

BOMAR[®]

Operating Instructions for Band Saw

ergonomic 360.280 DGS



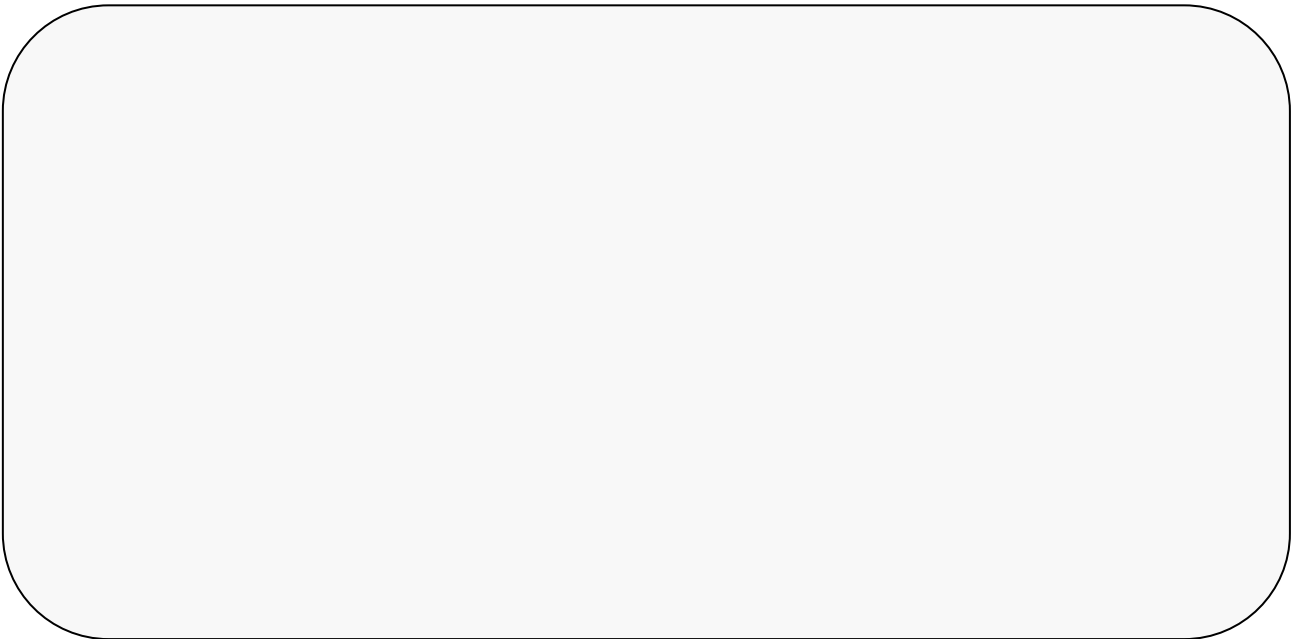
Before transporting and using the machine, please read the instructions thoroughly!

Serial number:



Service and Information

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



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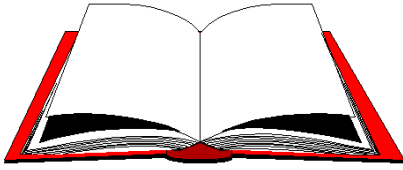
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1. Introduction



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 of 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 band saw ergonomic 360.280 DGS 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

Machine weight:

Weight	490 kg
--------	--------

Machine size:

Length	1742 mm
Width	900 mm
Height	1503 mm

Electrical equipment of the machine:

Supply voltage	~3 x 400V, 50Hz, TN-C-S
Total input	2,6 kW
Max. fuse	16 A
Protection degree	IP 54

Driving engine of the band saw:

Output	1,5 / 2,5 kW
Revolutions	2725 / 1440 min ⁻¹

Cooling pump:

Cooling pump output	0,09 kW
Capacity	20 dm ³

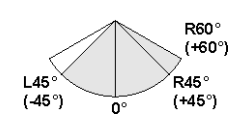


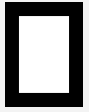

Size of the saw band:

3350 x 25 (27) x 0,90 mm

Cutting speed:

35 / 70 m/min

Cutting angles:

				
0°	Ø285 mm	360 x 145 mm	310 x 280 mm	280 x 280 mm
L 45°	Ø240 mm	240 x 130 mm	210 x 280 mm	230 x 230 mm
R 45°	Ø200 mm	240 x 110 mm	105 x 280 mm	180 x 180 mm
R 60°	Ø160 mm	160 x 125 mm	160 x 125 mm	125 x 125 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.



Enhanced risk!

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

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.

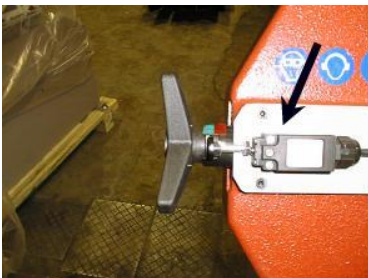
Saw arm cover



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. Transportation and stocking

5.1. 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 $+55^{\circ}\text{C}$, for a short term (max. 24 hours) temperature of the air until $+70^{\circ}\text{C}$.
- 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.

5.2. 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.

5.3. 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!

5.4. Transport and stocking

Handle the machine only with the hand pallet truck or the forklift truck! If the machine is equipped with the shackles in the pedestal, you can use the suspension cable and the crane.
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!

6. Activation

6.1. 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.

6.2. 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.

6.3. Electrical connection



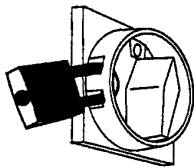
ATTENTION! Only a qualified professional must carry out the servicing and repairs of the electric equipment! Take special care during work with electrical equipment. High voltage shock can have fatal consequences! Always keep notes about work safety!

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.

6.4. 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.

6.5. 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.

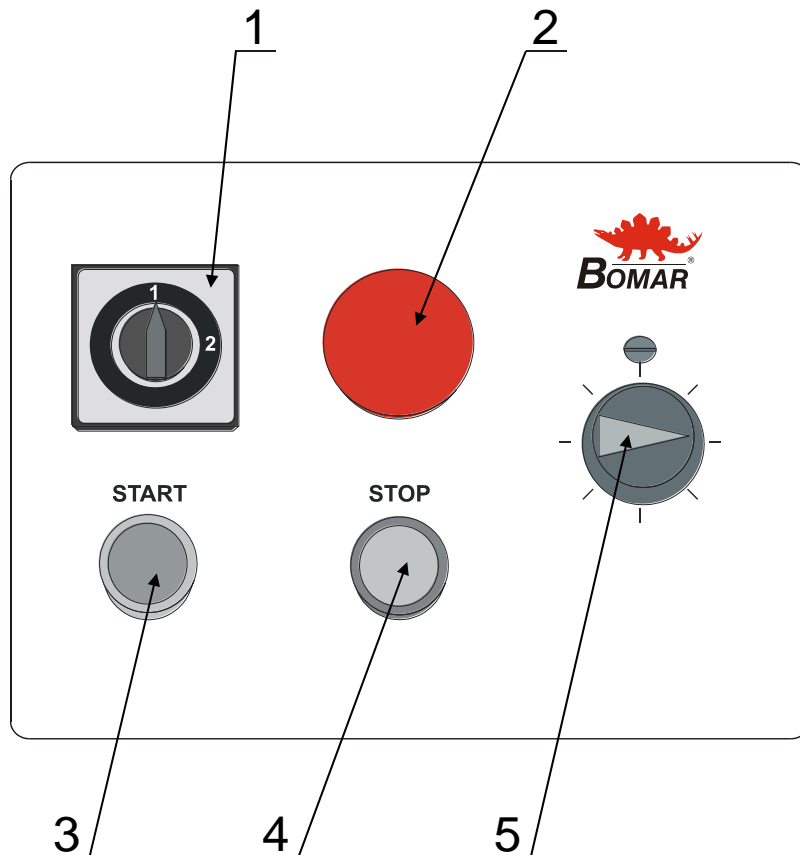
Switch on the main switch and check the motors and systems (saw band drive, hydraulic pump, cooling pump, chips conveyor).

Open and close the main vice and the feeding vice. Drive the front feeder from the front position 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.

7. Control panel - description



1 Cutting speed controller
Selection of the cutting speed during cutting (35 or 70 m.min⁻¹).

2 TOTAL STOP button
In case of emergency, the machine is stated to the order! **ATTENTION!** By press button TOTAL STOP is **not stopped** saw frame sinking!

3 START
Switch on the saw band drive.

4 STOP
Switch off 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. Material insertion

8.1. 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!

8.2. Handling agent selection



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

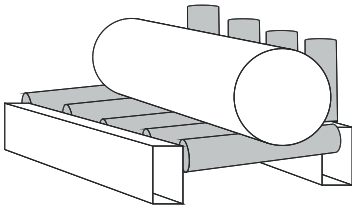
Handle with the material only with the lift truck or use the suspension strands and the crane!
Do not use the lift truck or crane in case that you do not have the licence to handle with it!

8.3. 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**“.

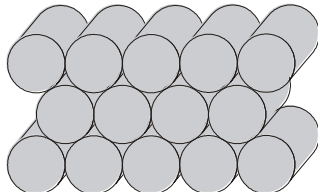
Make sure the conveyor is long enough and the material cannot tip off the conveyor.



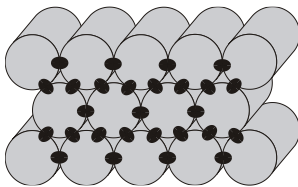
Be especially careful with round materials that it always stays on two vertical rollers and that it cannot fall off the conveyor!

8.4. Bundle material cutting

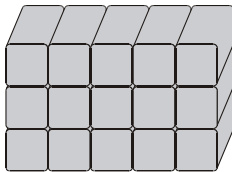
If you want to cut the material in the bundle, there are suggestions for the positioning of bundles



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.

9. Band saw adjusting

9.1. 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.

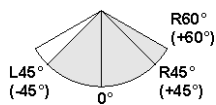
9.2. Setting of the material length

Release the securing screw, move the length stop on the desired length of the material and fasten the securing screw.

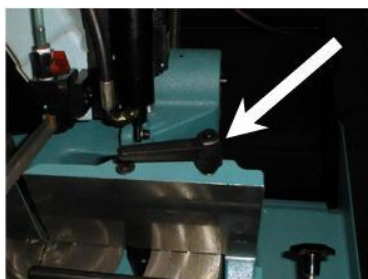


Note.: The length stop makes bounce listel of the material, so that the saw band will be not compressed in the cut. Turn the lever to the arrow direction.

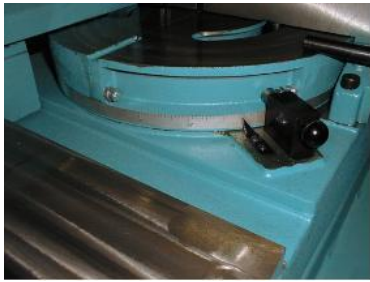
9.3. Angular cut setting



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



1) Lift the saw frame and release-securing lever of the console.



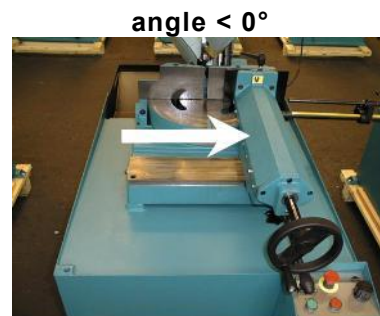
2) Set the desired angle of the cut according to the scale on the turning console.



3) If you want set the angle of the cut bigger than 45° or less than 0° , you must pull up the stop pivot.

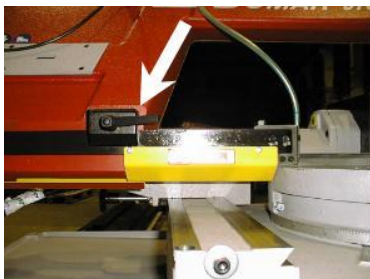
4) Tighten the securing lever of the console.

5) 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° .



9.4. 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.



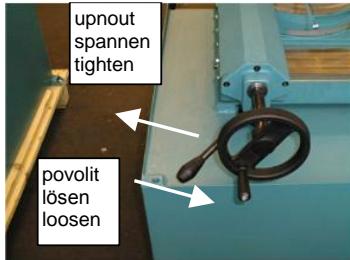
1) Release the lever of the left listel and move left part of the guide apparatus so that the left guide cube edge is as close to the cut material as possible.

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.

9.5. Cutting

- 1) Open the vice of the band saw.
- 2) Set the length stop to the desired length of the material.
- 3) Set the desired cutting angle.
- 4) Insert the material to the vice and pull it up to the length stop.
- 5) Pull vice jaws about 5 mm from the material by hand wheel.
- 6) Tighten the material with the clamping lever.



- 7) Set the saw band speed.
 - 8) Start the saw band drive by button START.
- Note:** Saw band drive is possible to stop by button STOP or by button TOTAL STOP in emergency causes during cutting. **ATTENTION!** Saw frame sinking is possible to stop by governing valve closing!
- 9) Set the speed of the saw frame sinking.
 - 10) Close the governing valve of the frame sinking and lift the saw frame to the top position after cutting finishing.
 - 11) Remove the cut. Now you can repeat whole progress.

10. Blanks removing from the band saw

10.1. 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!

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 the handle with it!

10.3. Blanks removing

Remove the blanks from the band saw.

11. Selection and replacement of the saw band

11.1. 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.

11.2. Saw band size

3350 x 25 (27) x 0,90 mm

11.3. 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.

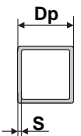
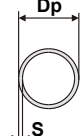

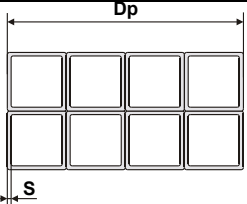
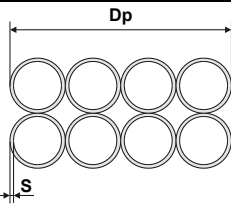
K – tooth with positive angle of the teeth.

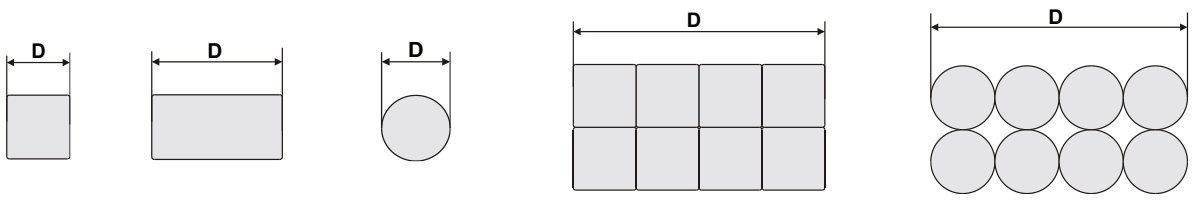
Examples of the tooth system marking:

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)						
						
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.						
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!

11.4. Saw band running - in

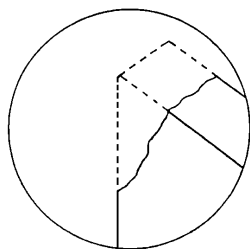
To ensure a full service life of the saw bands, we strongly recommend that you carry out the „RUN-IN“ process.

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

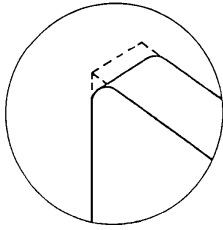
When cutting small pieces run the band until approximately 300 cm² of material has been cut.

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.

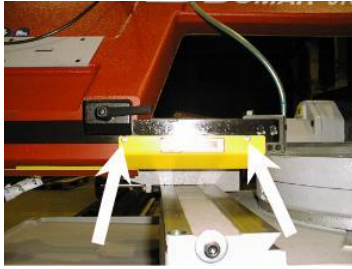


The optimal running in of the saw band produces ideal rounded cutting edges and therefore the conditions for an optimal service life.

Note: Run regrinding saw bands too!

11.5. 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) Dismantle back covering sheet metal of the saw frame. The covering sheet metal is clamped with two screws with plastic head.



4) Release brush holder and turn it. The brush must not defend saw band dismantling.



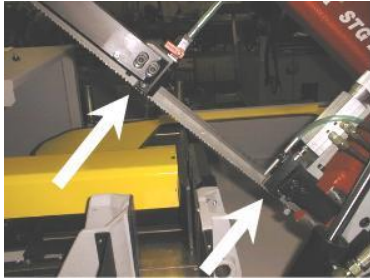
5) Turn by stretching star to the left side, release saw band stretching and pull saw band from blade wheels.



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

11.6. 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) Put the brush into the function position and screw up the holder.



6) Install the rear protective cover of the frame.



7) 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, you must turn the band round.

11.7. 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.

11.7.1. 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.

11.7.2. Saw band inspection

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

- 1) 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**“.

- 2) Switch off the main switch.

- 3) Check, if the saw band is right in the guiding cubes.

- 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 – 2 mm**, setting is right.
- if the distance is bigger than **2 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 of the saw band.

12. Cooling agents and chips disposal

12.1. 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.

