Series **Ergonomic**

Ergonomic 275.230 DG

Operating instructions

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

Seriové číslo / Serien Nummer / Serial Number _____

Service and information

Your BOMAR dealer:

Direct BOMAR contact:

BOMAR spol. s r.o.
Těžební 1236/1
62700 Brno
Czech Republic, EU

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

We are available:

Mondays to Fridays $7^{00} – 16^{00}$

Version:

1.04 / Feb. 2013

rev. 1

EC Declaration of Conformity

1) We

BOMAR, spol. s r.o.
Těžební 1236/1
627 00 Brno, The Czech Republic
Id.no: 48908827

declare herewith,

that the following designated device based on its conception and construction as well as the design launched by us meets the relevant basic safety requirements of the decrees of the government. In the event of any device modification not approved by us this declaration shall lose its validity.

Name: **Band Saw**

Type range: **Ergonomic 275.230 DG**

Serial number: .....

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

Product data

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

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

Hydraulic *YES* ☐ *NO* ☒ Control system *YES* ☐ NO ☒

Technical data: Cutting rate 40–80 $m.min^{-1}$, cutting angle from - 45° to 60°
Total dimensions in mm (l×w×h) 1331x1276x1385
Supply voltage 3×400 V TN-C-S/3×400 V TN-C)/3×230 TN-C/1×230 V TN-C
Total power requirement 2,7 kW, weight 310 kg

The applied decrees of governments: **No. 176/2008 Coll.** (Directive 2006/42/EC)
No. 616/2006 Coll. (Directive 2004/108/EC)
No. 17/2003 Coll. (Directive 2006/95/EC)

The applied harmonized standards,
National standards and technical specifications: ČSN EN ISO 12 100-2:2004, ČSN EN 13 898+A1:2009, ČSN EN ISO 13857:2008, ČSN EN 982+A1:2008, ČSN EN 61000-6-2 ed. 2:2007, ČSN EN 61000-6-4:2002 ed.2:2007, ČSN EN 60204-1 ed.2:2007

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

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

2) [2] The declaration of conformity was carried out in the cooperation with the TÜV SÜD Czech s.r.o, Novodvorská 994, 142 21 Prague 4 – Czech Republic, Identification number: 63987121 - Inspection body no. 4002

The inspection certificate no . 01.074.556/09/07/02/0 was issued.

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

Alfred Pichlmann, Managing Director

Point of issue, datum	Name and function of the responsible subject	Signature

1] Name, address and identification number of the subject issuing the conformity declaration (producer of importer)
2) The authorized or accredited body co-operating on the conformity judging

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

Content

1. Bezpečnostní pokyny / Sicherheitshinweise/ Safety notes

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

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

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

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

1.1. Machine determination

The band saw **Ergonomic 275.230 DG** is determined for cutting and shortening of rolled bars and drawn bars and profiles from steels, stainless steels, non-ferrous metals and plastics **with cutting angles from -45° to 60°**.

Combustible materials are excepted for cutting! Any other usage and operation outside this range are unauthorized and the manufacturer/supplier does not accept any responsibility for any damages resulting from such misuse. **The operator has full responsibility!**

The machine is equipped with safety and protective guarding for operator and machine protection. Nevertheless, this safety and protective guarding cannot prevent injury. Service personnel must read this chapter and comprehend it, before he starts to work on the machine. **Always keep instructions about work safety!** Service personnel must take into account other aspects of the risk, which refer to the ambient conditions and the material.

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

1.2. Protective suit and personal safety

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

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

Attention!
Gloves you can use only at working material replacement (saw band)! The machine and accessories must be inactive!
If the machine is running, you must not wear gloves! It is dangerous, because some parts of the machine can catch gloves!

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

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

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

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

Operate the machine only when you are fit enough to work. Illnesses or injuries diminish concentration. Avoid machine work, which may compromise the safety of you and your colleagues!

1.3. Safety notes for machine operator

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

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

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

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

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

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

1.4. Safety notes for the servicing and repairs

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

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

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

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

1.5. Safety machine accessories

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

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

1.5.1. Total Stop

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

If any damages or fault appears, immediately press TOTAL STOP button! Release the pressing button is possible by twisting of the upper part of the button.

1.5.2. Arm 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 start in set mode.

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

1.5.3. Band saw cover

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

Never turn-ON saw band when cover is not mounted!

1.5.4. Saw band stretching and rupture inspection

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

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

1.6. Safety notes for the cooling

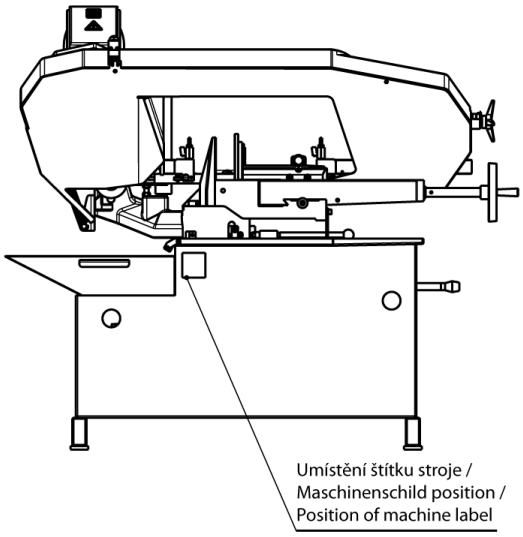
Attention!

- *When handling cooling agents always wear hazardous fluid-proof gloves!*
- *Wear protective goggles!*
- *Cooling liquid can get in contact with your eyes and may cause permanent severe injuries*

1.7. Instructions for first help

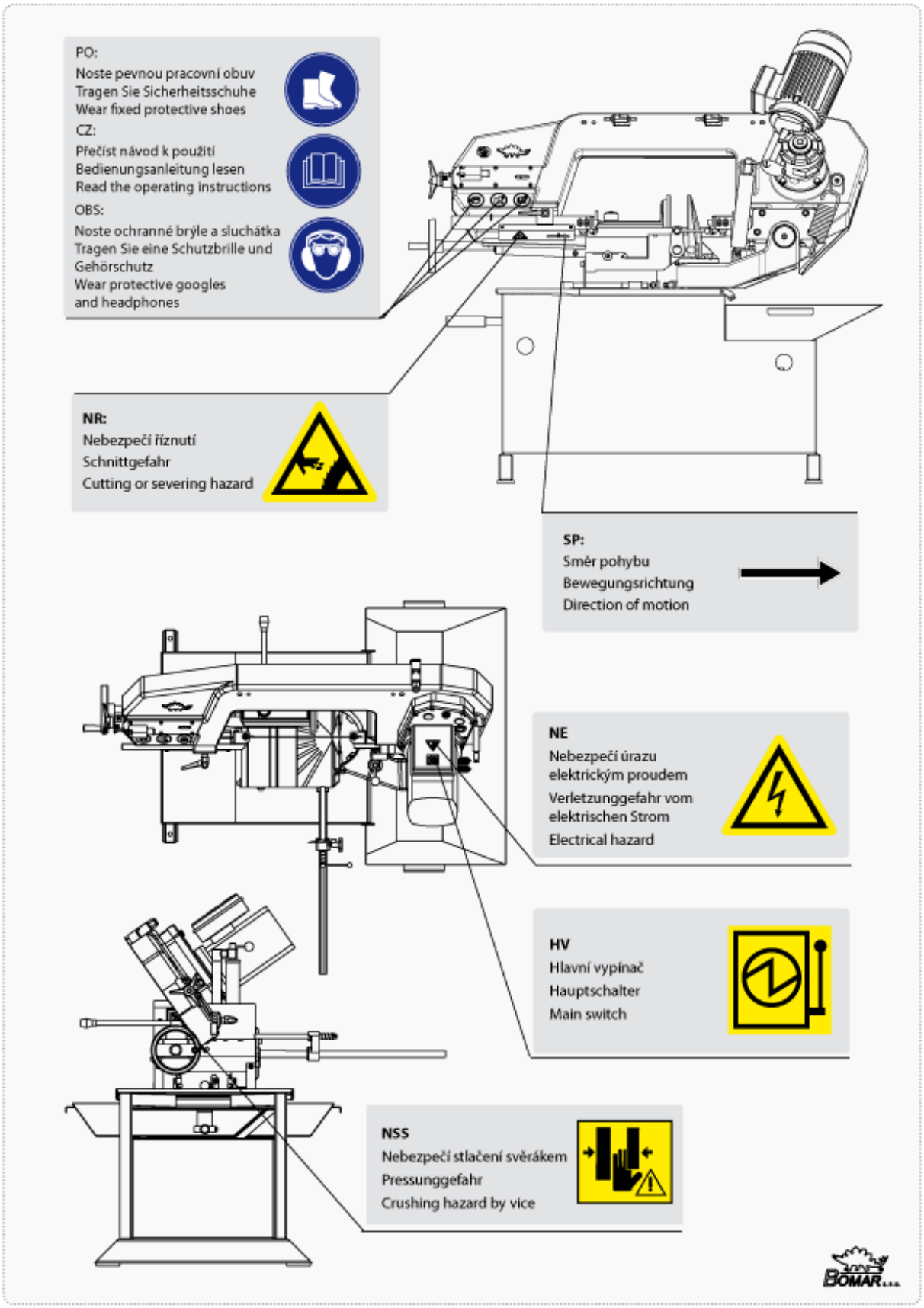
1. Pull off and safely remove polluted, soaked clothing.
2. For breathing, go out in the fresh air or look for first aid treatment.
3. Wash with water or use crèmes for contact with the skin.
4. Flush with water for eyes and look for first aid treatment.
5. For swallowing, drink a lot of water and induce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

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



Manual version: 1.04 / Feb. 2013
Manual rev.: 1

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

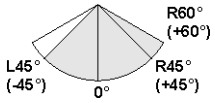


2. Dokumentace stroje / Dokumentation der Maschinen / Machine documentation

2.1. Technická data / Technische Daten / Technical data

Hmotnost stroje / Maschinengewicht / Machine weight:	
• Hmotnost / Gewicht / Weight	310 kg
Rozměry stroje / Maschinengröße / Machine size :	
• Délka / Länge / Lenght	1331 mm
• Šířka / Breite / Width	1276 mm
• Výška / Höhe / Height	1385 mm
Elektrické vybavení / Elektrische Ausrüstung / Electical equipment:	
• Napájení / Versorgungsspannun / Supply voltage	~3 x 400V, 50Hz, TN-C-S
• Příkon / Gesamptschlusswert / Total Input	2,7 kW
• Max. jištění / Max. Vorschaltsicherung / Max. Fuse	16 A
• Krytí / Schutzart / Protection	IP 54
Akustický tlak / Schalldruckpegel / Acoustic pressure:	
• Ergonomic 275.230 DG	L_{Aeqv}=59 / 65 dB … 35 m.min^{-1} / 70 m.min^{-1}
Virbrace / Vibration / Vibration:	
• Ergonomic 275.230 DG	0,08/0,2 m.s^{-2} … 35 m.min^{-1}/70 m.min^{-1}
Pohon / Atrieb / Drive:	
• Typ / Type / Type	(TM) 90 2/4 B5
• Napájení / Versorgungsspannun / Supply voltage	~ 3×400V, 50H z
• Výkon / Leistung / Output	1,1 / 1,5 kW
• Jmenovité otáčky / Motornenndrehzahl / Nominal speed	1340 / 2640 min^{-1}
Chladící zařízení / Kühlmiteleinrichtung / Cooling equipment:	
• Výkon / Leistung / Output	0,05 kW
• Obsah nádrže / Volumen vom Kühlmittel / Capacity	10 dm3
Rozměr pásu / Sägebanddimension / Band size:	
2720×25 (27)×0,90 mm	
Řezná rychlost / Schnittgeschwindigkeit / Cutting speed:	
40/80 m/min.	

