the saw band is replaced, the limit switch setting must be checked out. If the limit switch is not set correctly, the band is stretch too much or it is to loose.



1. Stretch the band by means of TENZOMAT–on the optimal value.
2. Release the nut on the stop screw.
3. Start the driving engine. *Two scenarios may occur:*
 - If the engine is switched on, but it does not run, turn the screw to the left until the engine starts to run.
 - If the engine runs turn the screw to the right until it stops to run, then turn the screw shortly to the left until the engine starts to run again.
4. Secure the stop screw with nut and check the switch setting once more.

Attention!

If the band is stretched to the value according the TENZOMAT but the holder of the stop screw is not situated on the boundary of the red and green colour, it is necessary to stick the sticker in the correct place.

7.5.4. Saw frame lower position stop adjustment

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



1. Move the saw frame to the upper position.
2. Release the nut of the adjusting screw and adjust the stop point by adjusting the screw.
3. Fasten the adjusting screw with the nut again.
4. Set the limit switch of the lower arm position.

7.5.5. Adjustment of the limit switch of saw frame lower stop point

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

Adjustment:

- **Check setting**

Lower the arm to the lowest position. If the arm lays on the lower stop and the switch reacts, the setting is correct. In other case carry out the switch setting.

- **Limit switch setting**



1. Release the nut of the stop screw and screw down the stop screw.
2. Lower the arm to the lower stop and turn on the band driver.
3. Screw out the stop screw until the band driver stops.
4. Secure the screw with nut again and check the limit switch setting once more.

- **Saw frame sinking speed control**



From top position saw frame is sinking fast until sensor hit the material.

After this point setting screw make contact with limit switch and rapid feed change to cutting feeding.

7.5.6. Pressure switch adjustment

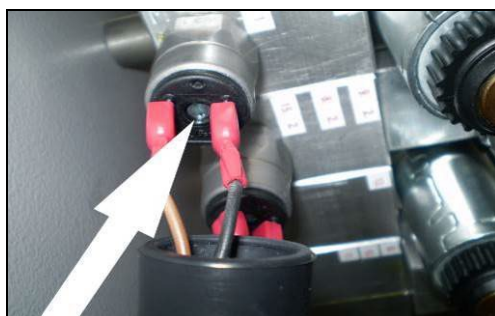
Attention!
Pay attention while working on the hydraulic system! In hydraulic system is residual pressure after hydraulic aggregate is stopped!

The pressure switches are in the block of the hydraulic aggregate.

The pressure switch of vice is marked with yellow band **SQ xx** or pressure switch of feeding vice with yellow band **SQ 1** must be adjusted on occasion:



Pull off the elastic cover of the pressure switch (carefully – outlets must not be broken).



Set the sensitivity of the pressure switch by means of the screwdriver.

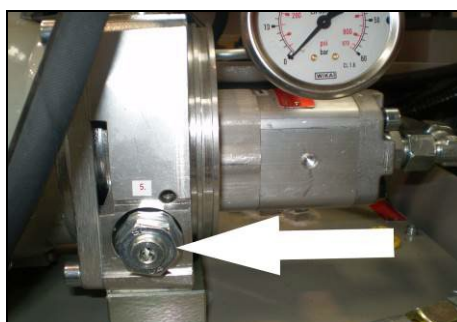
Turn by screwdriver to the left, the sensitivity is bigger. Turn by screwdriver to the right, the switch will be clip with higher pressure.

Check limit switches adjustment.

- **The vice is clamped** – The pilot light of the control system is lighted
- **The vice is opened** – The pilot light of the c. system in not lighted
- **The vice is on the move** – The pilot light is not lighted, they are not winked

7.5.7. Pressure adjustment of the hydraulic system

- Pull off the black cover of the pressure valve.
- Release the nut of the pressure valve.

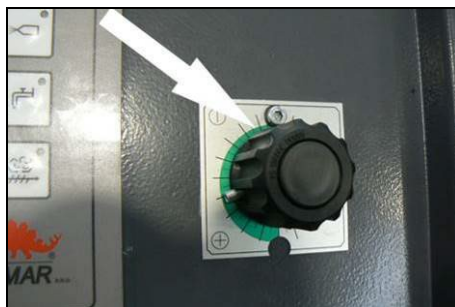


- *Higher pressure* – turn the pressure valve to the clock's direction
- *Lower pressure* – turn the pressure valve against the clock's direction

Set the pressure by means of the pressure valve and manometer. If the pressure is adjusted, tighten the nut.

7.5.8. Adjustment of a throttle valve

1. Switch off the machine by its main switch. Let the sawing head down at the bottom. Close the throttle valve gently.



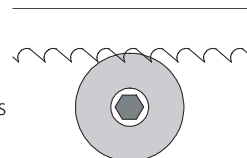
2. The worm screw must be next to the stop, when the valve is closed (see picture).
3. Otherwise, you must loosen the worm screw, lift the plastic knob and close the throttle valve to the maximum. Next loosen the worm screw and take off the plastic knob. Put it back so that the worm screw must be next to the stop while the valve is closed. Then tighten the worm screw again.
4. Turn the machine on and test the down-feed control.

7.5.9. Brush adjustment

The brush has essential influence on cutting performance, saw band lifetime and lifetime of wheels and hard metal guides and finally cut accuracy. Therefore the brush has to be checked during every shift.



1. Release the tightening screw of the brush so that it is possible to move with the brush.
2. Get the brush closer to the saw band teeth. **Attention!** After the brush is set, its ends must not reach the saw band teeth bottoms.
3. Tighten the screw again and turn on the band driver. If the chip removing brush is correctly fastened the brush moves and turns smoothly with the saw band.



7.6. 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

7.6.1. 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

7.7. Hydraulics, greases and oils

7.7.1. 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.



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!

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

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

Band saw	Gearbox oil	Capacity
Ergonomic 290.258 DGANC	Paramo PP7	2,0 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

7.7.2. Lubricant greases

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

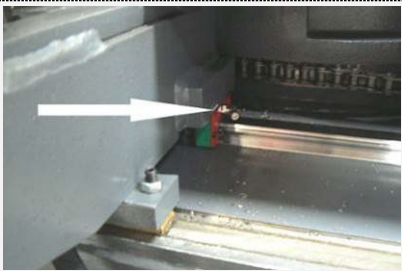
Comparative table of the lubricant greases:

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

7.7.3. Lubrication

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

Place	Procedure
	The upper pivot of the lifting cylinder – drop the oil once a week.
	The linear guiding of feeder vice – 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.

Place	Procedure
	The linear guiding of feeder trolley – 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 sliding surface - lubricate with grease every day for the machine starting
	Guiding bar - lubricate with grease as necessary

7.7.4. Hydraulic oils

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

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

Note:

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

Comparative table of the hydraulic oils:

Manufacturer	Type	Manufacturer	Type
Agip	Oso 32	Ina	Hidraol 32 HD
Aral	Vitam GF 32	Klüber	Lamora HLP 32
Avia	Avilub RSL 32	Hungary	Hidrokomol P 32
Benzina	OH-HM 32	Mobil	Mobil DTE 25
BP	Energol HLP 32	ÖMV	HLP 32
Bulgaria	MX-M/32	Poland	Hydrol 30
Castrol	Hyspin AWS 32	Rumania	H 32 EP
Čepro	Mogul HM 32	Russia	IGP 30
DEA	Astron HLP 32	Shell	Tellus Oil 32
Elf	Elfolna 32	Sun	Sunvis 832 WR
Esso	Nuto H 32	Texaco	Rando HD B 32

Manufacturer	Type	Manufacturer	Type
Fam	HD 5040	Valvoline	Ultramax AW 32
Fina	Hydran 32		

7.7.5. Hydraulic unit service

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



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

To realise a high reliability of the power pack, the manufacturer lays down following inspection intervals

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

7.8. 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 main and feeding vice.
- The guiding of the feeder.
- Loading surface of the main, feeding vice, and area under them.
- Threaded bar of the main and feeding vice.

Attention!

When you use rinsing gun make sure that water not get into the engines and into rotation sensor arm. Water in these parts could damage the saw.

Rinse with water only chips from the board table.

Attention!

Do not use compressed air for machine cleaning.

7.8.1. Tool cleaning machines from chips after cutting. (optional accessory)

The tool can be used for cleaning of a machine from chips which were produced during cutting proces.

As a cleaning liquid is used coolant which spouts from the nozzle of the „gun“ when its handle is pushed down.



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

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

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

Package includes:

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



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



3. Valve for setting maximum coolant flow



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



5. Connecting part equipped with a transparent tube with a connecting part for coupling the cleaning pistol to the pump.



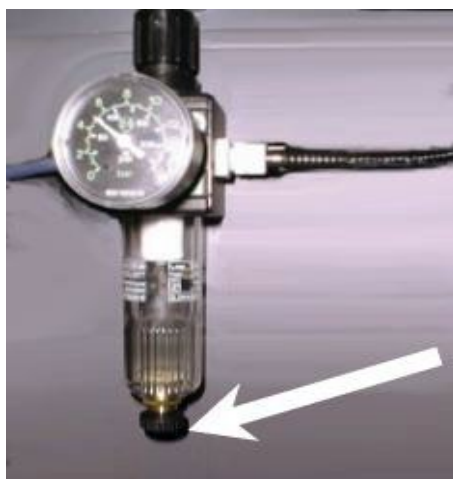
6. Transparent inlet hose to couple the pistol to the connecting part.



Suitable for machine brand Bomar

7.8.2. Pressure system servicing

Filter of the pressure system is necessary to clean periodically, that means drain sediments and impurities from the reservoir.



Close the pressure air supply. Screw off the screw and let to drain sediments to the reservoir. Screw on the screw again.

WARNING!

There is the pressure 0,5 – 0,6 MPa in the pressure system, therefore you must release the screw very carefully!!

7.9. Worn pieces replacement

7.9.1. Hard metal guides replacement

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



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



2. Grip the guide cube in the vice and screw out the screws of both the hard metal desks.



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

7.9.2. Saw band guiding rollers replacement

Attention!

Rollers must be replaced on both guiding cubes at once!

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



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



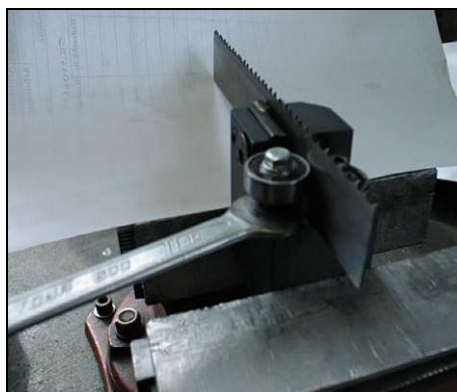
2. Grip the guide cube in the vice and screw out both fastening screws of the eccentrics.



3. Pull both guide rollers from their eccentrics.



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



5. Now insert a test piece of saw band (cca 15 - 20 cm) into the guide cube. Adjust both eccentrics so that the band runs in the middle of milled groove. This groove is located between both eccentrics.

Guide rollers may not press too much on the band, but they must spin freely.
Optimal distance between band and roller is 0,05mm.

6. Install the cube on the gib. Install the saw band and adjust guiding cubes.

7.9.3. Stretching wheel replacement

1. Dismantle the saw band.



2. Screw off the screw of the stretching wheel and pull off the washer.
3. Screw on the auxiliary screw to the shaft of the stretching wheel.



4. Put on the three-leg puller on the stretching wheel and pull off it from the shaft.



5. If the lower bearing stays on the shaft, pull of it from the shaft with two-leg puller. Check both bearings; eventually replace them for a new.



6. Insert the retaining ring to the hole in the new stretching wheel.
7. Insert the bearing to the hole in the wheel and push it to the retaining ring.



8. Clean the shaft and oil it. Install the new stretching wheel on the shaft.



9. Install the distance ring on the shaft and push it to the lower bearing.



10. Install second bearing on the shaft and push it to the distance ring.



11. Install the washer and screw on the stretching wheel.
12. Install the saw band. Wheel replacement is ready.

7.9.4. Driving wheel replacement

1. Dismantle the saw band.



2. Screw of the fastening screw of the driving wheel and pull off the washer.



3. Screw on the auxiliary screw to the driving shaft.



4. Install the three-leg puller on the driving wheel and pull off it from the shaft.



5. Check, if the feather and the driving shaft are not damaged. Contact your supplier for parts replacement.



6. If the shaft and the feather are in good order, clean them, oil them and install them on the driving shaft.



7. Install the washer and screw on the driving wheel.
8. Install the saw band.

7.9.5. Cooling pump replacement

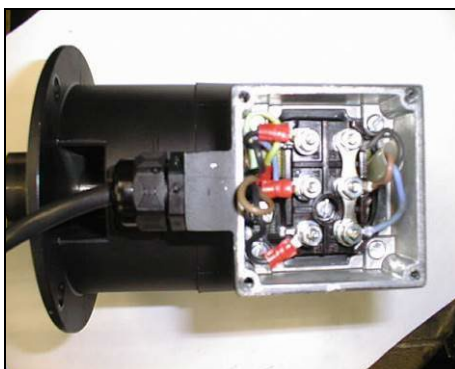
Only a qualified worker can carry out the connection! High-voltage shock may have fatal results.



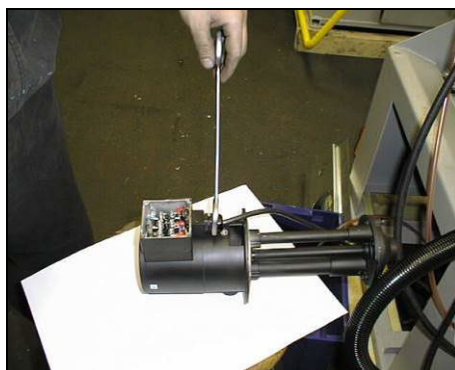
1. Pull out the cooling agent tank from the machine base as far as possible.



2. Remove the hosepipe leading the cooling agent from the connection on the pump. Unscrew four screws on the cooling pump flange and pull out the pump from the metal sheet holder.



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



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



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

7.9.6. Round brush replacement

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

1. Release the nut of the brush, exchange old brush to new brush and screw on the nut of the brush.



2. Set the brush to the saw band.

8. **Závady / Störungen / Troubleshooting**

8.1. 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.
2. The cut is not cut upon desired angle	- Unexpected oscillation in material quality.	Set the cut and feeding speed to the relevant material.
	- 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.
3. Short lifetime of the saw band	- Dirt between material and clamping jaw.	Cleanse the material and mating jaw.
	- Insufficient saw band stretching.	Raise the tightening of the saw band set the scanner of saw band tightening according to chapter „Servicing and adjustment“.
	- Worn swarf brush.	Check the swarf brush condition and replace it in case of excessive use as described in chapter „Worn pieces replacement“
	- Wrongly adjusted swarf brush.	Check swarf brush adjustment, set it according to chapter „Servicing and adjustment“
	- Over stretched saw band	Lower stretching of the saw band and set the limit switch of the saw band stretching according to chapter „Servicing and adjustment“
	- Wrongly adjusted hard metal guides.	Check the adjustment of the hard metal guides and carry out adjustment as described in chapter „Servicing and adjustment“
	- Worn hard metal guides of the saw	Check the condition of the hard metal guide and

Problem	Possible causes	Repair
	band.	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.
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.

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

8.2. Electric problems

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

Problem	Possible causes	Repair
		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.

8.3. Hydraulic problems

Problem	Possible causes	Repair
1. Hydrogenerator not supplying oil	• reverse rotation	Check the connections of each phase. Reconnect properly connection of the electrical phases.
	• shortage of oil in the tank	Add hydraulic oil
	• Oil viscosity does not correspond prescribed viscosity value	Change hydraulic oil.
	• Hydrogenerator malfunction	Call service
	• Wrong power supply connection.	Check the connections of each phase. Reconnect properly connection of the electrical phases.
2. Hydraulic oil contains bubbles	• Hydraulic circuit is not adequately deaerated	Make deaeration of hydraulic circuit.
	• Low oil level	Add hydraulic oil
	• the pump shaft seals damaged	Call service
3. Increased mechanical noise	• damaged joint drive	Call service
	• damaged or destroyed motor bearings	Call service
	• air intake	Check for leaks.
4. Low pressure, pump supplies oil	• problem in the safety valve	Wrong settings. Check the settings and adjust the safety valve.
	• pump wear	Call service
	• external or internal leakage	Call service
5. Hydrogenerator is seized	• damage by solid particles in oil	Make oil filtration, or call the service.
	• non-prescribed oil	Change hydraulic oil.
	• wrong type of oil	Change hydraulic oil.
	• exceeding the life of the pump	Call service
6. Overheating oil	• cooler malfunction	Check the cooler function or call service.
	• wear the pump, the energy is converted into heat	Call service

7. Hydraulic valve can not be readjusted	• electromagnet has no signal (voltage) - interrupted supply lines	Check agin.
	• Electromagnet coil burnt	Replace coil – Call service.
	• spool valve sticking	Replace valve – Call service

9. **Schémata / Schemas / Schematics**

9.1. Elektrické schema /Elektroschema / Wiring diagrams



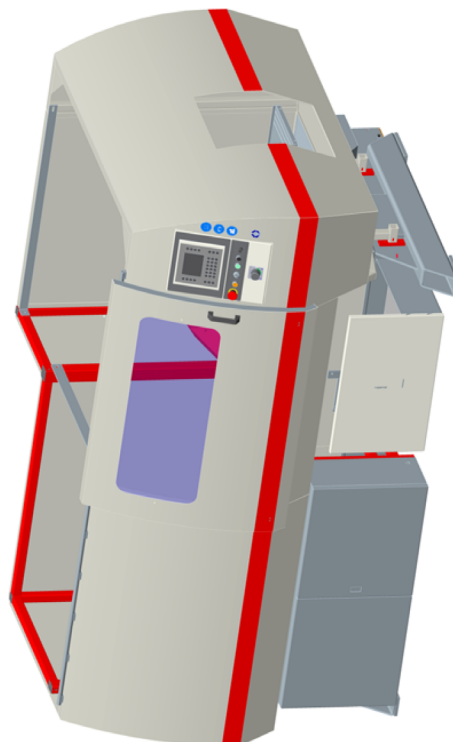
Ergonomic 290.258 DGANC

3x400V + PE, 50Hz

Wiring diagram

ES-101.148-B1/B2-V4.5

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627 00 Brno
Czech republic



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Ergonomic 290.258 DGANC

Název stránky/Name page/Name seiten:

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Číslo dok./Doc.No/Anzahl der Dokumente.:

ES-101.148-B1/B2-V4.5

Nápis/Power supply/Eingelung:

3x400V + PE, 50Hz

Zpracoval/Processed /Hat verarbeitet:

31.01.2020

Datum/Date/Datum:

31.01.2020

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/27	SyncFree / SyncFree / SyncFree	12.05.2022
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 BOMAR, s.r.o. Telčská 1236/1 CZ 627 00, Brno	Strany/Machine/Maschine: Ergonomic 290.258 DGANC	Název stránky/Page page/Name seiten: Obsah / Content / Inhalt Table of contents Inhaltsverzeichnis	Cela dok./Doc.to/Anzahl der Dokumente.: Napájení/Power supply/Einspeisung: Zpracováno/Processed / Hat verarbeitet: Datum/Date/Datum:	ES-10.1.48-B1.02-V4.5 3x400V + PE, 50Hz 12.05.2022	Úděl/Pages/ Seiten: 2, a Úděl/Pages/ Seiten: 36
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Kusovník artiklů / Parts list / Stückliste

Označení přístroje Device identification Geräteidentifikation	Typ přístroje Device description Gerätebeschreibung	Objednáací číslo Type number Typennummer	Výrobce Manufacturer Hersteller	Skladové číslo Part number Lagernummer	Množství Quantity Menge	Umístění Location Stelle
+OP1-PR1	Potenciometr 4k7 Potentiometer 4k7	TP195 4k7/N20A	Elektronické součástky CZ, a.s	91.283.015	1	/10.4
+OP1-PR1	Hlavice potenciometru - 24mm Head of potentiometer 24mm Leiter Potentiometer 24mm	S8877 BLK	GES-ELECTRONICS, a.s.	91.060.063	1	/10.4
+OP1-PR1	Svorka rychloupínací Fastconnect clamp Fast Connect Klemm	WAGO 224-112	WAGO	91.250.009	3	/10.4
-A1.5.1	Modul digitálních vstupů Digital input module Digitales Eingangsmodul	X20DI9371	B&R	91.995.212	1	/21.0
-A1.5.1	Špičkový modul - 1xI/O Bus module - 1xI/O Bus module - 1xI/O	X20BM11	B&R	91.995.205	1	/21.0
-A1.5.1	Svorkovnice 12-pin Terminal block 12-pin Klemmenblock 12-pin	X20TB12	B&R	91.995.217	1	/21.0
-A1.7.1	Modul digitálních výstupů Digital output module Digitales Ausgangsmodul	X20DO8332	B&R	91.995.213	1	/22.0
-A1.7.1	Špičkový modul - 1xI/O Bus module - 1xI/O Bus module - 1xI/O	X20BM11	B&R	91.995.205	1	/22.0
-A1.7.1	Svorkovnice 12-pin Terminal block 12-pin Klemmenblock 12-pin	X20TB12	B&R	91.995.217	1	/22.0
-A1.7.2	Modul digitálních výstupů Digital output module Digitales Ausgangsmodul	X20DO8332	B&R	91.995.213	1	/23.0
-A1.7.2	Špičkový modul - 1xI/O Bus module - 1xI/O Bus module - 1xI/O	X20BM11	B&R	91.995.205	1	/23.0
-A1.7.2	Svorkovnice 12-pin Terminal block 12-pin Klemmenblock 12-pin	X20TB12	B&R	91.995.217	1	/23.0

The manufacturer reserves right to use an equivalent replacement device.

Kusovník artiklů / Parts list / Stückliste

Označení přístroje Device identification Geräteidentifikation	Typ přístroje Device description Gerätebeschreibung	Objednáací číslo Part number Typennummer	Výrobce Manufacturer Hersteller	Skladové číslo Part number Lagernummer	Množství Quantity Menge	Umístění Location Stelle
-BM1	Bezpečnostní relé 24VDC, 3NO/1NC Safety relay 24VDC, 3NO/1NC Sicherheitsrelais 24VDC, 3NO/1NC	ABB.2TLA010040R0000	ABB	91.051.076	1	/14.6
-ENC1.1	Lineární inkrementální snímač - 10-30VDC/10-30VDC Linear Encoder - 10-30VDC / 10-30VDC Linearencoder - 10-30VDC / 10-30VDC	LMDX-026-08.0-1-00	ELGO	91.270.011	1	/18.6
-ENC1.2	Inkrementální rotační snímač Incremental rotary encoder Inkremental-Encoder	EIL580P-SY06.7AQ.10000.B	BaumertWO	91.103.129	1	/18.3
-ENC1.2	Kabel s konektorem 5m Cable with connector 5m Kabel mit Stecker 5m	IFM.E20838	IFM electronic	91.142.140	1	/18.3
-FA1.1	Motorový spouštěč - 0.4A Motor starter - 0.4A Motorstarter - 0.4A	MSL16-0.4	ABB	91.045.017	1	/7.6
-FA1.1	Pomocné kontakty - 1xNO+1xNC Auxiliary contacts - 1xNO+1xNC Hilfskontakte - 1xNO+1xNC	HKF1-11	ABB	91.046.002	1	/7.6
-FA1.3	Motorový spouštěč - 2.5A Motor starter - 2.5A Motorstarter - 2.5A	MSL16-2.5	ABB	91.045.021	1	/9.6
-FA1.3	Pomocné kontakty - 1xNO+1xNC Auxiliary contacts - 1xNO+1xNC Hilfskontakte - 1xNO+1xNC	HKF1-11	ABB	91.046.002	1	/9.6
-FA10.3	Motorový spouštěč - 1A Motor starter - 1A Motorstarter - 1A	MSL16-1.00	ABB	91.045.019	1	/9.2
-FA10.3	Pomocné kontakty - 1xNO+1xNC Auxiliary contacts - 1xNO+1xNC Hilfskontakte - 1xNO+1xNC	HKF1-11	ABB	91.046.002	1	/9.2
-FM1.1	Frekvenční měnič - 3x 380-500 V, 0.55 kW Frequency inverter - 3x 380-500V, 0.55 kW Frequenzumrichter - 3x 380-500V, 0.55 kW	8166T400055.0P-000	B&R	91.012.186	1	/8.0
-FM1.1	Ethernet kabel 1m Ethernet cable 1m Ethernetkabel 1m	KEL-CG-S-010 KELine	Cables with connector	91.142.129	1	/8.0

The manufacturer reserves right to use an equivalent replacement device.



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Název stránky/Name page/Blatt: Kusovník artiklů / Part list / Stückliste

Kusovník artiklů / Part list / Stückliste

Číslo dok./Doc./Anzahl der Dokumente: ES-10.1.148-B1/02-V4.5
Nápis/Power supply/Eingabe: 3x400V + PE, 50Hz
Zpracováno/Processed / Hat verarbeitet: 12.05.2022

Lišt/Pages/Blatt: 3, a
Lišt/Pages/Blatt: 36

Kusovník artiklů / Parts list / Stückliste

Označení přístroje Device identification Geräteidentifikation	Typ přístroje Device description Gerätebeschreibung	Objednáací číslo Part number Typennummer	Výrobce Manufacturer Hersteller	Skladové číslo Part number Lagernummer	Množství Quantity Menge	Umístění Location Stelle
-FM1.2	Frekvenční měnič - 3x 380-500 V, 0,37 kW Frequency inverter - 3x 380-500V, 0,37 kW Frequenzumrichter - 3x 380-500V, 0,37 kW	8166TF00037,0P-000	B&R	91.012.185	1	/8.4
-FM1.2	Ethernet kabel 1m Ethernet cable 1m Ethernetkabel 1m	KEL-C6-S-010 KELine	Cables with connector	91.142.129	1	/8.4
-FM1.3	Frekvenční měnič - 1,5kW, 3x400VAC Frequency converter - 1.5kW, 3x400VAC Frequenzumrichter - 1,5kW, 3x400VAC	VFD4A2ME3AFNAA	DELTA ELECTRONICS, INC.	91.012.197	1	/10.0
-FU1.1	Svorka pojistková Fuse terminal Sicherungsklemme	WK4/TH5SU	WIELAND	91.251.102	1	/13.5
-FU1.1	Pojistka trubičková - 2A/250V, pomalá, 5x20 Tube fuse - 2A/250V, slow, 5x20 Rohrsicherung - 2A / 250V, langsam, 5x20	T2A/250V	ESKA	91.230.001	1	/13.5
-FU1.2	Svorka pojistková Fuse terminal Sicherungsklemme	WK4/TH5SU	WIELAND	91.251.102	1	/13.5
-FU1.2	Pojistka trubičková - 6,3A/250V, pomalá, 5x20 Tube fuse - 6,3A/250V, slow, 5x20 Rohrsicherung - T6,3A / 250V, langsam, 5x20	T6.3A/250V	ESKA	91.230.002	1	/13.5
-FU1.3	Svorka pojistková Fuse terminal Sicherungsklemme	WK4/TH5SU	WIELAND	91.251.102	1	/13.5
-FU1.3	Pojistka trubičková - 3,15A/250V, pomalá, 5x20 Tube fuse - 3,15A/250V, slow, 5x20 Rohrsicherung - T3,15A / 250V, langsam, 5x20	T3.15A/250V	ESKA	91.230.012	1	/13.5
-FU1.4	Svorka pojistková Fuse terminal Sicherungsklemme	WK4/TH5SU	WIELAND	91.251.102	1	/13.5
-FU1.4	Pojistka trubičková - 2A/250V, pomalá, 5x20 Tube fuse - 2A/250V, slow, 5x20 Rohrsicherung - 2A / 250V, langsam, 5x20	T2A/250V	ESKA	91.230.001	1	/13.5
-FU1.5	Svorka pojistková Fuse terminal Sicherungsklemme	WK4/TH5SU	WIELAND	91.251.102	1	/13.5

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3.a	 BOMAR, s.r.o. Třebení 1236/1 CZ 627 00, Brno	Stroj/Machine/Maschine: Ergonomic 290.258 DGANC	Název stránky/Name page/Name seiten: Kusovník artiklů / Part list / Stückliste Parts list Artikelstückliste	Číslo dok./Doc./Anzahl der Dokumente.: Nápis/Power supply/Eingehung: Zpracová/Processed /Hat verarbeitet: Datum/Date/Datum:		ES-10.1.148-81/02-V4.5 3x400V + PE, 50Hz 12.05.2022	3.b 3.b 30

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Kusovník artiklů / Parts list / Stückliste

Označení přístroje Device identification Geräteidentifikation	Typ přístroje Device description Gerätebeschreibung	Objednáací číslo Type number Typennummer	Výrobce Manufacturer Hersteller	Skladové číslo Part number Lagernummer	Množství Quantity Menge	Umístění Location Stelle
-FU1.5	Pojistka trubičková - 2A/250V, pomalá, 5x20 Tube fuse - 2A/250V, slow, 5x20 Rohrsicherung - 2A / 250V, langsam, 5x20	T2A/250V	ESKA	91.230.001	1	/13.5
-FU1.6	Pojistka trubičková - 500mA/250V, pomalá, 5x20 Tube fuse - 500mA/250V, slow, 5x20 Rohrsicherung - 500 mA / 250 V, langsam, 5x20	T500mA/250V	ESKA	91.230.011	1	/26.1
-FU1.6	Svorka pojistková Fuse terminal Sicherungsklemme	WK4/THSISU	WIELAND	91.251.102	1	/26.1
-FU1.7	Pojistka trubičková - 200mA/250V, pomalá, 5x20 Tube fuse - 200mA/250V, slow, 5x20 Rohrsicherung - 160mA / 250V, langsam, 5x20	T200mA/250V	ESKA	91.230.037	1	/26.4
-FU1.7	Svorka pojistková Fuse terminal Sicherungsklemme	WK4/THSISU	WIELAND	91.251.102	1	/26.4
-H10.4	Maják - základna Lighthouse - Base Leuchtturm - Basis	SL7-CB-100	EATON	91.063.058	1	/19.2
-H10.4	Maják - žlutý Lighthouse - yellow Leuchtturm - gelb	SL7-L-Y	EATON	91.063.059	1	/19.2
-H10.4	Žárovka 24V Lamp 24V Lampe 24V	SL7-L24	EATON	91.063.061	1	/19.2
-HL1.2	Signálka LED zelená na adaptér Green light for Eaton adapter Grünes Licht für Eaton-Adapter	M22-LED-G	EATON	91.061.023	1	/19.3
-HL1.510	Signálka LED bílá na adaptér White LED light for adapter Weißes LED-Licht für Adapter	M22-LED-W	EATON	91.061.034	1	/14.7
-HV5	Dioda 800V 3A Diode 800V 3A Diode 800V 3A	BY399 D0201	GH-electronics	91.280.009	1	/12.7
-KL1.1	Maticová klávesnice Matrix keyboard Matrix-Tastatur	HT 4582	AKI ELECTRONIC, spol.s.r.o.	31.W330-155	1	/24.2

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ES-10.1.148-B1/02-V4.5

Nápis/Power supply/Eingabeung:

3x400V + PE, 50Hz

Zpracováno/Processed /Hat verarbeitet:

12.05.2022

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Kusovník artiklů / Parts list / Stückliste

Označení přístroje Device identification Geräteidentifikation	Typ přístroje Device description Gerätebeschreibung	Objednáací číslo Part number Typennummer	Výrobce Manufacturer Hersteller	Skladové číslo Part number Lagernummer	Množství Quantity Menge	Umístění Location Stelle
-KL1.1	Převodník maticové klávesnice na RS232 Converter matrix keyboard to RS232 Converter Matrix-Tastatur auf RS232	HT4582-232	AKI ELECTRONIC, spol.s.r.o.	91.995.102	1	/24.2
-KM1.1	Ministýkač 4kW/400V Minicontactor 4kW/400V Minischutz 4kW/400V	B6S-30-01-1.7-71	ABB	91.040.049	1	/19.1
-KM1.4	Ministýkač 4kW/400V Minicontactor 4kW/400V Minischutz 4kW/400V	B6S-30-01-1.7-71	ABB	91.040.049	1	/11.7
-KM1.11	Stýkač 5.5kW/400V Contactor 5.5kW/400V Schutz 5.5kW/400V	AF12-30-01-11	ABB	91.040.051	1	/14.7
-KM1.11	Pomocný kontakt - 1xNO Auxiliary contact - 1xNO Hilfskontakt - 1xNO	CA4-10	ABB	91.041.044	2	/14.7
-KM1.12	Stýkač 5.5kW/400V Contactor 5.5kW/400V Schutz 5.5kW/400V	AF12-30-01-11	ABB	91.040.051	1	/14.8
-KM1.12	Pomocný kontakt - 1xNO Auxiliary contact - 1xNO Hilfskontakt - 1xNO	CA4-10	ABB	91.041.044	2	/14.8
-KM10.3	Ministýkač 4kW/400V Minicontactor 4kW/400V Minischutz 4kW/400V	B6S-30-01-1.7-71	ABB	91.040.049	1	/23.2
-LP10.2	Laser Laser Laser	Laser 24AC/DC	HOFMAN SYSTEMS s.r.o.	91.100.109	1	/26.5
-LQ1.1A	Snímač laserový - přijímač Laser sensor - receiver Laser sensor - receiver	BOS 12M-PA-LE10-S4	BALLUFF	91.400.018	1	/15.8
-LQ1.1A	PUR, zásuvka M12, 4-pin, přímý, 10 m PUR, M12 socket, 4-pin, straight, 10 m PUR, M12-Buchse, 4-polig, gerade, 10 m	MOD.15/4 M12 SL LC10	Cables with connector	91.142.002	1	/15.8
-LQ1.1B	Laserová závora - vysílač Laser barrier - transmitter Laserlichtschranke - Sender	BOS 12M-X-LS11-S4	BALLUFF	91.400.055	1	/15.8

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Kusovník artiklů / Parts list / Stückliste

Označení přístroje Device identification Geräteidentifikation	Typ přístroje Device description Gerätebeschreibung	Objednáací číslo Part number Typennummer	Výrobce Manufacturer Hersteller	Skladové číslo Inventory number Lagernummer	Množství Quantity Menge	Umístění Location Stelle
-PAL.5	Pojiskový odpínač pro válcové vložky - 3P Switch fuse for the cylinder inserts - 3P Schalter Sicherung für den Zylinderinsätze - 3P	E93/32	ABB	91.241.014	1	/13.1
-PAL.5	Pojistka válcová - 2A, 10x38; rychlá Tube fuse - 2A, 10x38; fast Rohrsicherung - 2A, 10x38; schnell	PV10 2A gG	OEZ	91.230.034	3	/13.1
-QSL.1	3 pólový odpínač, 16A Disconnecter - 3P, 16A Trennschalter - 3P, 16A	OT16FT3	ABB	91.170.018	1	/7.0
-QSL.1	Rukojeť odpínače - černá Handle switch - black Griffschalter - schwarz	OHBS3RH	ABB	91.180.016	1	/7.0
-QSL.1	Kryt svorek Terminal shroud Klemmenabdeckung	OTS40T3	ABB	91.170.017	1	/7.0
-RT10.7	Modem-router eWON COSY 131, WAN Modem-router eWON COSY 131, WAN Modem-router eWON COSY 131, WAN	ECG1330	eWON	91.990.034	1	/26.6
-SA1.1	Hlavice 3 polohového přepínače, klíček Head of 3 positional key switch Leiter der 3-Position Schlüsselhalter	M22-WRS3	EATON	91.060.058	1	/17.4
-SA1.1	Upevňovací adaptér + 1NO Attaching adapter + 1NO Montageadapter + 1NO	M22-AK10	EATON	91.061.021	1	/17.4
-SA1.1	Kontaktní blok - 1NO; na panel Contact block - 1NO; on the panel Kontaktblock - 1NO; auf dem panel	M22-K10	EATON	91.061.022	1	/17.4
-SA10.2	Přepínač 2 polohy Switch 2 positions Schalter 2 Positionen	M22 - WKV	EATON	91.060.037	1	/26.4
-SA10.2	Upevňovací adaptér + 1NO Attaching adapter + 1NO Montageadapter + 1NO	M22-AK10	EATON	91.061.021	1	/26.4
-SA10.2	Nosič štítků Moeller Moeller label holder Moeller Etikettenhalter	M22S-ST-X	EATON	91.062.009	1	/26.4

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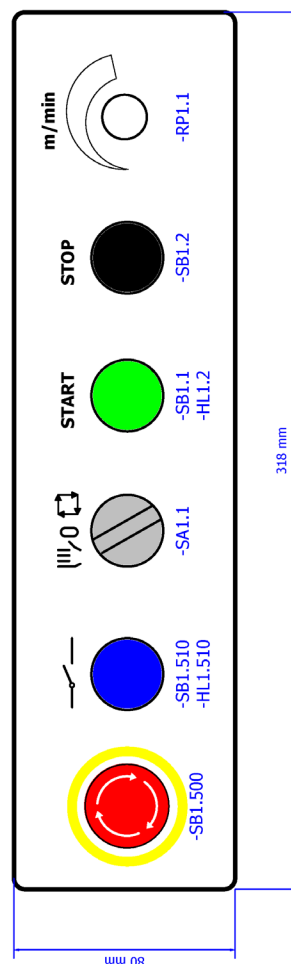
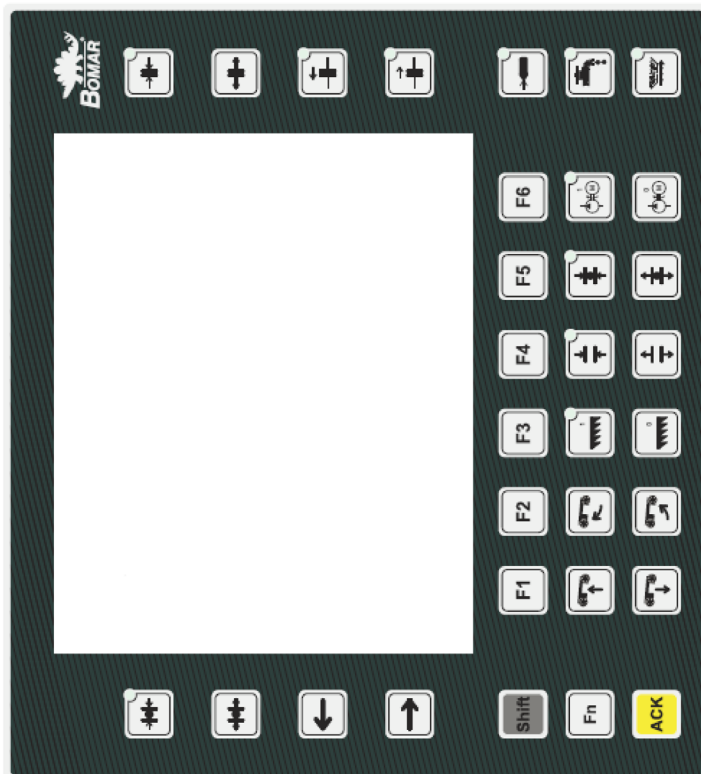
Označení přístroje Device identification Geräteidentifikation	Typ přístroje Device description Gerätebeschreibung	Objednáací číslo Part number Typennummer	Výrobce Manufacturer Hersteller	Skladové číslo Quantity Lagernummer	Množství Quantity Menge	Umístění Location Stelle
-SQ1.5	Koncový spínač - 1NC+1NO Limit switch - 1NC+1NO Endschalter - 1NC+1NO	D4N-4A31	OMRON	91.173.007	1	/21.1
-SQ1.6	Koncový spínač - 1NC+1NO Limit switch - 1NC+1NO Endschalter - 1NC+1NO	D4N-4A31	OMRON	91.173.007	1	/21.1
-SQ1.7	Koncový spínač - 1NO + 1NC Limit switch - 1NO + 1NC Endschalter - 1NO + 1NC	FK 3301-M1	PIZZATO	91.173.015	1	/21.2
-SQ1.8	Koncový spínač - 1NO + 1NC, kladka, M1, slow action Limit switch - 1NO + 1NC, pulley, M1, slow action Endschalter - 1S + 1O, Riemenscheibe, M1, langsam Wirkung	FK 3302-M1	PIZZATO	91.173.011	1	/21.3
-SQ1.9	Koncový spínač - 1NO + 1NC, kladka, M1, slow action Limit switch - 1NO + 1NC, pulley, M1, slow action Endschalter - 1S + 1O, Riemenscheibe, M1, langsam Wirkung	FK 3302-M1	PIZZATO	91.173.011	1	/21.3
-SQ1.10	Magnetický cylindrický senzor - T-slot, 24V DC Magnetic cylindric sensor - T-slot, 24V DC Magnetische Zylindersensor - T-Nut, 24VDC	MZT7-03VPS-KUB	SICK	91.400.020	1	/21.7
-SQ1.11	Magnetický cylindrický senzor - T-slot, 24V DC Magnetic cylindric sensor - T-slot, 24V DC Magnetische Zylindersensor - T-Nut, 24VDC	MZT7-03VPS-KUB	SICK	91.400.020	1	/21.8
-SQ1.12	Koncový spínač - 1NO Limit switch - 1NO Endschalter - 1NO	BNS 819-99-D-13-S80	BALLUFF	91.173.016	1	/16.1
-SQ1.501	Bezpečnostní koncový spínač - 2xNC Safety Limit Switch - 2x NC Sicherheitsendschalter - 2x NC	QKS8	KEDU	91.173.012	1	/14.4
-SQ1.502	Bezpečnostní koncový spínač - 2xNC Safety Limit Switch - 2x NC Sicherheitsendschalter - 2x NC	QKS8	KEDU	91.173.012	1	/14.4
-SQ1.503	Bezpečnostní koncový spínač - 2xNC Safety Limit Switch - 2x NC Sicherheitsendschalter - 2x NC	QKS8	KEDU	91.173.012	1	/14.2
-SQ10.4	Indukční snímač vzdálenosti Inductive proximity sensor Induktive Näherungssensor	BAW R06AC-UAF20B-EP03	BALLUFF	91.172.016	1	/15.4

The manufacturer reserves right to use an equivalent replacement device.