12.2. 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. For cooling liquid using and liquidation reads date of cooling liquid manufacturer, which it is necessary to keep.

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

12.3. 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.

12.4. 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.

13. Greases and oils

13.1. 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
Ergonomic 360.280 DGS	Shell Tivela S 220	1,2 l
Ergonomic 360.280 DGSH	Shell Tivela S 220	1,2 l
Ergonomic 360.280 DGSP	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

13.2. 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		

13.3. 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

14. Service

14.1. 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.
- The guiding of the feeder.
- Loading surface of the main vice, and area under it.
- Threaded bar of the main vice.

14.2. 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.

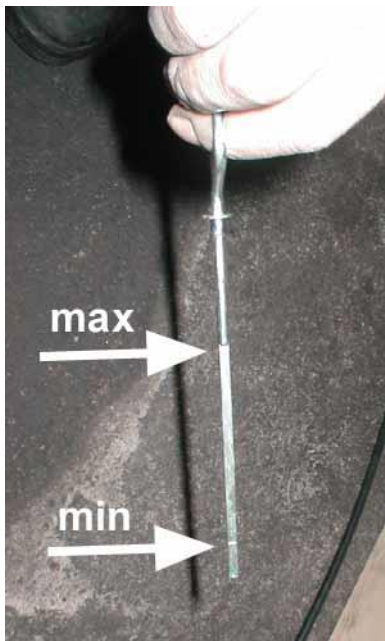
14.3. Hydraulic oil level check

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

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.



15. Adjustment

15.1. Guide cube adjustment

Cutting quality and saw band life is also dependent on guide cubes adjustment.

Therefore this adjustment has to be checked periodically.



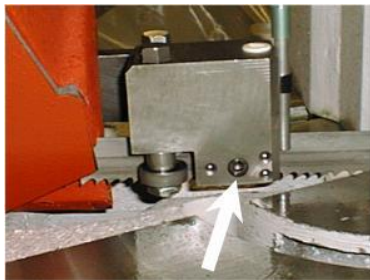
1) Loosen both tightening screws of the guide cubes and push it carefully to the band. Make sure the saw band is not bent; otherwise this cube will push on the band and damage it.

2) Fasten both tightening screws again.

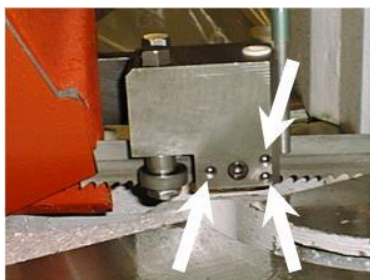
If the guide cube is correctly adjusted, upper cube edge and the ruler are parallel.

15.2. Hard metal guides adjustment

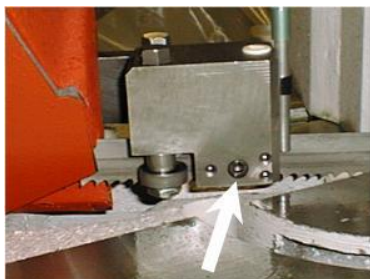
Hard metal guides adjustment is one of the most important criterions which influences cutting accuracy and saw band life. Therefore it is essential to regularly check that hard metal guides adjustment is correct.



1) Release the screw. The screw holds the guide in the guiding cube. Make sure, that the guide of the hard metal does not falls.



2) Press the guide on the saw band by tighten three screws. 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 (and between saw band and the guide is not width) the hard metal guides are adjusted.



3) Tighten the screw. The screw holds the guide in the guiding cube. Make sure, that the guide did not damaged.

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

15.3. 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 off the wheel

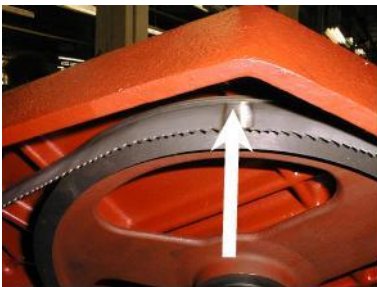
The saw band and protective cover can be damaged.

The saw band runs on the wheel rim

The saw band and wheel rim can be damaged.



- 1) Start and stop saw band drive.
- 2) Stop the main switch!
- 3) Open rear cover of the saw frame.



- 4) Check saw band placing on the wheels.

- If the distance of the rear part of the saw band from wheel rim is **1-2 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.

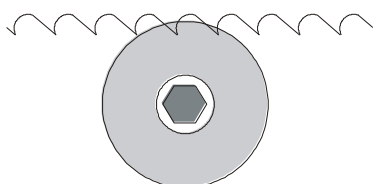
When you have successfully adjusted the band, it is necessary to check the band run in the way described previously in this chapter.

15.4. 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.



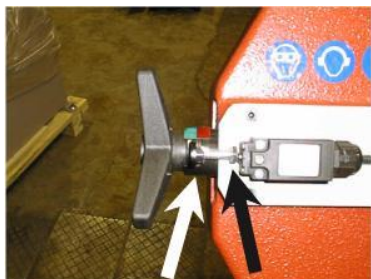
1) Release the tightening screw of the brush so that it is possible to move with the brush.



2) Get the brush closer to the saw band teeth. Attention! After the brush is set, its ends must not reach the saw band teeth bottoms.

3) Tighten the screw again and turn on the band driver. If the chip removing brush is correctly fastened the brush moves and turns smoothly with the saw band.

15.5. 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 too 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.

ATTENTION!

If the band is stretched to the value according to the TENZOMAT but the holder of the stop screw is not situated on the boundary of the red and green colour, it is necessary to stick the sticker in the correct place.

15.6. Saw frame lower position stop adjustment

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



- 1) Move the saw frame to the upper position.
- 2) Release the nut of the adjusting screw and adjust the stop point by adjusting the screw.
- 3) Fasten the adjusting screw with the nut again.
- 4) Set the limit switch of the lower arm position.

15.7. Limit switch of the saw frame lower position adjustment

Check setting

Lower the arm to the lowest position. If the arm lays on the lower stop and the switch reacts, the setting is correct. In other case carry out the switch setting.

Limit switch setting



- 1) Release the nut of the stop screw and screw down the stop screw.
- 2) Lower the arm to the lower stop and turn on the band driver.
- 3) Screw out the stop screw until the band driver stops.
- 4) Secure the screw with nut again and check the limit switch setting once more.

15.8. Angular stops adjustments

There are two fixed stops with adjustable screw on the console. The angular stop-points setting have to be periodically inspected to prevent inaccurate angular cuts.



1) In order to check angular stop settings, turn the arm to the fixed stop and put the protractor on the saw band and vice jaw.

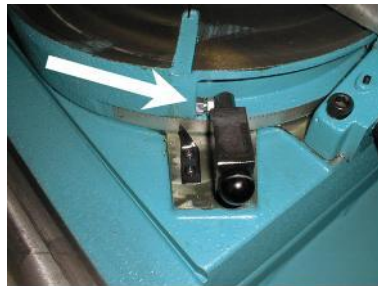
2) If the angles are not set correctly, release the nut on the stop screw. You can set smaller angles by tightening the screw. You can set larger angles by loosening the screw.



angle -45°



angle 0°



angle $+45^{\circ}$

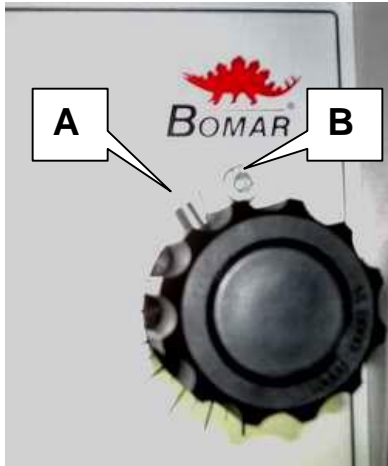


angle $+60^{\circ}$

3) Fasten the nut again and check the angle setting with the protractor according to procedure above.

15.9. 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

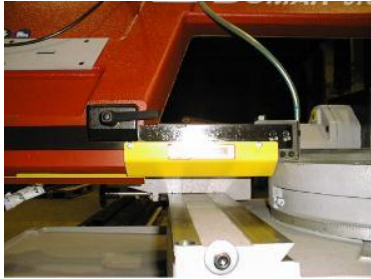
- 3) Otherwise, you must loosen the worm screw, lift the plastic knob and close the throttle valve to the maximum. Next loosen the worm screw and take off the plastic knob. Put it back so that the worm screw must be next to the stop while the valve is closed. Then tighten the worm screw again.

- 4) Turn the machine on and test the down-feed control.

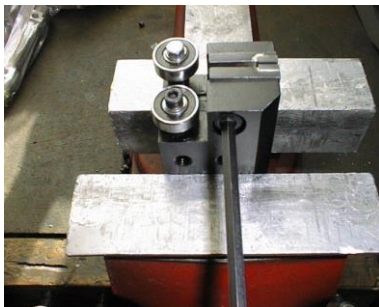
16. Worn pieces replacement

16.1. Hard metal guides replacement

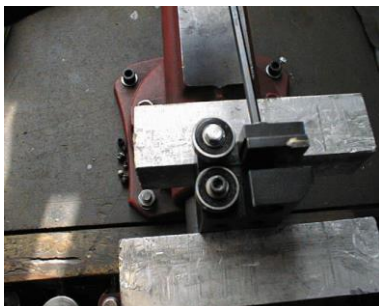
If the hard metal guides cannot be adjusted, they have to be replaced.



1) Remove the hosepipe leading to the cooling agent and dismantle saw band and saw band guide cube.



2) Grip the guide cube in the vice and screw out the screws of both the hard metal desks.



3) Screw out the adjusting screw of the adjustable guiding desk as far from the guide cube so that it is not possible to see it from the inner side.

4) Now insert new hard metal guides and fasten them tightly and fasten the guide cube to the gib.

5) Install the saw band and adjust guide cube and hard metal guides.

16.2. Round brush replacement

If the chip removing brush is so worn, that it does not fulfil its function, the brush must be replaced.

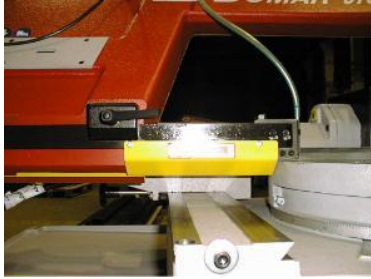


1) Release the nut of the brush, exchange old brush to new brush and screw on the nut of the brush.

2) Set the brush to the saw band.

16.3. 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!



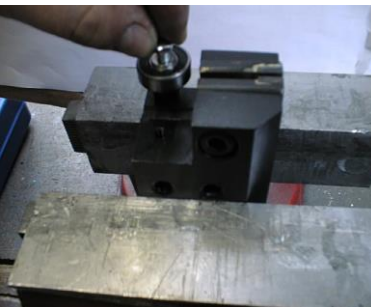
1) Remove the hosepipe leading to the cooling agent and dismantle saw band and saw band guide cube.



2) Grip the guide cube in the vice and screw out both fastening screws of the eccentrics.



3) Pull both guide rollers from their eccentrics.



4) Put new guide rollers on the eccentrics and screw the eccentrics to the guide cube.



5) Now, insert a test piece of saw band (cca 15 - 20 cm) into the guide cube. Adjust both eccentrics so that the band runs in the middle of milled groove. This groove is located between both eccentrics.

Guide rollers may not press too much on the band, but they must spin freely. Optimal distance between band and roller is 0,05mm.

6) Install the cube on the gib. Install the saw band and adjust guiding cubes.

16.4. Stretching wheel replacement

1) Dismantle the saw band.



2) Screw off the screw of the stretching wheel and pull off the washer.



3) Screw on the auxiliary screw to the shaft of the stretching wheel.



4) Put on the three-leg puller on the stretching wheel and pull off it from the shaft.



5) If the lower bearing stays on the shaft, pull of it from the shaft with two-leg puller. Check both bearings; eventually replace them for a new.



6) Insert the retaining ring to the hole in the new stretching wheel.



7) Insert the bearing to the hole in the wheel and push it to the retaining ring.



8) Clean the shaft and oil it. Install the new stretching wheel on the shaft.



9) Install the distance ring on the shaft and push it to the lower bearing.



10) Install second bearing on the shaft and push it to the distance ring.

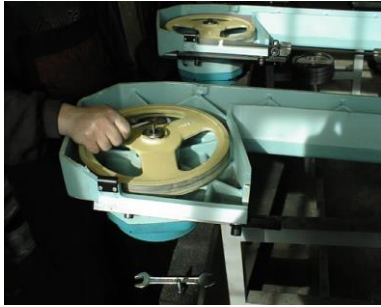


11) Install the washer and screw on the stretching wheel.

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

16.5. Driving wheel replacement

1) Dismantle the saw band.



2) Screw of the fastening screw of the driving wheel and pull off the washer.



3) Screw on the auxiliary screw to the driving shaft.



4) Install the three-leg puller on the driving wheel and pull off it from the shaft.



5) Check, if the feather and the driving shaft are not damaged. Contact your supplier for parts replacement.



6) If the shaft and the feather are in good order, clean them, oil them and install them on the driving shaft.



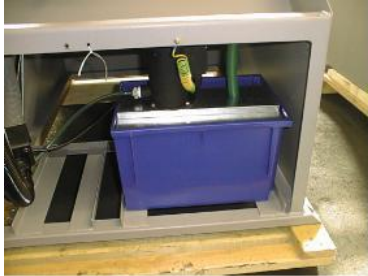
7) Install the washer and screw on the driving wheel.

8) Install the saw band.

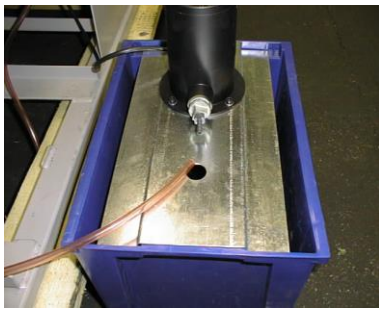
16.6. Cooling pump replacement



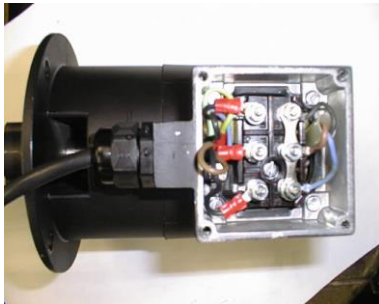
**Only a qualified worker can carry out the connection!
High-voltage shock may have fatal results.**



1) Pull out the cooling agent tank from the machine base as far as possible.



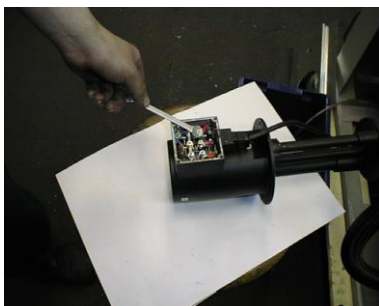
2) Remove the hosepipe leading to the cooling agent from the plug on the pump.
Screw off four screws from the cooling pump flange and pull out the pump from the sheet metal holder.



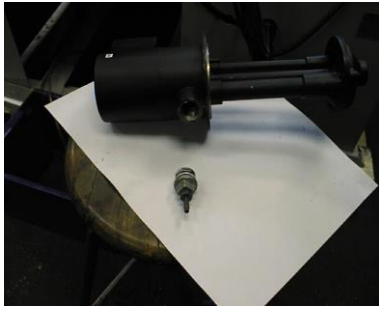
3) Remove the cover of the pump terminal switchboard.
Disconnect 4 terminal connectors of the input cables. Cables are identified according to the red clamps.