Řezné rozsahy / Schnittbereiche / Cutting size:

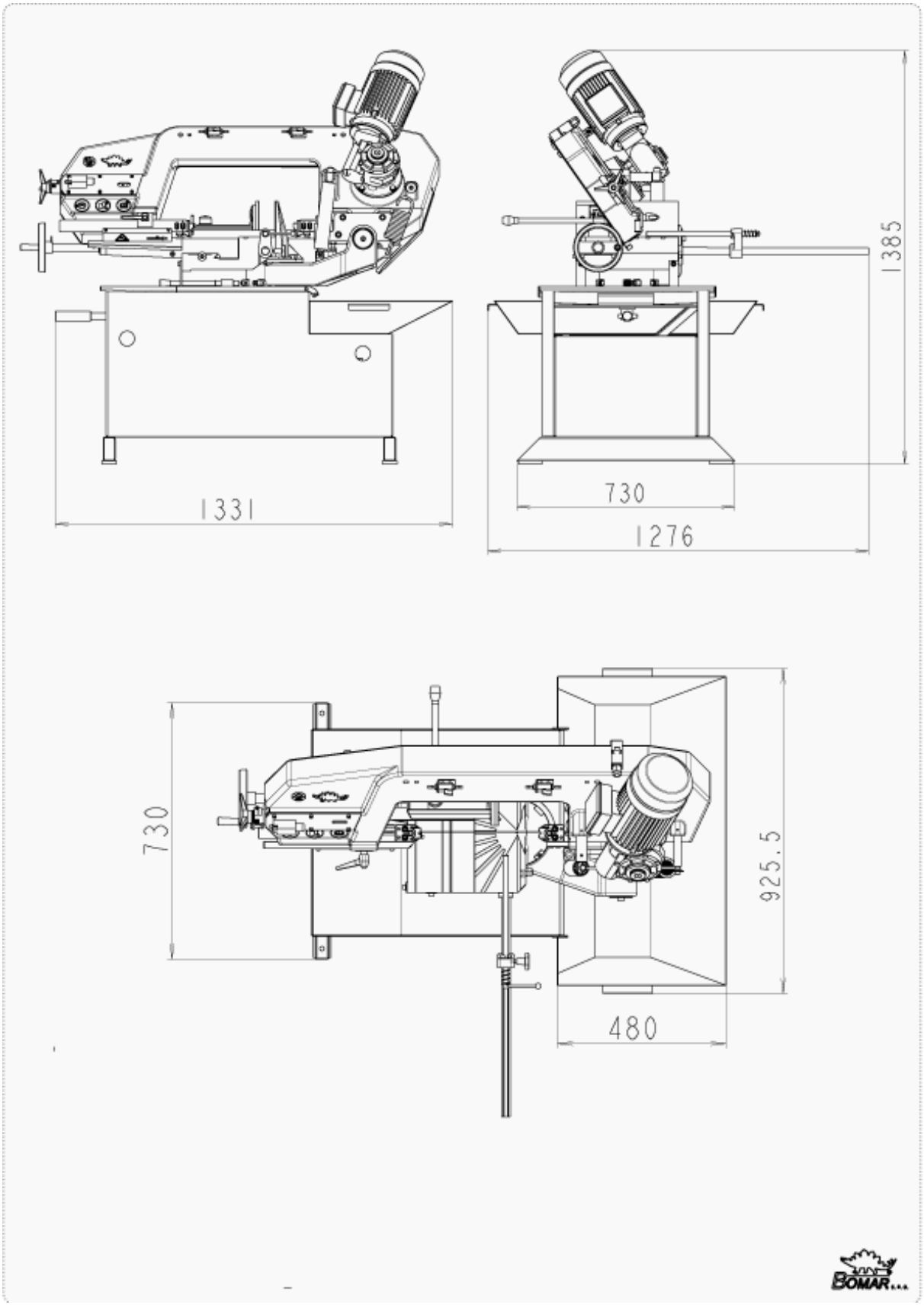


0°	Ø 230 mm	275×200 mm	250×230 mm	230×230 mm
R 45° (+45°)	Ø 190 mm	190×160 mm	180×230 mm	190×190 mm
L 45° (-45°)	Ø 170 mm	185×100 mm	90×230 mm	150×150 mm
R 60° (+60°)	Ø 120 mm	120×85 mm	120×85 mm	85×85 mm

Acoustic pressure level:

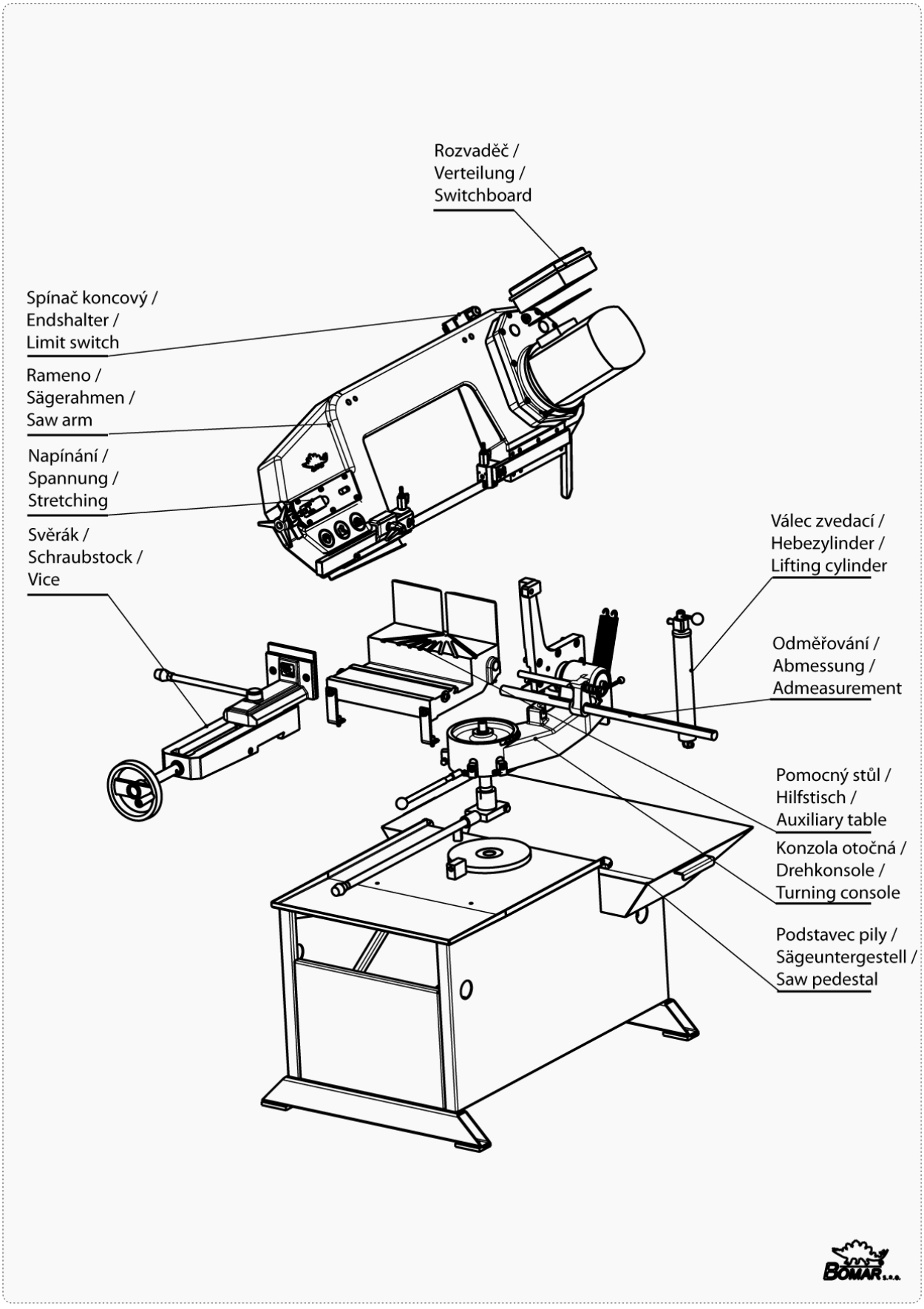
The equivalent level of the acoustic pressure A (noise) in the position of the operator is L_{Aeqv}= 59 / 65 dB on 35 m.min^{-1}/70 m.min^{-1}. The values are indicating the emission levels and may not present safety working levels. Among the factors, which influence the real values of the operator exposure, are properties of the workshop room, cut material and used saw bands – which may significantly influence the exposure levels.

2.2. Rozměrové schéma / Aufstellzeichnung / Installation diagram



Manual version: 1.04 / Feb. 2013
Manual rev.: 1

2.3. Popis / Beschreibung / Description



2.4. Transportation and stocking

2.4.1. Conditions for transportation and stocking

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

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

2.4.2. Transport and stocking preparations

Close the vice and thoroughly oil all blank surfaces.

Lower the saw frame to the lowest position.

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

Fasten all loose parts securely to the machine.

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

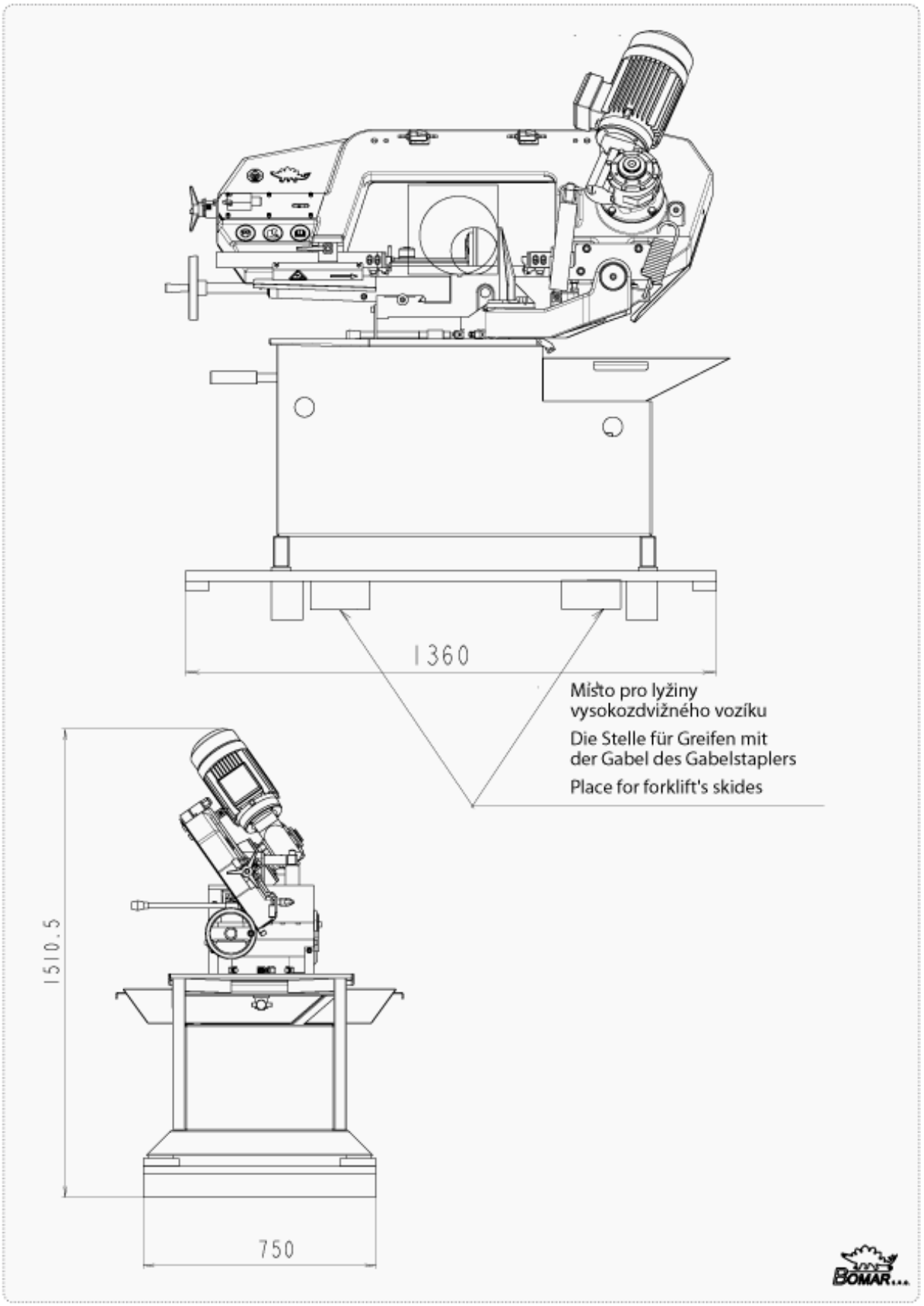
Fix the stickers stating the minimum approximate machine weight to at least five well visible places.

2.4.3. Transport and stocking

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

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

2.4.4. Transportní schéma / Transport schema / Transport diagram



2.5. Activation

2.5.1. Machine working conditions

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

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

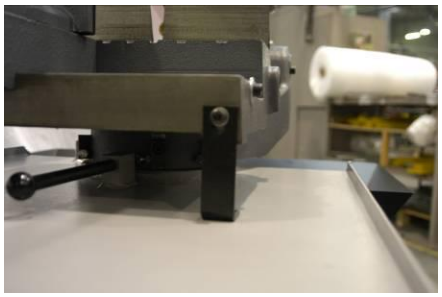
- At temperature air from ***5°C to 40°C***, the temperature average during 24 hours must ***not exceed over 35°C***.
- At relative dampness of the air in the extend from 30% to 95% (not concentrate)
- Altitude lower than 1000 metres.
- Do not expose the machine to the radiation (for example microwave radiation, ultra-violet radiation, laser radiation, x-ray radiation). Radiation can cause problems with the machine function and deteriorating condition of the isolation.

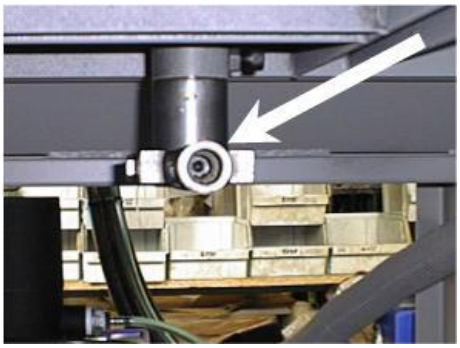
2.6. Band saw unpacking and assembling

Remove the packing from the machine and unpack all parts.

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

2.6.1. Assembly of the hold-down lever



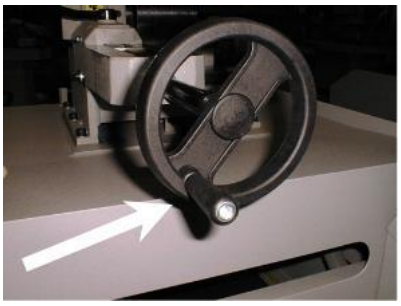


Screw on the hold-down lever of the console to the hold with white arrow to the lower picture.

