

Operating Instructions for Band Saw

Series economic

economic 510.320 G
economic 510.320 GH
economic 510.320 GHK
economic 510.320 GHV

economic 510.320 DG
economic 510.320 DGH
economic 510.320 DGHK
economic 510.320 DGHV



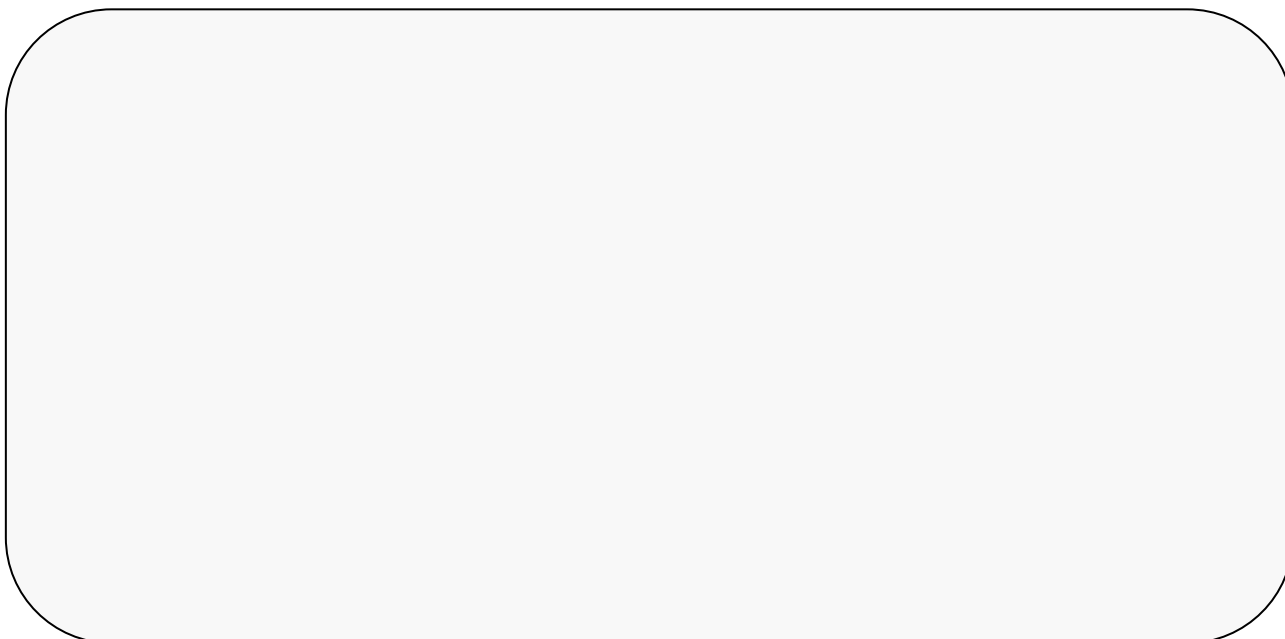
Before transporting and using the machine, please read the instructions thoroughly!

Serial number:



Service and Information

In case of technical difficulties or spare parts order, please contact your dealer:



Or contact Bomar, spol. s r.o. directly:

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We are available Mondays to Fridays from 7⁰⁰ to 16⁰⁰.

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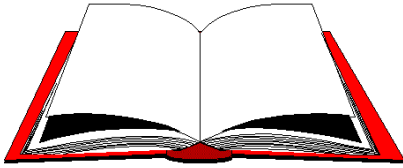
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1. Introduction



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

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



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



Attention! The exclamation mark in the yellow triangle signifies a safety warning. The meaning is described next to the symbol.

2. Band saw using

The economic 510.320 is used for cutting and shortening of rolled bars and drawn bars and profiles from steels, stainless steels, non-ferrous metals and plastics. **Combustible materials are excepted for cutting!** Any other usage and operation outside this range are unauthorised and the manufacturer/supplier does not accept any responsibility for any damages resulting from such misuse. **The operator has full responsibility!**

The roller conveyors can be connected with the band saw, which facilitates manipulation with the material. Recommended types and style of connecting are described in chapter „**Roller conveyors and accessories**“.

3. Technical data

3.1. economic 510.320 G, DG

Machine weight:

	Type G	Type DG
Weight	586 kg	630 kg

Machine size:

	Type G	Type DG
Length	2400 mm	2400 mm
Width	845 mm	845 mm
Height	1480 mm	1430 mm

Electrical equipment of the machine:

Supply voltage	~3 x 400V, 50Hz, TN-C-S
Total input	3,8 kVA
Max. fuse	16 A
Protection degree	IP 54

Driving engine of the band saw:

Type	MDERA 112M-8/4 B14
Output	1,5 / 2,5 kW

Cooling pump:

Type	2C0P1-14H
Capacity	50 dm ³

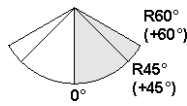




Size of the saw band:

4780 x 32 (34) x 1,1 mm

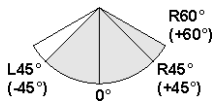




Cutting speed:

37 / 74 m/min

Cutting angles – G-type:

				
0°	∅345 mm	520 x 210 mm	150 x 370 mm	340 x 340 mm
R 45° (+45°)	∅340 mm	360 x 120 mm	260 x 340 mm	310 x 310 mm
R 60° (+60°)	∅240 mm	240 x 120 mm	120 x 340 mm	220 x 220 mm

Cutting angles – DG-type:

				
0°	∅345 mm	515 x 220 mm	150 x 370 mm	340 x 340 mm
R 45° (+45°)	∅340 mm	360 x 120 mm	255 x 340 mm	310 x 310 mm
L 45° (-45°)	∅340 mm	370 x 120 mm	130 x 370 mm	325 x 325 mm
R 60° (+60°)	∅240 mm	240 x 120 mm	120 x 340 mm	220 x 220 mm

3.2. economic 510.320 GH, DGH

Machine weight:

	Type GH	Type DGH
Weight	625 kg	675 kg

Machine size:

	Type GH	Type DGH
Length	2400 mm	2400 mm
Width	845 mm	845 mm
Height	1480 mm	1430 mm

Electrical equipment of the machine:

Supply voltage	~3 x 400V, 50Hz, TN-C-S
Total input	4,8 kVA
Max. fuse	16 A
Protection degree	IP 54

Driving engine of the band saw:

Type	MDERA 112M-8/4 B14
Output	1,5 / 2,5 kW

Hydraulic equipment:

Type	HAH8P-4,5/30-0,55-1
Output	0.55 kW

Cooling pump:

Type	2COP1-14H
Capacity	50 dm ³

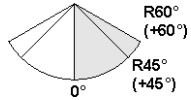


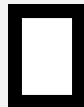

Size of the saw band:

4780 x 32 (34) x 1,1 mm

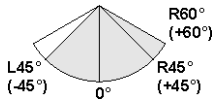




Cutting speed:

37 / 74 m/min

Cutting angles – GH-type:

				
0°	∅345 mm	520 x 210 mm	150 x 370 mm	340 x 340 mm
R 45° (+45°)	∅340 mm	360 x 120 mm	260 x 340 mm	310 x 310 mm
R 60° (+60°)	∅240 mm	240 x 120 mm	120 x 340 mm	220 x 220 mm

Cutting angles – DGH-type:

				
0°	∅345 mm	515 x 220 mm	150 x 370 mm	340 x 340 mm
R 45° (+45°)	∅340 mm	360 x 120 mm	255 x 340 mm	310 x 310 mm
L 45° (-45°)	∅340 mm	370 x 120 mm	130 x 370 mm	325 x 325 mm
R 60° (+60°)	∅240 mm	240 x 120 mm	120 x 340 mm	220 x 220 mm

3.3. economic 510.320 GHK, DGHK

Machine weight:

	Type GHK	Type DGHK
Weight	637 kg	687 kg

Machine size:

	Type GHK	Type DGHK
Length	2400 mm	2400 mm
Width	845 mm	845 mm
Height	1480 mm	1430 mm

Electrical equipment of the machine:

Supply voltage	~3 x 400V, 50Hz, TN-C-S
Total input	4,4 kVA
Max. fuse	16 A
Protection degree	IP 54

Driving engine of the band saw:

Type	MDERA 112M-8/4 B14
Output	1,5 / 2,5 kW

Hydraulic equipment:

Type	731-0440
Output	0,25 kW

Cooling pump:

Type	2COP1-14H
Capacity	50 dm ³

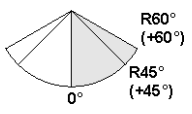




Size of the saw band:

4780 x 32 (34) x 1,1 mm

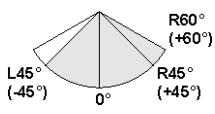




Cutting speed:

37 / 74 m/min

Cutting angles – GHK-type:

				
0°	∅345 mm	520 x 210 mm	150 x 370 mm	340 x 340 mm
R 45° (+45°)	∅340 mm	360 x 120 mm	260 x 340 mm	310 x 310 mm
R 60° (+60°)	∅240 mm	240 x 120 mm	120 x 340 mm	220 x 220 mm

Cutting angles – DGHK-type:

				
0°	∅345 mm	515 x 220 mm	150 x 370 mm	340 x 340 mm
R 45° (+45°)	∅340 mm	360 x 120 mm	255 x 340 mm	310 x 310 mm
L 45° (-45°)	∅340 mm	370 x 120 mm	130 x 370 mm	325 x 325 mm
R 60° (+60°)	∅240 mm	240 x 120 mm	120 x 340 mm	220 x 220 mm

3.4. economic 510.320 GHV, DGHV

Machine weight:

	Type GHV	Type DGHV
Weight	650 kg	698 kg

Machine size:

	Type GHV	Type DGHV
Length	2400 mm	2400 mm
Width	845 mm	845 mm
Height	1480 mm	1430 mm

Electrical equipment of the machine:

Supply voltage	~3 x 400V, 50Hz, TN-C-S
Total input	4,4 kVA
Max. fuse	16 A
Protection degree	IP 54

Driving engine of the band saw:

Type	MDERA 112M-8/4 B14
Output	1,5 / 2,5 kW

Hydraulic equipment:

Type	731-0441
Output	0,25 kW

Cooling pump:

Type	2COP1-14H
Capacity	50 dm ³

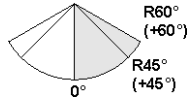


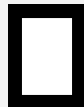

Size of the saw band:

4780 x 32 (34) x 1,1 mm

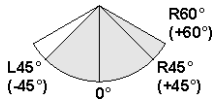




Cutting speed:

37 / 74 m/min

Cutting angles – GHV-type:

				
0°	∅345 mm	510 x 235 mm	150 x 370 mm	340 x 340 mm
R 45° (+45°)	∅340 mm	360 x 120 mm	260 x 340 mm	310 x 310 mm
R 60° (+60°)	∅240 mm	240 x 120 mm	125 x 345 mm	220 x 220 mm

Cutting angles – DGHV-type:

				
0°	∅345 mm	515 x 220 mm	150 x 370 mm	340 x 340 mm
R 45° (+45°)	∅340 mm	360 x 120 mm	255 x 340 mm	310 x 310 mm
L 45° (-45°)	∅340 mm	370 x 120 mm	130 x 370 mm	325 x 325 mm
R 60° (+60°)	∅240 mm	240 x 120 mm	120 x 340 mm	220 x 220 mm

4. Safety notes

4.1. General

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.

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

4.2. Protective suit and personal safety



Wear tight fitting overalls!
Loose fitting clothes may be caught by 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!

4.3. Safety notes for machine operator

Keep instructions and orders about work safety!



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

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



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

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

Do not operate with the buttons and the switches on the control panel, if 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!

4.4. Safety notes for the servicing and repairs



Only a qualified professional can carry out servicing and repairs! Always keep notes about work safety!



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



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

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

Do not remove or do not lock the limit switches or safety equipments!

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

Do not start the machine, if the covers are not on their places!

4.5. Safety machine accessories

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

TOTAL STOP button



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

If any damages or fault appears, immediately press TOTAL STOP button!

Release the pressing button is possible by twisting of the upper part of the button.



Enhanced risk!

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

Saw arm cover



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

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

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.

Saw band cover

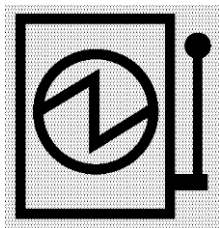


This protective cover envelops the saw band in the area from guiding cube to the arm.

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

5. Seznam bezpečnostních značek / Liste der Sicherheitszeichen / List of safety symbols

Značka / Zeichen / Symbol	Význam / Bedeutung / Signification Objednací číslo / Bestell - Nr. / Reference No.
	Nebezpečí stlačení / Pressungsgefahr / Crushing hazard
	Nebezpečí říznutí / Schnittgefahr / Cutting or severing hazard
	Nebezpečí nárazu / Stoßgefahr / Impact hazard
	Nebezpečí vtažení / Einzuggefahr / Drawing – in hazard
	Nebezpečí zachycení / Erfassungsgefahr / Tramping hazard
	Nebezpečí stříhu / Schnittgefahr / Shearing hazard
	Nebezpečí úrazu elektrickým proudem / Verletzungsgefahr vom elektrischen Strom / Electrical hazard



Hlavní vypínač / Hauptschalter / Main switch



Směr otáčení doleva / Drehrichtung nach links / direction of rotation left



Směr otáčení doprava / Drehrichtung nach rechts / direction of rotation right



Směr otáčení oboustranně / Drehrichtung doppelseitig / direction of rotation double-sided



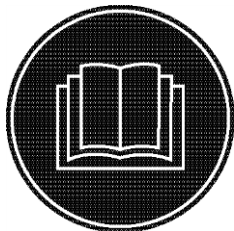
Směrová šipka / Richtungspfeil / direction arrow



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



Noste pevnou pracovní obuv / Tragen Sie Sicherheitsschuhe / Wear fixed protective shoes



Přečíst návod k použití / Bedienungsanleitung lesen / Read the operating instructions

6. Transportation and stocking

6.1. 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.

Conditions for transportation and stocking:

- 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, ultra-violet 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.

6.2. Safety notes

Keep safety notes for the transport!



Always wear protective hardhat to avoid hard injuries during loading and transportation!



Wear protective gloves!
Sharp edges of the machine, pallets and means of transport can injure your hands.



Wear safety boots!
Loose parts and packing materials can cause serious injuries.

Do not use a forklift truck for handling the machine, if you do not have licence for it!

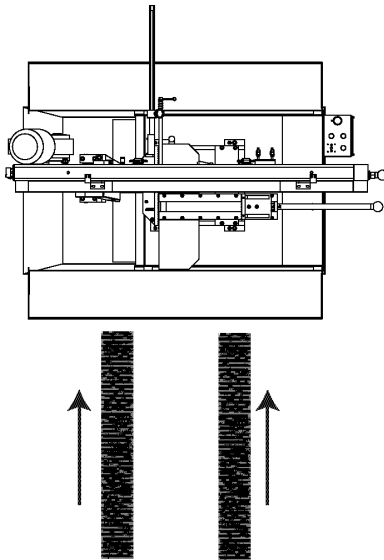
Do not move under suspended loads! Fault in lifting device may cause serious injury.

Keep a safe distance from the machine during the transport.

6.3. 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.
The machine has to be screwed to a pallet for the transport!

6.4. 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 schema.
Make sure that the hand pallet truck; the forklift truck or the crane had sufficient capacity.
Make sure that the van or the trailer had sufficient capacity.
The machine must be secured during transportation.
Screw on the palette to the floor of the van or the trailer.
Be careful that the machine is not damaged during transportation.

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

7. Activation

7.1. Machine working conditions

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

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

At temperature air from +5°C to +40°C, the temperature average during 24 hours must not exceed over +35°C.

At relative dampness of the air in the extend from 30% to 95% (not concentrate).

Altitude higher 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.

7.2. 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 (chapter **Technical data**)

+ 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.

7.3. Band saw unpacking and assembling

Remove the packing from the machine and unpack all parts.

Saw frame blocking

Dismantle the saw frame blocking from the machine before band saw operation.

Note: Store the holder and screws! Install the saw frame blocking on the machine for band saw displacement! You can avoid the saw frame damage.

7.4. Electrical connection



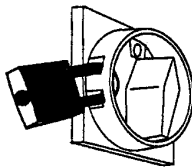
ATTENTION! Only a qualified professional must carry out the servicing and repairs of the electric equipment! Take special care during work with electrical equipment. High voltage shock can have fatal consequences! Always keep notes about work safety!

Electrical parameters of the machine:

Service voltage:	~ 3 x 400 V, 50 Hz, TN-C-S
Total input:	see Technical data
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!
Crosscut of the supply line must respond with rated current for max. machine load. *Note:* The values of the crosscut of the conductor and the rated current are in the norms.
Connect the service cable of the machine on the clamps of the electric distribution. *Note:* The socket with the fork can be used only at the machines with the rated current less than 16A and total input less than 3 kW.



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

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

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.



7.5. Filling of the cooling system

If handling cooling liquid, keep the notes about work safety and instructions of the cooling liquid manufacturer!



Wear protective gloves when working with cooling liquids!



Wear protective goggles!
The cooling liquid can get into your eyes and cause serious injury.

Prepare the mixture of the water and the cooling liquid. Keep the concentration specified by manufacturer.

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**“.

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.

Keep by manufacturer specified recommendation for adding the anticorrosive agents, the antifreezes or other agents! For mixture of two different mixes can produce toxic and aggressive mixes, which can threaten your health or damage cooling system of the machine!

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

7.6. Check machine functions

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 covers are installed and functional.

Check by means of the Tenzomat (see. **Special accessory**), if the saw band is correctly stretched. If it is necessary, you can stretch the saw band according to chapter „**Selection and replacement of the saw band**“. Values of the saw band stretching are on the Tenzomat.

Switch on the main switch and check the motors and systems (saw band drive, hydraulic pump, cooling pump, chips conveyor).

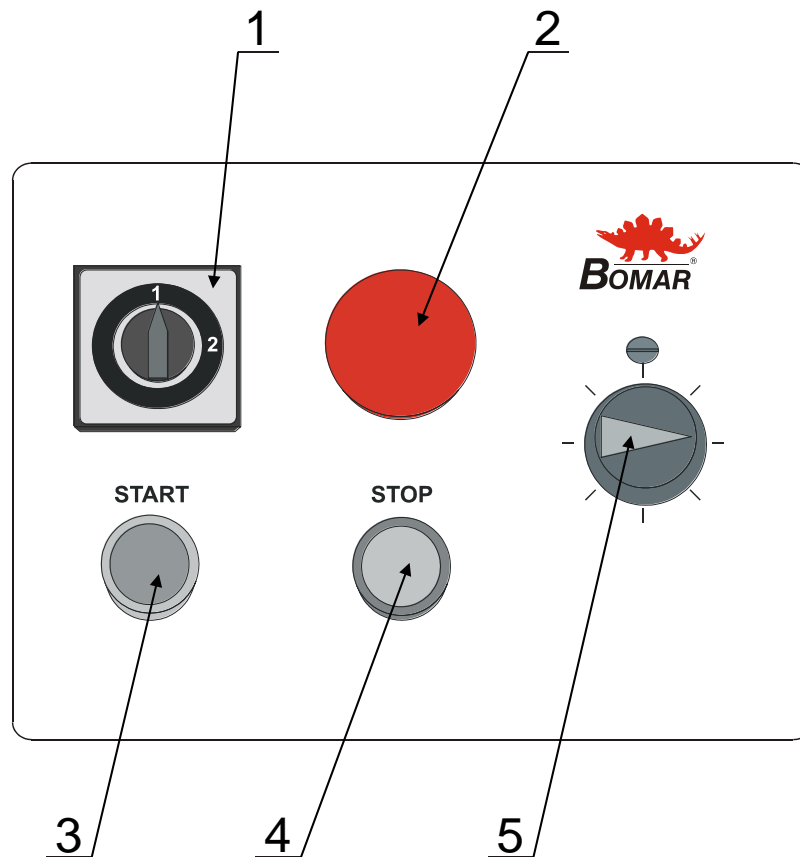
Open and close the main vice and the feeding vice. Drive the front feeder from the front position – GA model only – to the rear position. Turn the saw frame of the band saw from one outer position to other outer position. Raise the saw frame to the top position and drop the saw frame to the lowest position.

Start the machine with the cooling pump and let it run without load until the cooling system will be filled with cooling liquid. As soon as the cooling liquid starts to escape from the nozzles of the cooling system, the cooling system is ready for the operation.

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

8. Control panel - description

8.1. Control panel – economic 510.320 G, DG



1 Switch of the cutting speed
Select of the cutting speed during cutting (40 or 80 m. min⁻¹).

2 TOTAL STOP button
In case of emergency, the machine is stated to the order! **ATTENTION!** Saw arm sinking **is not stopped** with pressing TOTAL STOP button!

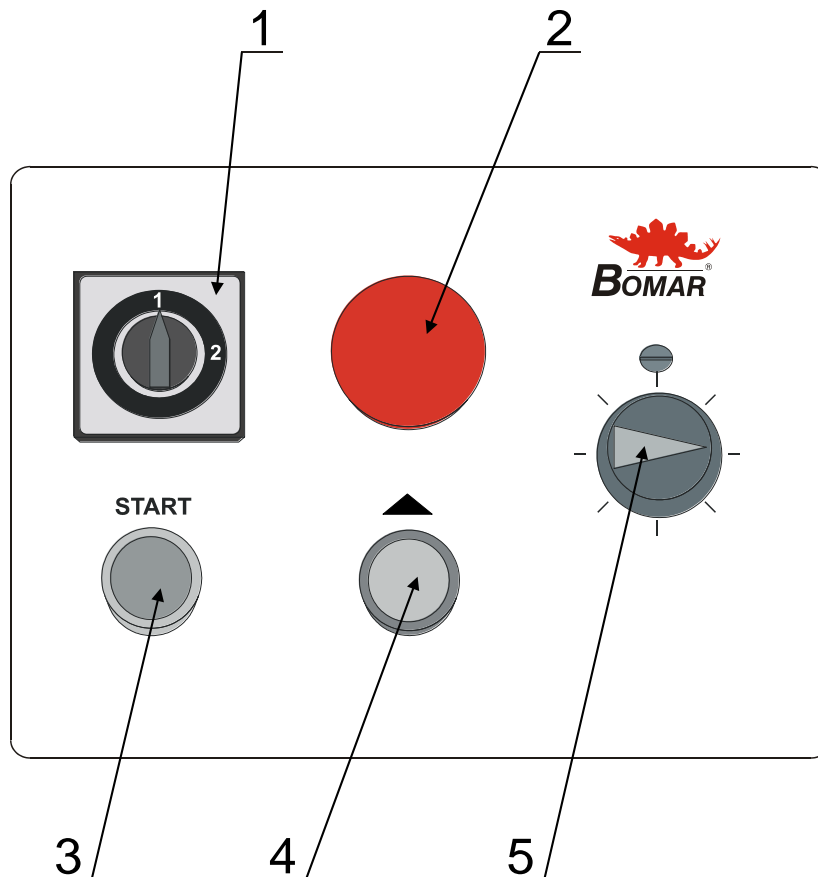
3 START
It starts of the semi-automatic cycle.

4 STOP
It stops of the semi-automatic cycle.

5 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.

Main switch
It is on the vice side of the distributing box.
It is not depicted on the diagram.

8.2. Control panel - economic 510.320 GH, DGH



1 Switch of the cutting speed
Select the cutting speed during cutting (40 or 80 m. min⁻¹).

2 TOTAL STOP button
In case of emergency, the machine is stated to the order!

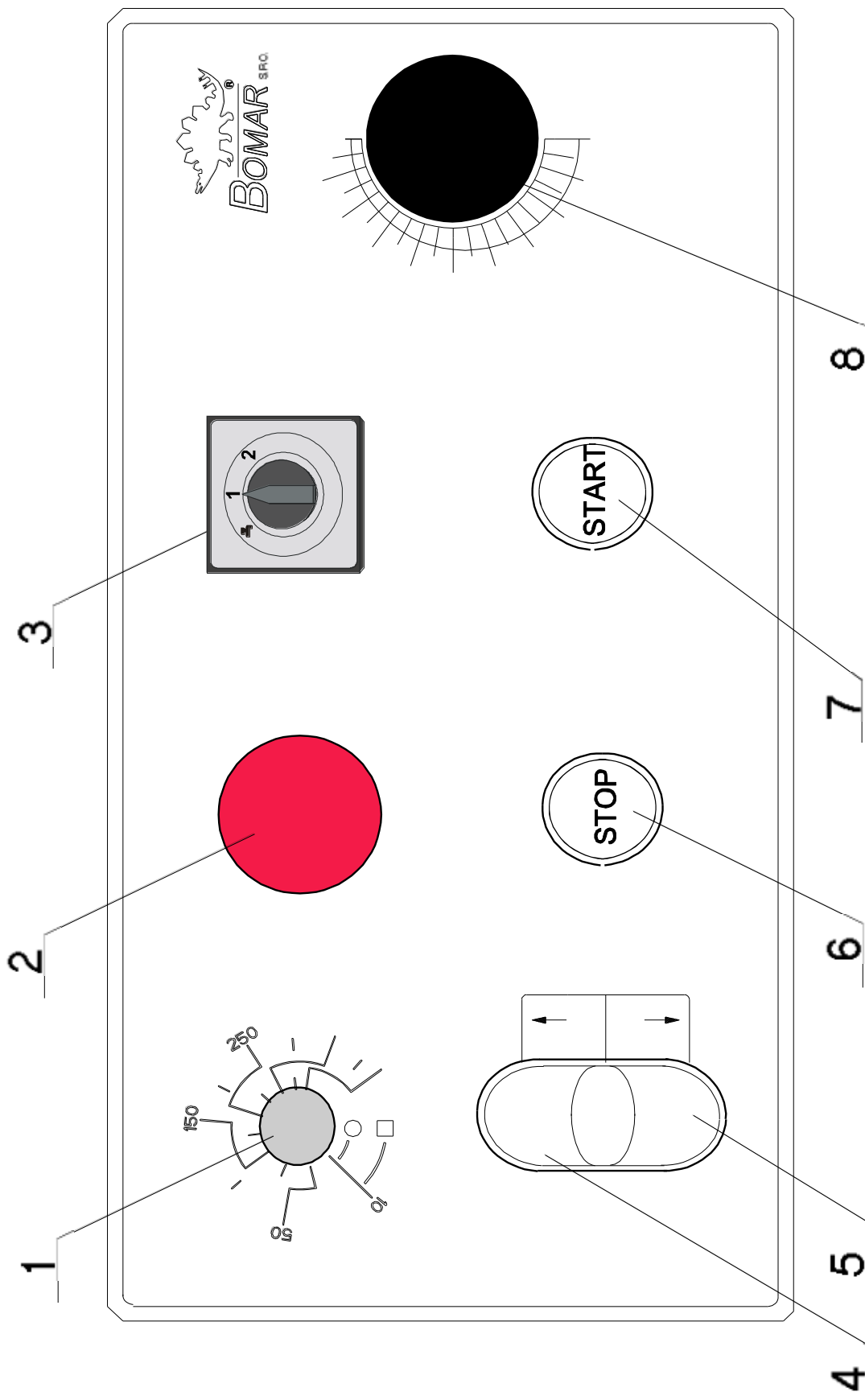
3 START
It starts of the semi-automatic cycle


4 STOP
It stops of the semi-automatic cycle, lifts the saw frame to the top position and stops of the saw band drive

5 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.

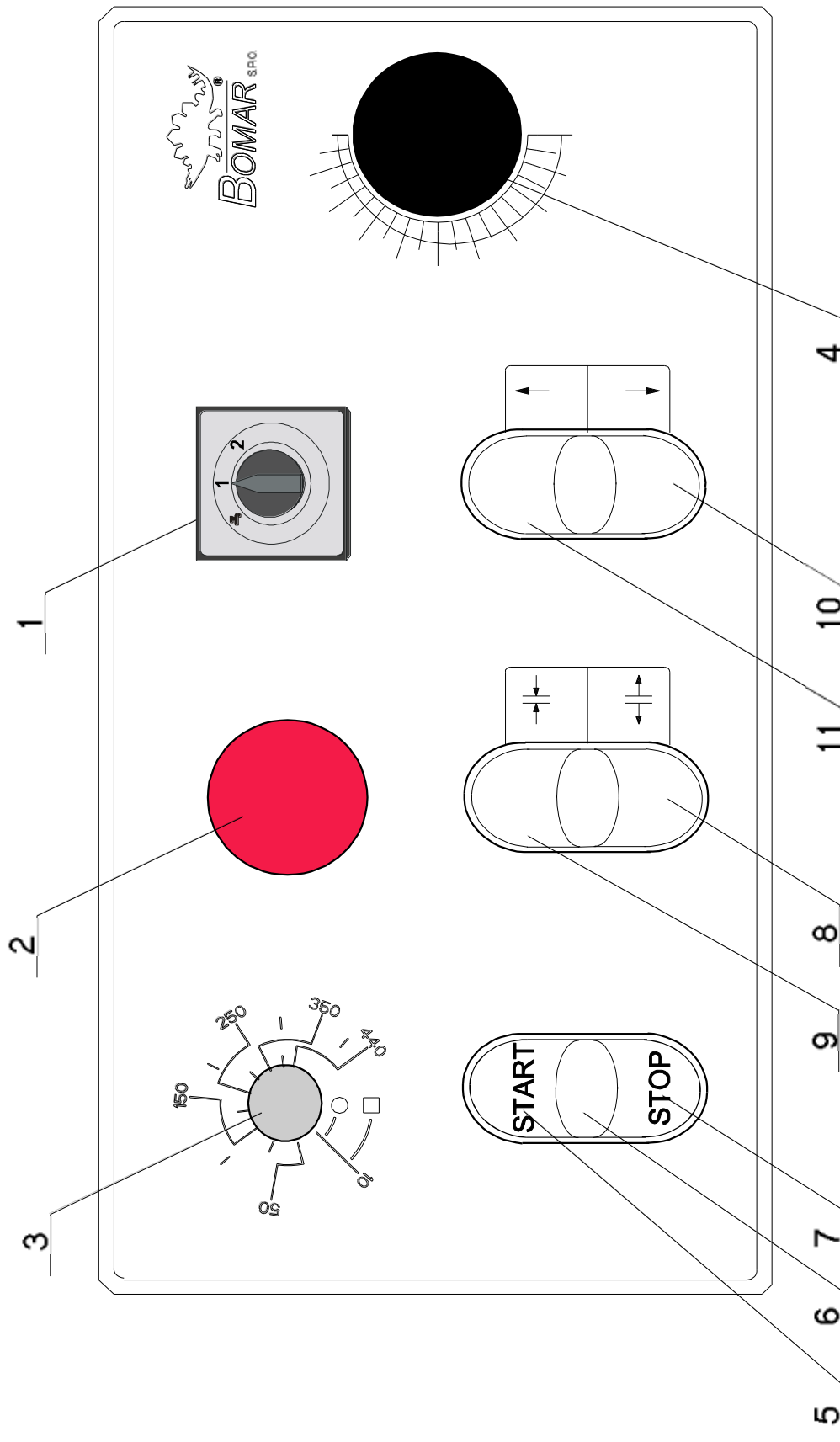
Main switch
It is on the vice side of the distributing box.
It is not depicted on the diagram.


8.3. Control panel – economic 510.320 GHK, DGHK



- 1 Arm height setting**
You can limit the arm height according to the scale of the control panel.
- 2 TOTAL STOP button**
In emergency causes the machine must be immediately switched off.
- 3 Switch of the cutting speed / Cleaning pistol (option)**
Select the cutting speed during cutting (**40** or **80** m. min⁻¹).
In position , the cleaning pistol can be used (the cleaning pistol is optional equipment).
- 4 Lift the saw arm**
- 5 Lower the saw arm**
- 6 STOP button**
This button stops the cutting cycle.
- 7 START button**
It starts the cutting cycle.
- 8 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.
- Main switch**
It is situated on the side of the control panel. It is not depicted on the schema.

8.4. Control panel – economic 510.320 GHV, DGHV



- 1 Switch of the cutting speed / Cleaning pistol (option)**
Select the cutting speed during cutting (40 or 80 m. min⁻¹).
In position , the cleaning pistol can be used (the cleaning pistol is optional equipment).
- 2 TOTAL STOP button**
In emergency causes the machine must be immediately switched off.
- 3 Arm height setting**
You can limit the arm height according to the scale of the control panel.
- 4 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.
- 5 START button**
It starts the cutting cycle.
- 6 Indicator of the arm position**
If the indicator lights, the arm is in the top position according to the arm height setting.
- 7 STOP button**
Press button. The cycle is broken. The saw arm is lifted up and the saw band is stopped.
- 8 Open the vice**
- 9 Clamp the vice**
- 10 Lower the saw arm**
- 11 Lift the saw arm**
- Main switch**
It is situated on the side of the control panel. It is not depicted on the schema.

9. Starting the band saw



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

10. Material insertion

10.1. Safety notes

Keep safety notes!



Wear protective gloves!
Material may have sharp edges and may cause cuts.



Wear protective boots!
Falling cut pieces can cause serious injuries.



Wear protective hardhat!
Falling work pieces can cause severe head injuries.

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

10.2. Handling agent selection

Use the strong handling agents to lift and transfer the material!



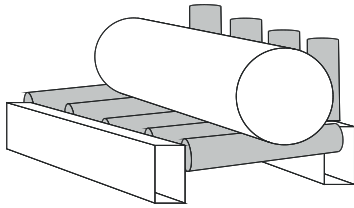
Handle with the material only with the lift truck or use the suspension strands and the crane!
Do not use the lift truck or crane in case that you do not have the licence to handle with it!

10.3. Material insertion

Insert material to the vice and ensure that the material cannot move in the vice or fall from the vice after the clamping.

If you cut long pieces of the material (for example rod, tube), you must use the roller conveyors for material shifting to the band saw. The roller conveyors are described in the chapter „**Roller conveyors and accessories**“.

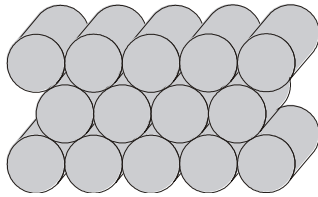
Make sure the conveyor is long enough and the material cannot tip off the conveyor.



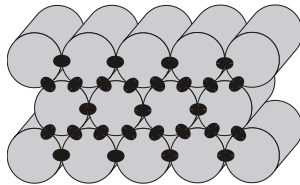
Be especially careful with round materials that it always stays on two vertical rollers and that it cannot fall off the conveyor!

10.4. Bundle material cutting

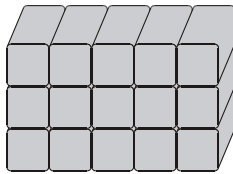
If you want to cut the material in the bundle, there are suggestions for the positioning of bundles



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



Always weld the material at the rear end of the bundle to secure it from moving. **ATTENTION! Before welding always, switch the machine off at the main switch! The magnetic fields, which often occur during welding, may damage the controls!**



Square material bundle.



Angled material bundle.

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

11. Length setting – length stop

Note: The length stop is not standard equipment of the band saw. It is supplied only for customer's request.



1) Release the securing screw.



2) Move the length stop to the desired length of the material.



3) Fasten the securing screw.



Note: The length stop makes bounce listel of the material, so that the saw band will be not compressed in the cut. Turn the lever to the arrow direction.

12. Material shifting to the length stop

12.1. Safety notes



Keep safety notes!

Take care, that there is nobody in the working area of the roller conveyors and the length stop! The shifting material can cause the injury!

12.2. Material shifting to the length stop

Insert the material to the vice of the band saw and shift it carefully on the adjusted length. Take care, to the length stop will not be damaged!

13. Band saw adjusting

13.1. Safety notes



Keep the safety notes! Work the machine with the highest safety!



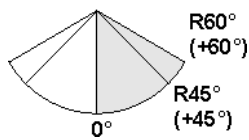
Wear protective boots!
Falling cut pieces can cause serious injuries.



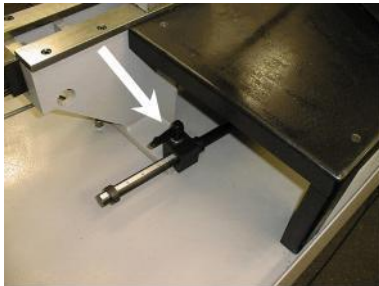
Wear protective hardhat!
Falling work pieces can cause severe head injuries.

13.2. Angular cut setting

Type G



The cut angle can be varied from **0°** to **+60°**. Angles **0°** and **+60°** are set by means of the fixed stop.

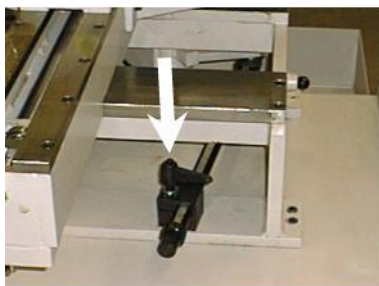


Release the securing lever, set the desired angle according to the scale and tighten the lever.

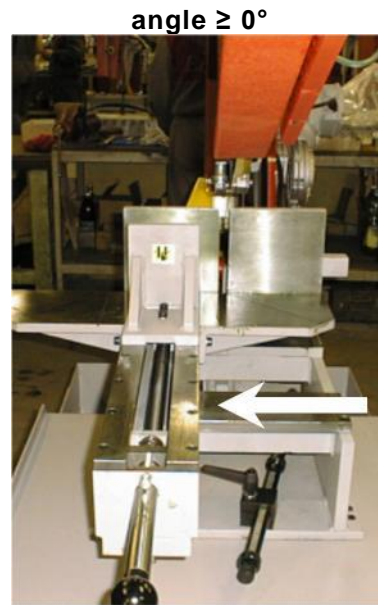
Type DG

The cut angle can be varied from **-45°** to **+60°**. Angles **-45°**, **0°** and **+60°** are set by means of the fixed stop.

1) Release the securing lever, set the desired angle according to the scale and tighten the lever.



2) Shift the vice according to setting angle of the cutting. Shift the vice to the right for angle of the cut, which is less than 0° , shift the vice to the left for angle of the cut 0° or for angle of the cut, which is bigger than 0° .



13.3. Cutting speed adjustment

The saw band speed is possible to select $40 \text{ m}\cdot\text{min}^{-1}$ or $80 \text{ m}\cdot\text{min}^{-1}$. The cutting speed adjustment is persued by switch.

13.4. 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.