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

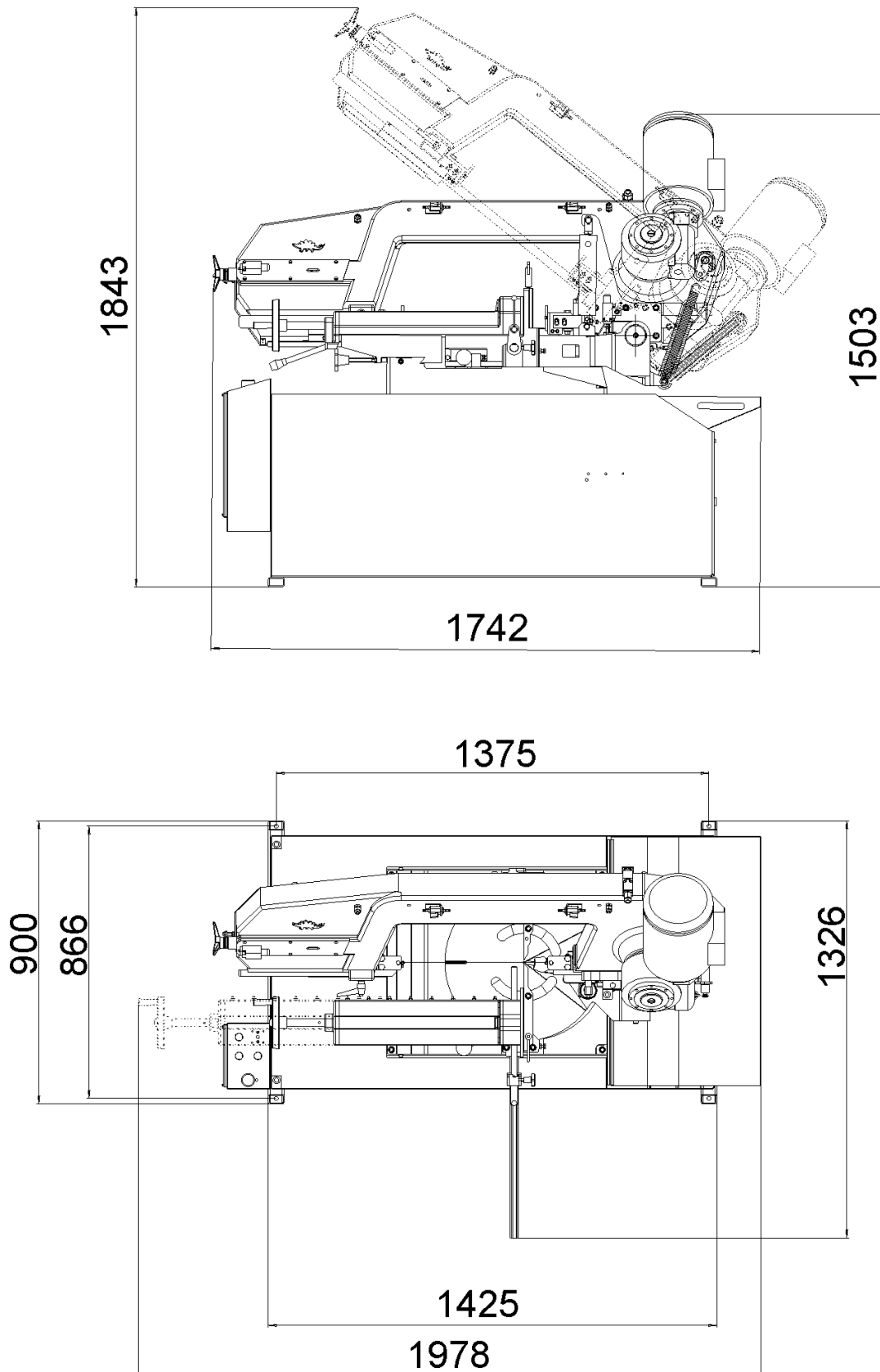


5) Dismantle new pump switchboard cover. Push the cable through the bushing and fasten it.

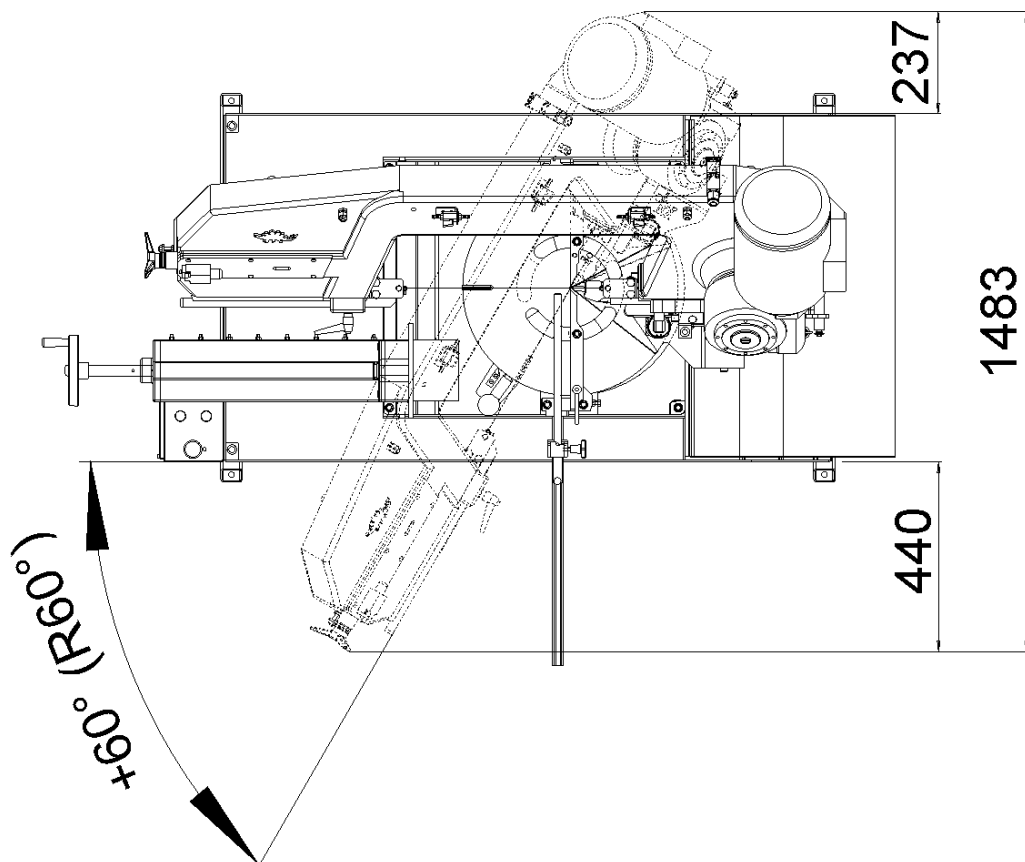
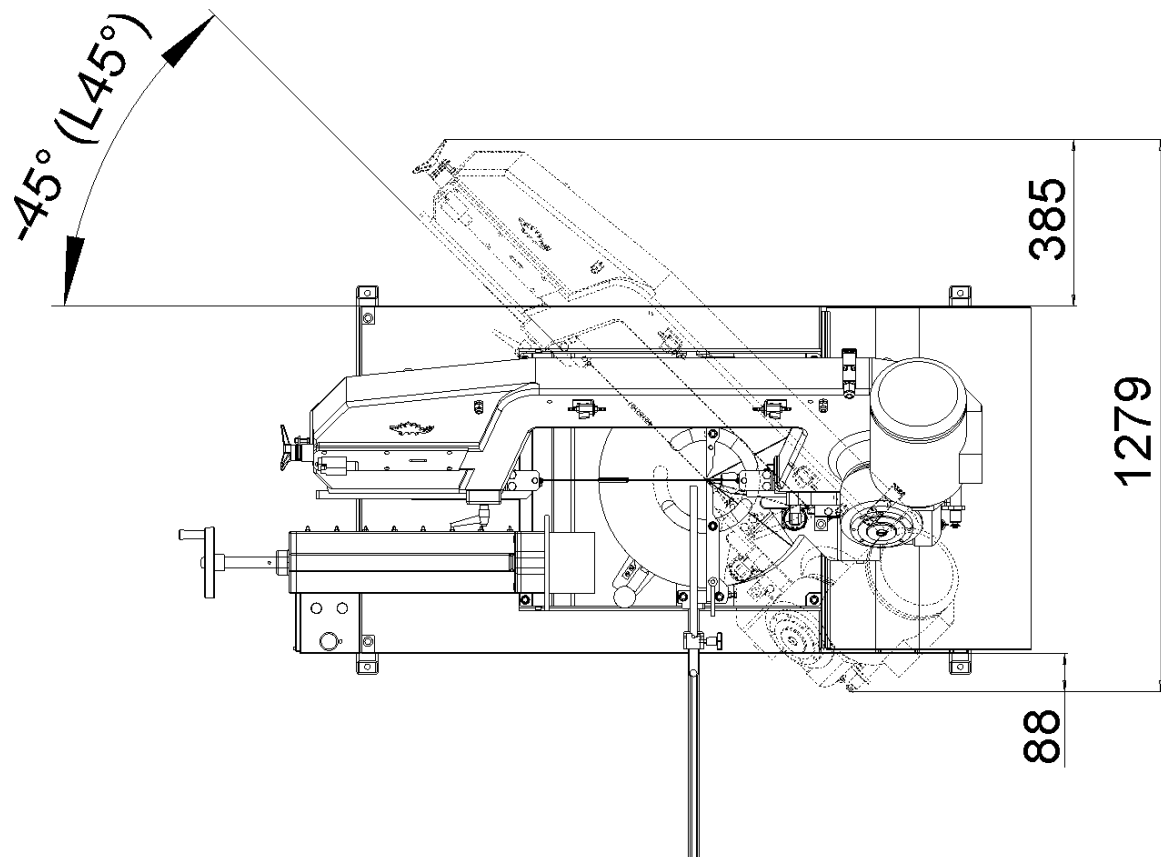


6) Screw on the cable bushing and cover of the terminal block. Do not forget the rubber gasket! Tighten the cooling liquid hose with non-stick tape and screw it again. Install cooling liquid hose, place the pump on the sheet metal holder and screw it.

17. Rozměrové schéma / Aufstellzeichnung / Installation diagram

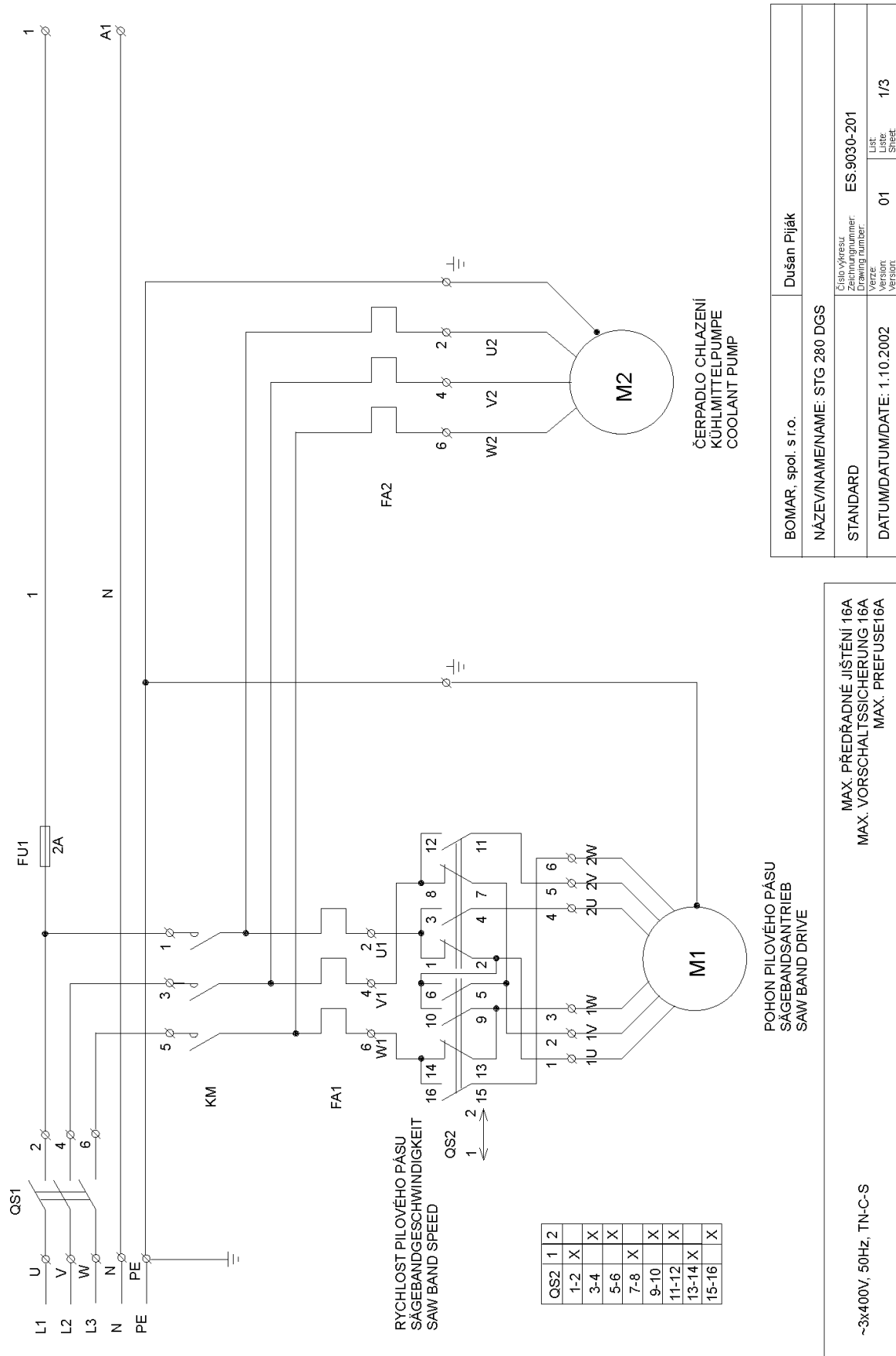


Rozměrové schéma 1 / Aufstellzeichnung 1 / Installation diagram 1

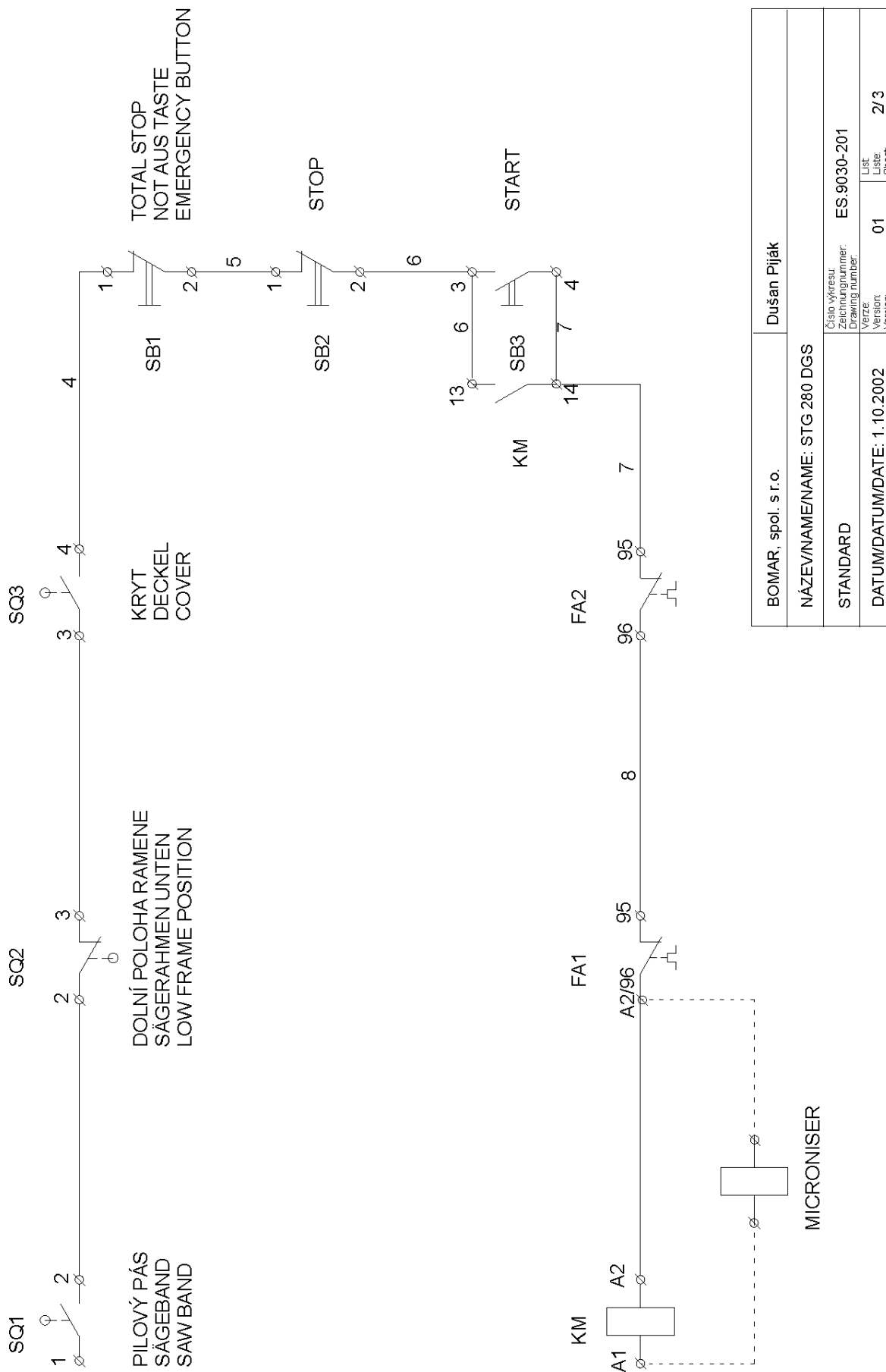


Rozměrové schéma 2 / Aufstellzeichnung 2 / Installation diagram 2

18. Elektrická schémata / Elektroschemas / Wiring diagrams



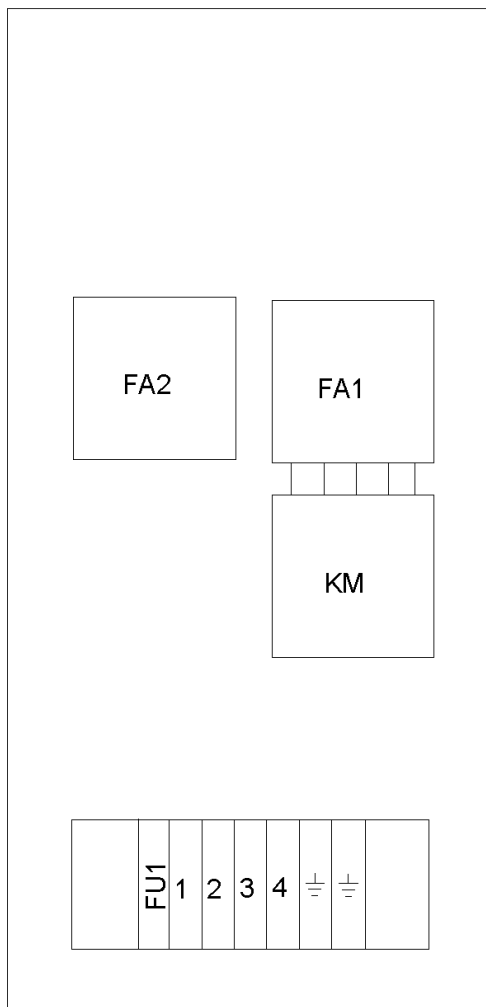
Elektrické schéma / Elektroschema / Wiring diagram 1