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

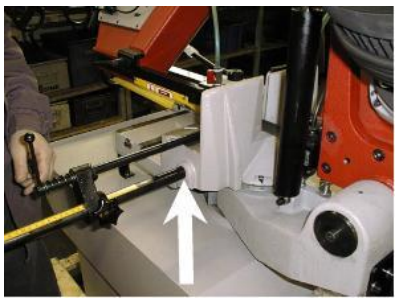
2.6.2. Hand wheel assembly

Take down the nut from holder of the hand wheel. Insert it to the hole on backside of the wheel and screw on the holder.

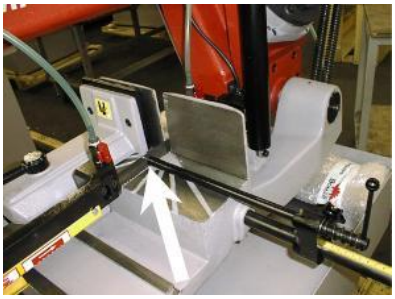


2.6.3. Length stop assembly

1. Take on the length stop to the hole on vice side.



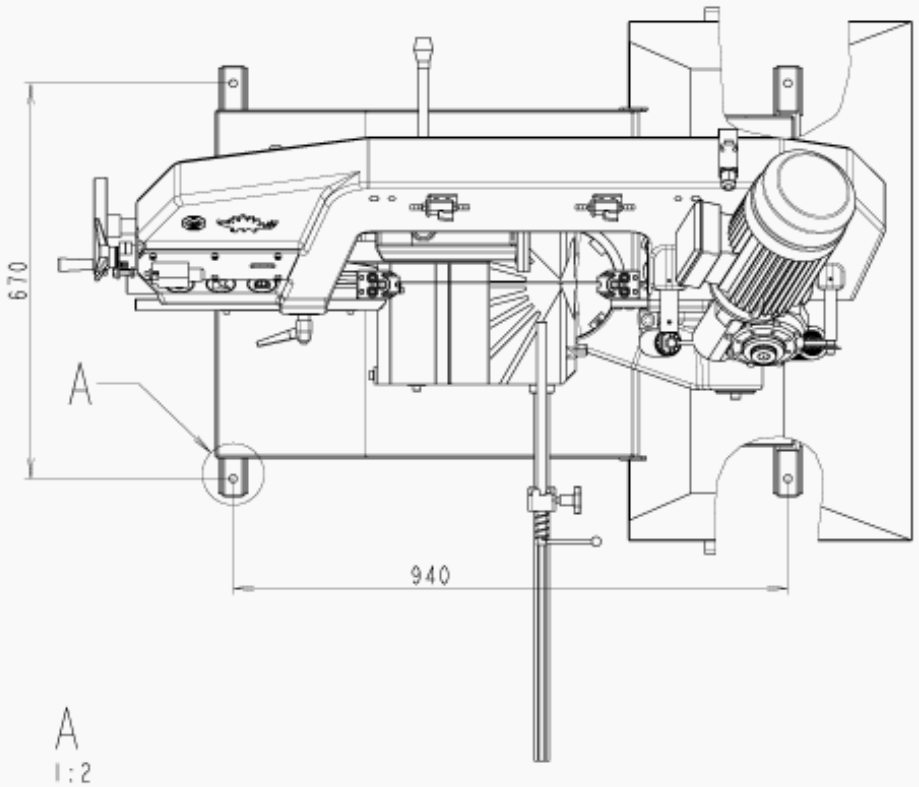
2. Shift the length stop until the saw band.

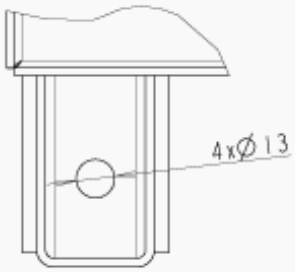


3. Set the scale to the value „0“.

4. Secure it with screw on the bottom side of the vice.

2.7. Kotevní plan / Verankerungsplan / Grounding plan





Kotvící materiál / Verankerungsmaterial / Grouding material

- Hmoždina / Dübel / Plug – 4xø14 mm
- Vrtáno do hloubky / In die Tiefe gebohrt / Drilled to – 100 mm
- Šrouby / Schraube / Screws – 4xM12

Šrouby podložit deskami o min. rozměrech P10x100-100
- Die Schrauben mit Platten mit Minimaldimensionen P10x100-100 unterlegen
Screew must be bottomed with plates (min. dimensions P10x100-100)

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

± 10 mm / 1 m

2.8. Machine installing and levelling

Check the floor supporting capacity before machine installing. If the floor capacity does not agree with requirements, you must prepare the necessary base for the machine.

Minimal requirement:

machine weight – Ergonomic 275.230 DG – 310 kg

+ weight of accessories

+ maximum weight of material

- The machine must be levelled at the horizontal position. All feet of the machine must touch with the floor after levelling
- The machine must be levelled by means of the calibrated spirit level. Spirit level is put on the vice area. Set the roller conveyors according to the spirit level.
- For machine levelling, take care that there is sufficient available space for operation, repair work, servicing of the machine and handling the material..
- The machine including appended parts and accessories must be visible from the place of operation.

2.9. Machine disposal after lifetime

Blown out all service fluids (cooling liquid, hydraulic oil) into designated reservoir. Dismantle machine into separate parts and dispose them in accordance with valid directives.

2.10. Electrical connection

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

Electrical parameters of the machine:

- Service voltage: ~ 3×400 V, 50 Hz, TN-C-S
- Total input / Max. fuse: 2,7 kW / 16 A

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

Service voltage must agree with the line voltage! Crosscut of the supply line must respond with rated current for max. machine load.

Note:
The values of the crosscut of the conductor and the rated current are in the norms.

Přívod je opatřen koncovkou 16 A pro připojení ke zdroji el. napětí.

Note:
The socket with the fork can be used only at the machines with the rated current less than 16 A and total input less than 3 kW.

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

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

2.10.1. Check the direction of the saw band

After the machine has been successfully connected, briefly switch on the machine and put the driving engine of the band in the running position. The direction must be in accordance with the arrow direction on the saw band cover. In case the direction of the saw band does not match, two phases at the terminal strip must be switched.

2.11. Filling of the cooling system

Prepare the mixture of the water and the cooling liquid. Keep the concentration specified by manufacturer. Shift away the cover from the drainage hole. Fill the mixture of the water and the cooling liquid to the tank of the cooling system. Area of the tank for the cooling liquid is discovered from the chapter *Technical data*.

Let the drainage hole opened and with the sieve during operation, because it secures the right work of the cooling system. Filling the tank with the cooling liquid, take care that the liquid does not drip out of the tank and the tank does not overflowed.

2.12. Check machine function

Check, if the machine or some parts of the machine were not damaged during transport.

Check, if covers are installed and functional. Check by means of the Tenzomat if the saw band is correctly stretched. If it is necessary, you can stretch the saw band according to chapter *Selection and replacement of the saw band.* Values of the saw band stretching are on the Tenzomat. Switch on the main switch and check the motors and systems (saw band drive, hydraulic pump, cooling pump, chips conveyor).

Open and close the main vice. Turn the saw frame of the band saw from one outer position to other outer position. Raise the saw frame to the top position and drop the saw frame to the lowest position.

Start the machine with the cooling pump and let it run without load until the cooling system will be filled with cooling liquid. As soon as the cooling liquid starts to escape from the nozzles of the cooling system, the cooling system is ready for the operation. Carry one cycle of cutting without material. Check, if the machine runs with no irregularities. If all machine functions are right, the machine is ready for operation..

2.13. Saw band

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

2.13.1. Saw band size

2720×25 (27)×0,90 mm

2.13.2. Selection of the saw band tooth system

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

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

BOMAR for recommended Variable tooth system for band saw.

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

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

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

Footnotes:

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

Examples of the tooth system marking:

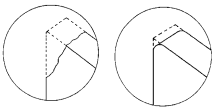
32 S – number „32" means 32 teeth on one inch (that means constant tooth system), letter „S" marks teeth with zero angle of the tooth.

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

2.13.3. Saw band running-in

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

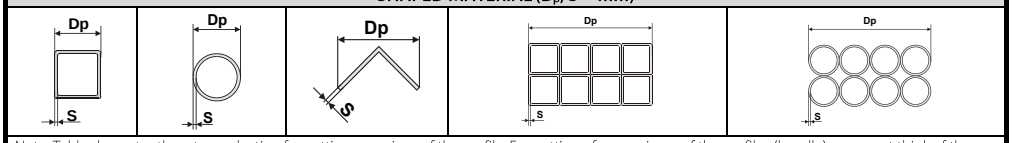
When cutting small pieces run the band until approximately 300 cm^2 of material has been cut. When cutting large pieces run the band for 15 minutes approximately. When the band has been run, increase the lowering-speed to normal speed. The running in of the saw band avoids micro-breaks on the cutting edges of new saw band ensuing from first excessive stress. This would decrease service life substantially. The optimal running in of the saw band produces ideal rounded cutting edges and therefore the conditions for an optimal service life.



Note: *Run regrinding saw bands too.*

2.13.4. Tables for teeth selection

SHAPED MATERIAL (D_p, S = mm)

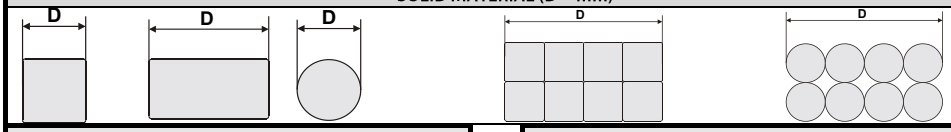


Note: Table shows tooth system selection for cutting one piece of the profile. For cutting of more pieces of the profiles (bundle), you must think of the size of the wall as double size of the wall of one profile (that means, size „S" equates to 2×S). In table, there are tooth systems constant and variable.

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

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

SOLID MATERIAL (D = mm)



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

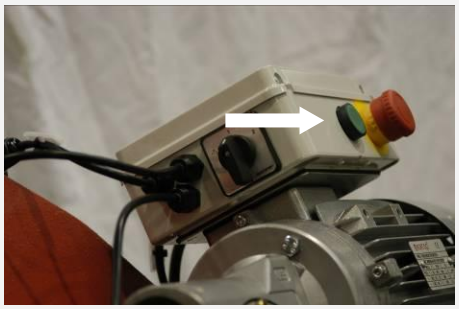
Variable tooth system	
length of the cut D	tooth system (Z_pZ)
to 30 mm	10–14
20–50 mm	8–12
25–60 mm	6–10
35–80 mm	5–8
50–100 mm	4–6
70–120 mm	4–5
80–150 mm	3–4
120–350 mm	2–3
250–600 mm	1,4–2
500–3000 mm	0,75–1,25

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

3. Ovládání stroje / Bedienung der Maschine / Machine control

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

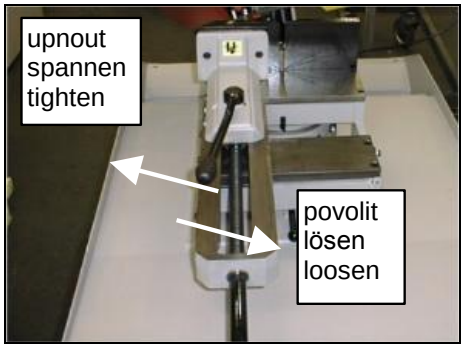
3.1. Control elements

Control element	Description
	1. **Switch of the saw band speed** Select the saw band speed 40 m.min^{-1} (position 1) or 80 m.min^{-1} (position 2).
	2. **STOP of the saw band drive / TOTAL STOP** It is used for stopping of the saw band speed. **Note:** The saw arm sinking is not stopped by pressing button! Saw arm sinking is necessary to stop by adjusting valve on the lifting cylinder!
	3. **START** of the saw band drive

3.2. Machine controling

3.2.1. 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 and pull it up to the length stop.
5. Pull up 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 saw band drive by button START.

Attention
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!

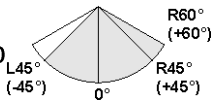
9. Set the speed of the saw frame sinking.
10. Close the governing valve of the sinking. Lift the saw frame to the top position after cutting.
11. Remove the cut. Now you can repeat whole progress.