</

264

-KL



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

Stroj/Machine/Maschine:

Ergonomic 290.258 DGANC

Název stránky/Name page/Name seiten:

Rozmístění prvků na ovládacím panelu / Control panel component placement / Einsatz der Elemente des Bedienfelds

Celo dok./Doc.to/Anzahl der Dokumente.:

ES-10.1.48-B1.02-V4.5

Verz./Verz./Verz.:

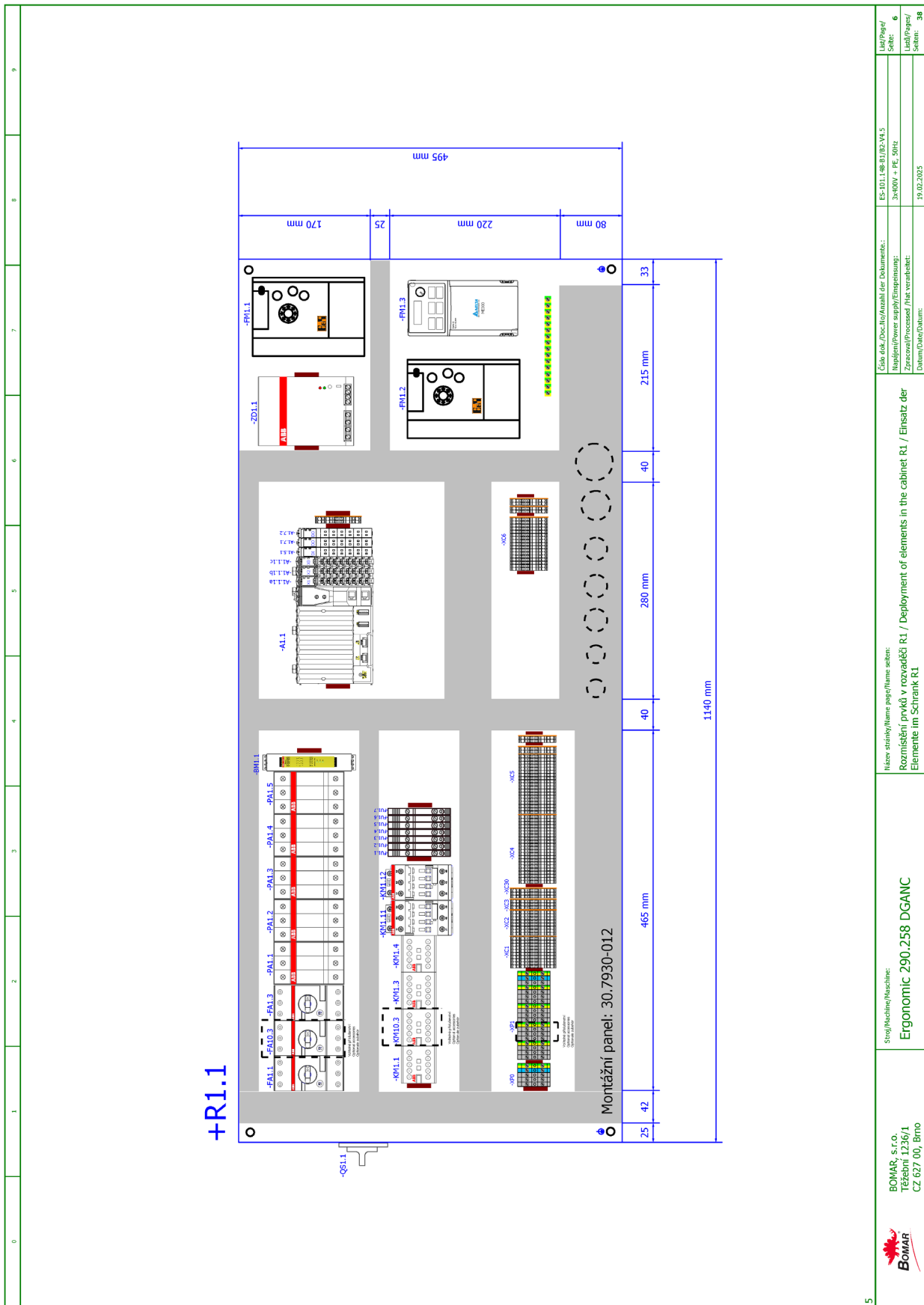
3x400V + PE, 50Hz

Verz./Verz./Verz.:

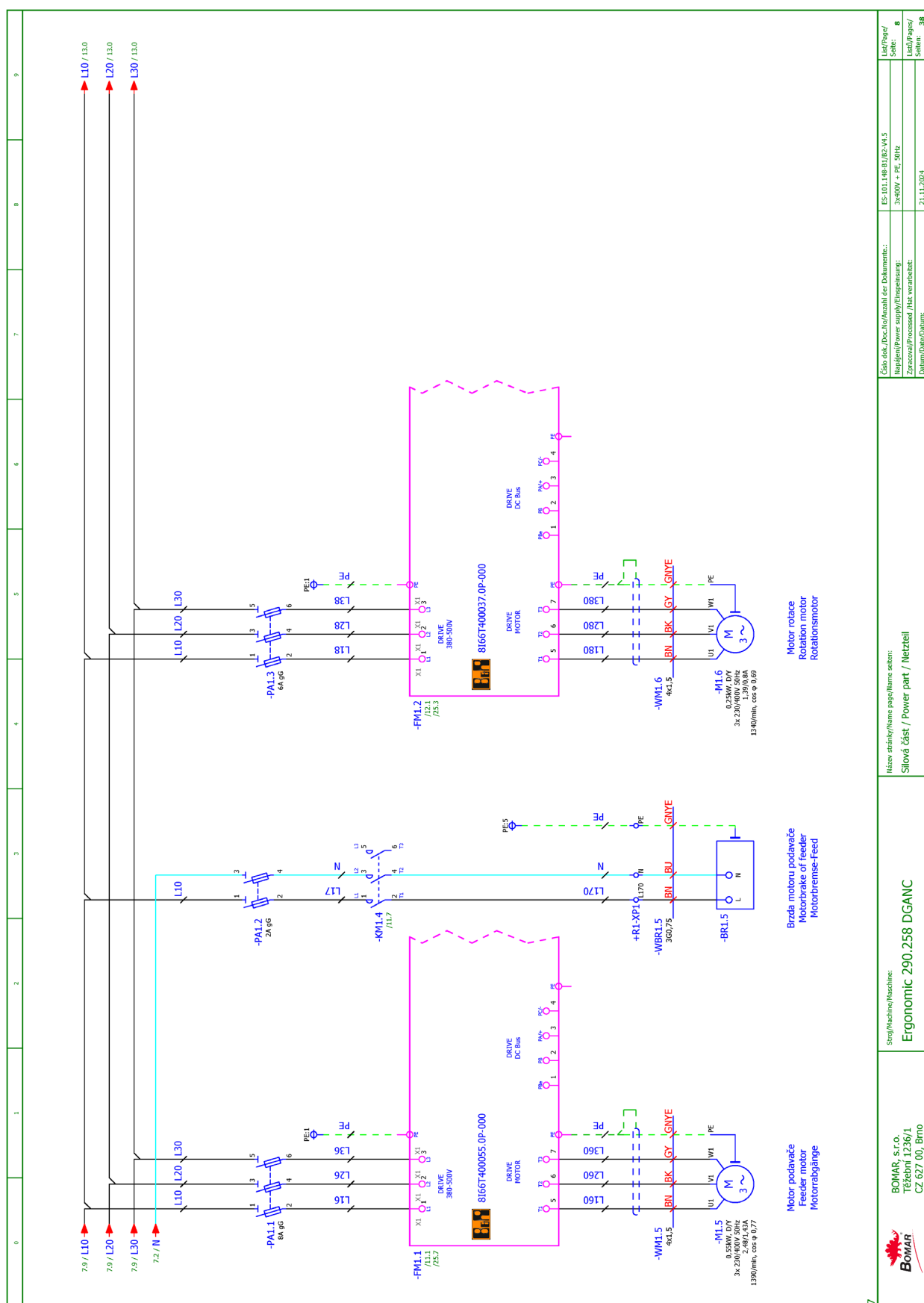
15.10.2021

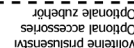
Verz./Verz./Verz.:

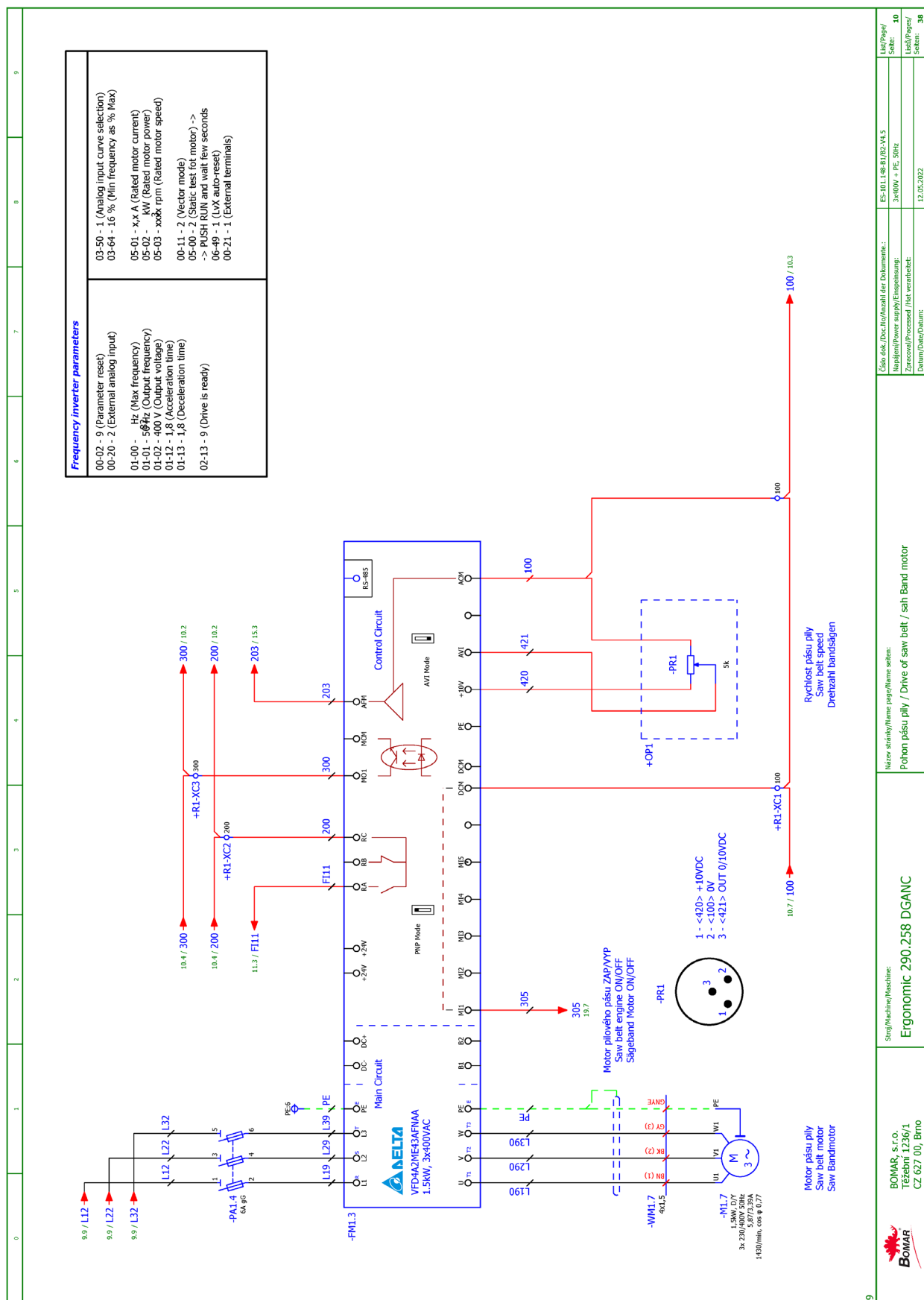
38



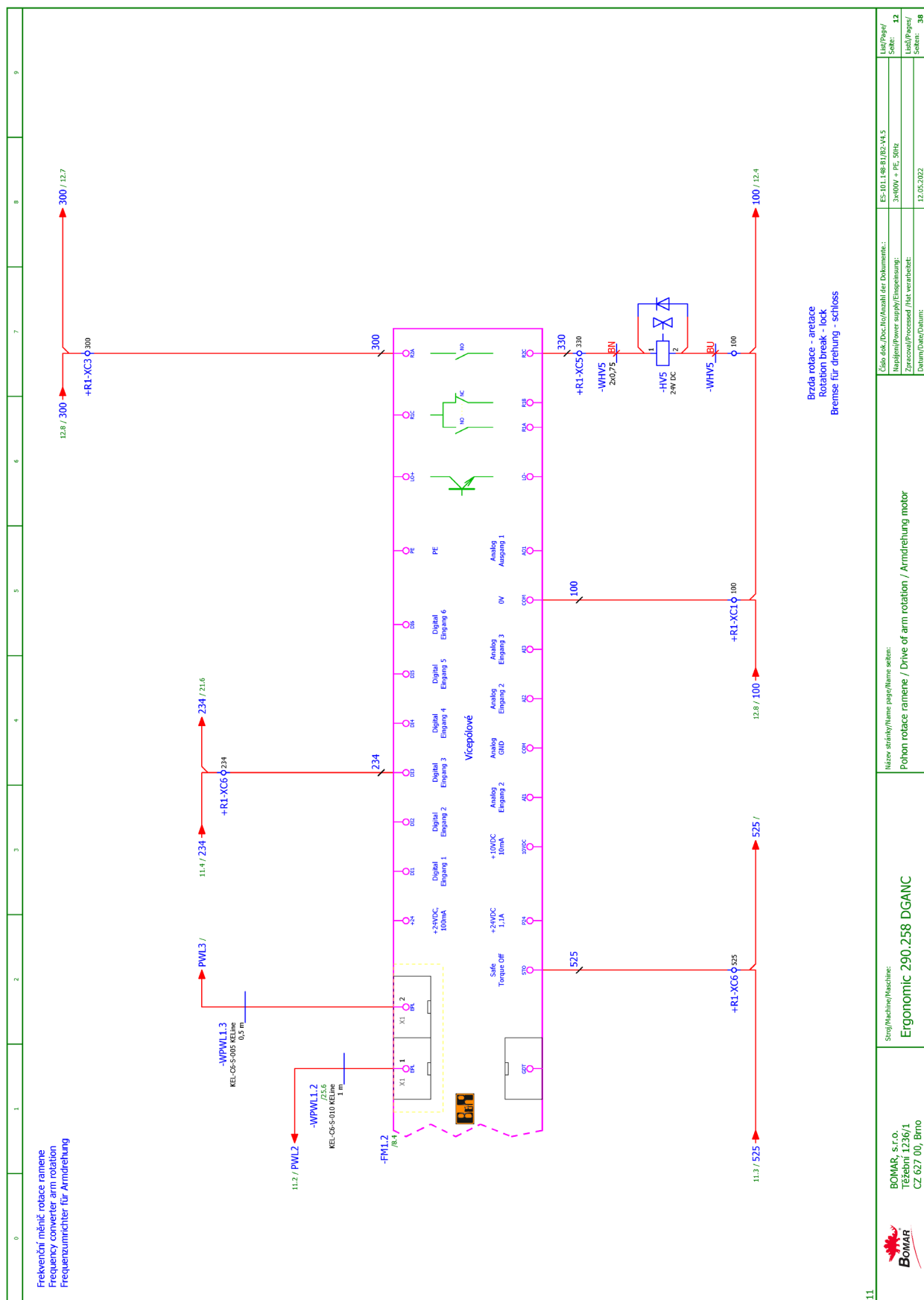




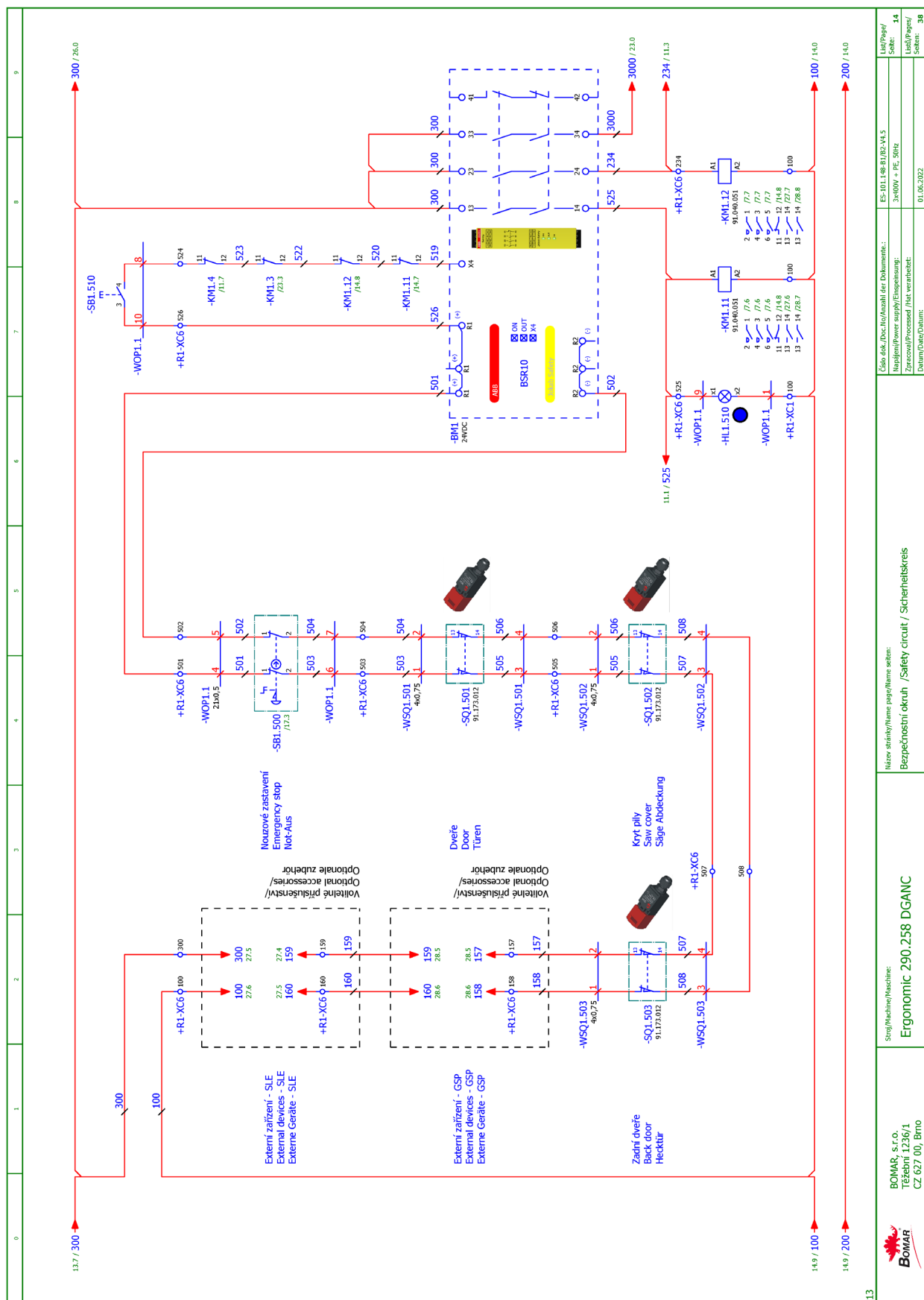


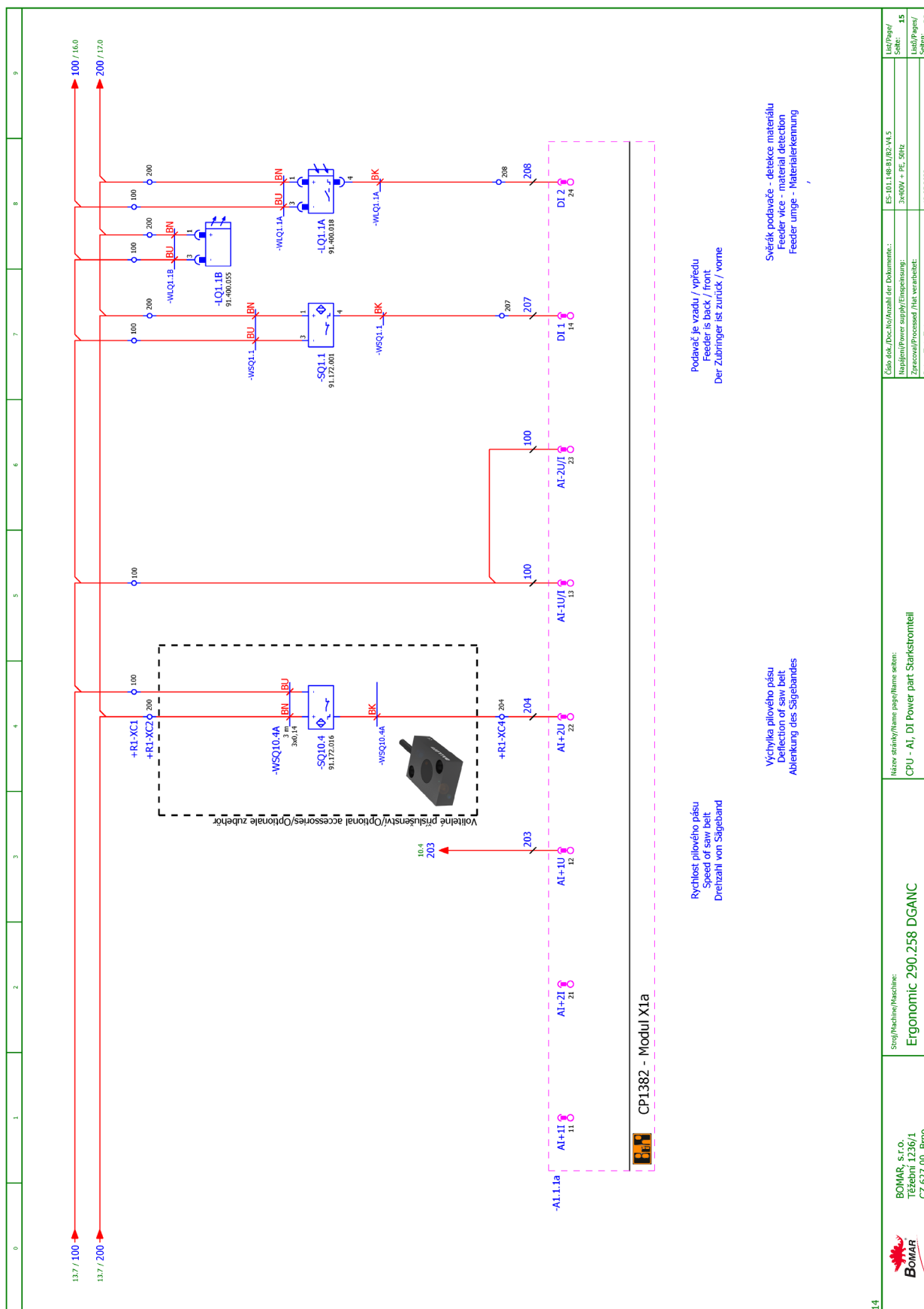


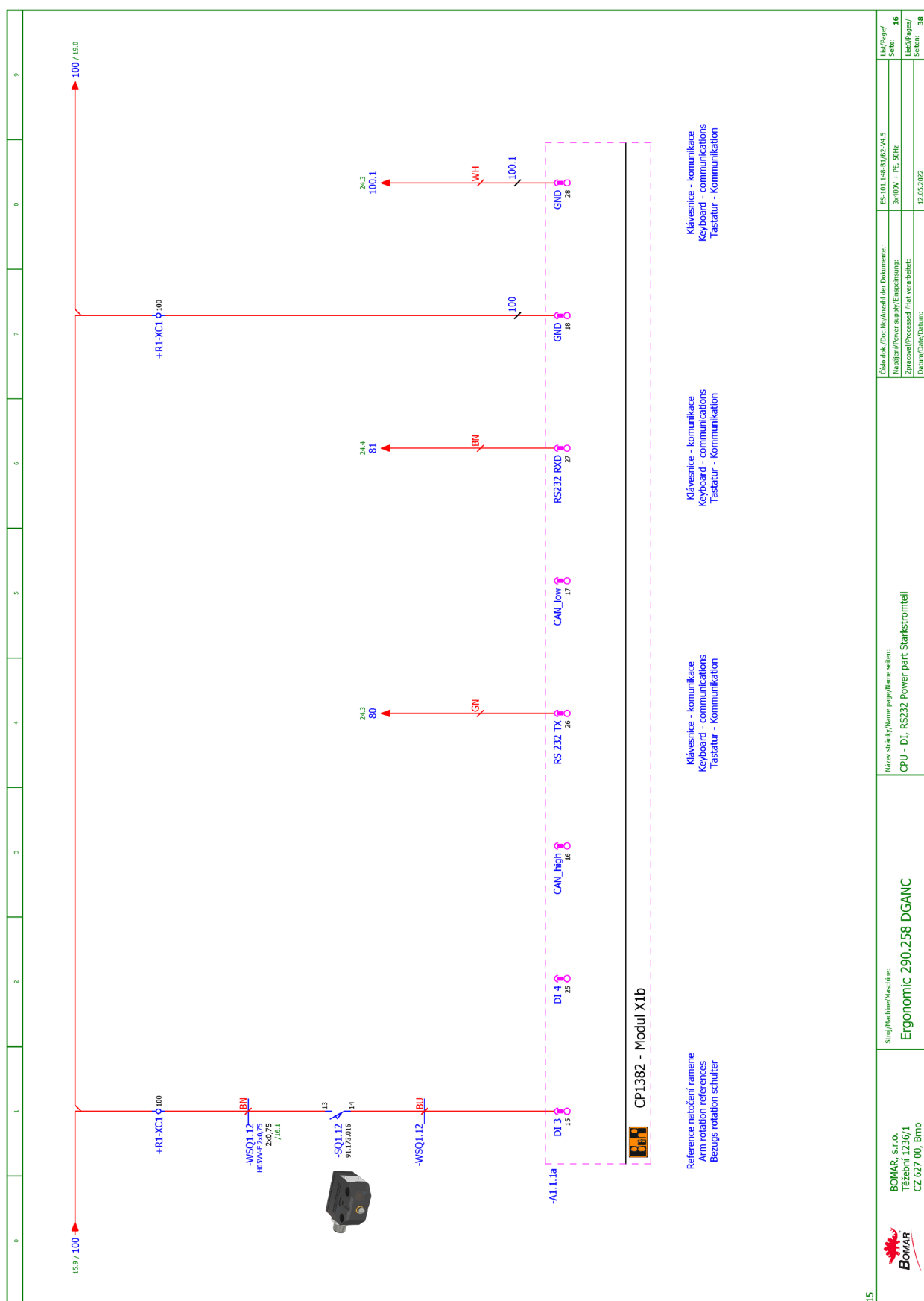




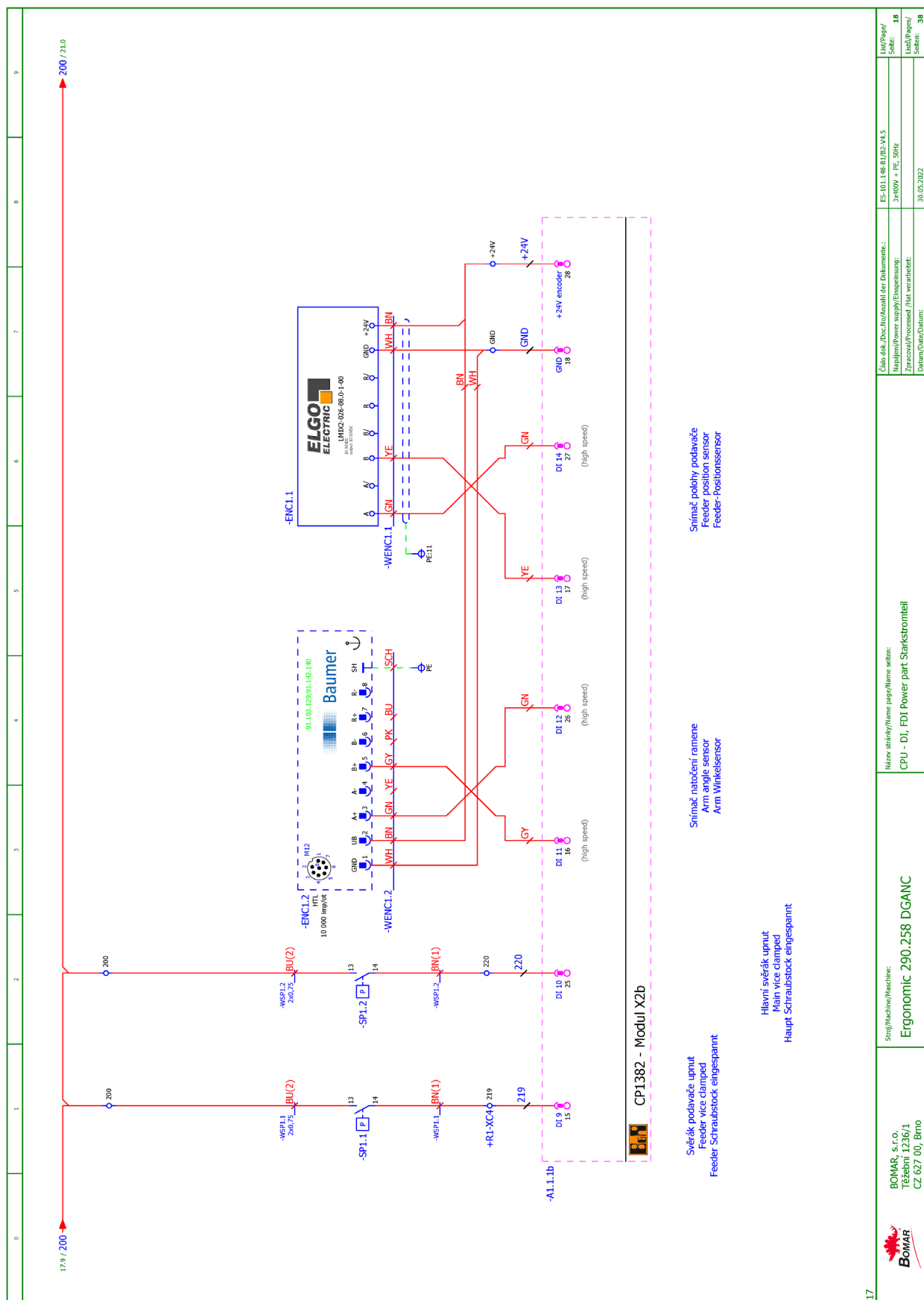
ES-101.148-B1/B2-V4.5
3x400V + PE, 50Hz



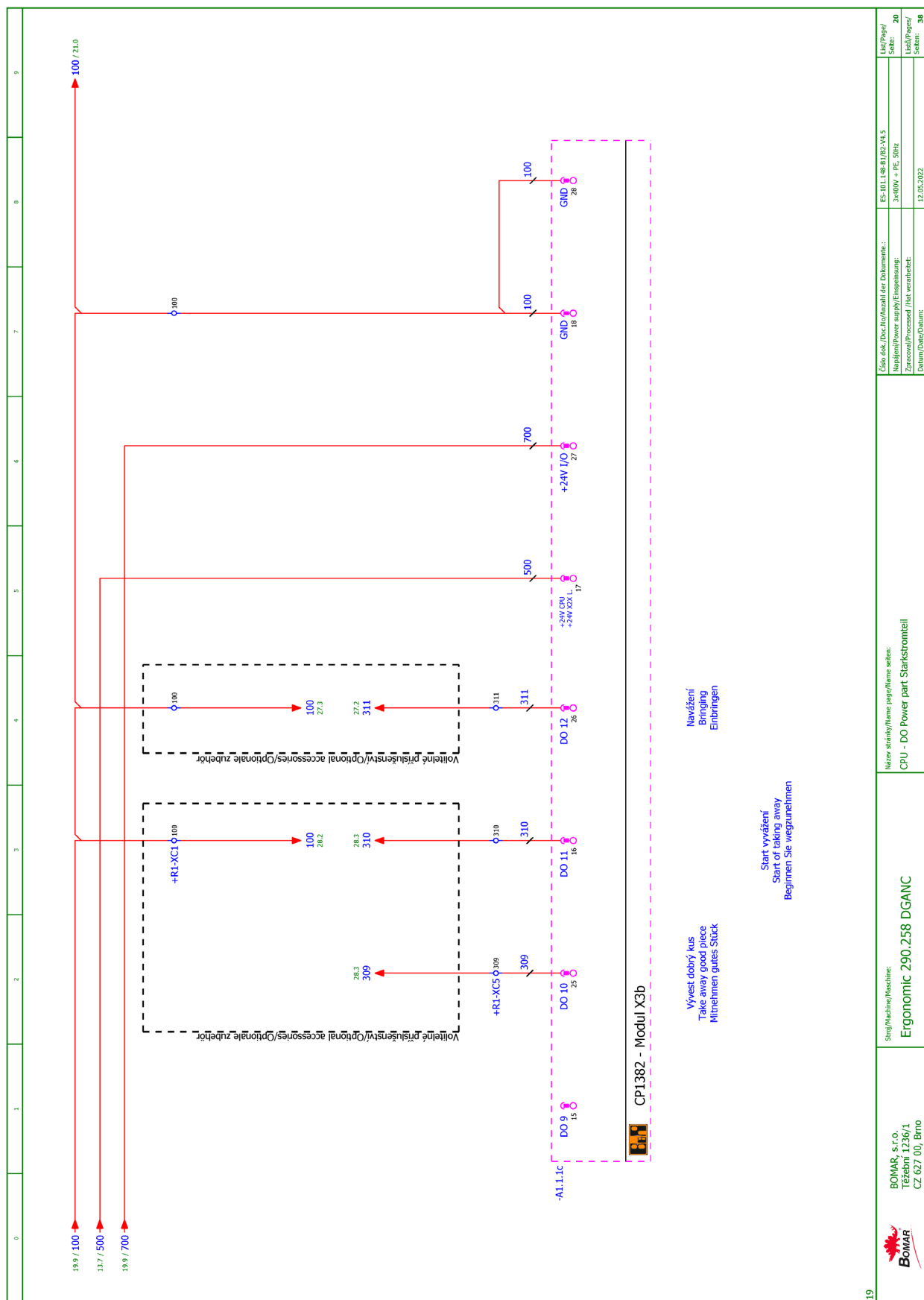


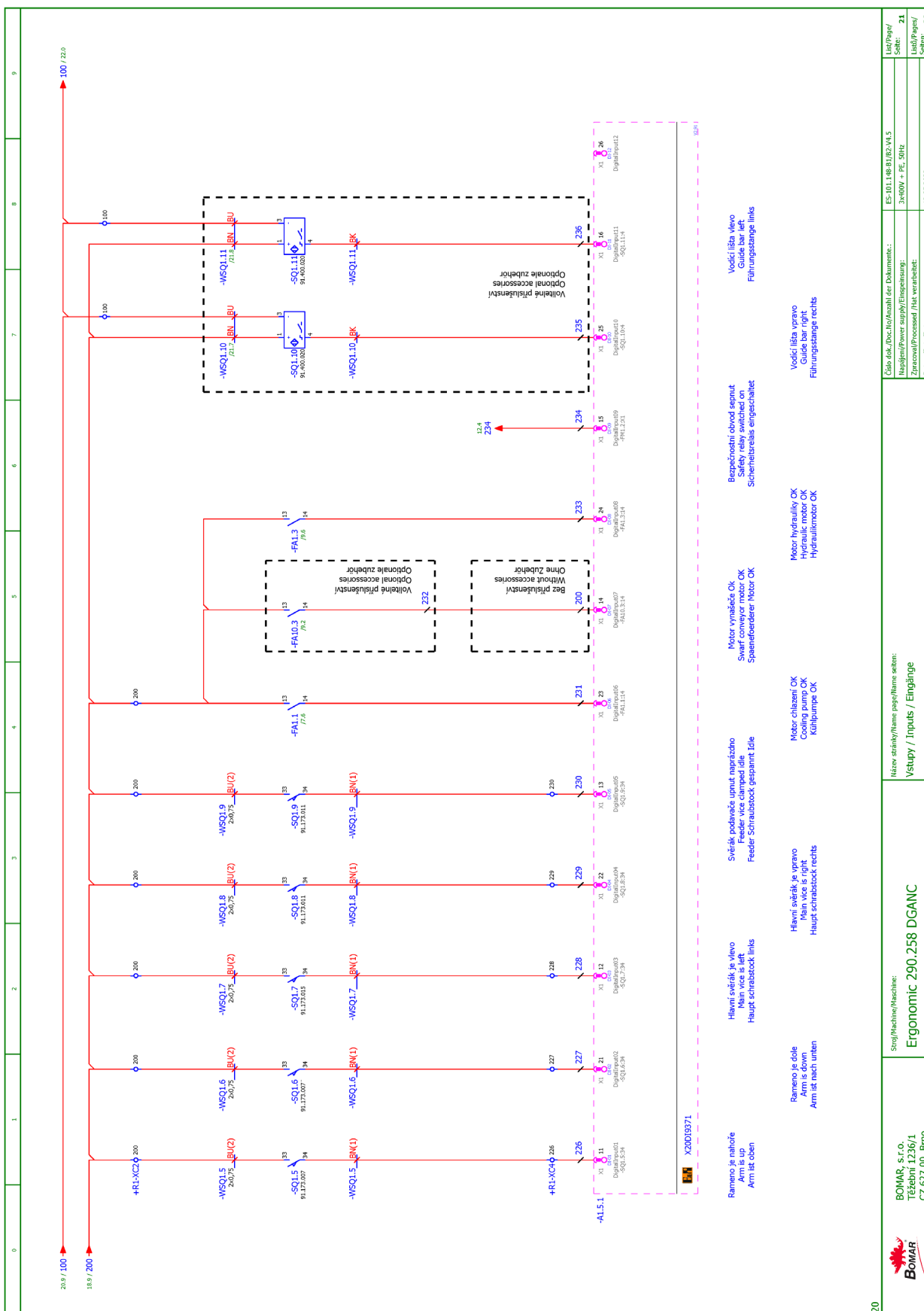


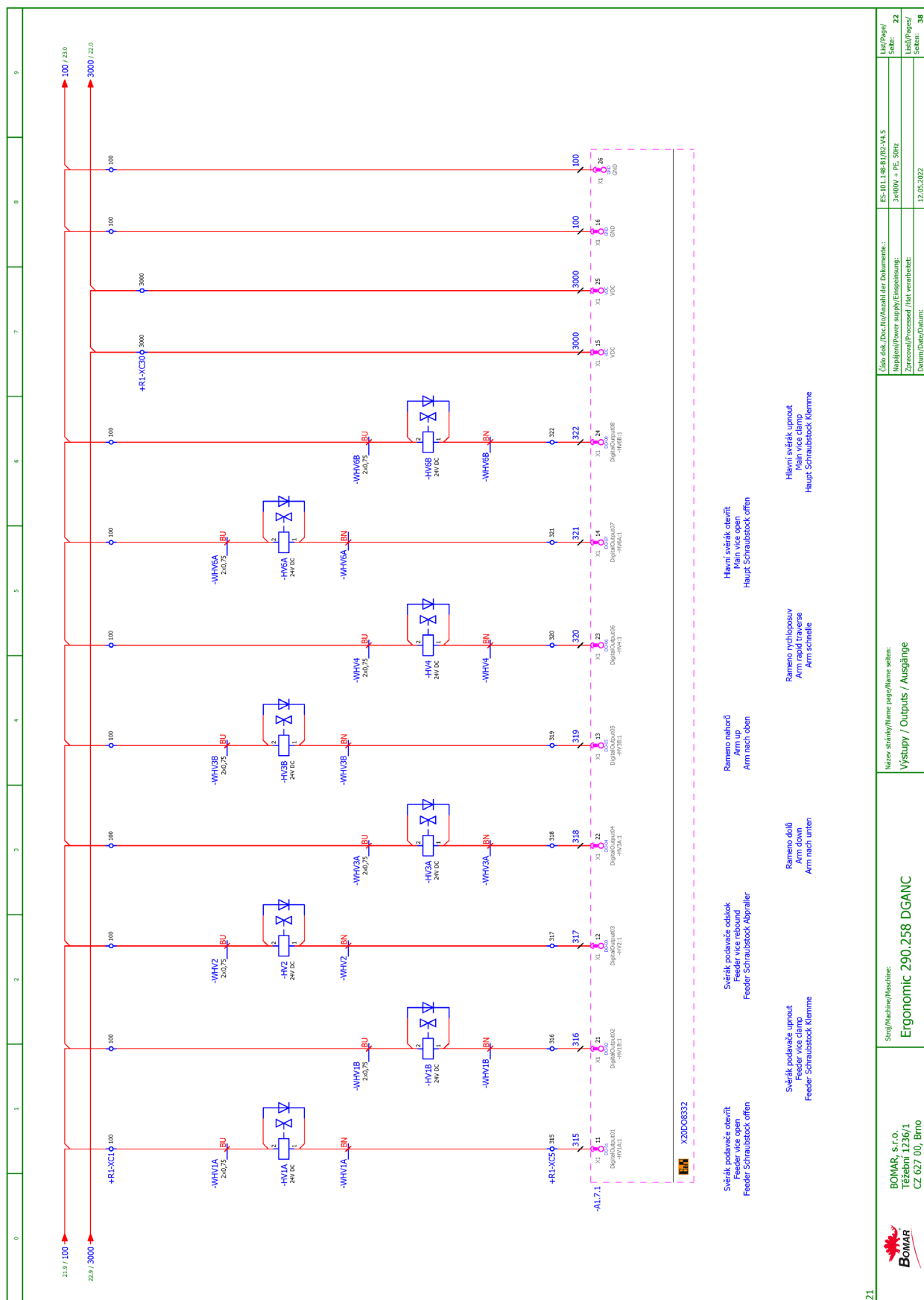








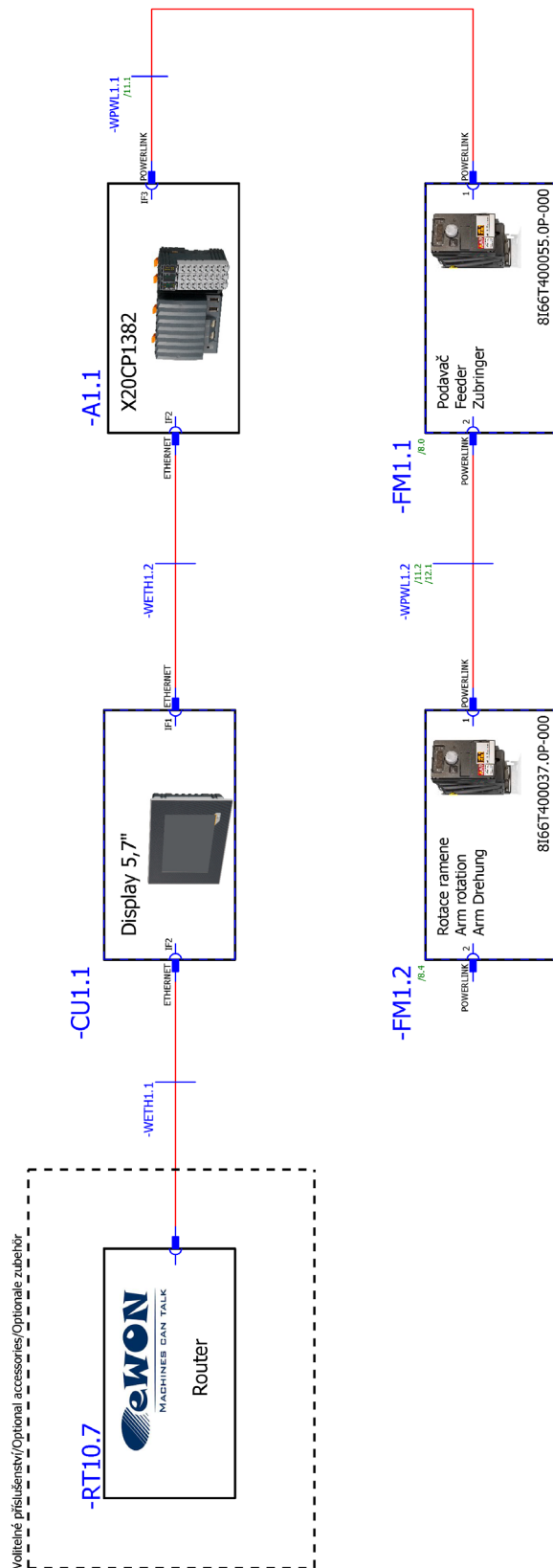


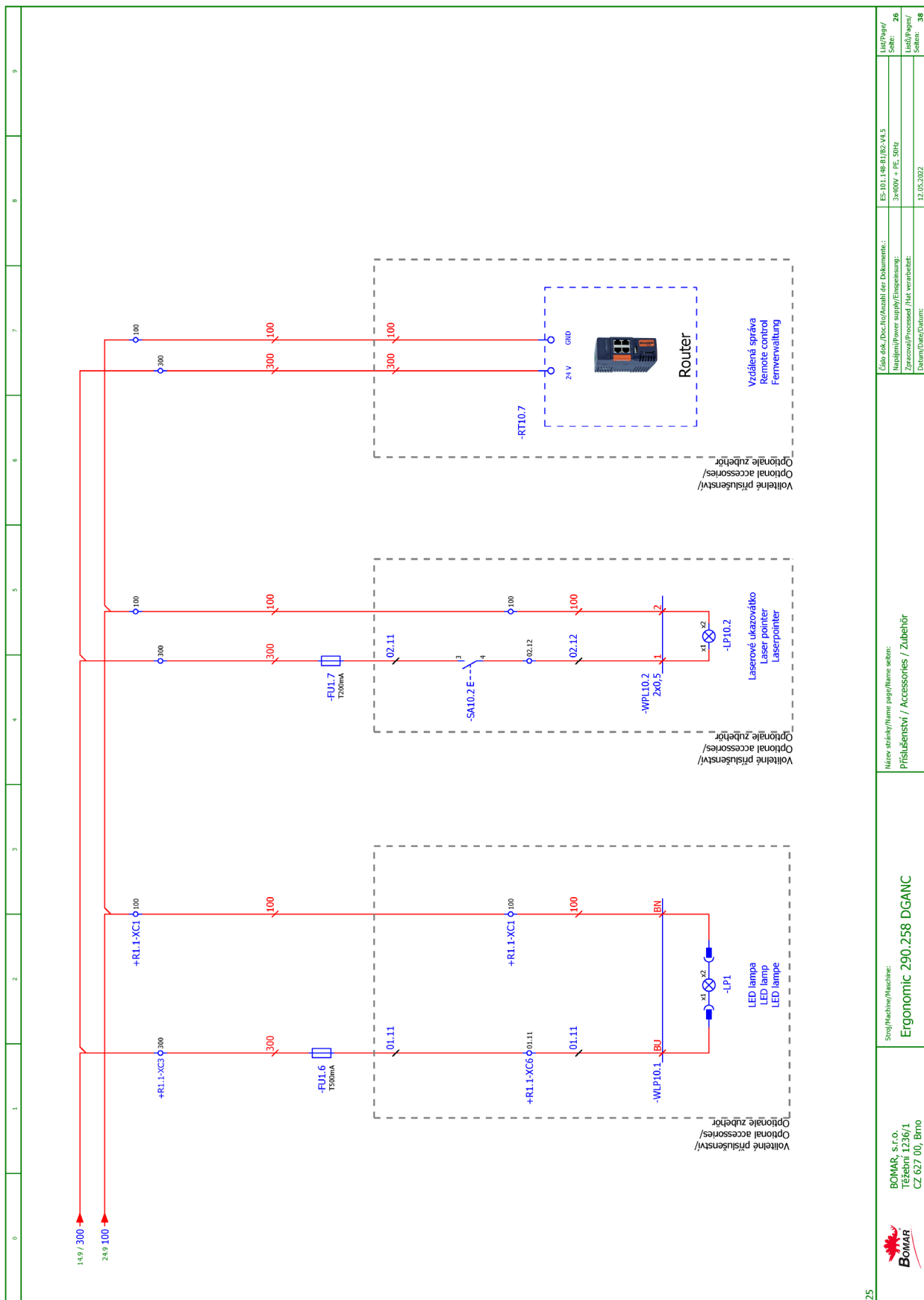






Topologie sběrnice Bus topology Busaufbau





Zařízení pracuje samostatně
Device works independently
Gerät ist unabhängig

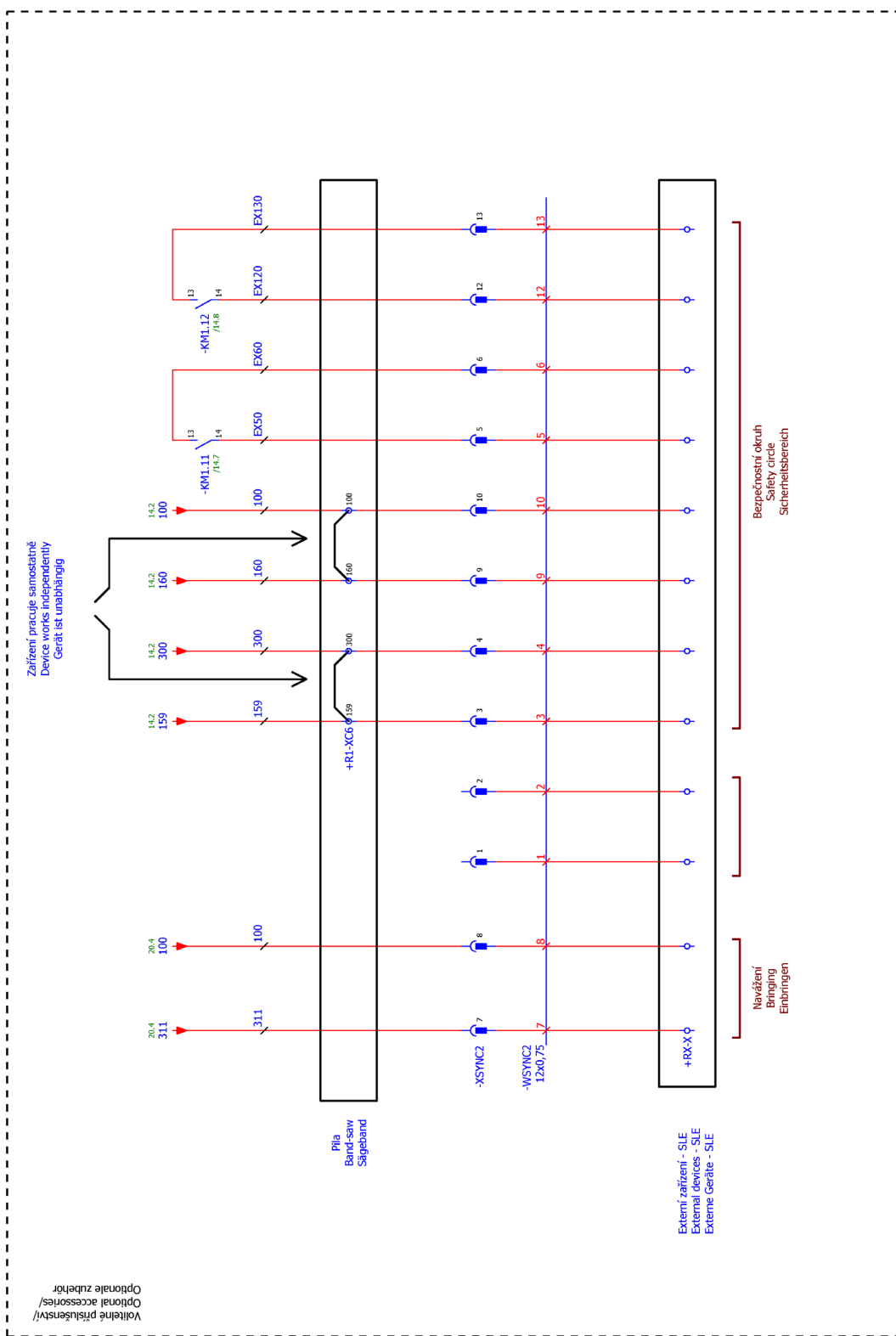
Volitelné příslušenství/
Optional accessories/
Optionale zubehör

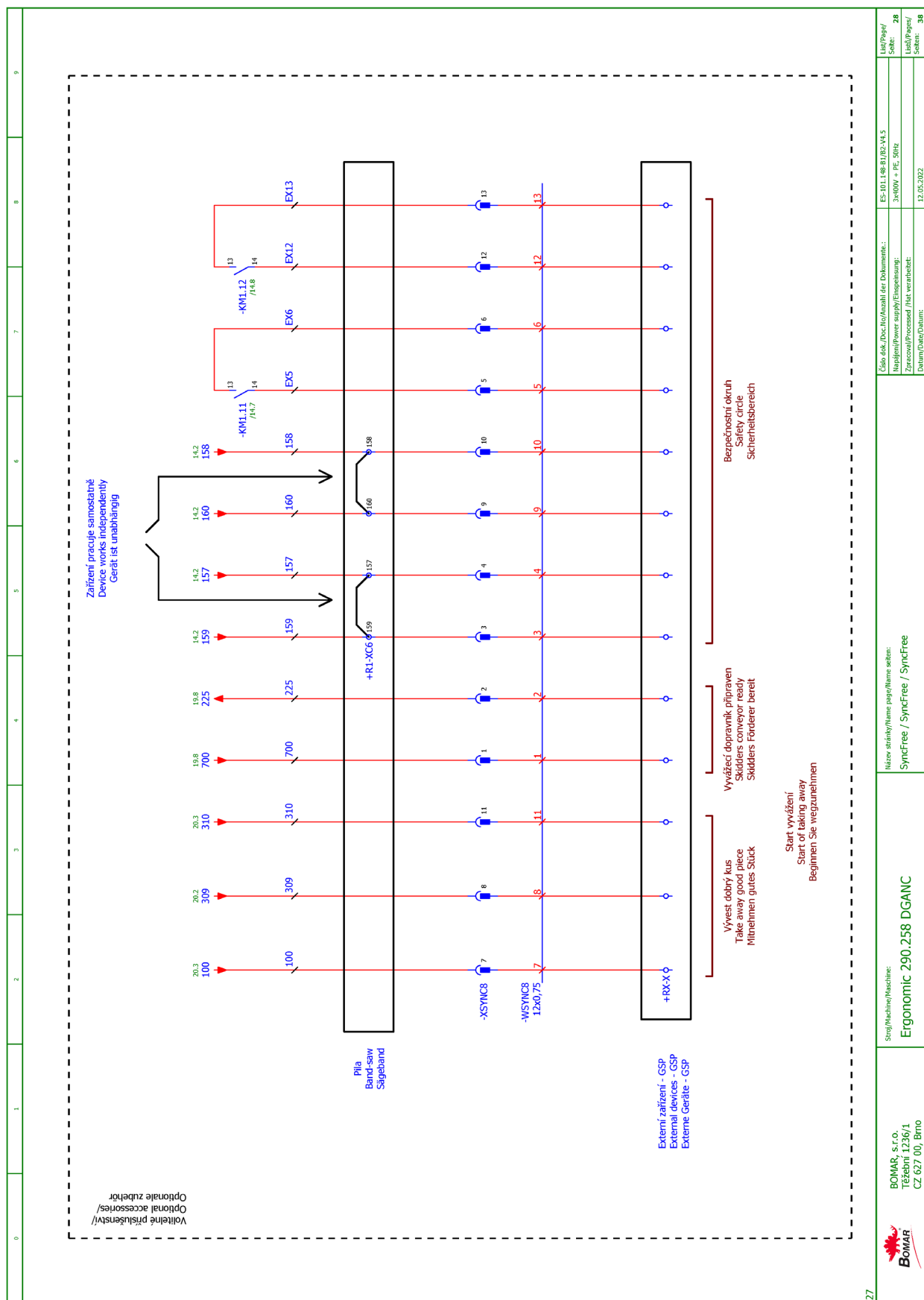
Pila
Band-saw
Sägeband

Externí zařízení - SLE
External devices - SLE
Externe Geräte - SLE

Navázání
Bringing
Einbringen

Bezpečnostní okruh
Safety circle
Sicherheitsbereich





9.2. Hydraulické schéma / Hydraulikschema Hydraulic diagram

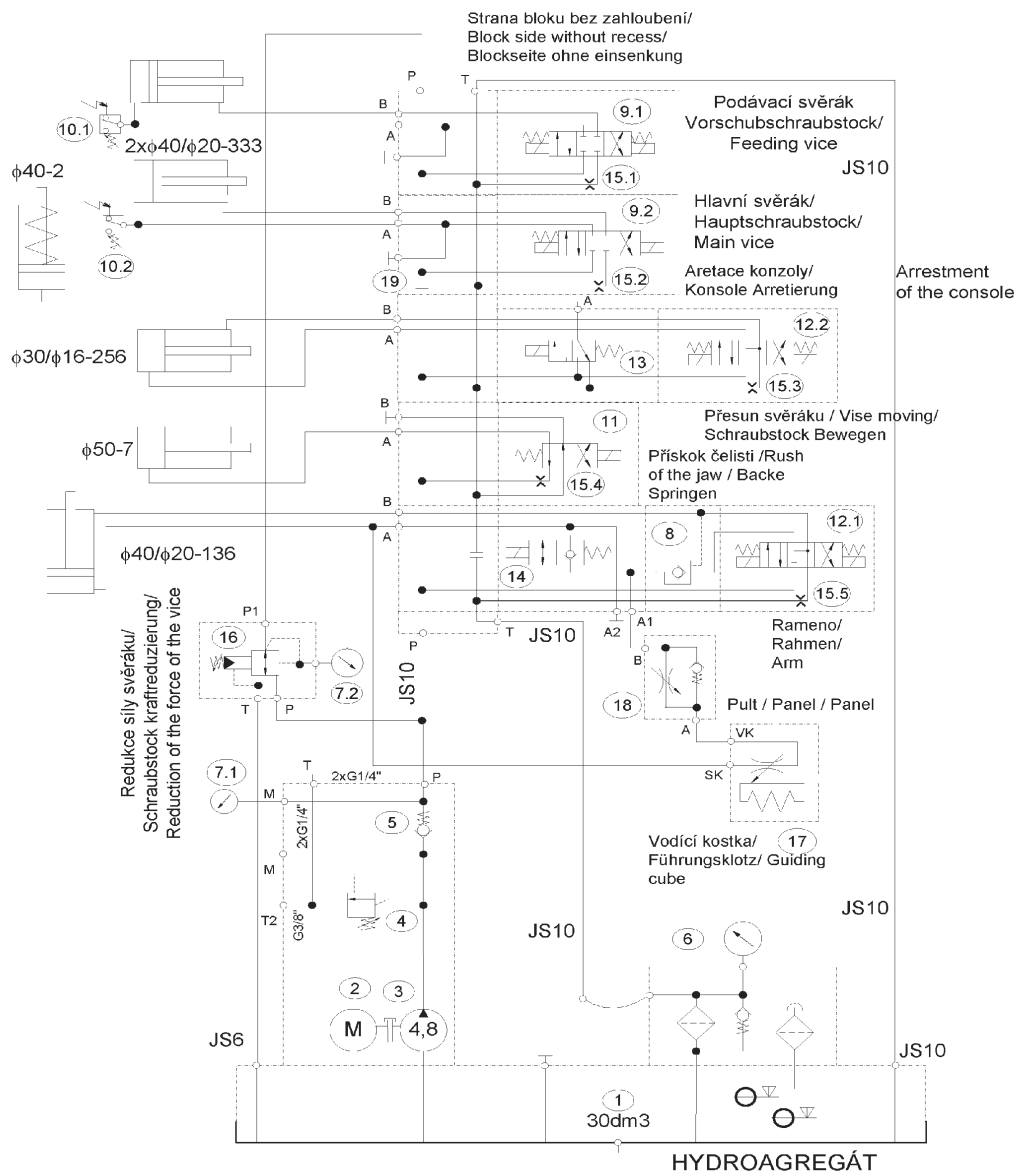


Schéma
Schemas
Schematics

Typ / Type / Type

Ergonomic 290.258 DGANC

Hydraulický agregát / Hydroaggregat / Hydro aggregat
92.001.169

SMA03-48/13.O-S11.X-H33M.0-1922/02400

Neuvedené světllosti / Unerwähnt Lichtbreite / Unlisted inside diameters

JS6

Výstupní šroubení / Ausgangsschraubung / Output screwing

G1/4"

P/Pmax

4 Mpa

Q

6,3 dm³/min

n

1390 rpm

P

0,55 kW

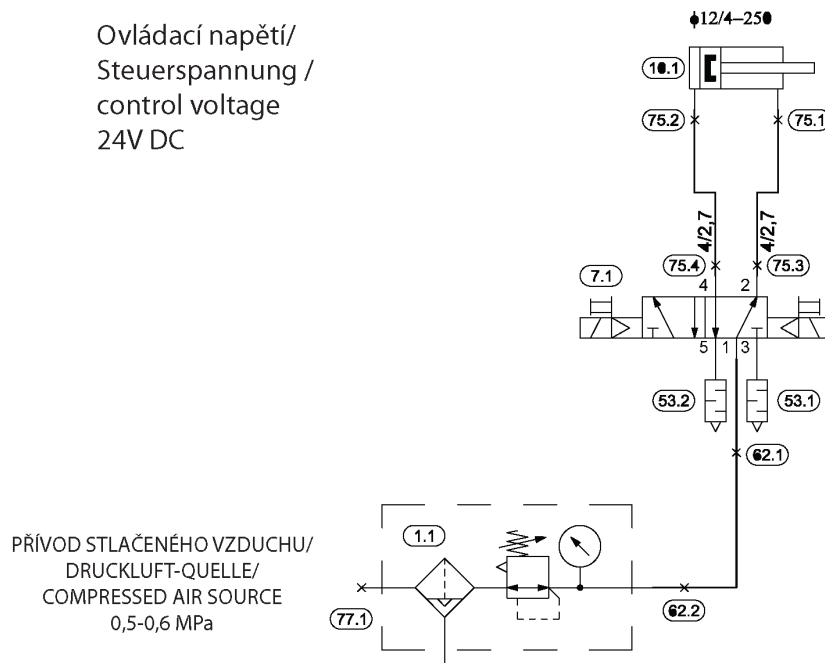
Poz. Pos. Pos.	Název položky Bezeichnung Item		ks Mng. Pcs.
1	Nádrž / Behälter / Tank	30 dm ³ special (750/7264)	1
2	Elektromotor / Elektromotor / Electromotor	MA-AL80 400/230V –50Hz 0,55kW – 1,51A	1
3	Hydrogenerátor / Hydraulikaggregat / Hydrogenerator	P2-4.8L 66017 4.8cm ³ /rev.	1
4	Jednosměrný ventil / Einwegventil / One-way valve	VJO1-06/SG-1	1
5	Přepouštěcí ventil / Bypašventil / By pass valve	VPP2-04/S-6 4 Mpa	1
6	Zpětný filtr / Regressivfilter / Reverse filter	FR 043- 166/0 (10µm) 92.153.101/039 + Vložka / Einlage / Insert V3.0510-56	1
7	Manometer / Manometer /Manometer	ø 68 (Glycerin) 0-6 MPa	2
8	Hydraulický zámek / Hydrauliksschloss / Hydraulic lock	VJR1-04/MA 92.103.002	1
9	Rozváděč / Verteilungsventil / Distributor	RPE3-043Z11/02400E1K1 92.101.010	2
10	Tlakový spínač / Druckschalter / Pressure Switch	166415031059 20-50bar SUCO s krytkou/ mit Haube/ with cover	2
11	Rozváděč / Verteilungsventil / Distributor	RPE3-042R11/02400E1K1 92.101.001	1
12	Rozváděč / Verteilungsventil / Distributor	RPE3-043Y11/02400E1K1 92.101.005	2
13	Blok aretace / Arretierungblock / Locking Block	731-9002 Bez trysky/ Keine Düse/No Nozzle	1
14	Blok rychloposuvu / Eilgangblock / Rapid feed blocking	729-0084 92.153.006	1
15	Clona / Schürze / Shield	Ø1,2 mm 92.153.023	5
16	Redukční ventil / Reduktionsventil / Control valve	VRN2-6/S-6R 28bar (Kostka / Würfel / Cube)	1
17	Kostka regulace/ Regelungswürfel/ Regulation cube	201.6816-100	1
18	Škrťací ventil / Drosselventil / Throttle-valve	VS01-04/R2,5-O 92.152.001	1
19	Zátka / Stopfen / Stopper M6	Nainstalovat vždy! installieren Sie immer/ Install always!	1

Attention!

The saw arm must always be in the down position after finishing work and resting or during longer intervals between cuts or at night. Otherwise there is a risk of damage to the hydraulic part of the saw arm.

All material must be removed from the saw area. (Risk of damage to the saw blade)

9.3. Pneumatické schéma – pomocné vedení (volitelné) / Pneumatikschema – Hilfsführungs (optional) / Pneumatic scheme – auxiliary guide (optinal)



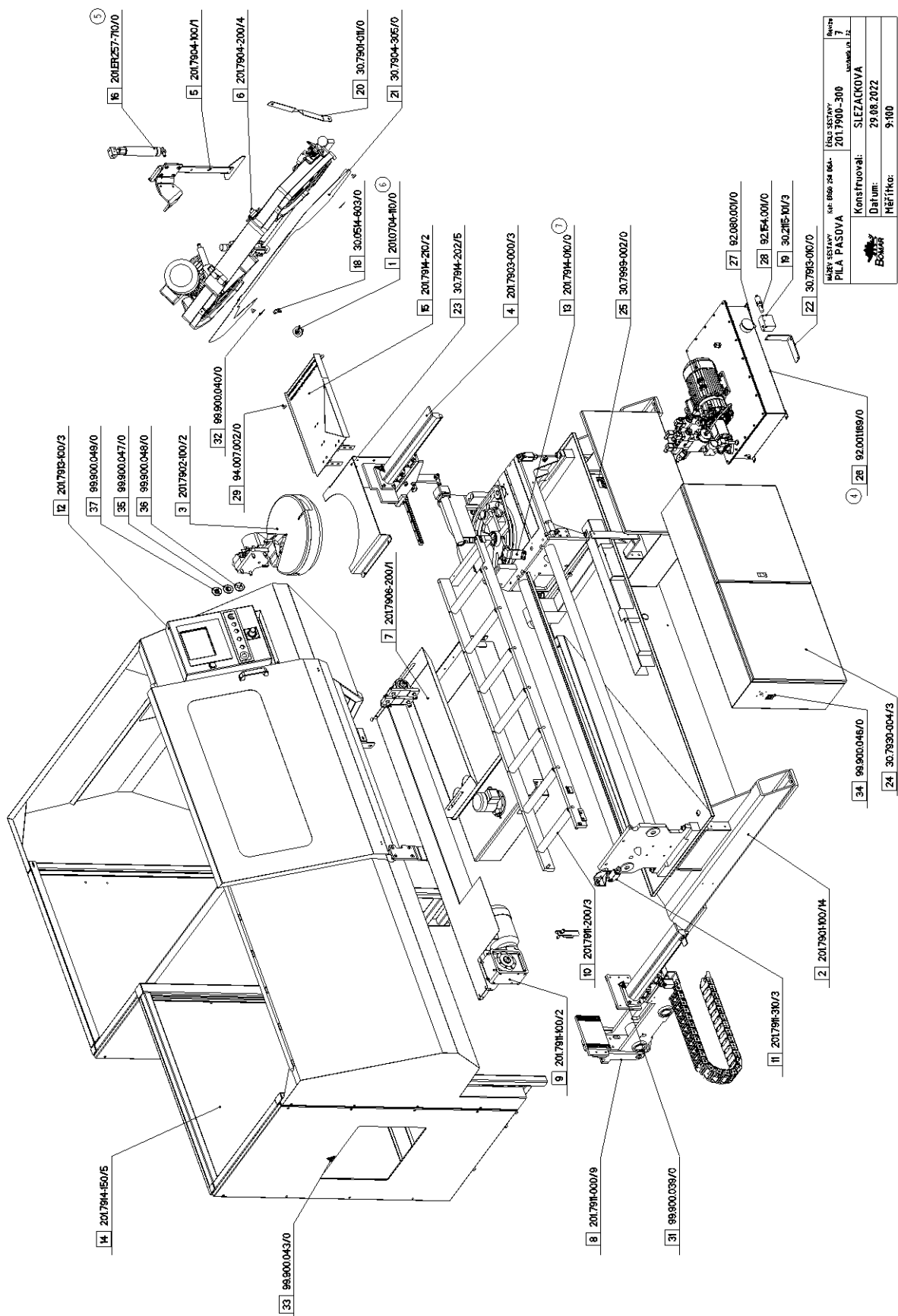
Schéματα
Schemas
Schematics

Poz. Pos. Pos.	Název položky Bezeichnung Item		ks Mng. Pcs.
1	Redukční ventil / Reduktionsventil / Control valve	93.003.001 0821300300	1
7	Ventil 5/2 cestný / 5/2 Wegeventil / 5/2-way valve	93.001.012 0820060601	1
10	Válec vzduchový/ Air cylinder/ Luftzylinder	93.004.206 0822331219	1
53	Tlumič/ Dämpfer/ Inhibitor	93.014.003 1827000000 – G1/8	2
62	Přímé šroubení / Gerade Verschraubung / Straight screwing	93.005.001 1823391037 – 1/8'' - 6/4	2
75	Šroubení úhlově natáčecí kovové/ Schraubung, winkelbeweglich, metallisch/ Angle swivelling metal	93.009.020 M5 – 6/4	4
77	Šroubení úhlově natáčecí / Schraubung, winkelbeweglich / Angle swivelling - Polyamid	93.007.004 1823391105 ¼''- 8/6 hadice/ hose/ Schlauch	1

10. **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. Ergonomic 290.258 DGANC) , výrobní číslo (např. 125) a rok výroby (např. 1999).
- In die Bestellung der Ersatzteile führen Sie immer an: Maschinentyp (z. B. Ergonomic 290.258 DGANC), Serien Nr. (z. B. 125) und Baujahr (z. B. 1999).
- For spare parts order, you must always to allege: type of machine (for example Ergonomic 290.258 DGANC), serial number (for example 125) and year of construction (for example 1999).

10.1. Ergonomic 290.258 DGANC



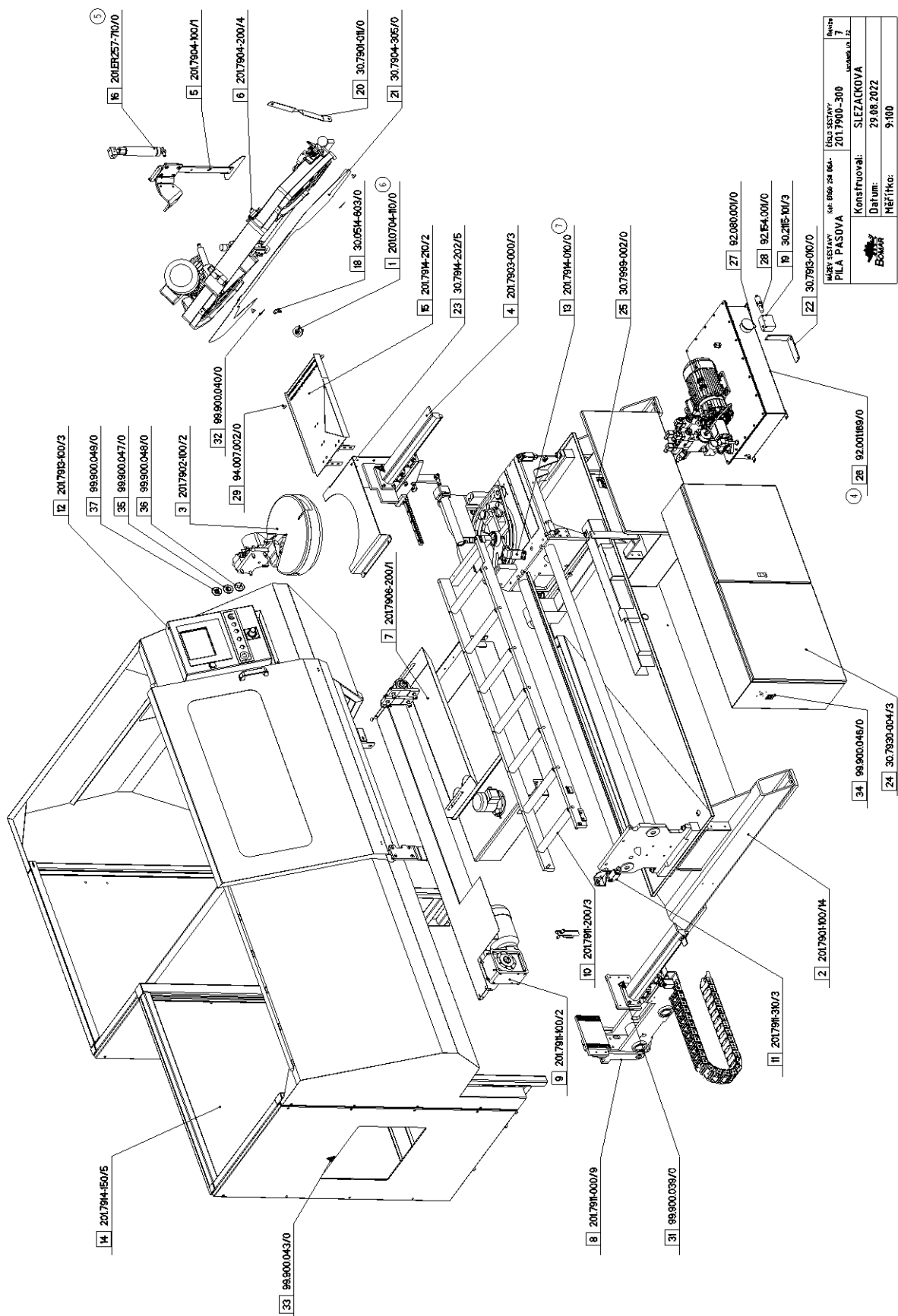
PLA P430VA	PLA P430VA	PLA P430VA
Konstruoval:	Konstruoval:	Konstruoval:
Datum:	Datum:	Datum:
Verziťka:	Verziťka:	Verziťka:

10.2. Kusovník / Piece list / Stückliste - Ergonomic 290.258 DGANC

NAZEV SESTAVY			CISLO SESTAVY		REVIZE	Name DE		Polotovar	k.s./m
PILA PASOVA			201.7900-300		7	Name EN			
Poz.	Objednáací číslo	Verze	Název CZ	Name EN	Name DE				
1	201.0704-110 (6)	0	KARTAC	BRUSH	BÜRSTE				1
2	201.7901-100	14	PODSTAVEC	BASE	UNTERSATZ				1
3	201.7902-100	2	KONZOLA	BRACKET	KONSOLE				1
4	201.7903-000	3	SVĚRAK	VICE	SCHRAUBSTOCK				1
5	201.7904-100	1	ODMĚROVÁNÍ	MEASURING	GEHRUNGSMESSUNG				1
6	201.7904-200	4	RAMENO	BEAM	RAHMEN				1
7	201.7906-200	1	CHLAZENÍ	COOLING	KÜHLUNG				1
8	201.7911-000	9	PODÁVAC	FEEDER	VORSCHUB				1
9	201.7911-100	2	POHON	DRIVE	ANTRIEB				1
10	201.7911-200	3	TRAT	TRACK	BAHN				1
11	201.7911-310	3	ZAVORA OPTICKA	OPTICAL GATE	LICHTSCHRANKE				1
12	201.7913-100	3	OVLADACÍ PANEL	CONTROL PANEL	BEDIENPULT				1
13	201.7914-010 (7)	0	SNÍMAC	SENSOR	SENSOR				1
14	201.7914-150	5	KRYTY	COVERS	ABDECKUNGEN				1
15	201.7914-210	2	SKLUZ	CHUTE	RUTSCH				1
16	201.7925-710 (5)	0	VALEC ZVEDACÍ	LIFTING CYLINDER	HEBEZYLINDER				1
18	30.0514-603	0	DRZAK	CUBE	HALTER			P5 - 20x60.2	1
19	30.2115-101	3	KOSTKA	CUBE	WÜRFEL			HR60x40 - 70	1
20	30.7901-011	0	DRZAK	HOLDER	HALTER			P3 - 30x481	1
21	30.7904-305	0	KRYTÍ RAMENE	ARM COVER	RAHMENABDECKUNG			P15 - 4.93x1383	1
22	30.7913-010	0	DRZAK	HOLDER	HALTER			P5 - 40x269	1
23	30.7914-202	5	STUL	TABLE	TISCH			P4 - 330x874	1
24	30.7930-004	3	ROZVADEC	DISTRIBUTOR	VERTEILER				1
25	30.7999-002	0	STÍTEK TYPOVÝ	MACHINE LABEL	MASCHINE SCHILD				1
26	92.001469 (4)	0	AGREGAT HYDRAULICKÝ	HYDRAULIC PUMP	HYDRAULIKAGGREGAT			4.4919700 * (nahrada za 92.001.030 od r.2023) erg 258 DGA	1
27	92.080.001	0	MANOMETR	MANOMETER	MANOMETER			0-60 bar vyvod spodni 1/4" D63	1
28	92.154.001	0	VENTIL REDUKCNI	REDUCING VALVE	REDUKTIONSVENTIL			VRN1-06-RV/6,3 556-0203, 16758000	1
29	94.007.002	0	SROUB PLASTOVÝ	PLASTIC BOLT	KUNSTSTOFFSCHRAUBE			sroub s ryhovanou hlavou M6x10	4
31	99.900.039	0	SAMOLEPKA	STICKER	AUFKLEBER			NS Nebezpečí sřlacení	2
32	99.900.040	0	SAMOLEPKA	STICKER	AUFKLEBER			NR Nebezpečí riznutí	2
33	99.900.043	0	SAMOLEPKA	STICKER	AUFKLEBER			NZ Nebezpečí zachycení	1
34	99.900.046	0	SAMOLEPKA	STICKER	AUFKLEBER			HV Hlavní vypínač	1
35	99.900.047	0	SAMOLEPKA	STICKER	AUFKLEBER			OBS Noste bryle sluchátka	1

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe;; Poz.-Pozice/Position/Position; Objednáací číslo/Order number/Bestellnummer;
Polotovar/Semiproduct/Halbfabrikat; Výstupní materiál/Output material/Eingangsmaterial;

10.3. Ergonomic 290.258 DGANC



PLA P430YA	PLA P430YA	PLA P430YA
Konstruoval:	Konstruoval:	Konstruoval:
Datum:	Datum:	Datum:
Verzi:	Verzi:	Verzi:

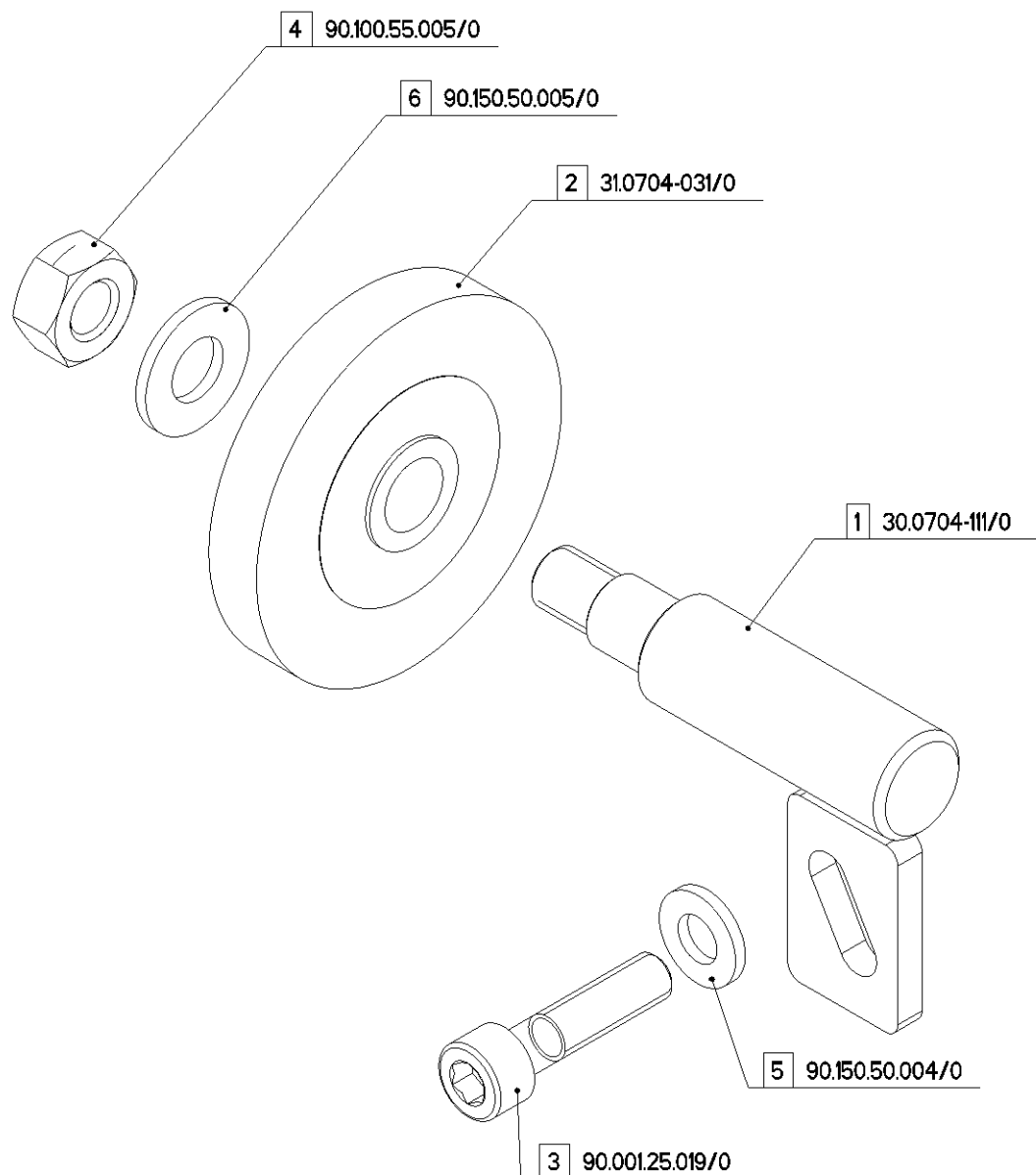
10.4. Kusovník / Piece list / Stückliste - Ergonomic 290.258 DGANC

Poz.	Objednáací číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	k.s./m
36	99.900.048	0	SAMOLEPKA	STICKER	AUFKLEBER	PO Nostre pevnou prac.obuv	1
37	99.900.049	0	SAMOLEPKA	STICKER	AUFKLEBER	CN Precist' navod k použití	1

1. ZRUS. CERTIFIKACNI SAMOLEPKA 99.901.032. 282/ZM105 19.3.2021 SLEZACKOVA
2. ZRUSEN VALEC ZVEDACI 201.ER257-310 A NAHR. 201.ER257-510. 282/ZM112 7.4.2021 SLEZACKOVA
3. ZRUSEN VALEC ZVEDACI 201.ER257-510 A NAHR. 201.ER257-610. 252/ZM371 8.9.2021 KOVAR
4. ZM. HYDR. AGREGATU 92.001.030 NA 92.001.169 300/ZM354 14.12.2022 GAGO
5. ZRUSEN VALEC ZVEDACI 201.ER257-610 A NAHR. 201.ER257-710. 147/ZM198 27.6.2024 HALAS
6. KARTAC 201.0704.100 NAHRAZUJE 201.0704.110 107/ZM279 13.09.2024 DOSTAL
7. PRIDAN SNIMAC 201.7914-010. 293/ZM391 29.11.2024 SLEZACKOVA

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe;; Poz.-Position/Position/Position; Objednáací číslo/Order number/Bestellnummer;
Potovar/Semproduct/Halbfabrikat; Vstupní materiál/Default material/Eingangsmaterial;