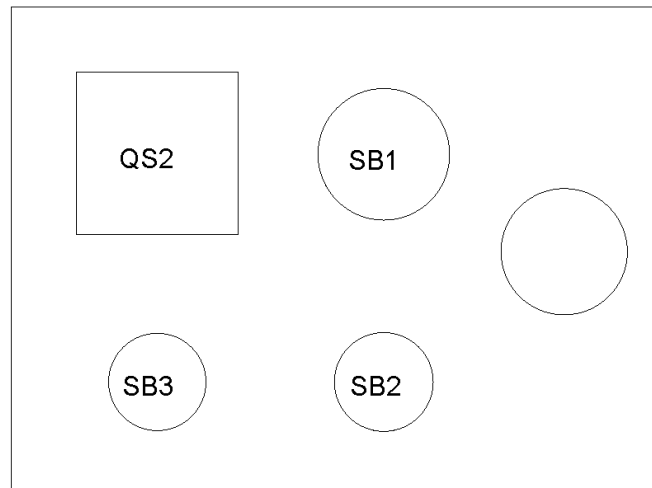
BOMAR, spol. s r. o.	Dušan Piják
NÁZEV/NAME/NAME: STG 280 DGS	
STANDARD	Číslo výřezu: Zeichnungsnummer: Drawing number: ES.9030-201
DATUM/DATUM/DATE: 1.10.2002	Verze: Version: version: 01
	List: Liste: Sheet: 2/3

Elektrické schéma / Elektroschema / Wiring diagram 2

PŘÍSTROJOVÁ DESKA
GERÄTEBRETT
DASHBOARD



OVLÁDACÍ PANEĽ
BEDIENPULT
CONTROL PANEL

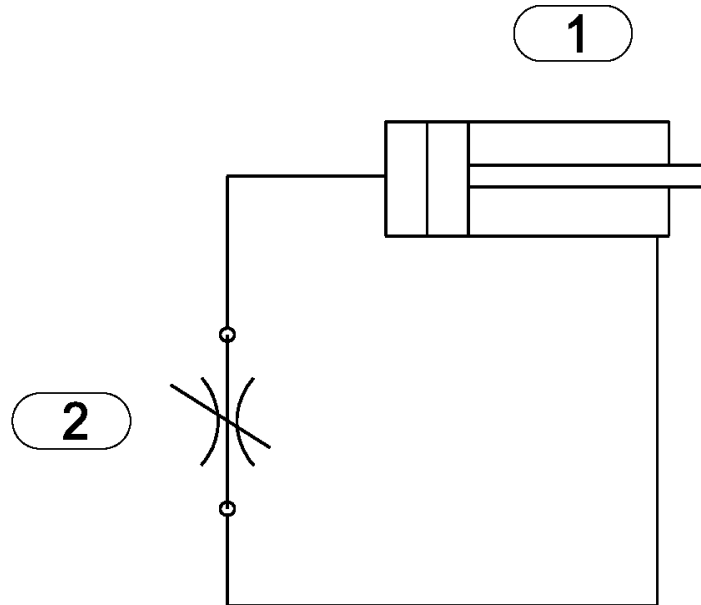


BOMAR, spol. s r.o.	Dušan Piják		
NÁZEV/NAME/NAME: STG 280 DGS			
STANDARD	Číslo výkresu: Zeichnungsnummer: Drawing number:	ES.9030-201	
DATUM/DATUM/DATE: 1.10.2002	Verze: Version: Version:	01	List: Liste: Sheet: 3/3

Elektrické schéma / Elektroschema / Wiring diagram 3

Objednací číslo	Název položky		Ozn.	ks
Bestell - Nr.	Bezeichnung		Sign.	Menge
Reference No.	Item		Sign.	Pcs.
91.001.007	Elektromotor / Elektromotor / Electromotor	TM902/4 B5	M1	1
91.020.006	Čerpadlo chlazení / Kühlmittelpumpe / Coolant pump	3COA2-22H	M2	1
91.040.001	Stykač / Schaltschütz / Contactor	9A 230V	KM	1
91.050.003	Relé tepelné / Überstromrelais / Temperature relay	0.26-0.43A	FA2	1
91.050.009	Relé tepelné / Überstromrelais / Temperature relay	3.0-4.7A	FA1	1
91.060.012	Hlavice TOTAL STOP / Taste TOTAL STOP / Total stop button	ZB5AS844	SB1	1
91.061.006	Kontakt rozp.+adapt. / Ausschaltkontakt / Contact expand. + adapt.	ZB5AZ102	SB1	1
91.060.015	Hlavice rudá / Kopf – rot / Red jugulum	ZB5AA4	SB2	1
91.061.006	Kontakt rozp.+adapt. / Ausschaltkontakt / Contact expand. + adapt.	ZB5AZ102	SB2	1
91.060.014	Hlavice zelená / Kopf grün / Green jugulum	ZB5AA3	SB3	1
91.061.007	Kontakt spín.+adapt. / Schaltkontakt / Contact switch. + adapt.	ZB5AZ101	SB3	1
91.170.003	Spínač vačkový / Schalter / Cam switch	194L-E16-1753	QS1	1
91.180.001	Deska spínače černá / Schalterplatte – schwarz / Switch black board	194L-HE4E-175	QS1	1
91.171.006	Spínač vačkový / Schalter / Cam switch	S10-60129	QS2	1
91.173.012	Spínač konc.-zámek / Endschalter / Limit switch - lock	QKS8	SQ3	1
91.173.007	Spínač koncový / Endschalter / Limit switch	Pizzato	SQ1,2	2
91.230.001	Pojistka / Röhrensicherung / Fuse	2A	FU1	1
91.190.004	Krabice elektro / Buchse / Cross			1

19. Hydraulické schéma / Hydraulikschemata / Hydraulic diagram



Hydraulické schéma: Hydraulikschemata: Hydraulic diagram:	K51.0352	Schéma / Schema / Diagram: K51.0352_1.AI Datum / Datum / Date: 8. 3. 2002
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Hydraulické schéma / Hydraulikschemata / Hydraulic diagram

Poz.	Název položky		ks
Pos.	Bezeichnung		Menge
Pos.	Item		Pcs.
1	251.215	Zvedací válec / Hubzylinder / Lifting cylinder	1
2	92.152.002	Škrťící ventil / Drosselventil / Throttle valve	1

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

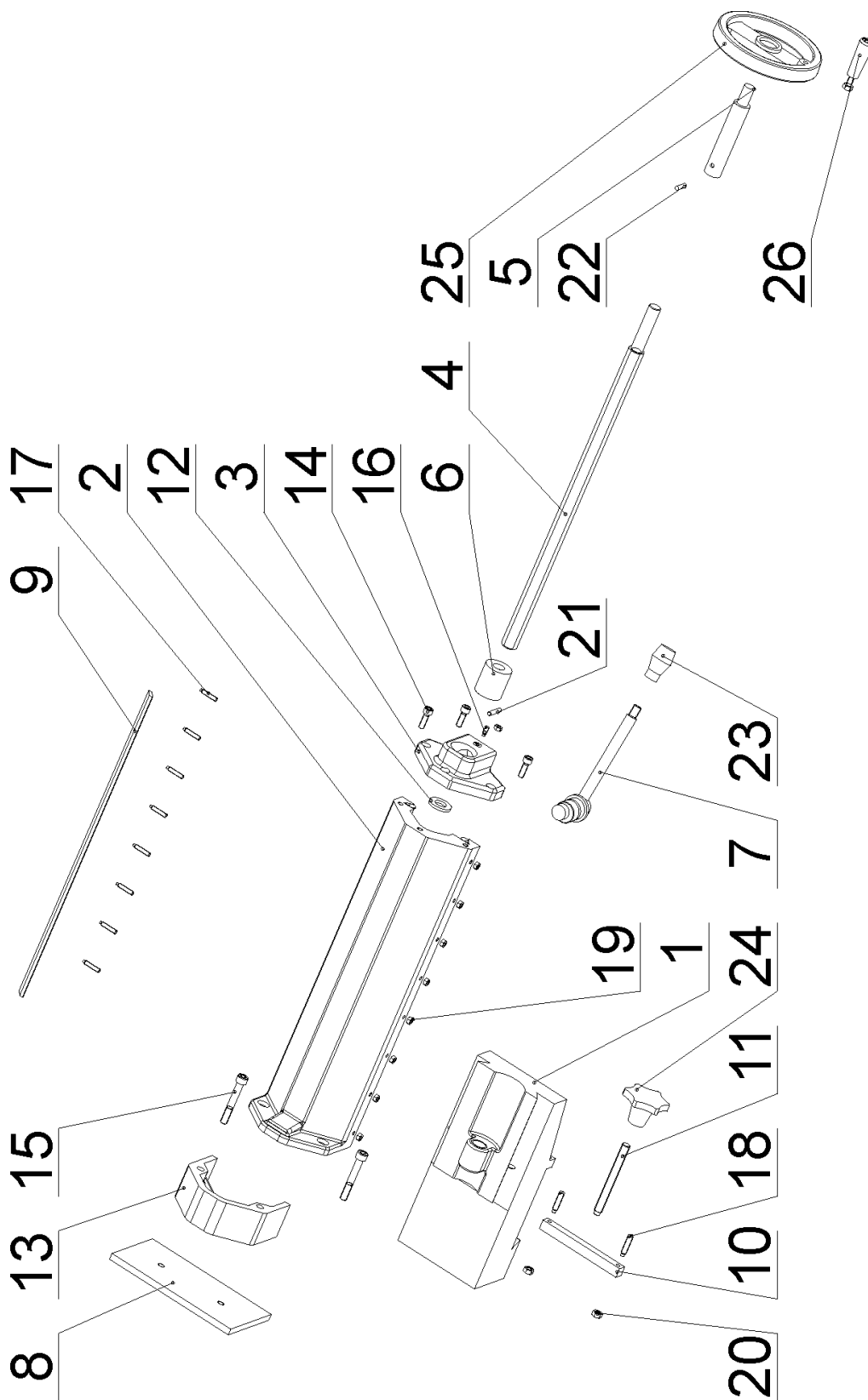
Hydr. hadice	Hadice	Kování	Konc. A	Konc. B	Konc. C	Konc. D	Konc. E	Konc. F	Konc. G	Ks
Hydr. Schlauche	Schlauche	Schmieden	Schlauchtüle A	B	C	D	E	F	G	Menge
Hydr. Hose	hose	forging	terminal A	B	C	D	E	F	G	piece
6BA4000	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	1
6AG4000	42.001.001	92.051.001	92.052.001	-	-	-	-	-	93.012.005	1
6BA2000	42.001.001	92.051.001	92.052.001	92.053.001	-	-	-	-	-	2
6BF2700	42.001.001	92.051.001	-	92.053.001	-	-	-	93.012.006	-	1
6BG500	42.001.001	92.051.001	-	92.053.001	-	-	-	-	93.012.005	1

20. 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).

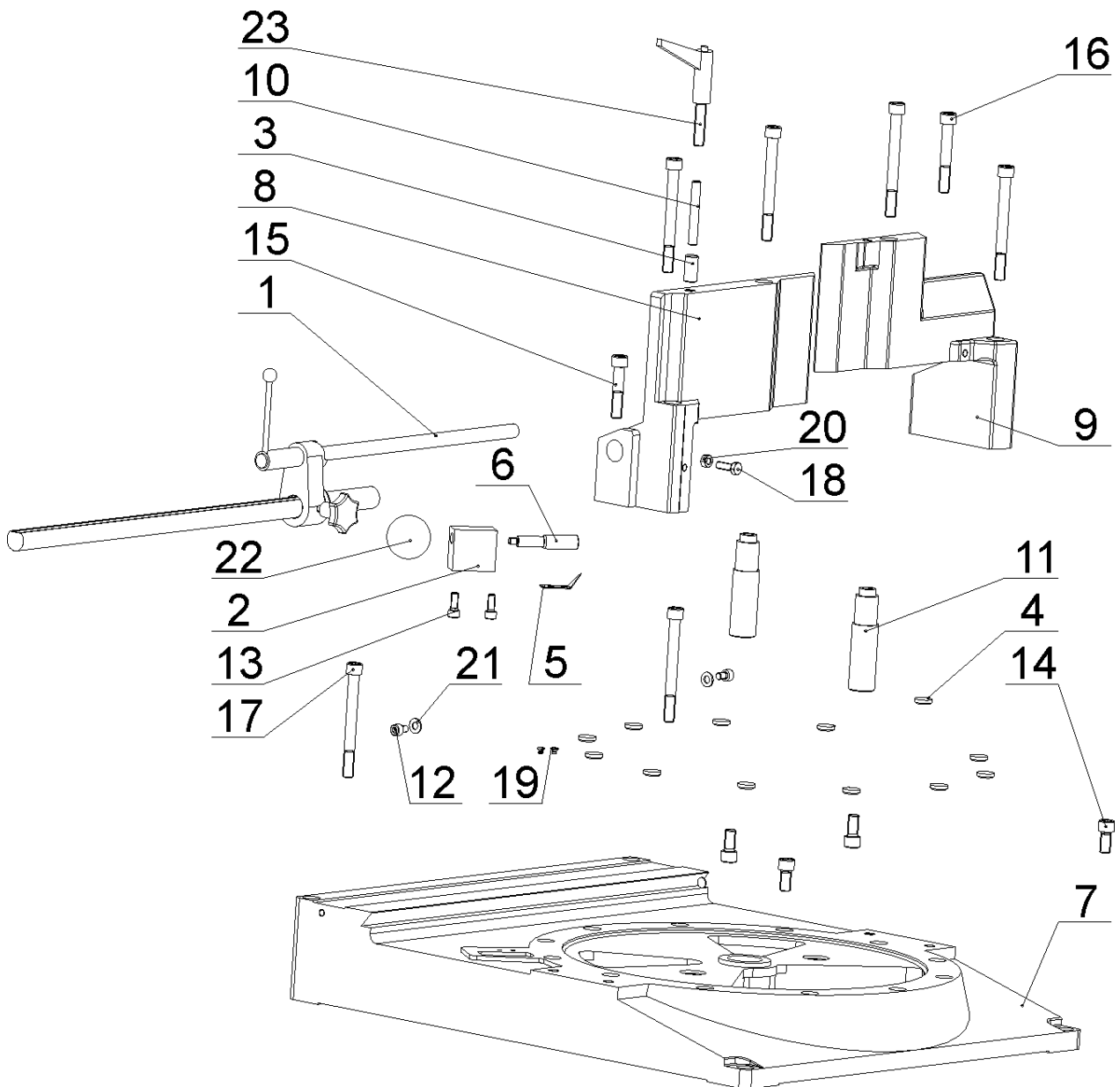
In die Bestellung der Ersatzteile führen Sie immer an:
Maschinentyp (z. B. STG 120), Serien Nr. (z. B. 125) und
Baujahr (z. B. 1999).

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).