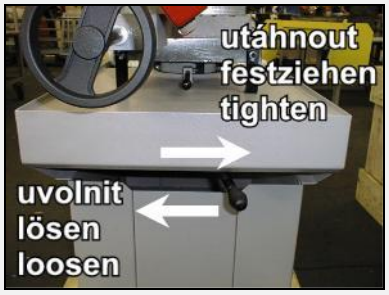
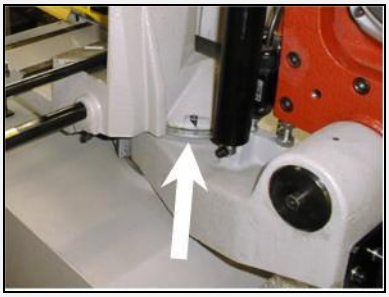
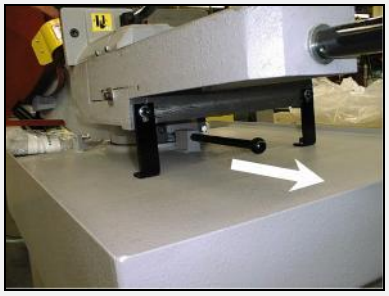
3.2.2. Cutting speed setting

Picture	Description
	• speed **40 m.min^{-1}** – turn speed switch into pos. no. **1** • speed **80 m.min^{-1}** – turn speed switch into pos. no. **2**

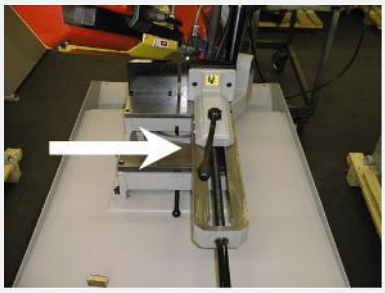
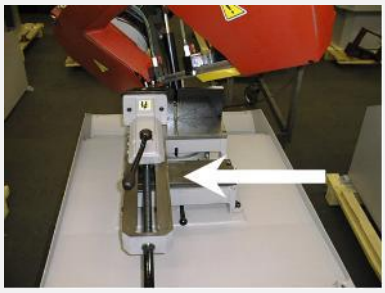
3.2.3. Angular cut setting

The band saw **Ergonomic 275.230 DG** alollows angular cuts at angles from **-45°** to **60°**. There are limit stops on the saw for easy setting of extreme positions of **-45° – 0, 45° – 60°**.



Picture	Description
	1. Lift the saw arm 2. Release the securing lever of the console.
	3. Set the desired cutting angle according to scale on the turning console.
	4. If you want to set the cut angle bigger then 45° or smaller then 0°, pull out the stop pin. 5. Tighten the securing lever of the console.

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

angle < 0°	angle ≥ 0°
	

6. 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°.

3.2.4. 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. Tighten the lever of the guiding listel after leading adjusting.

3.2.5. Setting the speed of the arm sinking to the cut

Set the desired speed of the arm sinking to the cut by lever on the lifting cylinder. Arm sinking is stopped by adjusting valve closing.

3.3. Material insertion

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

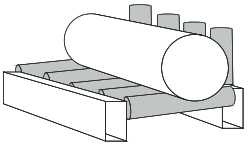
3.3.1. Handling agent selection

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

3.3.2. Insertion

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

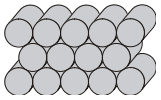
Make sure the conveyor is long enough and the material cannot tip off the conveyor.



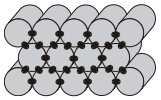
Be especially careful with round materials that it always stays on two vertical rollers and that it cannot fall off the conveyor!

3.3.3. Bundle material cutting

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



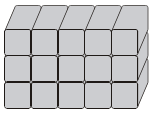
Round material bundle: Take care especially with round material that the bars are put according to the picture. If the bars are put differently, you may have problems with movement.



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

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

Square material bundle:



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

4. Údržba stroje / Wartung / Machine service

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

4.1. Saw band dismantling

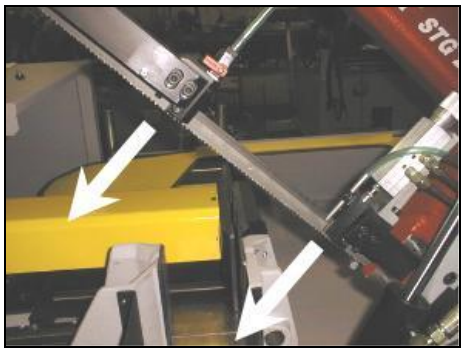
1. Lift the saw frame to the top position. Stop the saw frame in top position by control valve.

2. Dismantle 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.

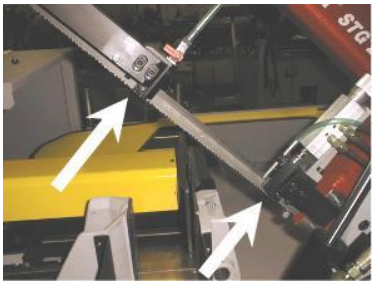
5. Turn by stretching star to the left side, release saw band stretching and pull saw band from blade wheels.



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

4.2. Saw band installation

1. Prior to installation, clean all track wheels, guide cubes and inner side of the arm thoroughly of all traces of chips and dirt. ***Keep in mind the teeth direction when installing the saw band.***



2. Insert new saw band in the guide cubes. Make sure the saw band runs between both guide rollers and it is pushed all the way to the top.

3. Put the saw band on both guide wheels. Make sure that the saw band ridge fits tightly to the wheel rim. Then push the saw band as far back as possible.

4. 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.

4.3. Saw band stretching and inspection

Right saw band stretching is one of the most important criteria's, which influents accuracy and saw band service life. Stretch the saw bands according to the selected saw band and the band saw. Keep the recommendation of your manufacturer.

4.3.1. Saw band stretching

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.

4.3.2. Saw band run inspection

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

- **The saw band falls from the wheels** – The saw band and protective cover can be damaged.
- **The saw band runs on the wheel rim** – The saw band and wheel rim can be damaged

Process control:

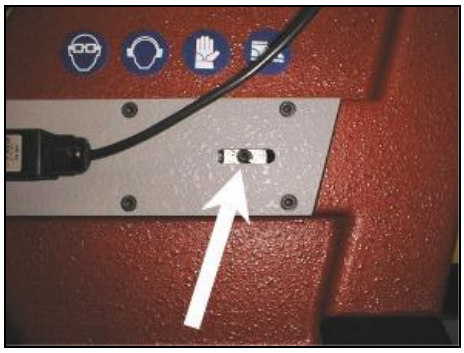
1. Start and stop saw band drive.
2. Stop the main switch!
3. Open rear cover of the saw frame.

4. Check saw band placing on the wheels.

- If the distance of the rear part of the saw band from wheel rim is 1 mm, setting is right.
- If the distance is bigger than 1 mm, or the saw band runs on the wheel rim, saw band run must be set.

4.3.3. 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 mm**.

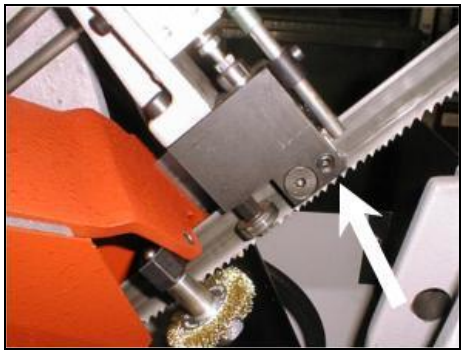


- Turn by screw to the right, the saw band approximates to the stretching wheel rim.
- Turn by screw to the left, the saw band departs from the stretching wheel rim.

4.4. Adjustment

4.4.1. Hard metal guides adjustment

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



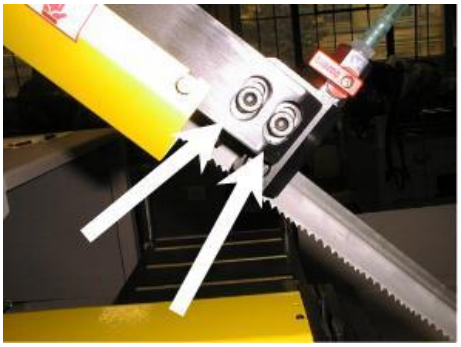
1. Tighten the stop screw on the rear side of guide cube so that the band cannot move.
2. Release the stop screw and at the same time grip the saw band by hand and check if the hard metal guide does not put up to much resistance against the movement of the band. As soon as it is possible to move the band without resistance, the hard metal guides are adjusted.
3. Be sure that the hard metal guides do not put up to much resistance otherwise the lifetime of the saw band and drive decreases.

4.4.2. Guide cubes 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.



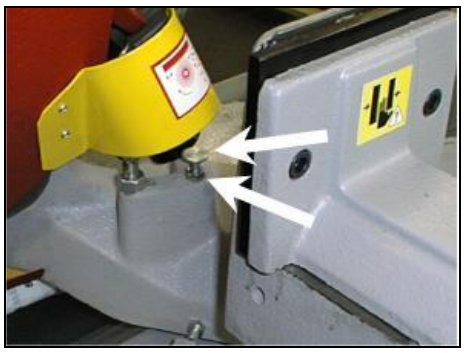
2. Fasten both tightening screws again.

4.4.3. Adjustment of the limit switch of saw frame lower stop point

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.

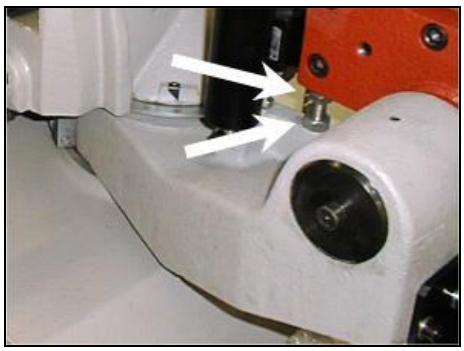
Limit switch setting



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.

4.4.4. Saw frame lower position stop adjustment

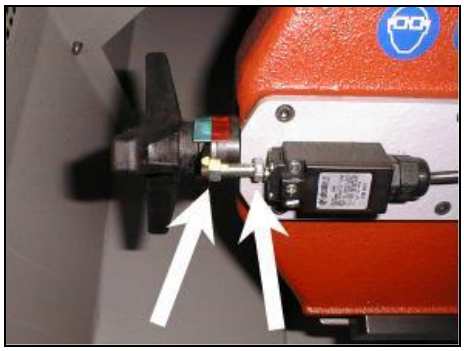
The lower stop limits the lowest position of the saw frame. This stop point has to be checked at least once a month. If the lower stop point is wrongly adjusted, the cutting table can be deeply cut or the material will not be cut completely.



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

4.4.5. Limit switch setting of the saw band stretching

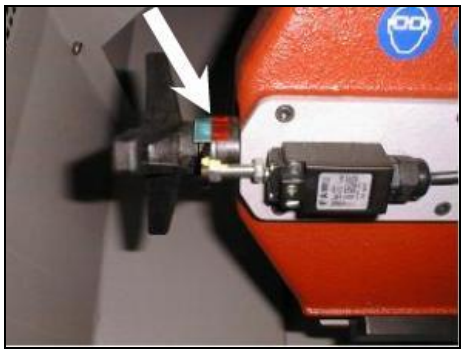
After the saw band is replaced, the limit switch setting must be checked out. If the limit switch is not set correctly, the band is stretch too much or it is to loose.



1. Stretch the saw band by means of TENZOMAT on the optimal value.
2. Release the nut on the stop screw.
3. Start the driving engine. Two scenarios can occur:

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

   b) If the engine runs turn the screw to the right until it stops to run, then turn the screw shortly to the left until the engine starts to run again.



4. Secure the stop screw with nut and check the switch setting once more.

ATTENTION!

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

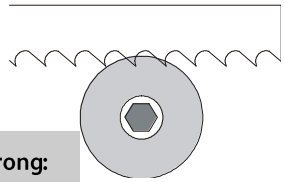
4.4.6. Brush adjustment

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

1. Release screws on the brush holder
2. Get the brush closer tot he 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.



4.5. Cooling agents and chips disposal

The quality of the cooling agent will deteriorate due to:	If the solution is too weak:	If the solution is too strong:
• use of contaminated water • impurity • outside oil contamination (hydraulics, gears) • high operating temperatures • lack of air circulation • wrong concentration	• corrosion protection is diminished • lubrication decreases • microbial attack is more likely	• the cooling ability is decreased • foam behaviour increases • emulsions stability deteriorates • sticky residue develops

4.5.1. Coolant device inspection

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

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

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

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

Testing	Interval	Method	Condition	Precaution
Liquid level	daily	visually	too low	after concentration check, refill with water or emulsion
Concentration	daily	refractometer densimeter	too high too low	refill water refill base emulsion
Smell	daily	by sense of smell	unpleasant smell	good ventilation, add biocides or renew coolant
Contamination	daily	by sense of smell	visible oil leaks, sludge fungi	surface cleaning, fix leaks, add biocides or fungicides, or coolant renewal after added system cleanser*

Testing	Interval	Method	Condition	Precaution
Corrosion-protection	when necessary	visually chip test Herbert-test	insufficient corrosion protection	test stability, if necessary – increase concentration or pH value
Stability	when necessary	refractometer	oiling	add concentrate, enquiries to supplier
Foam reaction	when necessary	shaking test	too much foam, foam disperses too slowly	avoid aeration, increase water hardness, ix with defoamer

* according to manufacturers' instructions

4.5.2. Chips disposal

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

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

4.6. Greases and oils

4.6.1. Gearbox oils

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

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

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

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

Band saw	Gearbox oil	Capacity
Ergonomic 275.230 DG	Paramo PP7	2,0 l
Swarf conveyer	Shell Tivela S 320	0,075 l

Comparative table of the gearbox oils

Manufacturer	Viscosity grade		
	ISO VG 100	ISO VG 220	ISO VG 320
BP	Energol GR-XP 100	Energol GR-XP 220	Energol GR-XP 320
Castrol	Alpha SP 100 Alpha MW 100	Alpha SP 220 Alpha MW 220	
Elf	Reductelf SP 100	Reductelf SP 220 Reductelf Synthese 220	Reductelf SP 320
Esso	Spartan EP 100	Spartan EP 220	Spartan EP 320
Mobil	Mobilgear 627	Mobilgear SHC 220 Mobilgear 630	Mobilgear 632
ÖMV		PG 220	
Paramo	PP 7	Paramo CLP 220	Paramo CLP 320
Shell	Shell Omala 100	Shell Omala 220 Shell Tivela S 220	Shell Omala 320 Shell Tivela S 320

Total	Carter EP 100	Carter EP 220	Carter EP 320

4.6.2. Lubricant greases

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

Comparative table of the lubricant greases:

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

4.7. Machine cleaning

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

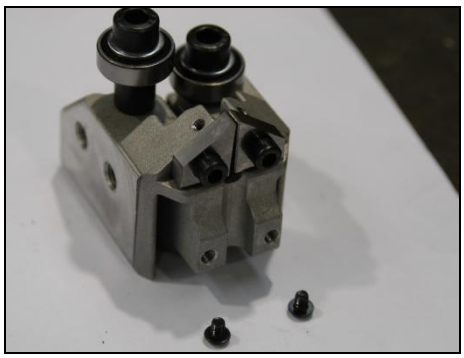
- Clamping jaws guiding of the vice.
- The guiding of the feeder.
- Loading surface of the vice.