14. Material cutting

14.1. Safety notes



Keep the safety notes! Work the machine with the highest safety!



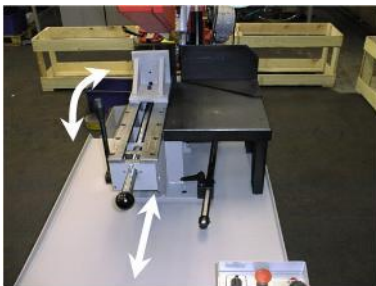
Wear protective boots!
Falling cut pieces can cause serious injuries.



Wear protective hardhat!
Falling work pieces can cause severe head injuries.

14.2. Material clamping to the vice

economic 510.320 G, DG, GH, DGH



Release the clamping lever, shift the vice cca 5 mm from the material and clamp the material to the vice by lever.

economic 510.320 GHK, DGHK

1) Shift the vice cca 5 mm from the material.

2) If the cutting cycle starts (see below), the vice clamps by itself.

economic 510.320 GHV, DGHV

If the cutting cycle starts (see below), the vice clamps by itself.

14.3. Cutting cycle starting

14.3.1. Start

Switch on the band saw drive by pressing the button **START**.

14.3.2. Cycle breaking

The cycle can be stopped by 2 ways:

a) Press button **STOP** – arm lifts to the starting position and cycle is stopped.

b) Press emergency button **TOTAL STOP** in emergency cases! The safety circuit is stopped; the saw band drive is stopped too.

ATTENTION! Arm sinking is possible to stop only with control valve closing!

14.4. Length stop bounce for material releasing



The length stop makes bounce listel of the material, so that the saw band will be not compressed in the cut.

Turn the lever to the arrow direction.

14.5. Setting the speed of the saw arm lowering

Set the speed of the arm lowering to the cut by control valve on the 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.

15. Blanks removing from the band saw

15.1. Safety notes

Keep the safety notes! Work the machine with the highest safety!



Wear protective gloves!
Material may have sharp edges and may cause cuts.



Wear protective boots!
Falling cut pieces can cause serious injuries.



Wear protective hardhat!
Falling work pieces can cause severe head injuries.

Take care, that there is nobody in the working area of the band saw! The moving material can cause the serious injuries!

15.2. Length stop lifting



1) Release the securing screw.



2) Turn the length stop to remove the material.



3) Fasten the securing screw.

15.3. Handling agent selection



Use the strong handling agents to lift and transfer the material!

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

15.4. Blanks removing

Remove the blanks from the band saw.

16. Selection and replacement of the saw band

16.1. Safety notes



Wear protective gloves!
The saw band has sharp teeth and can cause serious injuries to your hands.



Wear protective goggles!
The saw band can snap during assembly and seriously injure your eyes.



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

16.2. Saw band sizes

4780 x 32 (34) x 1,1 mm

16.3. 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.
- 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:

ZpZ – teeth number on one inch.

S – tooth with zero angle of the teeth.

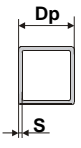

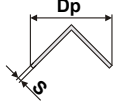
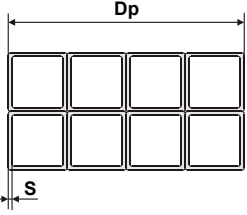
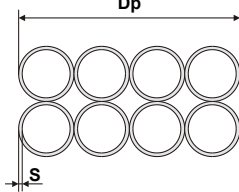
K – tooth with positive angle of the teeth.

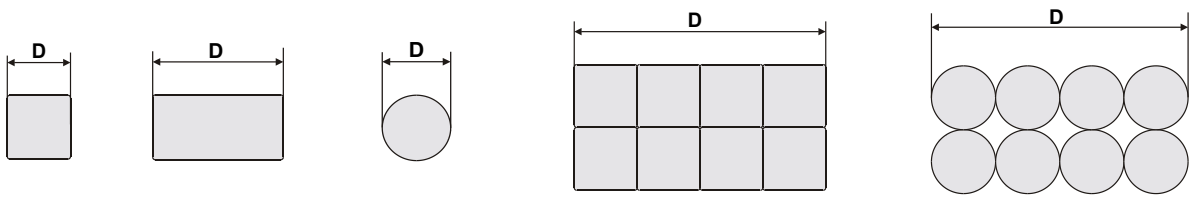
Examples of the tooth system marking:

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.

Tables for teeth selection:

SHAPED MATERIAL (Dp, S = mm)						
						
<p>Note: Table shows tooth system selection for cutting one piece of the profile. For cutting of more pieces of the profiles (bundle), you must think of the size of the wall as double size of the wall of one profile (that means, size „S“ equates to 2 x S). In table, there are tooth systems constant and variable.</p>						
Size of the wall S [mm]	Tooth system (ZpZ) Outer diameter of the profile Dp [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 (ZpZ) Outer diameter of the profile Dp [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 = mm)			
			
Constant tooth system		Variable tooth system	
length of the cut D	tooth system (ZpZ)	length of the cut D	tooth system (ZpZ)
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		

Despite the above recommendations, please follow your supplier's advice!

16.4. Saw band running - in

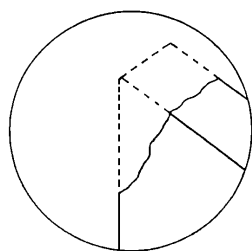
To ensure a full service life of the saw bands, we strongly recommend that you carry out the „RUN-IN“ process.

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

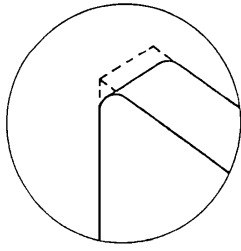
When cutting small pieces run the band until approximately 300 cm² of material has been cut.

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!

16.5. Saw band dismantling

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



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



3) Open the rear cover of the arm.



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



5) Pull up the saw band from the guiding cubes.

16.6. 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) Close the rear cover of the arm.



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

16.7. 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.

16.7.1. 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.

In case of use hydraulic band tensioning, BSPA indicator, you must tighten a blade, **up to green arrow** on the manometer.

16.7.2. Saw band inspection

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

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



- if the distance between backside of the saw band and the offset wheel is **1 – 3 mm**, setting is right.

- if the distance is bigger than **3 mm**, or the saw band is on the offset of the wheel, set the saw band according to chapter „**Servicing and adjustment**“.

- 5) Close cover(s) of the saw band.

17. Cooling agents and chips disposal

17.1. Safety notes



Keep notes about work safety for handling cooling liquid!



When handling cooling agents always wear hazardous fluid-proof gloves!



Wear protective goggles!
Cooling liquid can get in contact with your eyes and may cause permanent severe injuries.

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.

17.2. Cooling liquid preparation

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

All instructions are stated on the tank of the cooling liquid or in documents of the cooling liquid.

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

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

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

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

The quality of the cooling agent will deteriorate due to:

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

If the solution is too weak:

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

If the solution is too strong:

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

17.3. 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!

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.

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

17.4. Chips disposal

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

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

18. Greases and oils

18.1. Gearbox oils

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

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

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 must not be mixed!

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

The band saw	Gearbox oil	Capacity
Economic 410.260	Shell Tivela S 320	0,5 kg
Economic 410.260 GA	Shell Tivela S 320	0,5 kg
Economic 510.320	Shell Tivela S 220	1,2 l
Economic 510.320 GA	Shell Tivela S 220	1,2 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

18.2. Hydraulic oils

Note: This chapter is only for the band saws, which has hydraulic equipment.

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

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

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

Comparative table of the hydraulic oils

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

18.3. 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

19. Service

19.1. 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 vice.
- Loading surface of the main vice, and area under them.

19.2. Lubrication

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



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

19.3. Cooling liquid inspection

Check the state of the cooling liquid periodically. Keep notes in chapter **Cooling agents and chips removal** for state checking and cooling liquid filling.

If the cooling liquid is little in the tank, it can cause the damage of the saw band influences insufficient cooling.

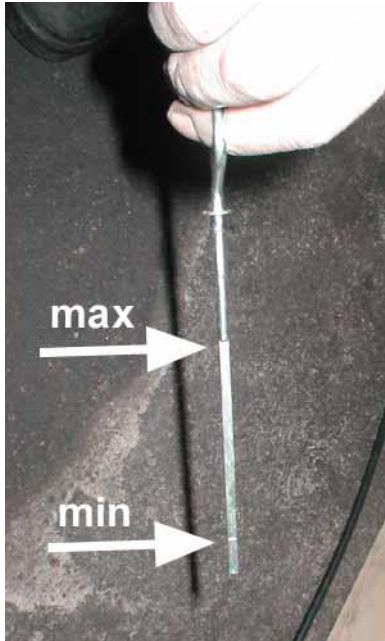
The excess liquid can overflow from the tank on the floor, the service worker can slide and he can injure.

19.4. Hydraulic oil level check

Recommended type of the hydraulic oil is placed in chapter **Hydraulic oils**.

Pull up the gauge and check the state of the oil. The oil level must be situated between marks **min** and **max**.

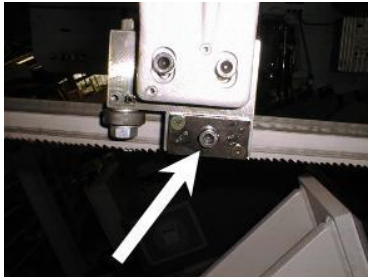
Fill the hydraulic oil, if it is necessary. Use always the filter (25 μm or better) when you fill the oil. You avoid impurities penetration to the hydraulic system and troubles in hydraulic system.



20. Servicing and adjustment

20.1. 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 screw on the guiding cube to release the saw band.

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.

3) Be sure that the hard metal guides do not put up to much resistance otherwise the lifetime of the saw band and drive decreases.

20.2. Guide cubes adjustment

The guiding cubes are set from the manufacturer. Cubes are secured with two pins. It is not necessary to set the guiding cubes all the while of the lifetime.

20.3. 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.

Saw band run inspection

If the run is not correct, the following problems may occur:

The saw band falls from the wheels

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 – 2 mm, setting is right.

If the distance is bigger than 2 mm, or the saw band runs on the wheel rim, saw band run must be set.

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 **1 – 2 mm**.

- 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.

20.4. Brush adjustment

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



Tighten the brush to the band with screw turning.
Set the brush so, that brush touches with the band.

20.5. Limit switch setting 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 saw band by means of TENZOMAT on the optimal value.
- 2) Release the nut on the stop screw.
- 3) Start the driving engine. Two scenarios can occur:



a) If the engine is switched on, but it does not run, turn the screw to the left until the engine starts to run.

b) 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.

20.6. Saw frame lower stop position 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 incorrectly adjusted, the cutting table can be damaged or the material will not be cut completely.



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

20.7. Limit switch of the saw frame lower position adjustment

If the lower stop of the saw frame was set, the limit switch must be set again.

Check setting

Lower the saw frame to the bottom position. If the saw frame is on the lower stop and the limit switch was responded, the limit switch adjustment is right. If the limit switch is not right, it must be set.

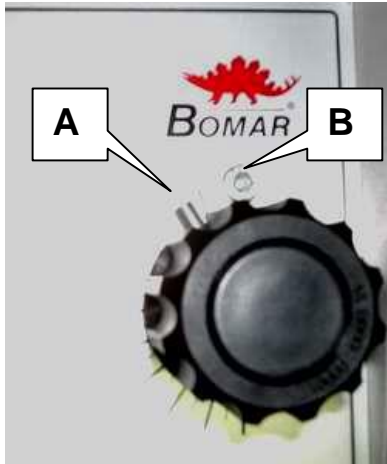
Limit switch setting



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

20.8. 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 (pos. A) must be next to the stop (pos. B), when the valve is closed.



Pic. 1



Pic. 2

- 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.

21. Worn pieces replacement

21.1. Hard metal guides replacement

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

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

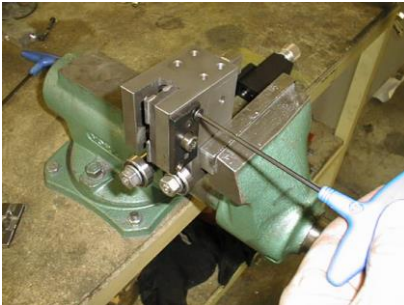


2) Disconnect the hosepipe leading and screw off the cutting pressure regulation. Let connected the cutting pressure regulation to the hydraulic system. Dismantle the guiding cube of the saw band.



3) Fasten the guiding cube to the vice.

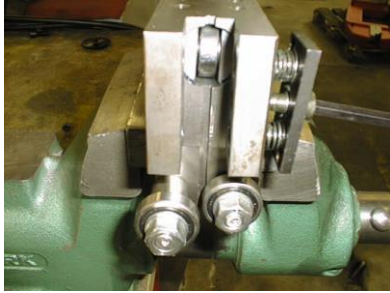
Release clamping screws of both hardmetal guides and remove them.



4) Screw off adjusting screws of hardmetal guide.



5) Screw off the screw of hardmetal guide so far from the cube until it is not seen from the inner side.



6) Remove the hardmetal guide.



7) Insert new hardmetal guides and screw them on.



8) Install the cube on the holder, fasten the cutting pressure regulation and connect the cooling system.

9) Adjust the hardmetal guides.

21.2. 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.

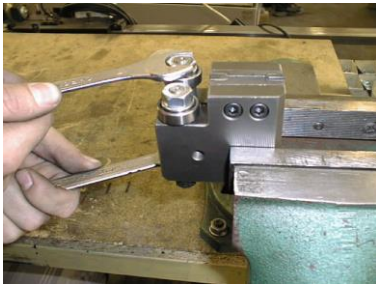
2) Set the brush to the saw band.

21.3. Saw band guiding rollers replacement

If the saw band is not sufficiently guided by guiding pulleys or if the pulleys are obviously worn, the pulleys should be replaced. **ATTENTION!** Guiding pulleys must be replaced together on both guiding cubes!

1) Dismantle the saw band.

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



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

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

4) Screw off nuts from eccentrics.



5) Remove eccentrics from bearings by means of the swager.



6) Change all bearings and other worn parts.



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

ATTENTION! Do not replace the eccentrics placing in the cube.



8) Screw on nuts on both eccentrics and tighten them.



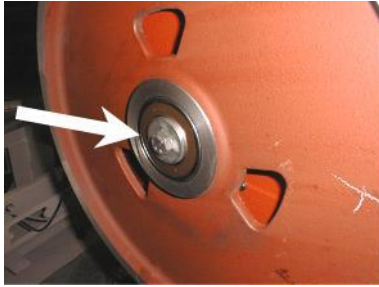
9) Insert the saw band to the guiding cube (cca 15 – 20 cm). Set the eccentrics by means of the wrenches, the saw band must run in the centre. Guide pulleys must not press too much on the band, but must spin freely during the band run.

10) Tighten nuts on both eccentrics.

11) Remove the testing piece of saw band from the cube lead. Install the guiding cube on the machine and connect the cutting pressure regulation and cooling. Install the saw band.

21.4. Stretching wheel replacement

1) Dismantle the saw band.

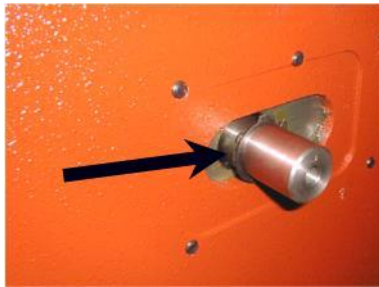


2) Screw off the screw and remove the washer.

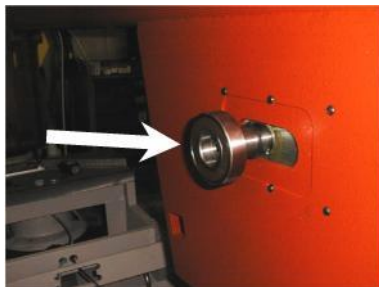


3) Pull the wheel from the shaft by means of wheel puller. If the lower bearing stays on the shaft, remove it too.

4) Check score of the bearings of the stretching wheel and replace them for new.



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



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



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



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



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



10) Pull the wheel on the shaft.



11) Screw on the washer and screw back.

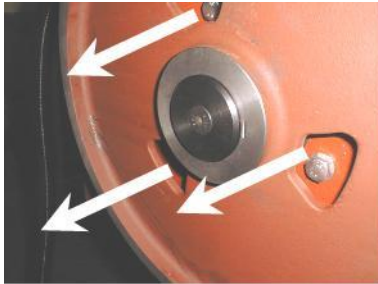
12) Install the saw band. Wheel replacement is ready.

21.5. Driving wheel replacement

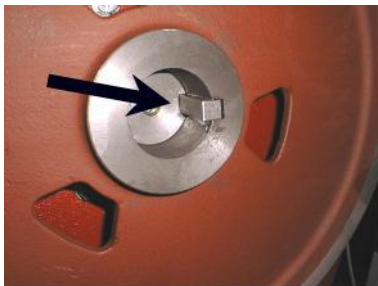
1) Dismantle the saw band.



2) Screw off the screw and remove the washer.



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



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



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



6) Screw on washer and screw back.

7) Install the saw band. Wheel replacement is ready.

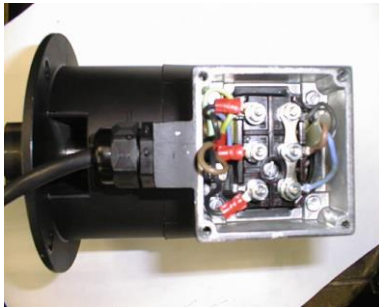
21.6. Cooling pump replacement



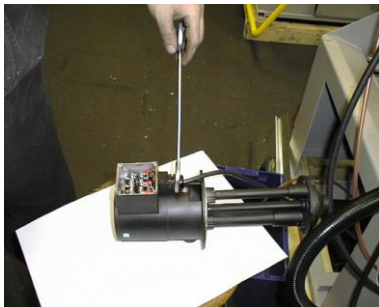
**Only a qualified worker can carry out the connection!
High-voltage shock may have fatal results.**

1) Pull the tank with the liquid from the pedestal.

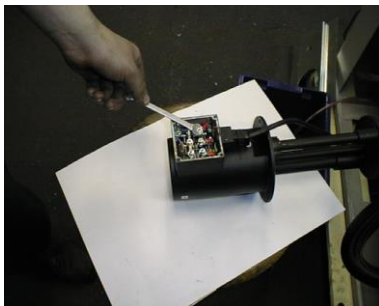
2) Remove the hosepipe leading to the cooling agent from the plug on the pump.
Screw off four screws from the cooling pump flange and pull out the pump from the sheet metal holder.



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



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

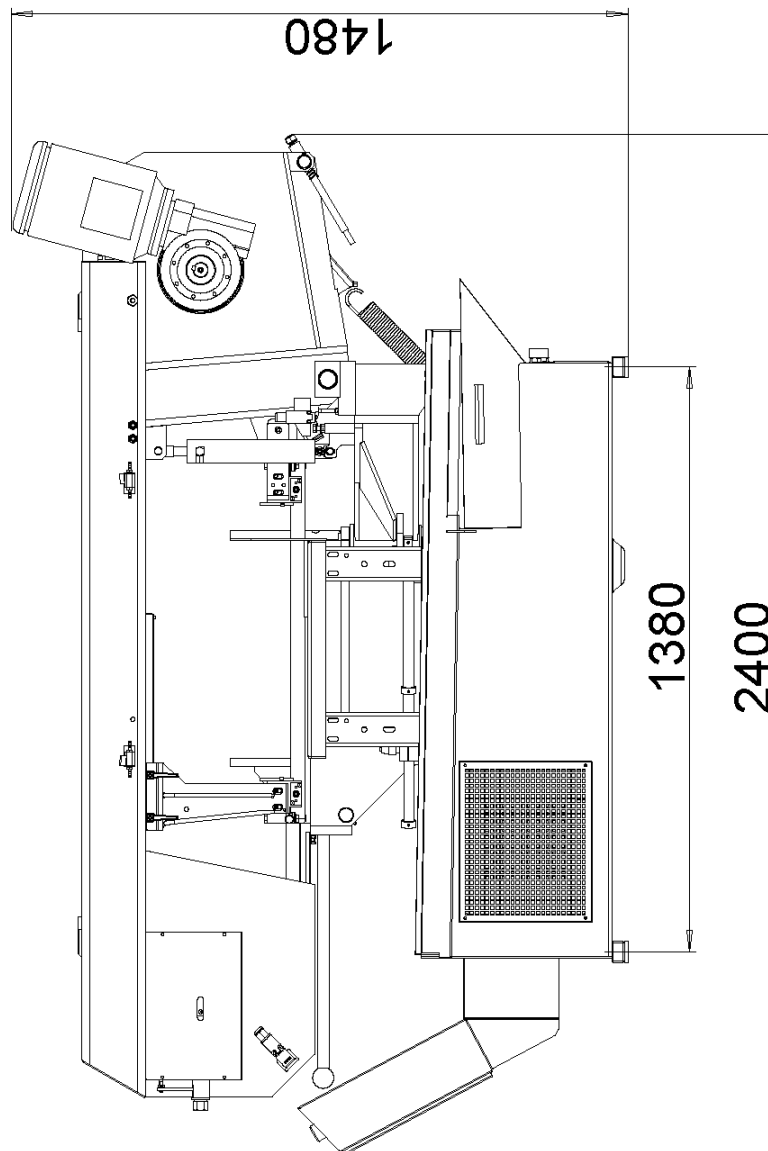
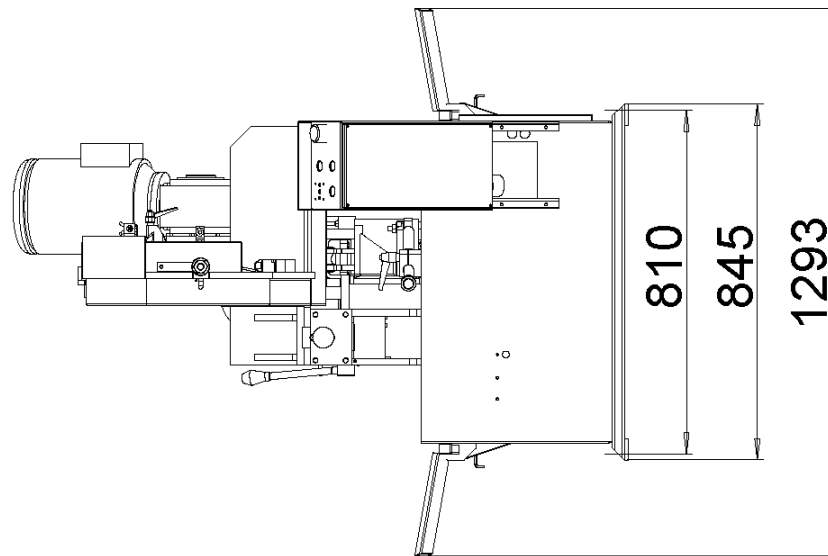


5) Dismantle new pump switchboard cover. Push the cable through the bushing and fasten it.

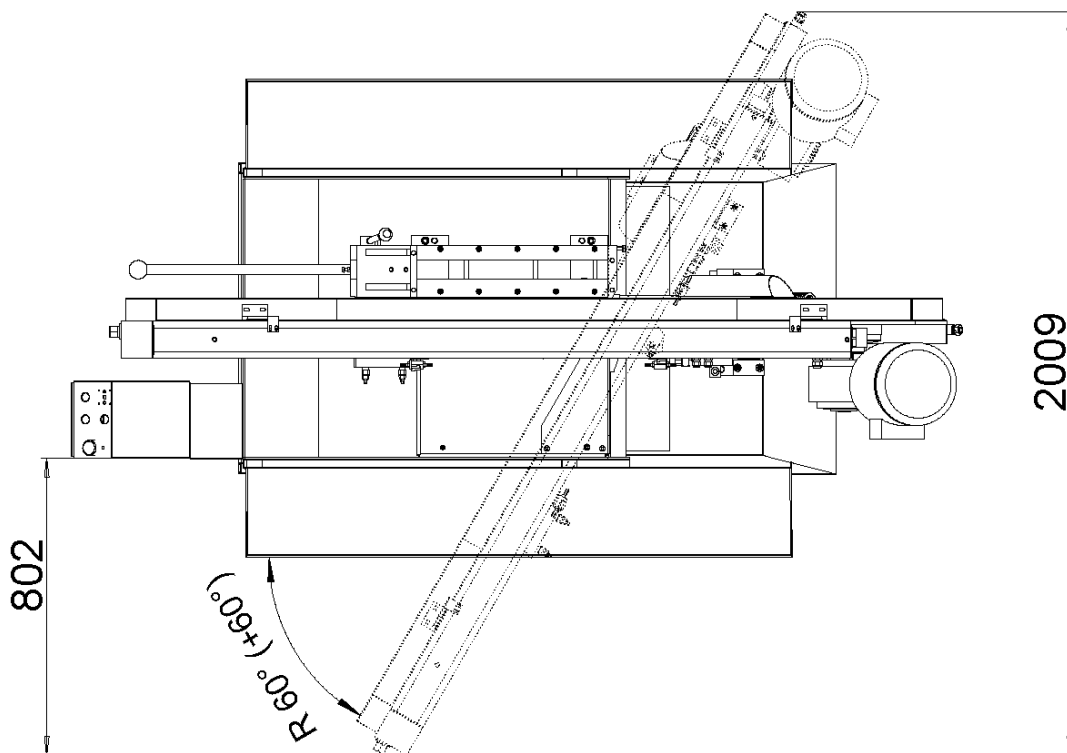
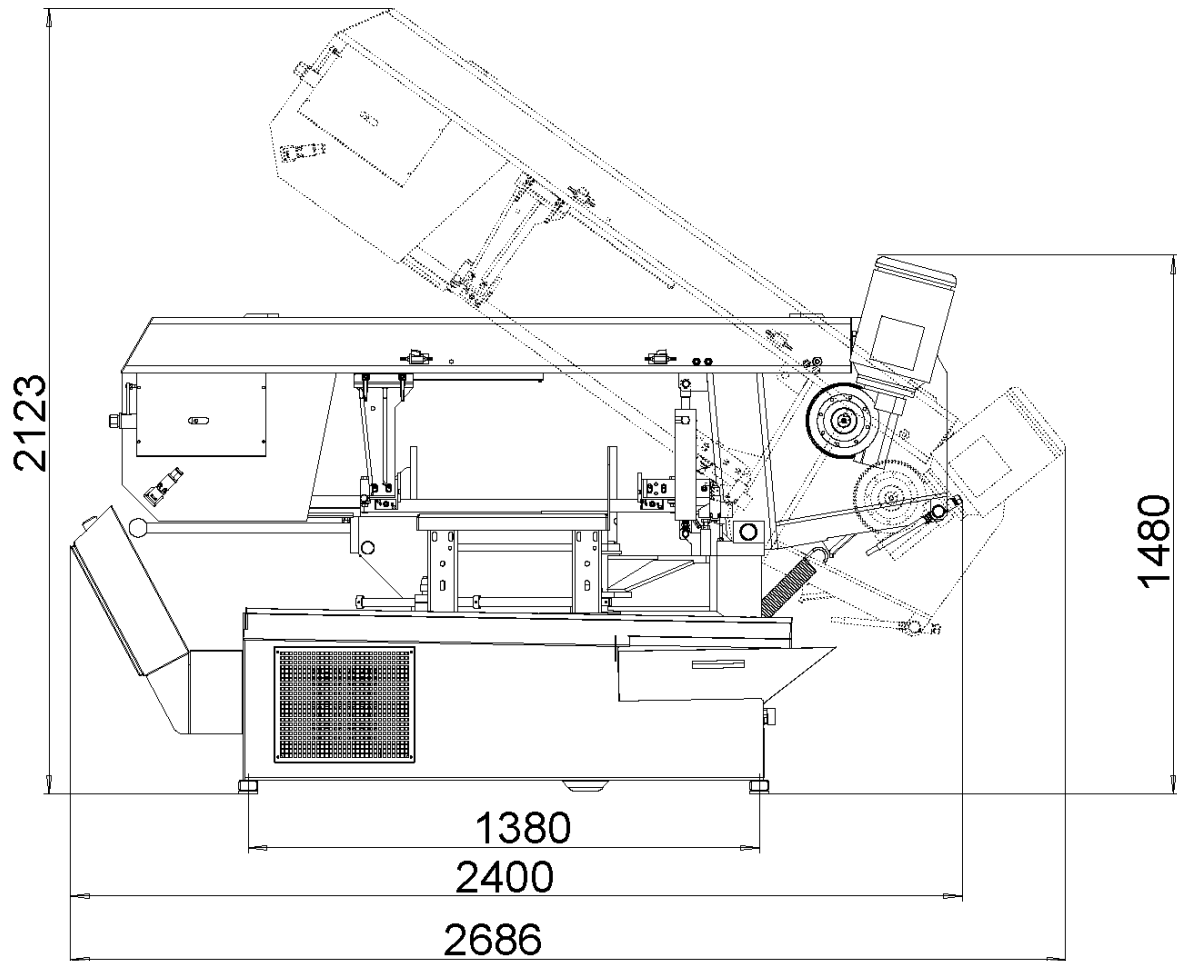


6) Screw on the cable bushing and cover of the terminal block. Do not forget the rubber gasket! Tighten the cooling liquid hose with non-stick tape and screw it again. Install cooling liquid hose, place the pump on the sheet metal holder and screw it.

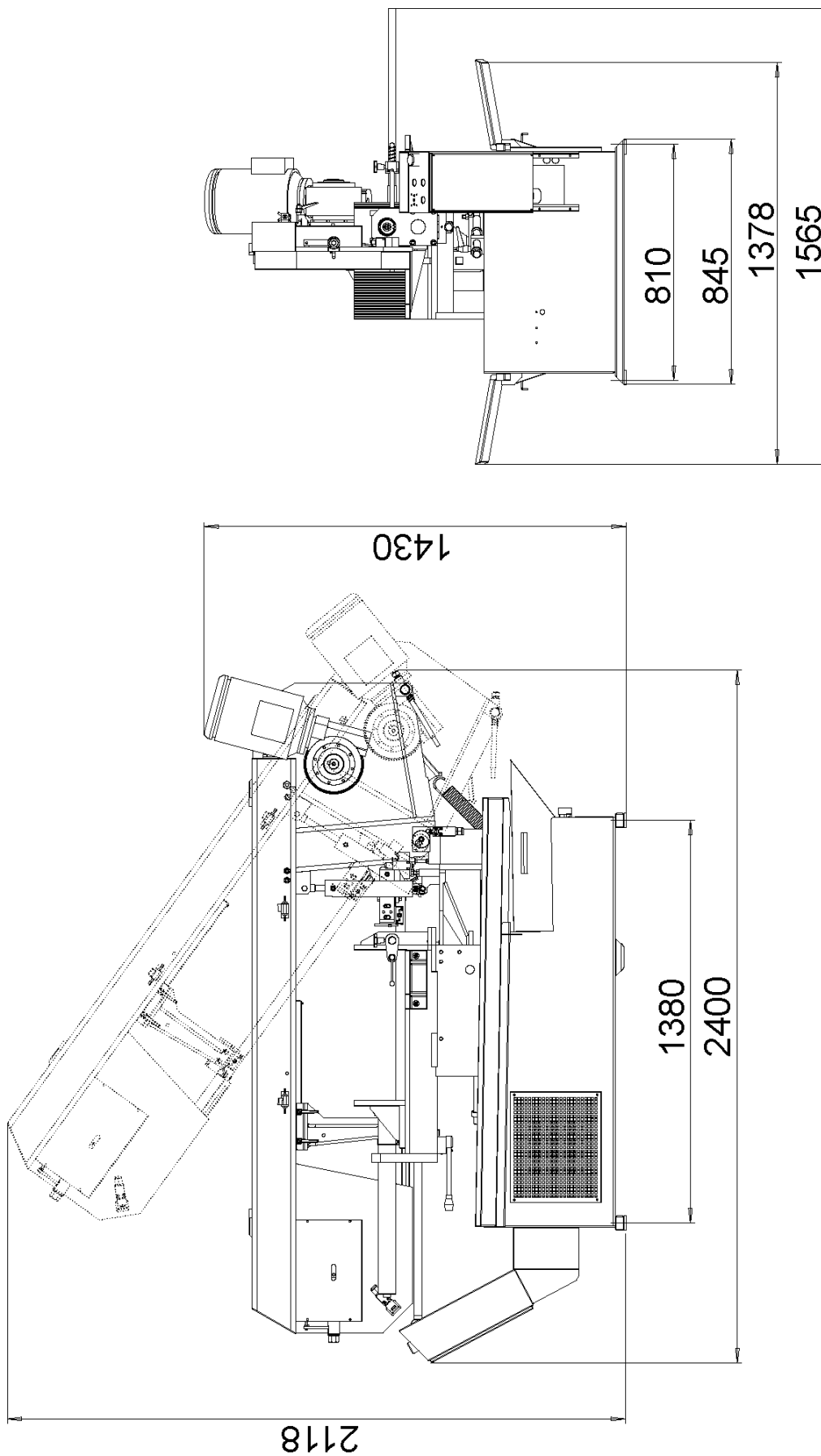
22. Rozměrové schéma / Aufstellzeichnung / Installation diagram



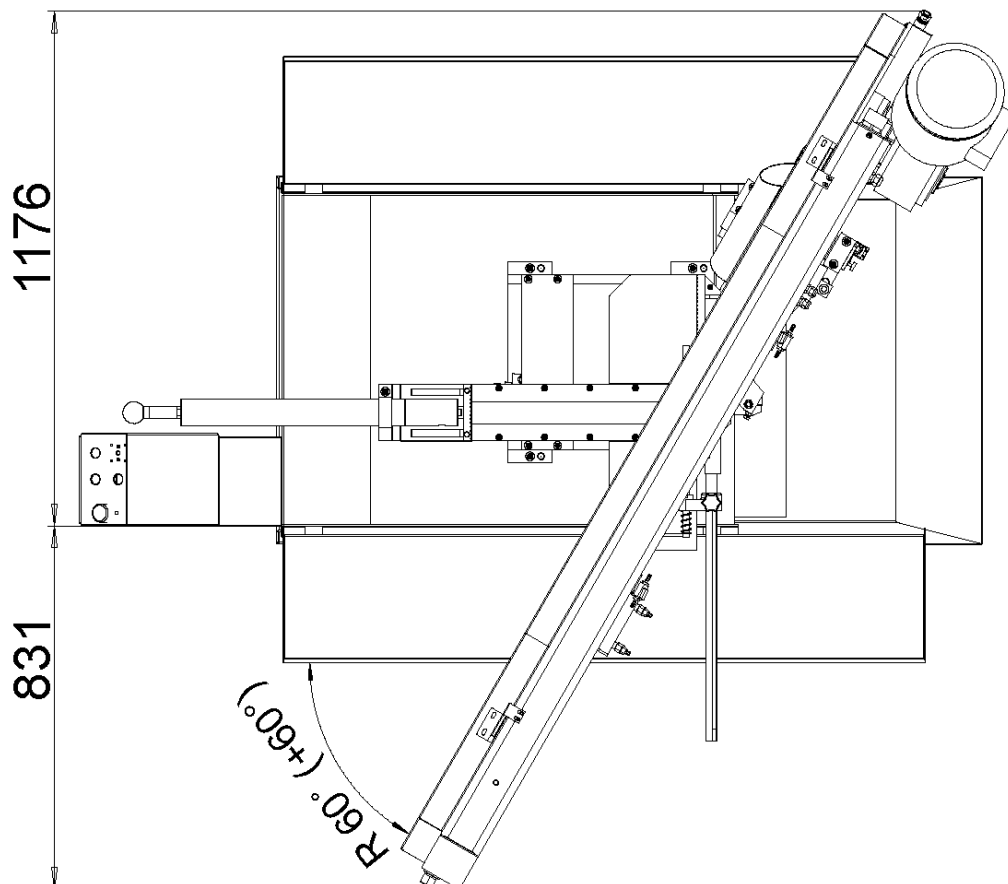
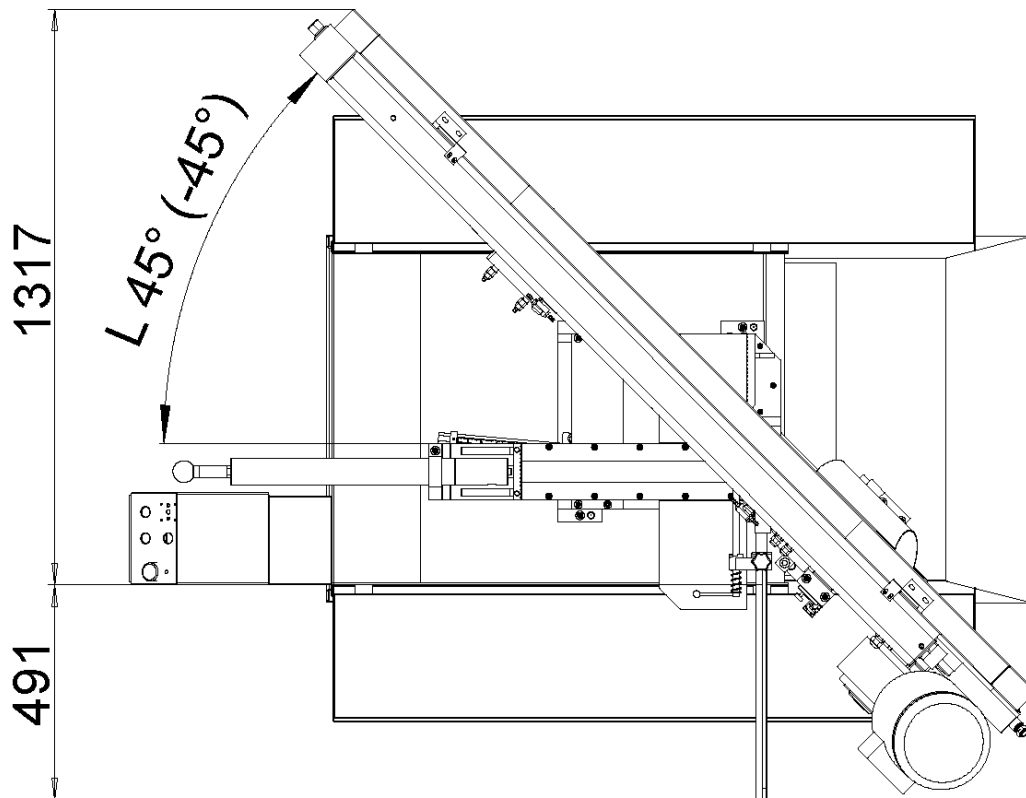
22.1. Rozměrové schéma 1 - typ G / Aufstellzeichnung 1 - Typ G / Installation diagram 1 – type G