10.5. Kartáč / Brush / Bürste



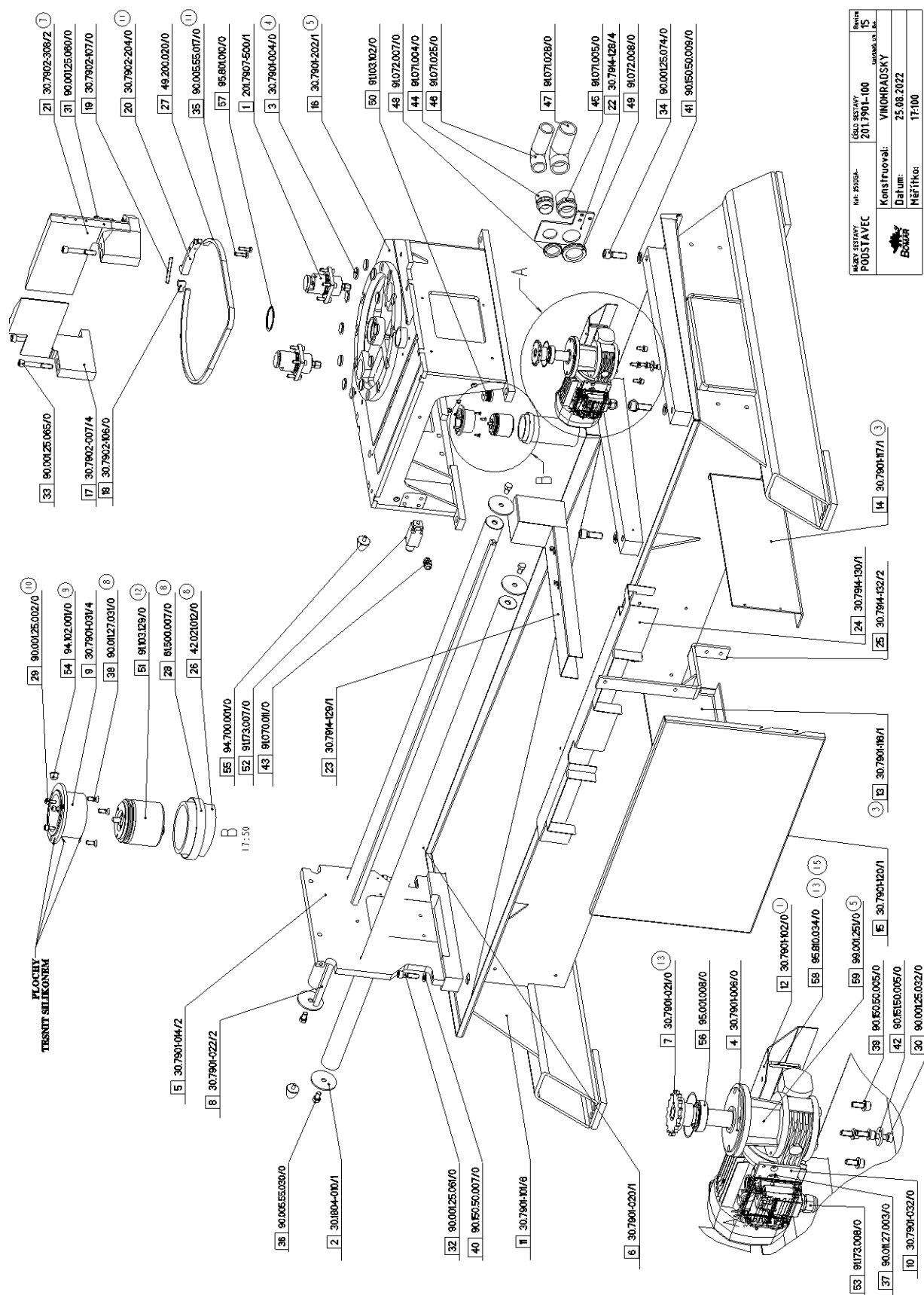
NÁZEV SESTAVY KARTAC	Kat: ERGONOMIC-	ČÍSLO SESTAVY 201.0704-110	Revize 0
	Konstruoval: FILIPCIK		List/Listů: 1/1
	Datum: 28.03.2024		0.2
	Měřítko: 3:2		

10.6. Kusovník / Piece list / Stückliste - Kartáč / Brush / Bürste

NAZEV SESTAVY		CISLO SESTAVY	REVIZE				
KARTAC		201.0704-110	0				
Poz.	Objednací číslo	Verze	Název CZ	Name EN	Name DE	Položtovar	Ks.
1	30.0704-111	0	DRŽÁK	HOLDER	HALTER		1
2	31.0704-031	0	KARTAC	BRUSH	BÜRSTE	díla 50, width 10, bore 9,5mm brassed steel, crimped wire 0,30mm	1
3	90.00125.019	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	6x25 DIN 912 8,8 černý	1
4	90.10055.005	0	MATICE PŘESNA ZINEK	PRECISION NUT - ZN	PRÄZISE MUTTER - ZN	8 DIN 934 8,8 Zn	1
5	90.15050.004	0	PODLOŽKA	WASHER	UNTERLEGSCHIBE	6,4 M6 DIN 125 Zn	1
6	90.15050.005	0	PODLOŽKA	WASHER	UNTERLEGSCHIBE	8,4 M8 DIN 125 Zn	1

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe;; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Polotovár/Semiproduct/Halbfabrikat; Výrobní materiál/Visupm mat./Default material/Eingangsmaterial;

10.7. Podstavec / Base / Untersatz

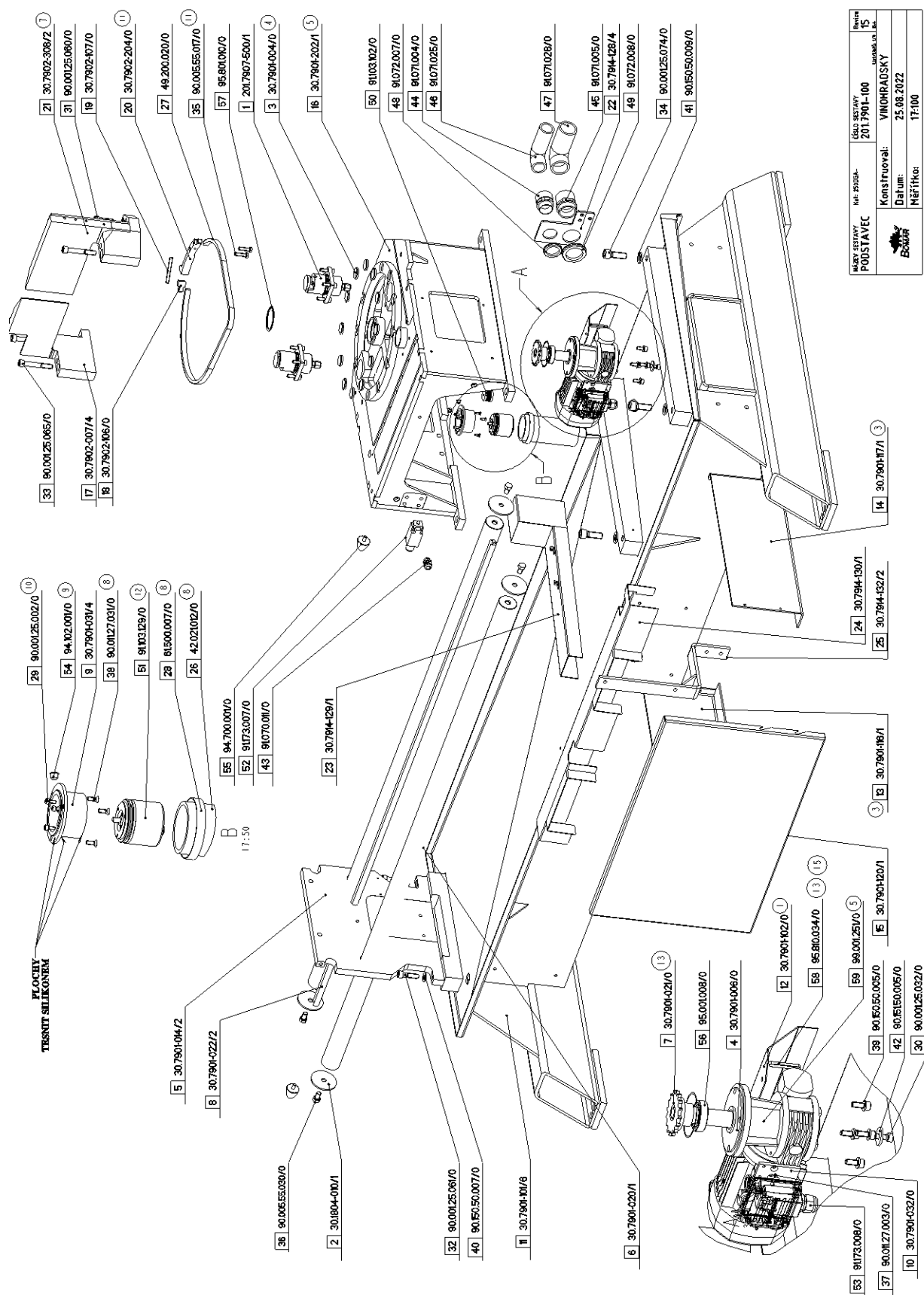


10.8. Kusovník / Piece list / Stückliste - Podstavec / Base / Untersatz

NAZEV SESTAVY			CISLO SESTAVY		REVIZE			
PODSTAVEC			201.7901-100		15			
Poz.	Objednáč. číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	rpt.index	
1	201.7907-500	1	VALEC	CYLINDER	ZYLINDER		ks / m	2
2	30.1804-010	1	PODLOŽKA	WASHER	UNTERLEGSCHIEBE	P4 - 70x70		4
3	30.7901-004 (4)	0	LISTA TRECI	FRICTION SLAT	FRIKTIONSLEISTE			12
4	30.7901-006	0	PRIŘUBA	FLANGE	FLANSCH			1
5	30.7901-014	2	CELO	FOREHEAD	STIRN			1
6	30.7901-020	1	TYC VODICI	LEAD POLE	FÜHRUNGSSTANGE			2
7	30.7901-021 (13)	0	HRIDEL OZUBENA	COG SHAFT	ZAHNWELLE			1
8	30.7901-022	2	TYC ODMEROVANI	MEASURING POLE	ABMESSUNGSSTANGE	D20 - 1764		1
9	30.7901-031	4	PRIŘUBA	FLANGE	FLANSCH	D80 - 40		1
10	30.7901-032	0	DRZAK	HOLDER	HALTER	HR30x5 - 65		1
11	30.7901-101	6	PODSTAVEC	BASE	UNTERSATZ			1
12	30.7901-102 (1)	0	KRYT	COVER	ABDECKUNG	P15 - 150x250		1
13	30.7901-116 (3)	1	DRZAK	HOLDER	HALTER	P4 - 247x517		1
14	30.7901-117 (3)	1	DRZAK	HOLDER	HALTER	P4 - 247x517		1
15	30.7901-120	1	KRYT	COVER	ABDECKUNG	P2 - 483x778		1
16	30.7901-202 (5)	1	PODSTAVEC SVERAKU	VICE BASE	SCHRAUBSTOCKUNTERSATZ			1
17	30.7902-007	4	CELIST PEVNA	FIXED JAW	FESTE BACKE			1
18	30.7902-406	0	DRZAK	HOLDER	HALTER	HR20x12 - 30		1
19	30.7902-407	0	TYC ZAVITOVA	THREADED POLE	GEWINDESTANGE	TZM8x125P - 70		1
20	30.7902-204 (11)	0	DRZAK	HOLDER	HALTER			1
21	30.7902-308 (7)	2	CELIST PEVNA	FIXED JAW	FESTE BACKE			1
22	30.7914-128	4	KONZOLA	BRACKET	KONSOLE	P5 - 125x135		1
23	30.7914-129	1	KRYT	COVER	ABDECKUNG			1
24	30.7914-130	1	KRYT	COVER	ABDECKUNG			1
25	30.7914-132	2	KONZOLA	BRACKET	KONSOLE			1
26	42.021-012 (8)	0	HADICE	HOSE	SCHLAUCH	FKS-R 60/70, na horkou vodu 4 bar, SBR, -35°C/-100°, Gumex 00045060		1
27	49.200-020	0	RETEZ POHONOVY	DRIVE BELT	ANTRIEBSKETTE	t=12,7, d=8,51, F=18000 088 simplex -prijem na ks		1
28	61500.007 (8)	0	PASKA STAHOVACI	null	null	TORRO 70-90 paska na hadice		1
29	90.00125-002 (10)	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	4x10 DIN 912 8,8 černý		3
30	90.00125-032	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x20 DIN 912 8,8 černý		5

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Polotovár/Semiproduct/Halbfabrikat; Vstupní materiál/Starting material/Eingangsmaterial;

10.9. Podstavec / Base / Untersatz

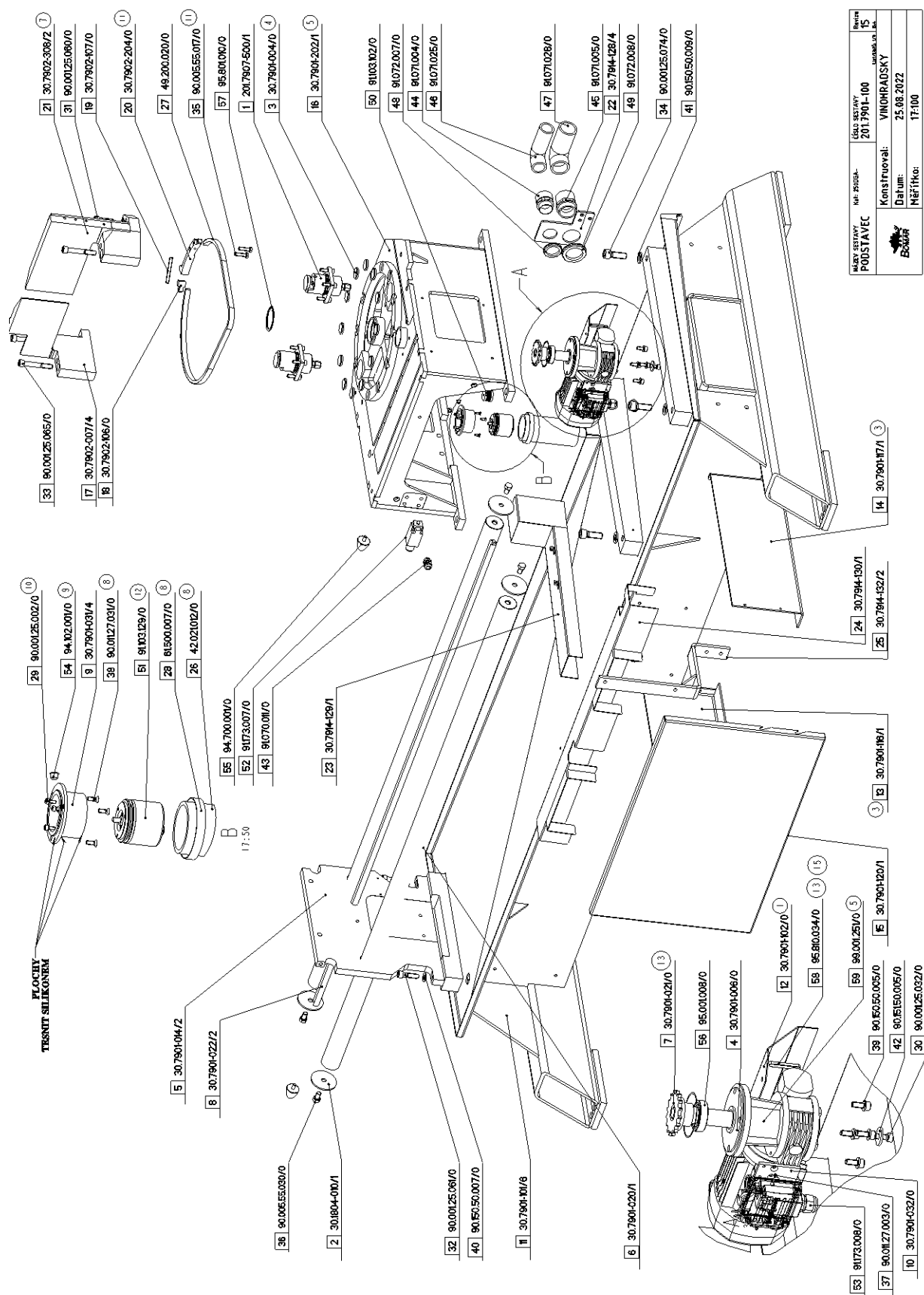


10.10. Kusovník / Piece list / Stückliste - Podstavec / Base / Untersatz

Poz.	Objednáč. číslo	Verze	Název CZ	Name EN	Name DE	Položovar	k.s./m
31	90.001.25.060	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	12x4,0 DIN 912 8,8 černý	1
32	90.001.25.061	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	12x4,5 DIN 912 8,8 černý	2
33	90.001.25.065	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	12x8,0 DIN 912 8,8 černý	3
34	90.001.25.074	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	16x4,5 DIN 912 8,8 černý	4
35	90.005.55.017 (1)	0	SROUB SESTIHRANNÝ	HEX HEAD SCREW	SECHSKANTSCHRAUBE	8x3,0 DIN 933 8,8 Zn	2
36	90.005.55.030	0	SROUB SESTIHRANNÝ	HEX HEAD SCREW	SECHSKANTSCHRAUBE	12x2,0 DIN 933 8,8 Zn	4
37	90.011.27.003	0	SROUB ZAPUSTNÝ	COUNTERSUNK SCREW	SENKSCHEIBE	5x1,0 DIN 7991 10,9 černý	2
38	90.011.27.031 (8)	0	SROUB ZAPUSTNÝ	COUNTERSUNK SCREW	SENKSCHEIBE	5x1,4 DIN 7991 10,9 černý	3
39	90.150.50.005	0	PODLOŽKA	WASHER	UNTERLEGSCHIBE	8,4 M8 DIN 125 Zn	4
40	90.150.50.007	0	PODLOŽKA	WASHER	UNTERLEGSCHIBE	13 M12 DIN 125 Zn	2
41	90.150.50.009	0	PODLOŽKA	WASHER	UNTERLEGSCHIBE	17 M16 DIN 125 Zn	4
42	90.151.50.005	0	PODLOŽKA VELKOPL.	LARGE WASHER	GROßFLÄCHENSCHIBE	9x28x3 M8 DIN 440 Zn	1
43	91.070.011	0	VÝVODKA	OUTLET	TÜLLE	AG-15x5,17-10 V-BIMED M16x1,5 -černa	2
44	91.071.004	0	VÝVODKA HADICE	OUTLET FOR HOSE	SCHLAUCHTÜLLE	MR-83601062 MSV-PG 29 černa	1
45	91.071.005	0	VÝVODKA HADICE	OUTLET FOR HOSE	SCHLAUCHTÜLLE	MR-83601064 MSV-Pg 36	1
46	91.071.025	0	VÝVODKA HADICE	OUTLET FOR HOSE	SCHLAUCHTÜLLE	uhlova PG29/PG29 PG 29 SM-WINKEL	1
47	91.071.028	0	VÝVODKA HADICE	OUTLET FOR HOSE	SCHLAUCHTÜLLE	uhlova koncovka PG36 AL42/PG36/L90	1
48	91.072.007	0	MATICE ČERNA	BLACK NUT	MUTTER ROH	PG29 - černa M-BIMED PG29 -černa	1
49	91.072.008	0	MATICE ČERNA	BLACK NUT	MUTTER ROH	PG36 - černa M-BIMED PG36 -černa	1
50	91.103.102	0	SPOJKA	CLUTCH	KUPPLUNG	nařazení ram. pro 250 DGA spojka KRC,Z121C02plast	1

Číslo sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Položovar/Semiproduct/Modulabau; Vstupní materiál/Entrance material; Vstupní materiál/Entrance material;

10.11. Podstavec / Base / Untersatz



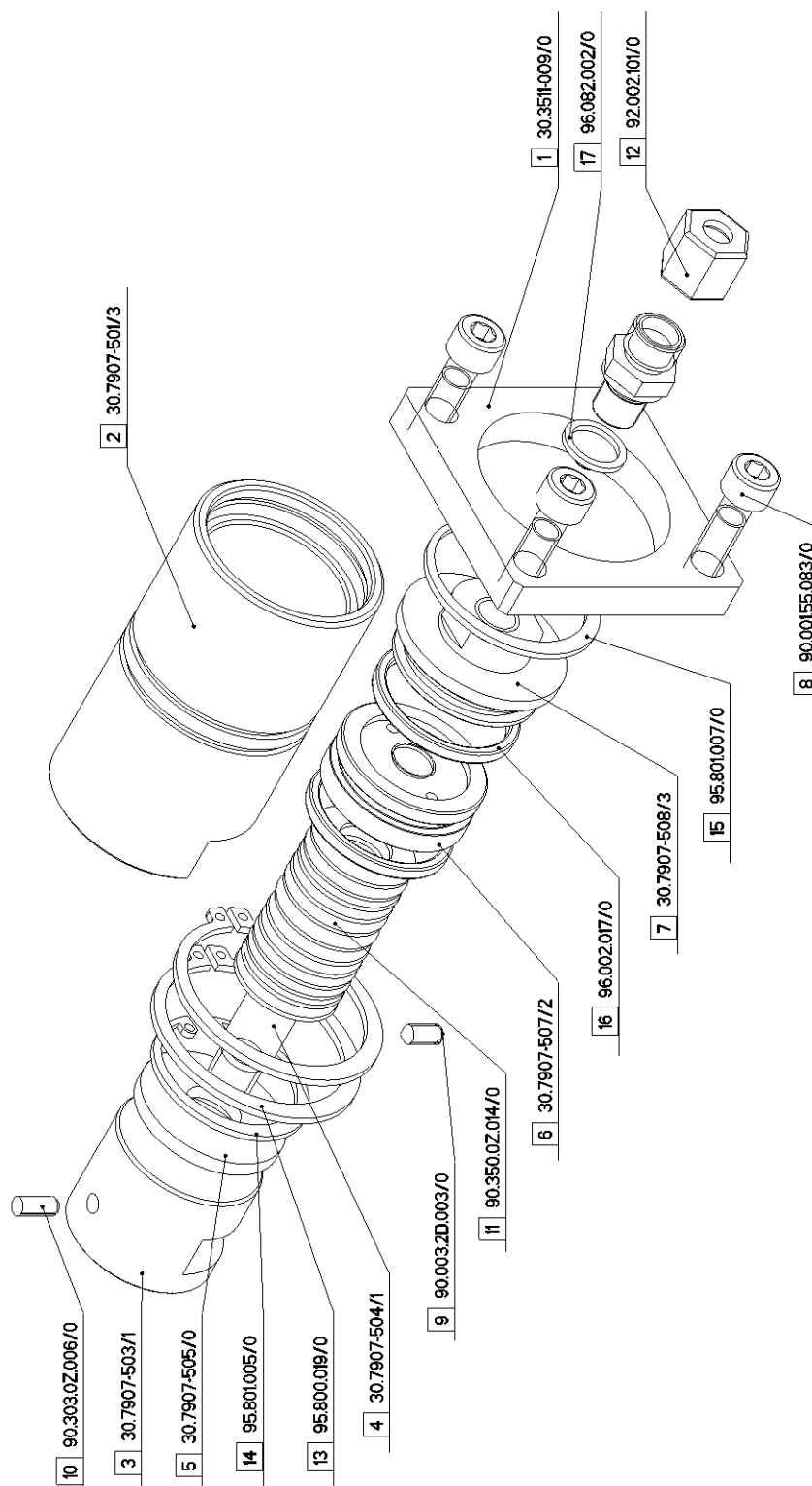
10.12. Kusovník / Piece list / Stückliste - Podstavec / Base / Untersatz

Poz.	Objednáč. číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	k s / m
51	91.103.129 (12)	0	SNIMAC INKREMENTALNI	INCREMENTAL SENSOR	INKREMENTALSSENSOR	nařazení ram. pro 258 DGA EL580P-SY06.7AF.01024.B , 10.000 pulzů	1
52	91.173.007	0	SPINAC KONCOVÝ	END SWITCH	ENDSCHALTER	KGAI11 Lovato (D4N-4A31) kNO/1xNC	1
53	91.173.008	0	SPINAC KONC.S KLAUK.	END SWITCH WITH PULLEY	ENDSCHALTER MIT ROLLE	D4N-4A62 /// lze nahradit 91173.011 poloout.- 1xNO/1xNC	1
54	94.102.001 (9)	0	UCPAVKA	PLUG	ABDICHTUNG	13x10x6,7 237-034 černá	2
55	94.700.001	0	SILENTBLOK	RUBBER BUFFER	GUMMPUFFER	G 76.16 42-85	2
56	95.001.008	0	LOZISKO	BEARING	LAGER	6005 T3 CMB 2RS	1
57	95.801.010	0	KRUZEK POJIST. VNITRNI	INTERNAL RETAINING RING	SICHERUNGSRING INNEN	d62 DIN 472	1
58	95.810.034 (15)	0	PERO TESNE	FEATHER KEY	PASSFEDER	6x6x50 DIN 6885	1
59	99.001.251 (5)	0	PREVODOVKA S MOTOREM	GEARBOX WITH MOTOR	GETRIEBE MIT MOTOR	VF 44; E70; B3; FA; P63; B14; BN63C; 0,25kW; 4P; 230/400V; B14; Vel.63	1

1. PRIDAN KRYT MOTORU 30.7901-102, 234/ZM236 8.9.2010 SLEZACKOVA
2. DOLNENI PREKLADU PRO NAVODY. 9.9.2010 SLEZACKOVA
3. UPRAVA POLOHY DRZAKU 30.7911-116, 30.7901-117, 291/ZM308 9.11.2010 SLEZACKOVA
4. ZRUSENA LISTA 30.0509-608 A NAHR.30.7901-004, 174/ZM026 12.2.2014 SLEZACKOVA
5. ZRUS. KOLO 30.7901-103 A NAHR.30.7901-104, ZRUS. HRIDEL 30.7901-005 A NAHR.30.7901-012, ZRUS. PERO 6x6x16 95.810.005 A NAHR. PERO 6x6x28 95.810.017, ZRUS. PODST. SVERAKU 30.7901-002 A NAHR.30.7901-202, ZRUS. PREVODOVKA 99.001.029 A NAHR.99.001.251, 161/ZM239 17.7.2017 CERNY
6. ZRUSENA KONZOLA 30.7914-131, 6.6.2018 SZABARI
7. ZRUSENA CELIST 30.7902-006 A NAHR.30.7902-308, 287/ZM458 11.12.2018 SLEZACKOVA
8. ZRUS. SNIMAC 91.103.101 A NAHR.91.103.122, PRID. HADICE 42.021.012 STAZENA PASKOU 61.500.007, ZRUS. SROUB IMBUS M5x10 90.001.25.007 A NAHR. ZAPUSTNYM SROUBEM M5x14 90.011.27.031, 195/ZM245 17.6.2020 SLEZACKOVA
9. PRIDANA 2xZATKA 94.102.001, 001/ZM047 5.2.2021 SLEZACKOVA
10. PRIDAN 4xSROUB M4x10 90.001.25.002, 298/ZM066 18.2.2021 SLEZACKOVA
11. ZRUS. DRZAK 30.7902-104 A NAHR. DRZAK 30.7902-204, PRIDAN SROUB M8x30 (2x) 90.005.55.017 017/ZM016 21.01.2022 ZINDULKA
12. ZRUS. SNIMAC 91.103.122 A NAHR.91.103.129, 177/ZM191 31.5.2022 JAGNESAK
13. ZRUS. DILY 30.7901-104, 30.7901-012 A NAHR.30.7901-021; ZRUS. DIL 95.810.017 A NAHR.30.7901-024, 207/ZM250 7.9.2022 JAGNESAK
14. OPRAVA KUSOVNIKU 19.3.2024 SLEZACKOVA
15. PERO 30.7901-024 NAHRAZENO PERO TESNE 95.810.034 213/ZM210 25.8.2025 DOSTAL

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Polotovár/Semi-product/Halbfabrikat; Vstupní materiál/Starting material/Detaill material/Eingangsmaterial;

10.13. Válec / Roller / Zylinder



NÁZEV SESTAVY VÁLEC	Kat: 25005A-	ČÍSLO SESTAVY 201.7907-500	Revize 1
			LEPŠÍM VZ. 13
	Konstruoval:	STASTNA	
	Datum:	25.08.2022	
	Měřtko:	4:5	

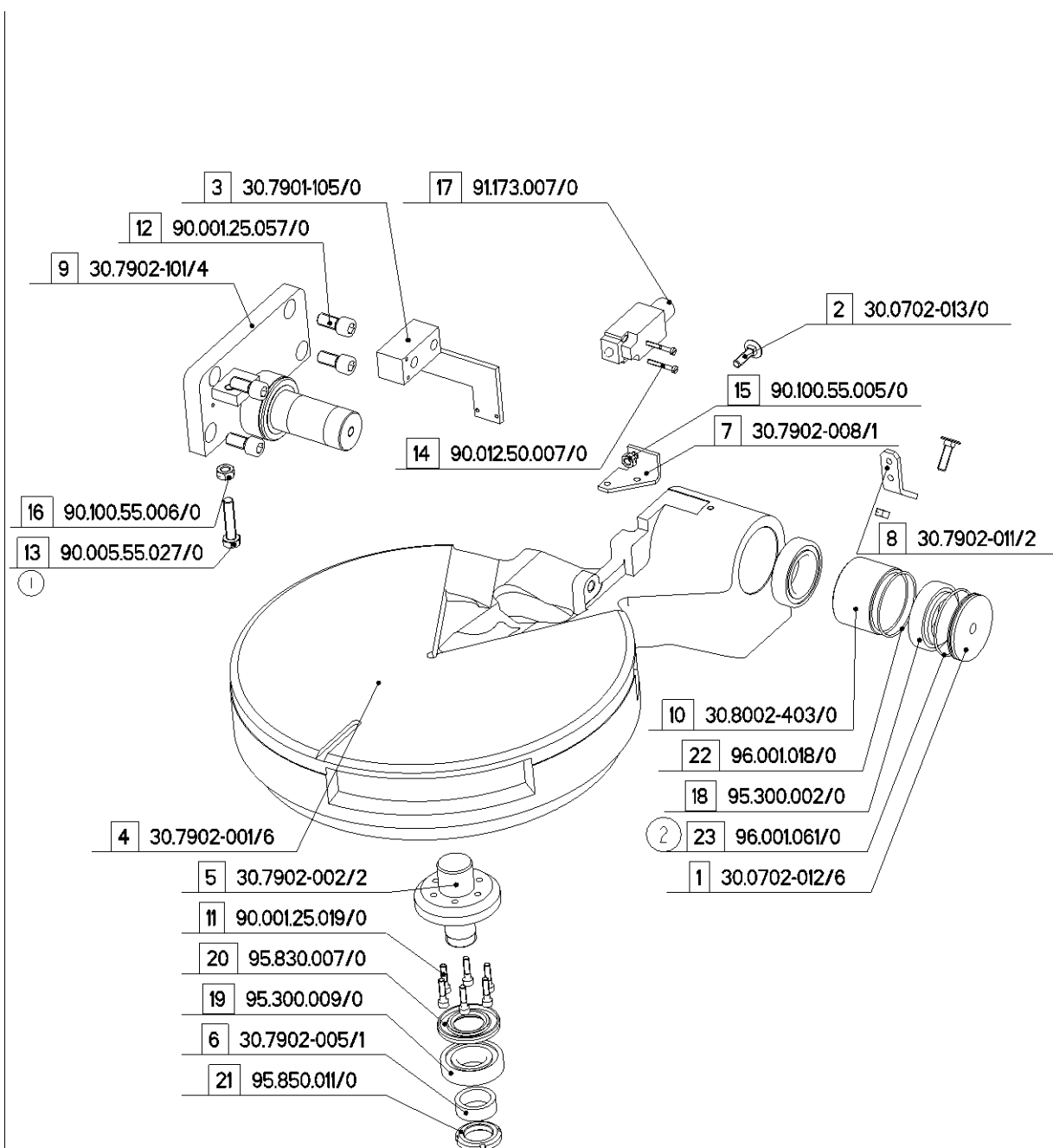
10.14. Kusovník / Piece list / Stückliste -
Válec / Roller / Zylinder

NAZEV SESTAVY VALEC		ČÍSLO SESTAVY 201.7907-500		REVIZE 1			
Poz.	Objednáč. číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	k.s./m
1	30.3511-009	0	PRÍLOŽKA	CLIP	CLIP	HR70x10 - 70	1
2	30.7907-501	3	TRUBKA	TUBE	ROHR	TR52x6 - 92	1
3	30.7907-503	1	PIST	PISTON	KOLBEN	D45 - 32	1
4	30.7907-504	1	TAHLO	TOWING ROD	ZUGSTANGE	D14 - 56	1
5	30.7907-505	0	PODLOŽKA	WASHER	UNTERLEGSCHEIBE	D40 - 6	1
6	30.7907-507	2	PIST	PISTON	KOLBEN	D45 - 16	1
7	30.7907-508	3	VÍKLO	COVER	DECKEL	D45 - 22	1
8	90.00155.083	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x30 DIN 912 8,8 Zn	4
9	90.003.20.003	0	SROUB STAVECI	SET SCREW	STELLSCHRAUBE	5x12 DIN 914 čeměn	1
10	90.303.02.006	0	KOLIK PRUŽNY BEZ PU	FLEXIBLE PIN WITHOUT SURF. TREATMENT	SPRINNSTIFT OHNE OBERFLÄCHENBEHANDLUNG	14x81	1
11	90.350.02.014	0	PRUŽINA TALIROVA	DISC SPRING	TELLERFEDER	28x14,2x1,25 DIN 2093	12
12	92.002.101	0	SROUBENÍ PRIME KOMPL	null	null	P-GEV 08LR 1/4" - 14x1,5 komplet	1
13	95.800.019	0	KROUZEK POJIST.VNEJŠ	EXTERNAL RETAINING RING	SICHERUNGSRING AUßEN	d52 DIN 471	2
14	95.801.005	0	KROUZEK POJIST.VNITR	INTERNAL RETAINING RING	SICHERUNGSRING INNEN	d40 DIN 472	1
15	95.801.007	0	KROUZEK POJIST.VNITR	INTERNAL RETAINING RING	SICHERUNGSRING INNEN	d45 DIN 472	1
16	96.002.017	0	O-KROUZEK DYNAMICKY	O-RING DYNAMIC	O-RING DYNAMISCH	34x3 NBR 70 lesklé materiál HH076880	2
17	96.082.002	0	KROUZEK TESNICI	SEALING RING	DICHTUNGSRING	13/17x15 Cu	1

I. PREKRESLONO DO WINDCHILU. 15.5.2024 SLEZACKOVA

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Polotovár/Semiproduct/Halbfabrikat; Vstupní materiál/Entrance material;

10.15. Konzola / Console / Konzole



NÁZEV SESTAVY KONZOLA	Kač: ER2500GANC-	ČÍSLO SESTAVY 201.7902-100	Revize 2
		List/Listů: 1/3	2.2
	Konstruoval: IVICIC		
	Datum: 29.08.2022		
	Měřítko: 1:5		

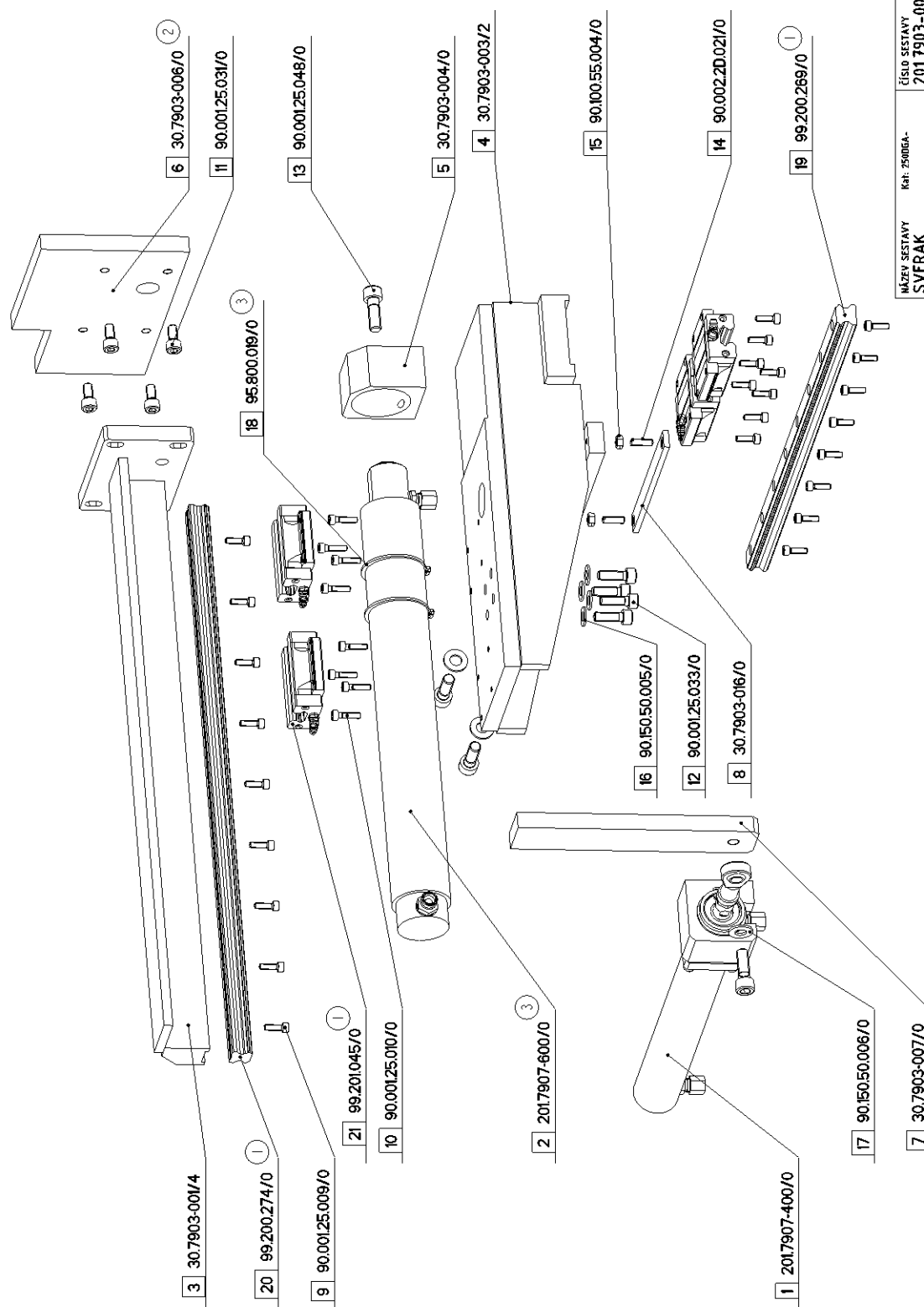
10.16. Kusovník / Piece list / Stückliste - Konzola / Console / Konzole

NAZEV SESTAVY			CISLO SESTAVY		REVIZE		
KONZOLA			201.7902-100		2		
Poz.	Objednáč. číslo	Verze	Název CZ	Name EN	Name DE	Položovar	k.s./m
1	30.0702-012	6	VÍKO	COVER	DECKEL		1
2	30.0702-013	0	SROUB	SCREW	SCHRAUBE		2
3	30.7901-105	0	DRŽÁK	HOLDER	HALTER		1
4	30.7902-001	6	KONZOLA OTČNA	PIVOT BRACKET	DREHKONSOLE		1
5	30.7902-002	2	CEP	PIVOT	BOLZEN	D85 - 100	1
6	30.7902-005	1	KROUZEK DISTANČNÍ	SPACER RING	DISTANZRING	TR40x5 - 15	1
7	30.7902-008	1	DRŽÁK	HOLDER	HALTER	<Chybné parametry pro položovar '4.0.001.01.05' typu 'P'>	1
8	30.7902-011	2	DRŽÁK	HOLDER	HALTER	<Chybné parametry pro položovar '4.0.001.01.06' typu 'P'>	1
9	30.7902-101	4	KONZOLA	BRACKET	KONSOLE		1
10	30.8002-403	0	POUZDRO	SLEEVE	BÜCHSE	TR70x5 - 47	1
11	90.001.25.019	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	6x25 DIN 912 8,8 černěný	6
12	90.001.25.057	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	12x25 DIN 912 8,8 černěný	4
13	90.005.55.027	1	SROUB 6HRANNÝ	HEX HEAD SCREW	SECHSKANTSCHRAUBE	10x45 DIN 933 8,8 Zn	1
14	90.012.50.007	0	SROUB VALCOVÝ	CYLINDER HEAD BOLT	ZYLINDERKOPFSCHRAUBE	4x30 DIN 84 Zn	2
15	90.100.55.005	0	MATICE PRESNA ZINEK	PRECISION NUT - ZN	PRÄZISE MUTTER - ZN	8 DIN 934 8,8 Zn	2
16	90.100.55.006	0	MATICE PRESNA ZINEK	PRECISION NUT - ZN	PRÄZISE MUTTER - ZN	10 DIN 934 8,8 Zn	1
17	91.173.007	0	SPINÁČ KONCOVÝ	END SWITCH	ENDSCHALTER	KBAIL11 Lovato (D4N-4A31) 1xNO/1xNC	1
18	95.300.002	0	LOŽISKO	BEARING	LAGER	32008 T3 CMB AX	2
19	95.300.009	0	LOŽISKO	BEARING	LAGER	30206 T3 CMB AX	1
20	95.830.007	0	GUFERO	RADIAL SHAFT SEAL	WELLENDICHTRING	TG 30-62-7 G NBR	1
21	95.850.011	0	MATICE KM	KM LOCK NUT	KM NUTMUTTER	KM 6	1
22	96.001.018	0	O-KROUZEK STATICKÝ	O-RING STATIC	O-RING STATISCH	63x2 NBR 70Sh	1
23	96.001.061	2	O-KROUZEK STATICKÝ	O-RING STATIC	O-RING STATISCH	62x3 NBR 70Sh	1

1. ZRUS.SROUB 90.041.02.002 A NAHR. 90.005.55.027. 024/ZM032 20.01.2020 KOSYK
2. ZRUS. KROUZEK 96.001.018 A NAHR. 96.001.061; 210/ZM236 10.11.2023 OSTRIZEK

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Položovar/Semiprodukt/Halbfabrikat; Vstupní materiál/Input material/Eingangsmaterial;

10.17. Svěrák / Vice / Schraubstock



	NÁZEV SESTAVY SVERAK		Kat. 250IGA- 2017903-000	ČÍSLO SESTAVY 2017903-000	Revize 3
			Konstruoval: HAJEK	Datum: 29.08.2022	URČENÍ: 02_34
		Měřítko: 3:100			