4.8. Worn pieces replacement

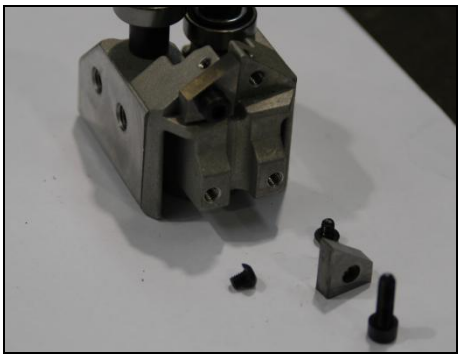
4.8.1. Replacement of Guides with Hard Metals

The hard metal guides have to be replaced where they cannot be adjusted.

1. Disconnect the cooling liquid supply tubing, dismantle the saw band and saw band-guiding cube.
2. Clamp the guiding cube in a bench vice.



3. Loosen the fastening worms with Allen wrench.



4. Unscrew the front screw that secures the hard metal guides.
5. Insert the new hard metal guides, screw them in firm and attach the guiding cube to the guide bar.
6. Install the saw band, set the hard metal guides and guiding cube.

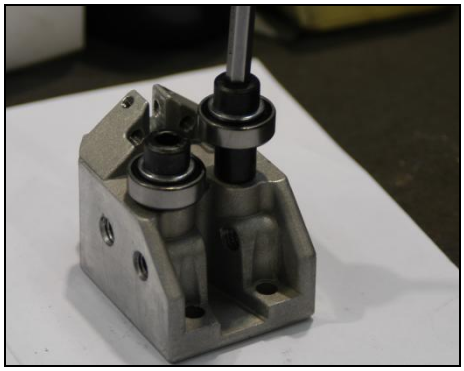
Caution!
The vice must have aluminum jaws or an aluminum fixture must be inserted in the vice, to protect the pin from damages upon clamping.

4.8.2. Replacement of saw band guiding pulleys

If the saw band is not properly guided by the pulleys any more or if the pulley already shows visible traces of wear, they must be replaced.

CAUTION! Guide pulleys must be replaced on both guide cubes at the same time!

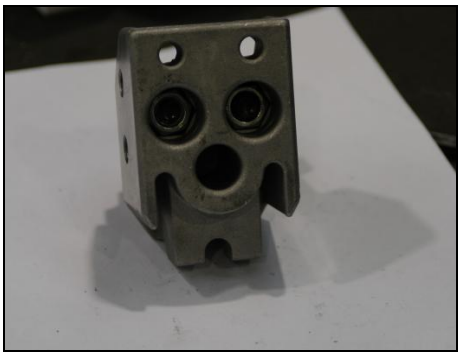
1. Disconnect the cooling liquid supply tubing, dismantle the saw band and saw band-guiding cube.



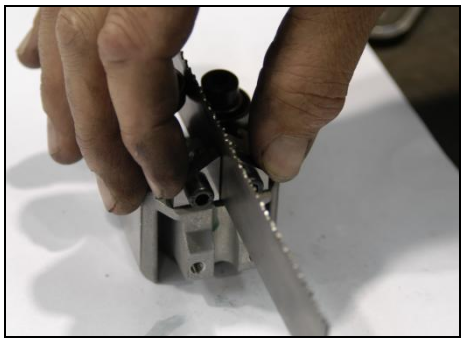
2. Clamp the guiding cube in a bench vice and remove both eccentric piece fastening screws.

3. Remove both guide pulleys from eccentric pieces.

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

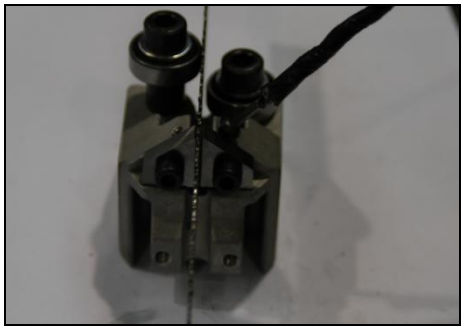


4. Mount new guide pulleys onto eccentric piece and screw both eccentric pieces back in the guiding cube.

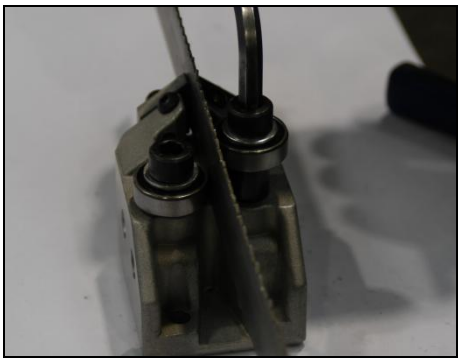


Optimum spacing between the saw band and guide pulley is 0.05 mm.

5. Insert test piece of the saw band (some 15–20 cm of it) into the guiding cube and set the eccentric pieces to a position that will allow the band to run in the middle of the groove. The groove is between the eccentric pieces fasteners. Guiding pulleys must not strongly press against the saw band, but must freely rotate.



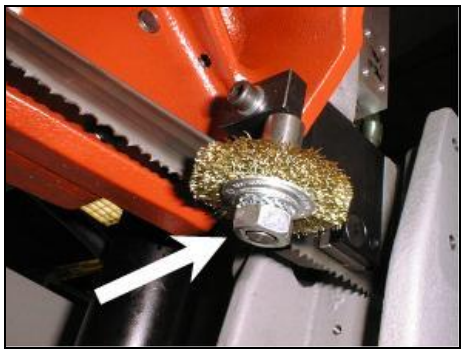
6. Adjust also the hard metal guides to allow free passage of saw band between them with adequate play. Tighten the front screw of hard metal guides, then tighten the safety worms.



7. Now, the screws of both band-guiding pulleys must be tightened.
8. **Install the guiding cube onto the guide bar**. Install the saw band and adjust the guiding cubes.

4.8.3. Round brush replacement

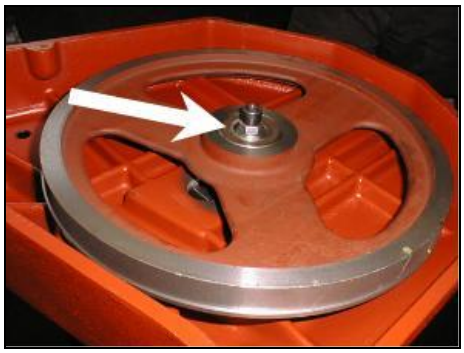
If the chip removing brush is so worn, that it does not fulfil its function, the brush must be replaced.



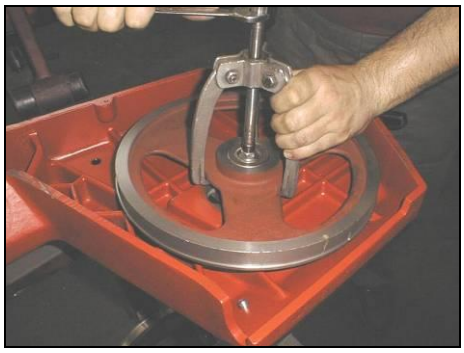
1. Release the nut of the brush, exchange old brush to new brush and screw on the nut of the brush.
2. Set the brush to the saw band.

4.8.4. 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.

4.8.5. Driving wheel replacement

1. Dismantle the saw band.

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

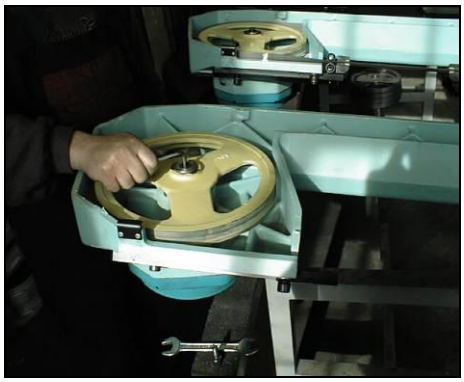
Manual version: 1.04 / Feb. 2013
Manual rev.: 1

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.

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

5. Závady / Störungen / Troubleshooting

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

5.1. Mechanical problems

Problem		Possible causes	Repair
1. **Slanting cut**	-	Wrongly adjusted hard metal guides.	Set according to the chapter „Servicing and adjustment“
	-	Worn hard metal guides.	Replace to the chapter „Worn pieces replacement“
	-	Wrongly adjusted cubes of the saw band guiding.	Set according to the chapter „Servicing and adjustment“
	-	Worn bearings of the saw band guiding.	Replace according to the chapter „Worn pieces replacement“
	-	Wrongly adjusted swarf brush.	Set according to the chapter „Servicing and adjustment“
	-	Worn swarf brush.	Replace according to the chapter „Worn pieces replacement“
	-	Insufficient saw band stretching.	Rise the saw band stretching and set the limit switch.
	-	Wrongly chosen tooth system of the saw band.	Replace the saw band and keep the instructions of manufacturer on new saw band choice.
	-	Worn saw band.	Replace the saw band.
	-	Wrongly balanced roller conveyor.	Set the roller conveyor.
	-	Dirty feeding board.	Cleanse the feeding board from debris, chip and residue material.
	-	Guiding arm and guiding cube are loosened.	Clamp the guiding arm.
	-	Guiding arm and cube are too far from the material.	Set the guiding cube to the material.
	-	Too fast cutting rate.	Lower the material feeding speed.
	-	Unexpected oscillation in material quality.	Set the cut and feeding speed to the relevant material.
2. **The cut is not cut upon desired angle**	-	Securing lever is loosened.	Check the securing lever efficiency and carry out its adjustment according to chapter „Servicing and adjustment“.
	-	Set angle does not match the cut angle.	Check the angle adjustment with a protractor and possibly set it according to chapter „Servicing and adjustment“.
	-	Insufficient saw band stretching.	Stretch the saw band and set the limit switch according to chapter „Servicing and adjustment“.
	-	Guiding arm and guiding cube are loosened.	Fasten the guiding arm and the cube.
	-	Dirt between material and clamping jaw.	Cleanse the material and mating jaw.
3. **Short lifetime of the saw band**	-	Insufficient saw band stretching.	Raise the tightening of the saw band set the scanner of saw band tightening according to chapter „Servicing and adjustment“.
	-	Worn swarf brush.	Check the swarf brush condition and replace it in case of excessive use as described in chapter „Worn pieces replacement“
	-	Wrongly adjusted swarf brush.	Check swarf brush adjustment, set it according to chapter „Servicing and adjustment“
	-	Over stretched saw band	Lower stretching of the saw band and set the limit switch of the saw band stretching according to chapter „Servicing and adjustment“
	-	Wrongly adjusted hard metal guides.	Check the adjustment of the hard metal guides and carry out adjustment as described in chapter „Servicing and adjustment“

	-	Worn hard metal guides of the saw band.	Check the condition of the hard metal guide and if it is too worn, replace hard metal guides according to chapter „Worn pieces replacement“
	-	Worn saw band guide bearings.	Check guiding bearings and if you notice some sort of excessive damage, replace them according to chapter„Worn pieces replacement“
	-	Wrongly adjusted guiding cubes of the saw band.	Set guiding cube according to chapter „Servicing and adjustment“
	-	Wrongly adjusted down feed and saw band speed.	Adjust the feeding and speed of a saw band according to values published by saw band manufacturer.
	-	Different material quality.	Adjust feeding and speed of a saw band according to desired material (try cut-test).
	-	Low-class saw band	Replace the saw band (contact your local accessory supplier for more information)
	-	Wrongly chosen saw band tooth system.	Replace the saw band and keep instructions of the manufacturer on the choice.
	-	Wrongly adjusted tracking.	Check the space between top of a saw band and driving wheel. Perhaps adjust the tracking as described in chapter „Servicing and adjustment“
4. **Insufficient cut output.**	-	Worn saw band.	Replace the saw band and keep instructions of the manufacturer on the choice.
	-	Wrong saw band tooth system.	Replace the saw band and keep instructions of the manufacturer on the choice.
	-	Wrongly set down feed and speed of a saw band.	Set feed and speed of a saw band according to values published by saw band manufacturer.
5. **The cut is not finished.**		Wrongly adjusted lower stop point of the saw frame.	Check lower limit switch and screw.
		Stop point surface is messed-up.	Cleanse stop point surface of the limit switch from debris and residue material.
6. **The saw bands are cracked**		In stretching wheel is wrong adjusting geometry.	Adjust distance band from recess wheel c.2 mm according to operating instructions.
		Hard metal plates of circuit saw band are not adjusting.	Hard metal plates of circuit saw band must be adjusting according to operating instructions.
		Guiding cubes are not adjusting (bearings + hard metal circuit)	Guiding cubes must be adjusting (bearings + hard metal circuit) according to operating instructions.
		Bearings of guiding cubes are used (rolling elements are damaged or outside ring of bearing has conical form).	Bearings of guiding cubes must be replaced. Bearings must be adjusting according to operating instructions.
7. **Damage tooth system of the saw band**	-	In gripping the lifting cylinder is backlash.	
	-	Squeezed pin upper or downer holder of the lifting cylinder.	Exchange complete upper or downer holder of lifting cylinder.
8. **The saw is cut downing.**	-	Geometry of hardmetal guiding cubes is wrong adjusted.	Hardmetal guiding cubes must be adjusted.
	-	Bearings of guiding cubes are used.	Bearings of guiding cubes must be replaced.