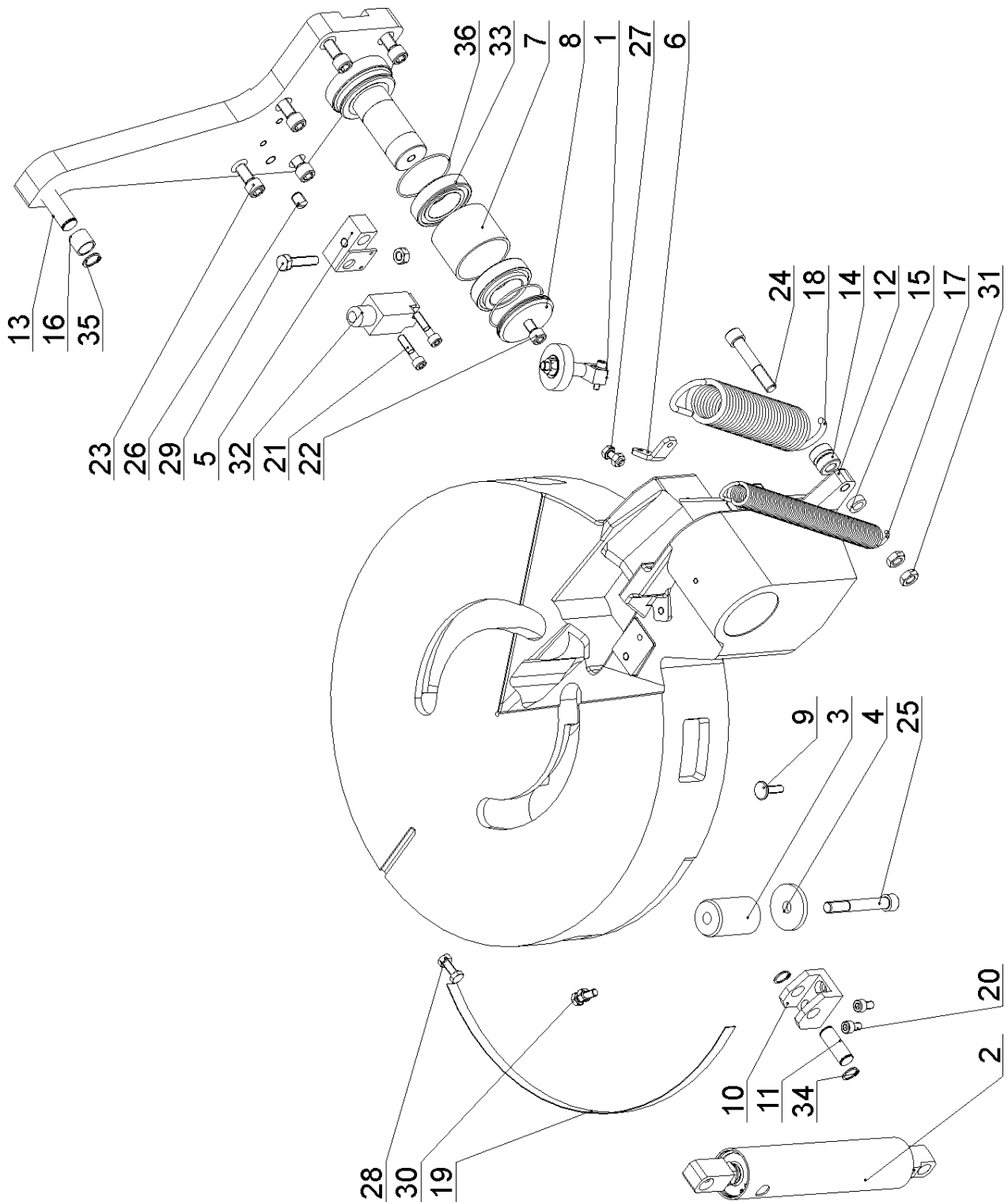
20.1. Svěrák / Schraubstock / Vice

Poz.	Objednáací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0503-602	Svěrák / Schraubstock / Vice	1
2	30.0503-603	Čelist / Backe / Jaw	1
3	30.0503-604	Příruba / Flansche / Flange	1
4	30.0503-608	Šroub trapéz / Gewindestange / Trapezial screw	1
5	30.0503-609	Prodloužení / Verlängerung / Extension	1
6	30.0503-610	Pouzdro / Buchse / Bush	1
7	30.0503-611	Čep upínací / Spannbolzen / Clamping pivot	1
8	30.9003-002	Čelist / Backe / Jaw	1
9	30.0503-617	Lišta / Leiste / Listel	1
10	30.0503-618	Lišta / Leiste / Listel	1
11	30.0503-619	Šroub / Schraube / Screw	1
12	30.1003-022	Podložka / Scheibe / Washer	1
13	30.9003-004	Propojovací díl / Verbindungsteil / Connecting part	1
14	90.001.25.033	Šroub / Schraube / Screw M8x25 DIN 912 8.8	3
15	90.001.25.055	Šroub / Schraube / Screw M10x70 DIN 912 8.8	2
16	90.004.2D.003	Šroub / Schraube / Screw M6x16 DIN 915 45H	1
17	90.004.2D.004	Šroub / Schraube / Screw M6x30 DIN 915 45H	8
18	90.004.2D.010	Šroub / Schraube / Screw M8x35 DIN 915 45H	2
19	90.100.55.004	Matice / Mutter / Nut M6 DIN 934 8.8	9
20	90.100.55.005	Matice / Mutter / Nut M8 DIN 934 8.8	2
21	90.300.0Z.006	Válcový kolík / Zylinderstift / Cylindrical pin 6x32 DIN 6325	1
22	90.303.0Z.012	Pružný kolík / Spannstift / Spring pin 6x25 DIN 1481	1
23	94.002.001	Rukojeť / Griff / Handle	1
24	94.003.002	Rukojeť / Griff / Handle	1
25	94.010.001	Ruční kolo / Handrad / Hand wheel	1
26	94.010.002	Rukojeť / Griff / Handle	1



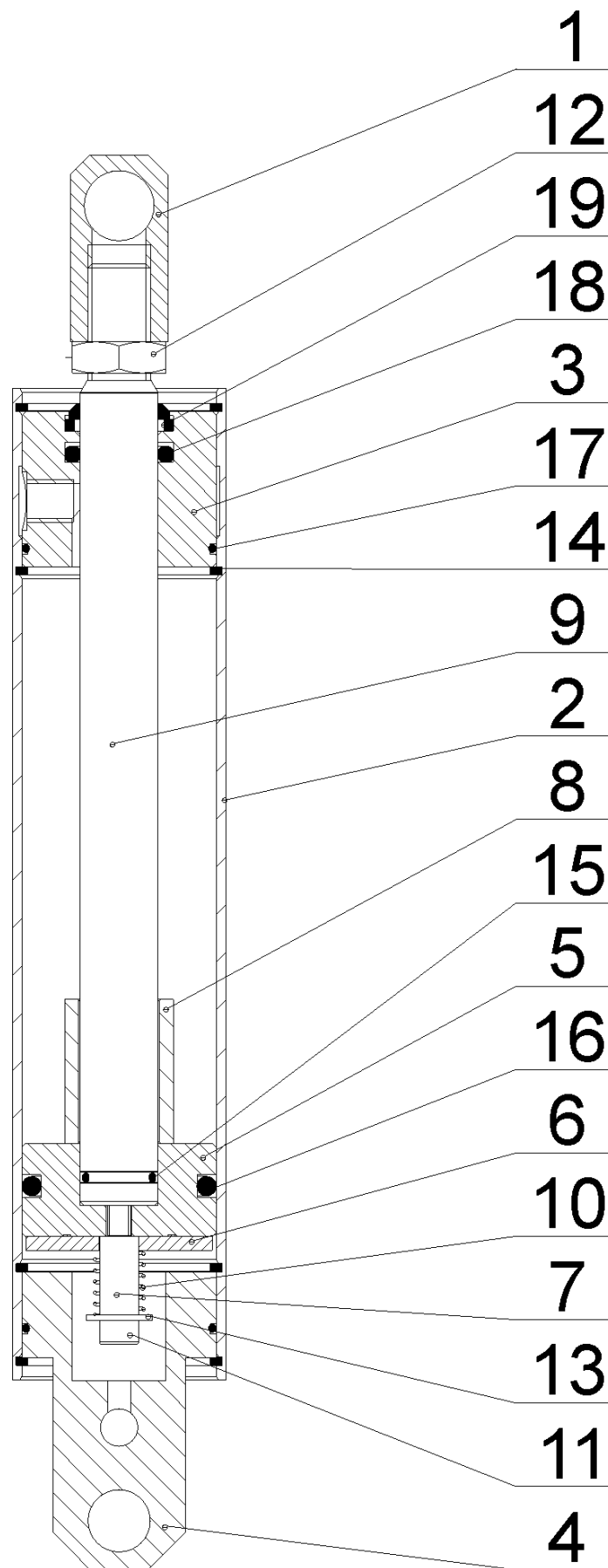
20.2. Stůl / Tisch / Table

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	Viz výkres / Siehe Zeichnung / See drawing	Doraz / Anschlag / Length stop	1
2	30.0509-602	Držák dorazu / Anschlagshalter / Length stop holder	1
3	30.0509-606	Váleček / Rolle / Roller	1
4	30.0509-608	Podložka / Scheibe / Washer	12
5	30.0509-610	Ukazatel / Zeiger / Indicator	1
6	30.0701-016	Doraz / Anschlag / Length stop	1
7	30.9009-001	Stůl / Tisch / Table	1
8	30.9009-003	Čelist / Backe / Jaw	1
9	30.9009-004	Čelist / Backe / Jaw	1
10	30.9009-005	Tyč / Stange / Rod	1
11	30.9009-009	Čep / Bolzen / Pivot	2
12	90.001.25.029	Šroub / Schraube / Screw M8x12 DIN 912 8.8	2
13	90.001.25.032	Šroub / Schraube / Screw M8x20 DIN 912 8.8	2
14	90.001.25.057	Šroub / Schraube / Screw M12x25 DIN 912 8.8	4
15	90.001.25.063	Šroub / Schraube / Screw M12x60 DIN 912 8.8	1
16	90.001.25.065	Šroub / Schraube / Screw M12x80 DIN 912 8.8	1
17	90.001.25.066	Šroub / Schraube / Screw M3x16 DIN 912 8.8	6
18	90.005.55.016	Šroub / Schraube / Screw M8x25 DIN 933 8.8	1
19	90.013.27.002	Šroub / Schraube / Screw M5x6 ISO 7380 10.9	2
20	90.100.55.005	Matice / Mutter / Nut M8 DIN 934 8.8	1
21	90.150.50.005	Podložka / Scheibe / Washer Ø8,4 DIN 125	2
22	94.001.002	Rukojeť / Griff / Handle	1
23	94.008.009	Páka / Hebel / Lever	1



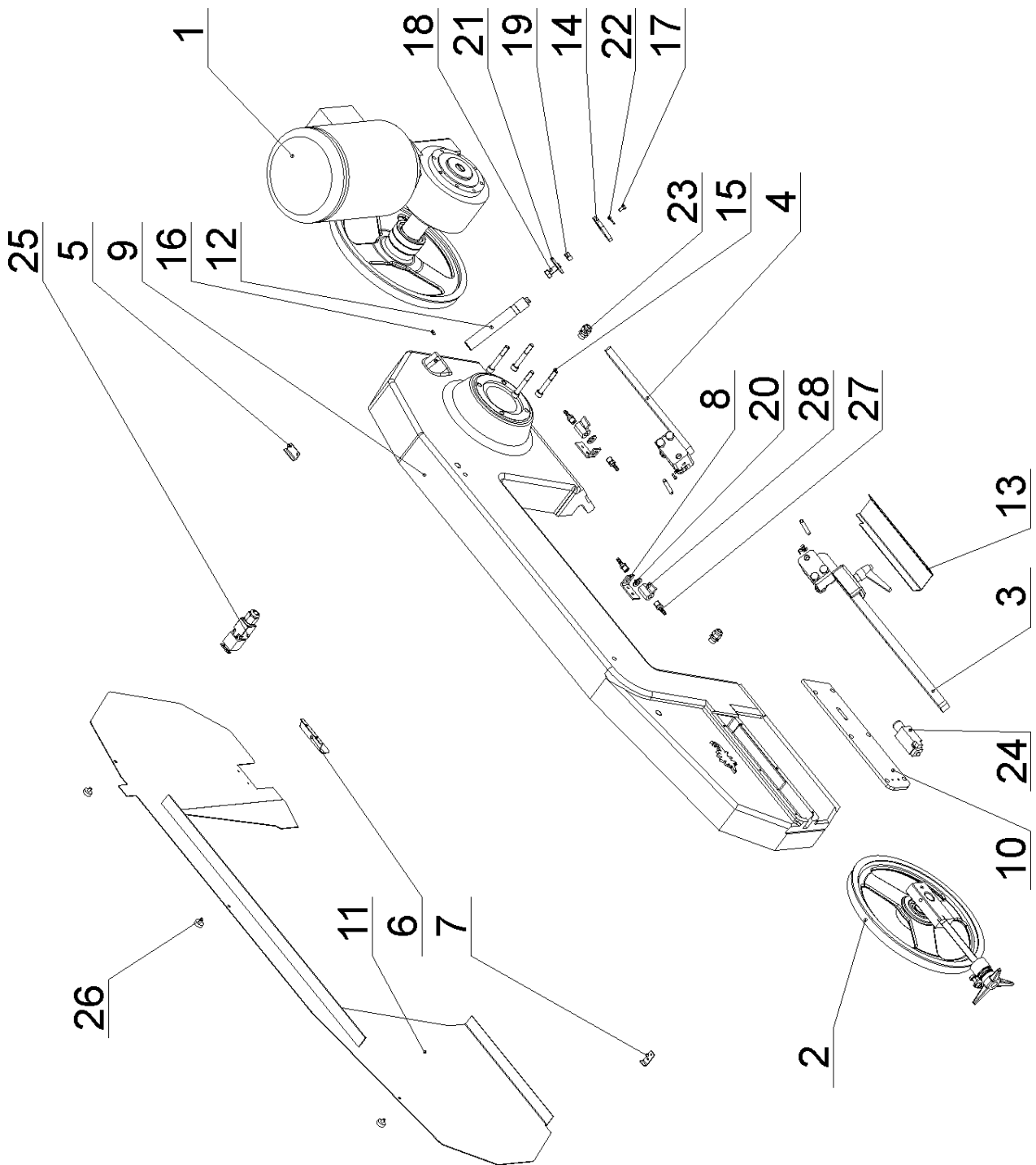
20.3. Otočná konzola / Drehkonsole / Turning console

Poz.	Objednáací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	Viz výkres / Siehe Zeichnung / See drawing	Kartáček / Spänbürste / Brush	1
2	Viz výkres / Siehe Zeichnung / See drawing	Zvedací válec / Hubzylinder / Lifting cylinder	1
3	30.0502-602	Pouzdro / Buchse / Bush	1
4	30.0502-603	Podložka / Scheibe / Washer	1
5	30.0502-610	Držák koncového spínače / Endschalterhalter / Limit switch holder	1
6	30.0514-603	Držák kartáčku / Spänbürstehalter / Brush holder	1
7	30.0702-008	Pouzdro ložiska / Lagerbuchse / Bearing bush	1
8	30.0702-012	Víko kloubu / Gelenksdeckel / Joint cover	1
9	30.0702-013	Šroub / Schraube / Screw	1
10	30.0807-008	Držák válce / Halter / Cylinder holder	1
11	30.0807-009	Čep / Bolzen / Pivot	1
12	30.9002-001	Otočná konzola / Drehkonsole / Turning console	1
13	30.9002-002	Držák ramene / Sägerahmenhalter / Arm holder	1
14	30.9002-006	Podložka / Scheibe / Washer	1
15	30.9002-007	Distanc / Distanz / Distance	1
16	30.9002-008	Distanc / Distanz / Distance	1
17	31.0702-019	Pružina / Feder / Spring	3.75x23x284x65
18	31.4204-002	Pružina / Feder / Spring	6.30x49x260x29
19	31.9002-005	Úhломěr / Winkelmesser / Mitre scale	1
20	90.001.25.030	Šroub / Schraube / Screw	M8x14 DIN 912 8.8
21	90.001.25.035	Šroub / Schraube / Screw	M8x35 DIN 912 8.8
22	90.001.25.046	Šroub / Schraube / Screw	M10x20 DIN 912 8.8
23	90.001.25.057	Šroub / Schraube / Screw	M12x25 DIN 912 8.8
24	90.001.25.064	Šroub / Schraube / Screw	M12x70 DIN 912 8.8
25	90.001.25.072	Šroub / Schraube / Screw	M12x90 DIN 912 8.8
26	90.002.2D.017	Šroub / Schraube / Screw	M12x16 DIN 913 45H
27	90.005.55.015	Šroub / Schraube / Screw	M8x20 DIN 933 8.8
28	90.005.55.016	Šroub / Schraube / Screw	M8x25 DIN 933 8.8
29	90.005.55.027	Šroub / Schraube / Screw	M10x45 DIN 933 8.8
30	90.100.55.005	Matice / Mutter / Nut	M8 DIN 934 8.8
31	90.101.55.006	Matice / Mutter / Nut	M12 DIN 439 8.8
32	91.173.007	Koncový spínač / Endschalter / Limit switch	1
33	95.300.002	Ložisko / Lager / Bearing	32008 AX
34	95.800.007	Pojistný kroužek / Sicherungsring / Retaining ring	Ø16 DIN 471
35	95.800.008	Pojistný kroužek / Sicherungsring / Retaining ring	Ø18 DIN 471
36	96.001.018	O-kroužek / O Ring / O Ring	63x2