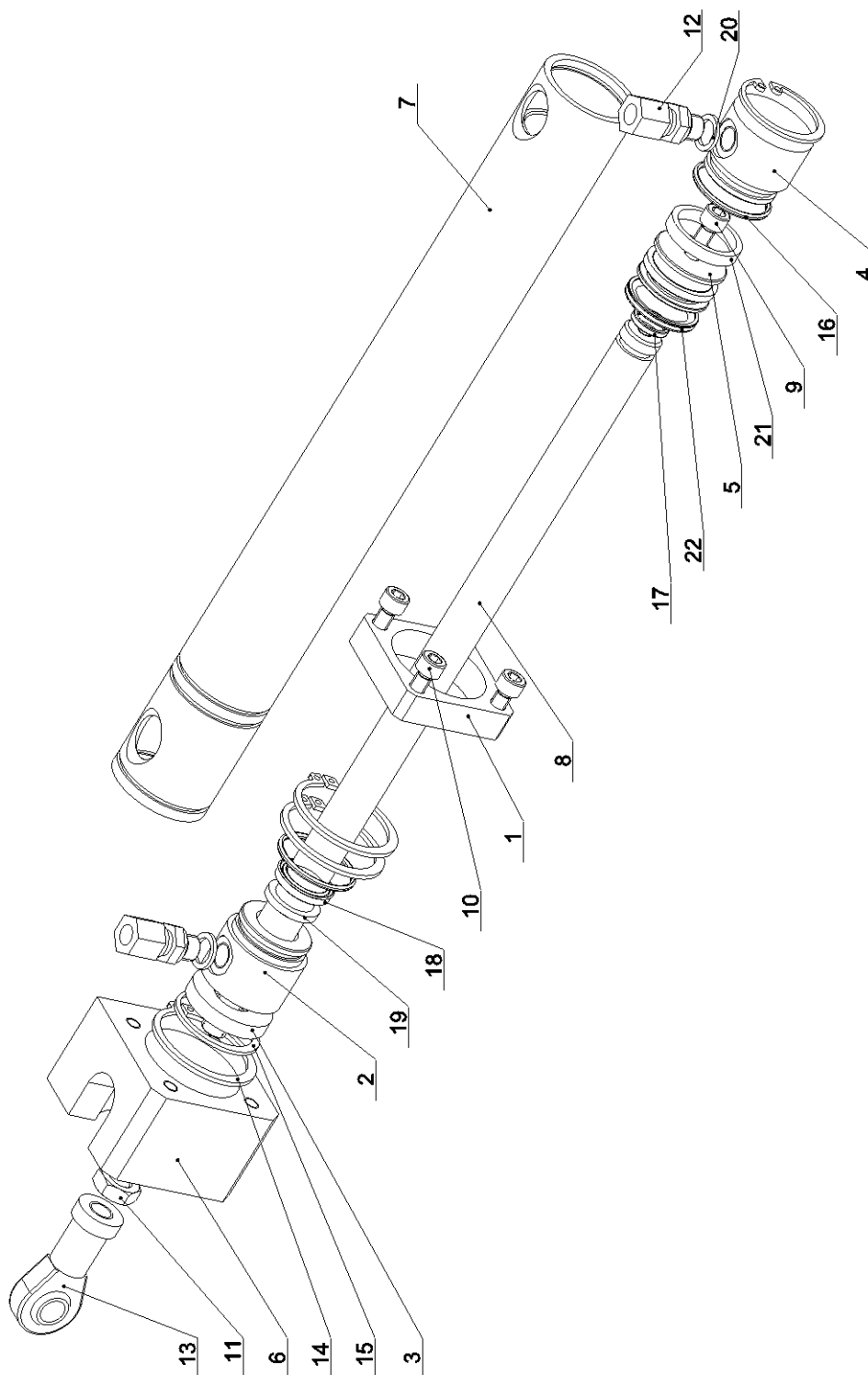
10.18. Kusovník / Piece list / Stückliste - Svěrák / Vice / Schraubstock

NAZEV SESTAVY SVERAK			CISLO SESTAVY 201.7903-000		REVIZE 3			
Poz.	Objednáční číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	k s /m	
1	201.7907-400	0	VALEC SVERAKU	VICE CYLINDER	SCHRAUBSTOCKZYLINDER		1	
2	201.7907-600	3	VALEC UPINACI	FIXING CYLINDER	SPANNZYLINDER		1	
3	30.7903-001	4	VEDENÍ	GUIDE	FÜHRUNG		1	
4	30.7903-003	2	TELESO SVERAKU	VICE BODY	SCHRAUBSTOCKKÖRPER		1	
5	30.7903-004	0	KOSTKA	CUBE	WÜRFEL	HR60x40 - 67	1	
6	30.7903-006	2	CELIST	JAW	BÄCKE	HR14-0x20 - 232	1	
7	30.7903-007	0	PAKA	LEVER	HEBEL	HR40x15 - 215	1	
8	30.7903-016	0	LISTA	SLAT	LEISTE	-Polotovár nema nastávené označení>	1	
9	90.00125-009	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	5x16 DIN 912 8,8 cerný	25	
10	90.00125-010	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	5x20 DIN 912 8,8 cerný	8	
11	90.00125-031	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x16 DIN 912 8,8 cerný	4	
12	90.00125-033	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x25 DIN 912 8,8 cerný	4	
13	90.00125-048	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	10x30 DIN 912 8,8 cerný	4	
14	90.00220-021	0	SROUB STAVECI	SET SCREW	STELLSCHRAUBE	6x20 DIN 913 4,5H cerný	2	
15	90.10055-004	0	MATICE PRESNA ZINEK	PRECISION NUT - ZN	PRÄZISE MUTTER - ZN	6 DIN 934 8,8 Zn	2	
16	90.15050-005	0	PODLÓŽKA	WASHER	UNTERLEGSCHIBE	8,4 M8 DIN 125 Zn	4	
17	90.15050-006	0	PODLÓŽKA	WASHER	UNTERLEGSCHIBE	10,5 M10 DIN 125 Zn	3	
18	95.800-019	3	KROUZKĚK POJIST. VNEJŠÍ	EXTERNAL RETAINING RING	SICHERUNGSRING AUFEN	ø52 DIN 471	2	
19	99.200-269	1	VEDENÍ LINEÁRNÍ	LINEAR GUIDE	LINEARE FÜHRUNG	MSA20R-0460 20/20 N	1	
20	99.200-274	1	VEDENÍ LINEÁRNÍ	LINEAR GUIDE	LINEARE FÜHRUNG	MSA20R-0540 30/30 N	1	
21	99.201045	1	VOZÍK LINEÁRNÍHO VEDENÍ	LINEAR GUIDE CART	LINEARFÜHRUNGSWAGEN	MSA20ESSFN	4	

1. ZRUS.LINEARNI VEDENI 99.200.,047 A NAHR.99.200.274,ZRUS.LIN.VEDENI 99.200.021 A NAHR.99.200.269,
ZRUS.LIN.VOZIK 99.201.012 A NAHR.99.201.045. 056/ZM078 7.3.2012 SLEZACKOVA
2. ZRUSENA CELIST 30.7903-002 A NAHR.30.7903-006, 287/ZM458 12.12.2018 SLEZACKOVA
3. ZRUS. VALEC 201.7907-200 A NAHR. 201.7907-600, PRIDAN POJISTNY KROUZEK 95.800.019 (2ks), 206/ZM287 27.9.2024 HALAS

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe;; Poz.-Poze/Position/Position; Objednáč. číslo/Order number/Bestellnummer;
Polotovar/Semiproduct/Halbfabrikat; Vstupní materiál/Starting material/Eingangsmaterial;

10.19. Válec svěráku / Vice cylinder / Schraubstockzylinder



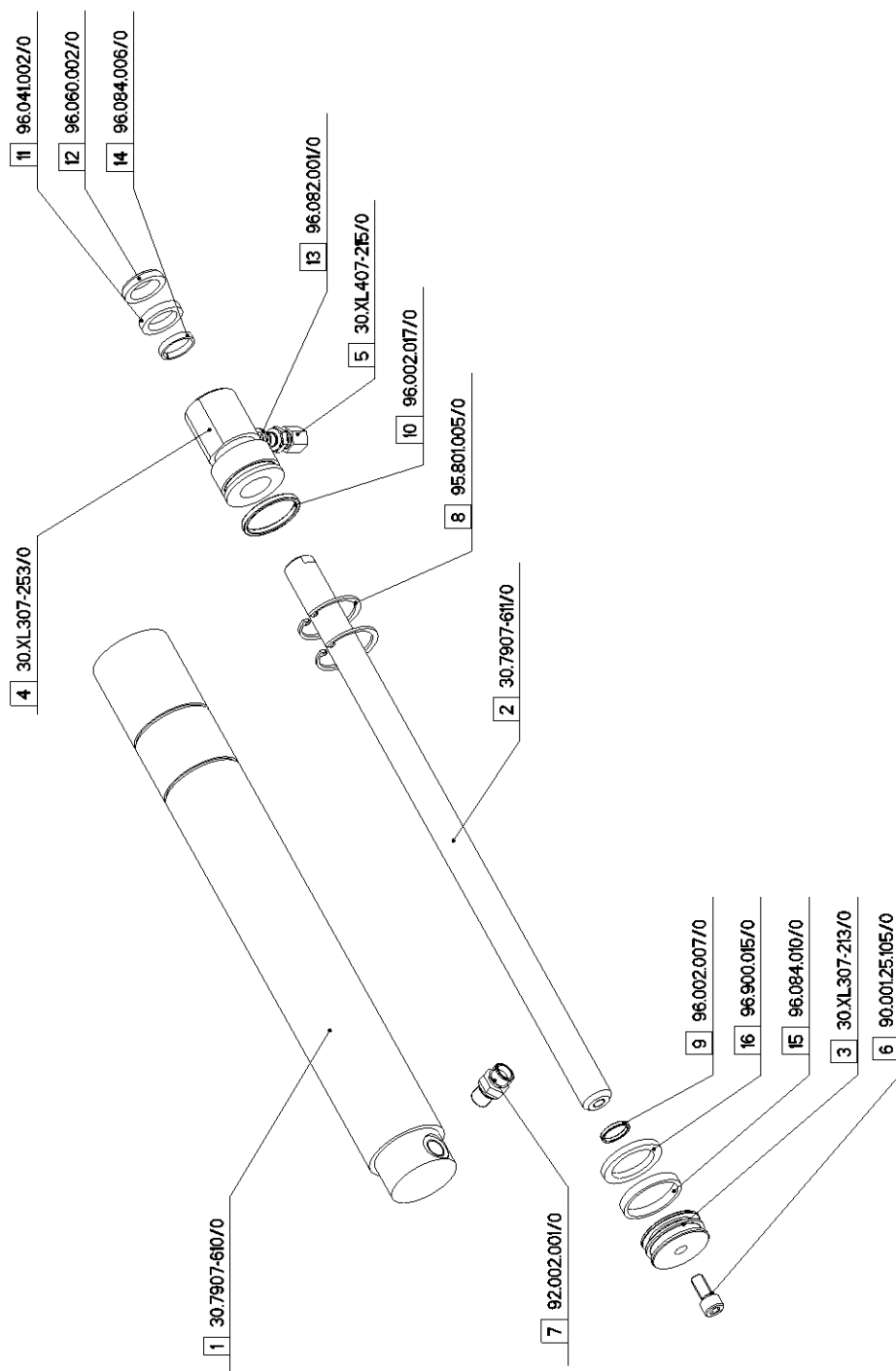
NAZEV SESTAVY	ČÍSLO SESTAVY	STROJ
VALEC SVĚRAKU	201.7907-400	250 DGA
Konstruoval: STASTNY		
Datum: 06.05.2015		
Měřtko: 1:2		

10.20. Kusovník / Piece list / Stückliste -
Válec svěráku / Vice cylinder / Schraubstockzylinder

Číslo Sestavy 201.7907-400		Ver. 0	Název sestavy VALEC SVERAKUMICE CYLINDER/SCHRAUBSTOCKZYLINDER		
Poz	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.6803-006	0	VIKO / COVER / DECKEL	TYC 50x12	1
2	30.6807-103	2	VIKO / COVER / DECKEL	TYC 35	1
3	30.6807-104	1	VIKO / COVER / DECKEL	TYC 35	1
4	30.6807-105	1	VIKO / COVER / DECKEL	TYC 35	1
5	30.6807-106	0	PIST / PISTON / KOLBEN	TYC 32	1
6	30.7903-015	0	KOSTKA / CUBE / WÜRFEL	HR 60x40	1
7	30.7907-401	0	VALEC / CYLINDER / ZYLINDER	TRUBKA 40/30	1
8	30.7907-402	0	PISTNICE / PISTON ROD / KOLBENSTANGE	D 16	1
9	90.001.25.017	0	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	M6X16	1
10	90.001.25.018	0	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	M6X20	4
11	90.101.55.008	0	MATICE PRŮMĚR 20 / PRECISION THIN NUT - ZN / PRÄZISE MUTTER NIEDRIGE - ZN	MATICE M10x1,25	1
12	92.002.102	0	SROUBENÍ PRÍME KOMPL / null / null	S-GEV-8LLR	2
13	95.170.001	0	HLAVICE / HEAD / KOPF	M10x1,25	1
14	95.800.015	0	KROUZEK POJIST.VNEJŠÍ / EXTERNAL RETAINING RING / SICHERUNGSRING AUSSEN	POJISTNÝ KROUZEK 40	3
15	95.801.026	0	KROUZEK POJIST.VNITŘNÍ / INTERNAL RETAINING RING / SICHERUNGSRING INNEN	POJISTNÝ KROUZEK 34	2
16	96.001.008	0	O-KROUZEK STATICKÝ / O-RING STATIC / O-RING STATISCH	26x2 NBR 70SH	2
17	96.002.006	0	O-KROUZEK DYNAMICKÝ / O-RING DYNAMIC / O-RING DYNAMISCH	12x2 NBR 70SH	1
18	96.041.001	0	MANŽETA / CUFF / MANSCHETTE	16x24x4 UN	1
19	96.060.001	0	KROUZEK STÍRAČÍ / WIPER RING / ABSTREIFRING	16x22 NBR 70	1
20	96.082.001	0	KROUZEK TESNICÍ / SEALING RING / DICHTUNGSRING	10/14	2
21	96.084.005	0	KROUZEK VODÍČÍ / GUIDE RING / FÜHRUNGSRING	GP6500300-T47	1
22	96.900.007	0	TESNĚNÍ KOMBINOVANÉ / COMBINED SEALING / KOMBIDICHTUNG	PW4100300-Z20	1

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

10.21. Válec upínací / Fixing cylinder / Spannzylinder



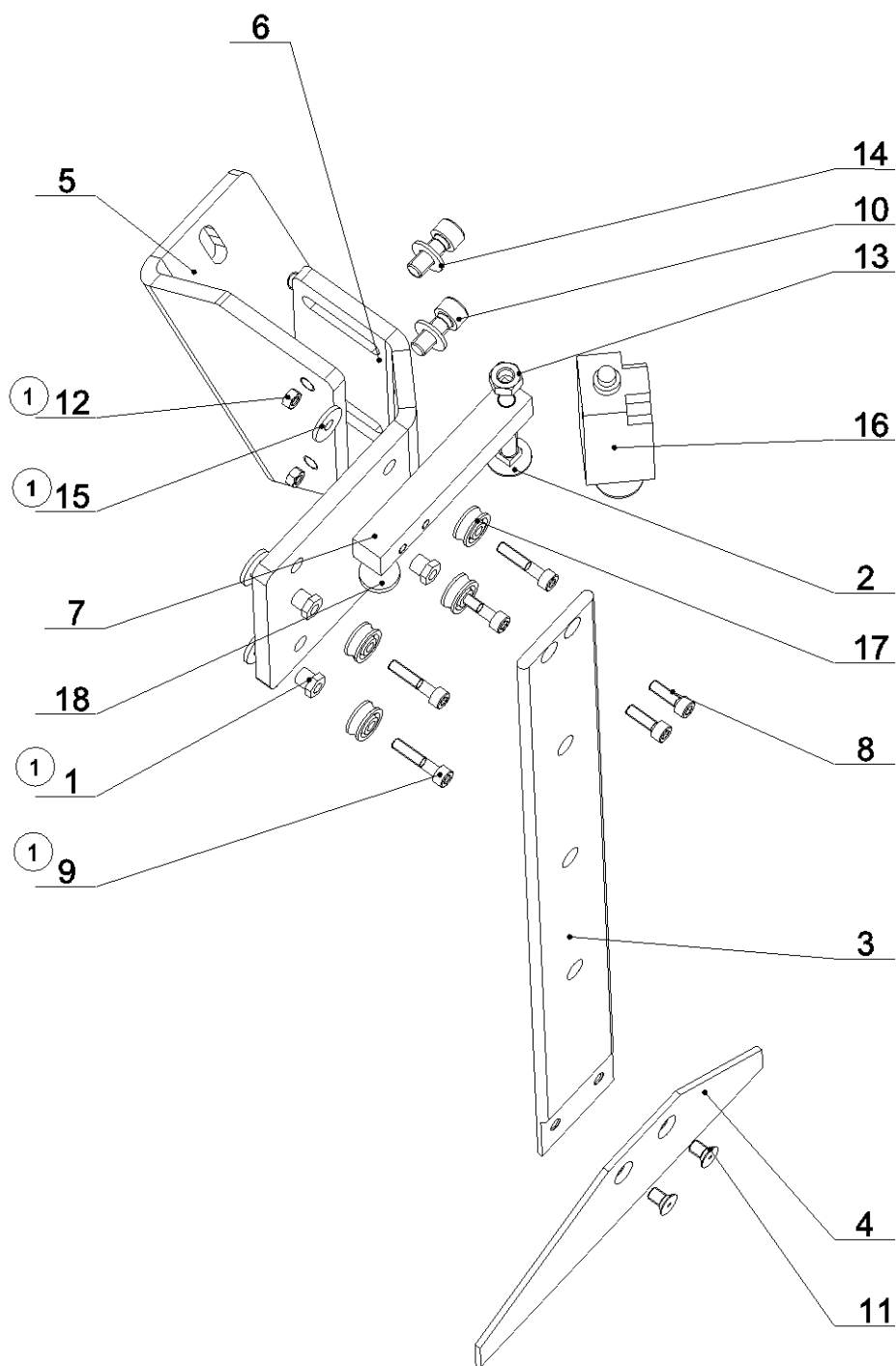
NÁZEV SESTAVY VALEC UPINACÍ 	Kat. PROL.280.350-	ČÍSLO SESTAVY 201.7907-600	Revize	
			0	
			Konstruoval: HALAS	
			Datum: 27.09.2024	
			Měřitko: 2:5	
			LITERÁRNÍ VZ. 01	

10.22. Kusovník / Piece list / Stückliste - Válec upínací / Fixing cylinder / Spannzylinder

NAZEV SESTAVY			CISLO SESTAVY	REVIZE			
VALEC UPINACI			201.7907-600	0			
Poz.	Objednací číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	k.s./m
1	30.7907-610	0	VALEC UPINACI	FIXING CYLINDER	SPANNZYLINDER		1
2	30.7907-611	0	PISTNICE	PISTON ROD	KOLBENSTANGE	D20 - 422	1
3	30.XL307-213	0	PIST	PISTON	KOLBEN	D45 - 17	1
4	30.XL307-253	0	VÍKO	COVER	DECKEL	D45 - 66	1
5	30.XL407-215	0	SROUBENI	TUBE FITTING	VERSCHRAUBUNG		1
6	90.001.25.105	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x18 DIN 912 8,8 černý	1
7	92.002.001	0	SROUBENI PRIME	TUBE FITTING - STRAIGHT	GERADE VERSCHRAUBUNG	GES 08LR WD (změna na WD od 1_2019) 1/4" - 16x1,5 tělo+tesnění	1
8	95.801.005	0	KROUZEK POJIST. VNITRNI	INTERNAL RETAINING RING	SICHERUNGSRING INNEN	d40 DIN 472	2
9	96.002.007	0	O-KROUZEK DYNAMICKÝ	O-RING DYNAMIC	O-RING DYNAMISCH	16x2 NBR 70Sh 16x2 NBR 70Sh	1
10	96.002.017	0	O-KROUZEK DYNAMICKÝ	O-RING DYNAMIC	O-RING DYNAMISCH	34x3 NBR 70 leskle materiál HH076880	1
11	96.041.002	0	MANŽETA	CUFF	MANSCHETTE	20x28x5 UN	1
12	96.060.002	0	KROUZEK STIRACÍ	WIPER RING	ABSTREIFRING	TK 20x28	1
13	96.082.001	0	KROUZEK TESNICÍ	SEALING RING	DICHTUNGSRING	10/14x15 Cu	1
14	96.084.006	0	KROUZEK VODICÍ	GUIDE RING	FÜHRUNGSRING	GR4-300280 - T47 28,0x3,9x1,55x94,1	1
15	96.084.010	0	KROUZEK VODICÍ	GUIDE RING	FÜHRUNGSRING	GP6500400 - T47 40,0x5,5x2,5x115,8	1
16	96.900.015	0	TESNENÍ KOMBINOVÁNE	COMBINED SEALING	KOMBIDICHTUNG	PT0200400-T46N 29x40x40,2	1

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednávací číslo/Order number/Bestellnummer; Polotovar/Semiproduct/Halbfabrikat; Vstupní materiál/Entrance material; Poz.-Pozice/Position/Position; Objednávací číslo/Order number/Bestellnummer;

10.23. Odměrování / Measuring / Gehungsmessung



NAZEV SESTAVY ODMEROVANI	CISLO SESTAVY 201.7904-100	STROJ 250DGA
	Konstruoval: HAJEK	
	Datum: 29. 04.2020	
	Meritko: 2:5	

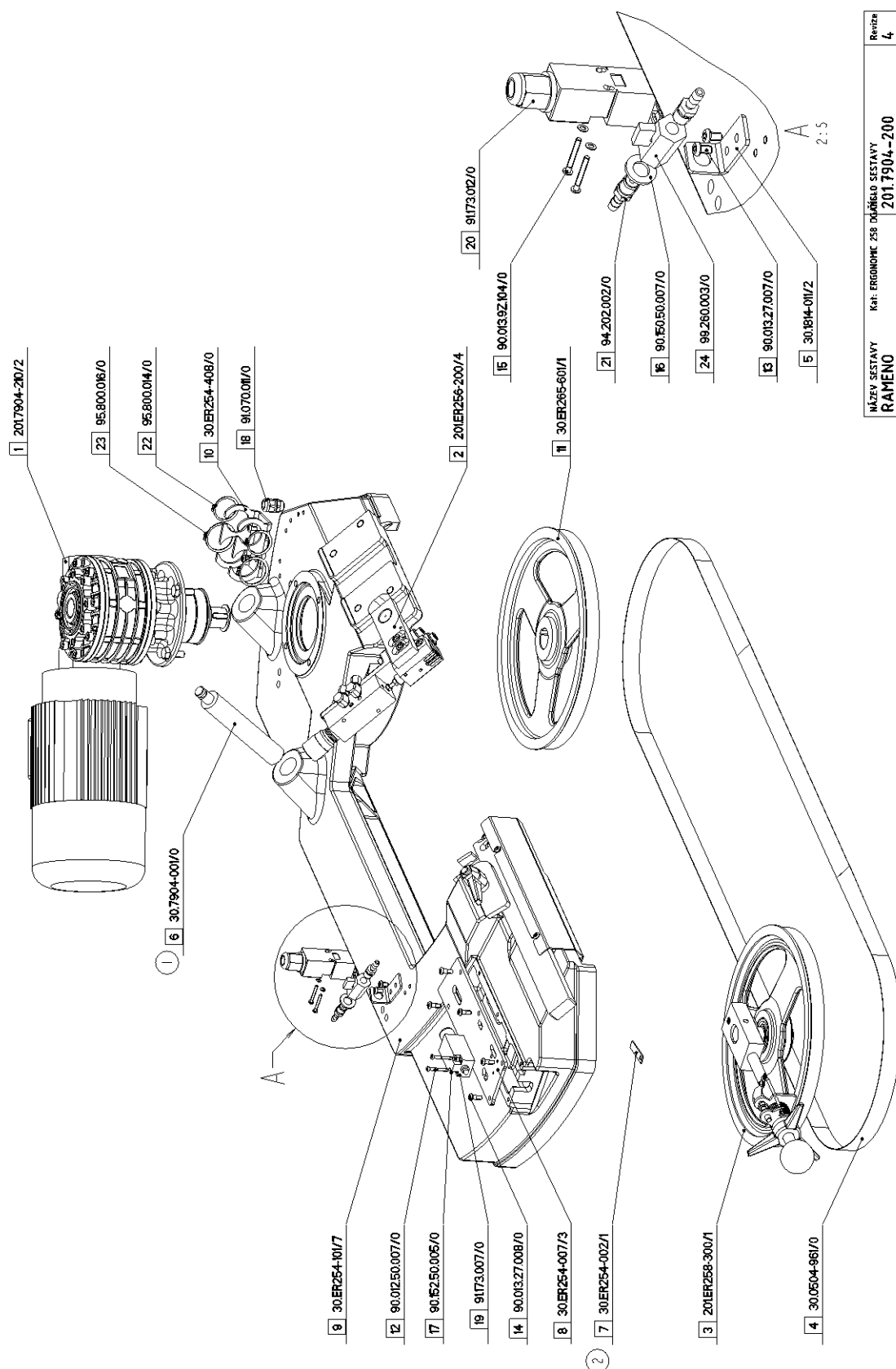
10.24. Kusovník / Piece list / Stückliste -
Odměrování / Measuring / Gehrungsmessung

Číslo Sestavy 201.7904-100		Ver. 0	Nazev sestavy ODMEROVANI/MEASURING/GEHRUNGSMESSUNG		
Poz.	Objednací číslo	Ver.	Nazev položky	Rozměr	Ks
1	30.0104-018	1	EXCENTR / EXCENTR / EXZENTER	SK10	4
2	30.0702-013	0	SROUB / SCREW / SCHRAUBE	M8	1
3	30.7904-102	0	VEDENÍ / GUIDE / FÖHRUNG	HR 50x6	1
4	30.7904-103	0	LISTA / SLAT / LEISTE	P 3x55	1
5	30.7904-106	0	DRŽÁK / HOLDER / HALTER	P 8x120	1
6	30.7904-107	0	DRŽÁK / HOLDER / HALTER	P 8x100	1
7	30.7904-108	0	KOSTKA / CUBE / WÜRFEL	TYC 16x16	1
8	90.001.25.009	0	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	M5X16	2
9	90.001.25.011	1	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	M5X25	4
10	90.001.25.032	0	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	8x20	2
11	90.011.27.004	0	SROUB ZAPUSTNÝ / COUNTERSUNK SCREW / SENKSCHRAUBE	SROUB M6X10	2
12	90.100.55.003	1	MATICE PRESNA ZINEK / PRECISION NUT - ZN / PRÁZISE MUTTER - ZN	MATICE _ M5	4
13	90.100.55.005	0	MATICE PRESNA ZINEK / PRECISION NUT - ZN / PRÁZISE MUTTER - ZN	MATICE _ M8	1
14	90.150.50.005	0	PODLOŽKA / WASHER / UNTERLEGSCHEIBE	PODLOŽKA 8,4	2
15	90.151.50.006	1	PODLOŽKA VELKOPL. / LARGE WASHER / GROßFLÄCHENSCHNEIBE	PODLOŽKA 5	4
16	91.173.007	0	SPINAC KONCOVÝ / END SWITCH / ENDSCHALTER	-RIWK	1
17	95.008.001	0	LOZISKO / BEARING / LAGER	YTLR 20/5	4
18	99.060.003	0	MAGNET / MAGNET / MAGNET	d 18	1

1.ZRUS.SROUB 30.7904-109.SROUB IMBUS M5x20 90.001.25.010.A NAHR.4x EXCENTR 0104-018.ZRUS.PODLOZKA 5.3 90.150.50.003,
PRIDANO 4x SROUB IMBUS M5x25 90.001.25.011,PRID. 2XMATICE M5 90.100.55.003,PRID.4xPODLOZKA VELKOPLOSNÁ 5 90.150.50.006.
239/ZM260 14.6.2007 SLEZACKOVA

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

10.25. Rameno / Shoulder / Sägerahmen



NÁZEV SESTAVY RAMENO	Kat. ERGONOMIE ZSS DÁŘELO SESTAVY 2017904-200	Revize 4
Konstruoval: IVICIC	Datum: 29.08.2022	Verze 1.3
Měřtko: 1:5		

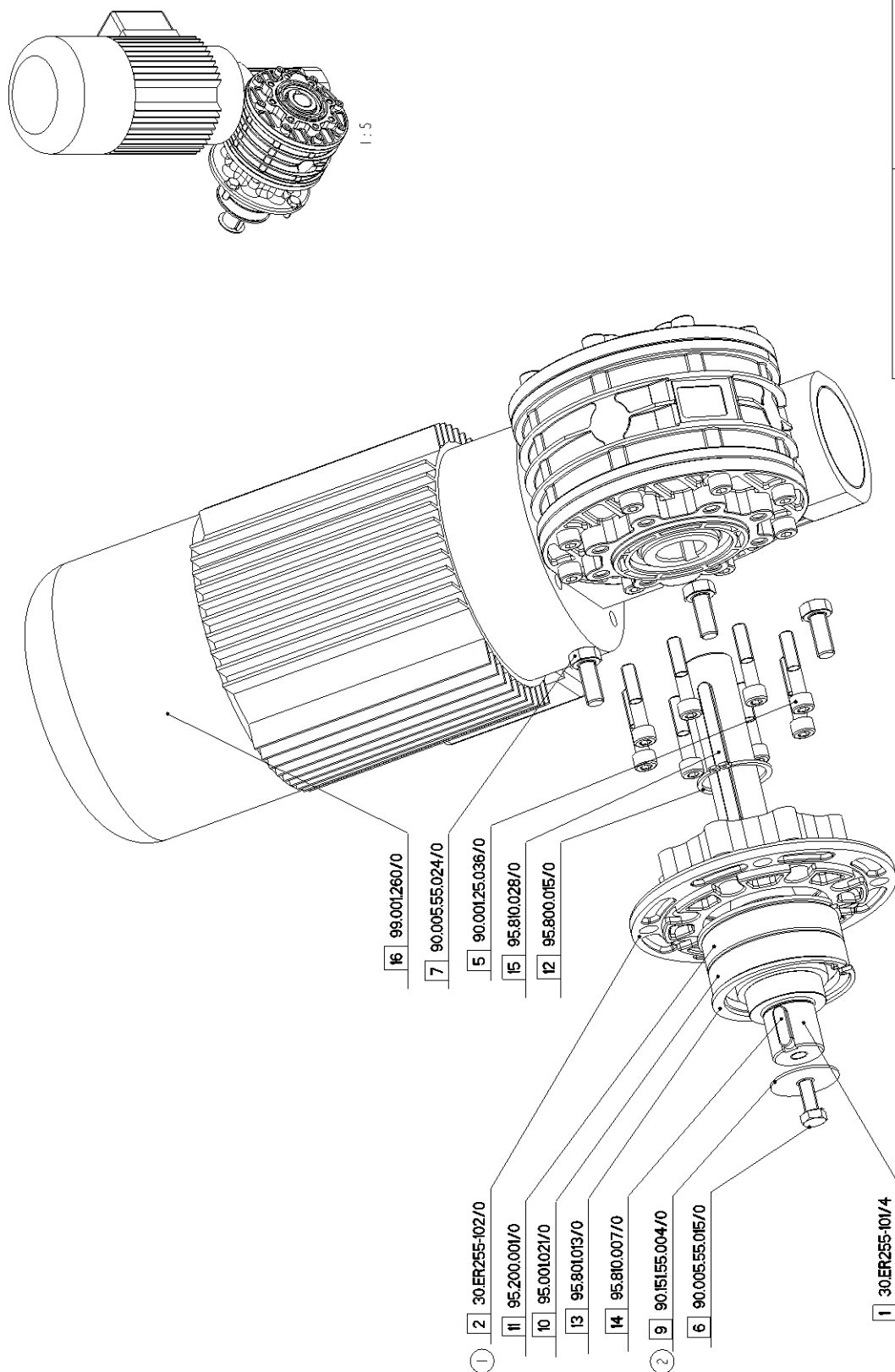
10.26. Kusovník / Piece list / Stückliste - Rameno / Shoulder / Sägerahmen

NAZEV SESTAVY			CISLO SESTAVY		REVIZE		
RAMENO			201.7904-200		4		
Poz.	Objednáčí číslo	Verze	Název CZ	Name EN	Name DE	Polotovary	k s /m
1	201.7904-210	2	POHON	DRIVE	ANTRIEB		1
2	201ER256-200	4	VEDENÍ PASU	SAW BAND GUIDE		SÄGEBANDFÜHRUNG	1
3	201ER258-300 (4)	1	NAPINÁNÍ	TENSIONING		SPANNUNG	1
4	30.0504-961	0	PAS PÍLOVÝ	SAW BAND		SÄGEBAND	1
5	30.1814-011	2	DRŽÁK	HOLDER		HALTER	1
6	30.7904-001 (1)	0	CEP	PIVOT		BOLZEN	1
7	30.ER254-002	1	PLECH	SHEET METAL		BLECH	1
8	30.ER254-007	3	KRYTÍ NAPINÁNÍ	COVER FOR TENSIONING DEV.		BANDSPANNUNGSABDECKUNG	1
9	30.ER254-101 (3)	7	RAMENO	BEAM		RAHMEN	1
10	30.ER254-408 (3)	0	DRŽÁK	HOLDER		HALTER	1
11	30.ER265-601	1	KOLO HNACÍ	DRIVE WHEEL		ANTRIEBSRAD	1
12	90.012.50.007	0	SROUB VALCOVÝ	CYLINDER HEAD BOLT		ZYLINDERKOPFSCHRAUBE	4x30 DIN 84 Zn
13	90.013.27.007	0	SROUB PULKULATY	BUTTON HEAD SCREW		RUNDKOPFSCHRAUBE	6x10 ISO 7380 čern
14	90.013.27.008	0	SROUB PULKULATY	BUTTON HEAD SCREW		RUNDKOPFSCHRAUBE	6x16 ISO 7380 čern
15	90.013.9Z.104	0	SROUB PULKULATY	BUTTON HEAD SCREW		RUNDKOPFSCHRAUBE	4x30 ISO 7380 TX A2 BEZPEČNOSTNÍ S KOLÍČKEM
16	90.150.50.007	0	PODLOŽKA	WASHER		UNTERLEGSCHIBE	13 M12 DIN 125 Zn
17	90.152.50.005	0	PODLOŽKA VEJÍROVA	FAN WASHER		FÄCHERSCHIBE	4,3 A DIN 6798 Zn
18	91.070.011	0	VÝVODKA	OUTLET		TÜLLE	AG-1545.17.10 V-BIMED M16x15 –černa
19	91.173.007	0	SPINAC KONCOVÝ	END SWITCH		ENDSCHALTER	KBA11L11 Lovato ID4N-4A31 kNO/1kNC
20	91.173.012	0	SPINAC KONC.-ZÁMEK	END SWITCH –LOCK		ENDSCHALTER – SCHLOSS	OKS8 2kNC, 250V/400V, 14A/8A, IP54
21	94.202.002	0	REDUKCE	REDUCTION / ADAPTOR		REDUKTION	1/4"-6 GES 6-R1/4"
22	95.800.014	0	KROUZEK POJIST. VNEJŠÍ	EXTERNAL RETAINING RING		SICHERUNGSRING AUßEN	d35 DIN 471
23	95.800.016	0	KROUZEK POJIST. VNEJŠÍ	EXTERNAL RETAINING RING		SICHERUNGSRING AUßEN	d42 DIN 471
24	99.260.003	0	VENTIL KULOVÝ	BALL VALVE		KUGELVENTIL	1/4" /111/ možno nahradit 99.260.004, vnitřní/vnitřní China

1. ZRUSEN CEP 30.ER254-003 A NAHR. 30.7904-001, 032/ZM052 29.01.2020 KOSYK
2. PRIDAN PLECH 30.ER254-002, 120/ZM163 7.4.2020 KOSYK
3. ZRUSEN KRYTÍ PASU 30.0704-038 A NAHR. 30.ER254-013; ZRUS. KRYTÍ PASU 30.0704-044 A NAHR. 30.ER254-014, 016/ZM104
28.3.2022 SLEZACKOVA
4. ZRUS. NAPINÁNÍ 201.ER258-000 A NAHR. 201.ER258-300; ZRUS. KRYTÍ PASU 30.ER254-013 A 30.ER253-014, 228/ZM013
19.1.2024 SLEZACKOVA

Číslo sestavy/Number of assembly/Numer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Polotovar/Semiproduct/Halbfabrikat; Vstupní materiál/Starting material/Eingangsmaterial;

10.27. Pohon / Power / Antrieb



NÁZEV SESTAVY POHON BOMAR	Kat. -	ČÍSLO SESTAVY 201.7904-210	Revize 2
	Konstruoval:		IVICIC
	Datum:		29.08.2022
	Měřtko:		1:2
		Lad.Jarda, v. 22	

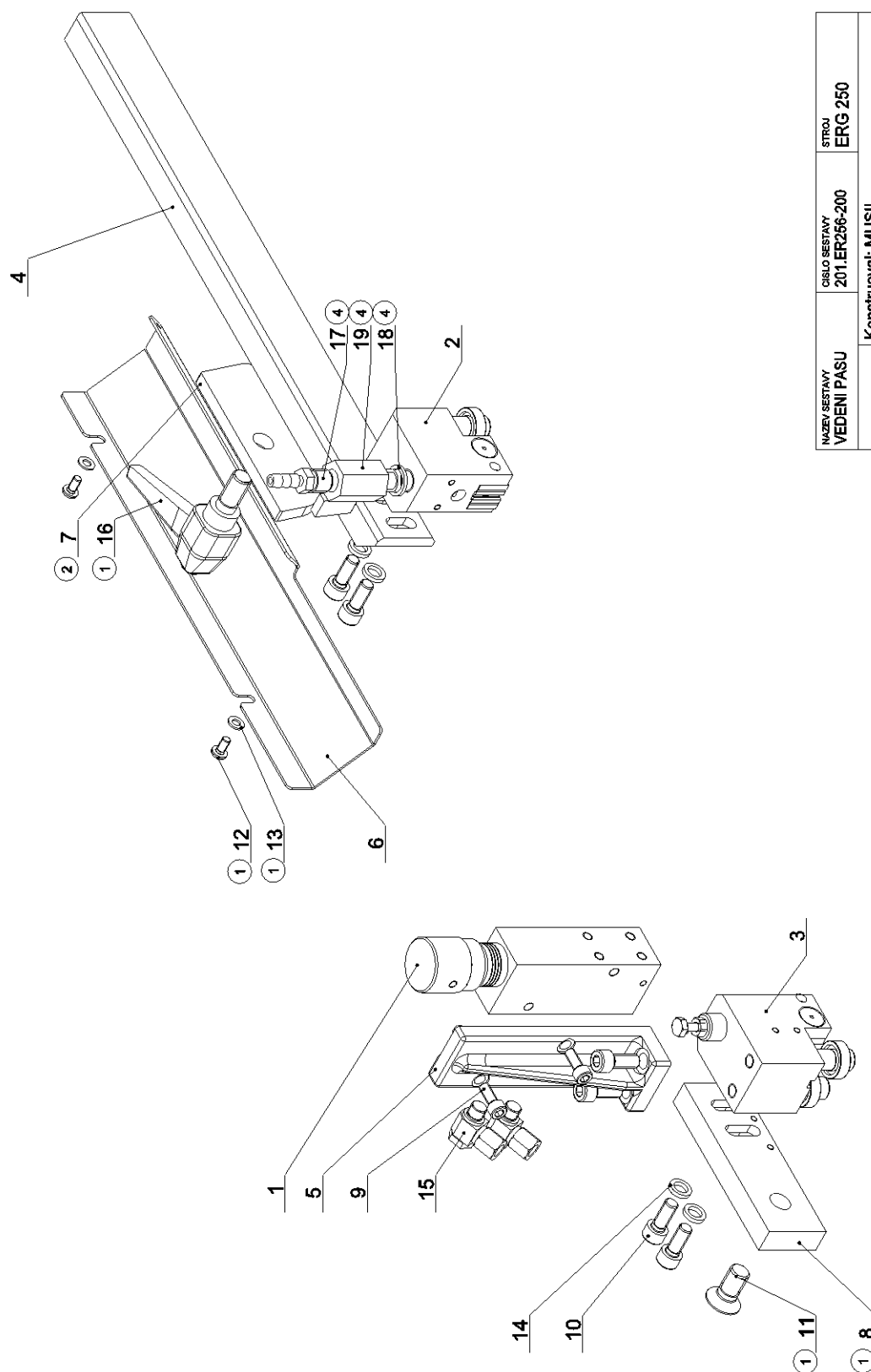
10.28. Kusovník / Piece list / Stückliste Pohon / Power / Antrieb

NAZEV SESTAVY			CISLO SESTAVY		REVIZE		
POHON			201.7904-210		2		
Poz.	Objednáč. číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	k s /m
1	30.ER255-101	4	HRDEL	SHAFT	WELLE	D45 - 249	1
2	30.ER255-102	0	PRIRUBA	FLANGE	FLANSCH		1
5	90.00125.036	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x40 DIN 912 8,8 černý	8
6	90.00555.015	0	SROUB SESTIHRANNY	HEX HEAD SCREW	SECHSKANTSCHRAUBE	8x20 DIN 933 8,8 Zn	1
7	90.00555.024	0	SROUB SESTIHRANNY	HEX HEAD SCREW	SECHSKANTSCHRAUBE	10x25 DIN 933 8,8 Zn	4
9	90.15155.004	0	PODLOZKA VELKOPL.	LARGE WASHER	GROßFLÄCHENSCHIBE	10,5x40 ART 120 karosarska Zn	1
10	95.001021	0	LOZISKO	BEARING	LAGER	6208 T3 CMB 2RS	1
11	95.200.001	0	LOZISKO	BEARING	LAGER	N/208 T3 CMB NJ	1
12	95.800.015	0	KROUZEK POJIST. VNEJSI	EXTERNAL RETAINING RING	SICHERUNGSRING AUFEN	d40 DIN 471	1
13	95.801013	0	KROUZEK POJIST. VNITRNI	INTERNAL RETAINING RING	SICHERUNGSRING INNEN	d80 DIN 472	2
14	95.810.007	0	PERO TESNE	FEATHER KEY	PASSFEDER	8x7x25 DIN 6885	1
15	95.810.028	0	PERO TESNE	FEATHER KEY	PASSFEDER	8x7x90 DIN 6885	1
	99.001260	0	PREVODOVKA S MOTOREM	GEARBOX WITH MOTOR	GETRIEBE MIT MOTOR	M170-PAM90-20/1-FP-120-B14_RAL7036 FC90L_4; 15kW; 4P; 230/400/50; B14	

I.ZR. PRIRUBA 30.ER255-202 A NAHR. 30.ER255-102, 026/ZM039 21.01.2020 KOSYK
2. PODLOZKA 30.0505-011 NAHRAZENA 90.151.55.004 228/ZM277 11.09.2024 DOSTAL