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

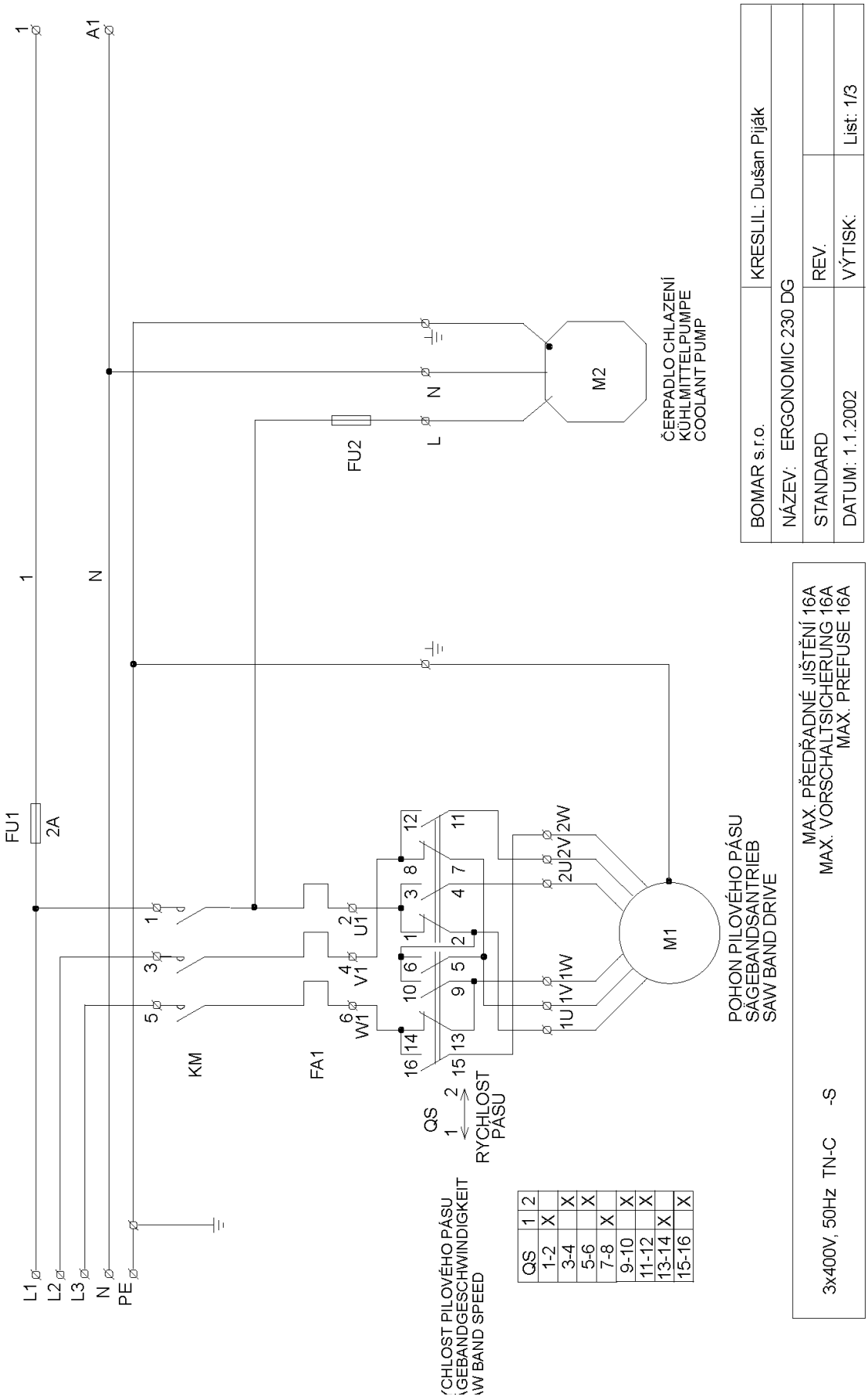
5.2. Electric problems

Problem		Possible causes	Repair
1. **Machine is not possible start.**	-	In socket is not voltage	Line voltage must be checked.
	-	Transfer relay is closed (thermal protector)	Each FA relay must be checked.
2. **When cut is finished, the frame is not raising.**	-	Bottom limit switch is adjusted wrong.	Bottom limit switch must be adjusted according to chapter ADJUSTING.
3. **Electric motor and pump are without voltage. Between contactor and thermal protector is not voltage.**	-	Wrong contactor.	Replace contactor of engine.
4. **Cooling is not active**		Lack of cooling agent.	Fill the tank with cooling agent.

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

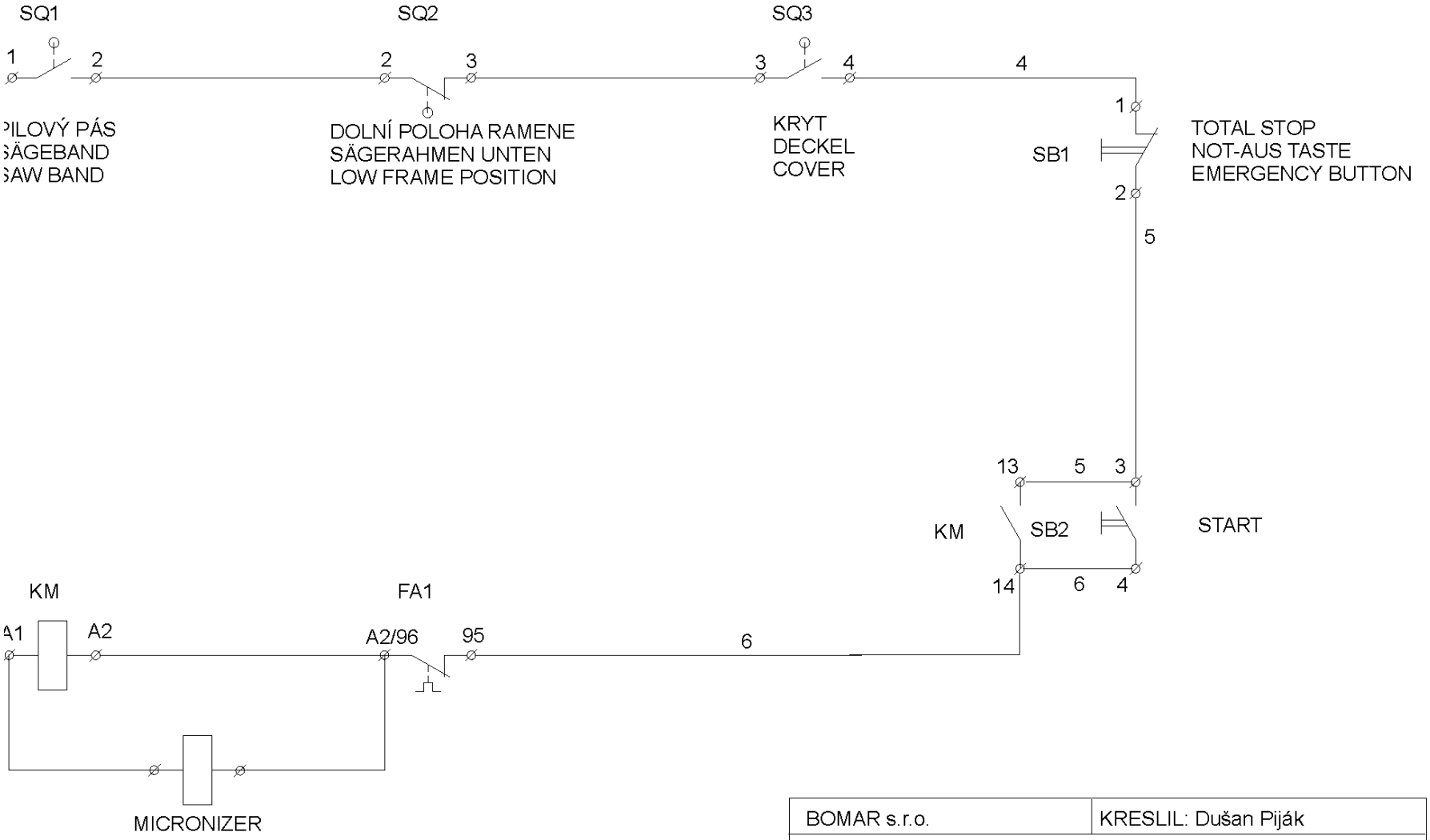
6. Schémata / Schemas / Schematics

6.1. Elektrické schema / Elektroschema / Wiring diagrams



QS	1	2
1-2	X	
3-4		X
5-6		X
7-8	X	
9-10		X
11-12		X
13-14	X	
15-16		X

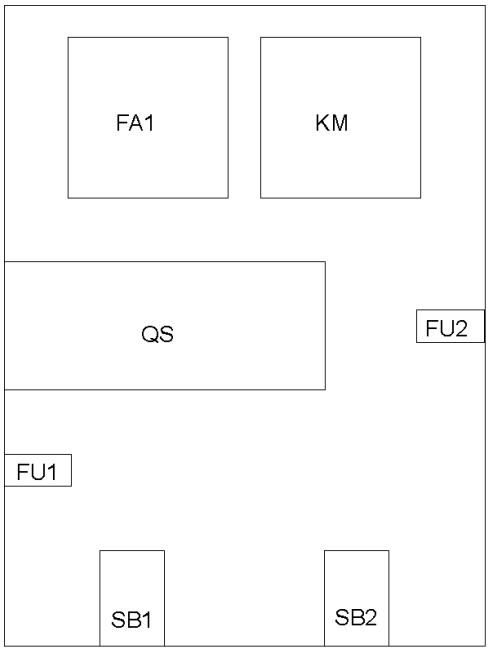
Manual version: 1.04 / Feb. 2013
Manual rev.: 1

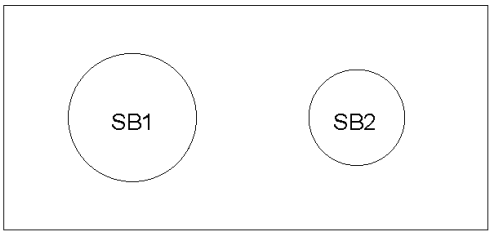


BOMAR s.r.o.	KRESLIL: Dušan Piják	
NÁZEV: ERGONOMIC 230 DG		
STANDARD	REV.	
DATUM: 1.1.2002	VÝTISK:	List: 2/3

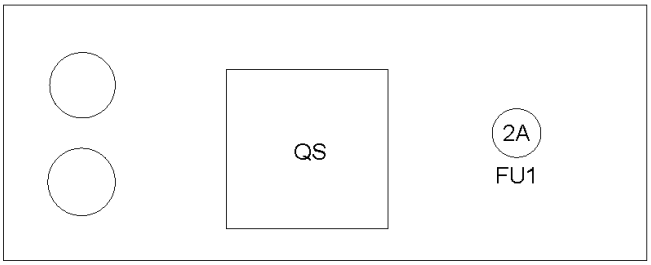
Schémata
Schemas
Schematics

KRABICE
BUCHSE
BOX





OVLÁDACÍ PANEL
BEDIENPULT
CONTROL PANEL

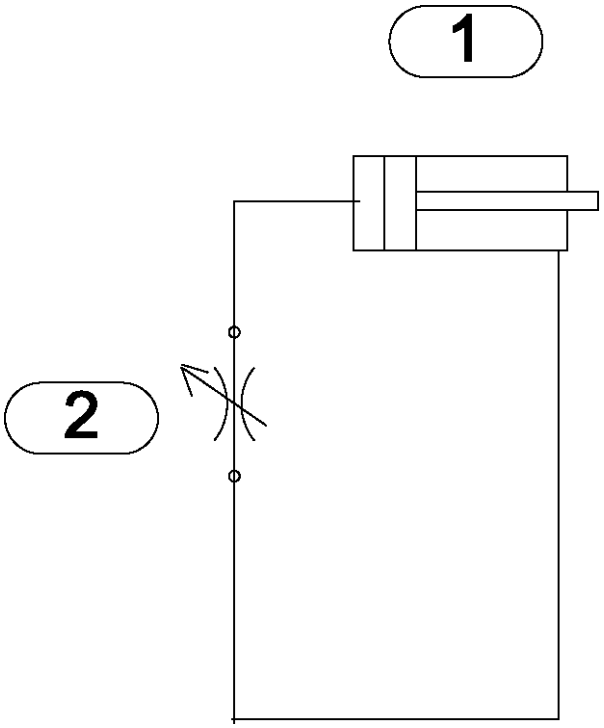


BOMAR s.r.o.	KRESLIL: Dušan Piják	
NÁZEV: ERGONOMIC 230 DG		
STANDARD	REV.	
DATUM: 1.1.2002	VÝTISK:	List: 3/3