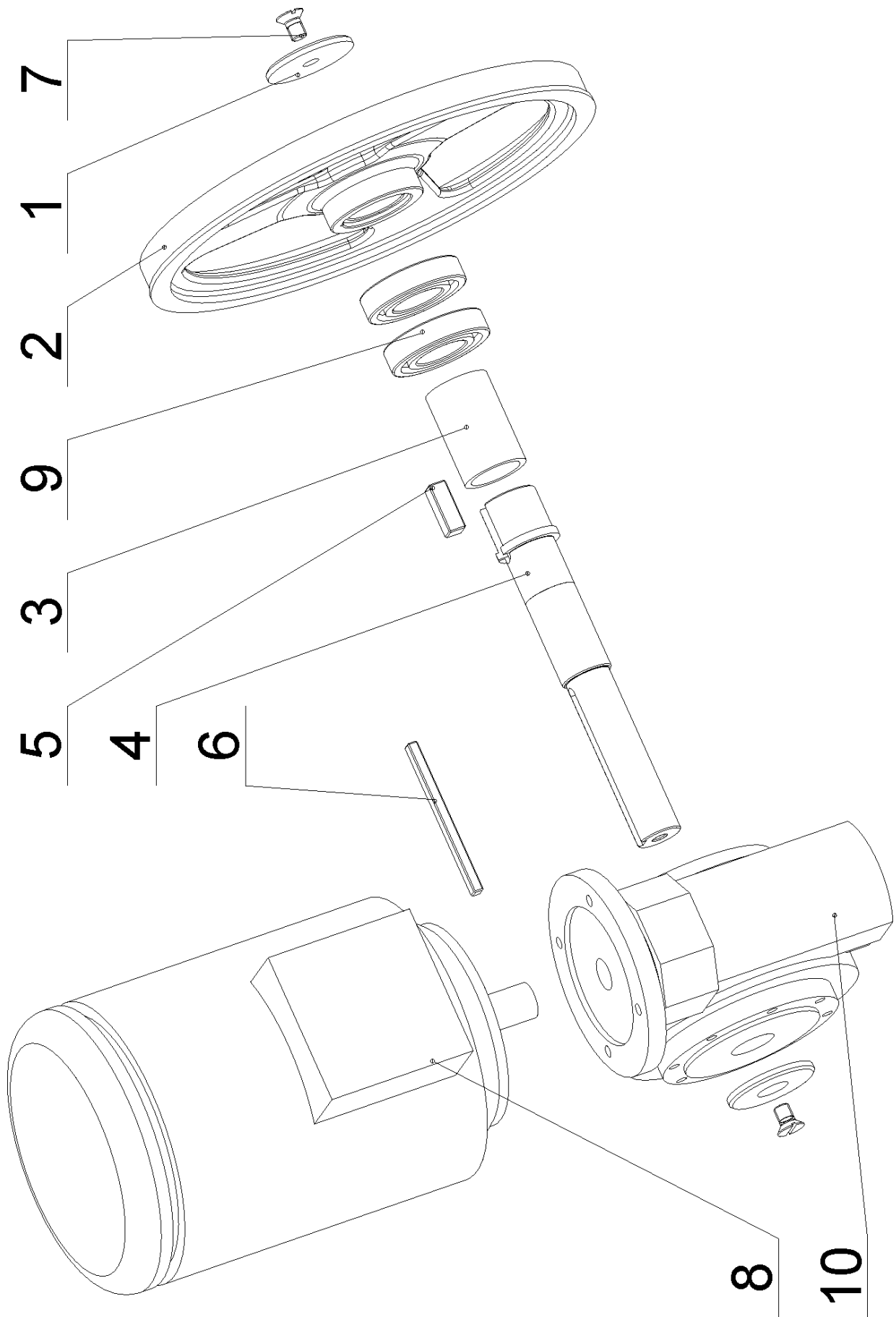
20.4. Zvedací válec / Hubzylinder / Lifting cylinder - 251.215

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	30.2807-001	Válec / Zylinder / Cylinder	1
3	30.2807-002	Víko horní / 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	30.9007-001	Trubka distanční / Distanzrohr / Distance tube	1
9	30.9007-002	Pístnice / Kolbenstange / Piston rod	1
10	31.4107-009	Pružina / Feder / Spring	0.80x13.3x22x7
11	90.001.25.022	Šroub / Schraube / Screw	M6x40 DIN 912 8.8
12	90.101.55.003	Maticice / Mutter / Nut	M16 DIN 439 8.8
13	90.150.50.005	Podložka / Scheibe / Washer	Ø8,4 DIN 125
14	95.801.009	Pojistný kroužek / Sicherungsring / Retaining ring	Ø50 DIN 472
15	96.002.006	O-kroužek / O Ring / O Ring	12x2
16	96.002.018	O-kroužek / O Ring / O Ring	39.2x5.7
17	96.002.019	O-kroužek / O Ring / O Ring	46x2
18	96.041.002	Těsnící manžeta / Dichtungsmanschette / Gasket	20x28
19	96.060.004	Stírací kroužek / Abstreifring / Wiping ring	12x18



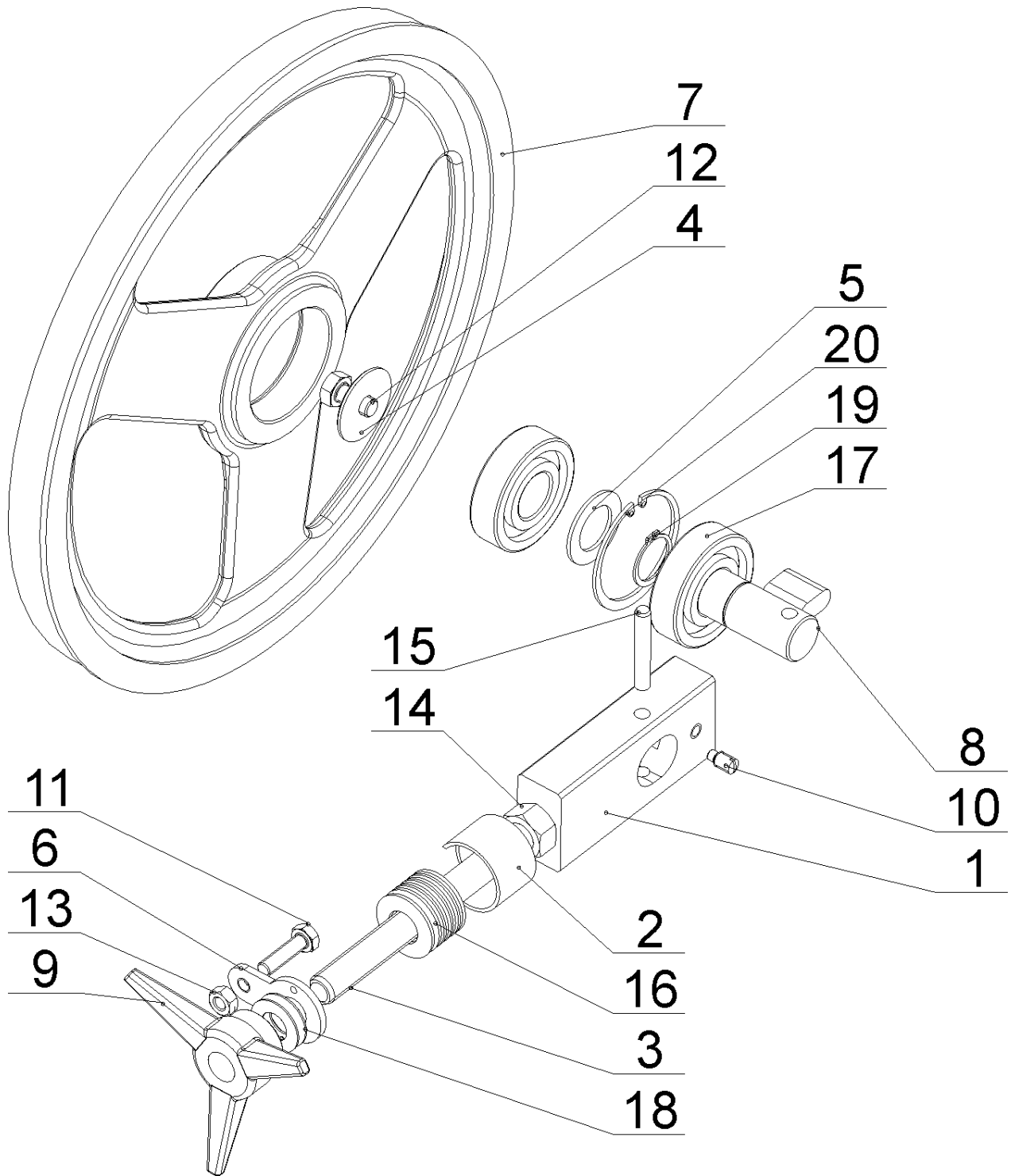
20.5. Rameno / Sägerahmen / Saw arm - 251.216

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	Viz výkres / Siehe Zeichnung / See drawing	Pohon / Antrieb / Drive	1
2	Viz výkres / Siehe Zeichnung / See drawing	Napínání / Bandspannung / Stretching	1
3	Viz výkres / Siehe Zeichnung / See drawing	Vedení pilového pásu / Sägebandführung / Saw band guiding	1
4	Viz výkres / Siehe Zeichnung / See drawing	Vedení pilového pásu / Sägebandführung / Saw band guiding	1
5	30.0104-029	Úchytka / Halter / Angle cleat	1
6	30.0504-602-2	Kryt kartáčku / Deckel / Brush cover	1
7	30.0704-032	Úchytka / Halter / Angle cleat	1
8	30.1814-011	Držák ventilu / Ventilhalter / Valve holder	2
9	30.9004-001	Rameno / Sägerahmen / Arm	1
10	30.9004-002	Kryt napínání / Bandspannungsdeckel / Stretching cover	1
11	30.9004-003	Kryt ramene / Sägerahmensdeckel / Arm cover	1
12	30.9004-004	Držák pružiny / Federhalter / Spring holder	1
13	30.9004-005	Kryt / Deckel / Cover	1
14	30.9004-007	Deska / Platte / Plate	1
15	90.001.25.055	Šroub / Schraube / Screw M10x70 DIN 912 8.8	4
16	90.003.2D.007	Šroub / Schraube / Screw M6x16 914 45H	1
17	90.005.55.006	Šroub / Schraube / Screw M6x12 DIN 933 8.8	1
18	90.005.55.032	Šroub / Schraube / Screw M12x35 DIN 933 8.8	1
19	90.100.55.007	Matice / Mutter / Nut M12 DIN 934 8.8	1
20	90.150.50.007	Podložka / Scheibe / Washer Ø13 DIN 125	2
21	90.151.50.002	Podložka / Scheibe / Washer Ø13 DIN 440	1
22	90.151.50.004	Podložka / Scheibe / Washer Ø6,6 DIN 440	1
23	91.070.011	Vývodka / Ausführung / Bushing M16x1,5	2
24	91.173.007	Koncový spínač / Endschalter / Limit switch FR 601	1
25	91.173.012	Koncový spínač / Endschalter / Limit switch QKS8	1
26	94.007.002	Plastový šroub / Plastikschraube / Plastic screw M6x10	3
27	94.202.002	Redukce / Reduktion / Reduction 1/4"-6	4
28	99.260.003	Kulový ventil / Kugelventil / Spherical valve 1/4"	2



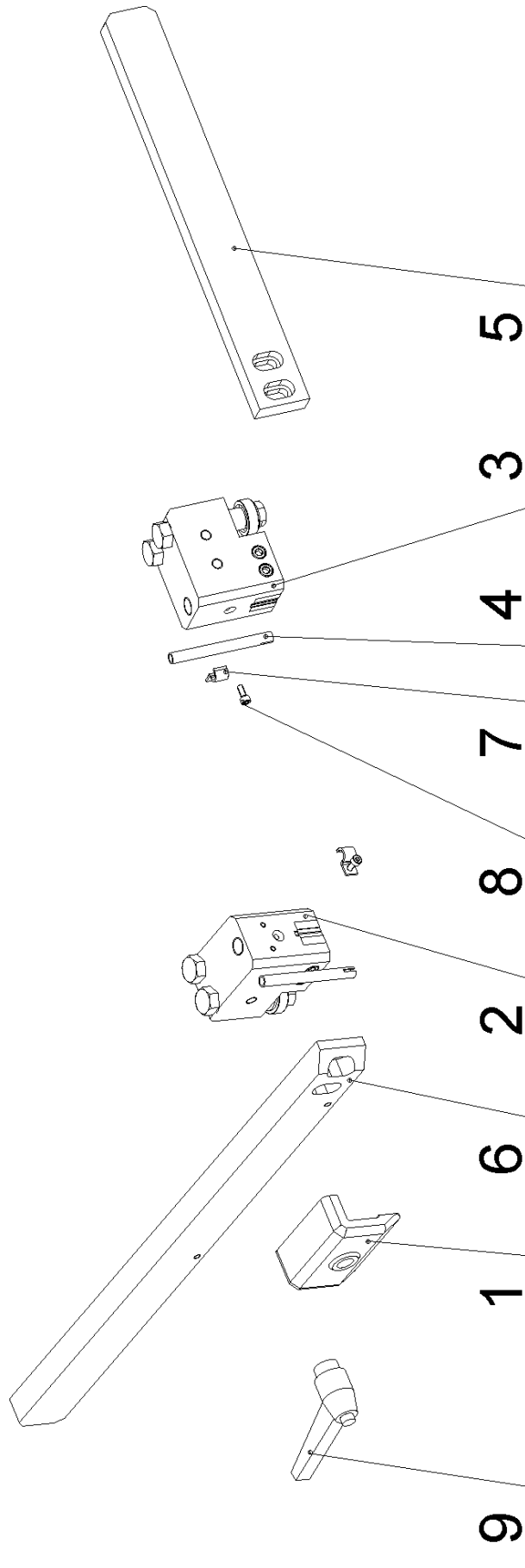
20.6. Pohon / Antrieb / Drive

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.1804-010	Podložka kola / Radscheibe / Wheel washer	2
2	30.9005-001	Hnací kolo / Antriebsrad / Driving wheel	1
3	30.9005-003	Distanční trubka / Distanzrohr / Distance tube	1
4	30.9005-004	Hřídel / Welle / Shaft	1
5	30.9005-006	Pero / Feder / Feather	1
6	30.9005-007	Pero / Feder / Feather	1
7	90.011.27.009	Šroub / Schraube / Screw M12x20 DIN 7991 10.9	2
8	91.001.XXX	Elektromotor / Elektromotor / Electromotor	1
9	95.001.021	Ložisko / Lager / Bearing 6208 2RS	2
10	99.001.017	Převodovka / Getriebe / Gearbox M085 FB	1



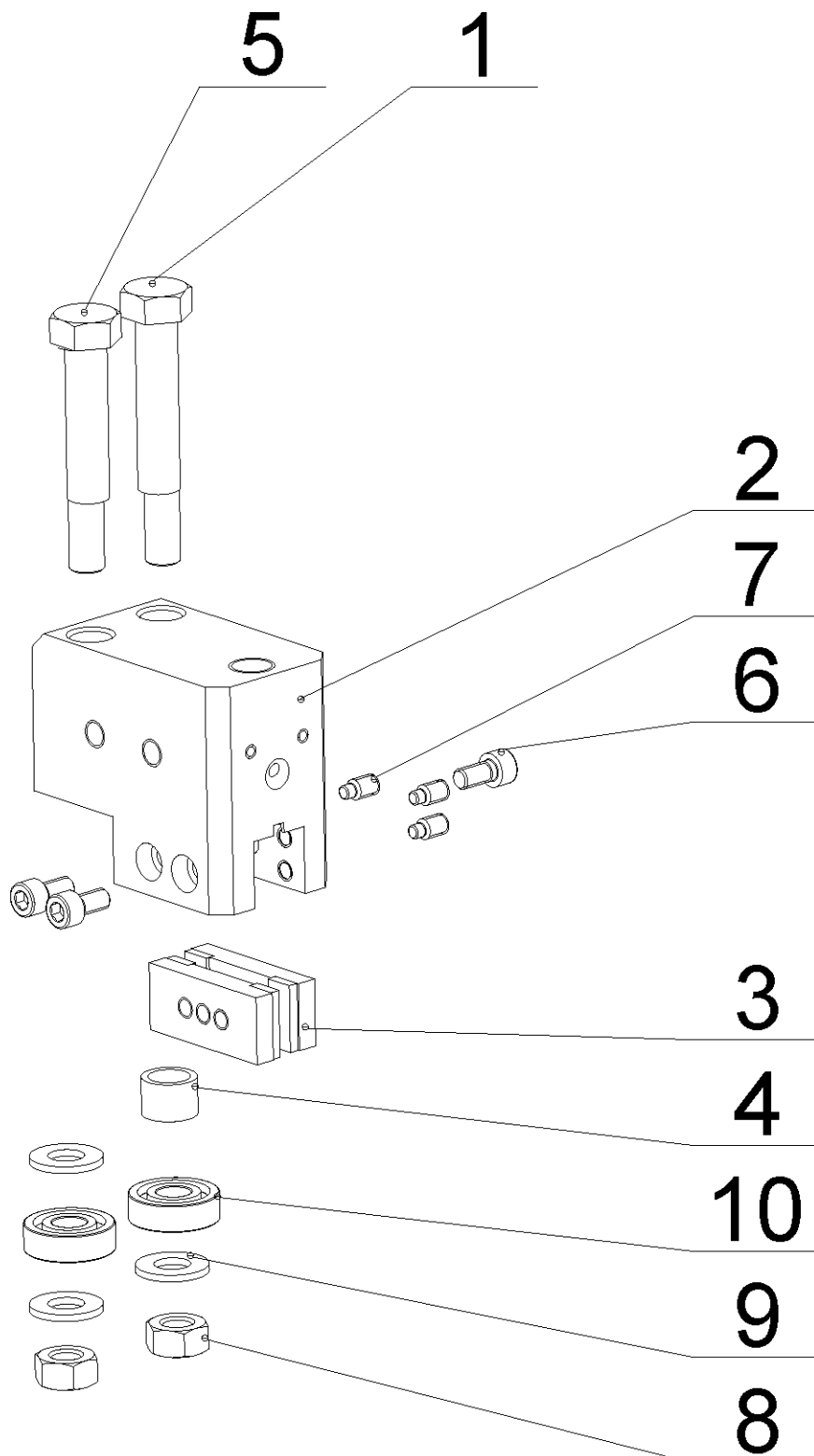
20.7. Napínání pilového pásu / Bandspannung / Saw band stretching