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Poziice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Polotovár/Semiproduct/Halbfabrikat; Vstupní materiál/Input material/Eingangsmaterial;

10.29. Vedení pásu / Belt guide / Sägebandführung



NAZEV/SESTAVY	CÍSLO SESTAVY	STROJ
VEDENÍ PÁSU	201.ER256-200	ERG 250
Konstruoval: MUSIL		
Datum: 23. 07. 2019		
Měřitko: 1:2		

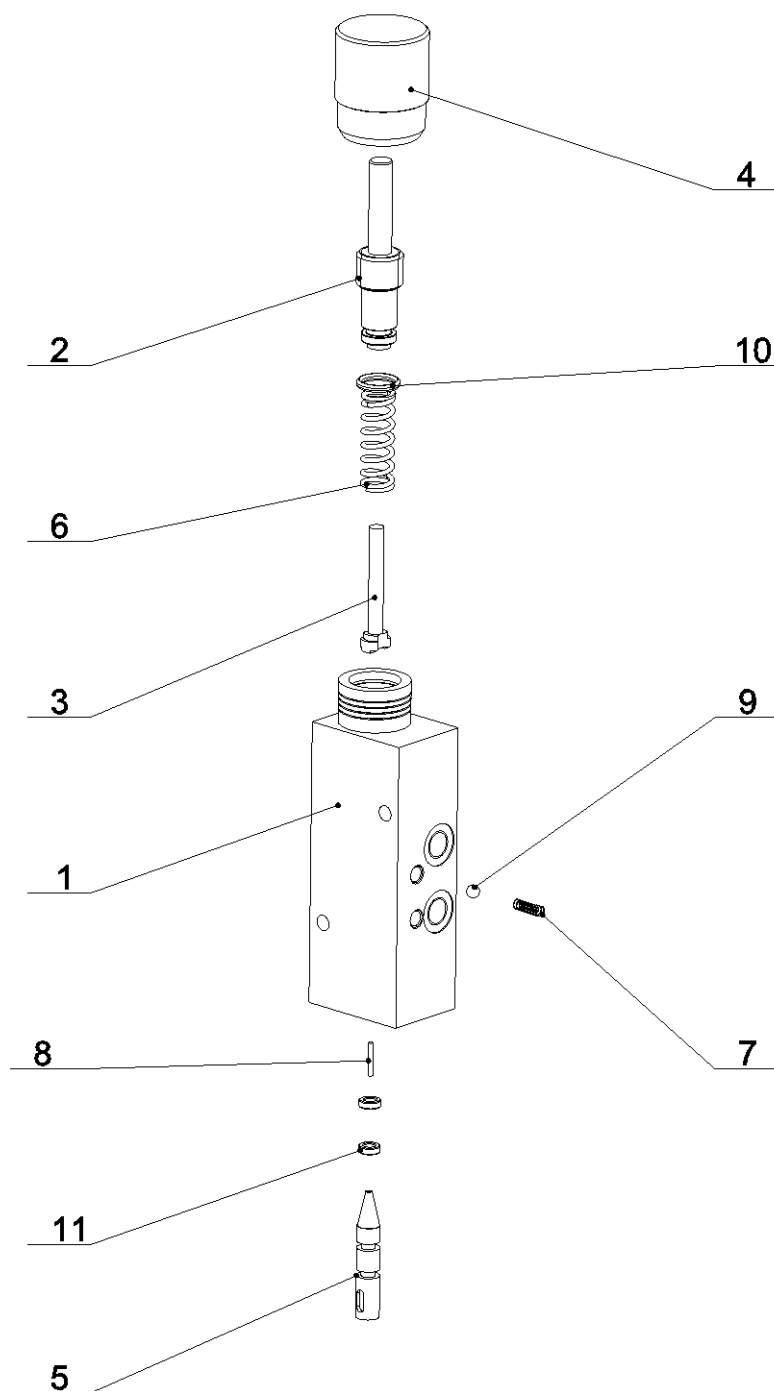
10.30. Kusovník / Piece list / Stückliste - Vedení pásu / Belt guide / Sägebandführung

Číslo sestavy 201.ER256-200		Ver. 0	Název sestavy VEDENÍ PÁSU/SAW BAND GUIDE/SÄGEBANDFÜHRUNG			
Poz	Objednávací číslo	Ver.	Název položky	Rozměr	Ks	
1	251.218	0	REGULACE PRITLAKU / PRESSURE REGULATION / SCHNITTDRUCKREGULATION		1	
2	201.0110-100	0	KOSTKA VODICI / GUIDING CUBE / FÜHRUNGSKLOTTZ		1	
3	201.2810-200	0	KOSTKA VODICI / GUIDING CUBE / FÜHRUNGSKLOTTZ		1	
4	30.0104-015	0	LISTA / SLAT / LEISTE	HR 40x20	1	
5	30.2804-001	0	DRŽÁK / HOLDER / HALTER		1	
6	30.ER256-005	0	KRYT PÁSU / BELT COVER / BANDABDECKUNG	P 1,5x34	1	
7	30.ER256-101	2	UPINKA / FASTENER / VERSCHLUSS	P 8x40	1	
8	30.FL256-002	1	LISTA / SLAT / LEISTE	HR 40x15	1	
9	90.001.25.017	0	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	M6x16	2	
10	90.001.25.032	0	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	8x20	6	
11	90.011.27.025	1	SROUB ZAPUSTNÝ / COUNTERSUNK SCREW / SENKSCHRAUBE	SROUB M12x25	1	
12	90.013.27.003	1	SROUB PULKULATÝ / BUTTON HEAD SCREW / RUNDKOPFSCHRAUBE	M5x10	2	
13	90.160.60.003	1	PODLOŽKA / WASHER / UNTERLEGSCHEIBE	PODLOŽKA 5,3	2	
14	90.163.00.002	0	PODLOŽKA / WASHER / UNTERLEGSCHEIBE	NORD-LOCK	4	
15	92.003.104	0	SROUBENÍ UHL.NATAC. KOVOVÉ / null / null	607002	2	
16	94.008.008	1	PAKA MONTÁŽNÍ / ASSEMBLY LEVER / MONTAGEHEBEL	M12x25	1	
17	94.202.002	4	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	GES 6/R1/4"	1	
18	96.080.001	4	KROUZEK TESNICÍ / SEALING RING / DICHTUNGSRING	17,8x13,5x2	1	
19	99.260.001	4	VENTIL KULOVÝ / BALL VALVE / KUGELVENTIL	VENTIL KULOVÝ	1	

1.ZRUS.UPINKA 30.ER256-003 A NAHR.30.ER256-001.ZRUS.LISTA 30.ER236-002 A NAHR.30.FL256-002.ZRUS.PAKA UTAHOVACÍ M10x25
(94.008.005) A NAHR.PAKA UTAHOVACÍ M12x25(94.008.008),PRID.2xPODLOŽKA 5,3(90.150.50.003),2xSROUB M5x10(90.013.27.003),
1xSROUB M12x25(90.011.27.025). 021/ZM147 12.4.2017 SLEZACKOVA
2.ZRUS.UPINKA 30.ER256-001 A NAHR.30.ER256-101. 148/ZM257 18.7.2018 SCERBA
3.ZRUSEN DRŽÁK 94.204.001 A NAHR.30.9010-003. 039/ZM056 12.2.2019 SLEZACKOVA
4.ZRUS. DRŽÁK 30.9010-003 A TRUBKA 30.3510-004, PRID. TESNENÍ 96.080.001, REDUKCE 94.202.002 A VENTIL 99.260.001.
229/ZM310 23.7.2019 SZABARI

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

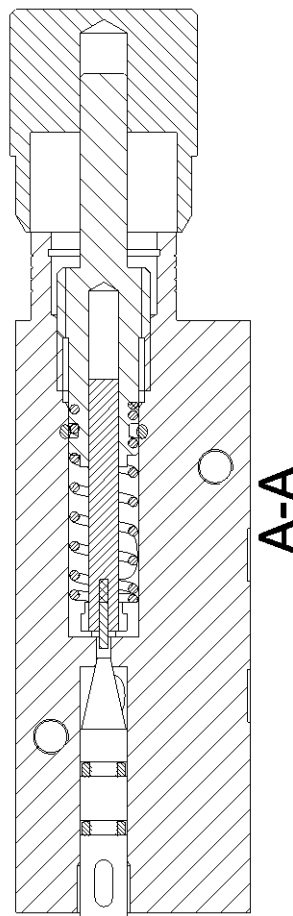
10.31. Regulace přítaku / Pressure regulation / Schnittdruckregulation



NAZEV SESTAVY	CISLO SESTAVY	STROJ
REGULACE PRITLAK	251.218	ERGO250
Konstruoval:		
Datum: 16. 08.2012		
Meritko: 1:2		

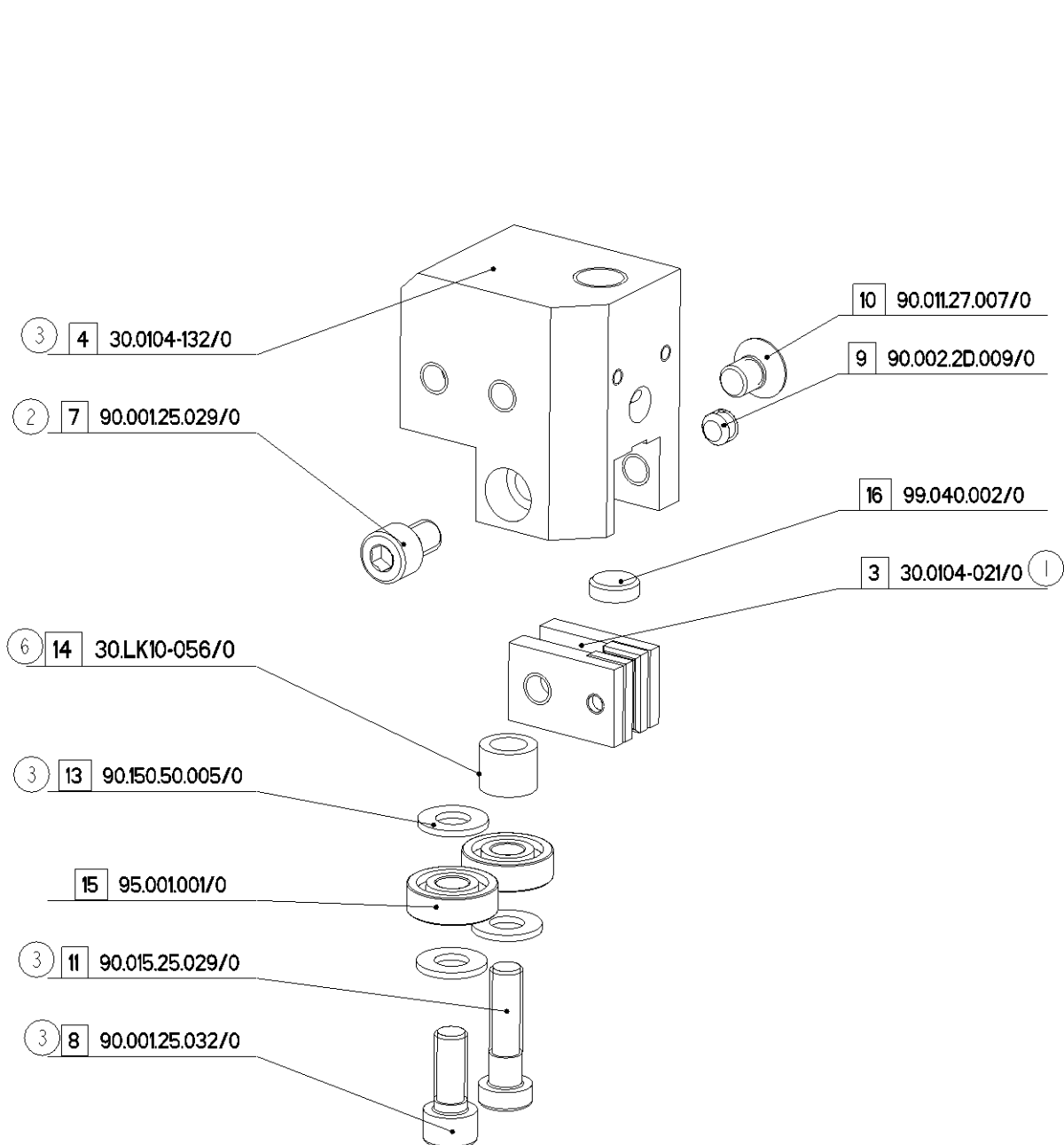
10.32. Kusovník / Piece list / Stückliste - Regulace přítlaku / Pressure regulation / Schnittdruckregulation

Císlo Sestavy 251.218		Ver. 0	Nazev sestavy REGULACE PRITLAKU/PRESSURE REGULATION/SCHNITTDRUCKREGULATION		
Poz.	Objednací číslo	Ver.	Nazev položky	Rozmer	Ks
1	30.2016-001	2	TELESO / BODY / KÖRPER	HR 40 x 40	1
2	30.2016-003	0	SROUB / SCREW / SCHRAUBE	d 16	1
3	30.2016-004	2	* / null / null	d 10	1
4	30.2016-005	0	KOLEČKO / WHEEL / ROLLE	d 32	1
5	30.3516-002	1	JEHLA / NEEDLE / NADL	d 8	1
6	31.2016-007	0	PRUZINA / SPRING / FEDER	1,6x11,6x34x8,5	1
7	31.2016-008	0	PRUZINA / SPRING / FEDER	0.25x3,6x12x9.5	1
8	95.690.001	0	JEHLA / NEEDLE / NADL	1.5x11.8	1
9	95.691.001	0	KULICKA LOŽISKA / BALL / KUGEL	RB 4,5	1
10	96.001.003	0	O-KROUZEK STATICKÝ / O-RING STATIC / O-RING STATISCH	8X2	1
11	96.002.001	0	O-KROUZEK DYNAMICKÝ / O-RING DYNAMIC / O-RING DYNAMISCH	4X2	2



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

10.33. Kostka vodící / Lead cube / Führungsklotz



NÁZEV SESTAVY KOSTKA VODICI	Kal: STG-240- ČÍSLO SESTAVY 201.0110-100	Revize 6 List/Listů: 1/0 6.2
	Konstruoval:	
	Datum:	24.08.2022
	Měřítko:	4:5

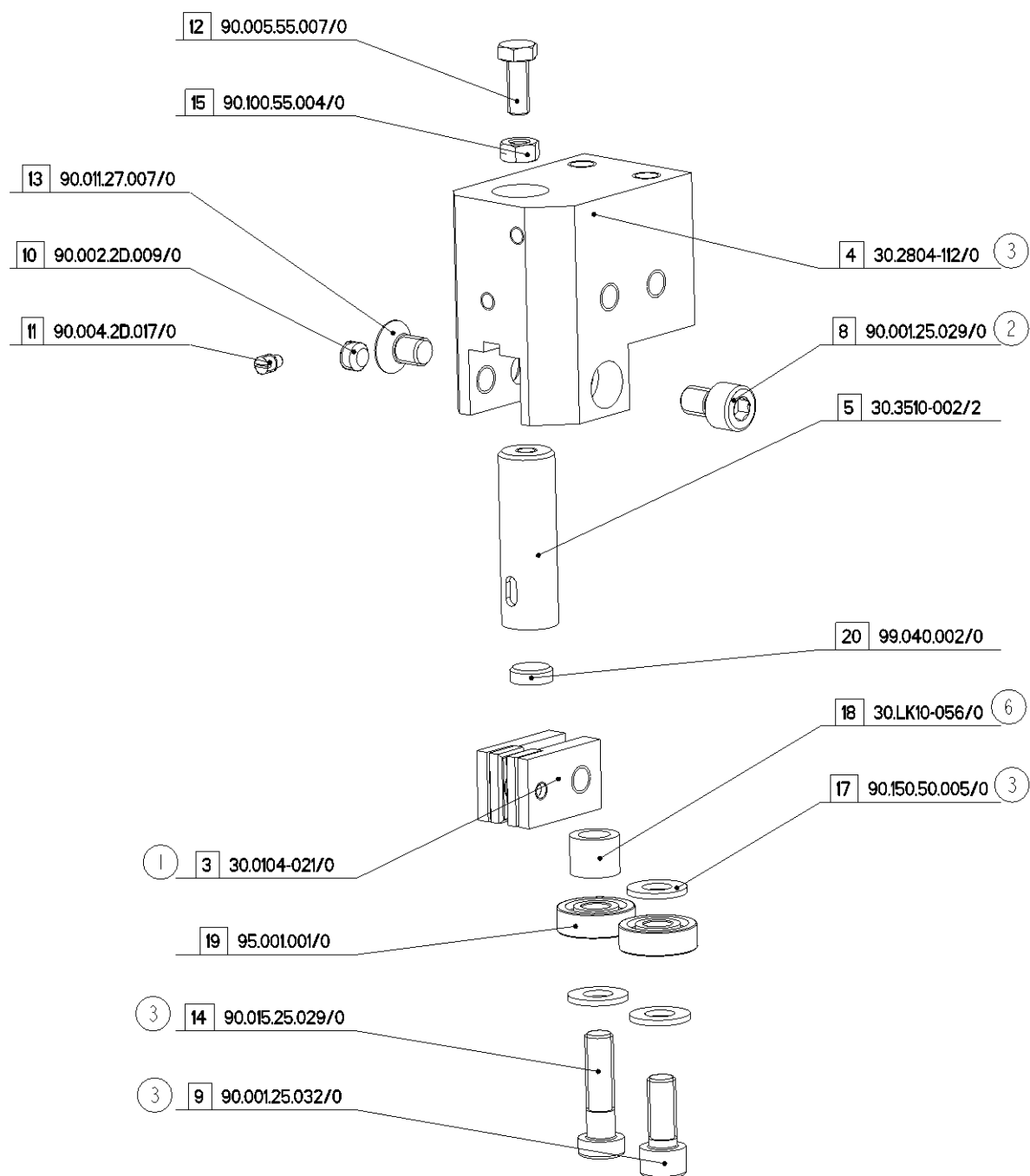
10.34. Kusovník / Piece list / Stückliste - Kostka vodící / Lead cube / Führungsklotz

NAZEV SESTAVY		CISLO SESTAVY	REVIZE					
KOSTKA VODICI		201.0110-100		6				
Poz.	Objednáací číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	rpt.index	
3	30.0104-021	1	DRŽAK	HOLDER	HALTER		2	
4	30.0104-132	3	KOSTKA VODICI	GUIDING CUBE	FÜHRUNGSKLOTZ	HR60x40 - 54	1	
7	90.00125.029	3	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x12 DIN 912 8,8 černý	1	
8	90.00125.032	3	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x20 DIN 912 8,8 černý	1	
9	90.002.20.009	2	SROUB STAVECI	SET SCREW	STELLSCHRAUBE	8x6 DIN 913 45H černí	1	
10	90.01127.007	0	SROUB ZAPUSTNÝ	COUNTERSUNK SCREW	SENKSCHEIBE	8x12 DIN 7991 10,9 černý	1	
11	90.015.25.029	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x30 DIN 7984 8,8 černý nízká hlava	1	
13	90.150.50.005	3	PODLOŽKA	WASHER	UNTERLEGSCHIEBE	8,4 M8 DIN 125 Zn	3	
14	30.LK10-056	6	TRUBKA	TUBE	ROHR	TR14x2,5 - 13	1	
15	95.001001	0	LOŽISKO	BEARING	LAGER	608 T3 CMB ZRS	2	
16	99.040.002	0	TVRDOKOV	HARD METAL	HM-SEGMENT	12x4 43011201	1	

1. ZRUS. KOSTKA 30.0104-017 A NAHR. 30.0104-032. ZRUS. DRZAK 30.0104-020 A NAHR. 30.0104-021. 297/272 12.8.2008 KRPEC
2. ZRUS. 90.005.55.005 A NAHR. 90.001.25.011; ZRUS. 90.005.55.003 A NAHR. 90.001.25.009; ZRUS. 90.001.25.030 A NAHR. 90.001.25.029; 260/ZM432 29.11.2018 SCERBA
3. ZRUS. EXCENTR 30.0104-018, 30.0104-019, ZRUS. SROUB 90.001.25.009 (M5x16) A NAHR. 90.001.25.032 (M8x20), ZRUS. SROUB 90.001.25.011 (M5x25) A NAHR. 90.015.25.029 (M8x30), ZRUS. PODLOZKA 90.150.50.003 (5.3) A NAHR. 90.150.50.005 (8.4), PRID. TRUBKA 30.LK10-006, ZRUS. KOSTKA VODICI 30.0104-032 A NAHR. 30.0104-132 112/ZMI14 31.03.2022 ZINDULKA
4. ZRUS. SOUC 30.LK10-006 A NAHRAZ 91.200.030. 222/ZM298 17.10.2022 KYASNICKA
5. ZRUS. SOUC. 91.020.030 A NAHR. 30.LK10-006. 091/ZMI27 18.5.2023 MACEL
6. ZRUS. SOUCAST 30.LK10-006 A NAHR. 30.LK10-056. 152/ZMI52 5.6.2025 HALAS

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Poziice/Position/Position; Objednáací číslo/Order number/Bestellnummer; Polotovár/Semiproduct/Halbfabrikat; Vstupní materiál/Starting material/Eingangsmaterial;

10.35. Kostka vodící / Lead cube / Führungsklotz



NÁZEV SESTAVY KOSTKA VODICI	Kal: STG 240A/GA-	ČÍSLO SESTAVY 201.2810-200	Revize 6 6.2
List/Listů: 1/0			
Konstruoval:			
Datum: 24.08.2022			
Měřítko: 7:10			

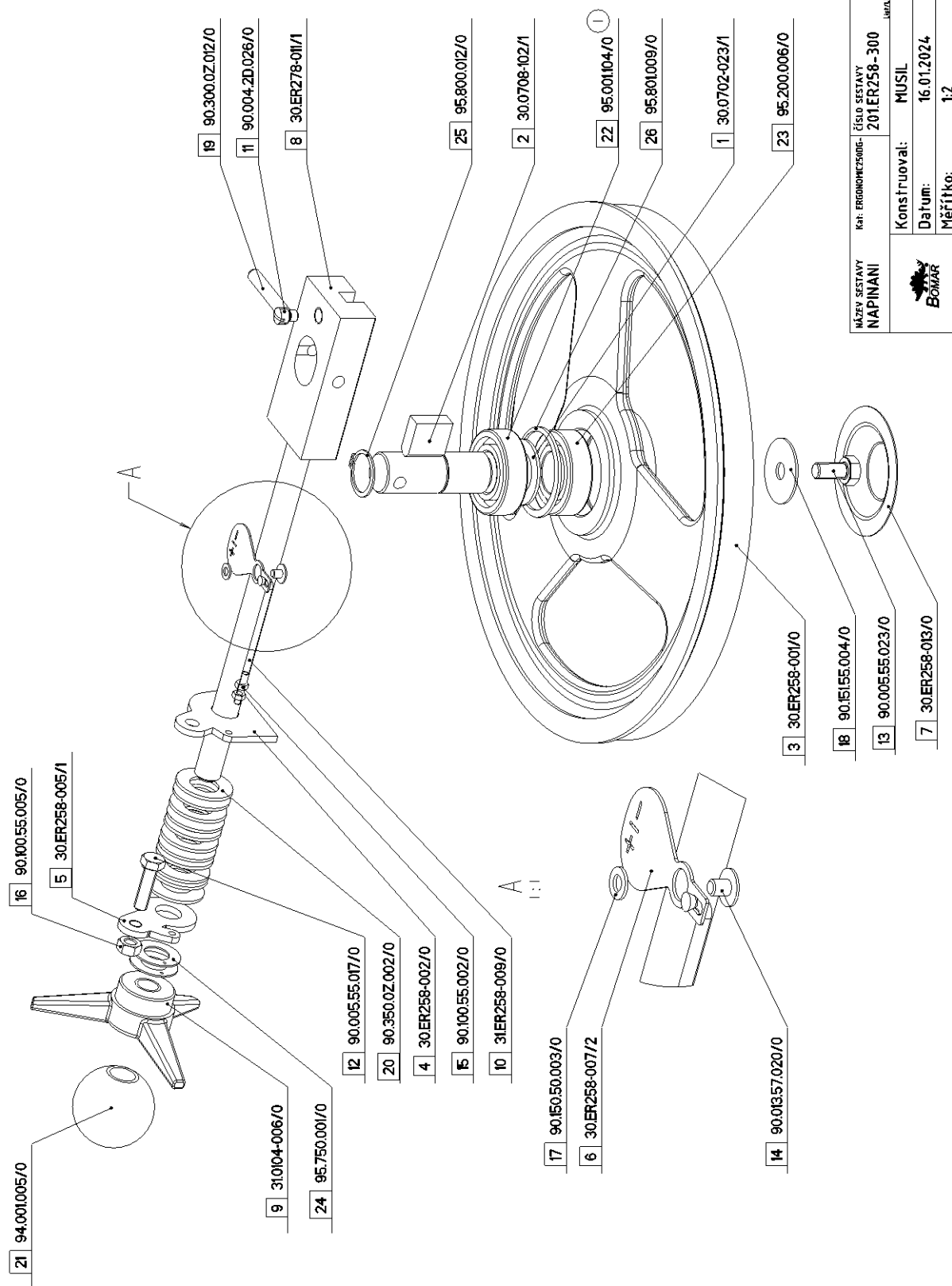
10.36. Kusovník / Piece list / Stückliste - Kostka vodící / Lead cube / Führungsklotz

NAZEV SESTAVY		CISLO SESTAVY		REVIZE			
KOSTKA VODICI		201.2810-200		6			
Poz.	Objednávací číslo	Verze	Název CZ	Name EN	Name DE	Polotovar	rpt.index Ks.
3	30.0104-021 (1)	0	DRŽÁK	HOLDER	HALTER	HR60x40 - 66	2
4	30.2804-112 (3)	0	KOSTKA VODICI	GUIDING CUBE	FÜHRUNGSKLOTZ	D16 - 52	1
5	30.3510-002 (3)	2	DRŽÁK TVRDOKOVU	HM HOLDER	HM-HALTER	8x12 DIN 912 8,8 cerneny	1
8	90.00125.029 (3)	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x20 DIN 912 8,8 cerneny	1
9	90.00125.032 (3)	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x6 DIN 913 4,5H cernen	1
10	90.00220.009 (3)	0	SROUB STAVECI	SET SCREW	STELLSCHRAUBE	5x8 DIN 915 cernen	1
11	90.00420.017	0	SROUB STAVECI	SET SCREW	STELLSCHRAUBE	6x16 DIN 933 8,8 Zn	1
12	90.00555.007	0	SROUB SESTIHRANNY	HEX HEAD SCREW	SECHSKANTSCHRAUBE	8x12 DIN 7991 10,9 cerneny	1
13	90.01127.007	0	SROUB ZAPUSTNY	COUNTERSUNK SCREW	SENKSCHRAUBE	8x30 DIN 7984 8,8 cerneny niz hlava	1
14	90.01525.029 (3)	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	6 DIN 934 8,8 Zn	1
15	90.10055.004	0	MATICE PRESNA ZINEK	PRECISION NUT - ZN	PRÄZISE MUTTER - ZN	8,4 M8 DIN 125 Zn	3
17	90.15050.005 (3)	0	PODLOŽKA	WASHER	UNTERLEGSCHIBE	TR14x2,5 - 13	1
18	30.LK10-056 (6)	0	TRUBKA	TUBE	ROHR	608 T3 CMB ZRS	2
19	95.001001	0	LOZISKO	BEARING	LAGER	12x4 4301201	1
20	95.040.002	0	TVRDOKOV	HARD METAL	HM-SEGMENT		

1. ZRUS. KOSTKA 30.2804-002 A NAHR. 30.2804-012, ZRUS. DRŽÁK 30.0104-020 A NAHR. 201.0104-021. 3407ZM343 16.10.2008 SLEZACKOVA
2. ZRUS. 90.00555.005 A NAHR. 90.001.25.011; ZRUS. 90.00555.003 A NAHR. 90.001.25.009; ZRUS. 90.001.25.030 A NAHR. 90.001.25.029; 2607ZM432 29.11.2018 SCERBA
3. ZRUS. EXCENTR 30.0104-018, 30.0104-019, ZRUS. SROUB 90.001.25.009 (M5x16) A NAHR. 90.001.25.032 (M8x20), ZRUS. SROUB 90.001.25.011 (M5x25) A NAHR. 90.015.25.029 (M8x30), ZRUS. PODLOŽKA 90.150.50.003 (5,3) A NAHR. 90.150.50.005 (8,4), PRUD. TRUBKA 30.LK10-006, ZRUS. KOSTKA VODICI 30.2804-012 A NAHR. 30.2804-112 112ZM114 31.03.2022 ZINDULKA
4. ZRUS. SOUC 30.LK10-006 A NAHR. 30.LK10-030, 222ZM298 17.10.2022 KVASNICKA
5. ZRUS. SOUC 91.020.030 A NAHR. 30.LK10-006, 091ZM127 18.5.2023 MACEL
6. ZRUS. SOUGAST 30.LK10-006 A NAHR. 30.LK10-056. 152ZM152 5.6.2025 HALAS

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednávací číslo/Order number/Bestellnummer; Polotovary/Semi-product/Halbfabrikat; Vstupní materiál/Input material; Deradit material/Eingangsmaterial;

10.37. Napínání / Tensioning / Spannung



NÁZEV SESTAVY NAPÍNÁNÍ	Kat. ERGONOMIE2500G-	ČÍSLO SESTAVY 201ER258-300	Revize 1
Konstruktor: Datum: Měřtko:	MUSIL 16.01.2024 1:2	LEKARSKÉ VYB. 12	

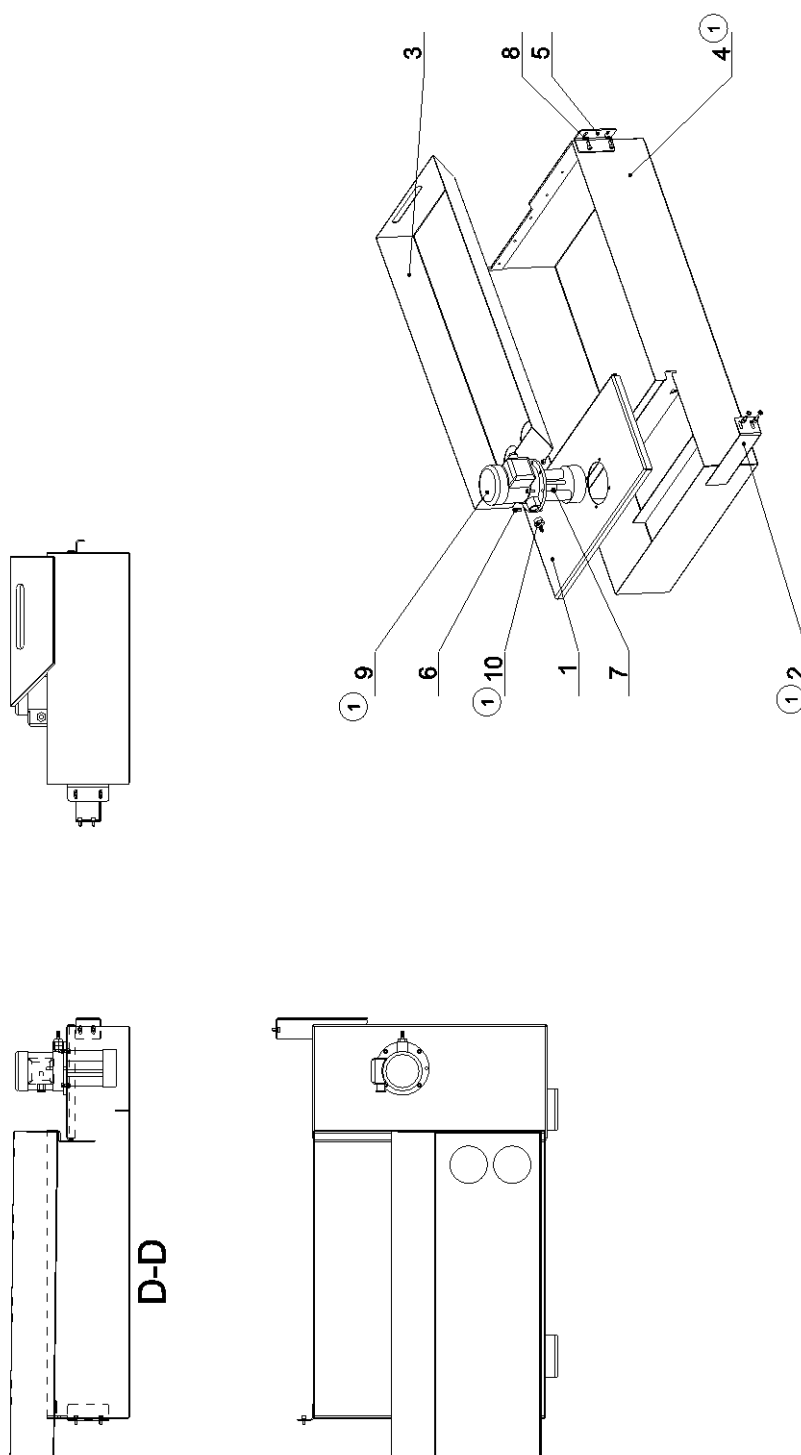
10.38. Kusovník / Piece list / Stückliste -
Napínání / Tensioning / Spannung

NAZEV SESTAVY			CISLO SESTAVY		REVIZE		
NAPINANI			201.ER258-300		1		
Poz.	Objednáčí číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	k s /m
1	30.0702-023	1	KROUZEK DISTANČNÍ	SPACER RING	DISTANZRING	P2 - 40x40	1
2	30.0708-102	1	ČEP NAPINÁNÍ	TENSIONING PIVOT	SPANNUNGSBOLZEN		1
3	30.ER258-001	0	KOLO NAPINACÍ	TENSIONING WHEEL	SPANNRAD		1
4	30.ER258-002	0	DNO	BOTTOM	BODEN	P4 - 58x45	1
5	30.ER258-005	1	PŘILOŽKA	CLIP	CLIP	P4 - 42x60	1
6	30.ER258-007	2	STUPNICE	SCALE	SKALA	P1 - 41x55	1
7	30.ER258-013	0	KRYT	COVER	ABDECKUNG	P1 - 79x79	1
8	30.ER278-011	1	VEDEMÍ	GUIDE	FÜHRUNG		1
9	31.0104-006	0	HVEZDICE	STAR WHEEL	STERN	plast hvezdice M16	1
10	31.ER258-009	0	HÁČEK	HOOK	HÄKCHEN		1
11	90.004.20.026	0	SROUB STAVEČI	SET SCREW	STELLSCHRAUBE	10x14 DIN 915 cernen	1
12	90.005.55.017	0	SROUB SESTIHRANNÝ	HEX HEAD SCREW	SECHSKANTSCHRAUBE	8x30 DIN 933 8,8 Zn	1
13	90.005.55.023	0	SROUB SESTIHRANNÝ	HEX HEAD SCREW	SECHSKANTSCHRAUBE	10x20 DIN 933 8,8 Zn	1
14	90.013.57.020	0	SROUB PULKULATÝ	BUTTON HEAD SCREW	RUNDKOPFSCHRAUBE	5x6 ISO 7380 Zn s podl.	1
15	90.100.55.002	0	MATICE PRESNA ZINEK	PRECISION NUT - ZN	PRÄZISE MUTTER - ZN	4 DIN 934 8,8 Zn	2
16	90.100.55.005	0	MATICE PRESNA ZINEK	PRECISION NUT - ZN	PRÄZISE MUTTER - ZN	8 DIN 934 8,8 Zn	1
17	90.150.50.003	0	PODLOŽKA	WASHER	UNTERLEGSCHEBE	5,3 M5 DIN 125 Zn	1
18	90.151.55.004	0	PODLOŽKA VELKOPL.	LARGE WASHER	GROßFLÄCHENSCHEBE	10,5x40 ART 120 karosarska Zn	1
19	90.300.02.012	0	KOLÍK VALCOVÝ KALENÝ	CYLINDRICAL PIN HARDENED	ZYLINDERSTIFT GEHÄRTET	8x50 DIN 6325	1
20	90.350.02.002	0	PŘÍZINA TALIROVA	DISC SPRING	TELLERFEDER	35,5x18,3x2,0x2,8 DIN 2093	11
21	94.001.005	0	RUKOJET	HANDLE	GRIFF	M16 průměr 50 V403 - 64 114.090177	1
22	95.001.104	0	LOŽISKO	BEARING	LAGER	6205 2RS T1 SKF 2RS	1
23	95.200.006	0	LOŽISKO	BEARING	LAGER	NJ205 ZVL	1
24	95.750.001	0	KROUZEK KU	TEFLON BEARING	GLEITLAGER BUCHSEN	16x1,5 vnější průměr 30mm, A16KU	2
25	95.800.012	0	KROUZEK POJIST. VNEJŠÍ	EXTERNAL RETAINING RING	SICHERUNGSRING AUBEN	d25 DIN 471	1
26	95.801.009	0	KROUZEK POJIST. VNITŘNÍ	INTERNAL RETAINING RING	SICHERUNGSRING INNEN	d52 DIN 472	1

I. ZRUS. I x KULICKOVA LOŽISKO 95.001.018 A NAHR. LOŽISKEM 95.001.104. 228/ZM367 13.11.2024 SLEZACKOVA

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe;; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer;
Polotovár/Semiproduct/Halbfabrikat; Vstřípni materiál/Vstřípni materiál/Vstřípni material/Eingangsmaterial;

10.39. Chlazení / Cooling / Kühlung



NAZEV SESTAVY CHLAZENÍ	ČÍSLO SESTAVY 201.7906-200	STROJ ERG 250DGA
Konstruoval: FABER		
Datum: 04.08.2016		
Měřtko: 1:10		

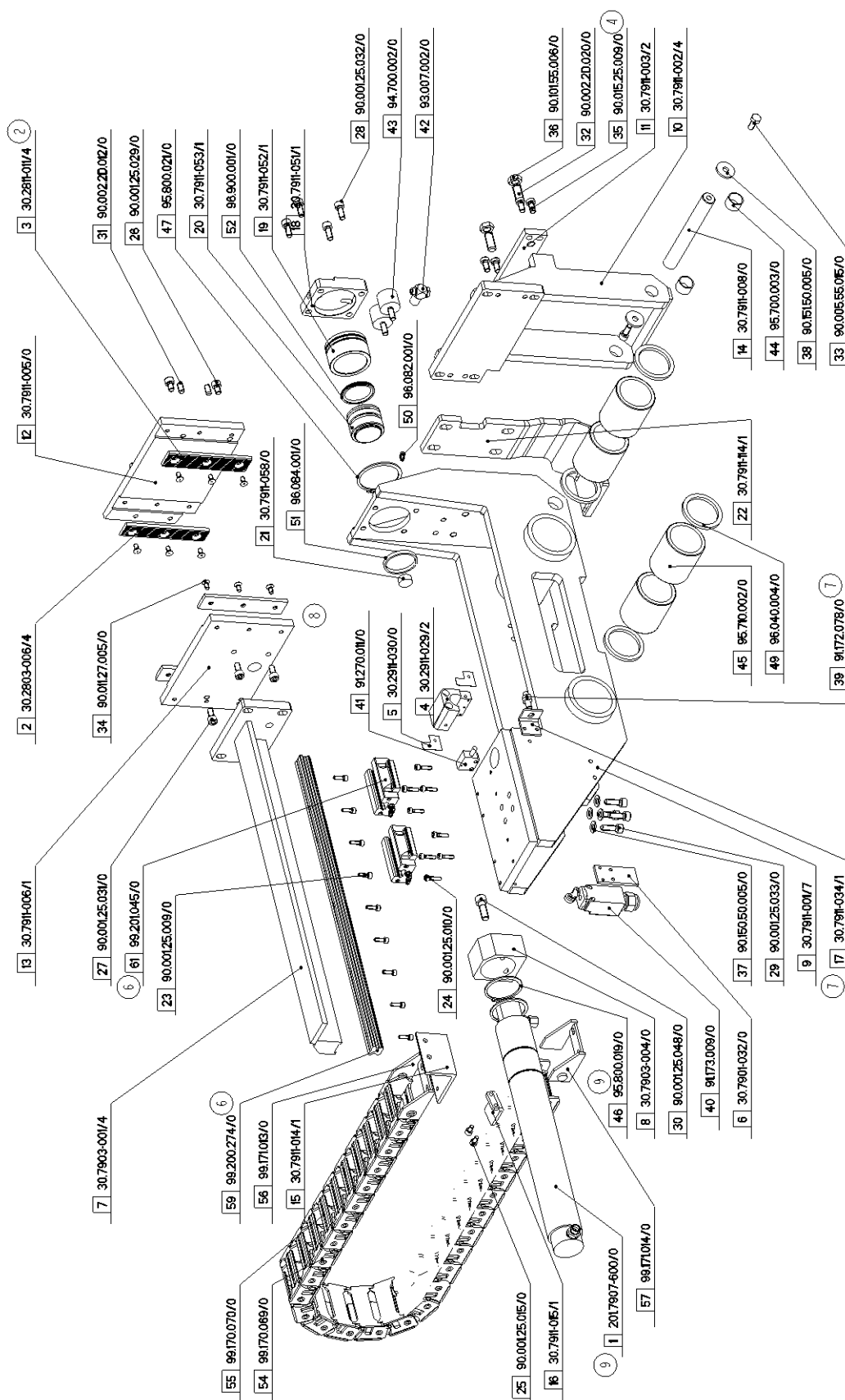
10.40. Kusovník / Piece list / Stückliste - Chlazení / Cooling / Kühlung

Číslo Sestavy 201.7906-200		Ver. 0	Název sestavy CHLAZENÍ/COOLING/KÜHLUNG	
Poz	Objednávací číslo	Ver.	Název položky	Ks
1	30.7906-203	0	VIKO / COVER / DECKEL	P2x303 1
2	30.7906-204	0	VEDENÍ / GUIDE / FÜHRUNG	P2x106 1
3	30.7906-205	0	VANA / TANK / WANNE	1
4	30.7906-302	0	VANA / TANK / WANNE	1
5	30.7914-086	0	DORAZ / STOP PIECE / ANSCHLAG	P3x74 1
6	90.001.25.092	0	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	M6x14 8
7	90.100.55.004	0	MATICE PRESNA ZINEK / PRECISION NUT - ZN / PRÄZISE MUTTER - ZN	MATICE _M6 4
8	90.163.00.012	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	NORD-LOCK 4
9	91.020.032	0	CERPADLO CHLAZENÍ / COOLING PUMP / KÜHLMITTELPUMPE	230/400V 1
10	94.202.020	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	1/2"-5 1