22.2. Rozměrové schéma 2 - typ G / Aufstellzeichnung 2 - Typ G / Installation diagram 2 – type G

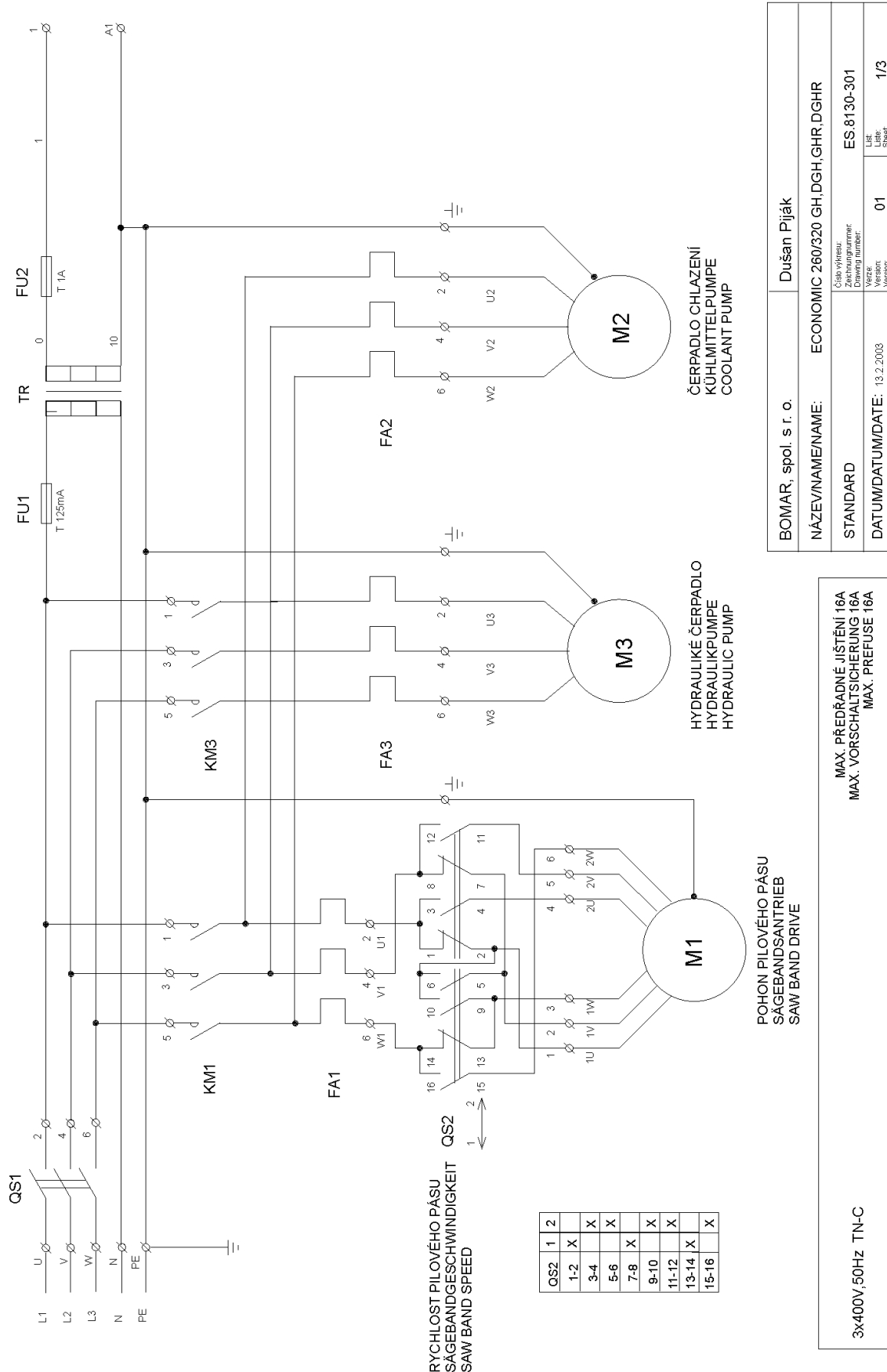


22.3. Rozměrové schéma 3 - typ DG / Aufstellzeichnung 3 - Typ DG / Installation diagram 3 – type DG

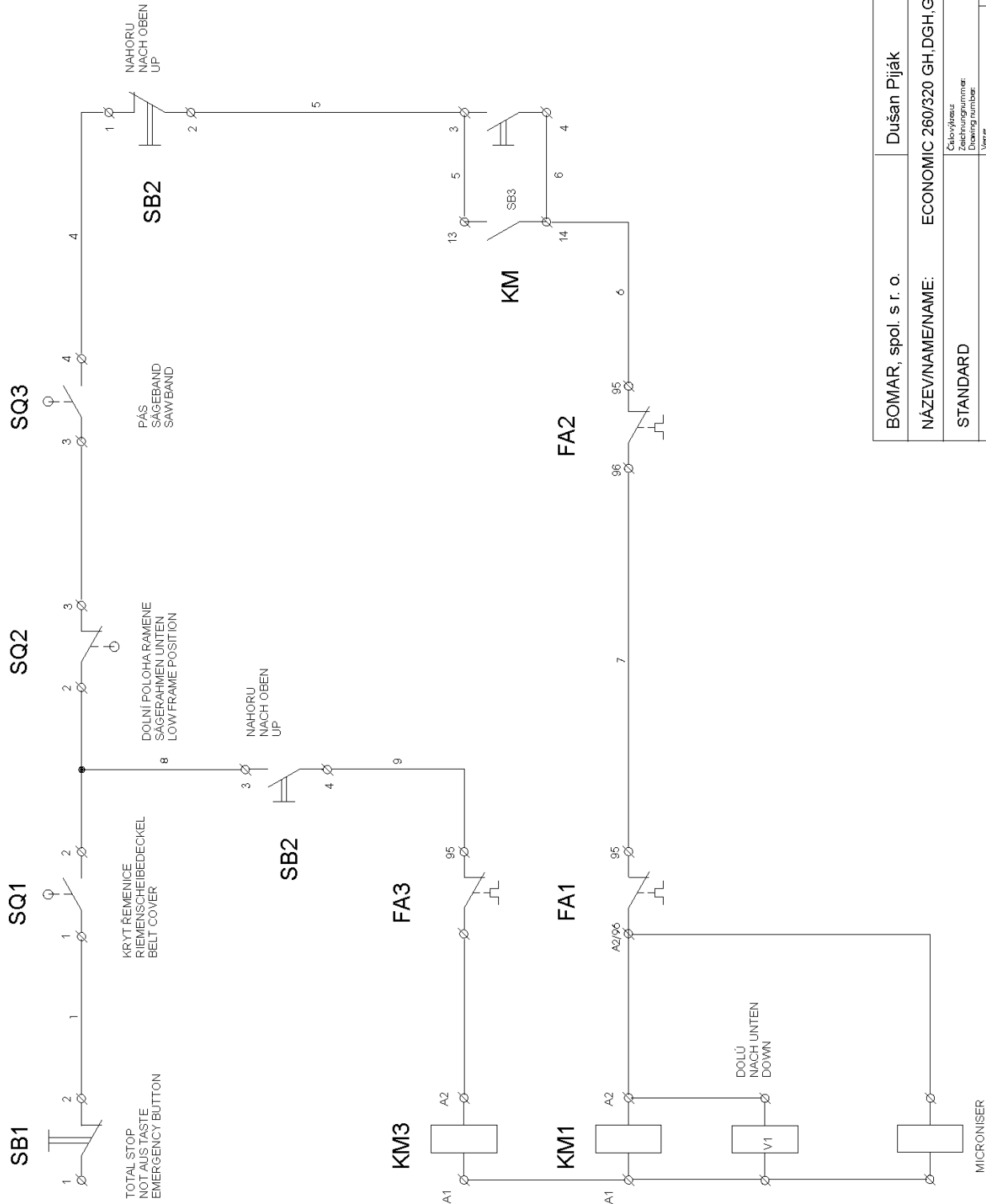


22.4. Rozměrové schéma 4 - typ DG / Aufstellzeichnung 4 - Typ DG / Installation diagram 4 – type DG

23. Elektrická schémata / Elektroschemas / Wiring diagrams

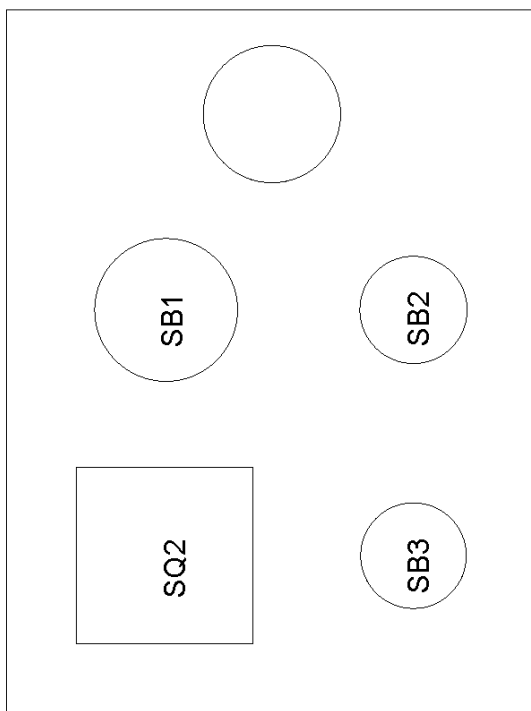
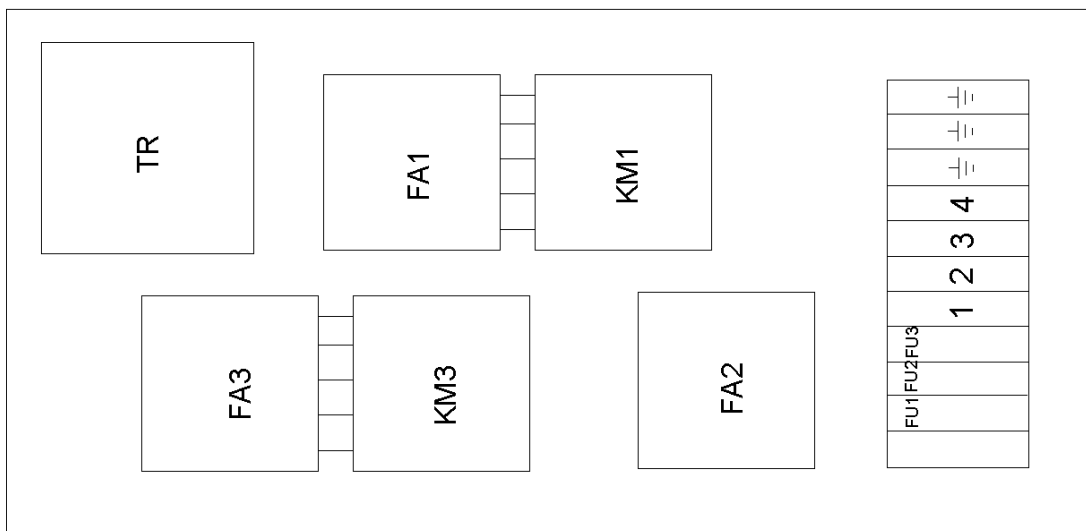


23.1. Elektrické schéma / Elektroschema / Wiring diagram 1 – economic 510.320 GH, DGH



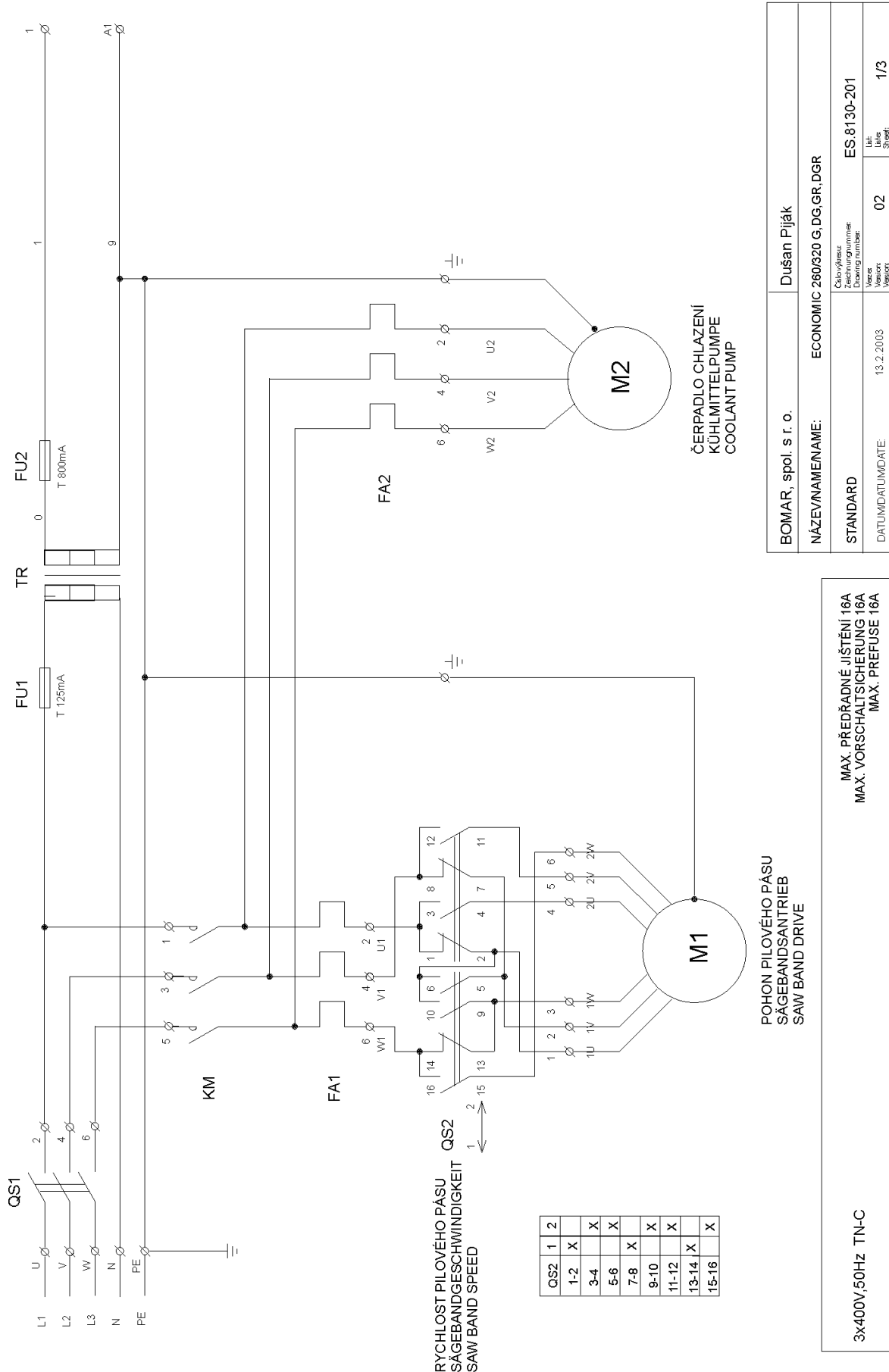
BOMAR, spol. s r. o.	Dušan Piják
NÁZEV/NAME/NAME:	ECONOMIC 260/320 GH,DGH,GHR,DGHR
STANDARD	Číslo/kód: Zeichnungsnummer: Drawing number: Verze: Version: ES.8130-301
DATE/DATE/DATE:	13.2.2003 Lib: Sheet: 01 2/3

23.2. Elektrické schéma / Elektroschema / Wiring diagram 2 – economic 510.320 GH, DGH

OVLÁDACÍ PANEL
 BEDIENPULT
 CONTROL PANEL

 PŘÍSTROJOVÁ DESKA
 GERÄTEBRETT
 DASHBOARD


BOMAR, spol. s r. o.	Dušan Piják
NÁZEV/NAME/NAME:	ECONOMIC 260/320 GH,DGH,GHR,DGHR
STANDARD	Číslo/keuz: Zeichnungsnummer: Drawing number: ES.8130-301
DATUM/DATUM/DATE:	Vyzece: Version: Version: 01
	Liit: Page: Sheet: 3/3

 23.3. Elektrické schéma / Elektroschema / Wiring diagram 3 – economic 510.320
 GH, DGH

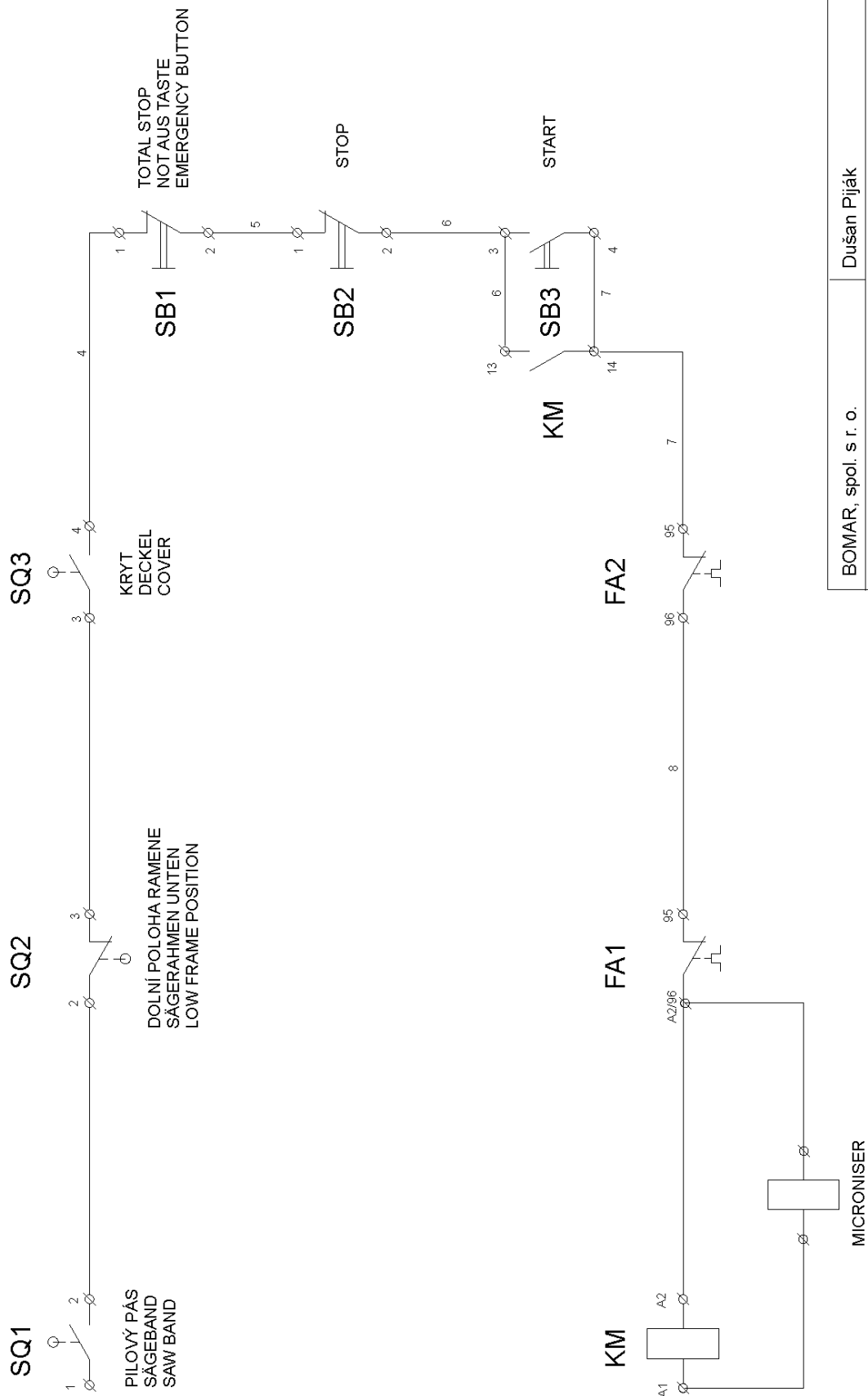


BOMAR, spol. s r. o.	Dušan Píják
NÁZEY/NAME/NAME:	ECONOMIC 260/920 G, DG, GR, DGR
STANDARD	ES.8130-201
DATUM/DATE:	13.2.2003
Verze/Version:	02
Liř/Liře/Sheet:	1/3

3x400V,50HZ TN-C

MAX. PŘEDŘADNÉ JIŘTĚNÍ 16A
MAX. VORSCHALTSICHERUNG 16A
MAX. PREFUSE 16A

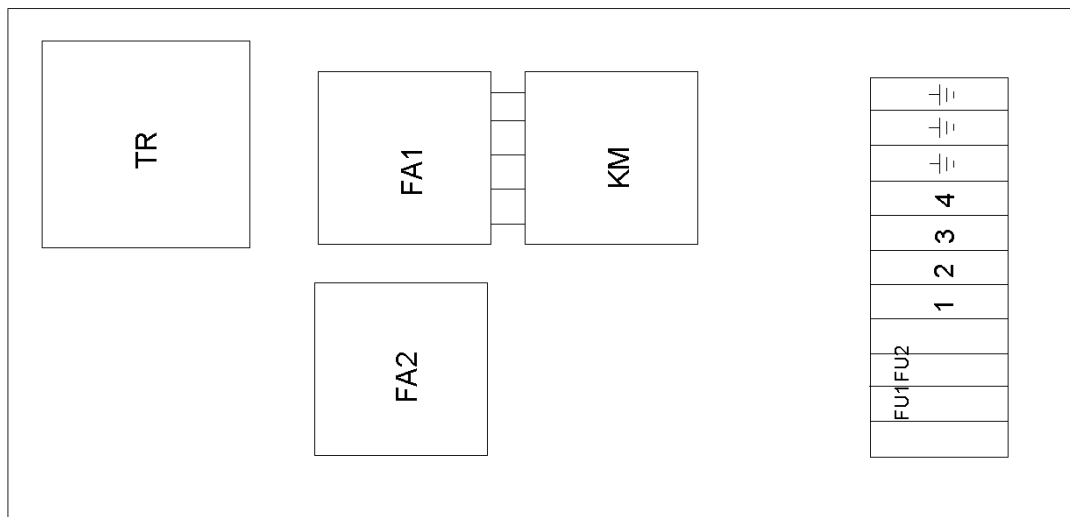
23.4. Elektrické schéma / Elektroschema / Wiring diagram 4 – economic 510.320 G, DG



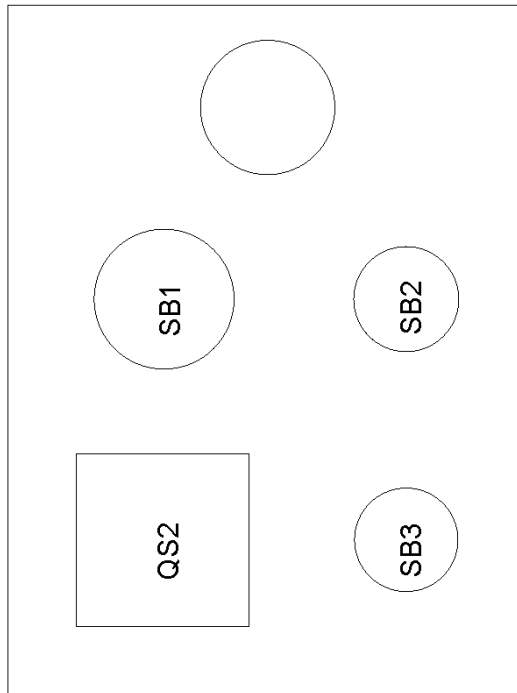
BOMAR, spol. s r. o.	Dušan Piják
NÁZEV/NAME/NAME:	ECONOMIC 260/320 G.DG.GR.DGR
STANDARD	Ciklovyřez: Začíslování: Drawing number: Version: Version: Version:
DATUM/DATE/DATE:	13.2.2003
	02
	ES:8130-201
	2/3

23.5. Elektrické schéma / Elektroschema / Wiring diagram 5 – economic 510.320 G, DG

PŘÍSTROJOVÁ DESKA
GERÄTEBRETT
DASHBOARD

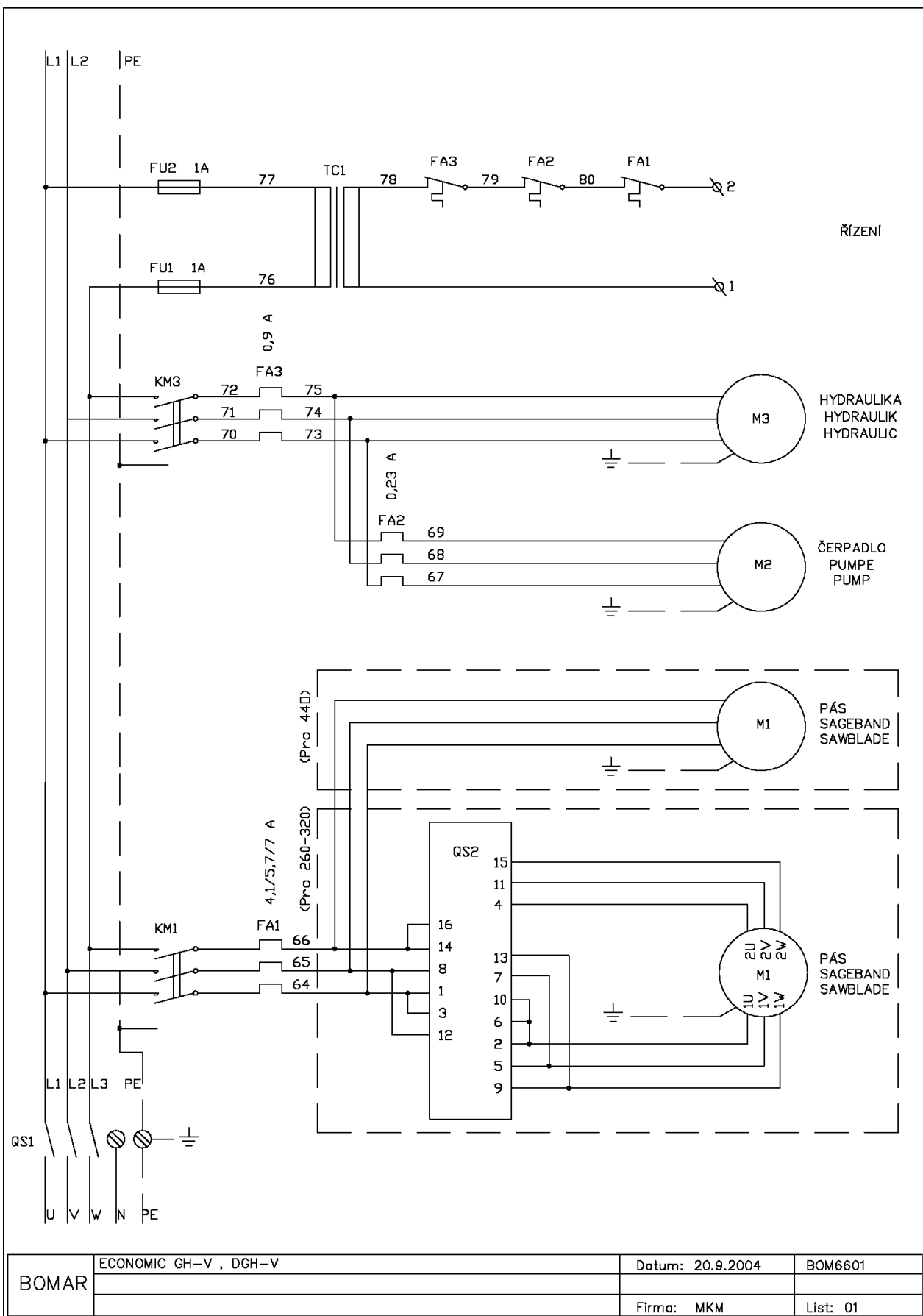


OVLÁDACÍ PANEĽ
BEDIENPULT
CONTROL PANEL

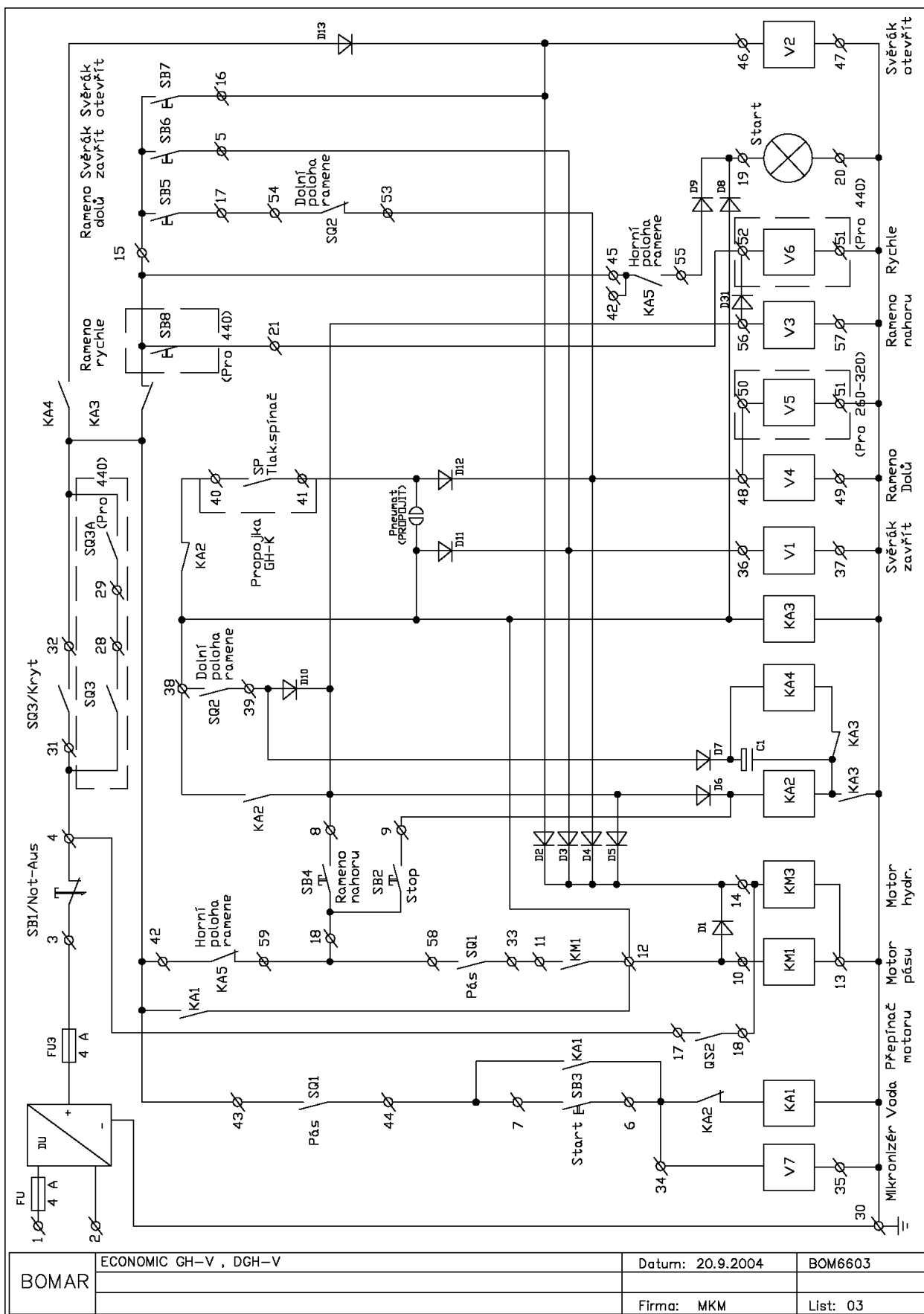


BOMAR, spol. s r. o.	Dušan Piják
NÁZEV/NAME/NAME:	ECONOMIC 260/320 G, DG, GR, DGR
STANDARD	Číslo výkresu Zeichnungsnummer Drawing number: ES.8130-201
DATUM/DATUM/DATE:	Verze: Version: Version: 13.2.2003
	02
	02
	3/3

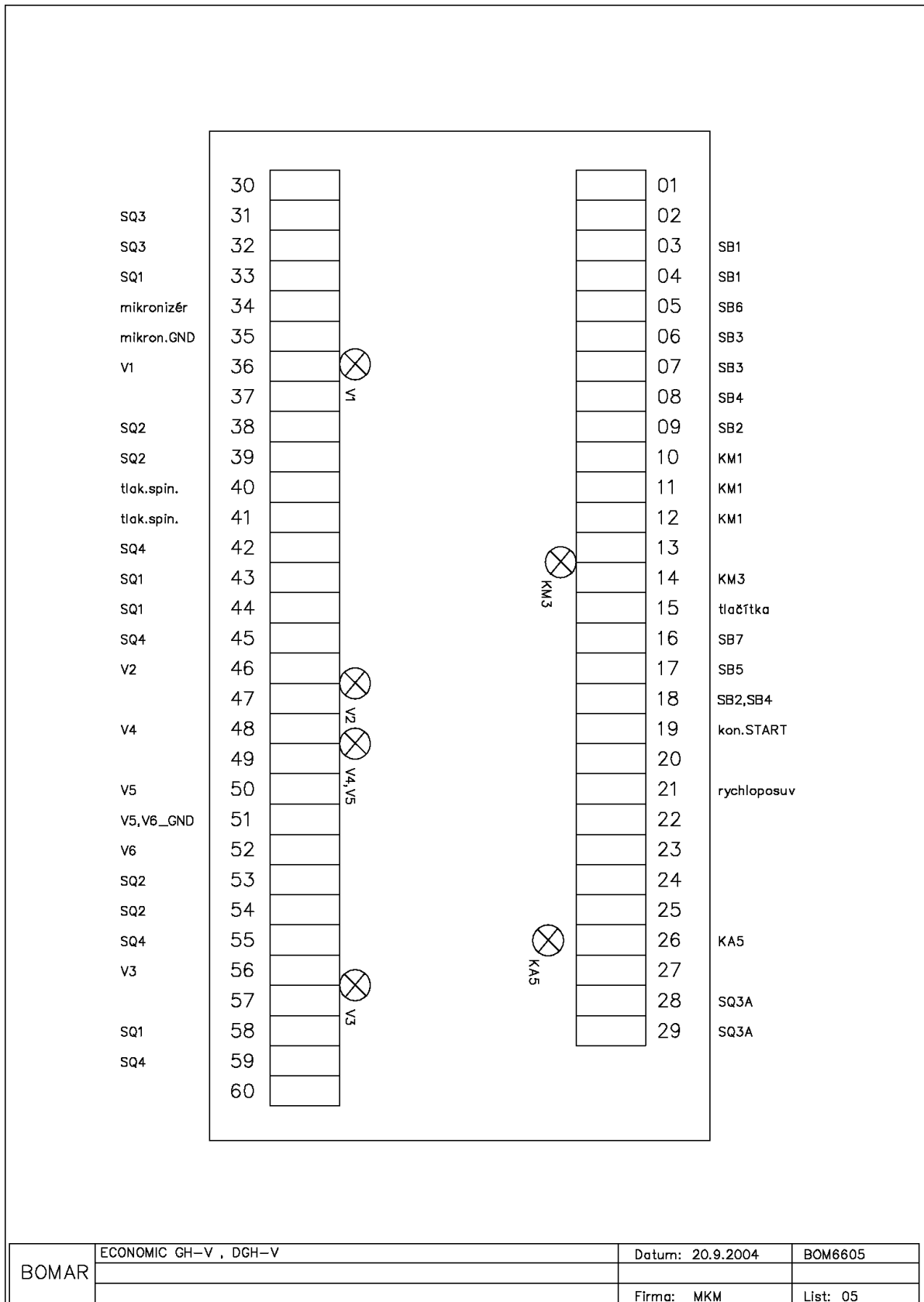
23.6. Elektrické schéma / Elektroschema / Wiring diagram 6 – economic 510.320 G, DG



23.7. Elektrické schéma / Elektroschema / Wiring diagram 7 – economic 510.320 GHV, DGHV



23.9. Elektrické schéma / Elektroschema / Wiring diagram 9 – economic 510.320 GHV, DGHV



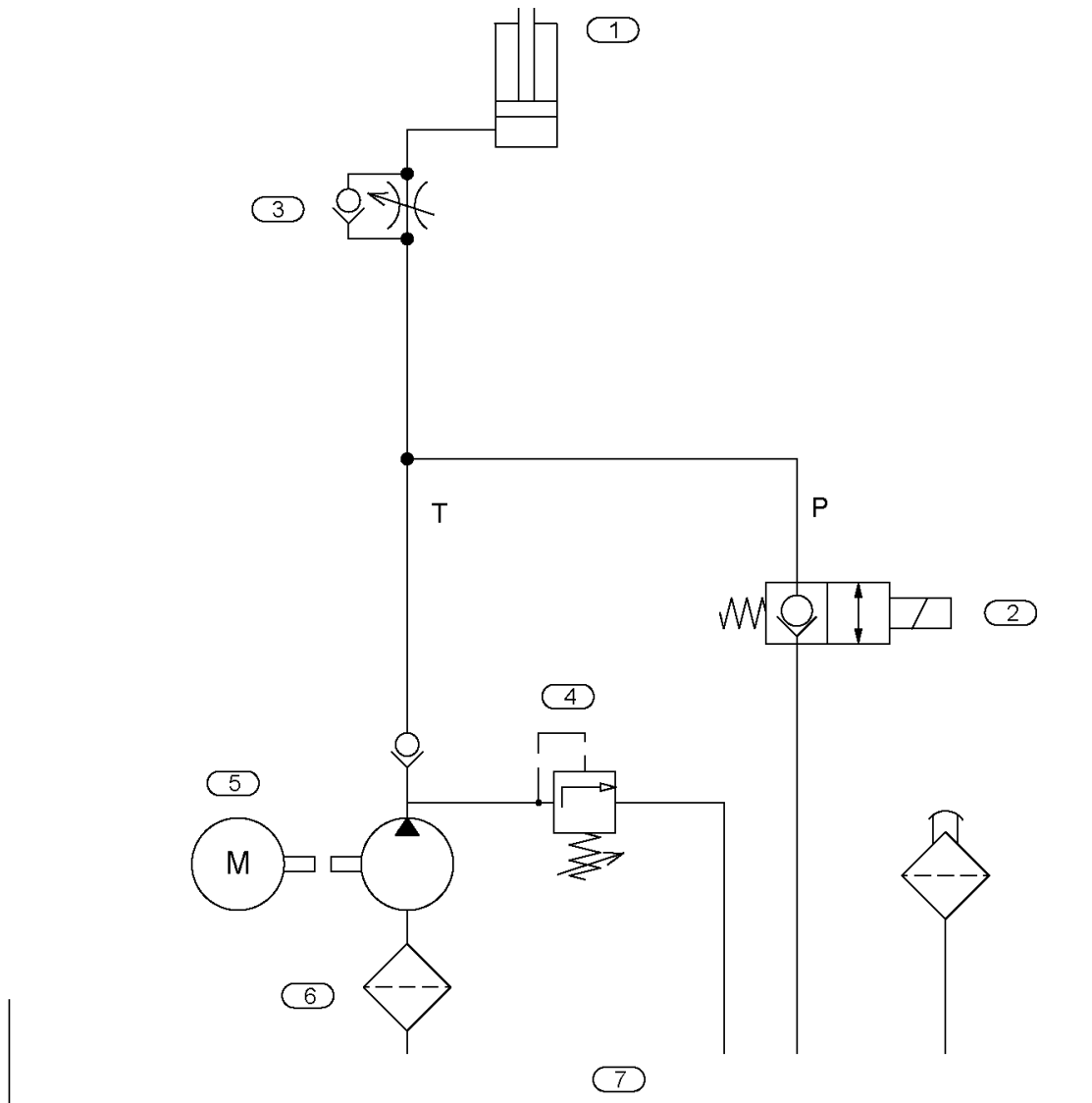
23.11. Elektrické schéma / Elektroschema / Wiring diagram 10 – economic 410.260 HV, DGHV

24. Kusovník elektrosoučástí / Stückliste der Elektroteilen / Piece list of electroparts

ATTENTION! Only qualified person can do the servicing and repairs. For parts changing, use only parts, which are identical with the originals.