6.1.1. Kusovník elektrosoučástí / Stückliste der Elektroteilen / Piece list of elektroparts

Objednací číslo	Název položky		Ozn.	ks
Bestell - Nr.	Bezeichnung		Sign.	Menge
Reference No.	Item		Sign.	Pcs.
91.001.007	Elektromotor / Elektromotor / Electromotor	TM90 2/4 B5	M1	1
91.020.014	Čerpadlo chlazení / Kühlmittelpumpe / Coolant pump	SAP-ES/3	M2	1
91.040.001	Stykač / Schaltschütz / Contactor	9A 230V	KM	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
91.060.014	Hlavice zelená / Kopf grün / Green jugulum	ZB5AA3	SB2	1
91.061.007	Kontakt spín.+adapt. / Schaltkontakt / Contact switch. + adapt.	ZB5AZ101	SB2	1
91.171.013	Spínač vačkový / Schalter / Cam switch	S10-60169	QS	1
91.173.012	Spínač konc.-zámek / Endschalter / Limit switch - lock	ELF	SQ3	1
91.173.007	Spínač koncový / Endschalter / Limit switch	Pizzato	SQ1,2	2
91.230.001	Pojistka / Röhrensicherung / Fuse	2A	FU1/2	2
91.240.002	Držák pojistky panel / Sicherungshalter / Holder panel fuse	PTF 30	FU1/2	2
91.190.002	Krabice elektro / Buchse / Cross			1

6.2. Hydraulické schéma / Hydraulikschema / Hydraulic diagram



Poz.	Název položky			ks
Pos.	Bezeichnung			Menge
Pos.	Item			Pcs.
1	251.056	Hydraulický válec / Hydraulikzylinder / Hydraulic cylinder		1
2	92.152.002	Regulační ventil / Regelventil / Regulation valve HYTOS		1

Manual version: 1.04 / Feb. 2013
Manual rev.: 1

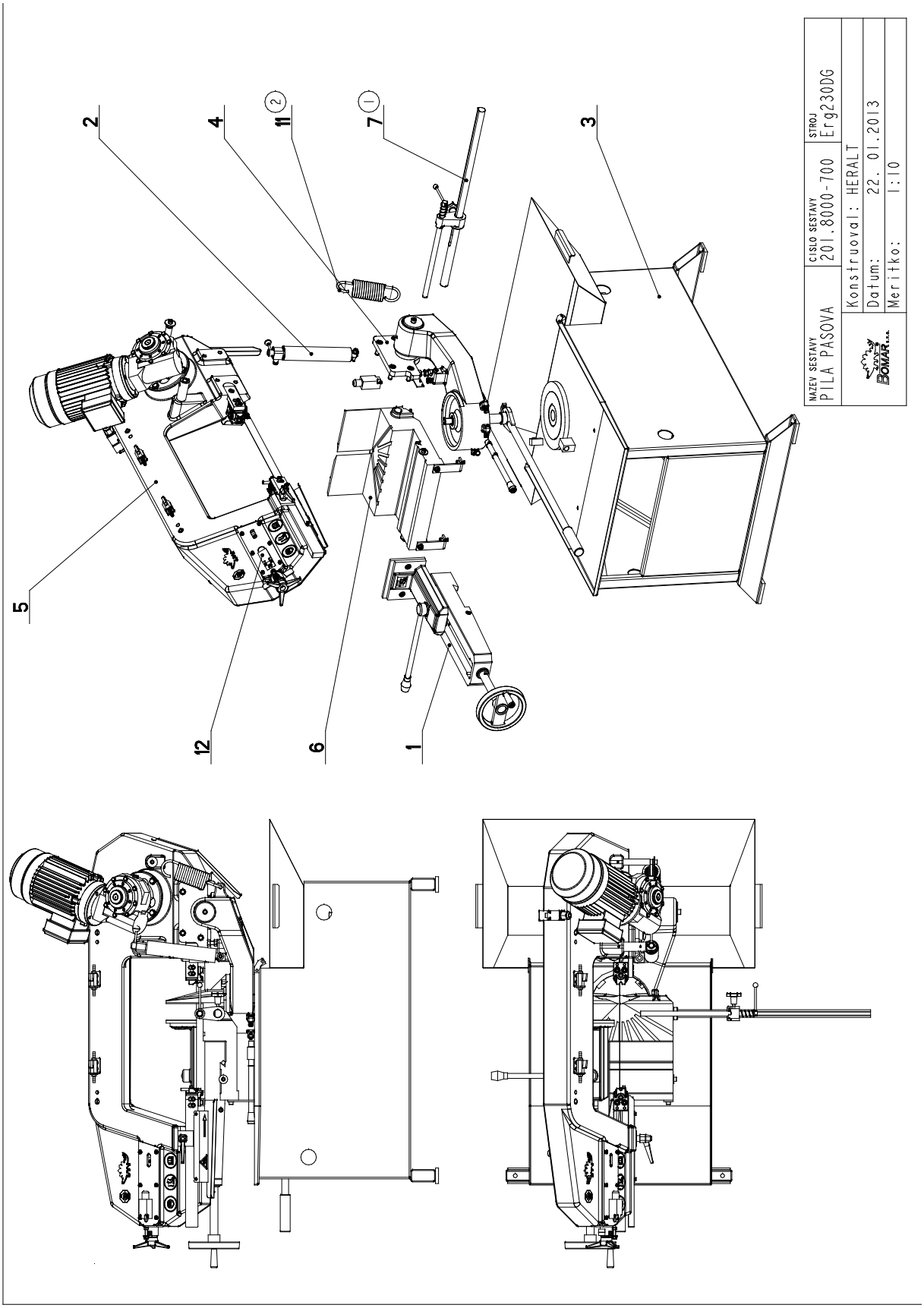
7. Výkresy sestav pro objednání náhradních dílů/ Zeichnungen für Bestellung der Ersatzteile / Drawing assemblies for spare parts order

- Při objednávání náhradních dílů vždy uvádějte: typ stroje (např. practix Ergonomic 275.230 DG) , výrobní číslo (např. 125) a rok výroby (např. 1999).

- In die Bestellung der Ersatzteile führen Sie immer an: Maschinentyp (z. B. Ergonomic 275.230 DG), Serien Nr. (z. B. 125) und Baujahr (z. B. 1999).

- For spare parts order, you must always to allege: type of machine (for example Ergonomic 275.230 DG), serial number (for example 125, see cover page) and year of construction (for example 1999).

7.1. Ergonomic 275.230 DG - 1



Manual version: 1.04 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.8000-700	2	PILA PASOVA/BAND SAW/BANDSÄGE

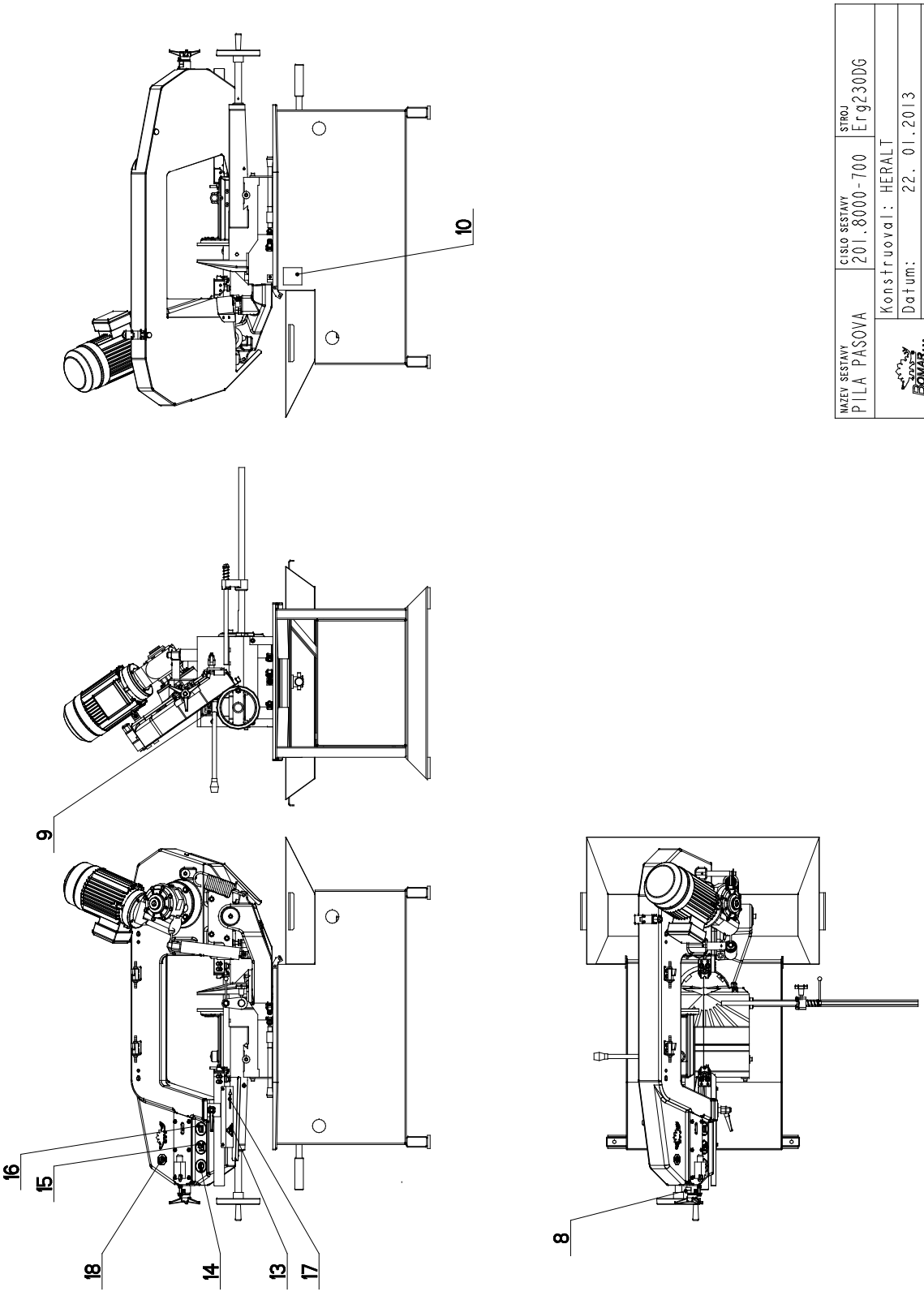
Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.1003-200	2	SVERAK / VICE / SCHRAUBSTOCK		1
2	201.3907-100	0	VALEC / ROLLER / ZYLINDER		1
3	201.8001-500	0	PODSTAVEC / BASE / UNTERSATZ		1
4	201.8002-400	2	KONZOLA OTOCNA / TURNABLE CONSOL / DREHKONSOLE		1
5	201.8004-400	3	RAMENO / SHOULDER / SÄGERAHMEN		1
6	201.8009-000	2	PODSTAVEC SVERAKU / VICE BASE / SCHRAUBSTOCKUNTERSATZ		1
7	221.8003-100 (1)	0	DORAZ / STOP PIECE / ANSCHLAG		1
8	31.0508-005	0	STITEK / LABEL / SCHILD	P 0.8-25	1
9	31.0599-005	0	SAMOLEPKA / STICKER / AUFKLEBER		1
10	31.0599-102	2	STITEK / LABEL / SCHILD	P 0,5 - 65	1
11	31.LM04-006 (2)	0	PRUZINA / SPRING / FEDER	d 7.1	1
12	91.173.007	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	-RIWK	2
13	99.900.040	0	SAMOLEPKA / STICKER / AUFKLEBER		1
14	99.900.047	0	SAMOLEPKA / STICKER / AUFKLEBER		1
15	99.900.048	0	SAMOLEPKA / STICKER / AUFKLEBER		1
16	99.900.049	0	SAMOLEPKA / STICKER / AUFKLEBER		1
17	99.900.053	0	SAMOLEPKA / STICKER / AUFKLEBER		1
18	99.901.032	0	SAMOLEPKA / STICKER / AUFKLEBER	CETIFIKACNI SAMOLEPKA	1