1.ZRUS.VANA 30.7906-301 A NAHR.30.7906-302,ZRUS.VIKO 30.7906-202 A NAHR.30.7906-203,ZRUS.VEDENÍ 30.7914-187
A NAHR.30.7906-204,ZRUS.REDUKCE 94.202.005 A NAHR.94.202.020. 001ZM241 4.8.2016 SLEZACKOVA

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

10.41. Podavač / Feeder / Vorschub



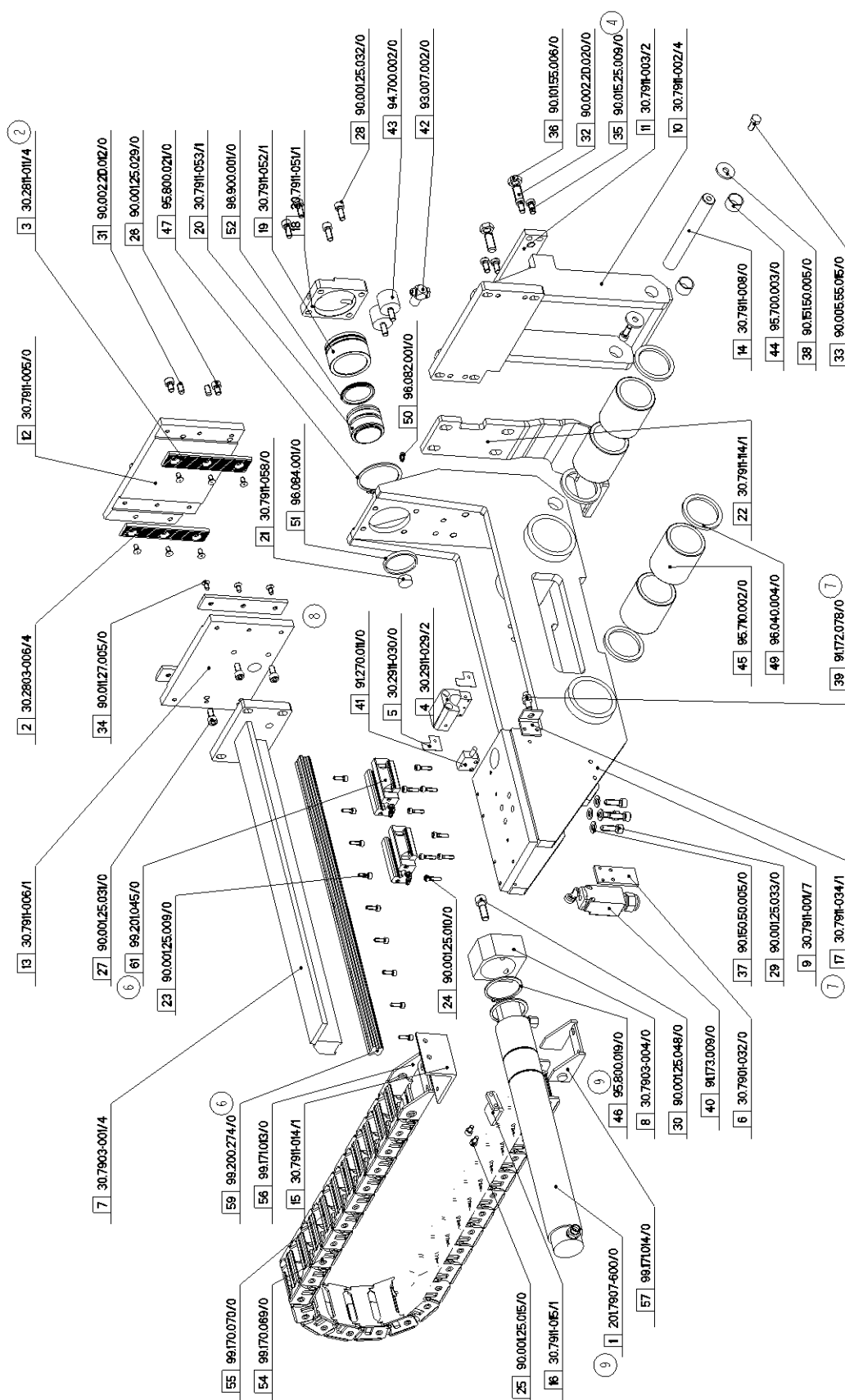
NÁZEV SESTAVY PODAVAC	Kat. 2500GA-	ČÍSLO SESTAVY 201.7911-000	Revize	9
			UPRAVIL: VJ 34	
Konstruoval:			STASTNA	
Datum:			29.08.2022	
Měřtko:			1:5	
				

10.42. Kusovník / Piece list / Stückliste - Podavač / Feeder / Vorschub

NAZEV SESTAVY		CISLO SESTAVY		REVIZE			
PODAVAC		201.7911-000		9			
Poz.	Objednáací číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	k s / m
1	201.7907-600	0	VALEC UPINACÍ	FIXING CYLINDER	SPANNZYLINDER		1
2	30.2803-006	4	LISTA CELISTI	JAW SLAT	BACKENLEISTE	HR30x6 - 134	2
3	30.2801-011	2	LISTA CELISTI	JAW SLAT	BACKENLEISTE	HR30x6 - 134	2
4	30.2911-029	2	DRZAK	HOLDER	HALTER	HR50x50 - 43	1
5	30.2911-030	0	STERAC	WIPER	ABSTREIFER		2
6	30.7901-032	0	DRZAK	HOLDER	HALTER	HR30x5 - 65	1
7	30.7903-001	4	VEDENÍ	GUIDE	FÜHRUNG		1
8	30.7903-004	0	KOSTKA	CUBE	WÜRFEL	HR60x40 - 67	1
9	30.7911-001	7	TELESO	BODY	KÖRPER		1
10	30.7911-002	4	CELIST POHYBLIVÁ	MOVING JAW	BEWEGLICHE BACKE		1
11	30.7911-003	2	PŘILOŽKA	CLIP	CLIP	HR35x10 - 162	1
12	30.7911-005	0	DESKA	BOARD	PLATTE	HR140x20 - 237	1
13	30.7911-006	1	DESKA	BOARD	PLATTE	HR140x20 - 207	1
14	30.7911-008	0	CEP	PIVOT	BOLZEN	D20 - 164	1
15	30.7911-014	1	DRZAK	HOLDER	HALTER	L75x50x5 - 74	1
16	30.7911-015	1	DORAZ	STOP PIECE	ANSCHLAG	HR30x5 - 59	1
17	30.7911-034	7	DRZAK	HOLDER	HALTER	P3 - 30x50	1
18	30.7911-051	1	VÍKO	COVER	DECKEL	HR70x20 - 82	1
19	30.7911-052	1	TRUBKA	TUBE	ROHR	TR62x6 - 39	1
20	30.7911-053	1	PIST	PISTON	KOLBEN	D50 - 42	1
21	30.7911-058	0	TVRDOKOV	HARD METAL	HM-SEGMENT	D20 - 13	1
22	30.7911-114	1	DRZAK	HOLDER	HALTER	P10 - 135x362	1
23	90.001.25.009	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	5x16 DIN 912 8,8 cerný	9
24	90.001.25.010	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	5x20 DIN 912 8,8 cerný	8
25	90.001.25.015	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	6x10 DIN 912 8,8 cerný	2
26	90.001.25.029	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x12 DIN 912 8,8 cerný	4
27	90.001.25.031	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x16 DIN 912 8,8 cerný	4
28	90.001.25.032	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x20 DIN 912 8,8 cerný	5
29	90.001.25.033	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x25 DIN 912 8,8 cerný	4
30	90.001.25.048	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	10x30 DIN 912 8,8 cerný	1
31	90.002.20.012	0	SROUB STAVECI	SET SCREW	STELLSCHRAUBE	8x16 DIN 913 45H cerný	4
32	90.002.20.020	0	SROUB STAVECI	SET SCREW	STELLSCHRAUBE	12x30 DIN 913 45H cerný	2
33	90.005.55.015	0	SROUB SESTIHRANNÝ	HEX HEAD SCREW	SECHSKANTSCHRAUBE	8x20 DIN 933 8,8 Zn	1
34	90.011.27.005	0	SROUB ZAPUSTNÝ	COUNTERSUNK SCREW	SENKSCHEIBE	6x12 DIN 7991 10,9 cerný	12

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednáací číslo/Order number/Bestellnummer; Polotovár/Semiproduct/Halbfabrikat; Vstřípní materiál/Insert material/Eingangsmaterial;

10.43. Podavač / Feeder / Vorschub



 BOMAR	NÁZEV SESTAVY PODPAVAC	Kód: 25006A- 2017911-000	Číslo sestavy 2017911-000	Revize 9
	Konstruuoval: STASTNA			Dátum: 29.08.2022
Miestnosť: 1-5			Úroveň: 02, 32	

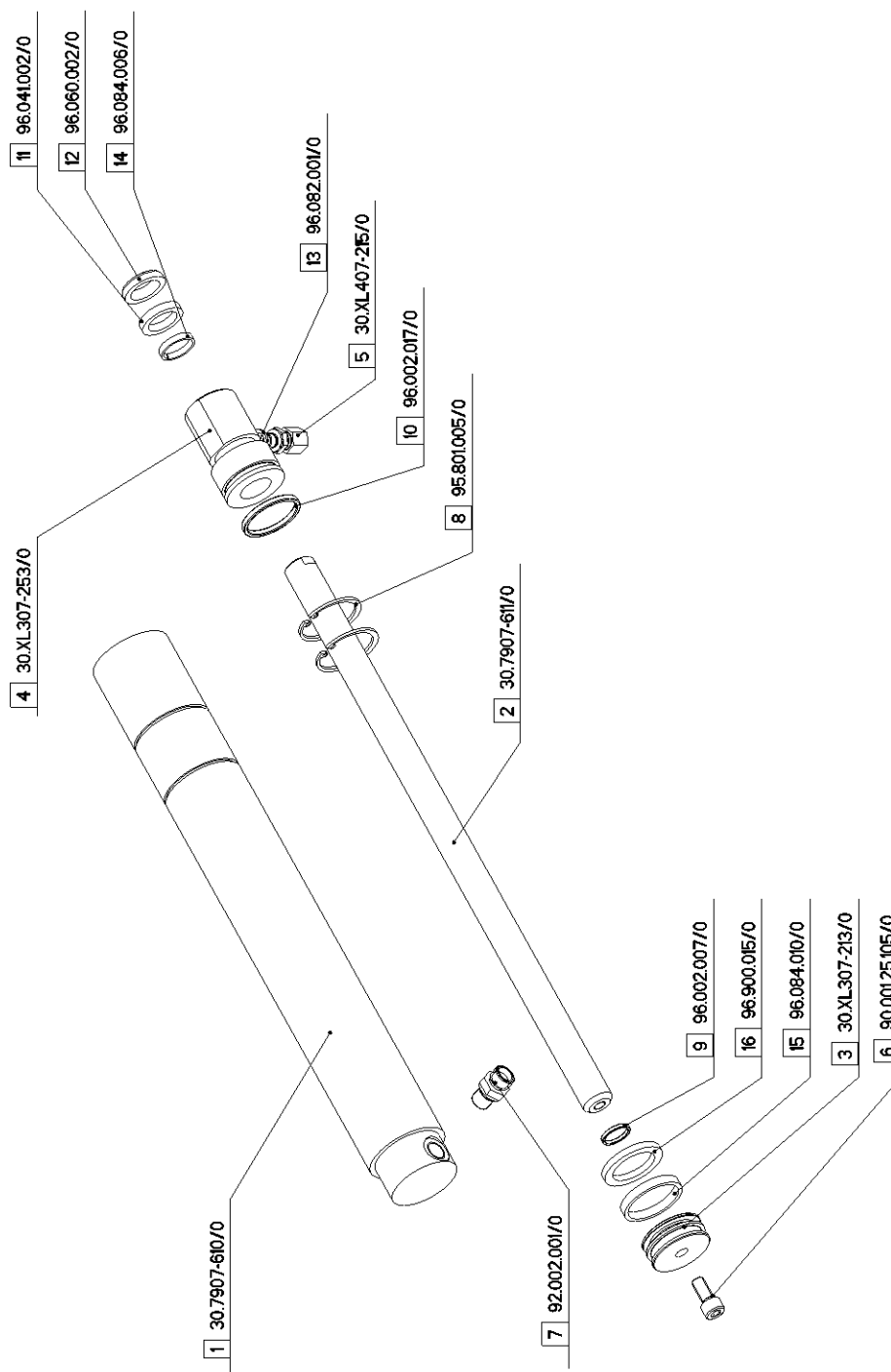
10.44. Kusovník / Piece list / Stückliste - Podavač / Feeder / Vorschub

Poz.	Objednáč číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	ks /m
35	90.015.25.009 (4)	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x16 DIN 7984, 8.8 černý	4
36	90.101.55.006	0	MATICE PRŮŽKA ZN	PRECISION THIN NUT - ZN	PRÄZISE MUTTER NIEDRIGE - ZN	12 DIN 439 Zn	2
37	90.150.50.005	0	PODLOŽKA	WASHER	UNTERLEGSCHIBE	8,4 M8 DIN 125 Zn	4
38	90.151.50.005	0	PODLOŽKA VELKOPL.	LARGE WASHER	GROßFLÄCHENSCHIBE	9x28x3 M8 DIN 440 Zn	2
39	91.172.078 (7)	0	*	null	null	IES338 indukční senzor; M8x1 / L=60mm, spín. vzdál. 3mm	1
40	91.173.009	0	SPINAC KONČS KLADK.	END SWITCH WITH PULLEY	ENDSCHALTER MIT ROLLE	PZ-FR605-M2 pro vyskak.pak- 1xNO/1xNC	1
41	91.270.011 (8)	0	SNIMAC MAGNET.	MAGNETIC SENSOR	MAGNETSENSOR	LMIX2-026-02,0-1-00 (tze jako nahr. za LMIX2-000-04,0-1-00) Lineární inkren	1
42	93.007.002	0	SROUBENI UHL.NATAC.POLYAMID	null	null	1823391103 1823391103, 1/8" - B/6 Spotřebovač zm.89-1/2015	1
43	94.700.002	0	SILENTBLOK	RUBBER BUFFER	GUMMPUFFER	silentblok 80/12 pro 250 DGA	4
44	95.700.003	0	POUZDRO	SLEEVE	BÜCHSE	20x15	3
45	95.710.002	0	POUZDRO KULICKOVÉ	BALL HOUSING	KUGELHÜLSE	50x70 KH	4
46	95.800.019 (9)	0	KROUZEK POJIST. VNEJŠÍ	EXTERNAL RETAINING RING	SICHERUNGSRING AUBEN	d52 DIN 471	2
47	95.800.021	0	KROUZEK POJIST. VNEJŠÍ	EXTERNAL RETAINING RING	SICHERUNGSRING AUBEN	d62 DIN 471	1
49	96.040.004	0	MANŽETA	CUFF	MANSCHETTE	50x62x5	4
50	96.082.001	0	KROUZEK TESNÍCI	SEALING RING	DICHTUNGSRING	10/14x15 Cu	1
51	96.084.001	0	KROUZEK VODICI	GUIDE RING	FÜHRUNGSRING	GP6500500 - T47 50,0x5,6x2,5x14,6,9	1
52	96.900.001	0	TESNENÍ KOMBINOVANE	COMBINED SEALING	KOMBIDICHTUNG	PW4/200500 - Z20N 39,0x50,0x4,2	1
54	99.170.069	0	RETEZ ENERGII	CABEL DRAG CHAIN	ENERGIEKETTE	MR-030005609500; prep.99.170.070 R-U-dil MP 3002,5 R 095 22ks ±20h	22ks ±20h
55	99.170.070	0	*	null	null	MR-03000905600 /// 22ks = 1m R-ramova prepazka DE 3002,5 /// 22ks = 1m R-ramova prepazka DE 3002,5	1
56	99.171.013	0	KONCOVKA VNEJŠÍ	OUTSIDE END	AUBERES ENDSTÜCK	MR-030000007600 6x56 KA/Z3002,5	1
57	99.171.014	0	KONCOVKA VNITŘNÍ	INSIDE END	INNERES ENDSTÜCK	MR-030000007700 26x56 KA/Z3002,5	1
59	99.200.274 (6)	0	VEDENÍ LINEARNI	LINEAR GUIDE	LINEARE FÜHRUNG	MSA20R-0540 30/30 N	1
61	99.201.045 (6)	0	VOZÍK LINEARNÍHO VEDENÍ	LINEAR GUIDE CART	LINEARFÜHRUNGSWAGEN	MSA20ESSFN	2

1. ZRUSENA SOUCAST 91.270.007 SENZOR MAGNET A NAHRAZENA 91.270.006, 356/ZMI52 16.6.2006 SLEZACKOVA
2. ZRUSENA SOUCAST 30.2803-006 LISTA CELISTI A NAHRAZENA 30.2811-011.ZMI71 24.4.2007 VINOHRADSKY
3. ZRUS. 4xSROUB M6x20(90.001.25.018) A NAHR. 4xSROUBEM M8x20(90.001.25.032, 169/ZMI77 15.6.2010 SLEZACKOVA
4. ZRUS. SROUB M8x20(90.001.25.032) A NAHR. M8x16 DIN7984 (90.015.25.009), 177/ZM259 24.9.2010 SLEZACKOVA
5. ZRUSEN SPINAC 91.172.001 A NAHR. 91.172.009, 203/ZM245 9.9.2011 SLEZACKOVA
6. ZRUS. LIN. VEDENI 99.200.047 A NAHR. 99.200.274, ZRUS. LIN. VOZIK 99.201.012 A NAHR. 99.201.045, 056/ZM078 7.3.2012 SLEZACKOVA
7. ZR. SNIMAC 91.172.009 A NAHR. 91.172.078, ZR. DRZAK 30.2114-001 A NAHR. 30.7911-034, 036/ZM043 24.01.2020 KOSYK
8. ZR. SNIMAC MAGNETICKY 91.270.006 A NAHR. 91.270.011, 110/152 27.3.2020 KOSYK
9. ZRUS. VALEC 201.7907-200 A NAHR. 201.7907-600, PRIDAN POJISTNY KROUZEK 95.800.019 (2ks), 206/ZM287 27.9.2024 HALAS

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

10.45. Válec upínací / Fixing cylinder / Spannzylinder



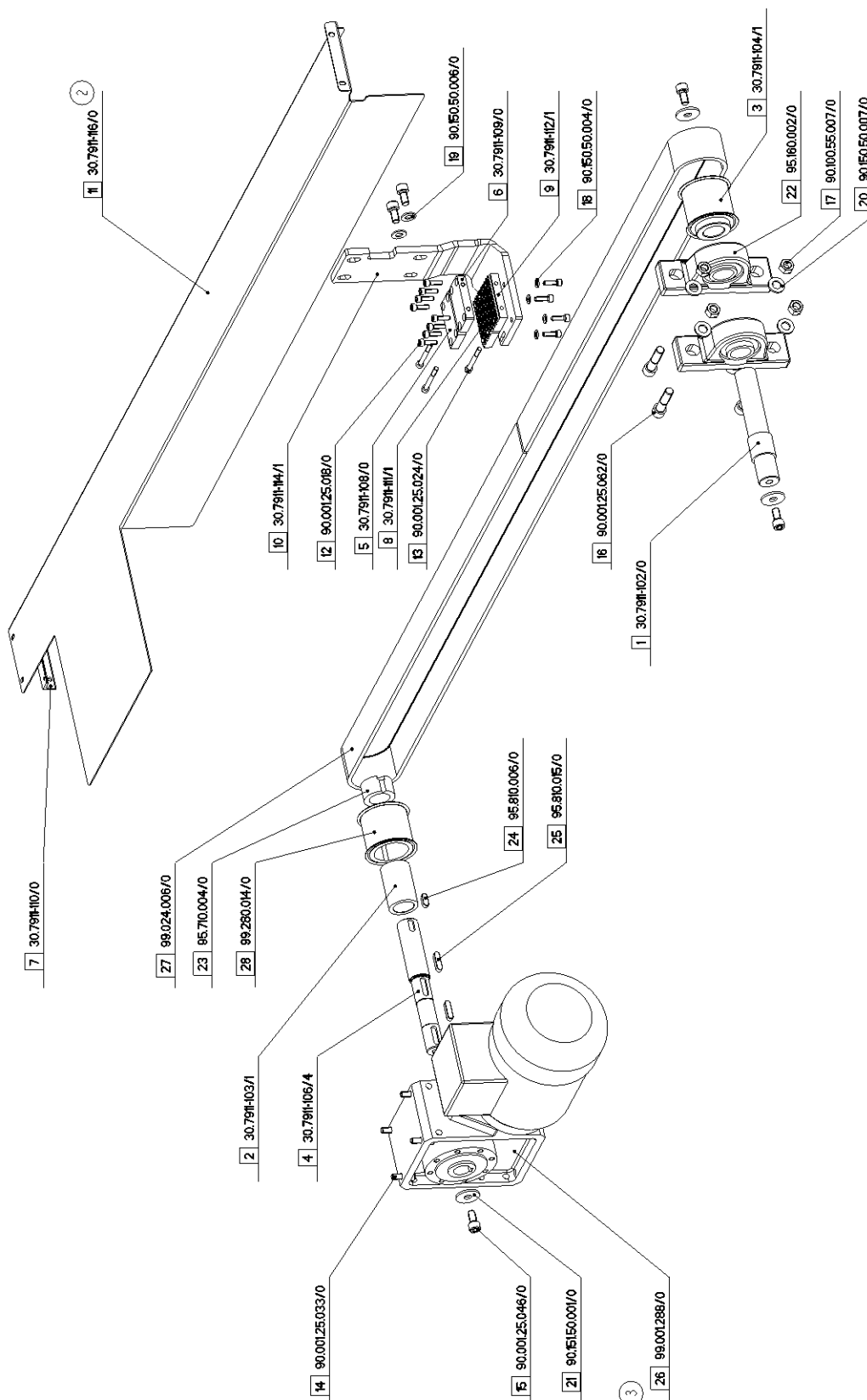
NÁZEV SESTAVY VALEC UPINACI	Kat. PROL.280.350-	ČÍSLO SESTAVY 201.7907-600	Revize 0
		HALAS	Verze 1/2 1/1
		Datum: 27.09.2024	
		Měřtko: 2:5	

10.46. Kusovník / Piece list / Stückliste -
Válec svěráku / Vice cylinder / Schraubstockzylinder

NAZEV SESTAVY VALEC UPINACI			CISLO SESTAVY 201.7907-600	REVIZE 0			
Poz.	Objednací číslo	Verze	Název CZ	Name EN	Name DE	Polotovar	k.s./m
1	30.7907-610	0	VALEC UPINACI	FIXING CYLINDER	SPANNZYLINDER		1
2	30.7907-611	0	PISTNICE	PISTON ROD	KOLBENSTANGE	D20 - 422	1
3	30.XL307-213	0	PIST	PISTON	KOLBEN	D45 - 17	1
4	30.XL307-253	0	VINKO	COVER	DECKEL	D45 - 66	1
5	30.XL407-215	0	SROUBENI	TUBE FITTING	VERSCHRAUBUNG		1
6	90.001.25.105	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x18 DIN 912 8,8 černý	1
7	92.002.001	0	SROUBENI PRIME	TUBE FITTING - STRAIGHT	GERADE VERSCHRAUBUNG	GES 08LR WD (změna na WD od 1_2019) 1/4" - 14x1,5 tělo+tesnění	1
8	95.801.005	0	KROUZEK POJIST. VNITRNI	INTERNAL RETAINING RING	SICHERUNGSRING INNEN	d40 DIN 472	2
9	96.002.007	0	O-KROUZEK DYNAMICKY	O-RING DYNAMIC	O-RING DYNAMISCH	16x2 NBR 70Sh 16x2 NBR 70Sh	1
10	96.002.017	0	O-KROUZEK DYNAMICKY	O-RING DYNAMIC	O-RING DYNAMISCH	34x3 NBR 70 leskle material HH0176880	1
11	96.041.002	0	MANŽETA	CUFF	MANSCHE	20x28x5 UN	1
12	96.060.002	0	KROUZEK STIRACI	WIPER RING	ABSTREIFRING	TK 20x28	1
13	96.082.001	0	KROUZEK TESNICI	SEALING RING	DICHTUNGSRING	10/14x15 Cu	1
14	96.084.006	0	KROUZEK VODICI	GUIDE RING	FÜHRUNGSRING	GR4300280 - T47 28,0x3,9x155x94,1	1
15	96.084.010	0	KROUZEK VODICI	GUIDE RING	FÜHRUNGSRING	GP6500400 - T47 40,0x5,5x2,5x115,8	1
16	96.900.015	0	TESNENI KOMBINOVA NE	COMBINED SEALING	KOMBIDICHTUNG	PT0200400-T46N 29x40x40,2	1

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Versio/Versio; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Poziice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Polotovar/Semiproduct/Halbfabrikat; Vstupní materiál/Entrance material; Poz.-Poziice/Position/Position; Objednáč. číslo/Order number/Bestellnummer;

10.47. Pohon/ Drive/ Antrieb



NÁZEV SESTAVY POHON	Kód: ERGONOMIE ZSE DÁŘELO SESTAVY 201.7911-100	Revize 3
Konstruoval:	STASTNA	Datum: 29.08.2022
Měřitko:	1:5	

10.48. Kusovník / Piece list / Stückliste - Pohon/ Drive/ Antrieb

NAZEV SESTAVY POHON		CISLO SESTAVY 201.7911-100		REVIZE 3			
Poz.	Objednáč. číslo	Verze	Název CZ	Name EN	Name DE	Polotovar	k.s./m
1	30.7911-102	0	HRDEL	SHAFT	WELLE	D35 - 182	1
2	30.7911-103	1	KROUZEK DISTANČNÍ	SPACER RING	DISTANZRING	TR42x8 - 67	1
3	30.7911-104	1	REHENCE	PULLEY	RIEMENSCHIEBE		1
4	30.7911-106	4	HRDEL	SHAFT	WELLE	D32 - 212	1
5	30.7911-108	0	DESKA	BOARD	PLATTE	HR40x12 - 72	1
6	30.7911-109	0	DESKA	BOARD	PLATTE	HR40x12 - 72	1
7	30.7911-110	0	LISTA	SLAT	LEISTE	L20x20x3 - 90	1
8	30.7911-111	1	DESKA	BOARD	PLATTE	HR40x15 - 72	1
9	30.7911-112	1	DESKA	BOARD	PLATTE	HR40x15 - 72	1
10	30.7911-114	1	DRZAK	HOLDER	HALTER	P10 - 135x362	1
11	30.7911-116 (2)	0	KRYTÍ RAHENE	ARM COVER	RAHMENABDECKUNG	P15 - 375x1744	1
12	90.001.25.018	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	6x20 DIN 912 8,8 černý	12
13	90.001.25.024	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	6x55 DIN 912 8,8 černý	4
14	90.001.25.033	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x25 DIN 912 8,8 černý	4
15	90.001.25.046	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	10x20 DIN 912 8,8 černý	7
16	90.001.25.062	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	12x50 DIN 912 8,8 černý	4
17	90.100.55.007	0	MATICE PRESNA ZINEK	PRECISION NUT - ZN	PRÄZISE MUTTER - ZN	12 DIN 934 8,8 Zn	4
18	90.150.50.004	0	PODLOŽKA	WASHER	UNTERLEGSCHIEBE	6,4 M6 DIN 125 Zn	4
19	90.150.50.006	0	PODLOŽKA	WASHER	UNTERLEGSCHIEBE	10,5 M10 DIN 125 Zn	4
20	90.150.50.007	0	PODLOŽKA	WASHER	UNTERLEGSCHIEBE	13 M12 DIN 125 Zn	4
21	90.151.50.001	0	PODLOŽKA VELKOPL.	LARGE WASHER	GROßFLÄCHENSCHIEBE	11x34x3 M10 DIN 440 Zn	3
22	95.160.002	0	LOŽISKO	BEARING	LAGER	206 T3 UCP bez maznice.sede	2
23	95.710.004	0	POUZDRO	SLEEVE	BÜCHSE	Taper lock 1210F 30 MAGYS	1
24	95.810.006	0	PERO TESNE	FEATHER KEY	PASSFEDER	8x7x20 DIN 6885	1
25	95.810.015	0	PERO TESNE	FEATHER KEY	PASSFEDER	8x7x30 DIN 6885	2
26	99.001.288 (3)	0	PREVODOVKA SNEKOVA	WORM GEAR GEARBOX	SCHNECKENGETRIEBE	FCN075-20-1-90B4-35MM-V5_mineral oil Economic grade_bronze 0A9-4_Chir	
27	99.024.006	0	REHEN OZUBENÝ	COG BELT	ZAHNRIEMEN	HTD 8M-50 metraz_vždy nasobek 4 m	1
28	99.280.014	0	REHENCE	PULLEY	RIEMENSCHIEBE	28-8M-50F HTD Taper Lock	1

1. VYMENA PREVODOVKY SNEKOVE W63 U P80 B14 1-15 NAHRAZENA W63 U 19 P80 B14 V5 PV 91.001.030, 222/ZM029 5.4.2006 SLEZACKOVA
2. ZRUSENY KRYTY 30.7911-119, 30.7911-115, KARTACEK 49.250.004, NOVY KRYT 30.7911-116, 104/ZM062 25.3.2008 KRPEC
3. ZRUS. PREVODOVKA 99.001.030 A NAHR. 99.001.288, 158/ZM198 27.8.2025 SLEZACKOVA

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Polotovar/Semiproduct/Halbfabrikat; Vstupní materiál/Input material/Eingangsmaterial;

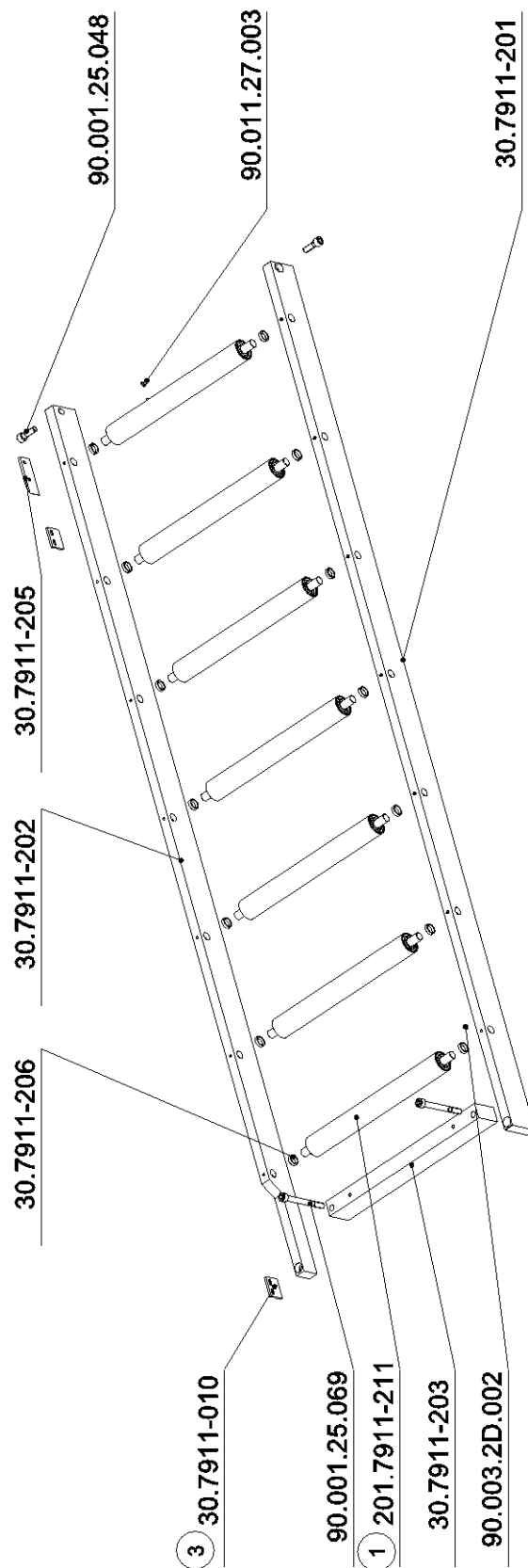
10.49. Trať / Track / Bahn

NAZEV SESTAVY		CISLO SESTAVY		VERZE		Datum: 29. 04.2020		KS/ST		STROJ	
TRAT		201.7911-200		0		Zhotovitel: HAJEK				250DGA	
číslo výkresu	ver.	název položky	rozměr	delka	mat. vych.	mat. kon.	pov. upr.	ks	pozdice sklad	povod	Poznamka
201.7911-211	1	VALEC						2.0	7	250DGA	
30.7911-010	3	DORAZ	HR 30x4	40	40.040.01.75	11373		0.0	2	250DGA	
30.7911-201	0	LISTA	HR 60x20	1787	40.160.01.26	11373		16.5	1	250DGA	
30.7911-202	0	LISTA	HR 60x20	1787	40.160.01.26	11373		15.9	1	ERG.250DGA	
30.7911-203	0	TYC	TYC 50x30	390	40.160.01.24	-11373	CERNIT	4.5	1	250DGA	
30.7911-205	0	LISTA	HR 25x5	75	40.160.01.04	-11373	CERNIT	0.1	1	250DGA	
30.7911-206	0	PODLOŽKA	TR 20x2	5	40.120.01.44	11373	CERNIT	0.0	14	250DGA	
90.001.25.048	0	SROUB IMBUS	M10X30		DIN 912 8,8			0.0	2	V05 -	
90.001.25.069	0	SROUB IMBUS	M10X100		DIN 912 8,8			0.1	2	V05 -	
90.003.2D.002	0	SROUB STAVECI	SROUB M5X10					0.0	7		
90.011.27.003	0	SROUB ZAPUSTNY	SROUB M5X10					0.0	2		

1 ZRUSENO VIKO VALECKU 31.131.502. TRUBKA 30.1313.501. NAHRAZENO VALEC 201.7911-211 037ZM062 5.3.2008 KRPEC

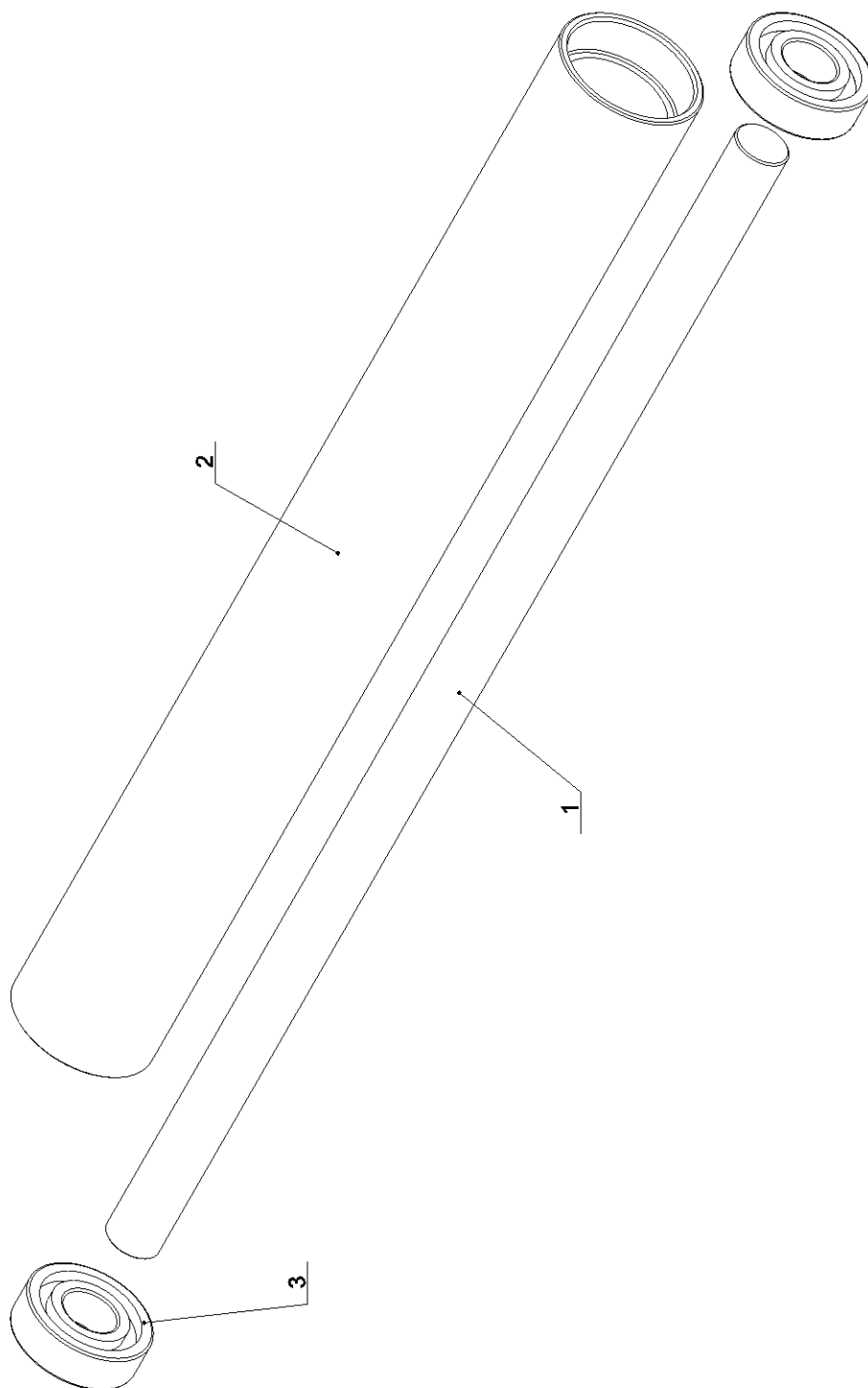
2 PRIDANA SOUCAST 30.6711-347 ODMEROVACI LISTA /ZM 22.7.2008 KRPEC

3 ZRUS:LISTA 30.6711-347 A NAHRAZENA DORAZEM 30.7911-010. 17/1ZM176 14.6.2010 SLEZACKOVA



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

10.50. Válec / Roller / Zylinder



NAZEV/SESTAVY VALEC	CÍSLO SESTAVY 201.7911-211	STROJ 250DGA
Konstruoval: KRPEC		
Datum: 06.05.2015		
Měřitko: 1:1		

10.51. Kusovník / Piece list / Stückliste - Válec / Roller / Zylinder

Číslo Sestavy 201.7911-211		Ver. 0	Název sestavy VALEC/CYLINDER/ZYLINDER	
Poz	Objednávací číslo	Ver.	Název položky	Ks
1	30.7911-204	0	CEP / PIVOT / BOLZEN	1
2	30.7911-212	0	HRIDEL / SHAFT / WELLE	1
3	95.001.015	0	LOŽISKO / BEARING / LAGER	2

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

10.52. Závora optická / Optical gate / Lichtschränke

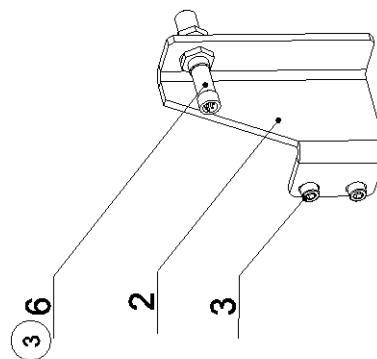
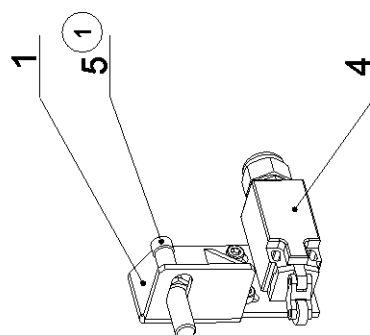
Číslo Sestavy 201.7911-310		Ver. 0	Název sestavy ZAVORA OPTICKA/OPTICAL GATE/LICHTSCHRANKE	
Poz.	Objednávací číslo	Ver.	Název položky	Ks
1	30.7911-311	0	DRŽÁK / HOLDER / HALTER	1
2	30.7911-312	0	DRŽÁK / HOLDER / HALTER	1
3	90.001.25.015	0	ŠROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	4
4	91.173.009	0	SPÍNACÍ KONG. S KŁADK. / END SWITCH WITH PULLEY / ENDSCHALTER MIT ROLLE	1
5	91.400.018 (1)	0	SNIMAC OPTOELEKTR. / OPTOELECTRIC SENSOR / OPTOELEKTRONISCHER SENSOR	1
6	91.400.055 (3)	0	SNIMAC OPTOELEKTR. / OPTOELECTRIC SENSOR / OPTOELEKTRONISCHER SENSOR	1

1.ZRUS.SNIMAC 91.400.002 A NAHR. SNIMACEM 91.400.017, ZRUS.SNIMAC 91.400.001 A NAHR.SNIMACEM 91.400.018.