Objednáací číslo	Název položky	Ozn.	Ks
Bestell – Nr.	Bezeichnung	Sign.	Menge
Reference No.	Item	Sign.	Pcs.
91.995.066	Deska řízení /Steuerplatte / kontrol panel 3123	A	1
91.040.004	Stykač / Schütz / Contactor LP1 KO910 BD	KM1-3	3
91.283.002	Potenciometr / Potenziometer / potentiometer TP195 5kOhm		3
91.170.009	Hlavní vypínač / Hauptschalter / main switcher ABB 16A-OT 16ET3HYST1	QS1	1
91.050.103	Tepelné relé / Thermrelais / temperature relay Telemachanigue KO-303-0,23-0,36 (400v)	FA2	1
91.050.106	Tepelné relé / Thermrelais / temperature relay Telemachanigue KO-306-0,8-1,2 (400v)	FA3	1
91.050.114	Tepelné relé / Thermrelais / temperature relay Telemachanigue KO-314-5,5-8A (400V)	FA1	1
91.050.104	Tepelné relé / Thermrelais / temperature relay Telemachanigue KO-304-0,36-0,54 A14-5,5-8A (3x230V)	FA2	1
91.050.107	Tepelné relé / Thermrelais / temperature relay Telemachanigue KO-307-1,2-1,8 A14-5,5-8A (3x230V)	FA3	1
91.050.116	Tepelné relé / Thermrelais / temperature relay Telemachanigue KO-316-8-11A (3x230V)	FA1	1
91.060.047	Tlačítko zeleno - červené/ Taste grün rot /green red button DDL-GR-GB1	SB2-SB3	1
91.060.054	Tlačítko bílo černé/ Taste weiss schwarz /black white DDL-W5	SB4-SB7	1
91.9230-001	Rozvaděč		1
91.080.015	Transformator / Transformator / Transformator TVB E 84.29/003-75VA	TC1	1
91.001.033	Elektromotor / Elektromotor / Electromotor MDERA 112M-8/4 B14	M1	1

25. Hydraulická schémata / Hydraulikschemas / Hydraulic diagrams



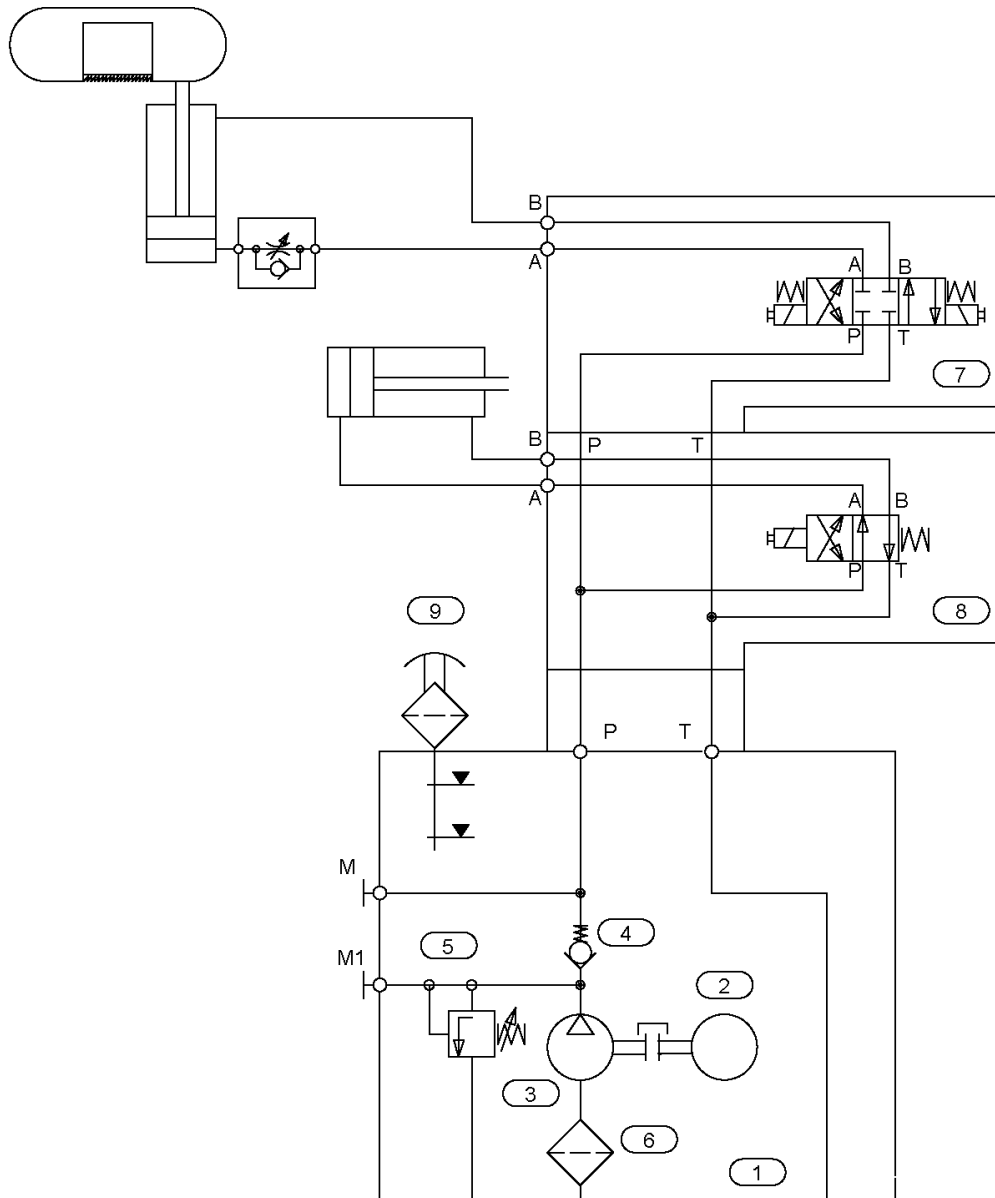
Základní technické parametry :
 Technische Spezifikation:
 Technical specification:

Q	3,6	dm ³ ·min ⁻¹	ot.	1395	min ⁻¹
p _{max}	3,0	MPa	P	0,55	kW

Hydraulické schéma: Hydraulikschemata: Hydraulic diagram:	9216-001	Schéma / Schema / Diagram: 9216-001.DXF Datum / Datum / Date: 3. 10. 2002
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25.1. Hydraulické schéma / Hydraulikschema / Hydraulic diagram – economic 510.320 GH, DGH

Poz.	Název položky		ks
Pos.	Bezeichnung		Menge
Pos.	Item		Pcs.
1	Válec zvedací / Hubzylinder / Lifting cylinder		1
2	Ventil solenoidový / Magnetventil / Solenoid valve	10600001	1
3	Ventil škrtící / Drosselventil / Throttle valve		1
4	Ventil přepouštěcí / Bypassventil / By-pass valve	VPP2-04/S-6	1
5	Elektromotor / Elektromotor / Electromotor	0,55kW, 1395 1/min	1
6	Filtr / Filter / Filter	90mm	1
7	Nádrž / Behälter / Tank	8 dm ³	1



Základní technické parametry :
 Technische Spezifikation:
 Technical specification:

Q	4,3	dm ³ ·min ⁻¹	ot.	1385	min ⁻¹
p _{max}	3,0	MPa	P	0,25	kW

Hydraulické schéma:
 Hydraulikschemata:
 Hydraulic diagram:

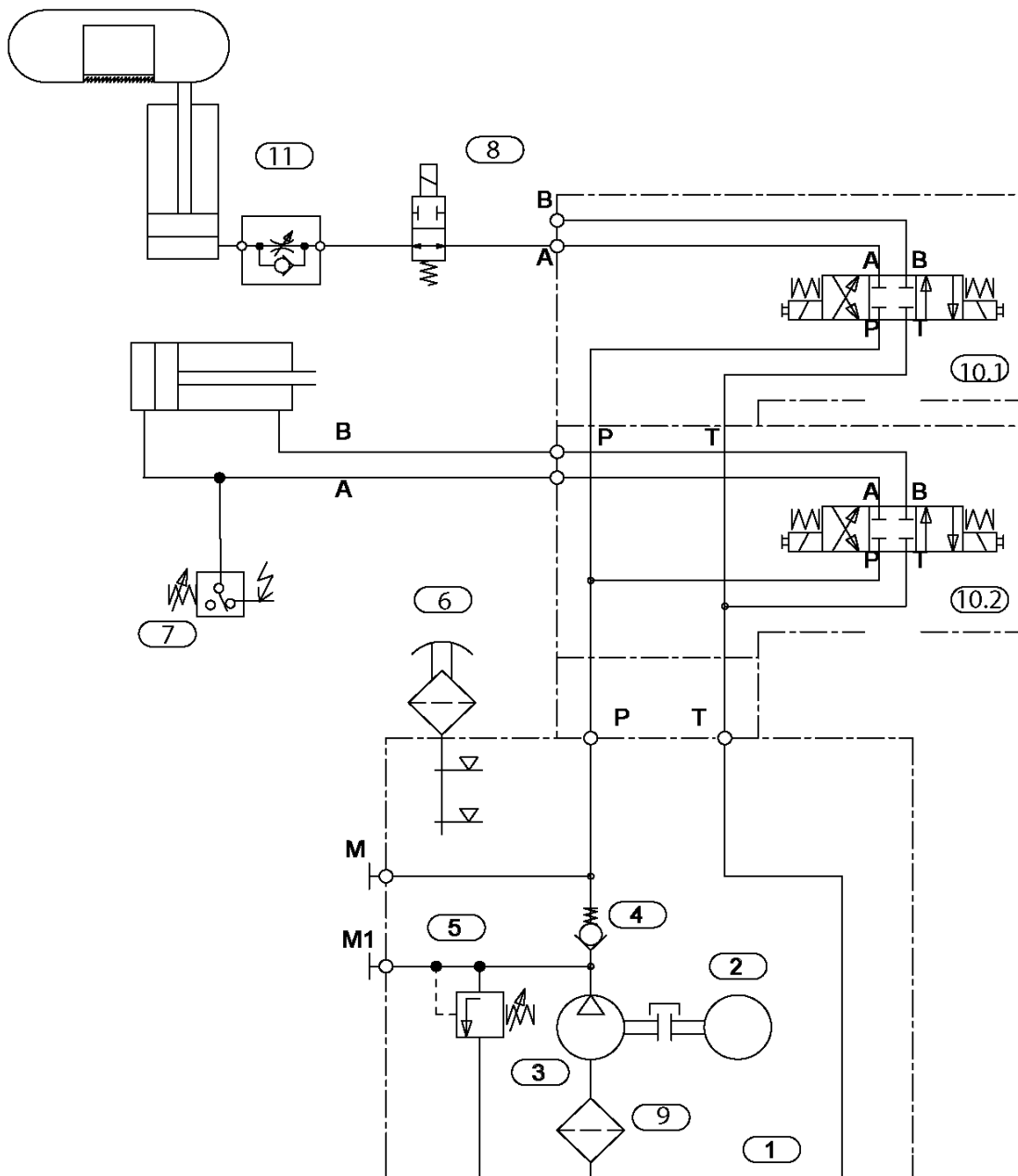
731-0440

Schéma / Schema / Diagram: 731-0440AH0.DWG
 Datum / Datum / Date: 13. 1. 2003

25.2. Hydraulické schéma / Hydraulikschemata / Hydraulic diagram – economic 510.320 GHK, DGHK

Poz.	Název položky	ks
Pos.	Bezeichnung	Menge
Pos.	Item	Pcs.
1	Nádrž / Behälter / Tank N12B, 12dm ³	1
2	Elektromotor / Elektromotor / Electromotor 1LA7063-4AB; 0,18kW; 0,56A	1
3	Hydrogenerátor / Hydraulikaggregat / Hydrogenerator P2-3,3L.66017	1
4	Jednosměrný ventil / Einwegventil / One-way valve VJO1-06/SG-1	1
5	Přepouštěcí ventil / Bypassventil / By-pass valve VPP2-04/S-2	1
6	Sací filtr / Filter / Suction filter 2SF 56/48-0,063	1
7	Rozváděč / Verteilung / Distributor RPEK1-033Z11/02400E1K5	1
8	Rozváděč / Verteilung / Distributor RPEK1-032R11/02400E1K5	1
9	Nalévací zátka / Stopfen / Fill stopper L1.0406-51	1

Výstupy "A","B" - hrdla G1/4" / M14x1,5 bez převlečných matic
 Ausgänge "A","B" - Stutzen G1/4" / M14x1,5 ohne Überwurfmuttern
 Outputs "A","B" - sockets G1/4" / M14x1,5 without cap nuts



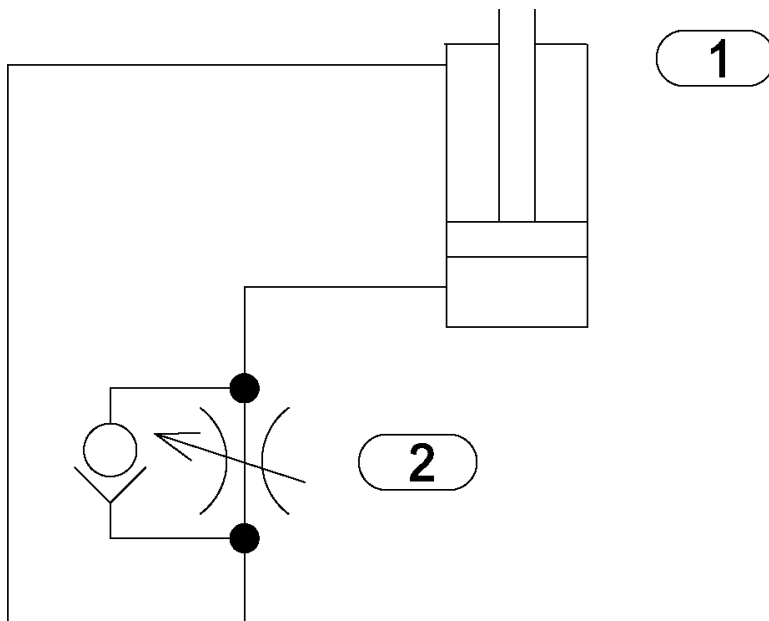
Základní technické parametry:
 Technische Spezifikation:
 Technical specification:

Q	4,3	dm ³ ·min ⁻¹	ot.	1395	min ⁻¹
P _{max}	3,0	MPa	P	0,25	kW

Hydraulické schéma: Hydraulikschemata: Hydraulic diagram:	731-0441	Schéma / Schema / Diagram: 731-0441B.DWG Datum / Datum / Date: 26.6. 2003
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25.3. Hydraulické schéma / Hydraulikschemata / Hydraulic diagram – economic 510.320 GHV, DGHV

Poz.	Název položky	ks
Pos.	Bezeichnung	Menge
Pos.	Item	Pcs.
1	Nádrž / Behälter / Tank N12B	1
2	Elektromotor / Elektromotor / Electromotor MA-AL71 0,25KW 400/230V B14	1
3	Hydrogenerátor / Hydraulikaggregat / Hydrogenerator P2-3,3L.66017	1
4	Jednosměrný ventil / Einwegventil / One-way valve VJO1-06/SG-1	1
5	Přepouštěcí ventil / Bypassventil / By-pass valve VPP2-04/S-6	1
9	Sací filtr / Filter / Suction filter 2SF 56/48-0,063	1
10	Rozváděč / Verteilung / Distributor RPEK1-033Z11/02400E1K5Z2 92.101.021	2
6	Nalévací zátka / Stopfen / Fill stopper L1.0406-51	1
7	Tlakový spínač / Druckschalter / Pressure switch SUKO 92.201.001	1
8	Solenoidový ventil / Magnetventil / Solenoid valve 92.153.013	1
11	Škrtící ventil /Drosselventil / Choke VS01-04/R2,5-0 92.152.001	1



Hydraulické schéma: Hydraulikschemata: Hydraulic diagram:	251.277	Schéma / Schema / Diagram: 251.277_1.AI Datum / Datum / Date: 11. 2. 2003
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25.4. Hydraulické schéma / Hydraulikschemata / Hydraulic diagram – economic 510.320 G, DG

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	251.251	Válec zvedací / Hubzylinder / Lifting cylinder	1
2	92.152.002	Ventil škrtící / Drosselventil / Throttle valve VSO1-04/R3-OS	1

Označení hydraulických hadiček / Bezeichnung der hydraulischen Schlauche / Indication of hydraulic hose:

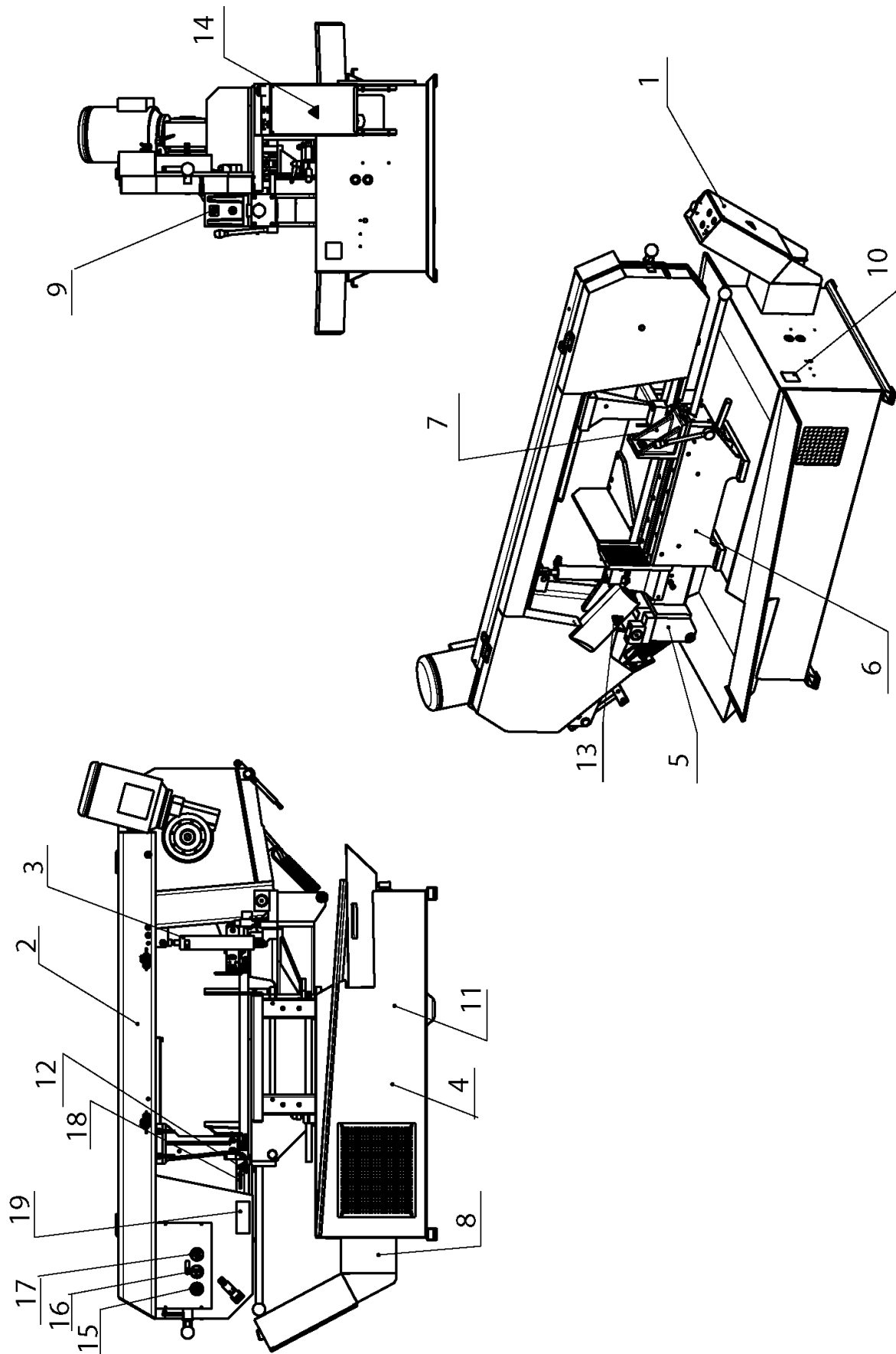
Hydr. hadice	Hadice	Kování	Konc. A	Konc. B	Konc. C	Konc. D	Konc. E	Kon c. F	Kon. G	Ks
Hydr. Schlauche	Schlauche	Schmieden	Schlauchtüle A	B	C	D	E	F	G	Menge
Hydr. Hose	hose	forging	terminal A	B	C	D	E	F	G	piece
320G-DG ECO(LC)										
6BA4600	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
320 GH-DGH-GHR-DGHR ECO										
6BA4600	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
6BA1100	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
KOSTKA REGULACE PASU / Klotz Bandregulation / cube band control										
6EA4400	42.001.001	92.051.001	92.052.001	-	-	-	93.012.004	-	-	1
6EA600	42.001.001	92.051.001	92.052.001	-	-	-	93.012.004	-	-	1
320 GHV-DGHV ECO										
6BA4600	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
6BA1420	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
6BA1420	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	2
260 GHK ECO										
6BA4600	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
6BA1100	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
6BB1450	42.001.001	92.051.001	-	92.053.001	-	-	-	-	-	1
320 DGH ECO										
6BA4600	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
Horní přítlak 320 GHV ECO / Obere Spannung / Top pressure										
6BA1900	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
6BA2350	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1

26. 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. STG 120), výrobní číslo (např. 125) a rok výroby (např. 1999).

In die Bestellung der Ersatzteile führen Sie immer an:
Maschinentyp (z. B. STG 120), Serien Nr. (z. B. 125) und
Baujahr (z. B. 1999).

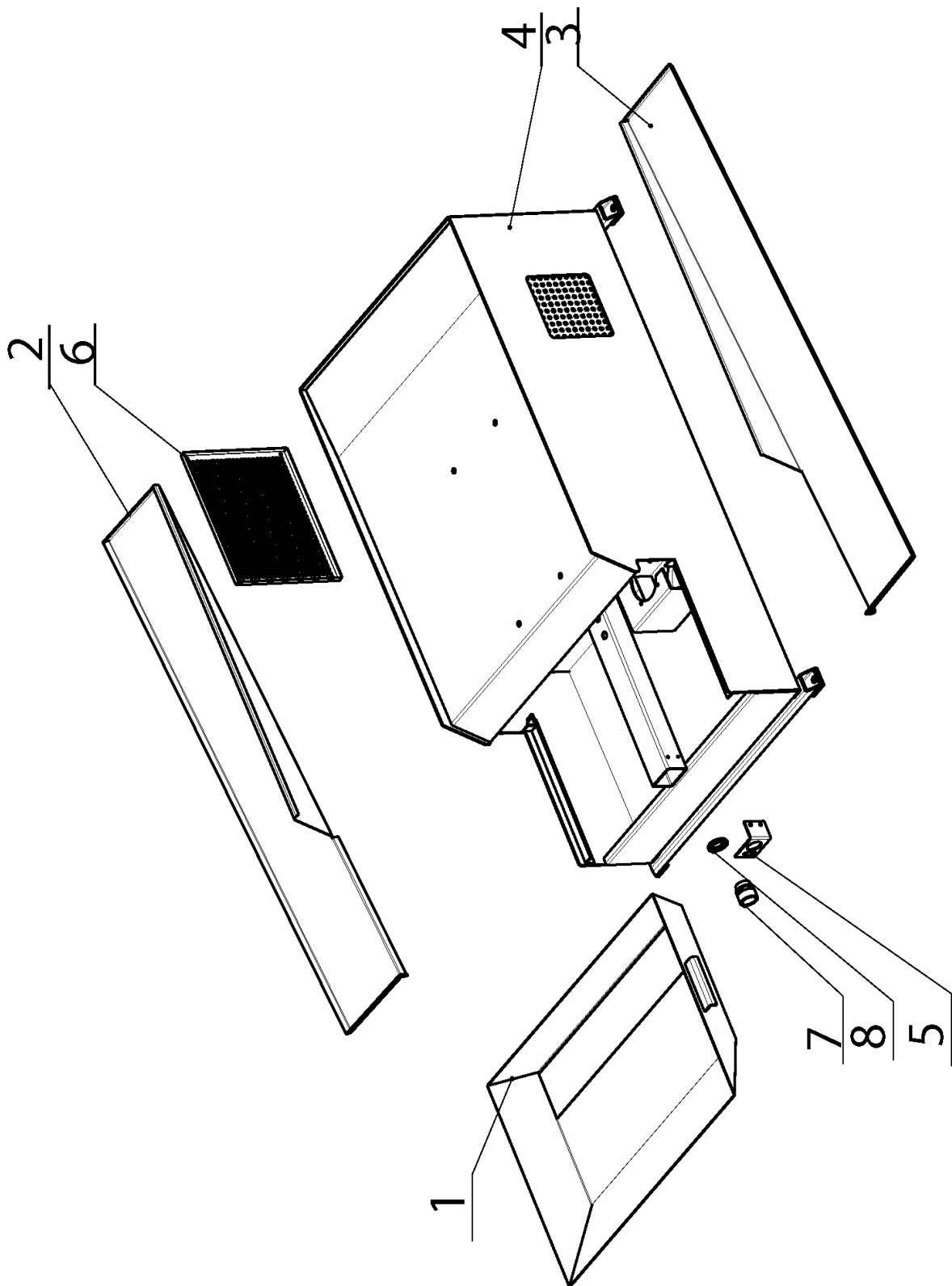
For spare parts order, you must always to allege: type of
machine (for example STG 120), serial number (for example 125)
and year of construction (for example 1999).



26.1. Pila / Säge / Saw - economic 510.320 G

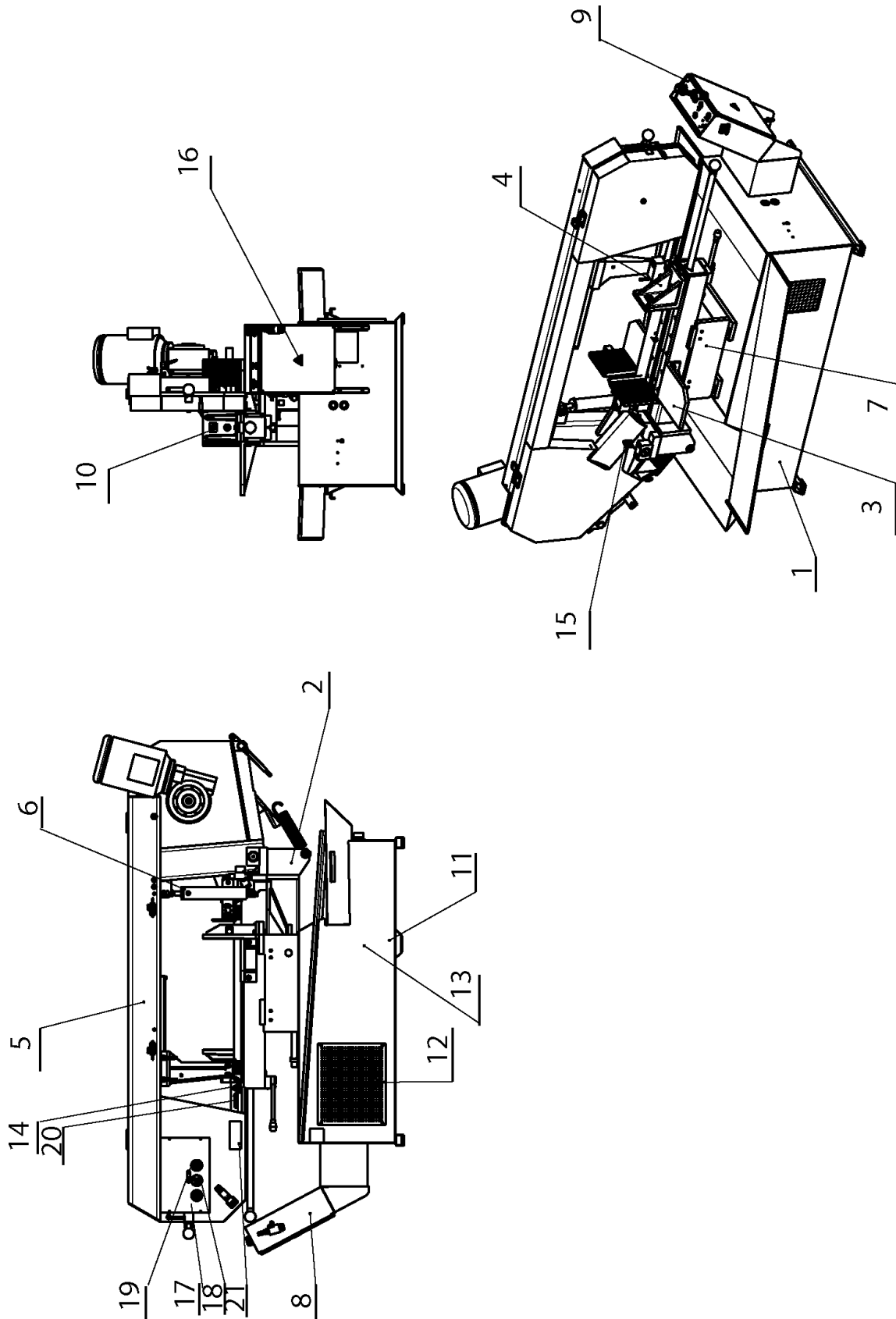
Umístění bezpečnostních značek / Verteilung der Sicherheitszeichen / Position of safety symbols

Poz.	Objednací číslo	Název položky		ks
Pos.	Bestell - Nr.	Bezeichnung		Menge
Pos.	Reference No.	Item		Pcs.
1	201.0513-000	Ovládací panel / Bedienpult / Control panel		1
2	201.9204-000	Rameno / Arm / Arm		1
3	201.9207-100	Válec / Zylinder / Cylinder		1
4	201.9501-100	Podstavec / Untergestell / Pedestal		1
5	201.9502-000	Konzola / Konsole / Console		1
6	201.9503-000	Svěrák / Schraubstock / Vice		1
7	201.9503-100	Svěrák / Schraubstock / Vice		1
8	30.4114-009	Konzola / Konsole / Console		1
9	31.3199-005	Samolepka / Aufkleber / self-adhesive label	Nebezpečí stlačení / Pressungsfahr / Danger of pressing	1
10	31.9299-001	Štítek typový / Typenschild / Design label	P 0,5-65	1
11	91.020.009	Čerpadlo / Pumpe / Pump	2COP1-14	1
12	99.900.040	Samolepka / Aufkleber / self-adhesive label	Nebezpečí říznutí / Schnittfahr / Danger of ker	1
13	99.900.043	Samolepka / Aufkleber / self-adhesive label	Nebezpečí zachycení / Erfassungsfahr / Danger of interception	1
14	99.900.045	Samolepka / Aufkleber / self-adhesive label	Nebezpečí úrazu elektrickým proudem / Verletzungsfahr vom elektrischen Strom / Danger of electric shock	1
15	99.900.047	Samolepka / Aufkleber / self-adhesive label	Noste ochranné brýle a sluchátka / Tragen Sie eine Schutzbrille und Gehörschutz / Wear protective goggles and headphones	1
16	99.900.048	Samolepka / Aufkleber / self-adhesive label	Noste pevnou pracovní obuv / Tragen Sie Sicherheitsschuhe / Wear fixed protective shoes	1
17	99.900.049	Samolepka / Aufkleber / self-adhesive label	Přečíst návod k použití / Bedienungsanleitung lesen / read the operating instructions	1
18	99.900.053	Samolepka / Aufkleber / self-adhesive label	Směrová šipka / Richtungspfeil / direction arrow	1
19	99.900.055	Samolepka / Aufkleber / self-adhesive label	Zajištění ramene / Rahmensicherung / saw frame	1



26.2. Podstavec / Untergestell / Pedestal - economic 510.320 G

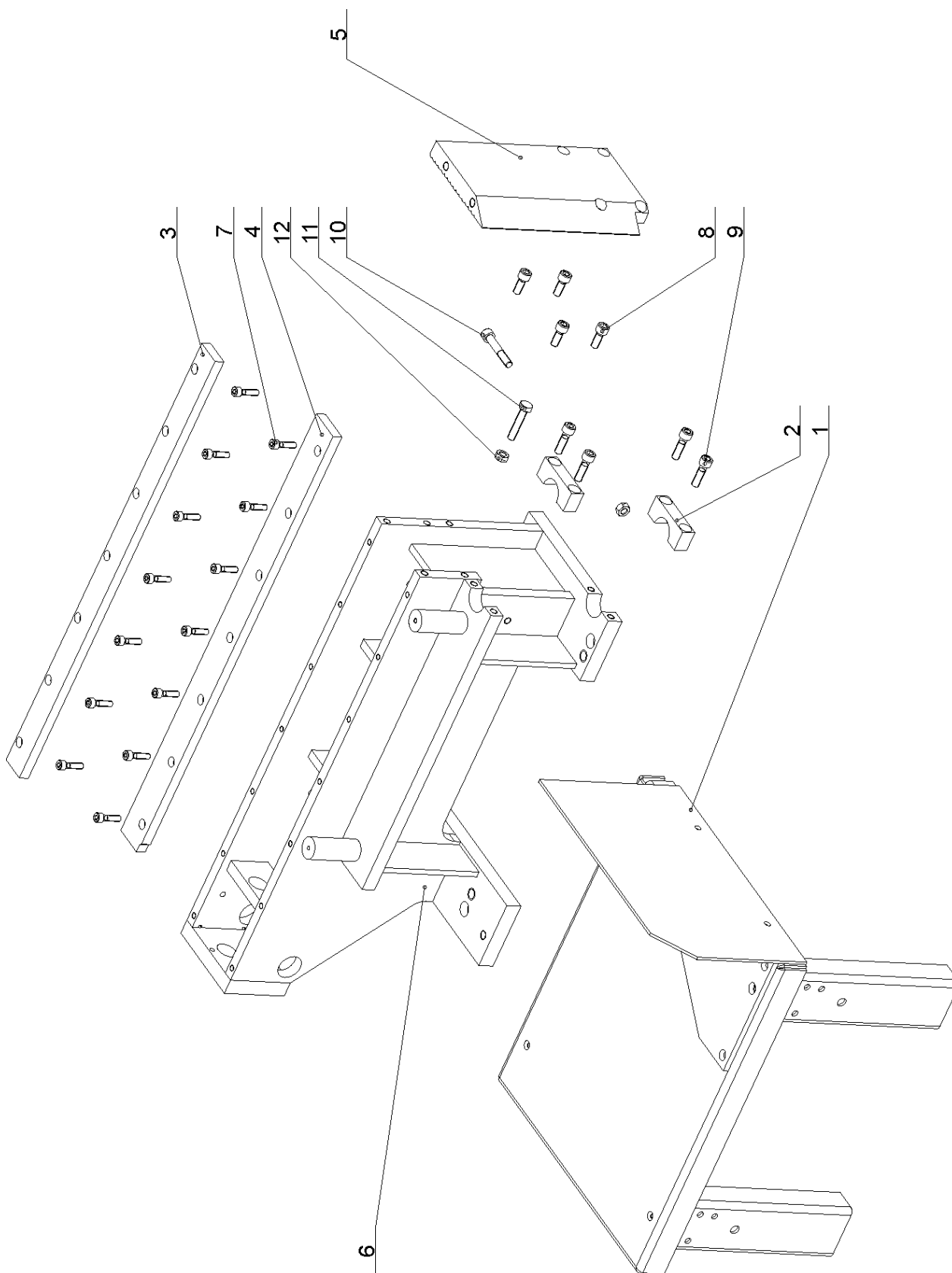
Poz.	Objednací číslo	Název položky		ks
Pos.	Bestell - Nr.	Bezeichnung		Menge
Pos.	Reference No.	Item		Pcs.
1	30.9101-102	Vana / Wanne / Tank		1
2	30.9201-106	Okapový plech /Traufblech / Gutter bed		1
3	30.9201-107	Okapový plech /Traufblech / Gutter bed		1
4	30.9501-101	Podstavec / Untergestell / Pedestal		1
5	30.LD01-003	Držák / Halterung / Holder		1
6	31.1801-004	Dveře / Tür / Door		1
7	91.071.004	Vývodka hadice / Verschraubung Gerade / Hose bushing	PG29	1
8	91.072.007	Matice / Mutter / Nut	PG29	1
9	94.500.005	Průchodka/ Tülle / Straight feed		2