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0104-002	Hranol / Prisma / Prism	1
2	30.0104-004	Držák pružiny / Federhalter / Spring holder	1
3	30.0303-005	Šroub / Schraube / Screw	1
4	30.0505-011	Podložka / Scheibe / Washer	1
5	30.0702-023	Kroužek distanční / Distanzring / Distance ring	1
6	30.0704-025	Příložka / Lasche / Splice plate	1
7	30.9008-001	Kolo napínací / Umlenkrad / Stretching wheel	1
8	30.9008-004	Čep napínání / Spannungsbolzen / Stretching pivot	1
9	31.0104-006	Hvězdice / Stern / Star	1
10	90.004.2D.008	Šroub / Schraube / Screw M8x16 DIN 915 45H	1
11	90.005.55.017	Šroub / Schraube / Screw M8x30 DIN 933 8.8	1
12	90.005.55.023	Šroub / Schraube / Screw M10x20 DIN 933 8.8	1
13	90.100.55.005	Maticе / Mutter / Nut M8 DIN 934 8.8	1
14	90.100.55.008	Maticе / Mutter / Nut M16 DIN 934 8.8	1
15	90.300.0Z.012	Válcový kolík / Zylinderstift / Cylindrical pin Ø8x50 DIN 6325	1
16	90.350.0Z.002	Talířová pružina / Tellerfeder / Belleville spring 35.5x18.3x2.0x2.8	7
17	95.001.XXX	Ložisko / Lager / Bearing 6305 A	2
18	95.750.001	Kroužek / Ring / Ring KU 16x1	2
19	95.800.012	Pojistný kroužek / Sicherungsring / Retaining ring Ø25 DIN 471	1
20	95.801.010	Pojistný kroužek / Sicherungsring / Retaining ring Ø62 DIN 472	1



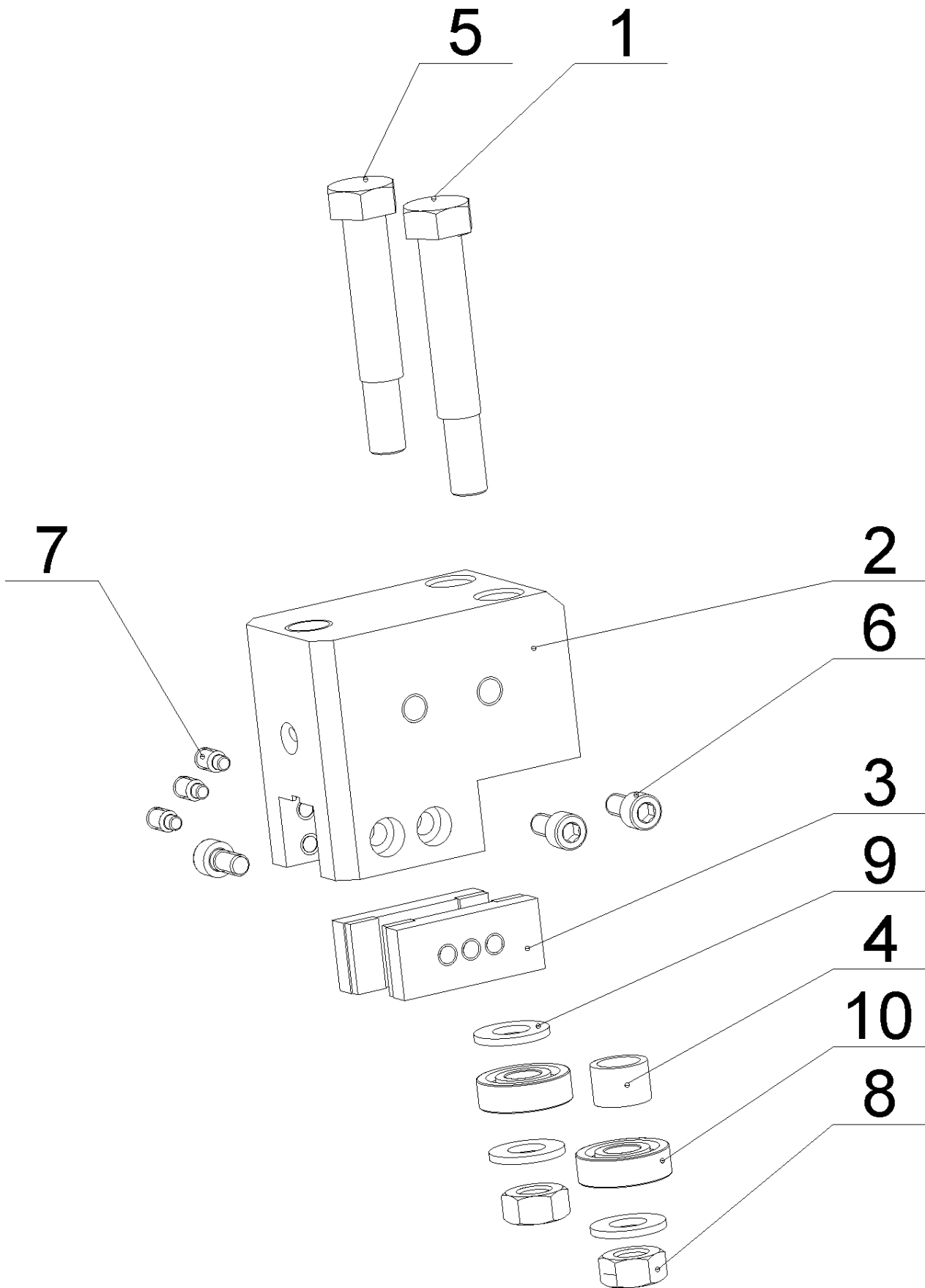
20.8. Vedení pilového pásu / Sägebandführung / Saw band guiding

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0704-010	Upínka / Spanneisen / Clamp	1
2	Viz výkres / Siehe Zeichnung / See drawing	Levá vodící kostka / Linker Führungsklotz / Left guiding cube	1
3	Viz výkres / Siehe Zeichnung / See drawing	Pravá vodící kostka / Rechter Führungsklotz / Right guiding cube	1
4	30.3510-004	Trubka / Rohr / Tube	1
5	30.9010-001	Vodící lišta / Führungsleiste / Guiding listel	1
6	30.9010-002	Vodící lišta / Führungsleiste / Guiding listel	1
7	30.9010-003	Držák / Halter / Holder	1
8	90.001.25.002	Šroub / Schraube / Screw M4x10 DIN 912 8.8	1
9	94.008.009	Páka / Hebel / Lever	1



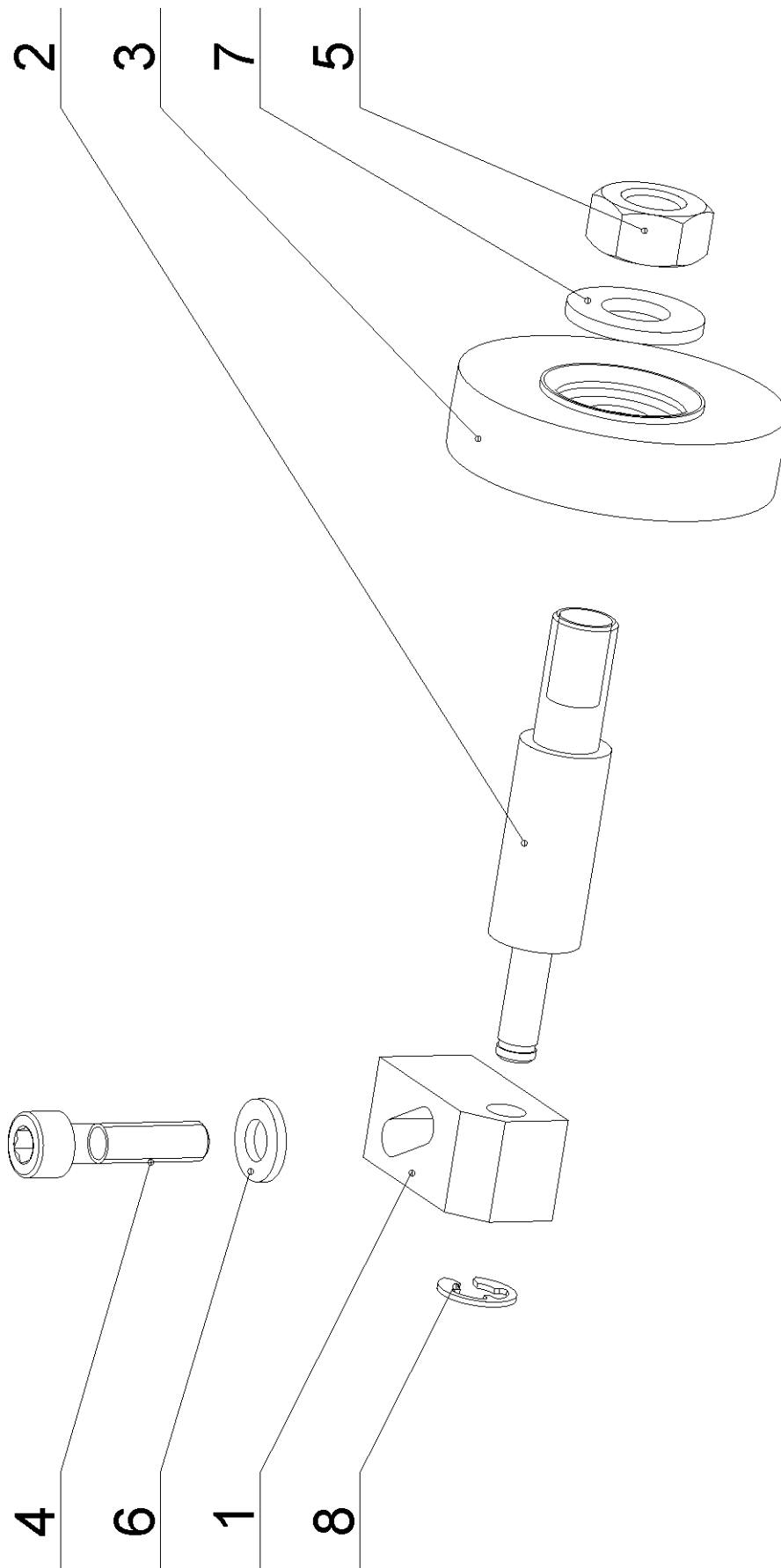
20.9. Levá vodící kostka / Linker Führungsklotz / Left guiding cube

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0810-009	Excentr / Exzenter / Excenter	1
2	30.1710-004	Levá vodící kostka / Linker Führungsklotz / Left guiding cube	1
3	30.1710-005	Držák tvrdokovu / HM-Halter / HM holder	2
4	30.1710-006	Distanční kroužek / Distanzring / Distance ring	1
5	30.1710-007	Excentr / Exzenter / Excenter	1
6	90.001.25.016	Šroub / Schraube / Screw M6x12 DIN 912 8.8	3
7	90.004.2D.002	Šroub / Schraube / Screw M6x12 DIN 915 45H	3
8	90.100.55.006	Matice / Mutter / Nut M10 DIN 934 8.8	2
9	90.150.50.006	Podložka / Scheibe / Washer Ø10,5 DIN 125	3
10	95.001.004	Ložisko / Lager / Bearing 6000 2RS	2



20.10. 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	30.0810-009	Excentr / Exzenter / Excenter	1
2	30.1710-003	Pravá vodící kostka / Rechter Führungsklotz / Right guiding cube	1
3	30.1710-005	Držák tvrdokovu / HM-Halter / HM holder	2
4	30.1710-006	Distanční kroužek / Distanzring / Distance ring	1
5	30.1710-007	Excentr / Exzenter / Excenter	1
6	90.001.25.016	Šroub / Schraube / Screw M6x12 DIN 912 8.8	3
7	90.004.2D.002	Šroub / Schraube / Screw M6x12 DIN 915 45H	3
8	90.100.55.006	Matice / Mutter / Nut M10 DIN 934 8.8	2
9	90.150.50.006	Podložka / Scheibe / Washer Ø10,5 DIN 125	3
10	95.001.004	Ložisko / Lager / Bearing 6000 2RS	2



20.11. Kartáček / Spänbürste / Brush

Poz.	Objednací číslo	Název položky	ks
Pos.	Bestell - Nr.	Bezeichnung	Menge
Pos.	Reference No.	Item	Pcs.
1	30.0104-022	Držák kartáčku / Spänbürstehalter / Brush holder	1
2	30.9004-101	Hřídel kartáčku / Bürstenwelle / Brush shaft	1
3	31.0704-031	Kartáček / Spänbürste / Brush	1
4	90.001.25.019	Šroub / Schraube / Screw M6x25 DIN 912 8.8	1
5	90.100.55.006	Maticice / Mutter / Nut M10 DIN 934 8.8	1
6	90.150.50.004	Podložka / Scheibe / Washer Ø6,4 DIN 125	1
7	90.150.50.006	Podložka / Scheibe / Washer Ø10,5 DIN 125	1
8	95.802.XXX	Pojistná podložka / Sicherungsring / Retaining ring Ø6 DIN 6799	1

21. Troubleshooting table

Problem	Possible causes	Repair
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>
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>
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>

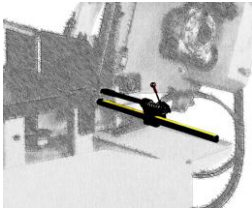
	- Wrongly adjusted swarf brush.	Check swarf brush adjustment, set it according to chapter „Servicing and adjustment“
	- Over stretched saw band	Lower stretching of the saw band and set the limit switch of the saw band stretching according to chapter „Servicing and adjustment“
	- Wrongly adjusted hard metal guides.	Check the adjustment of the hard metal guides and carry out adjustment as described in chapter „Servicing and adjustment“
	- Worn hard metal guides of the saw band.	Check the condition of the hard metal guide and if it is too worn, replace hard metal guides according to chapter „Worn pieces replacement“
	- Worn saw band guide bearings.	Check guiding bearings and if you notice some sort of excessive damage, replace them according to chapter „Worn pieces replacement“
	- Wrongly adjusted guiding cubes of the saw band.	Set guiding cube according to chapter „Servicing and adjustment“
	- Wrongly adjusted down feed and saw band speed.	Adjust the feeding and speed of a saw band according to values published by saw band manufacturer.
	- Different material quality.	Adjust feeding and speed of a saw band according to desired material (try cut-test).
	- Low-class saw band	Replace the saw band (contact your local accessory supplier for more information)
	- Wrongly chosen saw band tooth system.	Replace the saw band and keep instructions of the manufacturer on the choice.
	- Wrongly adjusted tracking.	Check the space between top of a saw band and driving wheel. Perhaps adjust the tracking as described in chapter „Servicing and adjustment“
Insufficient cut output.	- Worn saw band.	Replace the saw band and keep instructions of the manufacturer on the choice.
	- Wrong saw band tooth system.	Replace the saw band and keep instructions of the manufacturer on the choice.
	- Wrongly set down feed and speed of a saw band.	Set feed and speed of a saw band according to values published by saw band manufacturer.
Saw band drive cannot be started.	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.
	Material is deformed.	Use pressure control of the vices SDRA. SDRA is possible buy as additional load, parameters of the SDRA are in chapter „ Special accessories “
Cooling is not active	Lack of cooling agent.	Fill the tank with cooling agent.

	Input hosepipe is broken or obstructed. Cooling pump is defective.	Check the cooling circuit and perhaps cleanse cooling system. Replace the cooling pump.
The cut is not finished.	Wrongly adjusted lower stop point of the saw frame. Stop point surface is messed-up.	Check lower limit switch and screw. Cleanse stop point surface of the limit switch from debris and residue material.

22. Special accessory

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

22.1. Length stop



Length-stop 260

Manual length stop, measuring length 500mm.