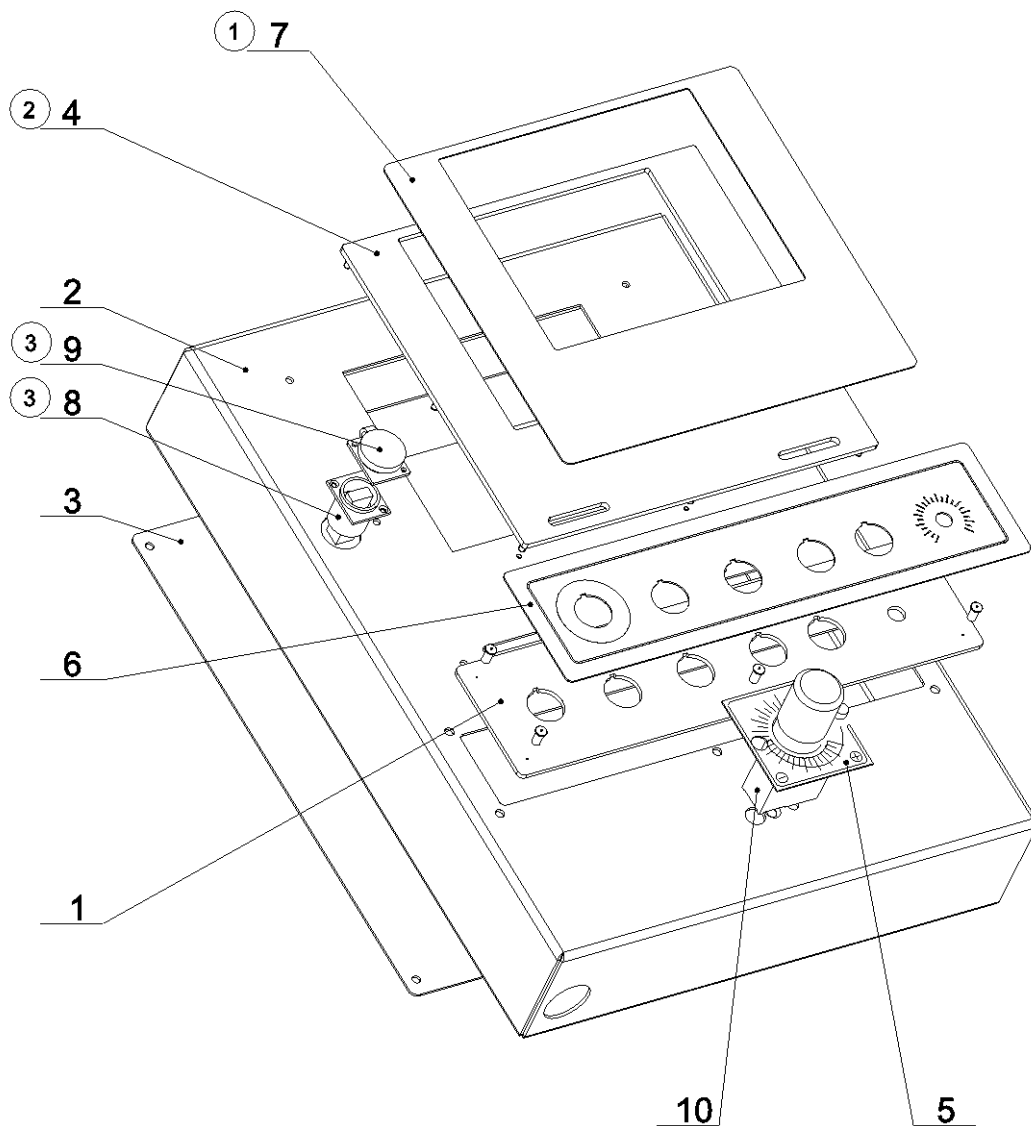
058/ZM079 19.3.2009 SLEZACKOVA

2.DOPLNENÍ PREKLADU PRO NAVOD. 292/ZM306 8.11.2010 SLEZACKOVA

3.ZRUSEN SNIMAC 91.400.017 A NAHR.91.400.055. 133/ZM129 11.6.2015 SLEZACKOVA



10.53. Ovladací panel / Control panel / Bedienpult



NAZEV SESTAVY OVLADACÍ PANEL	CÍSLO SESTAVY 201.7913-100	STROJ 250DGA
	Konstruoval: KRPEC	
	Datum: 24. 04.2019	
	Meritko: 3:10	

10.54. Kusovník / Piece list / Stückliste -
Ovladací panel / Control panel / Bedienpult

Číslo Sestavy 201.7913-100		Ver. 0	Název sestavy OVLADACÍ PANEL/CONTROL PANEL/BEDIENPULT	
Poz	Objednávací číslo	Ver.	Název položky	Ks
1	30.7913-008	0	DESKA / BOARD / PLATTE	1
2	30.7913-101	0	SKRIN / BOX / KASTEN	1
3	30.7913-102	0	KRYT / COVER / ABDECKUNG	1
4	30.W330-158	0	OVLADACÍ PANEL / CONTROL PANEL / BEDIENPULT	1
5	31.0699-003	0	STÍTEK / LABEL / SCHILD	1
6	31.7913-002	0	SAMOLEPKA / STICKER / AUFKLEBER	1
7	31.W330-155	0	KLAVESNICE FOLIOVA / null / null	1
8	91.141.110	0	KONEKTOR / CONNECTOR / STECKVERBINDER	1
9	91.141.111	0	KONEKTOR / CONNECTOR / STECKVERBINDER	1
10	92.152.001	0	VENTIL SKRTICI / CHOKE VALVE / DROSSELVENTIL	1

1.ZRUS.PANEL 30.7913-007 A NAHR.30.W330-152,ZRUS.SAMOLEPKA 31.7913-001 A NAHR.31.W330-155. 036/ZM064 7.3.2016 SLEZACKOVA

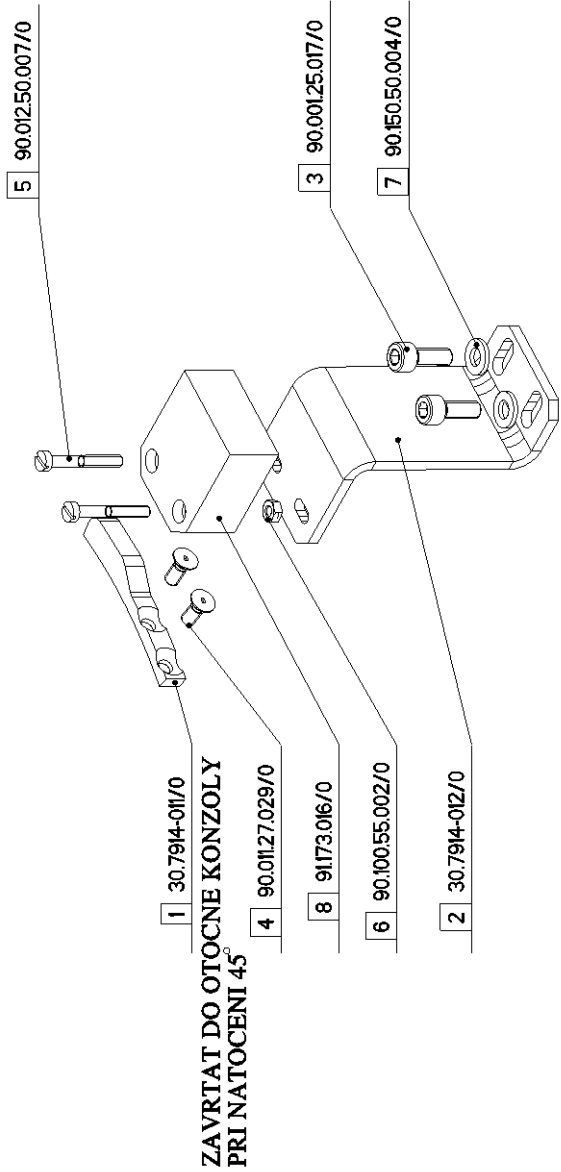
2.ZRUSEN PANEL 30.W330-152 A NAHRAZENO 30.W330-158. 032/ZM037 3.2.2017 SLEZACKOVA

3.PRID. KONEKTOR 91.141.110 A 91.141.111. 119/ZM167 24.4.2019 SZABARI

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

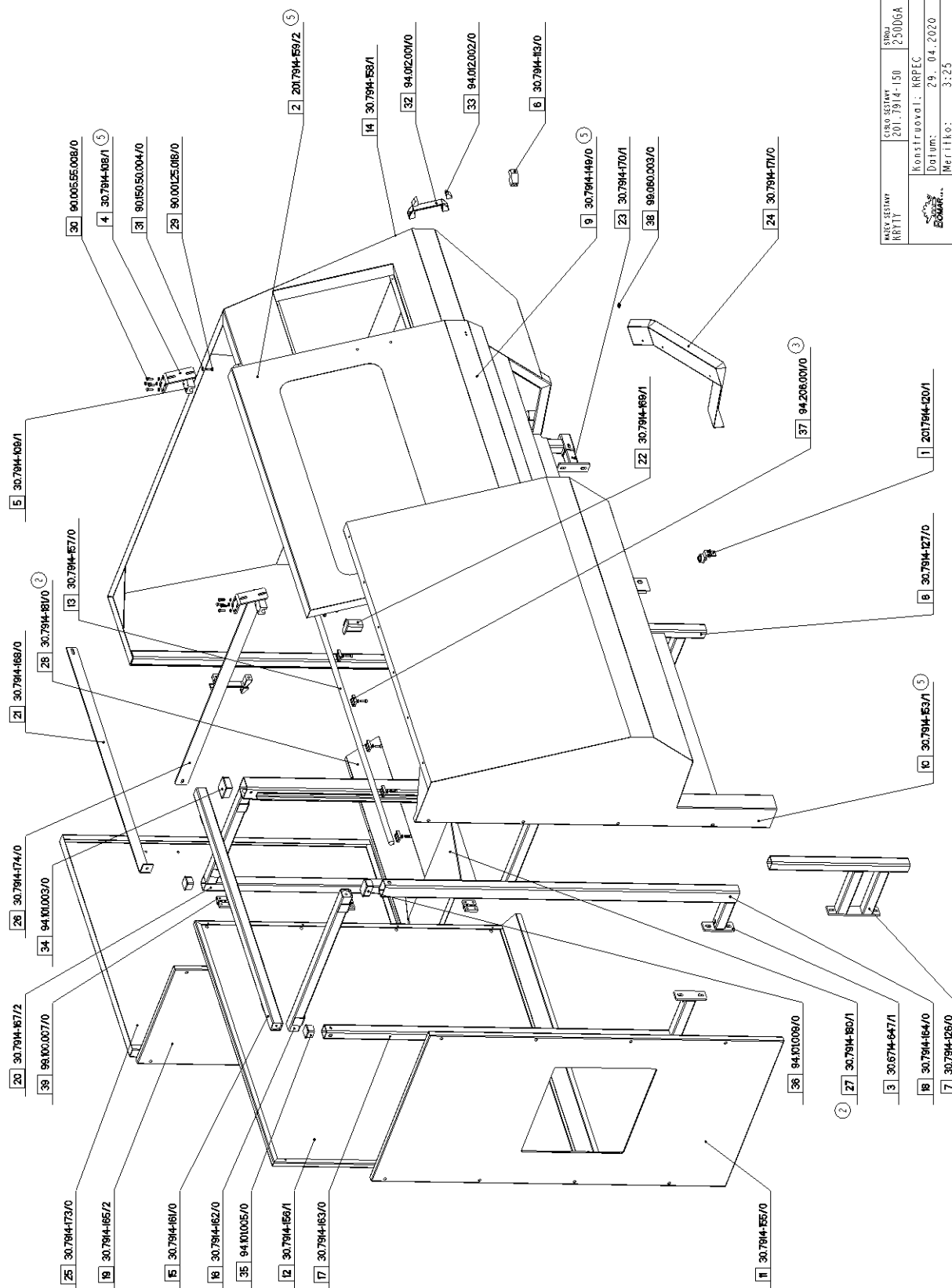
10.55. Snímač / Sensor / Sensor

NÁZEV SESTAVY		ČÍSLO SESTAVY		REVIZE	Kategorie: ERGONOMIC 258 DGANC-		BOMAR		
SNIMAC		201.7914-010		0	Datum: 23.11.2022		Konstruktér: SOCHOR		
		List/Laň 1/0		0.3					
pos.	číslo výkresu	verze	množství	název	polotovár	jakost	pov.úpr.	váha	poznámka
1	30.7914-011	0	1	DRŽÁK	P8 - 23x71 4.0.0010133	S235	KOM 7015	0.0	
2	30.7914-012	0	1	DRŽÁK	P4 - 45x132 4.0.0010128	S235	KOM 7015	0.2	
3	90.00125.017	0	2	SRÓUB IMBUS	6x16 DIN 912 8.8 černý			0.0	
4	90.01127.029	0	2	SRÓUB ZAPUSTNÝ	5x12 DIN 7991 10.9 černý			0.0	
5	90.01250.007	0	2	SRÓUB VALCOVÝ	4x30 DIN 84 Zn			0.0	
6	90.10055.002	0	2	MATICE PŘESNA ZINEK	4 DIN 934 8.8 Zn			0.0	
7	90.15050.004	0	2	PODLOŽKA	6,4 M6 DIN 125 Zn			0.0	
8	91.173.016	0	1	SPINÁK KONCOVÝ	BNS 819 - 99 - D - 13-580 Konecový spináč - INO, mzkovy	PŘESNAK 250VAC		0.3	
INDEX ZMĚNA				DATUM					
				PODPIS					



Číslo Sestavy/Number of assembly/Nummer der Baugruppe: Verze [Ver.] /Version/Version: Název sestavy/Assembly name/Name der Baugruppe: Datum/Date/Datum: Konstruktor/Designer/Konstrukteur: Číslo výkresu/Drawing number/Zeichnung number: Název/Name/Name: Polotovár/Semiproduct/Halbfabrikat: Vstupní materiál/Input material/Eingangsmaterial: Jakost/Norm/Norm: Pov. úpr./Surface finish/Oberflächenbere: váha/Weight/Gewicht: Poznámka/Note/Notiz

10.56. Kryty / Covers / Abdeckungen



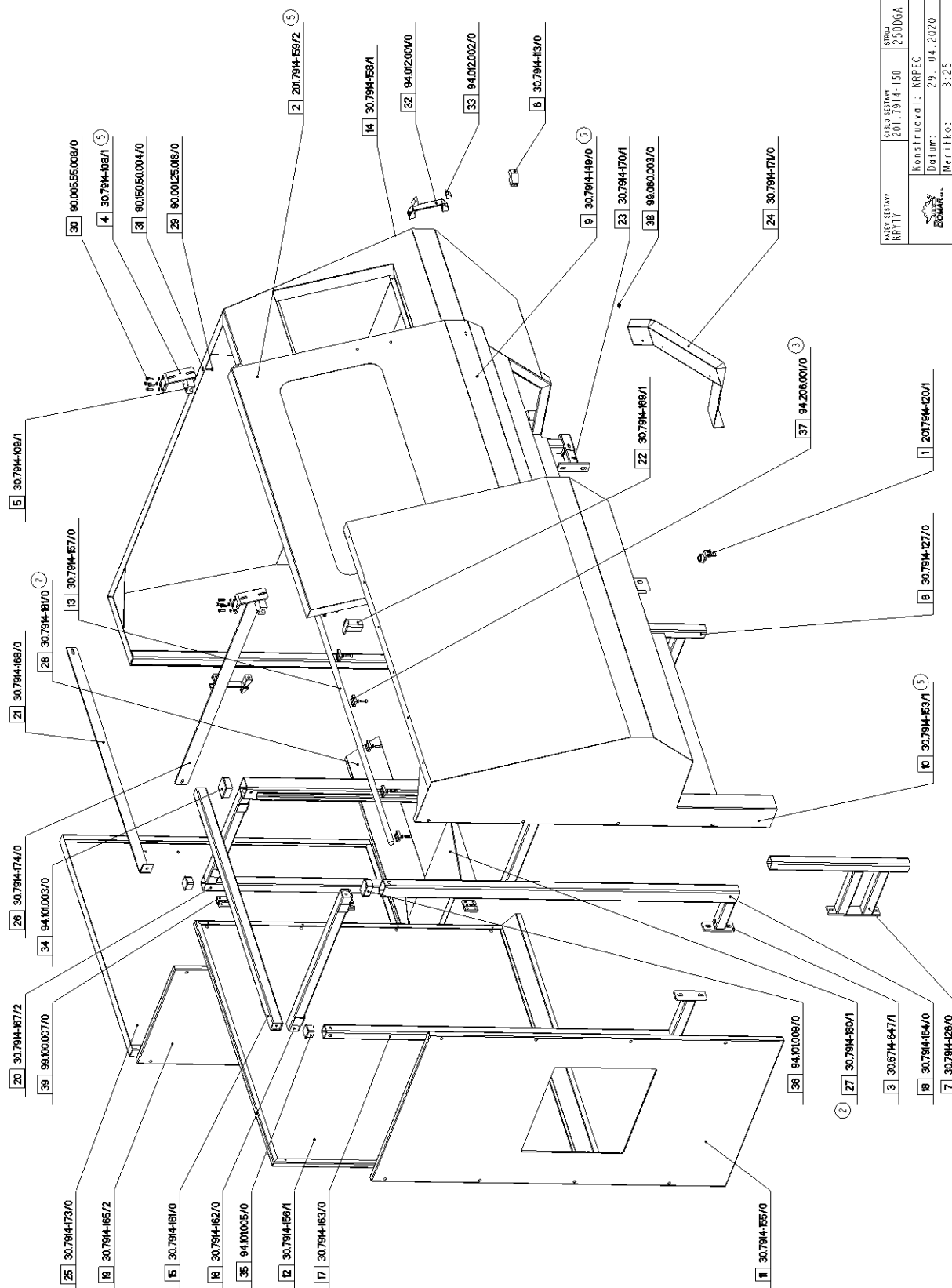
KRYT	201.7914-150	25006A
KRYT	201.7914-150	25006A
Konstruoval:	KRPEC	
Datum:	29. 04. 2020	
Meritko:	3:25	

10.57. Kusovník / Piece list / Stückliste - Kryty / Covers / Abdeckungen

NAZEV SESTAVY			CISLO SESTAVY		REVIZE			
KRYTY			201.7914-150		5			
Poz.	Objednáč. číslo	Verze	Název CZ	Name EN	Name DE	Polotovár	ks / m	
1	201.7914-120	1	KLADKA	PULLEY	ROLLE		2	
2	201.7914-159 (5)	2	DVERE	DOOR	TÜR		1	
3	30.6714-647	1	DRZAK	HOLDER	HALTER		3	
4	30.7914-108 (5)	1	DRZAK	HOLDER	HALTER		2	
5	30.7914-109	1	KOSTKA	CUBE	WÜRFEL	P5 - 50x161	2	
6	30.7914-113	0	KOSTKA	CUBE	WÜRFEL		1	
7	30.7914-126	0	KONZOLA	BRACKET	KONSOLE		1	
8	30.7914-127	0	KONZOLA	BRACKET	KONSOLE		1	
9	30.7914-149	0	OKAP	DRAIN PLATE	ABLAUFPLATTE		1	
10	30.7914-153 (3)	1	KRYT	COVER	ABDECKUNG		1	
11	30.7914-155	0	KRYT	COVER	ABDECKUNG		1	
12	30.7914-156	1	KRYT	COVER	ABDECKUNG	-Chybné parametry pro polotovár '4.0.001.01.02' typu 'P'-s	1	
13	30.7914-157	0	TYC VODICI	LEAD POLE	FÜHRUNGSTANGE	D20 - 2365	1	
14	30.7914-158 (5)	1	KRYT	COVER	ABDECKUNG		1	
15	30.7914-161	0	DRZAK	HOLDER	HALTER		1	
16	30.7914-162	0	DRZAK	HOLDER	HALTER		1	
17	30.7914-163	0	NOHA	LEG	STÄNDER		1	
18	30.7914-164	0	NOHA	LEG	STÄNDER		1	
19	30.7914-165	2	KRYT	COVER	ABDECKUNG	-Chybné parametry pro polotovár '4.0.001.01.02' typu 'P'-s	1	
20	30.7914-167	2	NOHA	LEG	STÄNDER		1	
21	30.7914-168	0	VZPERA	PROP	STREBE	HR40x5 - 1160.4	1	
22	30.7914-169	1	PODPERA	SUPPORT	STÜTZE		1	
23	30.7914-170	1	DRZAK	HOLDER	HALTER		2	
24	30.7914-171	0	KRYT	COVER	ABDECKUNG		1	
25	30.7914-173	0	DVERE	DOOR	TÜR	-Chybné parametry pro polotovár '4.0.001.01.02' typu 'P'-s	1	
26	30.7914-174	0	TYC	POLE	STANGE	HR50x6 - 1030	1	
27	30.7914-180	1	KRYT	COVER	ABDECKUNG	-Chybné parametry pro polotovár '4.0.001.01.02' typu 'P'-s	1	
28	30.7914-181 (2)	0	KRYT	COVER	ABDECKUNG	-Chybné parametry pro polotovár '4.0.001.01.02' typu 'P'-s	1	
29	90.00125.018 (2)	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	6x20 DIN 912 8,8 černěný	7	
30	90.00555.008	0	SROUB 6HRANNY	HEX HEAD SCREW	SECHSKANTSCHRAUBE	6x20 DIN 933 8,8 Zn	8	
31	90.150.50.004	0	PODLOZKA	WASHER	UNTERLESCHEIBE	6,4 M6 DIN 125 Zn	15	
32	94.012.001	0	RUKOJET	HANDLE	GRIF	503-043-151x42 možno s 2kryt 94.012.002	2	
33	94.012.002	0	KRYT	COVER	ABDECKUNG	krytka k 94.012.001 503-043-151	4	
34	94.101.003	0	ZATKA	PLUGBLIND PLUG	BLINDSTOPFEN	60x60x15-35 056-068 černá	1	

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Position/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Polotovár/Semiproduct/Halbfabrikat; Vstupní materiál/Input material/Eingangsmaterial;

10.58. Kryty / Covers / Abdeckungen



KRYT	201.7914-150	25006A
KRYT	201.7914-150	25006A
Konstruoval:	KRPEC	
Datum:	29. 04. 2020	
Meritko:	3:25	

10.59. Kusovník / Piece list / Stückliste - Kryty / Covers / Abdeckungen

Poz.	Objednáací číslo	Verze	Název CZ	Name EN	Name DE	Položkový	k.s./m
35	94.101.005	0	ZATKA	PLUGBLIND PLUG	BLINDSTOPFEN	40x40x3 056-034 černá	2
36	94.101.009	0	ZATKA	PLUGBLIND PLUG	BLINDSTOPFEN	60x40x3 057-068 černá	1
37	94.206.001 (3)	0	KLUZAK	GLIDER	GLEITER	sedlový 58FC2225-B	7
38	99.060.003	0	MAGNET	MAGNET	MAGNET	18x3 205687530011	2
39	99.100.007	0	PANT	HINGE	TÜRBAND	800055 50x50 s průchozí dírou	3

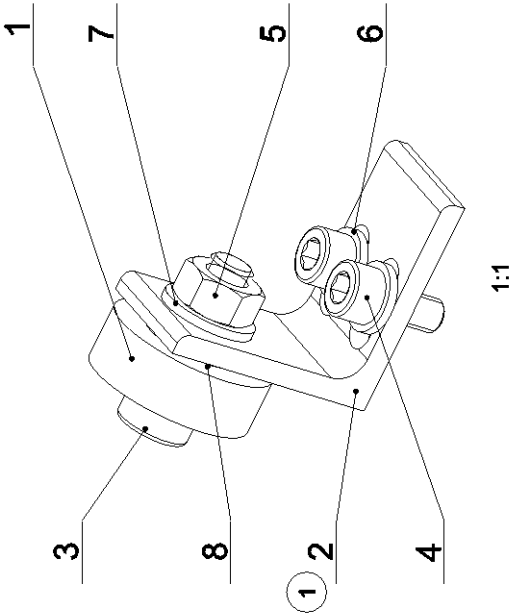
1. ZRUSENY DVERE 30.7914-152 A NAHRAZENY 201.7914-159, 168/ZMI60 21.5.2008 SLEZACKOVA
2. PRIDANY KRYTY 30.7914-180, 30.7914-181, 002/ZM003 6.1.2010 SLEZACKOVA
3. ZRUSENA SOUC. 30.7914-117 A NAHRAZENA 94.206.001, 211/ZMI94 22.6.2010 SLEZACKOVA
4. UPRAVA KONZOLY 30.7914-126, 30.7914-127, 291/ZM308 9.11.2010 SLEZACKOVA
5. UP. DVERE 201.7914-159 ; KRYT 30.7914-158 , 30.7914-153 ; DRZAK 30.7914-108, 198/ZM207 25.9.2023 SLEZACKOVA

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Versio/Versio; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Poze/Position/Position; Objednáací číslo/Order number/Bestellnummer;
Položkový/Semiproduct/Halbfabrikat; Vstupní materiál/Entrance material;

10.60. Kladka / Pulley / Rolle

Číslo Sestavy 201.7914-120		Ver. 0	Název sestavy KLADKA/PULLEY/ROLLE		
Poz	Objednací číslo	Ver.	Název položky	Rozměr	Ks
1	30.7914-122	0	KLADKA / PULLEY / ROLLE	TYC 30-1000 černá	1
2	30.7914-123	1	DRŽÁK / HOLDER / HALTER	PROFIL 40x40x4	1
3	90.001.25.033	0	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	8x25	1
4	90.001.25.092	0	SROUB IMBUS / HEXAGON SOCKET SCREW / IMBUSSCHRAUBE	M8x14	2
5	90.100.55.005	0	MATICE PŘESNÁ ZINEK / PRECISION NUT - ZN / PRÄZISE MUTTER - ZN	MATICE _M8	1
6	90.160.50.004	0	PODLOŽKA / WASHER / UNTERLEGSCHIBE	PODLOŽKA 6,4	2
7	90.160.50.005	0	PODLOŽKA / WASHER / UNTERLEGSCHIBE	PODLOŽKA 8,4	3
8	95.001.001	0	LOŽISKO / BEARING / LAGER	608 2RS	1

1 ZRUSENA SOUCAST 7914-121, NAHRAZENO 7914-123 254IZM186 5.6.2008 KRPEC



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

10.61. Dveře / Door / Tür

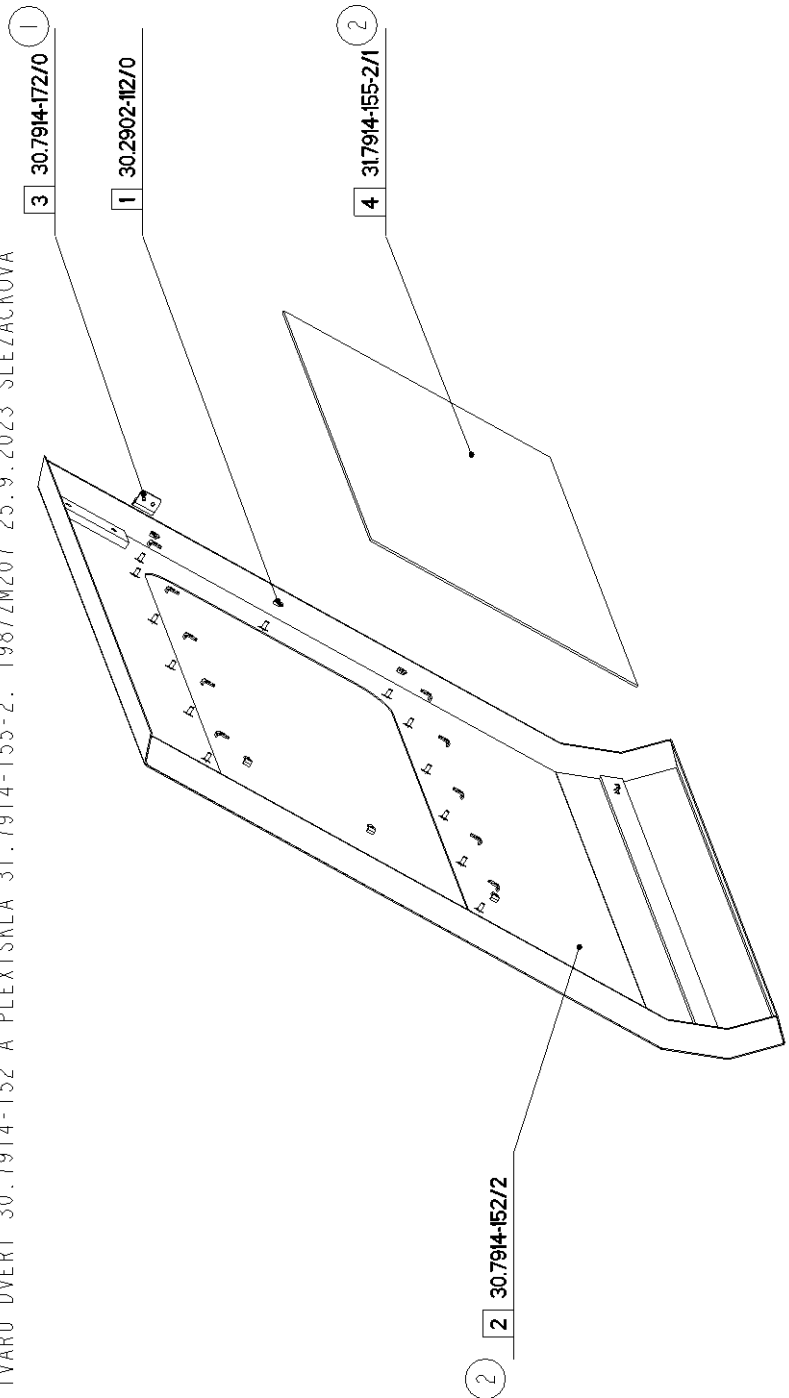
NÁZEV SESTAVY		ČÍSLO SESTAVY		REVIZE	Kategorie: ERGO.250DGA-				
DVEŘE		201.7914-159		2	Datum: 29.08.2022				
				List/Listě 1/2 22				Konstruktér:	
pos.	číslo výkresu	verze	množství	název	polotovary	jakost	pov.úpr.	váha	poznámka
1	30.2902-112	0	16	DRŽÁK	P2 - 10x20 40.0010127	S235	CERNENO	0.0	
2	30.7914-152	2	1	DVEŘE	SVARENO		KOMAXIT	15.0	
3	30.7914-172	0	1	DRŽÁK	<Chyběné parametry pro polotovary "40.0010104" typu "P">		LAKOVAT	0.0	
4	31.7914-155-2	1	1	SKLO ORGANICE	3x990x412			9.6	

INDEX ZMĚNA

1. PRIDAN DRŽÁK 30.7914-172, 013/ZM053 5.3.2013 SLEZACKOVA
2. UPRAVA TVARU DVEŘI 30.7914-152 A PLEXISKLA 31.7914-155-2, 198/ZM207 25.9.2023 SLEZACKOVA

DATUM

PODPIS



Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Verze [Ver.] /Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Datum/Date/Datum; Konstruktor/Designer/Konstrukteur; Číslo výkresu/Drawing number/Zeichnung number; Název/Name/Name; Polotovary/Semiproduct/Halbfabrikat; Vstupní materiál/Default material/Eingangsmaterial; Jakost/Norm/Norm; Pov. úpr./Surface finish/Oberflächengüte; váha/Weight/Gewicht; Poznámka/Note/Notiz

10.62. Skluz / Slide / Rutsch

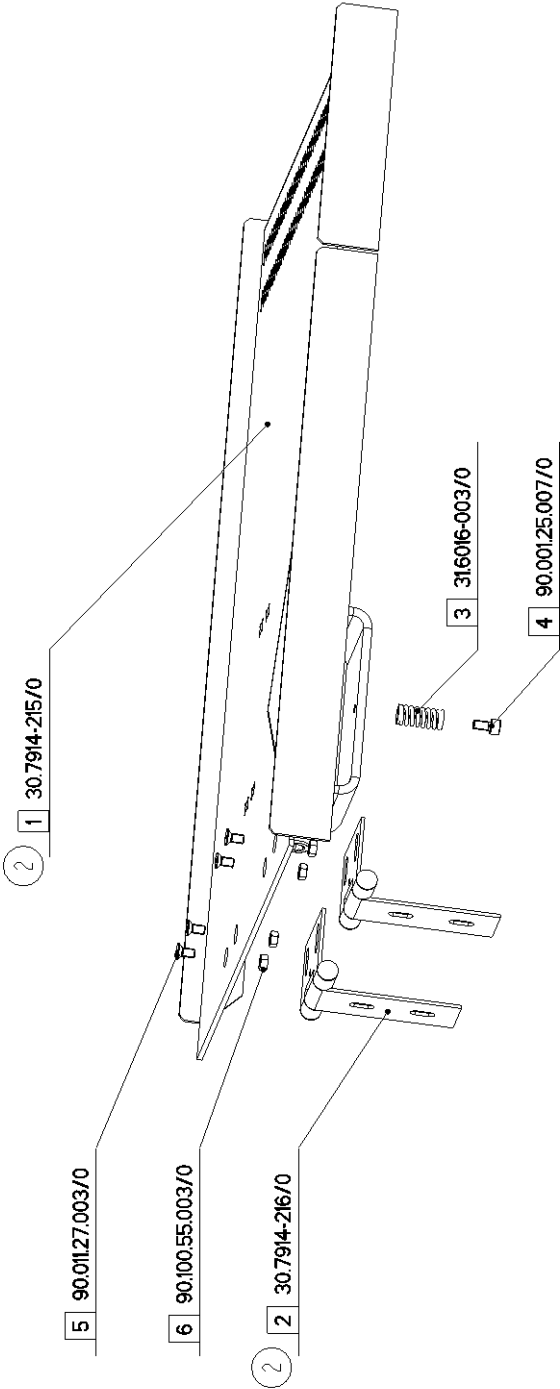
NÁZEV SESTAVY		ČÍSLO SESTAVY		REVIZE	Kategorie: 250DGA-		BOMAR		
SKLUZ		201.7914-210		2	Datum: 29.08.2022		Konstruktér: STASTNA		
				Líst/Listě 1/2 24					
pos.	číslo výkresu	verze	množství	název	polotovár	jakost	pov.úpr.	váha	poznámka
1	30.7914-215/2	0	1	SKLUZ				5.5	
2	30.7914-216/2	0	2	PANT	99.101.013			0.1	
3	31.6016-003	0	1	PRUŽINA	2x11.6x34x6.5-2			0.0	
4	90.001.25.007	0	2	SROUB IMBUS	5x10 DIN 912 8.8 černěný			0.0	
5	90.011.27.003	0	4	SROUB ZAPUSTNÝ	5x10 DIN 7991 10.9 černěný			0.0	
6	90.100.55.003	0	4	MATICE PŘESNA ZINEK	5 DIN 934 8.8 Zn			0.0	

INDEX ZMĚNA

1. ZRUS.2XSROUB 7914-305 A 2xMATICE M10 90.101.55.002(PRIDANO DO 30.7914-211). 0107ZMI05 19.5.2015 SLEZACKOVA

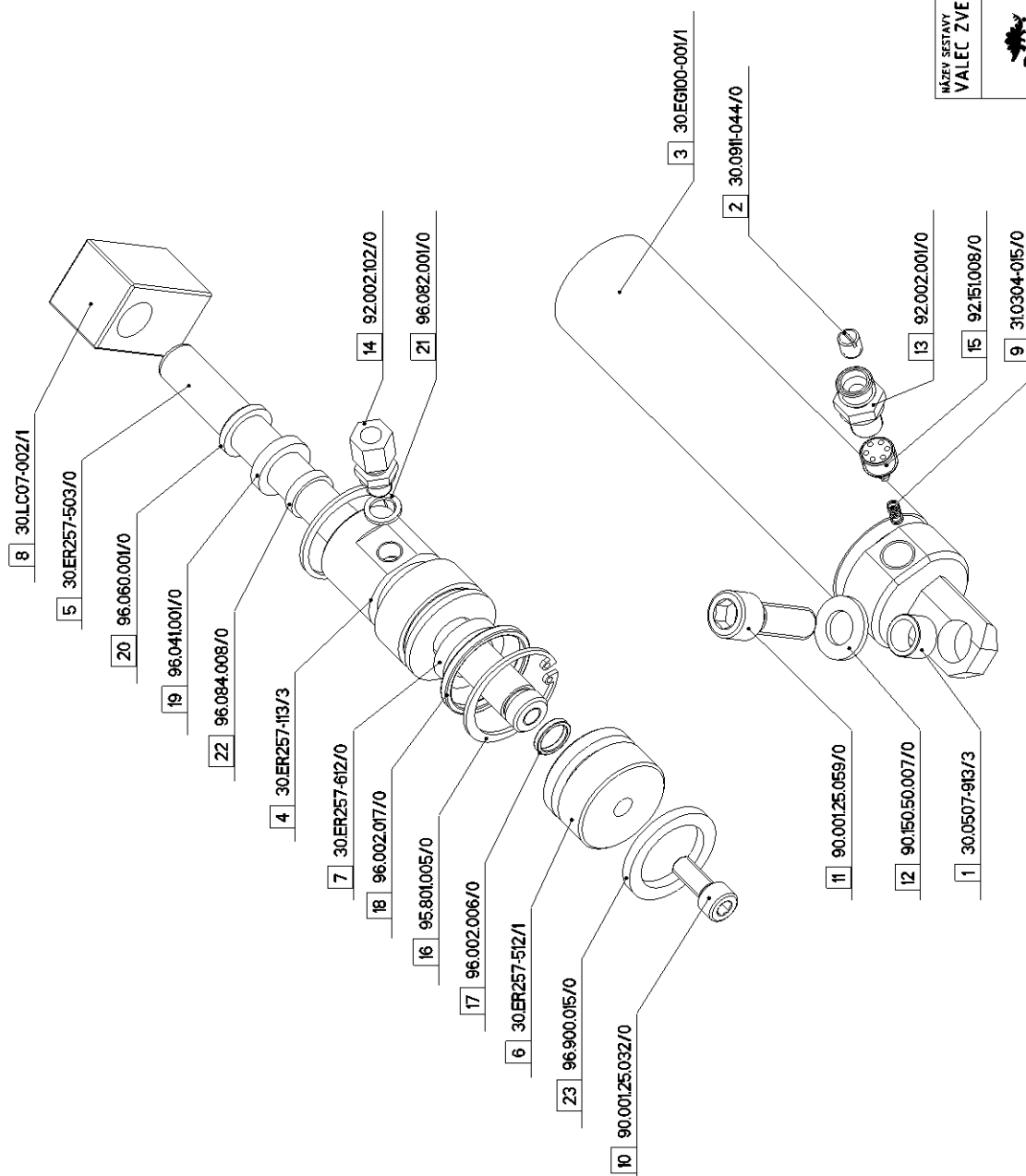
2. ZRUS.SOUCASTI 30.7914-212,30.7914-211 A DANY DO SESTAVY 30.7914-215,ZRUS.PANTY 30.7914-213,30.7914-214,CEP 30.7217-028

A NAHR.30.7914-216. 158/ZM265 15.11.2023 SLEZACKOVA



Číslo Sestavy/Number of assembly/Nummer der Baugruppe: Verze [Ver.] /Version/Version: Název sestavy/Assembly name/Name der Baugruppe: Datum/Date/Date: Konstruktor/Designer/Konstrukteur: Číslo výkresu/Drawing number/Zeichnung number: Název/Name/Name: Polotovár/Semiproduct/Halbfabrikat: Vstupní materiál/Input material/Default material/Eingangsmaterial: Jakost/Norm/Norm: Pov. úpr./Surface finish/Oberflächengüte: Váha/Weight/Gewicht: Poznámka/Note/Notiz

10.63. Válec zvedací / Lifting cylinder / Hebezyylinder



NÁZEV SESTAVY VALEC ZVEDACÍ	Kat. ERG DGH/GAK -	ČÍSLO SESTAVY 201ER257-710	Revize 0
Konstruoval:	HALAS	Datum:	27.06.2024
Měřtko:	3:10		

10.64. Kusovník / Piece list / Stückliste -
Válec zvedací / Lifting cylinder / Hebezyylinder

NAZEV SESTAVY			CISLO SESTAVY		REVIZE		
VALEC ZVEDACI			201.ER257-710		0		
Poz.	Objednáč. číslo	Verze	Název CZ	Name EN	Name DE	Položovar	Ks.
1	30.0507-913	3	POUZDRO	SLEEVE	BÜCHSE	D16 - 12	1
2	30.0911-044	0	CLONA	APERTURE	BLENDE		1
3	30.EG100-001	1	VALEC UPINACI	FIXING CYLINDER	SPANNZYLINDER		1
4	30.ER257-113	3	VÍKO	COVER	DECKEL	D42 - 61	1
5	30.ER257-503	0	PISTNICE	PISTON ROD	KOLBENSTANGE	D16 - 228	1
6	30.ER257-512	1	PIST	PISTON	KOLBEN	D40 - 25	1
7	30.ER257-612	0	DISTANC	SPACER	ABSTANDSTÜCK	TR28x5 - 6	1
8	30.LC07-002	1	DRZAK	HOLDER	HALTER	HR30x30 - 48	1
9	31.0304-015	0	PRUŽINA	SPRING	FEDER	d10,46 De4,57 Di3,65 L0:12,70 Ln6,07	1
10	90.00125-032	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	8x20 DIN 912 8,8 černý	1
11	90.00125-059	0	SROUB IMBUS	HEXAGON SOCKET SCREW	IMBUSSCHRAUBE	12x35 DIN 912 8,8 černý	1
12	90.150.50.007	0	PODLOŽKA	WASHER	UNTERLEGSCHIBE	13 M12 DIN 125 Zn	1
13	92.002.001	0	SROUBENI PRIME	TUBE FITTING - STRAIGHT	GERADE VERSCHRAUBUNG	GES 08LR WD (změna na WD od 1.2019) 1/4" - 14x1,5 tělo+fášený	1
14	92.002.102	0	SROUBENI PRIME KOMPL	null	null	S-GEV 08LLRK 1/8" - 12x1 komplet, kužel, závit	1
15	92.151.008	0	VENTIL POJISTNY	SAFETY VALVE	SICHERUNGSVENTIL	V204_004_1-01 1/4" bezpeč.ventil+ VUBA 1/4"	1
16	95.801.005	0	KROUZEK POJIST.VNITR	INTERNAL RETAINING RING	SICHERUNGSRING INNEN	d40 DIN 472	2
17	96.002.006	0	O-KROUZEK DYNAMICKY	O-RING DYNAMIC	O-RING DYNAMISCH	12x2 12x2	1
18	96.002.017	0	O-KROUZEK DYNAMICKY	O-RING DYNAMIC	O-RING DYNAMISCH	34x3 NBR 70 lesklé materiál HH0176880	1
19	96.041.001	0	MANŽETA	CUFF	MANSCHE	16x24x4 UN	1
20	96.060.001	0	KROUZEK STIRACI	WIPER RING	ABSTREIFRING	16x22 NBR 70	1
21	96.082.001	0	KROUZEK TESNICI	SEALING RING	DICHTUNGSRING	10/16x15 Cu	1
22	96.084.008	0	KROUZEK VODICI	GUIDE RING	FÜHRUNGSRING	GR4300160 - T4,7 16,0x3,9x1,55 -53,8	1
23	96.900.015	0	TESNENI KOMBINOVA NE	COMBINED SEALING	KOMBIDICHTUNG	PT0200400-T46N 29x40x40,2	1

Číslo Sestavy/Number of assembly/Nummer der Baugruppe; Ver.-Verze/Version/Version; Název sestavy/Assembly name/Name der Baugruppe; Poz.-Pozice/Position/Position; Objednáč. číslo/Order number/Bestellnummer; Položovar/Semiproduct/Halbfabrikat; Vstupní materiál/Entrance material; Vstupní materiál/Entrance material;