26.3. Pila / Säge / Saw - economic 510.320 DG

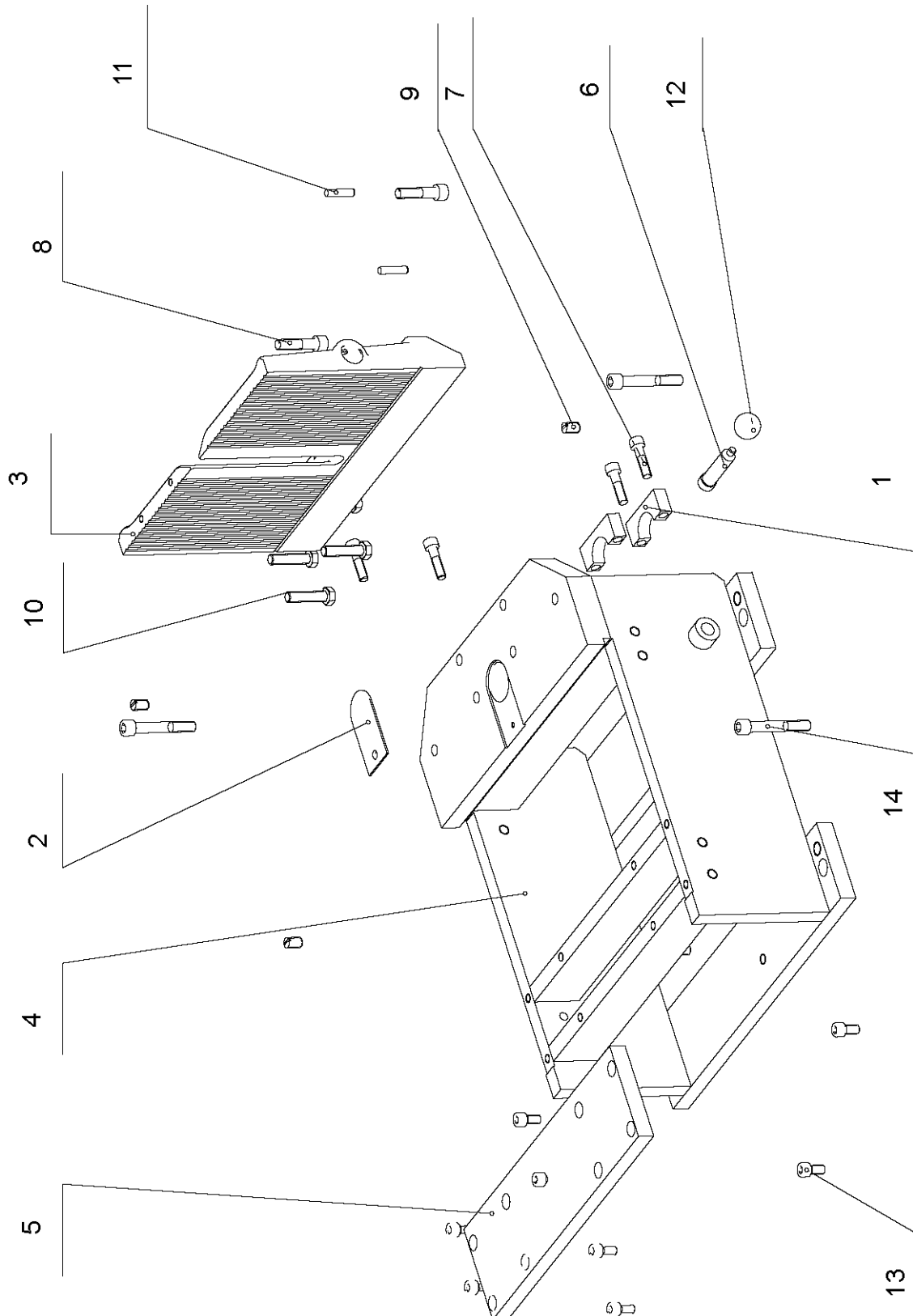
Umístění bezpečnostních značek / Verteilung der Sicherheitszeichen / Position of safety symbols

Poz.	Objednací číslo	Název položky		ks
Pos.	Bestell - Nr.	Bezeichnung		Menge
Pos.	Reference No.	Item		Pcs.
1	201.9201-100	Podstavec / Untergestell / Pedestal		1
2	201.9202-000	Konzola / Konsole / Console		1
3	201.9203-000	Svěrák / Schraubstock / Vice		1
4	201.9203-100	Svěrák / Schraubstock / Vice		1
5	201.9204-000	Rameno / Arm / Arm		1
6	201.9207-000	Válec / Zylinder / Cylinder		1
7	201.9209-100	Podstavec / Untergestell / Pedestal		1
8	201.9213-100	Ovládací panel / Bedienpult / Control panel		1
9	30.8113-104	Štítek typový / Typenschild / Design label		1
10	31.3199-005	Samolepka / Aufkleber / self-adhesive label	Nebezpečí stlačení / Pressungsgefahr / Danger of pressing	1
11	91.020.009	Čerpadlo / Pumpe / Pump	2COP1-14	1
12	92.001-017	Agregát / Aggregat / Aggregate	HAH 8 P-4,5/30	1
13	94.202.005	Redukce / Reduktion / Reduction	.3/4-6	1
14	99.900.040	Samolepka / Aufkleber / self-adhesive label	Nebezpečí říznutí / Schnittgefahr / Danger of ker	1
15	99.900.043	Samolepka / Aufkleber / self-adhesive label	Nebezpečí zachycení / Erfassungsgefahr / Danger of interception	1
16	99.900.045	Samolepka / Aufkleber / self-adhesive label	Nebezpečí úrazu elektrickým proudem / Verletzungsgefahr vom elektrischen Strom / Danger of electric shock	1
17	99.900.047	Samolepka / Aufkleber / self-adhesive label	Noste ochranné brýle a sluchátka / Tragen Sie eine Schutzbrille und Gehörschutz / Wear protective googles and headphones	1
18	99.900.048	Samolepka / Aufkleber / self-adhesive label	Noste pevnou pracovní obuv / Tragen Sie Sicherheitsschuhe / Wear fixed protective shoes	1
19	99.900.049	Samolepka / Aufkleber / self-adhesive label	Přečíst návod k použití / Bedienungsanleitung lesen / read the operating instructions	1



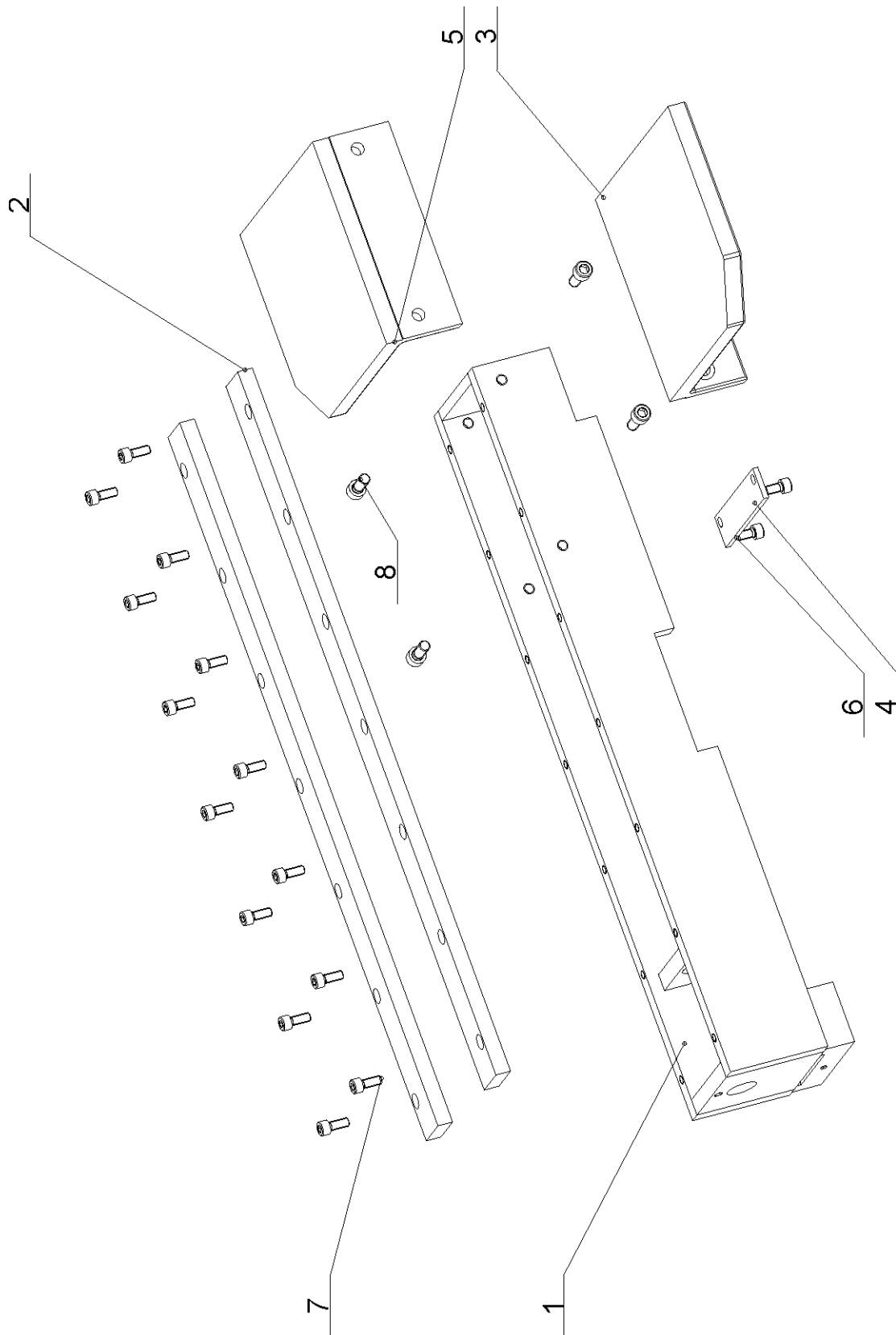
26.4. Podstavec svěráku – typ G / Schraubstockuntergestell – Type G / Vice pedestal - type G

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1		Pomocný stůl / Tisch / Auxiliary table	1
2	30.1709-002	Příložka / Lasche / Splice plate	2
3	30.9203-002	Lišta / Leiste / Listel	1
4	30.9303-103	Lišta / Leiste / Listel	1
5	30.9303-104	Pevná čelist / Feste Backe / Fixed jaw	1
6	30.9503-001	Podstavec / Untergestell / Pedestal	1
7	90.001.25.034	Šroub / Schraube / Screw M8x30 DIN 912	14
8	90.001.25.047	Šroub / Schraube / Screw M10x25 DIN 912	4
9	90.001.25.049	Šroub / Schraube / Screw M10x35 DIN 912	4
10	90.001.25.054	Šroub / Schraube / Screw M10x60 DIN 912	1
11	90.005.55.028	Šroub / Schraube / Screw M10x50 DIN 933	1
12	90.100.55.006	Matice / Mutter / Nut M10 DIN 934	2



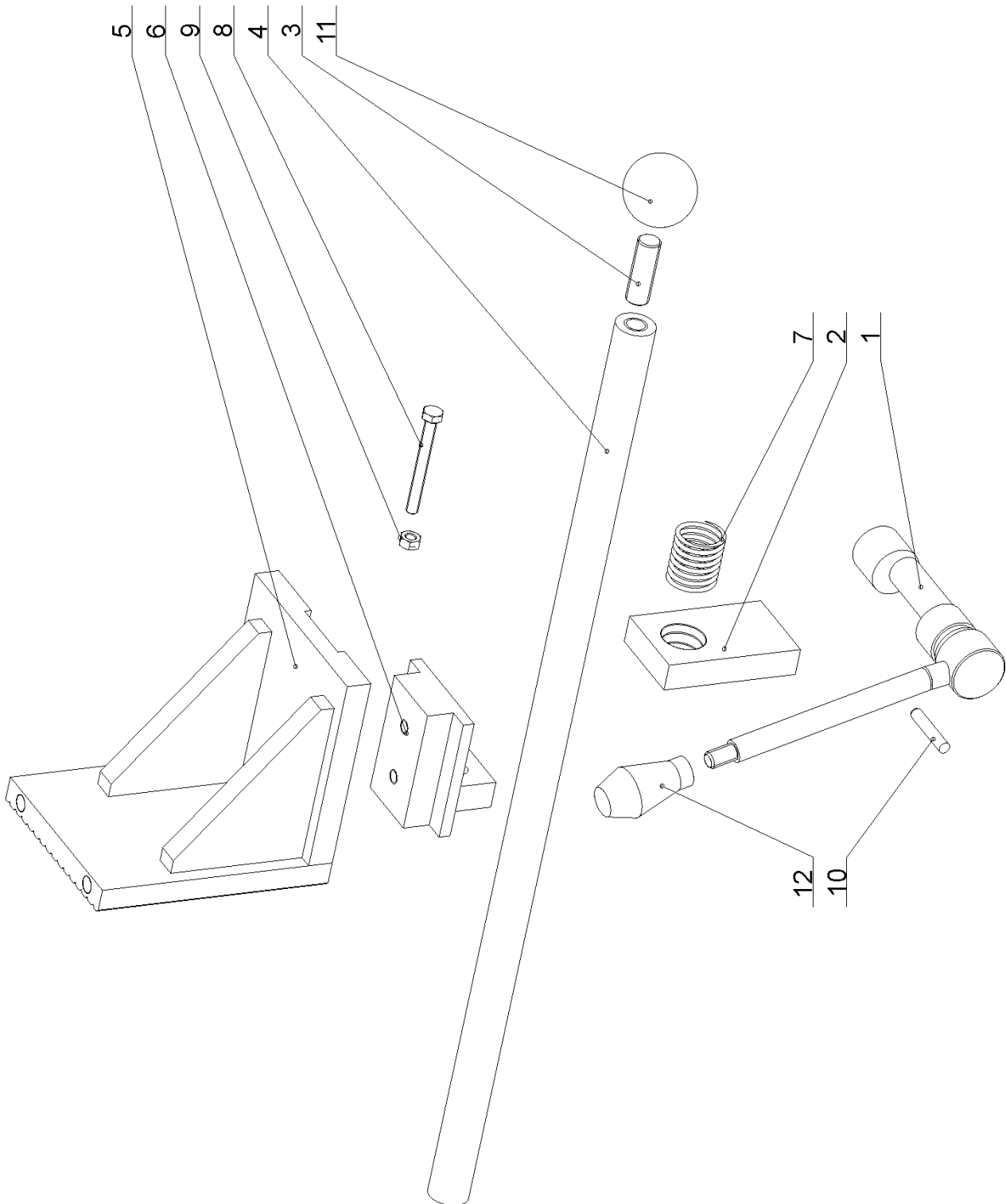
**26.5. Podstavec svěráku 1 – typ DG / Schraubstockuntergestell 1 – Type DG /
Vice pedestal 1 - type DG**

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.9209-006	Příložka / Lasche / Splice plate HR 30x15	2
2	30.9209-007	Příložka / Lasche / Splice plate	1
3	30.9209-202	Čelist evná / Feste Backe / Fixed jaw 10x40 DIN 912 8,8	1
4	30.9209-209	Podstavec / Untergestell / Pedestal	1
5	30.9209-210	Deska vodící / Führungsplatte / Guiding plate	1
6	30.LW09-005	Doraz / Anschlag / Length stop	1
7	90.001.25.050	Šroub / Schraube / Screw 10x40 DIN 912 8,8	4
8	90.001.25.062	Šroub / Schraube / Screw 12x50 DIN 912 8,8	2
9	90.002.2D.018	Stavěcí kužel / Stellkegel / Adjusting cone M12x20	4
10	90.005.55.045	Šroub / Schraube / Screw M 12x50	4
11	90.302.OZ.003	Kolík / Bolzen / Pin 8x36	2
12	94.001.002	Koule / Ball / Globe M8	1
13	94.001.25.046	Šroub / Schraube / Screw 10x20 DIN 91208,8	8
14	94.001.25.065	Šroub / Schraube / Screw 12x80 Din 912 8,8	4



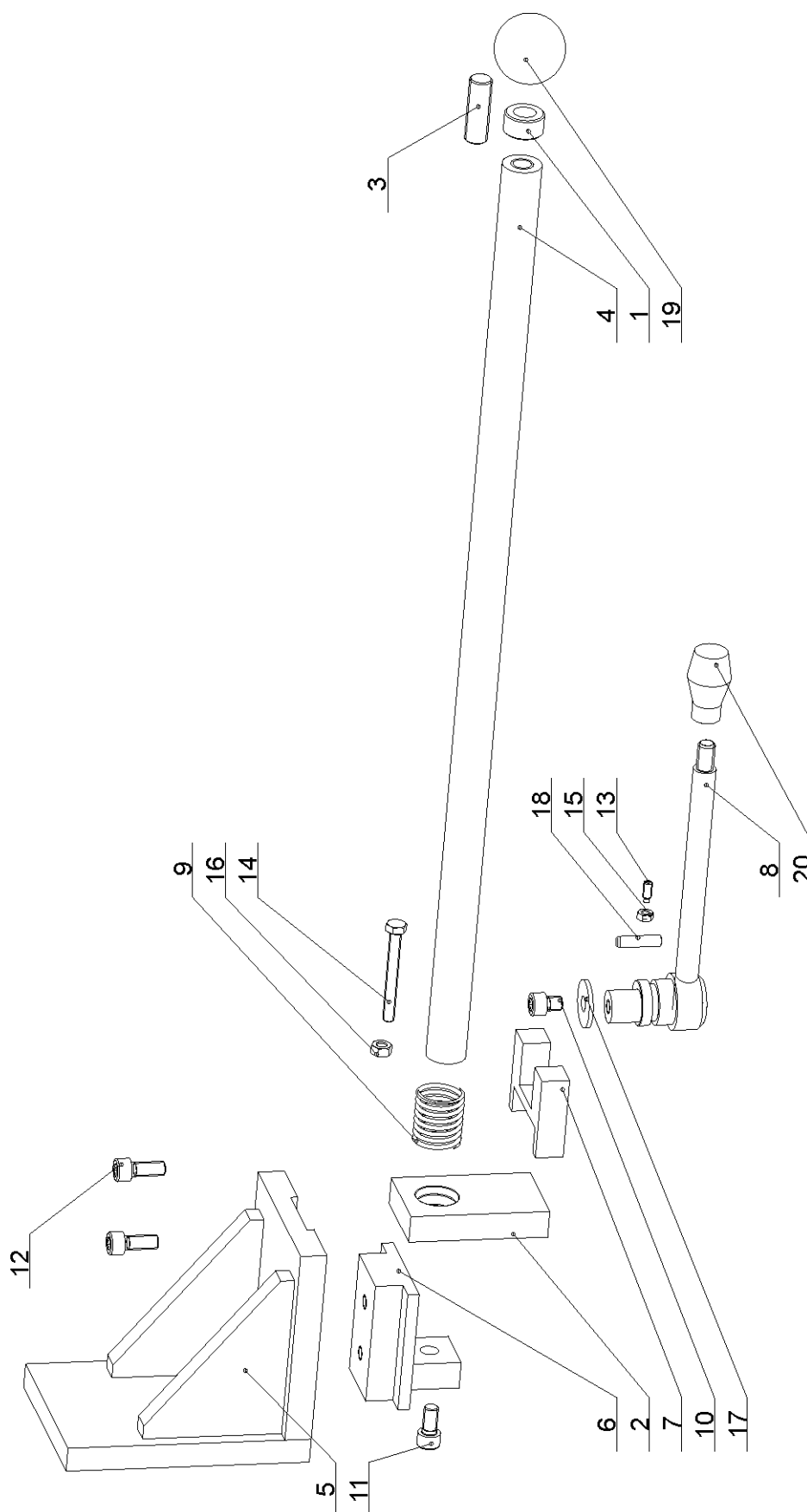
**26.6. Podstavec svěráku 2 – typ DG / Schraubstockuntergestell 2 – Type DG /
Vice pedestal 2 - type DG**

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.9203-001	Svěrák / Schraubstock / Vice	1
2	30.9203-002	Lišta / Leiste / Listel	2
3	30.LW03-010	Podpěra svěráku / Stütze / Vice support	1
4	30.LW03-017	Příložka / Lasche / Splice plate	1
5	30.LW03-018	Podpěra svěráku / Stütze / Vice support	1
6	90.001.25.031	Šroub / Schraube / Screw M8x16 DIN 912	2
7	90.001.25.032	Šroub / Schraube / Screw M8x20 DIN 912	14
8	90.001.25.047	Šroub / Schraube / Screw M10x25 DIN 912	4



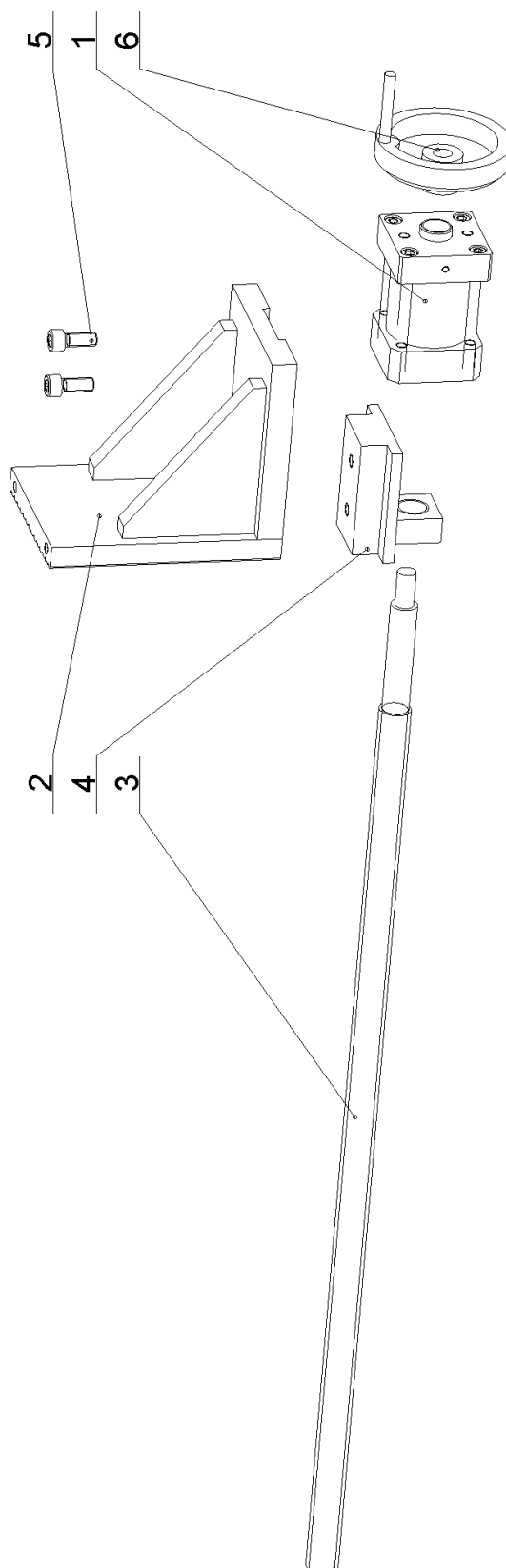
26.7. Svěrák / Schraubstock / Vice - economic 510.320 G - 251.273

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.4109-008	Upínací excentr / Spannexzenter / Clamping eccentric	1
2	30.4109-009	Deska / Platte / Plate	1
3	30.4109-014	Závitová tyč / Gewindestange / Screwed bar	1
4	30.4209-005	Upínací tyč / Spannstange / Clamping bar	1
5	30.9503-005	Pohyblivá čelist / Bewegliche Backe / Movable jaw	1
6	30.LW03-009	Kostka / Klotz / Cube	1
7	31.4109-011	Pružina / Feder / Spring	3.00x35x60x5+1
8	90.005.55.XXX	Šroub / Schraube / Screw	M8x75 DIN 933
9	90.100.55.005	Matice / Mutter / Nut	M8 DIN 934
10	90.301.0Z.XXX	Válcový kolík / Zylinderstift weich / Cylindrical pin	8x45 DIN 7
11	94.001.005	Rukojeť koule / Griffschlater / Handle round	1
12	94.002.001	Rukojeť kuželová / Griffschlater / Conical handle	1


26.8. Svěrák / Schraubstock / Vice - economic 510.320 DG - 251.290

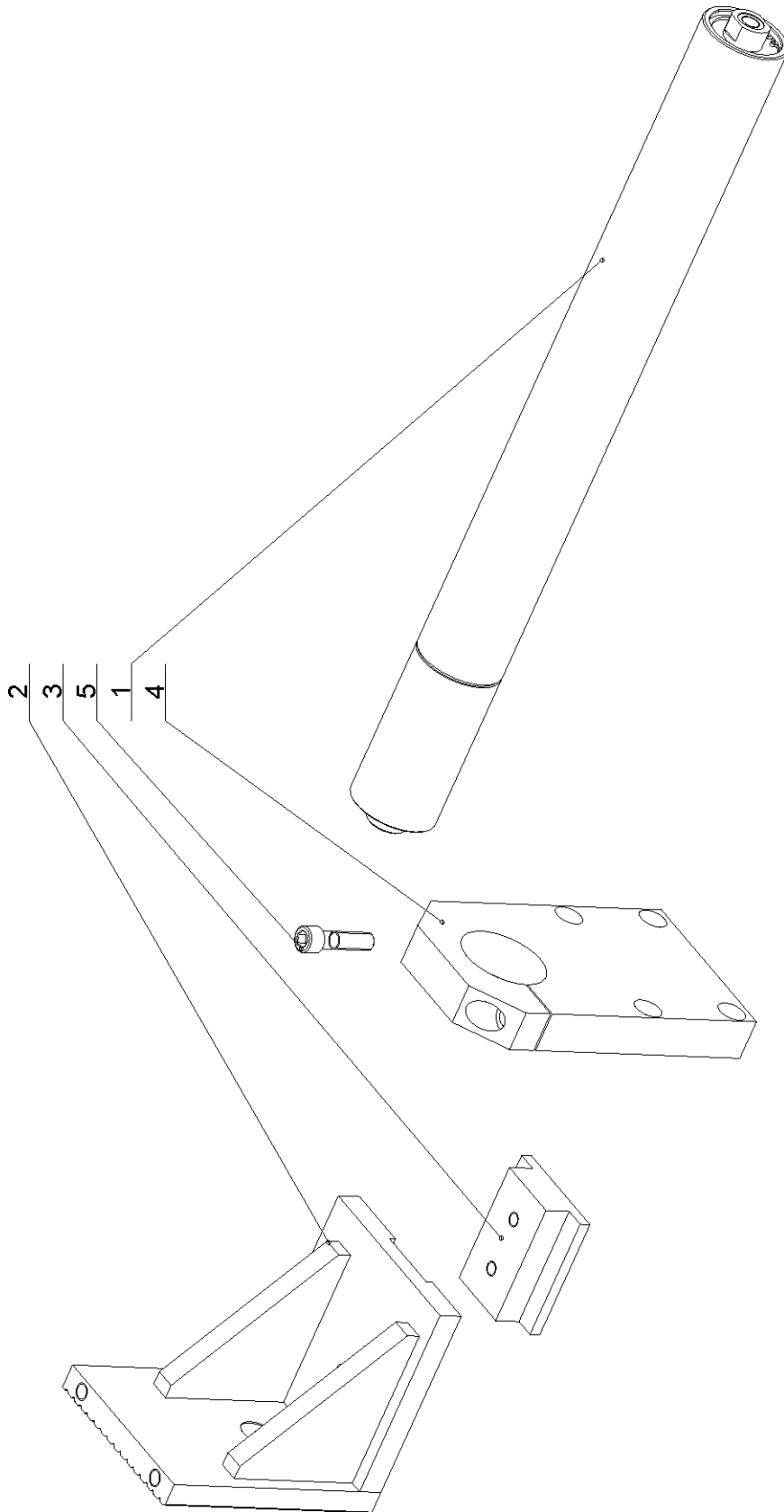
Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.4108-002	Distanc / Distanz / Distance	1
2	30.4109-009	Deska / Platte / Plate	1
3	30.4109-014	Závitová tyč / Gewindestange / Screwed bar	1
4	30.4209-005	Upínací tyč / Spannstange / Clamping bar	1
5	*30.9203-013	Pohyblivá čelist / Bewegliche Backe / Movable jaw	1
6	30.LW03-009	Kostka / Klotz / Cube	1
7	30.LW03-013	Vedení / Führung / Guide	1
8	30.LW03-014	Upínací excentr / Spannexzenter / Clamping tappet	1
9	31.4109-011	Pružina / Feder / Spring	3.00x35x60x5+1
10	90.001.25.043	Šroub / Schraube / Screw	M10x12 DIN 912
11	90.001.25.046	Šroub / Schraube / Screw	M10x20 DIN 912
12	90.001.25.047	Šroub / Schraube / Screw	M10x25 DIN 912
13	90.004.2D.003	Šroub / Schraube / Screw	M6x16 DIN 915
14	90.005.55.044	Šroub / Schraube / Screw	M8x70 DIN 933
15	90.100.55.004	Matice / Mutter / Nut	M6 DIN 934
16	90.100.55.005	Matice / Mutter / Nut	M8 DIN 934
17	90.151.50.001	Podložka / Scheibe / Washer	d11x34x3 DIN 440
18	90.300.0Z.010	Válcový kolík / Zylinderstift / Cylindrical pin	8x32 DIN 6325
19	94.001.005	Rukojeť koule / Griffschalter / Handle round	1
20	94.002.001	Rukojeť kuželová / Griffschalter / Conical handle	1

*Change from year 2004



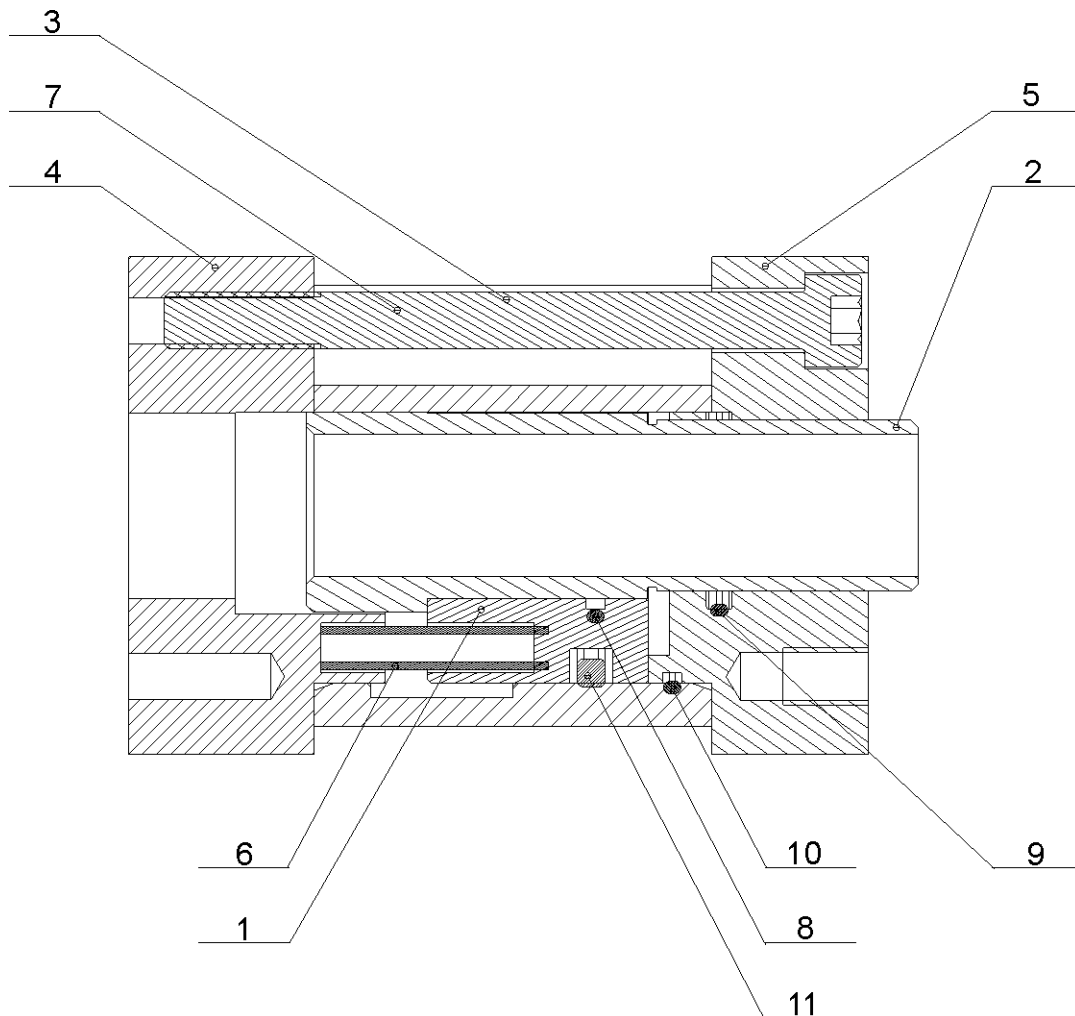
26.9. Svěrák / Schraubstock / Vice - economic 510.320 GHK, DGHK

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.3307-000	Válec / Zylinder / Cylinder	1
2	30.9203-005	Pohyblivá čelist / Bewegliche Backe / Movable jaw	1
3	30.9503-002	Šroub / Schraube / Screw	1
4	30.9503-004	Kostka / Würfel / Cube	1
5	90.001.25.047	Šroub / Schraube / Screw M10x25 DIN 912	2
6	94.010.004	Ruční kolo / Handrad / Hand wheel	1



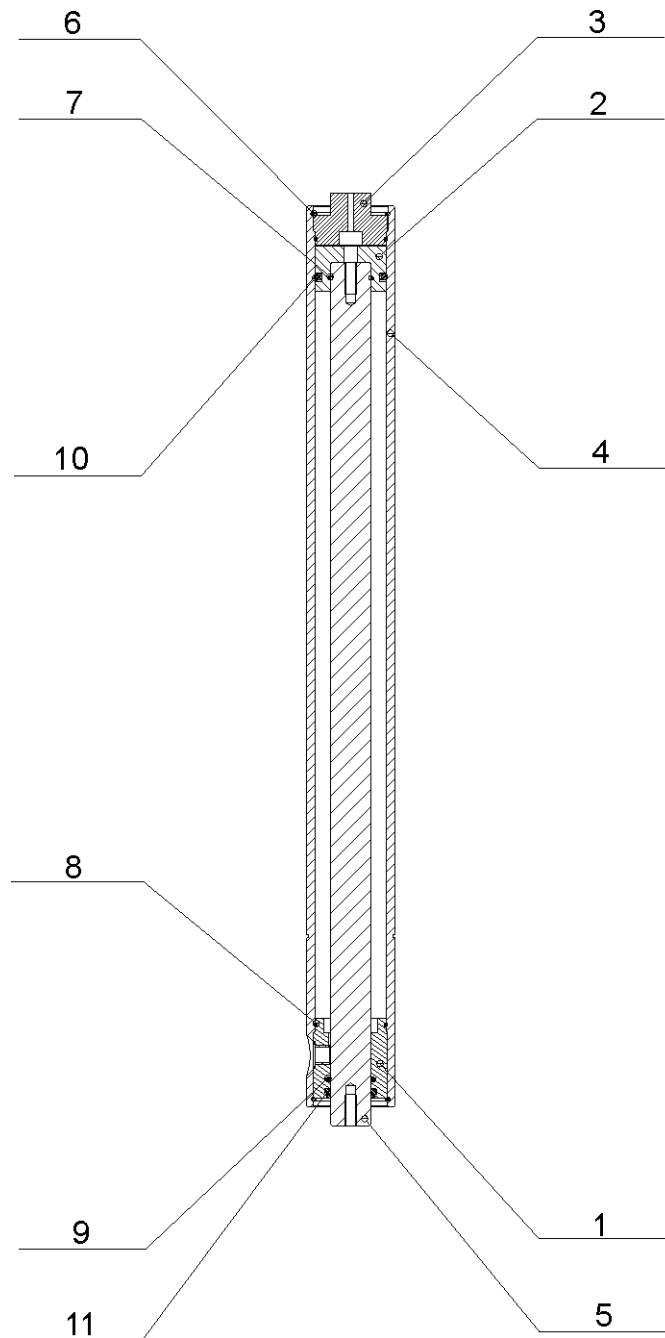
26.10. Svěrák / Schraubstock / Vice - economic 510.320 GHV, DGHV - 251.276

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	201.3707-000	Upínací válec dlouhý / Langer Spannzyylinder / Long clamping cylinder – DGHV, GHV	1
2	30.9303-003	Pohyblivá čelist / Bewegliche Backe / Movable jaw	1
3	30.9311-013	Kostka / Klotz / Cube	1
4	30.9311-014	Zadní čelo / Hintere Stirn / Rear panel	1
5	90.001.25.061	Šroub / Schraube / Screw M12x45 DIN 912	1