22.2. Frequency converter

FDE 260

Frequency converter for blade speeds from 20-120 m.min.
Just for assembly at BOMAR, spol. s r.o.

FDE 260 NRS

Frequency converter set for subsequent assembly.
Blade speed from 20 – 120 m.min.
Including complete assembly manual.
Only for subsequent assembly.

22.3. Microniser



MICRONISER Standard

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

MICRONISER 24V

Micro-spray-equipment including a full assembly set.
24V Version with connected pneumatic valve and anodized nozzle, assembling manual and electric plan are included.

22.4. Tenzomat



TENZOMAT

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

23. 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.

23.1. Roller conveyors of M type

23.1.1. Roller conveyors

M 330 – 2, M 330 – 2 PR

Conveyor with steel or plastic rolls

Max. load **steel rolls 215 kg/m**

Max. load **plastic rolls 15 kg/m**

Without legs.

Rolls Ø 60x330mm

Dimension 330x2000mm

Conveyor height 610 – 1020 mm



M 330 – 3, M 330 – 3 PR

Conveyor with steel or plastic rolls

Max. load **steel rolls 215 kg/m**

Max. load **plastic rolls 15 kg/m**

Without legs.

Rolls Ø 60x330mm

Dimension 330x3000mm

Conveyor height 610 – 1020 mm

M 430 – 2, M 430 – 2 PR

Conveyor with steel or plastic rolls

max. load **steel rolls 215 kg/m**

max. load **plastic rolls 15 kg/m**

Without legs.

Rolls Ø 60x430mm

Dimension 430x2000mm

Conveyor height 610 – 1020 mm



M 430 – 3, M 430 – 3 PR

Conveyor with steel or plastic rolls

max. load **steel rolls 215 kg/m**

max. load **plastic rolls 15 kg/m**

Without legs.

Rolls Ø 60x430mm

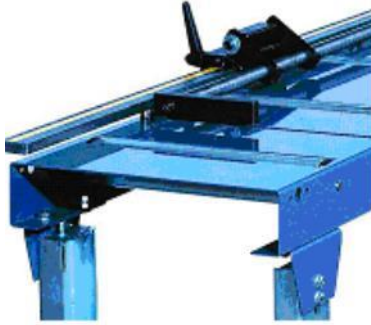
Dimension 430x3000mm

Conveyor height 610 – 1020 mm

23.1.2. Length stops

MA – 2

Manual length stop suitable for conveyors M 230 – 2, M 330 – 2, M 430 – 2. Attention! Without conveyor.



MA – 3

Manual length stop suitable for conveyor M 230 – 3, M 330 – 3, M 430 – 3. Attention! Without conveyor.

For special lengths of the length stop MA the price can be set together from the following components:

Trolley MA

Trolley with length stop

Guide way MA

Guide way with connection material for 1m

MDA – 3

Digital manual length stop adjusted by hand wheel and manual clamping. Attention! Without conveyor.



MDA – 6

Digital manual length stop adjusted by hand wheel and manual clamping. Attention! Without conveyor.

For special lengths of the length stop MDA the price can be set together from the following components:

Trolley MDA

Trolley with length stop

Guide way MDA

Guide way with connection material for 1m.

MNCA – 3

NC-controlled length stop in 3m Length, including connection material suitable for all conveyors of series M. Attention! Without conveyor.



MNCA – 6

NC-controlled length stop in 6m Length, including connection material suitable for all conveyors of series M. Attention! Without conveyor.

For special lengths of the length stop MDA the price can be set together from the following components:

Trolley MNCA

Trolley with length stop

Guide way MNCA

Guide way with connection material for 1m.

23.1.3. Feeding machines

M-VL

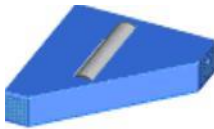
Automatic feeding machine.



23.1.4. Connection parts

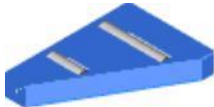
ATL

Left connection part for conveyor M 330.



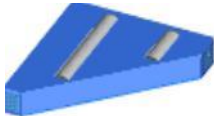
ATR

Right connection part for conveyor M 330.



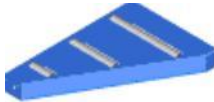
ATL

Left connection part for conveyor M 430.



ATR

Right connection part for conveyor M 430.



23.1.5. Connection sets

VBS L

Connection set, left side of conveyors M 330, M 430.



VBS R

Connection set, right side of conveyors M 330, M 430.



23.1.6. Accessories of roller conveyors



VR – M

Set of vertical rollers suitable for all conveyors of series M. VR-M includes 4 pcs. vertical rollers.



BVR – M

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



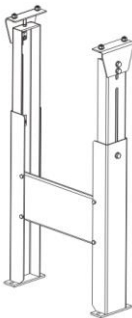
SB – M

Set of securing bolt suitable for all conveyors of series M. SB –M includes 4 pcs. securing bolt.



VBF – M

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



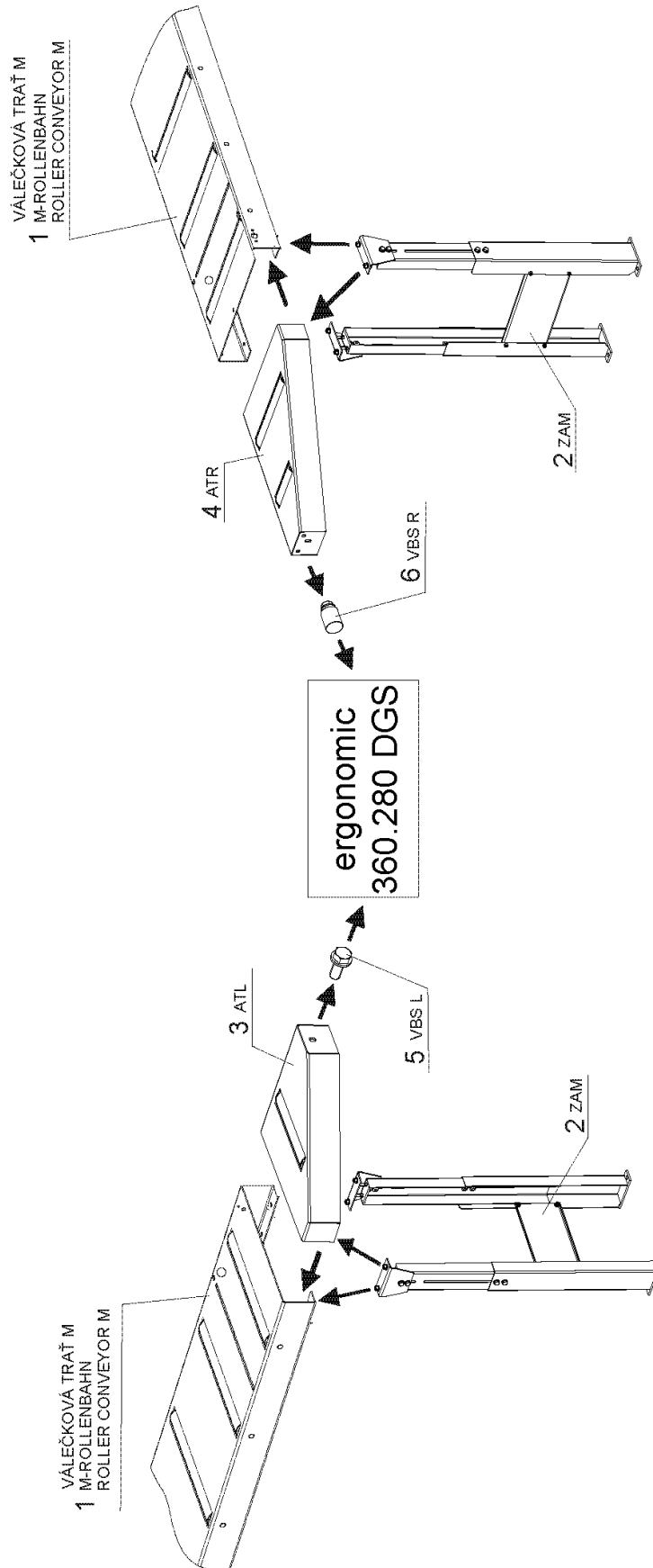
ZAM 330

Additional Leg for conveyor M 330.

ZAM 430

Additional Leg for conveyor M 430.

23.1.7. Connection schema of the roller conveyors to the band saw



Roller conveyor M 330

Pos.	Number	Sign.	Name	
1	253.014	M 330 - 2	Roller conveyor M	width 330mm, length 2m
	253.015	M 330 - 3	Roller conveyor M	width 330mm, length 3m
2	253.040	ZAM - 330	Additional leg	width 330mm
3	255.004	ATL	Left connection part	width 330mm
4	255.502	ATR	Right connection part	width 330mm
5	255.251	VBS L	Left connection set	
6	255.760	VBS R	Right connection set	

Roller conveyor M 430

Pos.	Number	Sign.	Name	
1	253.016	M 430 - 2	Roller conveyor M	width 430mm, length 2m
	253.017	M 430 - 3	Roller conveyor M	width 430mm, length 3m
2	253.042	ZAM - 430	Additional leg	width 430mm
3	255.005	ATL	Left connection part	width 430mm
4	255.503	ATR	Right connection part	width 430mm
5	255.251	VBS L	Left connection set	
6	255.760	VBS R	Right connection set	

For **ergonomic 360.280 DGS** band saw 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.

23.2. Roller conveyors of D type

23.2.1. Roller conveyors

D 340 – 2

Conveyor with steel rolls

Max. load **steel rolls 600 kg/m**

Without legs.

Rolls Ø 70x340mm

Dimension 430x2000mm

Conveyor height 700 – 800mm, 900 – 1000mm



D 340 – 3

Conveyor with steel rolls

Max. load **steel rolls 600 kg/m**

Without legs.

Rolls Ø 70x340mm

Dimension 430x3000mm

Conveyor height 700 – 800mm, 900 – 1000mm

D 440 – 2

Conveyor with steel rolls

Max. load **steel rolls 600 kg/m**

Without legs.

Rolls Ø 70x440mm

Dimension 530x2000mm

Conveyor height 700 – 800mm, 900 – 1000mm



D 440 – 3

Conveyor with steel rolls

Max. load **steel rolls 600 kg/m**

Without legs.

Rolls Ø 70x440mm

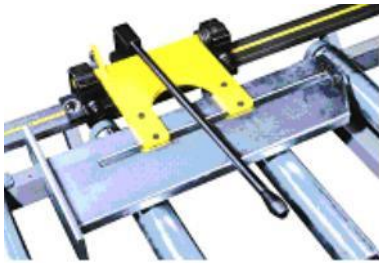
Dimension 530x3000mm

Conveyor height 700 – 800mm, 900 – 1000mm

23.2.2. 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

HAD – 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)



HAD – 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 HAD

For special lengthens of the length stop HAD, 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)

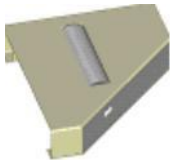
23.2.3. Feeding machines



D-VL

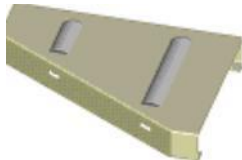
Automatic feeding machine.

23.2.4. Connection parts



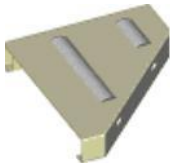
ATL

Left connection part for conveyor D 340.



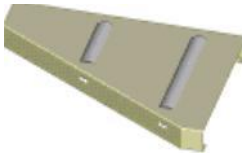
ATR

Right connection part for conveyor D 340.



ATL

Left connection part for conveyor D 440.



ATR

Right connection part for conveyor D 440.

23.2.5. Connection sets



VBS L

Connection set, left side of conveyors D 340, D 440.



VBS R

Connection set, right side of conveyors D 340, D 440.

23.2.6. 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.



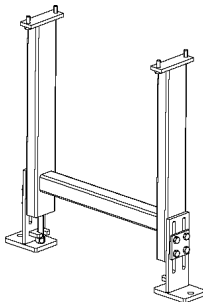
VBF – D

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.



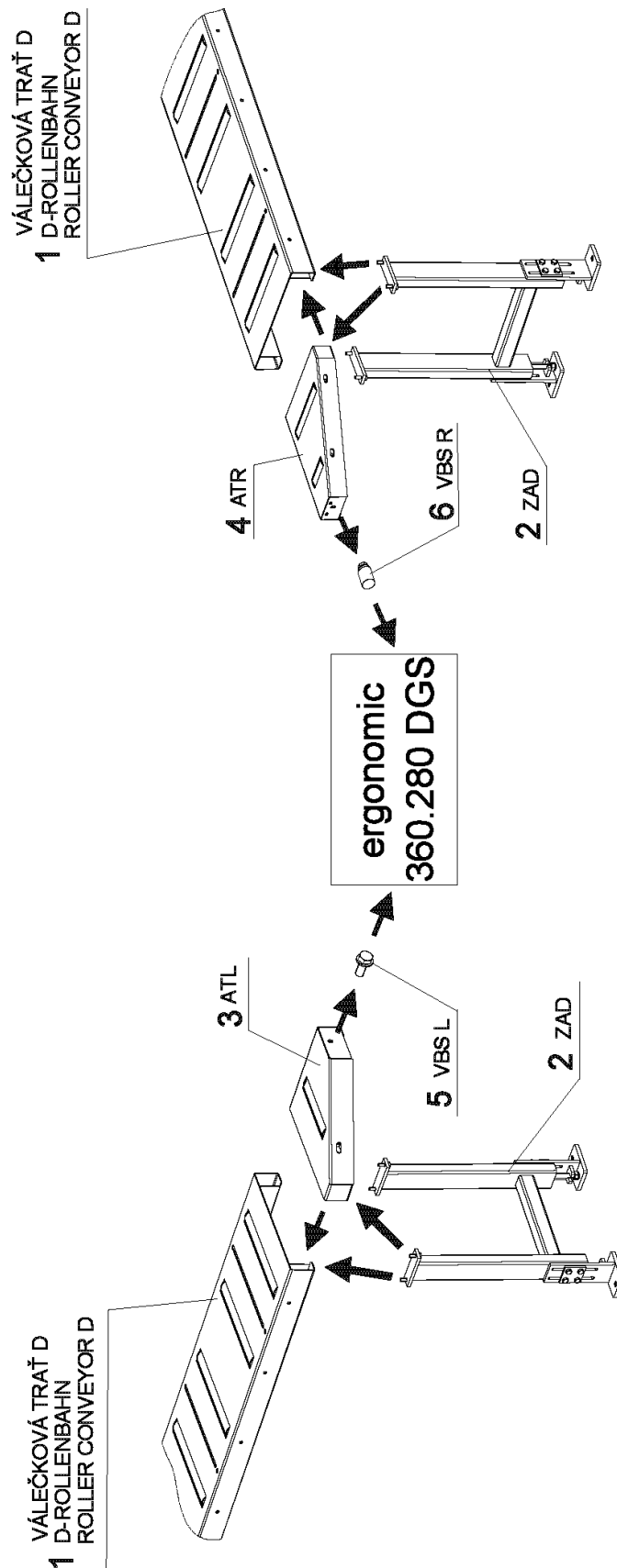
ZA-D 340

Additional leg suitable for conveyors D340/578, adjusted height 700-800 mm and for conveyors D340/778, adjusted height 900-1000 mm.

ZA-D 440

Additional leg suitable for conveyors D440/578, adjusted height 700-800 mm and for conveyors D440/778, adjusted height 900-1000 mm.

23.2.7. Connection schema of the roller conveyors to the band saw



Roller conveyor D 340

Pos.	Number	Sign.	Name	
1	253.082	D 340 - 2	Roller conveyor D	width 340mm, length 2m
	253.083	D 340 - 3	Roller conveyor D	width 340mm, length 3m
2	253.076	ZAD - 340	Additional leg	width 340mm
	253.077			
3	255.023	ATL	Left connection part	width 340mm
4	255.509	ATR	Right connection part	width 340mm
5	255.251	VBS L	Left connection set	
6	255.760	VBS R	Right connection set	

Roller conveyor D 440

Pos.	Number	Sign.	Name	
1	253.084	D 440 - 2	Roller conveyor D	width 440mm, length 2m
	253.085	D 440 - 3	Roller conveyor D	width 440mm, length 3m
2	253.078	ZAD - 440	Additional leg	width 440mm
	253.079			
3	255.024	ATL	Left connection part	width 440mm
4	255.510	ATR	Right connection part	width 440mm
5	255.251	VBS L	Left connection set	
6	255.760	VBS R	Right connection set	

For **ergonomic 360.280 DGS** band saw 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.

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**

Ergonomic 230.190G, 275.230DG, 290.250DGA, 290.250GAE, 290.250GAC, 290.250ANC, 290.250GANC, 320.250DG, 320.250DGH, 320.250DGS, 320.250DGSH, 320.250G, 320.250GH, 360.280DGS, 360.280DGSH, 320.250GP

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

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

Company seal

Alfred Pichlmann,
Managing Director



.....
name, office, signature