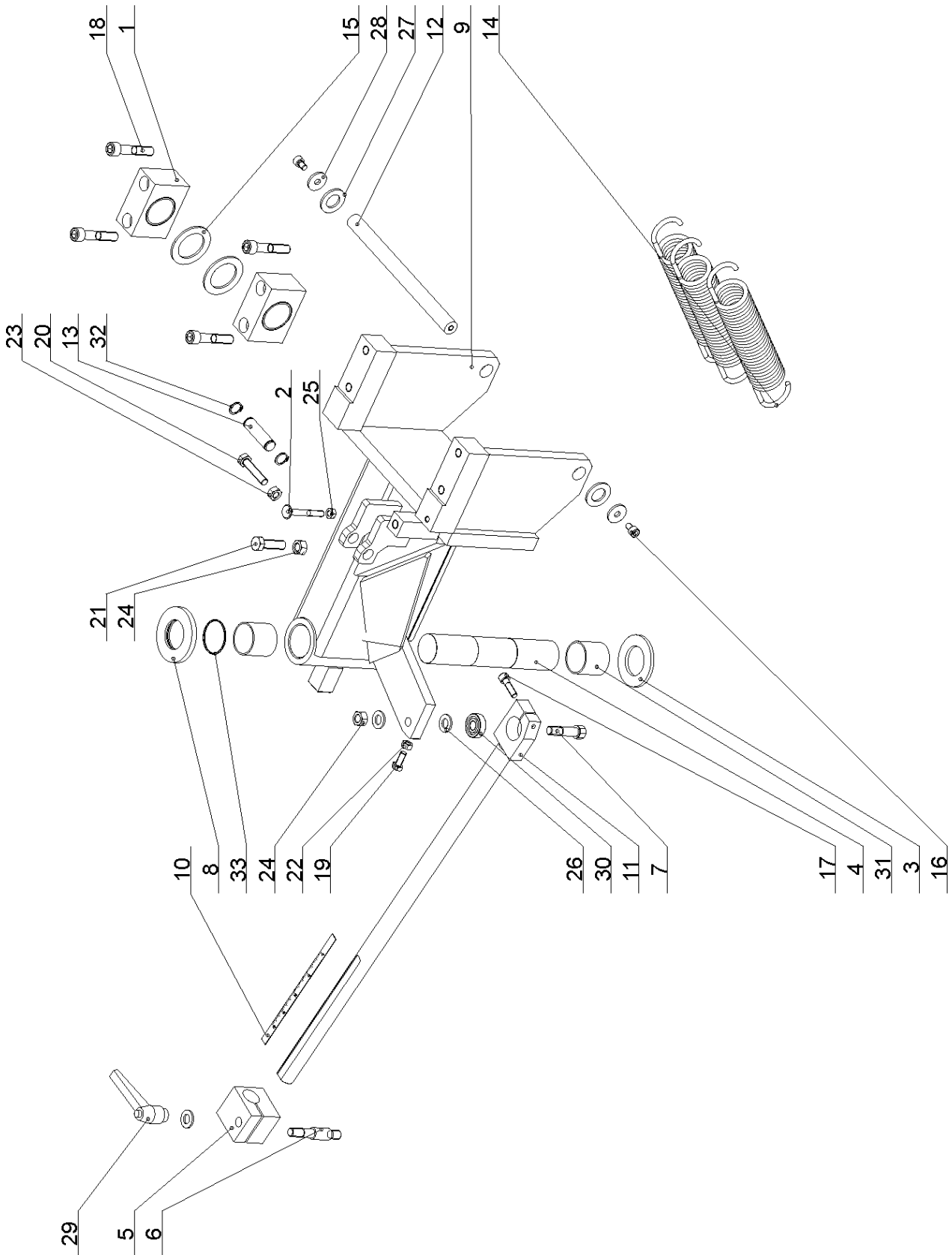
**26.11. Upínací válec / Spannzyylinder / Clamping cylinder – economic 510.320 GHK,
DGHK - 251.038**

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.3307-001	Píst / Kolben / Piston	1
2	30.3307-002	Pístnice / Kolbenstange / Piston rod	1
3	30.3307-003	Válec / Zylinder / Cylinder	1
4	30.3307-004	Víko / Deckel / Cover	1
5	30.3307-005	Víko / Deckel / Cover	1
6	31.3307-007	Pružina / Feder / Spring 1x6x32x17.5	8
7	90.001.25.078	Šroub / Schraube / Screw M8x90 DIN 912	4
8	96.001.008	O kroužek / O Ring / O Ring 26x2	1
9	96.002.012	O kroužek / O Ring / O Ring 24x3	1
10	96.002.019	O kroužek / O Ring / O Ring 46x2	1
11	96.020.005	Q kroužek / Q Ring / Q Ring	1



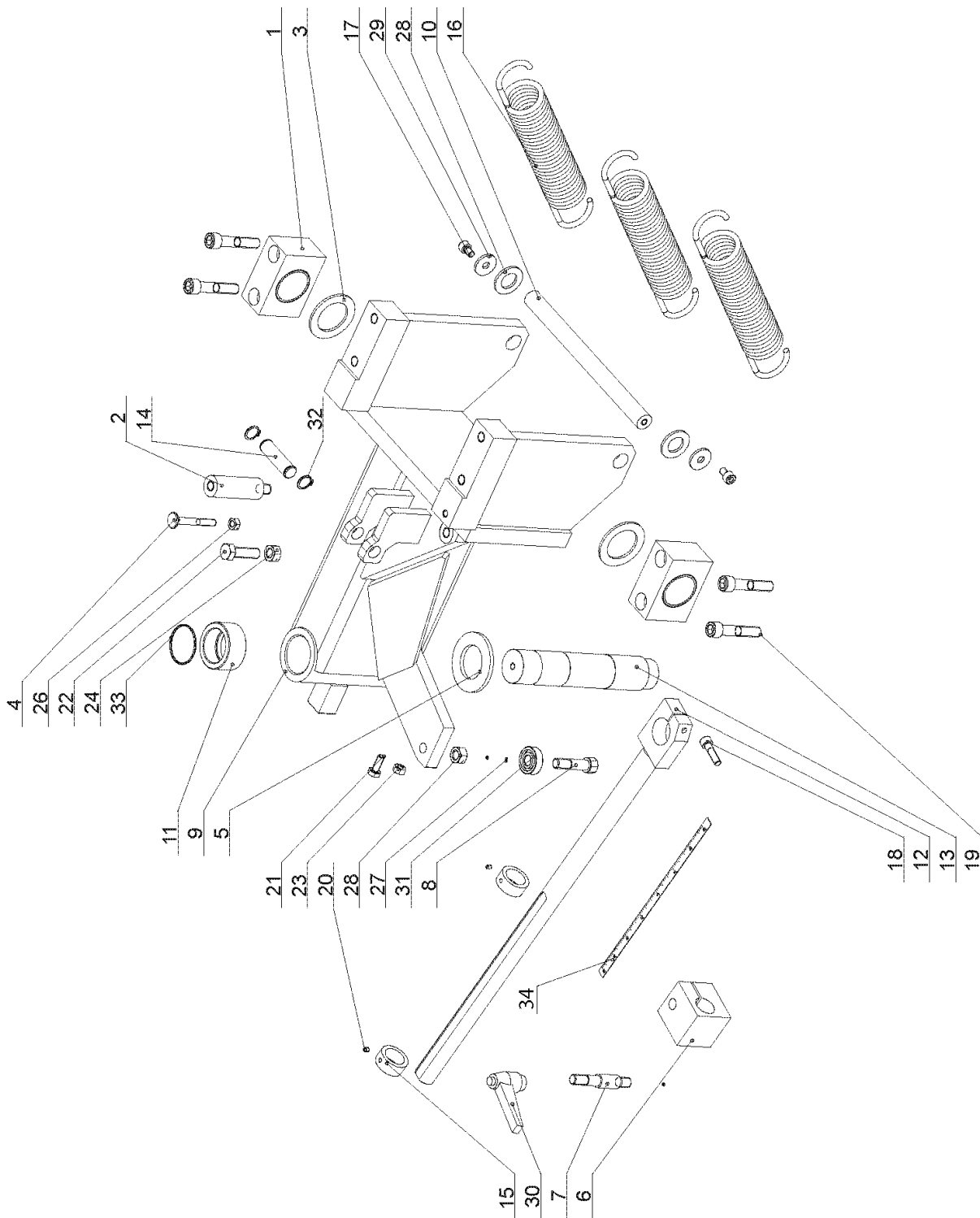
**26.12. Upínací válec / Spannzylinder / Clamping cylinder – economic 510.320 GHV,
DGHV - 251.076**

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.1807-104	Přívod / Zufuhr / Supply	1
2	30.2007-302	Píst / Kolben / Piston	1
3	30.2007-304	Víko / Deckel / Cover	1
4	30.6007-101	Válec svěráku / Zylinder / Vice cylinder	1
5	30.6007-105	Pístnice / Kolbenstange / Piston rod	1
6	95.801.009	Pojistný kroužek / Sicherungsring / Retaining ring d52 DIN 472	2
7	96.001.007	O kroužek / O Ring / O Ring 25x2	1
8	96.001.013	O kroužek / O Ring / O Ring 45x2	2
9	96.002.014	O kroužek / O Ring / O Ring 28x3	1
10	96.020.005	Q kroužek / Q Ring / Q Ring	1
11	96.060.003	Stírací kroužek / Abstreifring / Wiping ring 28x36	1



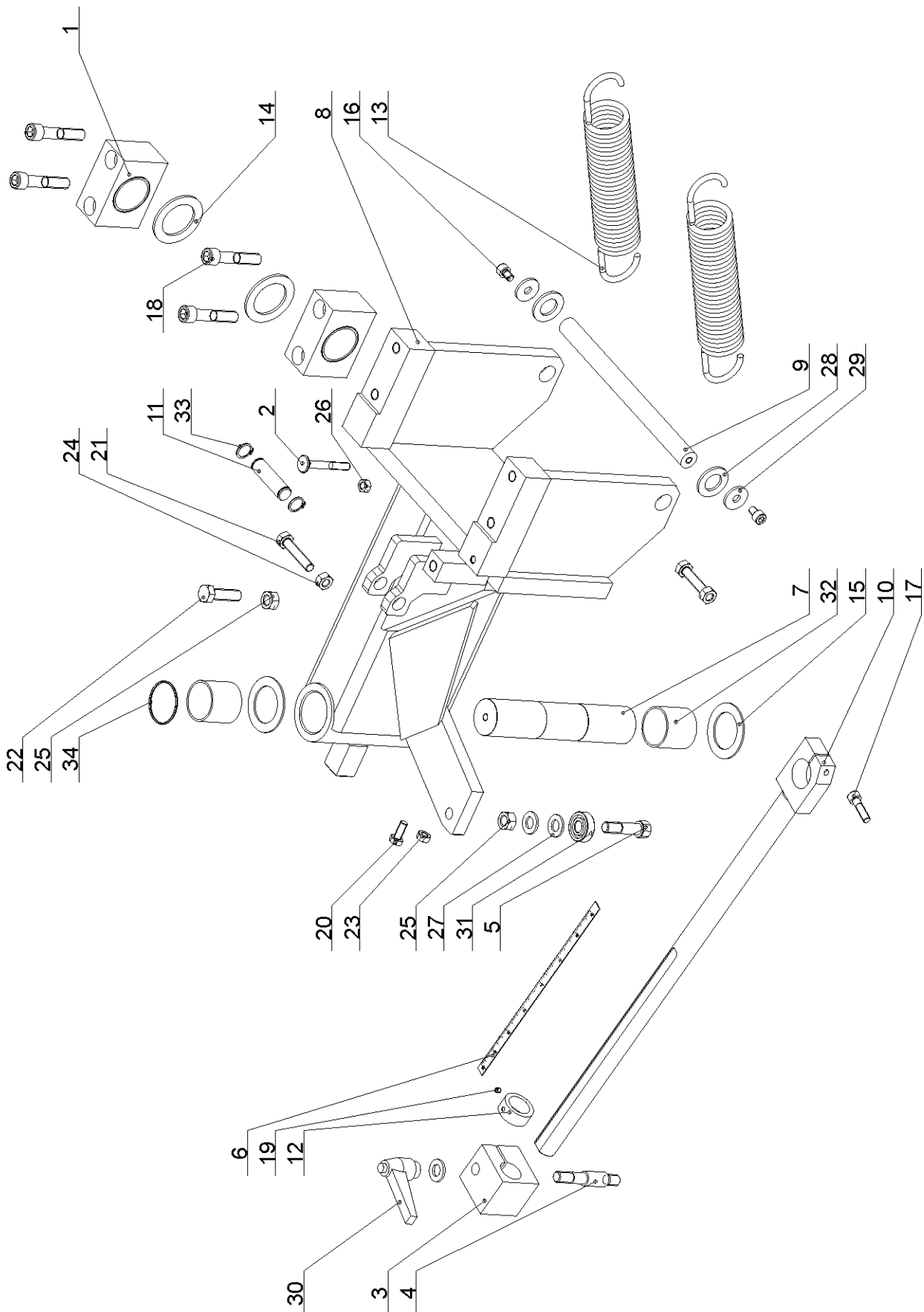
26.13. Otočná konzola – typ G / Drehkonsole – type G / Turning console – type G

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0802-002	Ložisko ramene / Lager / Arm bearing	2
2	30.0808-007	Šroub / Schraube / Screw	1
3	30.1702-006	Kroužek / Ring / Ring	1
4	30.4102-002	Čep / Bolzen / Pivot	1
5	30.4102-003	Kostka / Würfel / Cube	1
6	30.4102-004	Čep / Bolzen / Pivot	1
7	30.4102-006	Čep / Bolzen / Pivot	1
8	30.4102-020	Víko / Deckel / Cover	1
9	30.9302-001	Otočná konzola / Drehkonsole / Turning console	1
10	30.9302-002	Měřítko / Skalenbandmaß / Scale	1
11	30.9302-013	Tyč zpevnění / Stange / Hardening bar	1
12	30.LW02-008	Čep / Bolzen / Pivot	1
13	30.LW02-016	Čep / Bolzen / Pivot	1
14	31.4204-002	Pružina / Feder / Spring	6.30x49x260x29
15	81.0804-005	Kroužek / Ring / Ring	2
16	90.001.25.029	Šroub / Schraube / Screw	M8x12 DIN 912
17	90.001.25.034	Šroub / Schraube / Screw	M8x30 DIN 912
18	90.001.25.063	Šroub / Schraube / Screw	M12x60 DIN 912
19	90.005.55.015	Šroub / Schraube / Screw	M8x20 DIN 933
20	90.005.55.028	Šroub / Schraube / Screw	M10x50 DIN 933
21	90.005.55.034	Šroub / Schraube / Screw	M12x40 DIN 933
22	90.100.55.005	Matice / Mutter / Nut	M8 DIN 934
23	90.100.55.006	Matice / Mutter / Nut	M10 DIN 934
24	90.100.55.007	Matice / Mutter / Nut	M12 DIN 934
25	90.100.55.012	Matice / Mutter / Nut	M8x1 DIN 934
26	90.150.50.007	Podložka / Scheibe / Washer	d13 DIN 125
27	90.150.50.011	Podložka / Scheibe / Washer	d21 DIN 125
28	90.151.50.005	Podložka / Scheibe / Washer	d9x28x3 DIN 440
29	94.008.010	Montážní páka / Hebel / Assembly lever	1
30	95.001.028	Ložisko / Lager / Bearing	6201 2RS
31	95.700.006	Pouzdro / Buchse / Bush KU	40x40
32	95.800.007	Pojistný kroužek / Sicherungsring / Retaining ring	d16 DIN 471
33	96.001.011	O kroužek / O Ring / O Ring	40x2



26.14. Otočná konzola – typ DG / Drehkonsole – type DG / Turning console – type DG

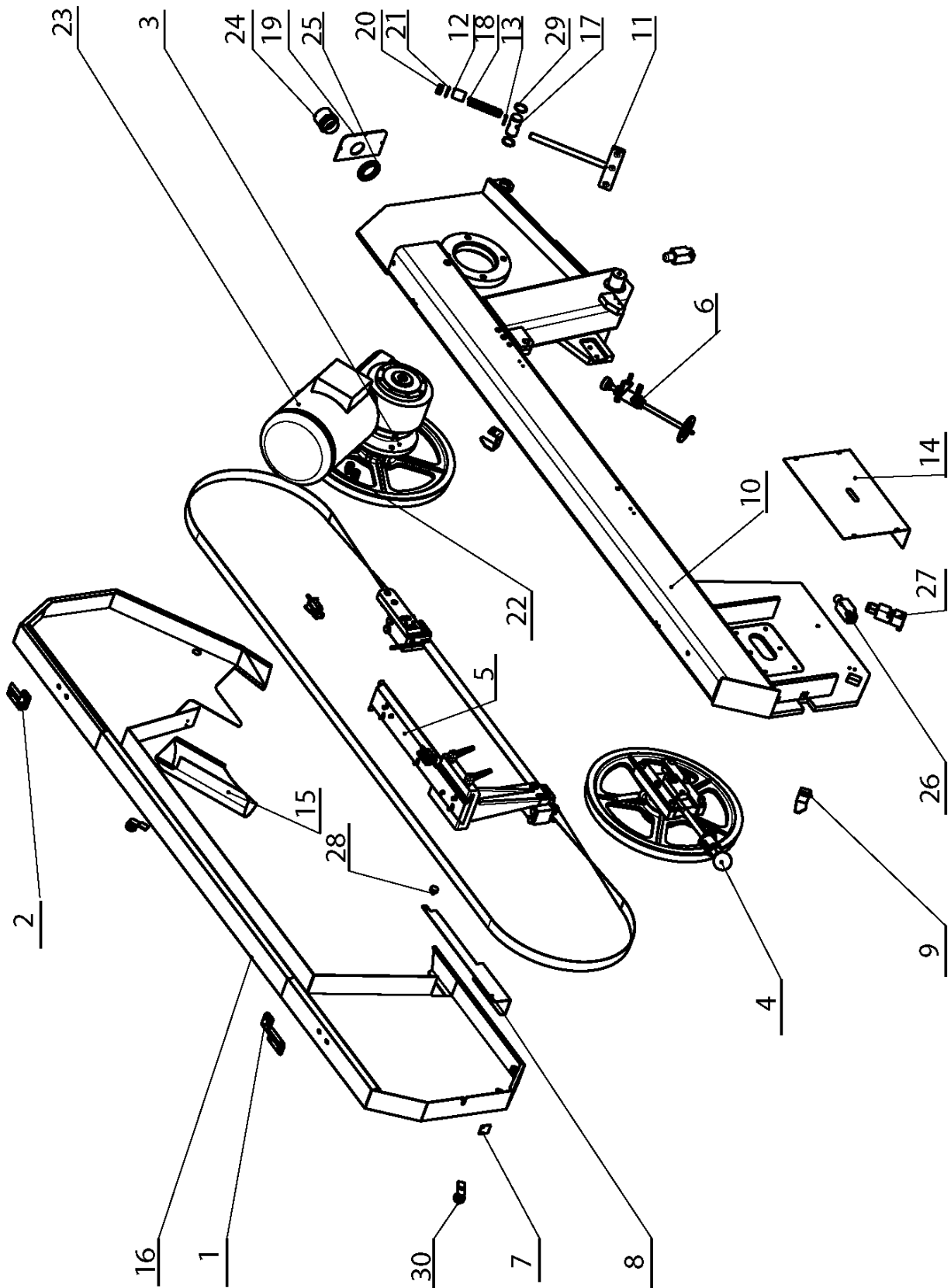
Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0802-002	Ložisko ramene / Rahmenlager / Arm bearing	2
2	30.0802-008	Doraz / Anschlag / Length stop	1
3	30.0804-005	Kroužek / Ring / Ring	2
4	30.0808-007	Šroub / Schraube / Screw	1
5	30.1702-006	Kroužek / Ring / Ring	1
6	30.4102-003	Kostka / Klotz / Cube	1
7	30.4102-004	Čep / Bolzen / Pivot	1
8	30.4102-006	Čep / Bolzen / Pivot	1
9	30.9302-001	Otočná konzola / Drehkonsole / Turning console	1
10	30.LW02-008	Čep / Bolzen / Pivot	1
11	30.LW02-012	Pouzdro / Buchse / Bush	1
12	30.LW02-013	Tyč zpevnění / Stange / Hardening rod	1
13	30.LW02-015	Čep / Bolzen / Pivot	1
14	30.LW02-016	Čep / Bolzen / Pivot	1
15	30.LW02-018	Kroužek / Ring / Ring	2
16	31.4204-002	Pružina / Feder / Spring	6.30x49x260x29
17	90.001.25.029	Šroub / Schraube / Screw	M8x12 DIN 912
18	90.001.25.034	Šroub / Schraube / Screw	M8x30 DIN 912
19	90.001.25.063	Šroub / Schraube / Screw	M12x60 DIN 912
20	90.002.2D.003	Šroub / Schraube / Screw	M5x6 DIN 913
21	90.005.55.015	Šroub / Schraube / Screw	M8x20 DIN 933
22	90.005.55.034	Šroub / Schraube / Screw	M12x40 DIN 933
23	90.100.55.005	Matice / Mutter / Nut	M8 DIN 934
24	90.100.55.007	Matice / Mutter / Nut	M12 DIN 934
25	90.100.55.007	Matice / Mutter / Nut	M12 DIN 934
26	90.100.55.012	Matice / Mutter / Nut	M8x1 DIN 934
27	90.150.50.007	Podložka / Scheibe / Washer	d13 DIN 125
28	90.150.50.011	Podložka / Scheibe / Washer	d21 DIN 125
29	90.151.50.005	Podložka / Scheibe / Washer	d9x28x3 DIN 440
30	94.008.010	Montážní páka / Klemmhebel / Clamping lever	1
31	95.001.028	Ložisko / Lager / Bearing	6201 2RS
32	95.800.007	Pojistný kroužek / Sicherungsring / Retaining ring	d16 DIN 471
33	96.001.011	O kroužek / O Ring / O Ring	40x2
34	30.9202-002	Měřítka / Skalenbandmaß / Scale	1



26.15. Otočná konzola – typ DGH / Drehkonsole – type DGH / Turning console – type DGH

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0802-002	Ložisko ramene / Lager / Arm bearing	2
2	30.0808-007	Šroub / Schraube / Screw	1
3	30.4102-003	Kostka / Würfel / Cube	1
4	30.4102-004	Čep / Bolzen / Pivot	1
5	30.4102-006	Čep / Bolzen / Pivot	1
6	30.9202-002	Měřítka / Skalenbandmaß / Scale	1
7	30.9202-005	Čep / Bolzen / Pivot	1
8	30.9302-001	Otočná konzola / Drehkonsole / Turning console	1
9	30.LW02-008	Čep / Bolzen / Pivot	1
10	30.LW02-013	Tyč zpevnění / Stange / Hardening rod	1
11	30.LW02-016	Čep / Bolzen / Pivot	1
12	30.LW02-018	Kroužek / Ring / Ring	1
13	31.4204-002	Pružina / Feder / Spring	2
14	81.0804-005	Kroužek / Ring / Ring	2
15	81.0804-011	Kroužek / Ring / Ring	2
16	90.001.25.029	Šroub / Schraube / Screw M8x12 DIN 912	2
17	90.001.25.034	Šroub / Schraube / Screw M8x30 DIN 912	1
18	90.001.25.063	Šroub / Schraube / Screw M12x60 DIN 912	4
19	90.002.2D.003	Šroub / Schraube / Screw M5x6 DIN 913	1
20	90.005.55.015	Šroub / Schraube / Screw M8x20 DIN 933	1
21	90.005.55.028	Šroub / Schraube / Screw M10x50 DIN 933	2
22	90.005.55.034	Šroub / Schraube / Screw M12x40 DIN 933	1
23	90.100.55.005	Matice / Mutter / Nut M8 DIN 934	2
24	90.100.55.006	Matice / Mutter / Nut M10 DIN 934	2
25	90.100.55.007	Matice / Mutter / Nut M12 DIN 934	2
27	90.150.50.007	Podložka / Scheibe / Washer d13 DIN 125	3
28	90.150.50.011	Podložka / Scheibe / Washer d21 DIN 125	2
29	90.151.50.005	Podložka / Scheibe / Washer d9x28x3 DIN 440	2
30	94.008.010	Montážní páka / Hebel / Assembly lever M12	1
31	95.001.028	Ložisko / Lager / Bearing 6201 2RS	1
32	*95.700.025	Pouzdro / Buchse / Bush KU 40x40	2
33	95.800.007	Pojistný kroužek / Sicherungsring / Retaining ring d16 DIN 471	2
34	96.001.011	O kroužek / O Ring / O Ring 40x2	1

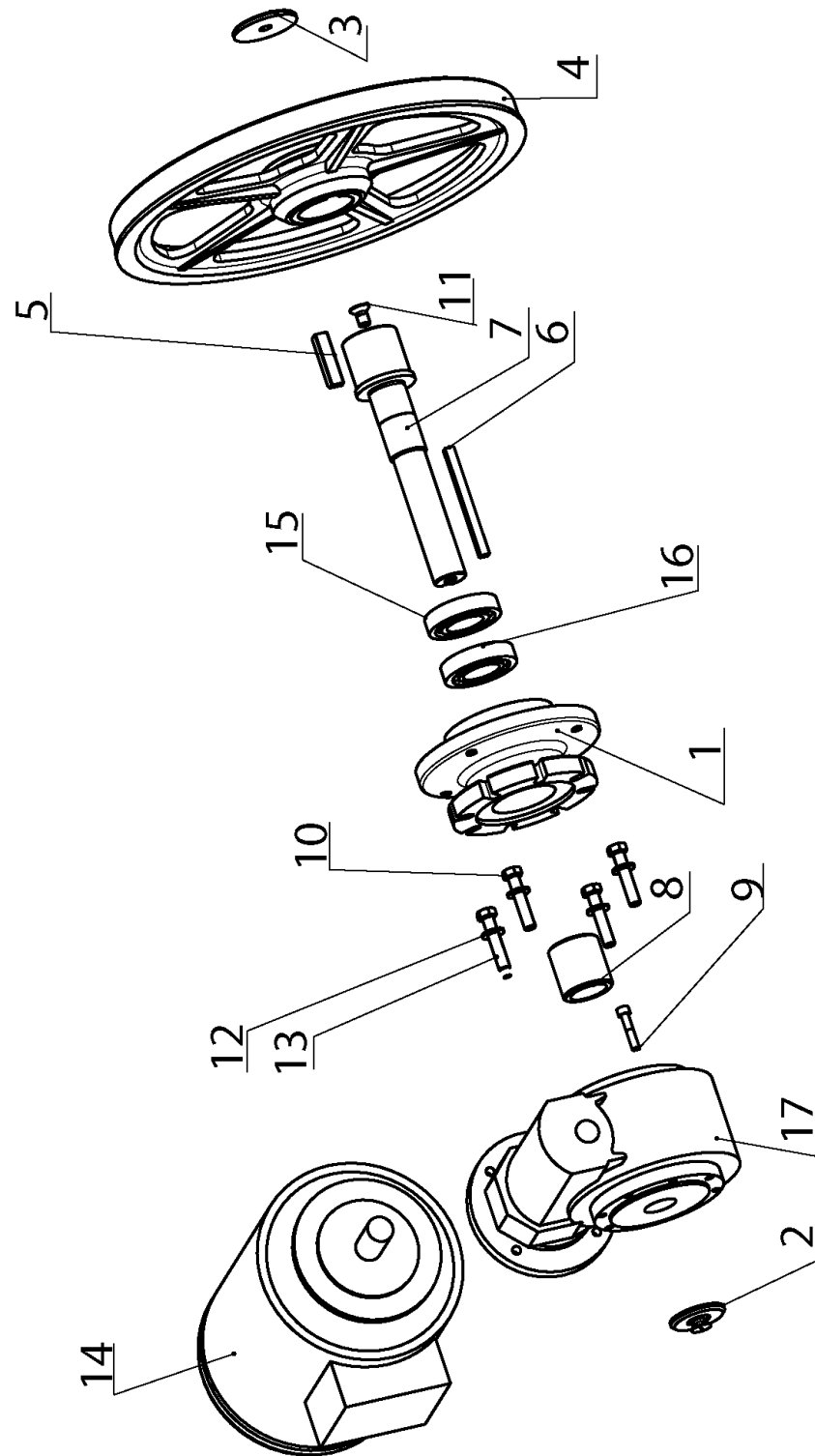
*change from year 2005 old no. 95.700.006



26.16. Pilové rameno / Sägerahmen / Saw arm

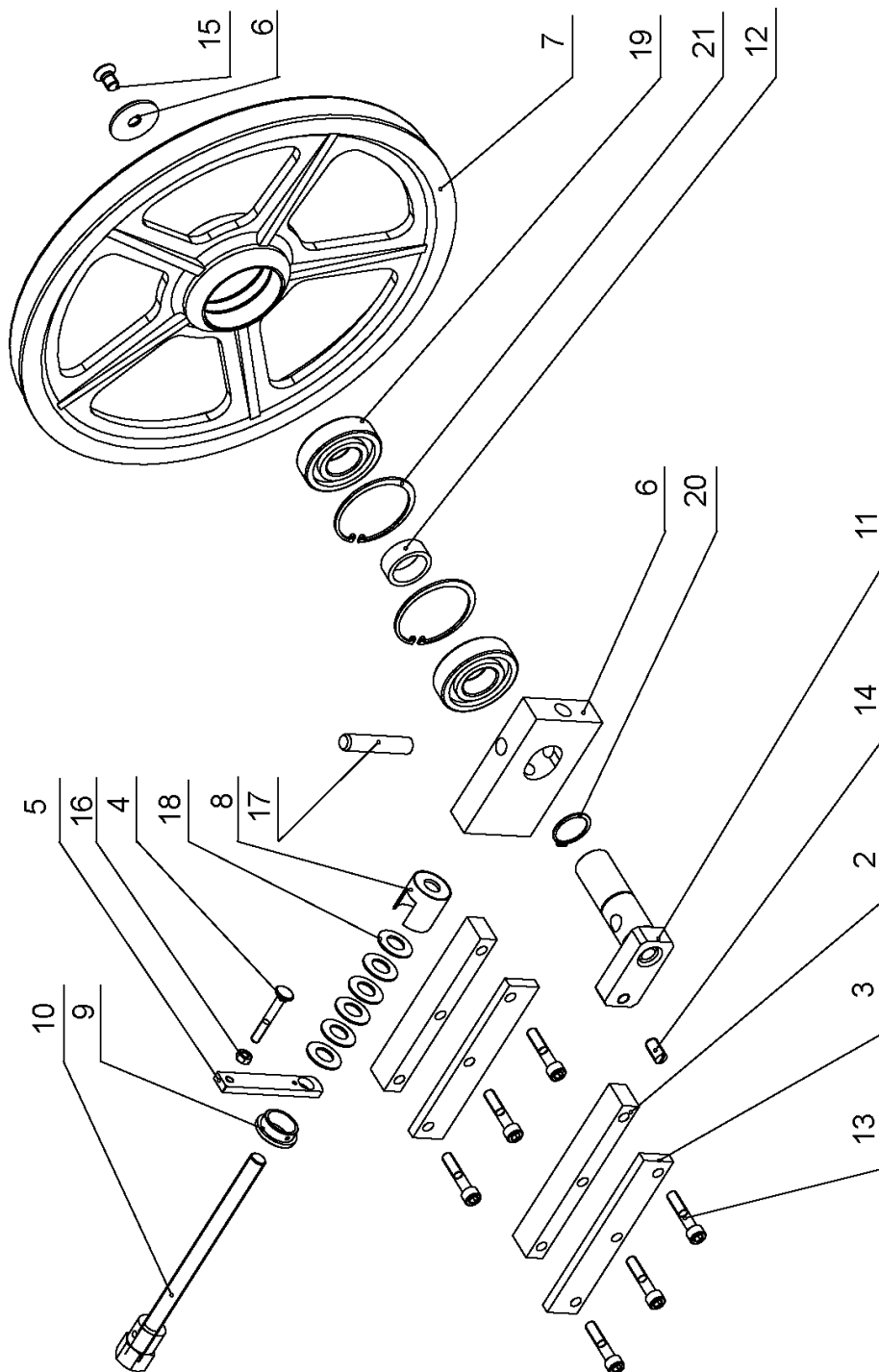
Poz.	Objednací číslo	Název položky		ks
Pos.	Bestell - Nr.	Bezeichnung		Menge
Pos.	Reference No.	Item		Pcs.
1	201.2914-207	Levý pant / Linkes Türband / Left hinge		1
2	201.2914-208	Pravý pant / Rechtes Türband / Right hinge		1
3	201.9205-000	Pohon / Sägebandantrieb / Drive		1
4	201.9208-000	Napínání / Sägebandspehnung / Stretching		1
5	201.9210-000	Vedení pásu / Sägebandführung / Band guide		1
6	201.9214-300	Kartáček / Spänbürste / Brush		1
7	30.0814-113	Plech / Blech / Metal plate		1
8	30.3714-104	Přední kryt pásu / Sägebandabdeckung / Front band cover		1
9	30.8407-091	Držák / Halter / Holder		2
10	30.9204-001	Rameno / Sägerahmen / Saw arm		1
11	30.9204-002	Držák pružiny / Federhalter / Spring holder		1
12	30.9204-004	Distanční trubka / Distanzrohr / Distance tube		1
13	30.9204-006	Distanční podložka / Distanscheibe / Distance washer		1
14	30.9214-002	Kryt napínání / Bandspehnungsabdeckung / Stretching cover		1
15	30.9214-009	Kryt kartáčku / Bürstenabdeckung / Brush cover		1
16	30.9214-010	Kryt ramene / Rahmendeckel / Arm cover		1
17	30.LW04-006	Čep / Bolzen / Pivot		1
18	31.9204-003	Pružina / Feder / Spring	2x21x100x14	1
19	81.9214-003	Kryt / Deckel / Cover		1
20	90.100.55.008	Matice / Mutter / Nut	M16 DIN 934	1
21	90.150.50.009	Podložka / Scheibe / Washer	d17 DIN 125	1
22	91.070.011	Vývodka / Ausführung / Bushing	M 16x1.5	2
23	91.070.012	Vývodka / Ausführung / Bushing	M 20x1.5	1
24	91.071.005	Vývodka hadice / Verschraubung Gerade / Hose bushing	PG36	1
25	91.072.008	Matice / Mutter / Nut	PG36	1
26	91.173.007	Koncový spínač / Endschalter / Limit switch		2
27	91.173.012	Koncový spínač - zámek / Endschalter - Klinke / Limit switch - lock		1
28	94.007.001	Plastový šroub / Rändelschraube / Plastic screw	M5x10	1
29	95.800.013	Pojistný kroužek / Sicherungsring / Retaining ring	d30 DIN 471	2
30	*99.104.002	Zámek / Schloß / Lock		2

*Change from year 2008



26.17. Pohon pilového pásu / Sägebandantrieb / Saw band drive

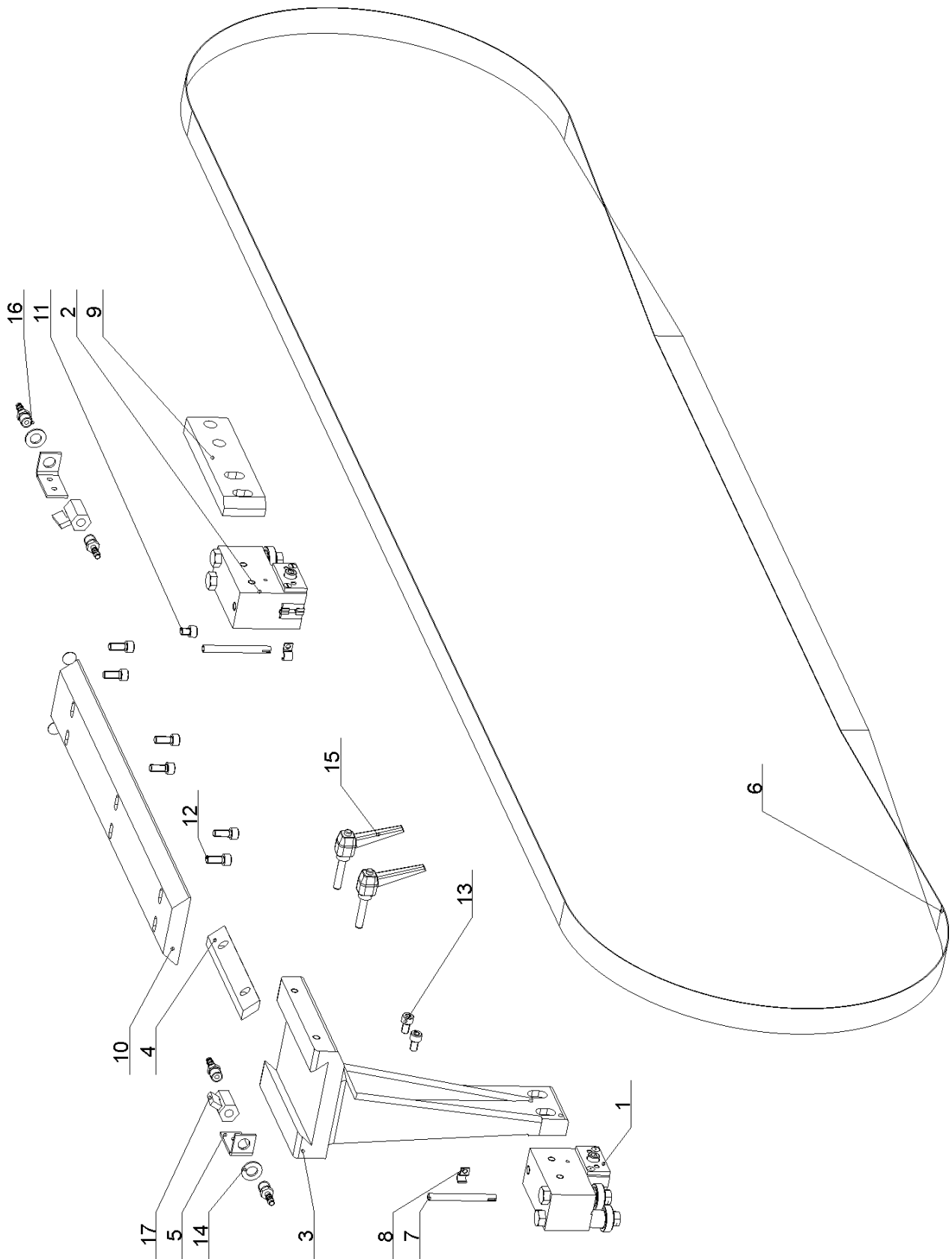
Poz.	Objednací číslo	Název položky		ks
Pos.	Bestell - Nr.	Bezeichnung		Menge
Pos.	Reference No.	Item		Pcs.
1	30.0804-002	Příruba / Flansche / Flange		1
2	30.0804-009	Podložka 60/13 / Scheibe / Wheel washer		1
3	30.1804-010	Podložka kola / Scheibe / Wheel washer		2
4	30.2904-003	Hnací kolo / Antriebsrad / Driving wheel		1
5	30.2904-006	Pero / Feder / Feather		1
6	30.9205-004	Pero / Feder / Feather		1
7	30.9205-005	Hřídel / Welle / Shaft		1
8	30.9205-008	Distanční trubka / Distanzrohr / Distance tube		1
9	90.001.25.036	Šroub / Schraube / Screw	M8x40 DIN 912	1
10	90.005.55.55	šroub se šestihrannou hlavou / Sechskantschraube / Hex head screw	M12x60	4
11	90.011.27.009	Šroub zápusťný/ Countersunk screw / Senkschraube	M12x20	2
12	90.150.50.007	Podložka / Scheibe / Wheel washer	d13 DIN 125	4
13	90.300.0Z.012	Kolík válcový / Zylinderstift / Cylindrical pin	8x50	1
14	91.001.033	Elektromotor / Elektromotor / Electromotor	DERA 112-2F-CG	1
15	95.001.021	Ložisko / Lager / Bearing	6208 2RS	1
16	95.201.001	Ložisko / Lager / Bearing	208E NU	1
17	99.001.021	Převodovka / Getriebe / Worm gearbox	M085 FB i28	1



26.18. Napínání pilového pásu / Sägebandspannung / Saw band stretching

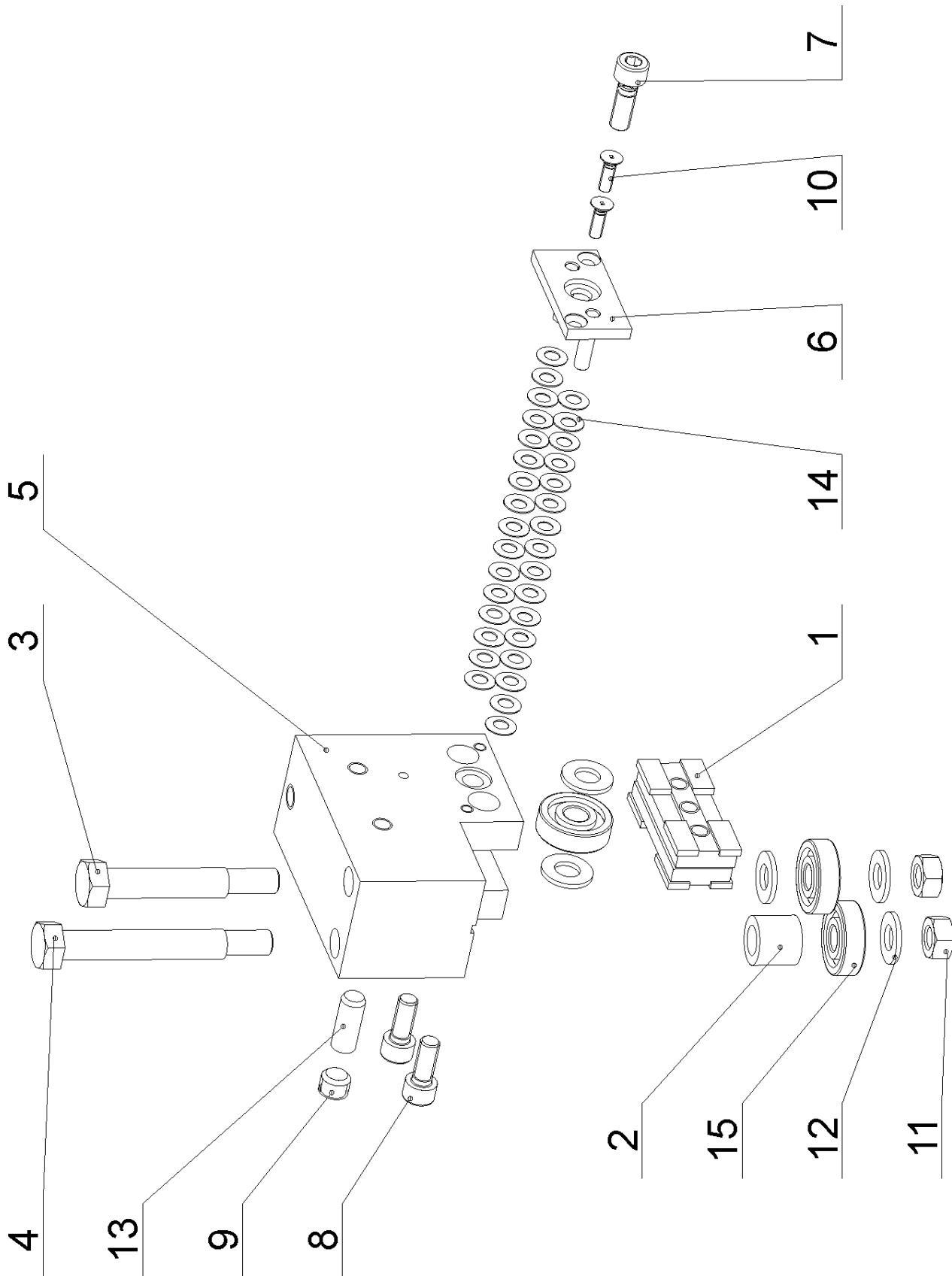
Poz.	Objednací číslo	Název položky	ks	
Pos.	Bestell - Nr.	Bezeichnung	Menge	
Pos.	Reference No.	Item	Pcs.	
1	30.0808-001	Kostka napínání / Bandspannungswürfel / Stretching cube	1	
2	30.0808-002	Lišta vodící / Führungsleiste / Guiding listel	2	
3	30.0808-006	Lišta / Leiste / Listel	2	
4	30.0808-007	Šroub / Schraube / Screw	1	
5	30.1708-004	Držák šroubu / Halter / Screw holder	1	
6	30.2908-001	Podložka / Scheibe / Washer	1	
7	*30.2908-103	Kolo napínací / Umlenkrad / Stretching wheel	1	
8	30.3508-002	Kalíšek pružiny / Federbecher / Spring cup	1	
9	30.3508-004	Kroužek měřicí / Meßring / Measuring ring	1	
10	30.4008-001	Šroub napínání / Bandspannungsschraube / Stretching screw	1	
11	*30.4808-101	Čep napínání / Bolzen Bandspannung / Stretching pivot	1	
12	*30.4808-103	Distanční kroužek / Distanzring / Distance ring	1	
13	90.001.25.053	Šroub / Schraube / Screw	M10x55 DIN 912 8.8	6
14	90.004.2D.013	Šroub / Schraube / Screw	M12x25 DIN 915	1
15	90.011.27.009	Šroub / Schraube / Screw	M12x20 DIN 84 4.8	1
16	90.100.55.005	Maticice / Mutter / Nut	M8 DIN 934 8.8	1
17	90.300.OZ.003	Válcový kolík / Zylinderstift / Cylindrical pin	d16x80 DIN 7	1
18	90.350.OZ.002	Talířová pružina / Tellerfeder / Belleville spring	35.5x18.3x2.0x2.8	6
19	95.001.026	Ložisko / Lager / Bearing	6307 2RS	2
20	95.800.014	Pojistný kroužek / Sicherungsring / Retaining ring	d35 DIN 471	1
21	95.801.013	Pojistný kroužek / Sicherungsring / Retaining ring	d80 DIN 472	2

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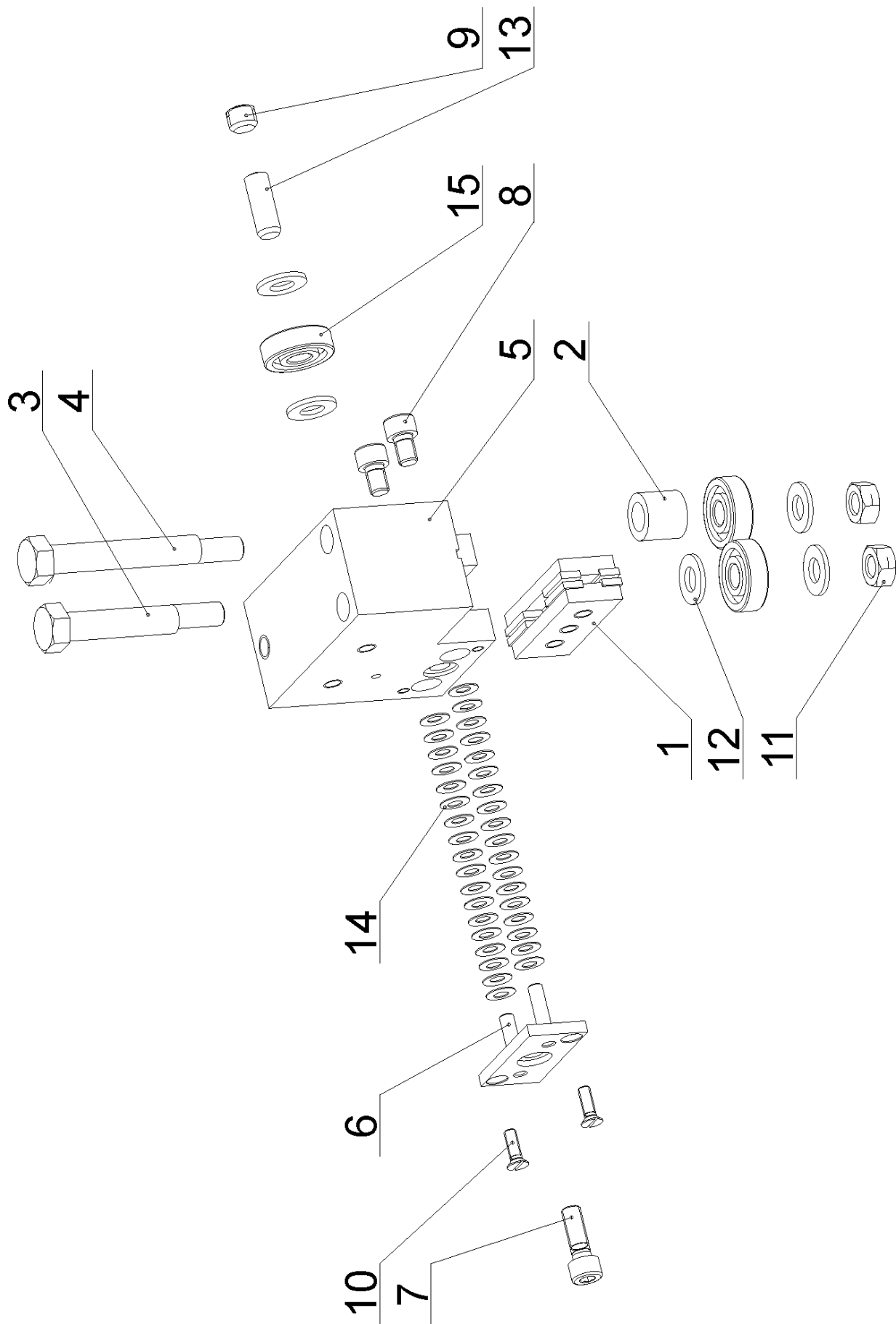
26.19. Vedení pilového pásu / Sägebandführung / Saw band guiding

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	201.4210-100	Levá vodící kostka / Linker Führungsklotz / Left guiding cube	1
2	201.4210-200	Pravá vodící kostka / Rechter Führungsklotz / Right guiding cube	1
3	30.0810-004	Držák levé vodící kostky / Führungsschuhhalt._L / Guiding cube holder_L.	1
4	30.0810-011	Lišta držáku / Halterleiste / Holder listel	1
5	30.1814-011	Držák ventilu / Ventilhalter / Valve holder	2
6	30.2904-913	Pilový pás / Sägeband / Saw band	1
7	30.3510-004	Trubka / Rohr / Tube	2
8	30.9010-003	Držák / Halterung / Holder	2
9	30.9210-001	Pravá lišta / Rechte Leiste / Right listel	1
10	30.9210-002	Lišta / Leiste / Listel	1
11	90.001.25.028	Šroub / Schraube / Screw M8x10 DIN 912	1
12	90.001.25.032	Šroub / Schraube / Screw M8x20 DIN 912	6
13	90.001.25.030	Šroub / Schraube / Screw M8x14 DIN 912 8.8	2
14	90.150.50.007	Podložka / Scheibe / Washer	2
15	94.008.003	Montážní páka / Klemmhebel / Clamping lever M8x40	2
16	94.202.002	Redukce / Reduktion / Reduction 1/4"-6	4
17	99.260.003	Kulový ventil / Kugelventil / Spherical valve 1/4"	2



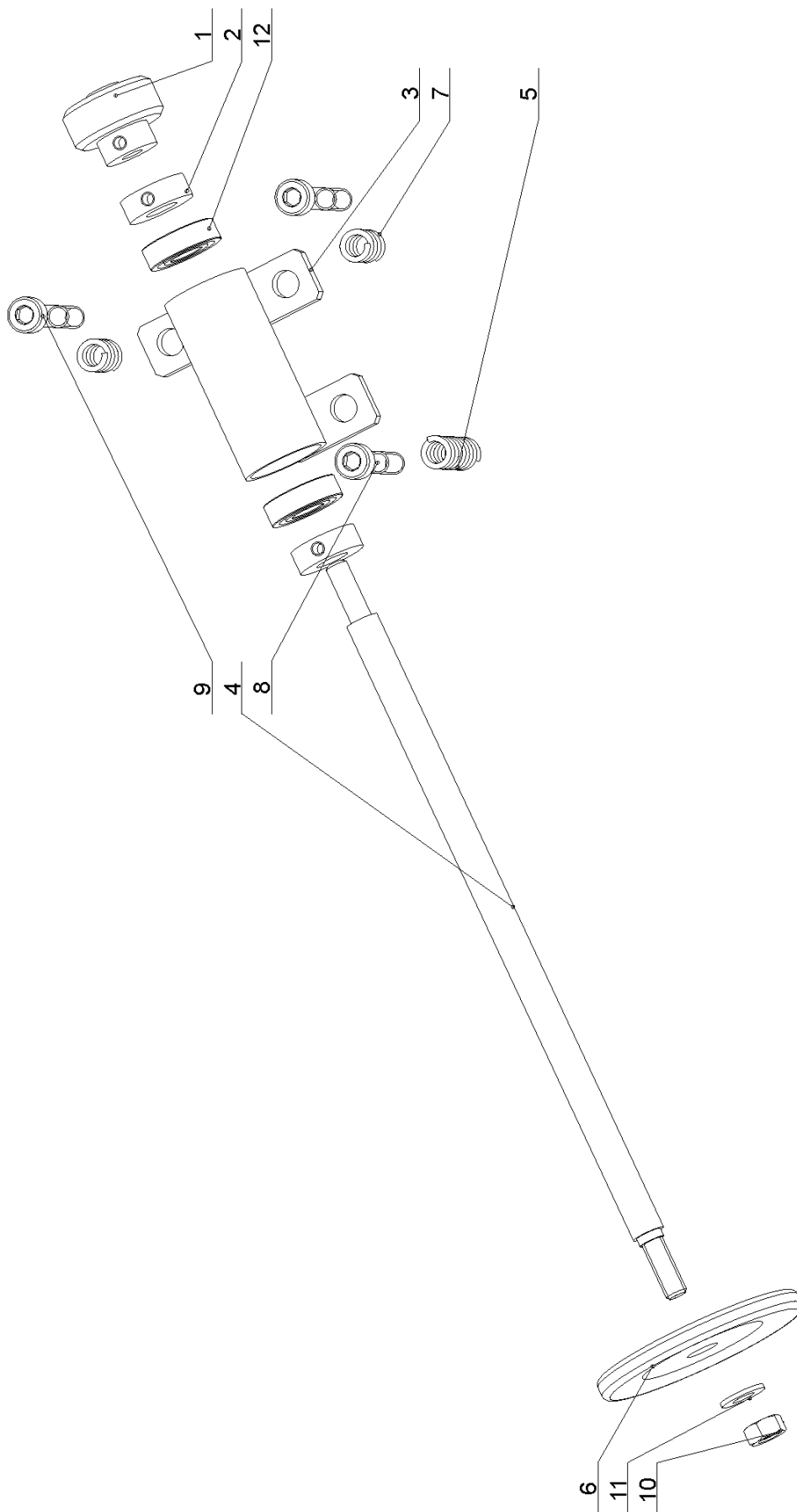
26.20. Levá vodící kostka / Linker Führungsklotz / Left guiding cube

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0810-005	Držák tvrdokovu / HM-Halter / HM holder	2
2	30.0810-007	Trubka ložiska / Lagerrohr / Bearing tube	1
3	30.0810-009	Excentr / Exzenter / Eccentric	1
4	30.0810-010	Excentr / Exzenter / Eccentric	1
5	30.4210-001	Levá vodící kostka / Linker Führungsklotz / Left guiding cube	1
6	30.0810-103	Vodící deska / Führungsplatte / Guiding plate	1
7	30.0810-104	Šroub / Schraube / Screw	1
8	90.001.25.029	Šroub / Schraube / Screw M8x12 DIN 912 8.8	2
9	90.002.2D.016	Šroub / Schraube / Screw M12x10 DIN 913 45H	1
10	90.011.27.022	Šroub / Schraube / Screw M5x16 DIN 7991 10.9	2
11	90.100.55.006	Matice / Mutter / Nut M10 DIN 934 8.8	2
12	90.150.50.006	Podložka / Scheibe / Washer Ø10,5 DIN 125	5
13	90.301.0Z.001	Válcový kolík / Zylinderstift / Cylindrical pin 10x28 DIN 7	1
14	90.350.0Z.001	Talířová pružina / Tellerfeder / Belleville spring 12.5x6.2x0.5	32
15	95.001.014	Ložisko / Lager / Bearing 6200 2RS	3



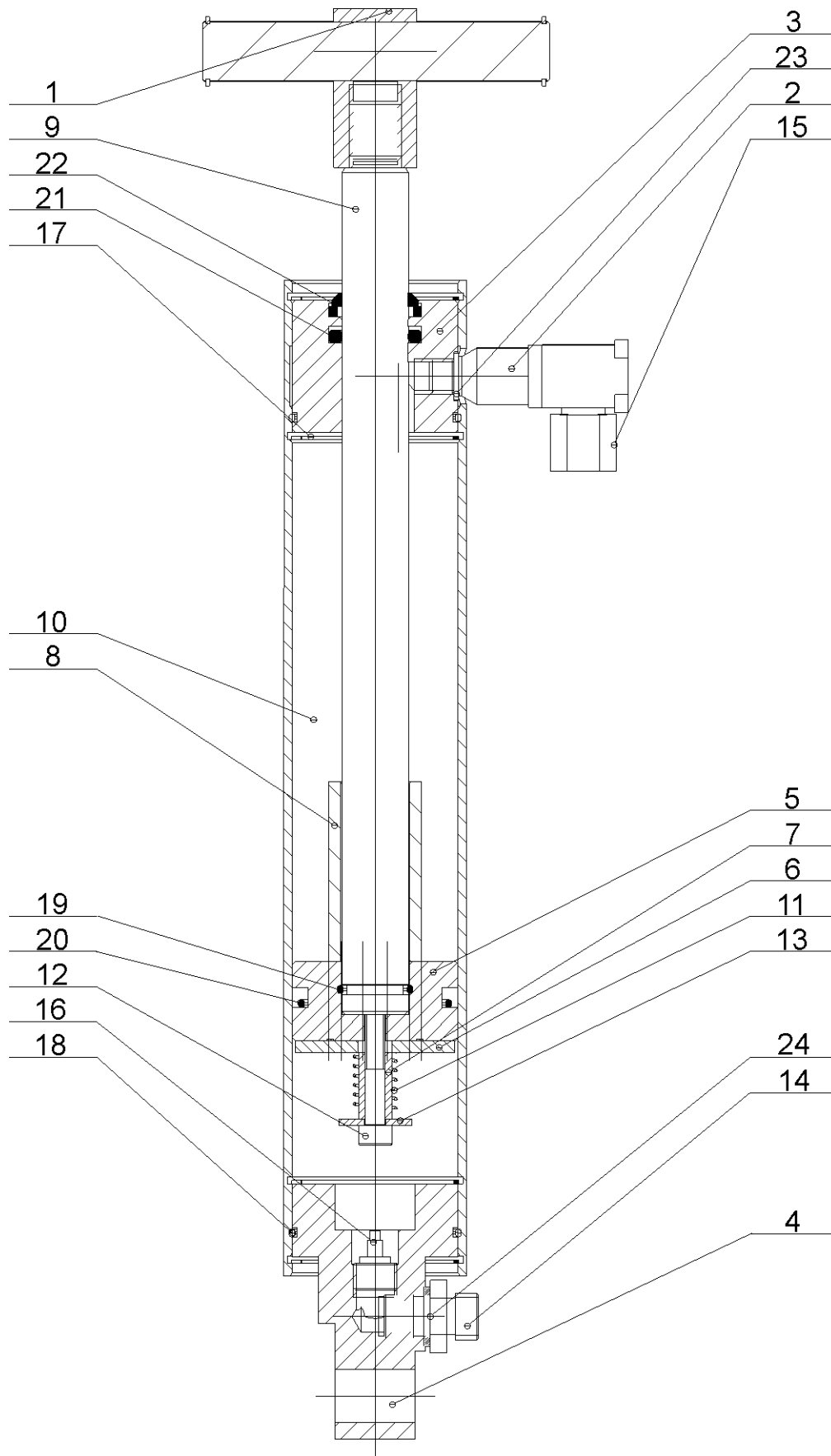
26.21. Pravá vodící kostka / Rechter Führungsklotz / Right guiding cube

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0810-005	Držák tvrdokovu / HM-Halter / HM holder	2
2	30.0810-007	Trubka ložiska / Lagerrohr / Bearing tube	1
3	30.0810-009	Excentr / Exzenter / Eccentric	1
4	30.0810-010	Excentr / Exzenter / Eccentric	1
5	30.4210-002	Kostka vodící pravá / Rechter Führungsklotz / Right guiding cube	1
6	30.0810-103	Deska vodící / Führungsplatte / Guiding plate	1
7	30.0810-104	Šroub / Schraube / Screw	1
8	90.001.25.029	Šroub / Schraube / Screw M8x12 DIN 912 8.8	2
9	90.002.2D.016	Šroub / Schraube / Screw M12x10 DIN 913 45H	1
10	90.011.27.022	Šroub / Schraube / Screw M5x16 DIN 7991 10.9	2
11	90.100.55.006	Matice / Mutter / Nut M10 DIN 934 8.8	2
12	90.150.50.006	Podložka / Scheibe / Washer Ø10,5 DIN 125	5
13	90.301.0Z.001	Válcový kolík / Zylinderstift / Cylindrical pin 10x28 DIN 7	1
14	90.350.0Z.001	Talířová pružina / Tellerfeder / Belleville spring 12.5x6.2x0.5	36
15	95.001.014	Ložisko / Lager / Bearing 6200 2RS	3



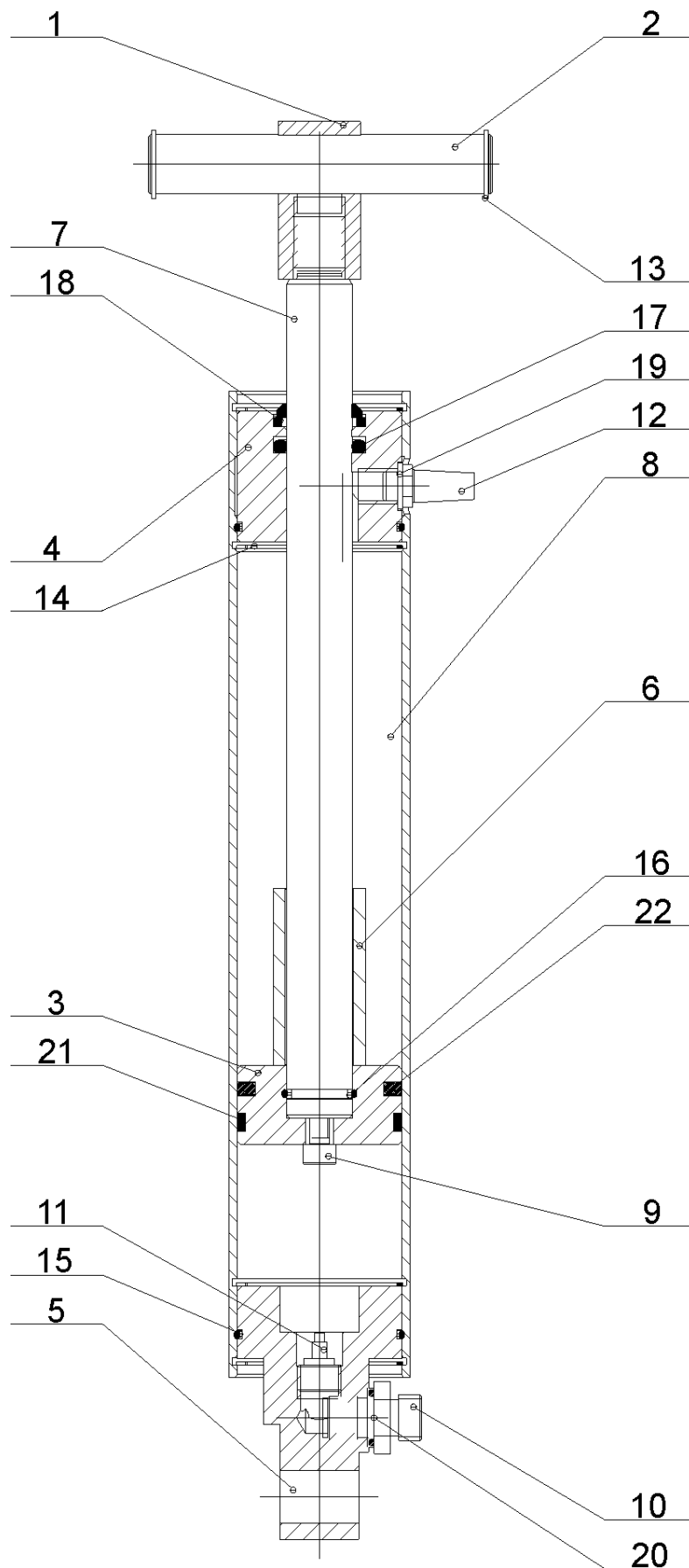
26.22. Kartáček / Spänbürste / Brush

Poz.	Objednací číslo	Název položky	ks	
Pos.	Bestell - Nr.	Bezeichnung	Menge	
Pos.	Reference No.	Item	Pcs.	
1	30.0814-204	Kolečko / Rolle / Wheel	1	
2	30.0814-207	Kroužek / Ring / Ring	2	
3	30.9214-301	Držák / Halterung / Holder	1	
4	30.9214-302	Hřídel / Welle / Shaft	1	
5	31.0305-211	Pružina čelisti / Feder / Jaw spring	1	
6	31.0814-208	Kartáček / Bürste / Brush	1	
7	31.1506-115	Pružina / Feder / Spring	1.6x12x25x7.5	2
8	90.001.25.038	Šroub / Schraube / Screw	M8x50 DIN 912	1
9	90.001.25.040	Šroub / Schraube / Screw	M8x60 DIN 912	2
10	90.100.55.005	Matice / Mutter / Nut	M8 DIN 934	1
11	90.150.50.005	Podložka / Scheibe / Washer	d8.4 DIN 125	1
12	95.001.005	Ložisko / Lager / Bearing	6001 2RS	2



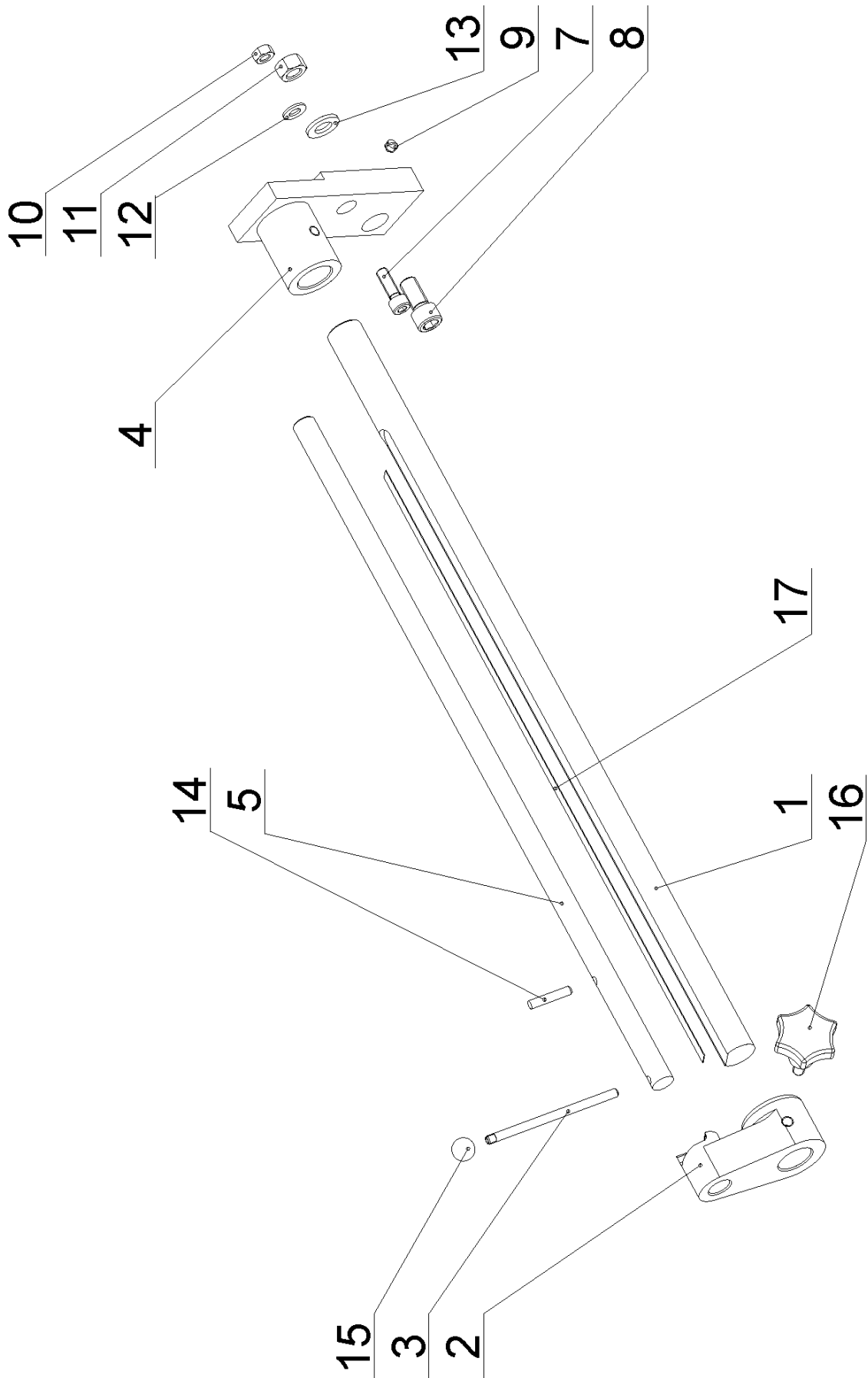
26.23. Zvedací válec - ruční / Hubzylinder - manuell / Lifting cylinder – hand - 251.251 G,DG

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0807-006	Držák pístnice / Kolbenstangehalter / Piston rod holder	1
2	30.3407-103	Redukce / Reduktion / Reduction	1
3	30.4107-002	Horní víko / Deckel / Upper cover	1
4	30.4107-003	Víko / Deckel / Cover	1
5	30.4107-004	Píst / Kolben / Piston	1
6	30.4107-006	Klapka ventilu / Ventilklappe / Valve flap	1
7	30.4107-008	Distanc / Distanz / Distance	1
8	30.9407-005	Distanc / Distanz / Distance	1
9	30.LW07-001	Pístnice / Kolbenstange / Piston rod	1
10	30.LW07-002	Válec / Zylinder / Cylinder	1
11	31.4107-009	Pružina / Feder / Spring	0.80x13.3x22x7
12	90.001.25.021	Šroub / Schraube / Screw	M6x35 DIN 912
13	90.151.50.004	Podložka / Scheibe / Washer	d6.6x22x2 DIN 440
14	92.002.003	Přímé šroubení / Gerade Verschraubung / Straight screwing	1
15	92.003.001	Natáčecí šroubení / Winkelverschraubung / Swivelling screw	1
16	92.151.001	Pojistný ventil / Sicherungsventil / Retaining valve	1
17	95.801.018	Pojistný kroužek / Sicherungsring / Retaining ring	d50 DIN 472
18	96.001.013	O kroužek / O Ring / O Ring	45x2
19	96.002.007	O kroužek / O Ring / O Ring	16x2
20	96.002.018	O kroužek / O Ring / O Ring	39.2x5.7
21	96.041.002	Těsnící manžeta / Dichtungsmanschette / Gasket	20x28
22	96.060.002	Stírací kroužek / Abstreifring / Wiping ring	20x28
23	96.082.001	Těsnící kroužek / Dichtungsring / Sealing ring Cu	10/14
24	96.082.002	Těsnící kroužek / Dichtungsring / Sealing ring Cu	13/17



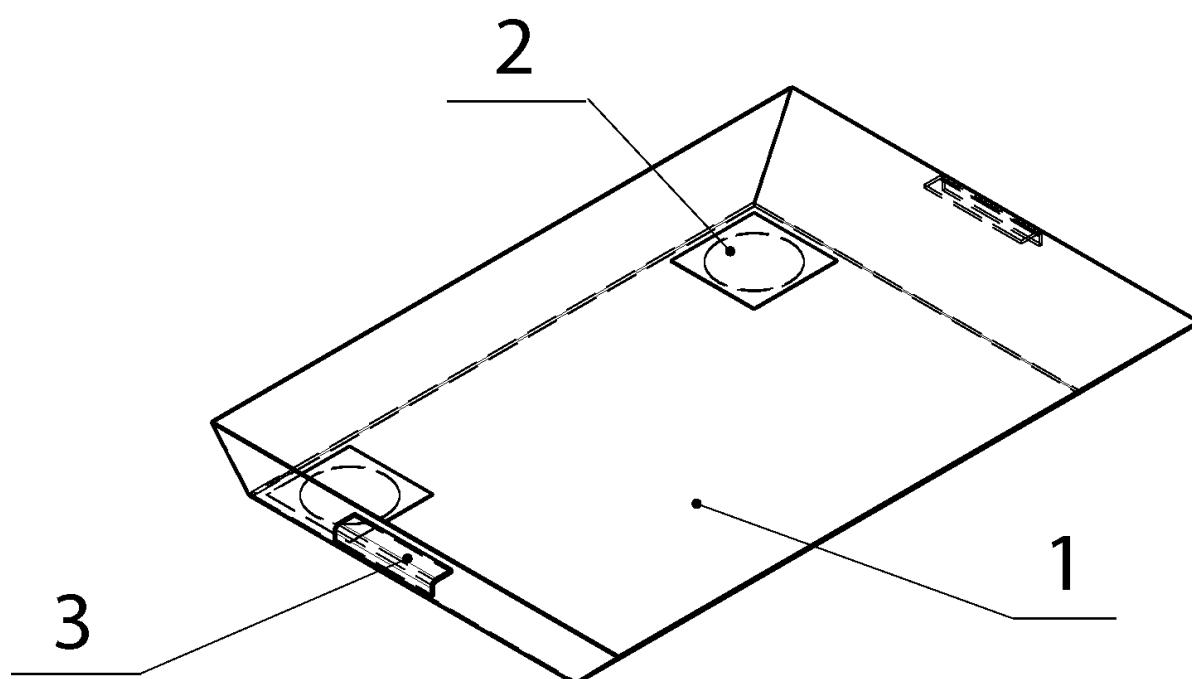
26.24. Zvedací válec - hydraulický / Hubzylinder - hydraulisch / Lifting cylinder – hydraulic 251.247 GH,GHK,GHV,DGH,DGHK,DGHV

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0807-006	Držák pístnice / Kolbenstangehalter / Piston rod holder	1
2	30.0807-007	Horní čep / Bolzen / Upper pivot	1
3	30.2807-004	Píst / Kolben / Piston	1
4	30.4107-002	Horní víko / Deckel / Upper cover	1
5	30.4107-003	Víko / Deckel / Cover	1
6	30.9407-005	Distanc / Distanc / Distance	1
7	30.LW07-001	Pístnice / Kolbenstange / Piston rod	1
8	30.LW07-002	Válec / Zylinder / Cylinder	1
9	90.001.25.018	Šroub / Schraube / Screw M6x20 DIN 912	1
10	92.002.003	Přímé šroubení / Gerade Verschraubung / Straight screwing	1
11	92.151.001	Pojistný ventil / Sicherungsventil / Retaining valve	1
12	93.014.003	Tlumič / Schalldämpfer / Absorber G1/8"	1
13	95.800.008	Pojistný kroužek / Sicherungsring / Retaining ring d18 DIN 471	2
14	95.801.018	Pojistný kroužek / Sicherungsring / Retaining ring d50 DIN 472	4
15	96.001.013	O kroužek / O Ring / O Ring 45x2	2
16	96.002.007	O kroužek / O Ring / O Ring 16x2	1
17	96.041.002	Těsnící manžeta / Dichtungsmanschette / Gasket 20x28	1
18	96.060.002	Stírací kroužek / Abstreifring / Wiping ring 20x28	1
19	96.082.001	Těsnící kroužek / Dichtungsring / Sealing ring Cu 10/14	1
20	96.082.002	Těsnící kroužek / Dichtungsring / Sealing ring Cu 13/17	1
21	96.084.001	Vodící kroužek / Führungsring / Guiding ring 50x5.5x2.5x146.9	1
22	96.900.001	Těsnění / Dichtung / Sealing 50x39x4	1
9	90.001.25.018	Šroub / Schraube / Screw M6x20 DIN 912	1
10	92.002.003	Přímé šroubení / Gerade Verschraubung / Straight screwing	1
11	92.151.001	Pojistný ventil / Sicherungsventil / Retaining valve	1
12	93.014.003	Tlumič / Schalldämpfer / Absorber G1/8"	1
13	95.800.008	Pojistný kroužek / Sicherungsring / Retaining ring d18 DIN 471	2



26.25. Doraz / Anschlag / Length stop

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0703-010.A	Tyč dorazu / Anschlagstange / Length stop bar	1
2	30.0703-013	Těleso dorazu / Anschlagskörper / Length stop body	1
3	30.0703-016	Páka dorazu / Anschlagshebel / Length stop lever	1
4	30.4114-101	Držák dorazu / Anschlagshalter / Length stop holder	1
5	30.4214-201	Doraz / Anschlag / Length stop	1
7	90.001.25.033	Šroub / Schraube / Screw M8x25 DIN 912 8.8	1
8	90.001.25.057	Šroub / Schraube / Screw M12x25 DIN 912 8.8	1
9	90.003.2D.009	Šroub / Schraube / Screw M8x8 DIN 914 45H	1
10	90.100.55.005	Matice / Mutter / Nut M8 DIN 934 8.8	1
11	90.100.55.007	Matice / Mutter / Nut M12 DIN 934 8.8	1
12	90.150.50.005	Podložka / Scheibe / Washer Ø8.4 DIN 125	1
13	90.150.50.007	Podložka / Scheibe / Washer Ø13 DIN 125	1
14	90.300.0Z.006	Válcový kolík / Zylinderstift / Cylindrical pin 6x32 DIN 6325	1
15	94.001.001	Rukojeť / Griff / Handle	1
16	94.006.001	Plastový šroub / Plastikschraube / Plastic screw M8x17	1
17	99.120.001	Měřítko / Maßstab / Straight edge	1



26.26. Vana / Wanne / Tank

Poz.	Objednací číslo	Název položky		ks
Pos.	Bestell - Nr.	Bezeichnung		Menge
Pos.	Reference No.	Item		Pcs.
1	30.9101-102-1	Plast / Plast / Plastic		1
2	30.9101-102-B3	Plech /Blech / Metal plate		2
3	30.9101-102-B2	Držák / Halter / Holder		1

27. Troubleshooting table

27.1. Mechanical problems

Problem	Possible causes	Repair
1. Slanting cut	<ul style="list-style-type: none"> - Wrongly adjusted hard metal guides. - Worn hard metal guides. - Wrongly adjusted cubes of the saw band guiding. - Worn bearings of the saw band guiding. - Wrongly adjusted swarf brush. - Worn swarf brush. - Insufficient saw band stretching. - Wrongly chosen tooth system of the saw band. - Worn saw band. - Wrongly balanced roller conveyor. - Dirty feeding board. - Guiding arm and guiding cube are loosened. - Guiding arm and cube are too far from the material. - Too fast cutting rate. - Unexpected oscillation in material quality. 	<p>Set according to the chapter „Servicing and adjustment“</p> <p>Replace to the chapter „Worn pieces replacement“</p> <p>Set according to the chapter „Servicing and adjustment“</p> <p>Replace according to the chapter „Worn pieces replacement“</p> <p>Set according to the chapter „Servicing and adjustment“</p> <p>Replace according to the chapter „Worn pieces replacement“</p> <p>Rise the saw band stretching and set the limit switch.</p> <p>Replace the saw band and keep the instructions of manufacturer on new saw band choice.</p> <p>Replace the saw band.</p> <p>Set the roller conveyor.</p> <p>Cleanse the feeding board from debris, chip and residue material.</p> <p>Clamp the guiding arm.</p> <p>Set the guiding cube to the material.</p> <p>Lower the material feeding speed.</p> <p>Set the cut and feeding speed to the relevant material.</p>
2. The cut is not cut upon desired angle	<ul style="list-style-type: none"> - Securing lever is loosened. - Set angle does not match the cut angle. - Insufficient saw band stretching. - Guiding arm and guiding cube are loosened. - Dirt between material and clamping jaw. 	<p>Check the securing lever efficiency and carry out its adjustment according to chapter „Servicing and adjustment“.</p> <p>Check the angle adjustment with a protractor and possibly set it according to chapter „Servicing and adjustment“.</p> <p>Stretch the saw band and set the limit switch according to chapter „Servicing and adjustment“.</p> <p>Fasten the guiding arm and the cube.</p> <p>Cleanse the material and mating jaw.</p>
3. Short lifetime of the saw band	<ul style="list-style-type: none"> - Insufficient saw band stretching. - Worn swarf brush. 	<p>Raise the tightening of the saw band set the scanner of saw band tightening according to chapter „Servicing and adjustment“.</p> <p>Check the swarf brush condition and replace it in case of excessive use as described in chapter „Worn pieces replacement“</p>

	<ul style="list-style-type: none"> - Wrongly adjusted swarf brush. 	Check swarf brush adjustment, set it according to chapter „Servicing and adjustment“
	<ul style="list-style-type: none"> - 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“
	<ul style="list-style-type: none"> - Wrongly adjusted hard metal guides. 	Check the adjustment of the hard metal guides and carry out adjustment as described in chapter „Servicing and adjustment“
	<ul style="list-style-type: none"> - Worn hard metal guides of the saw band. 	Check the condition of the hard metal guide and if it is too worn, replace hard metal guides according to chapter „Worn pieces replacement“
	<ul style="list-style-type: none"> - 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“
	<ul style="list-style-type: none"> - Wrongly adjusted guiding cubes of the saw band. 	Set guiding cube according to chapter „Servicing and adjustment“
	<ul style="list-style-type: none"> - 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.
	<ul style="list-style-type: none"> - Different material quality. 	Adjust feeding and speed of a saw band according to desired material (try cut-test).
	<ul style="list-style-type: none"> - Low-class saw band 	Replace the saw band (contact your local accessory supplier for more information)
	<ul style="list-style-type: none"> - Wrongly chosen saw band tooth system. 	Replace the saw band and keep instructions of the manufacturer on the choice.
	<ul style="list-style-type: none"> - 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.	<ul style="list-style-type: none"> - Worn saw band. 	Replace the saw band and keep instructions of the manufacturer on the choice.
	<ul style="list-style-type: none"> - Wrong saw band tooth system. 	Replace the saw band and keep instructions of the manufacturer on the choice.
	<ul style="list-style-type: none"> - 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.	<ul style="list-style-type: none"> - Wrongly adjusted lower stop point of the saw frame. 	Check lower limit switch and screw.
	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - Metal clamps between valve and panel. 	Clamps must be removed and put on the shaft O-Ring about 10x2 mm.
	<ul style="list-style-type: none"> - Metal clams are in body of valve. 	Valve must be cleared or changed.

7.Saw band drive cannot be started.	<ul style="list-style-type: none"> - Pressure switch is adjusted wrong. - Pressure switch is defective. 	Set the pressure switch according to chapter „Servicing and adjustment“ Replace defective parts of the pressure switch.
8.The saw bands are cracked.	<ul style="list-style-type: none"> - In stretching wheel is wrong adjusting geometry. - Hard metal plates of circuit saw band are not adjusting. - Guiding cubes are not adjusting (bearings + hard metal circuit) - Bearings of guiding cubes are used (rolling elements are damaged or outside ring of bearing has conical form). 	Adjust distance band from recess wheel c.2 mm according to operating instructions. Hard metal plates of circuit saw band must be adjusting according to operating instructions. Guiding cubes must be adjusting (bearings + hard metal circuit) according to operating instructions. Bearings of guiding cubes must be replaced. Bearings must be adjusting according to operating instructions.
9.Damage tooth system of the saw band	<ul style="list-style-type: none"> - 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.	<ul style="list-style-type: none"> - Geometry of hardmetal guiding cubes is wrong adjusted. - Bearings of guiding cubes are used. 	Hardmetal guiding cubes must be adjusted. Bearings of guiding cubes must be replaced.
11.Cleansing of the saw band is not functional.	<ul style="list-style-type: none"> - Elastic wheel of the brush drive is worn-down. - Knurling of the driving wheel is worn-down. - The shaft of the brush drive is rusted. - The brush position and the brush cover is adjusted wrong – with the brush cannot be turned. 	Elastic wheel of the brush must be changed. Driving wheel must be changed. The shaft of the brush must be cleaned and oiled. 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.	<ul style="list-style-type: none"> - Backlash in driving wheel lodgement on the shaft. - Worn channel for spring. 	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.

27.2. Electric and hydraulic problems

Problem	Possible causes	Repair
1.Machine is not possible start.	<ul style="list-style-type: none"> - In socket is not voltage - Transfer relay is closed (thermal protector) 	Line voltage must be checked. 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. - In hydraulic (pneumatic) ring is error. HYTOS (BOSCH) is not acting to frame uplift.	Bottom limit switch must be adjusted according to chapter ADJUSTING. 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. - Defective display - Wrong sensor – diode of indicator speed is not light.	Sensor of speed must be adjusted. The display must be changed. 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. - Thermal relay is defective - Input hosepipe is broken or obstructed. - Cooling pump protection is defective - Cooling pump is defective.	Fill the tank with cooling agent. Change the thermal relay Check the cooling circuit and perhaps cleanse cooling system. Check the protection of cooling pump if need change it. Replace the cooling pump.

28. Special accessory

Accessories, which are stated in this appendage, is not standard accessories of the band saw, it is necessary to order it separately.

28.1. PZH.ECO.320

Hydraulic clammer of the material bundles.

28.2. SDR.S.ECO

Cutting pressure regulation of one vice.

28.3. FDE.ECO.320

Frequency converter of the saw band speed.

28.4. VFDE

Potentiometer of the frequency converter control, it is placed on the control panel.

28.5. H.Bright

Halogen lighting of the working area.

28.6. LaserLiner

It is delivered including assembly.



28.7. S.Clean

The gun for machine cleaning from swarfs.

28.8. Microniser



MICRONISER Standard

Micro-spray-equipment including a full assembly set.
Standard version with ball valve and anodized nozzle.

MICRONISER 220V

Micro-spray-equipment including a full assembly set.
220V Version with connected pneumatic valve and anodized nozzle, assembling manual and electric plan are included.

28.9. Tenzomat



TENZOMAT

Sensitive tensionmeter for correct adjustment of the blade tension, including manual.

29. Roller conveyors and accessories

The rollers conveyors and accessories in this appendage are not standard accessories of the band saw and it is necessary to order them separately.

29.1. Roller conveyors of D type

29.1.1. Roller conveyors

D 540 – 2

Conveyor with steel rolls
 Max. load **steel rolls 600 kg/m**
 Without legs
 Rolls Ø 70x540mm
 Dimension 530x2000mm
 Conveyor height 700 – 800mm, 900 – 1000mm



D 540 – 3

Conveyor with steel rolls
 Max. load **steel rolls 600 kg/m**
 Without legs
 Rolls Ø 70x540mm
 Dimension 530x3000mm
 Conveyor height 700 – 800mm, 900 – 1000mm

29.1.2. Length stops

HA – 2

Manual length stop of series H for 2m



HA – 3

Manual length stop of series H for 3m

For special lengthens of the length stop HA the price can be set together from the following components:

Trolley HA

Trolley with length stop

Guide way HA

Guide way with connection material for 1m

HDA – 3

Digital Length stop with hand wheel suitable for all conveyors of series H and HP
 (Attention! Only mounted on the conveyor and with protective guide ASL-H)



HDA – 6

Digital Length stop with hand wheel suitable for all conveyors of series H and HP
 (Attention! Only mounted on the conveyor and with protective guide ASL-H)

Lengthens HDA

For special lengthens of the length stop HDA, use the price of 3m or 6m as basic number and add the costs for 1m



HNCA – 3

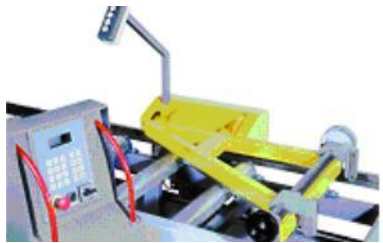
NC-controlled length stop suitable for all conveyors of series H and HP
(Attention! Only mounted on the conveyor and with protective guide ASL-H)

HNCA – 6

NC-controlled length stop suitable for all conveyors of series H and HP
(Attention! Only mounted on the conveyor and with protective guide ASL-H)

Lengthens HNCA

For special lengthens of the length stop HNCA, use the price of 3m or 6m as basic number and add the costs for 1m



H – VL

NC-controlled Incremental infeed machine

Lengthens Arm

Special order for double side band saws (DG, DGH)



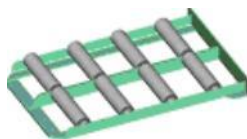
29.1.3. Feeding machines

D-VL

Automatic feeding machine.

29.1.4. Connection parts

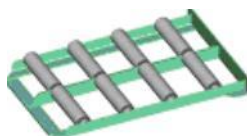
economic 510.320 G, GH, GHK, GHV



ATR

Connection part - right for conveyor D540.

economic 510.320 DG, DGH, DGHK, DGHV



ATL / R

Connection part – left / right for conveyor D540.

29.1.5. Connection sets

economic 510.320 G, GH, GHK, GHV

VBS L

Connection set, left side.



VBS R

Connection set, right side.



economic 510.320 DG, DGH, DGHK, DGHV

VBS L / R

Connection set, left / right side.



29.1.6. Accessories of roller conveyors

VR – D

Set of vertical rollers suitable for all conveyors of series D.



BVR – D

Set of movable vertical rollers suitable for all conveyors of series D.



VBF – D

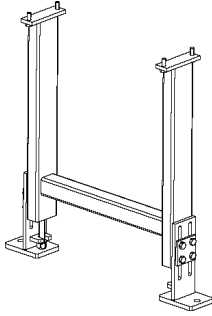
Preparation leg suitable for all conveyors of series D.
(Attention! At least two pieces have to be used).



SB-D

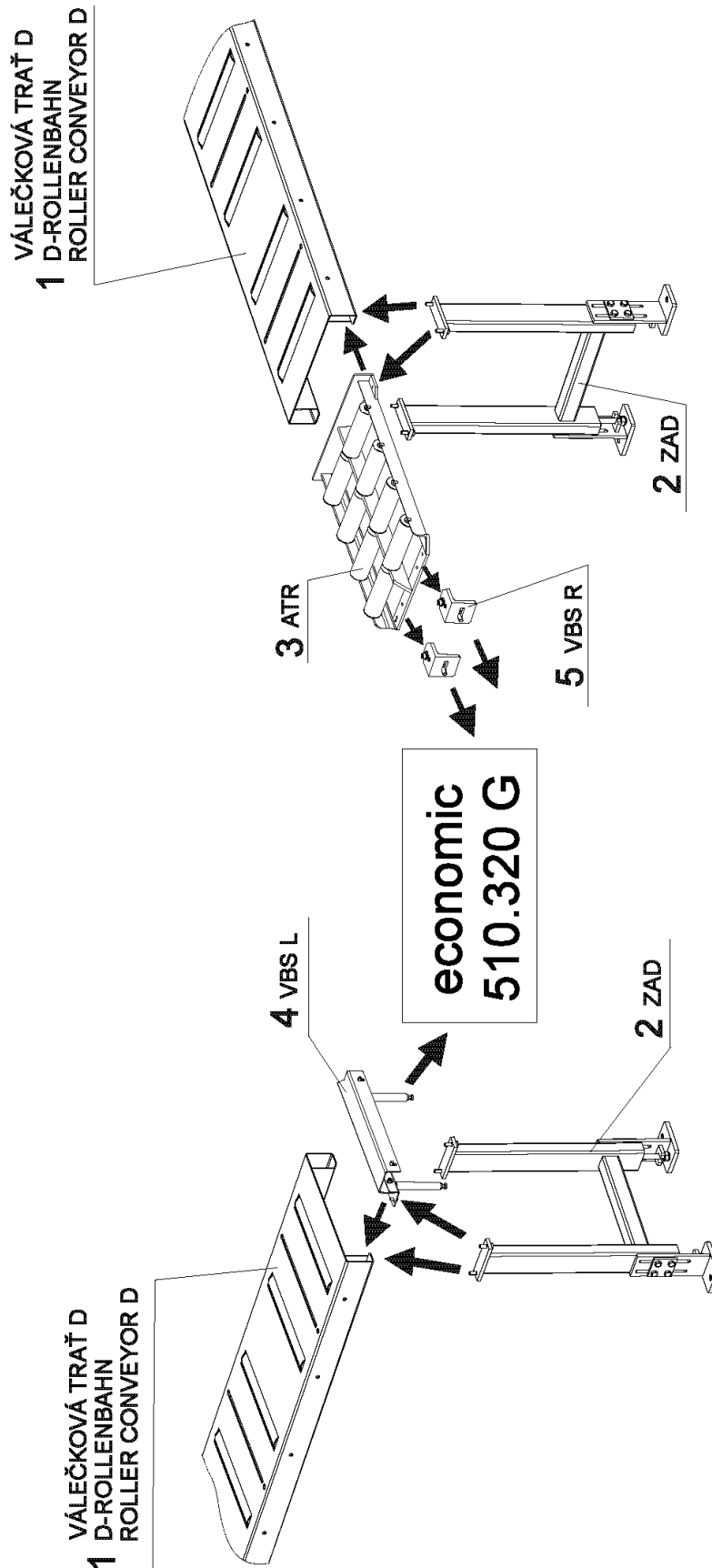
Set of securing bolt suitable for all conveyors of series D.



**ZA-D**

Additional leg suitable for conveyors D540/578, adjusted height 700-800 mm and for conveyors D540/778, adjusted height 900-1000 mm.

29.1.7. Connection schema of the roller conveyors to the band saw economic 510.320 G, GH, GHK, GHV

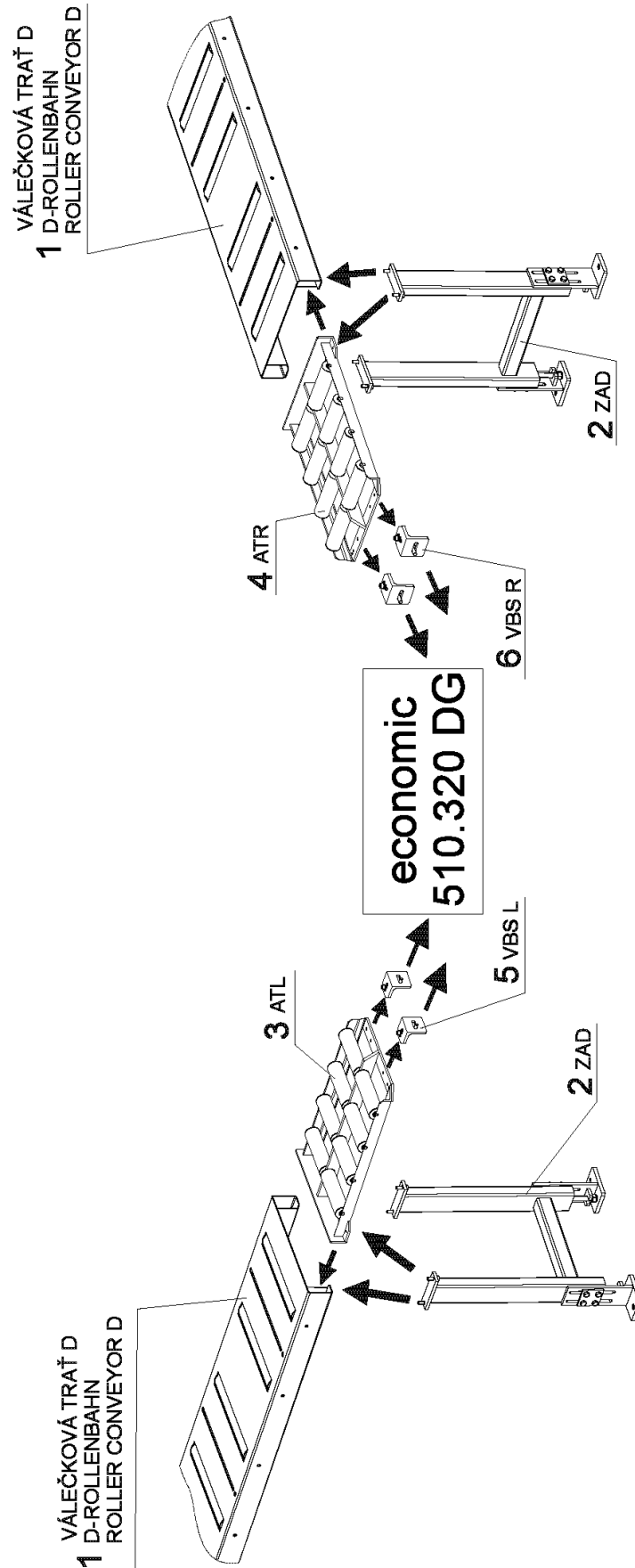


Roller conveyor D 540

Pos.	Number	Sign.	Name	
1	253.086	D 540 - 2	Roller conveyor D	width 540mm, length 2m
	253.087	D 540 - 3	Roller conveyor D	width 540mm, length 3m
2	253.080	ZA - D 540	Additional leg	width 540mm
	253.081			
3	255.511	ATR	Right connection part	width 540mm
4	255.263	VBS L	Left connection set	
5	255.260	VBS R	Right connection set	

For **economic 510.320 G, GH, GHK, GHV** band saws we advise, height presented groups. The roller conveyors are solved like modules, from which is possible to set together roller conveyor from desired length. In case of your questions, please contact your dealer.

economic 510.320 DG, DGH, DGHK, DGHV



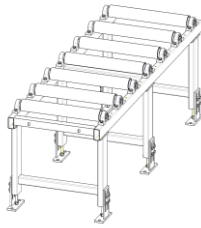
Roller conveyor D 540

Pos.	Number	Sign.	Name
1	253.086	D 540 - 2	Roller conveyor D width 540mm, length 2m
	253.087	D 540 - 3	Roller conveyor D width 540mm, length 3m
2	253.080	ZA – D 540	Additional leg width 540mm
	253.081		
3	255.511	ATL	Left connection part
4	255.511	ATR	Right connection part
5	255.260	VBS L	Left connection set
6	255.260	VBS R	Right connection set

For **economic 510.320 DG, DGH, DGHK, DGHV** band saws we advise, height presented groups. The roller conveyors are solved like modules, from which is possible to set together roller conveyor from desired length. In case of your questions, please contact your dealer.

29.2. Roller conveyors of H type

29.2.1. Roller conveyors



H 550 – 2

Conveyor with steel rolls
Max. Load 1200 kg/m
7 Rolls Ø 80x550mm
Dimension 640x2000mm
Without legs



H 550 – 3W

Conveyor with steel rolls
Max. Load 1200 kg/m
7 Rolls Ø 80x550mm
Dimension 640x3000mm
Without legs



H 550 – 3K

Conveyor with steel rolls
Max. Load 1200 kg/m
10 Rolls Ø 80x550mm
Dimension 640x3000mm
Without legs

29.2.2. Roller conveyors prepared for powering

HP 550 – 2

Conveyor prepared for powering with chains and chain wheels
Max. load 1200 kg/m
7 Rolls Ø 80x550mm
Dimension 640x2000mm
Without legs

HP 550 – 3W

Conveyor prepared for powering with chains and chain wheels
Max. load 1200 kg/m
7 Rolls Ø 80x550mm
Dimension 640x3000mm
Without legs

HP 550 – 3K

Conveyor prepared for powering with chains and chain wheels
Max. load 1200 kg/m
10 Rolls Ø 80x550mm
Dimension 640x3000mm
Without legs

29.2.3. Power and control units for powered conveyors



ARH – M

Power unit for powered conveyors of series HP, including motor, worm gear and manual clutch
Max. load 2500 kg / 1 drive



ARH – P

Power unit for powered conveyors of series HP, including motor, worm gear and pneumatic clutch
Max. load 2500 kg / 1 drive



RSP 1/1

Control unit for powered conveyors of series HP with one – phase frequency converter for one unit ARH

RSP 1/3

Control unit for powered conveyors of series HP with three – phase frequency converter for one unit ARH

RSP 2/1

Control unit for powered conveyors of series HP with one – phase frequency converter for two unit ARH

RSP 2/3

Control unit for powered conveyors of series HP with three – phase frequency converter for one unit ARH



EBS

End-stop unit for combination with powered conveyors of series HP and length stops HDA and HNCA



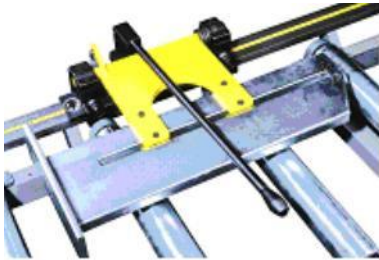
EMG-STOP

Additional emergency-stop unit for powered conveyors of series HP

29.2.4. Length stops

HA – 2

Manual length stop of series H for 2m



HA – 3

Manual length stop of series H for 3m

For special lengthens of the length stop HA the price can be set together from the following components:

Trolley HA

Trolley with length stop

Guide way HA

Guide way with connection material for 1m

HDA – 3

Digital Length stop with hand wheel suitable for all conveyors of series H and HP

(Attention! Only mounted on the conveyor and with protective guide ASL-H)



HDA – 6

Digital Length stop with hand wheel suitable for all conveyors of series H and HP

(Attention! Only mounted on the conveyor and with protective guide ASL-H)

Lengthens HDA

For special lengthens of the length stop HDA, use the price of 3m or 6m as basic number and add the costs for 1m

HNCA – 3

NC-controlled length stop suitable for all conveyors of series H and HP

(Attention! Only mounted on the conveyor and with protective guide ASL-H)



HNCA – 6

NC-controlled length stop suitable for all conveyors of series H and HP

(Attention! Only mounted on the conveyor and with protective guide ASL-H)

Lengthens HNCA

For special lengthens of the length stop HNCA, use the price of 3m or 6m as basic number and add the costs for 1m

H – VL

NC-controlled Incremental infeed machine



Lengthens Arm

Special order for double side band saws (DG, DGH)

29.2.5. Connection parts

economic 510.320 G, GH, GHK, GHV



ATH - R

Right connection part for conveyor H 550.

economic 510.320 DG, DGH, DGHK, DGHV



ATH - L

Left connection part for conveyor H 550.



ATH - R

Right connection part for conveyor H 550.

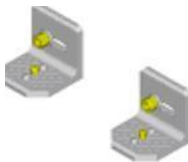
29.2.6. Connection sets

economic 510.320 G, GH, GHK, GHV



VBS L

Connection set, left side.



VBS R

Connection set, right side.

economic 510.320 DG, DGH, DGHK, DGHV



VBS L / R

Connection set, left / right side.

29.2.7. Accessories of roller conveyors



VR – H550

Vertical roller suitable for all conveyors of series H and HP.



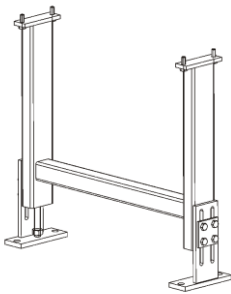
BVR – H

Movable vertical, suitable for conveyors H550 and HP550.



VBF – H

Preparative leg suitable for all conveyors of series H and HP.
(Attention! At least two pieces have to be used)



ZA-H550

Additional leg suitable for conveyors H550 and HP550,
adjusted height 700-800 mm.

29.2.8. Covers

ADB – H550 – 2

Set cover plates between rolls suitable for H550–2 and HP550–2. (Attention, only suitable for named conveyor)



ADB – H550 – 3W

Set cover plates between rolls suitable for H550–3W and HP550–3W. (Attention, only suitable for named conveyor)

ADB – H550 – 3K

Set cover plates between rolls suitable for H550–3K and HP550–3K. (Attention, only suitable for named conveyor)

ASL-H – 2

Cover for rollers placing from left and right side, it is suitable for conveyors H550–2.



ASL-H – 3W

Cover for rollers placing from left and right side, it is suitable for conveyors H550-3W.

ASL-H – 3K

Cover for rollers placing from left and right side, it is suitable for conveyors H550–3K.

ASL-HP – 2

Cover for rollers placing from left and right side, it is suitable for conveyors HP550–2.



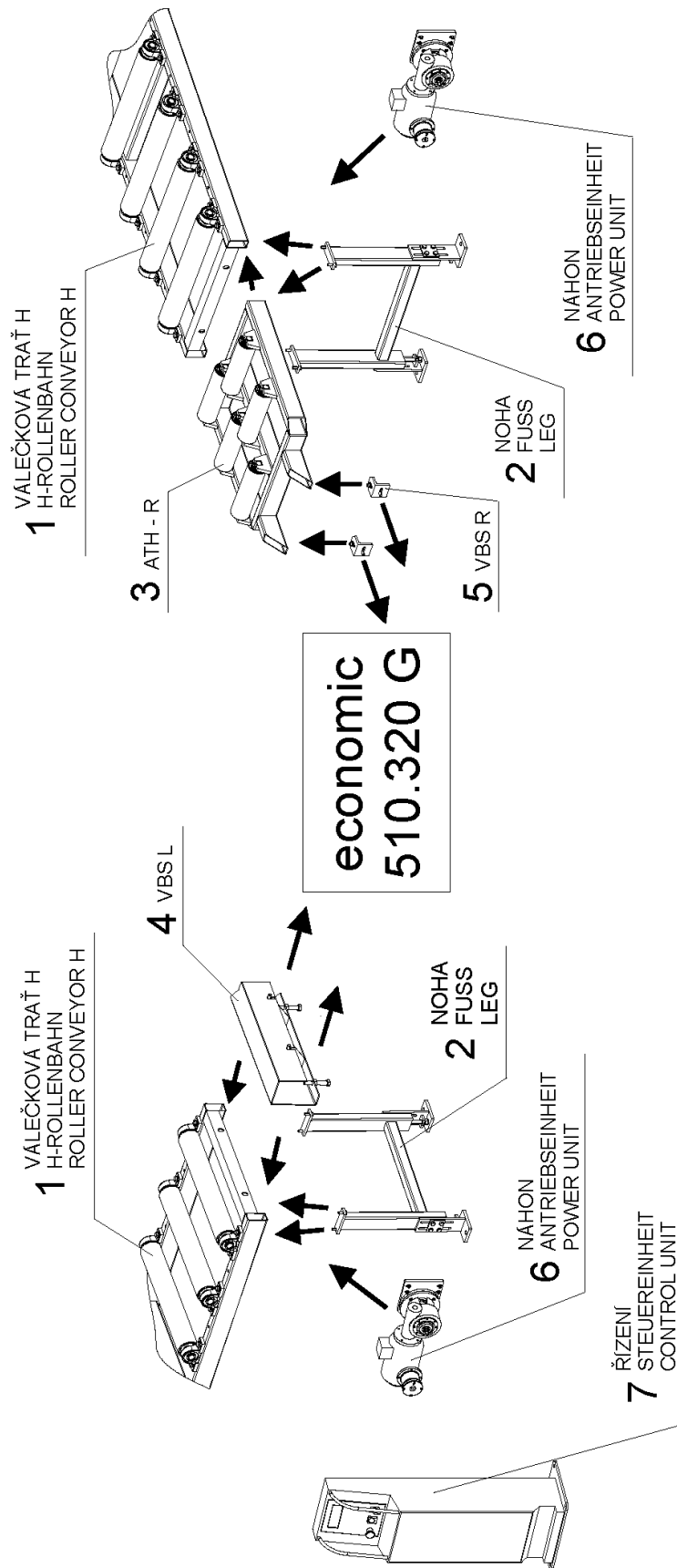
ASL-HP – 3W

Cover for rollers placing from left and right side, it is suitable for conveyors HP550-3W.

ASL-HP – 3K

Cover for rollers placing from left and right side, it is suitable for conveyors HP550–3K.

29.2.9. Connection schema of the roller conveyors to the band saw economic 510.320 G, GH, GHK, GHV



Roller conveyor H 550

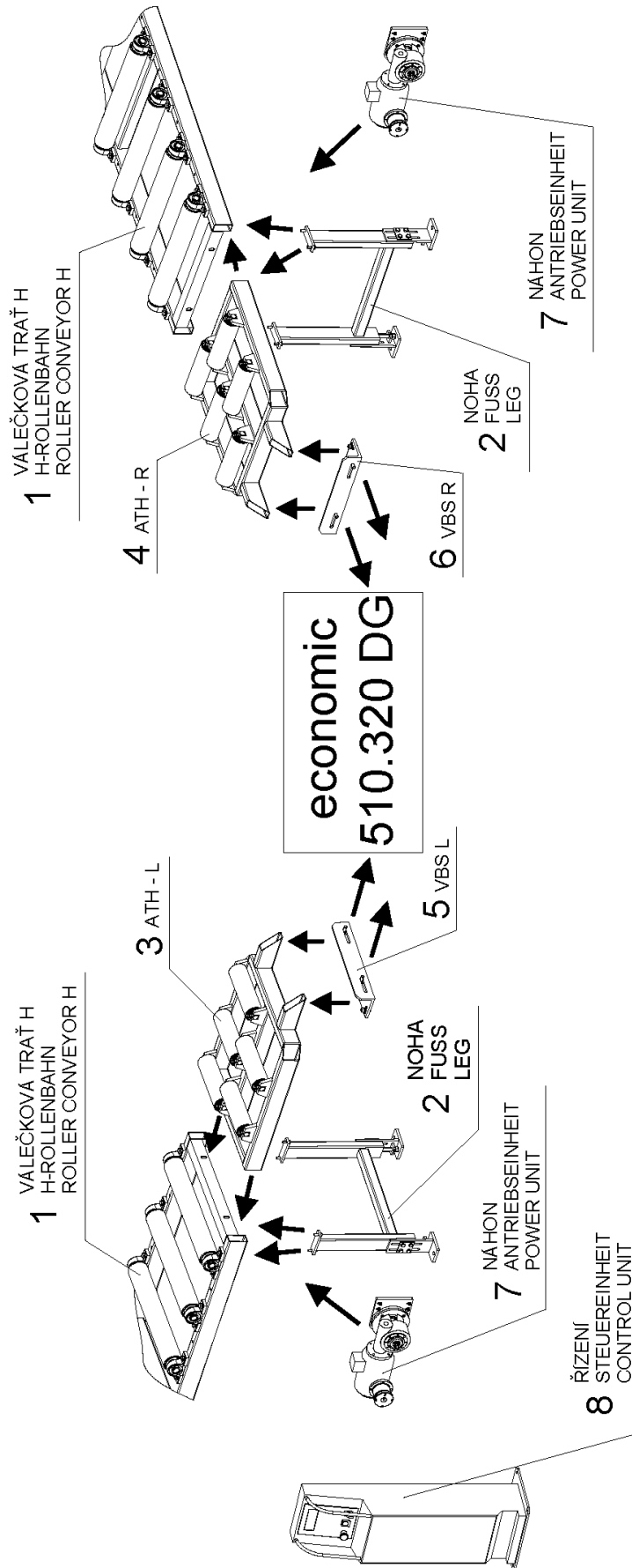
Pos.	Number	Sign.	Name
1	253.001	H 550 - 2	Roller conveyor H width 550mm, length 2m
	253.030	H 550 - 3W	Roller conveyor H width 550mm, length 3m
	253.002	H 550 -3K	Roller conveyor H width 550mm, length 3m
2	253.035	ZA – H 550	Additional leg width 550mm
3	255.505	ATH - R	Right connection part
4	255.261	VBS L	Left connection set
5	255.260	VBS R	Right connection set

Powered roller conveyor HP 550

Pos.	Number	Sign.	Name
1	253.006	HP 550 - 2	Roller conveyor H width 550mm, length 2m
	253.031	HP 550 - 3W	Roller conveyor H width 550mm, length 3m
	253.007	HP 550 -3K	Roller conveyor H width 550mm, length 3m
2	253.035	ZA - H 550	Additional leg width 550mm
3	255.505	ATH - R	Right connection part
4	255.261	VBS L	Left connection set
5	255.260	VBS R	Right connection set
6		ARH - M	Power unit with manual clutch
		ARH - P	Power unit with pneumatic clutch
7		RSP	Control unit with frequency converter

For **economic 510.320 G, GH, GHK, GHV** band saws we advise, height presented groups. The roller conveyors are solved like modules, from which is possible set together roller conveyor from desired length. In case of your questions, please contact your dealer.

economic 510.320 DG, DGH, DGHK, DGHV



Roller conveyor H 550

Pos.	Number	Sign.	Name	
1	253.001	H 550 - 2	Roller conveyor H	width 550mm, length 2m
	253.030	H 550 - 3W	Roller conveyor H	width 550mm, length 3m
	253.002	H 550 -3K	Roller conveyor H	width 550mm, length 3m
2	253.035	ZA – H 550	Přídavná opěrná noha	width 550mm
3	255.010	ATH - L	Propojovací díl levý	
4	255.505	ATH - R	Propojovací díl pravý	
5	255.265	VBS L	Připojovací díl levý	
6	255.265	VBS R	Připojovací díl pravý	

Powered roller conveyor HP 550

Pos.	Number	Sign.	Name	
1	253.006	HP 550 - 2	Roller conveyor H	width 550mm, length 2m
	253.031	HP 550 - 3W	Roller conveyor H	width 550mm, length 3m
	253.007	HP 550 -3K	Roller conveyor H	width 550mm, length 3m
2	253.035	ZA - H 550	Additional leg	width 550mm
3	255.010	ATH - L	Left connection part	
4	255.505	ATH - R	Right connection part	
5	255.265	VBS L	Left connection set	
6	255.265	VBS R	Right connection set	
7		ARH - M	Power unit with manual clutch	
		ARH - P	Power unit with pneumatic clutch	
8		RSP	Control unit with frequency converter	

For **economic 510.320 DG, DGH, DGHK, DGHV** band saws we advise, height presented groups. The roller conveyors are solved like modules, from which is possible set together roller conveyor from desired length. In case of your questions, please contact your dealer.

Declaration of Conformity

according to the Directive of the European Parliament and the Council 98/37EC modified by the Directive of the European Parliament and the Council 98/79/EC (statutory order num. 24/2003 Dig.), according to the Directive of the Council 73/23/EEC modified by the Directive of the Council 93/68/EEC (statutory order num. 17/2003 Dig.) and according to the Directive of the Council 89/336/EEC modified by the Directive 93/68/EEC (statutory order num. 18/2003 Dig.)

Manufacturer: **BOMAR, spol. s r.o.**
Těžební 1236/1
627 00 Brno
Czech Republic

we hereby declare that the machinery

Economic 410.260G, 410.260GH, 410.260GA, 410.260GHK, 410.260GHV,
410.260DG, 410.260DGH, 410.260DGHK, 410.260DGHV,
510.320GA, 510.320G, 510.320GH, 510.320GHK, 510.320GHV,
510.320DG, 510.320DGH, 510.320DGHK, 510.320DGHV
Transverse 410.260DGH, 410.260GANC, 510.330DGH, 510.330GANC, 610.440DGH,
610.440GANC
Individual 410.260GANC, 410.260GH, 510.330GH, 510.330 GANC, 610.440GANC
610.440GH, 640.520GH, 640.520GANC

satisfy all the requirements stated in the above Directives and that the machinery is safe for defined usage. Measures, which ensure conformity with all machinery on the market, were adopted and practiced.

To ensure the conformity, the following directives were applied:

- the Directive of the European Parliament and the Council 98/37/EC modified by the Directive of the European Parliament and the Council 98/79/EC
- the Directive of the Council 73/23/EEC modified by the Directive of the Council 93/68/EEC
- the Directive of the Council 89/336/EEC modified by the Directive of the Council 93/68/EEC

Cross-reference for the harmonized technical standards:

- ČSN EN ISO 12100-1:2004
- ČSN EN ISO 12100-2:2004
- ČSN EN 13898:2004
- ČSN EN 614-1:1997
- ČSN EN 953:1998
- ČSN EN 982:1997
- ČSN ISO 3746:1996
- ČSN EN 60204-1:2000
- ČSN EN 61000-6-4:2002 EMC
- ČSN EN 61000-6-2:2002 EMC

Year of the CE put on the product: 06

Place and date of issue: Brno, 26th May 2006

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DIČ: CZ48908827

Company seal

Alfred Pichlmann,
Managing Director



.....
name, office, signature