1.ZRUS.DORAZ 201.1003-100 A NAHR.221.8003-100. 275/ZM346 11.1.2013 SLEZACKOVA

2.ZRUS.PRUZINA 31.0502-719 A NAHR.31.LM04-006. 010/ZM008 22.1.2013 SLEZACKOVA

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

7.3. Ergonomic 275.230 DG – 2



Cislo Sestavy	Ver.	Nazev sestavy
201.8000-700	2	PILA PASOVA/BAND SAW/BANDSÄGE

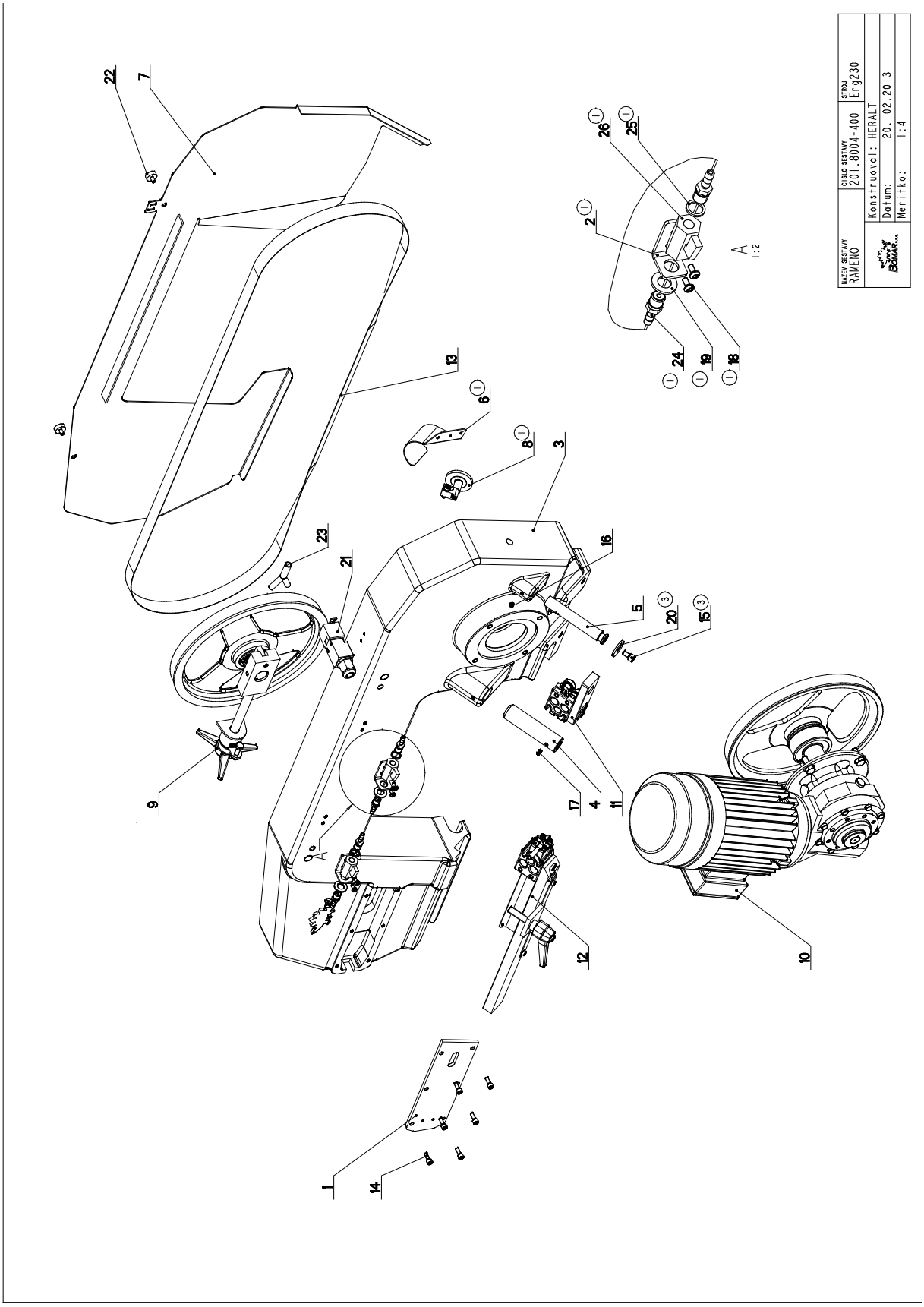
Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	201.1003-200	2	SVERAK / VICE / SCHRAUBSTOCK		1
2	201.3907-100	0	VALEC / ROLLER / ZYLINDER		1
3	201.8001-500	0	PODSTAVEC / BASE / UNTERSATZ		1
4	201.8002-400	2	KONZOLA OTOCNA / TURNABLE CONSOL / DREHKONSOLE		1
5	201.8004-400	3	RAMENO / SHOULDER / SÄGERAHMEN		1
6	201.8009-000	2	PODSTAVEC SVERAKU / VICE BASE / SCHRAUBSTOCKUNTERSATZ		1
7	221.8003-100 (1)	0	DORAZ / STOP PIECE / ANSCHLAG		1
8	31.0508-005	0	STITEK / LABEL / SCHILD	P 0.8-25	1
9	31.0599-005	0	SAMOLEPKA / STICKER / AUFKLEBER		1
10	31.0599-102	2	STITEK / LABEL / SCHILD	P 0,5 - 65	1
11	31.LM04-006 (2)	0	PRUZINA / SPRING / FEDER	d 7.1	1
12	91.173.007	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER	-RIWK	2
13	99.900.040	0	SAMOLEPKA / STICKER / AUFKLEBER		1
14	99.900.047	0	SAMOLEPKA / STICKER / AUFKLEBER		1
15	99.900.048	0	SAMOLEPKA / STICKER / AUFKLEBER		1
16	99.900.049	0	SAMOLEPKA / STICKER / AUFKLEBER		1
17	99.900.053	0	SAMOLEPKA / STICKER / AUFKLEBER		1
18	99.901.032	0	SAMOLEPKA / STICKER / AUFKLEBER	CETIFIKACNI SAMOLEPKA	1

1.ZRUS.DORAZ 201.1003-100 A NAHR.221.8003-100. 275/ZM346 11.1.2013 SLEZACKOVA

2.ZRUS.PRUZINA 31.0502-719 A NAHR.31.LM04-006. 010/ZM008 22.1.2013 SLEZACKOVA

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

7.5. Rameno / Sägerahmen / Saw arm



Manual version: 1.04 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.8004-400	3	RAMENO/SHOULDER/SÄGERAHMEN

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0704-007	4	KRYT NAPINANI / TENSIONING COVER / BANDSPANNUNGSABDECKUNG	VYPALEK	1
2	30.1814-011 (1)	1	DRZAK / HOLDER / HALTER	P 3x76	2
3	30.8004-301	1	RAMENO / SHOULDER / SÄGERAHMEN		1
4	30.8004-401	1	CEP / LUG / BOLZEN	D 30	1
5	30.8004-405 (3)	0	TYC / /	TYC 20	1
6	30.8014-005 (1)	0	KRYT KARTACKU / BRUSH COVER / BÜRSTENABDECKUNG	P 1.5 x 60	1
7	30.8014-351	1	KRYT / COVER / ABDECKUNG		1
8	201.0704-100 (1)	0	KARTAC / BRUSH / BÜRSTE		1
9	201.8004-410	0	NAPINANI / TENSIONING / SPANNUNG		1
10	201.8004-420	1	POHON / DRIVE / ANTRIEB		1
11	201.8004-430	1	VEDENI PASU / BELT GUIDE / SÄGEBANDFÜHRUNG		1
12	201.8004-450	1	VEDENI PASU / BELT GUIDE / SÄGEBANDFÜHRUNG		1
13	44.103.003	0	PAS PILOVY / SAW BELT / SÄGEBAND	2910x25(7)x0.9	1
14	90.001.25.017	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X16	6
15	90.001.55.082	0	SROUB IMBUS ZINEK / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X14	1
16	90.004.2D.001	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M6X8	1
17	90.004.2D.002	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M6X12	1
18	90.013.27.003 (1)	0	SROUB / BOLT / SCHRAUBE	M5X10	4
19	90.150.50.007 (1)	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 13	2
20	90.151.50.001 (3)	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 10	1
21	91.173.012	0	SPINAC KONCOVY / END SWITCH / ENDSCHALTER		1
22	94.007.002 (1)	0	SROUB / BOLT / SCHRAUBE		2
23	94.201.003		ROZDVOJKA Y / /		1
24	94.202.002 (1)	0	REDUKCE / REDUCTION / ADAPTOR / REDUKTION	GES 6/R1/4"	4
25	96.080.001 (1)	0	TESNENI / SEALING / DICHTUNG	17.8x13.5x2	2
26	99.260.003 (1)	0	VENTIL / VALVE / VENTIL	1/4"	2

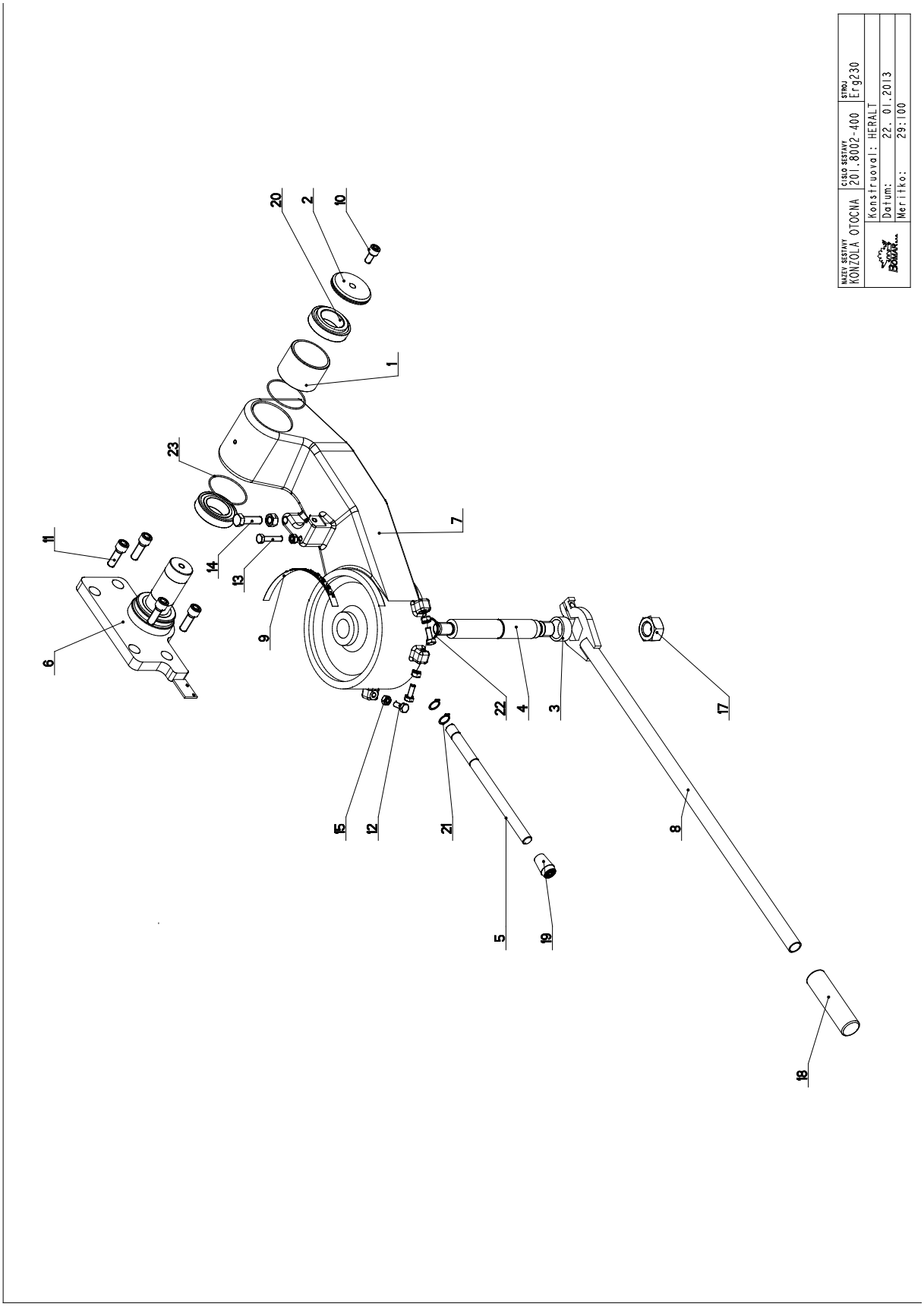
1.PRID.2xDRZAK 30.1814-011.4xSROUB M5x10 90.013.27.003,2xPODLOZKA 90.150.50.007,4xREDUKCE 94.202.002,KRYT 30.8014-005 2xVENTIL 99.260.003,2xTESNENI 96.080.001,2xSROUB PLASTOVY 94.007.002,KARTAC 201.0704-100.275/ZM350 11.12.2012 SLEZACKOVA

2.ZRUS.DRZAK 30.8004-402 A NAHR.30.0504-050,ZRUS.SROUB ZAVESNY M8 90.027.52.001,ZRUS.MATICE M8 90.100.55.005 PRID.TAHLO 30.8004-403. 010/ZM008 22.1.2013 SLEZACKOVA

3.ZRUS.TYC 30.0504-050 A NAHR.30.8004-405,ZRUS.TAHLO 30.8004-403,PRD.PODLOZKA 10 (DIN440 90.151.50 001). 046/ZM040 20.2.2013 SLEZACKOVA

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

7.7. Konzola otočná /Drehkonzole / Turnable consol



Cislo Sestavy	Ver.	Nazev sestavy
201.8002-400	2	KONZOLA OTOCNA/TURNABLE CONSOL/DREHKONSOLE

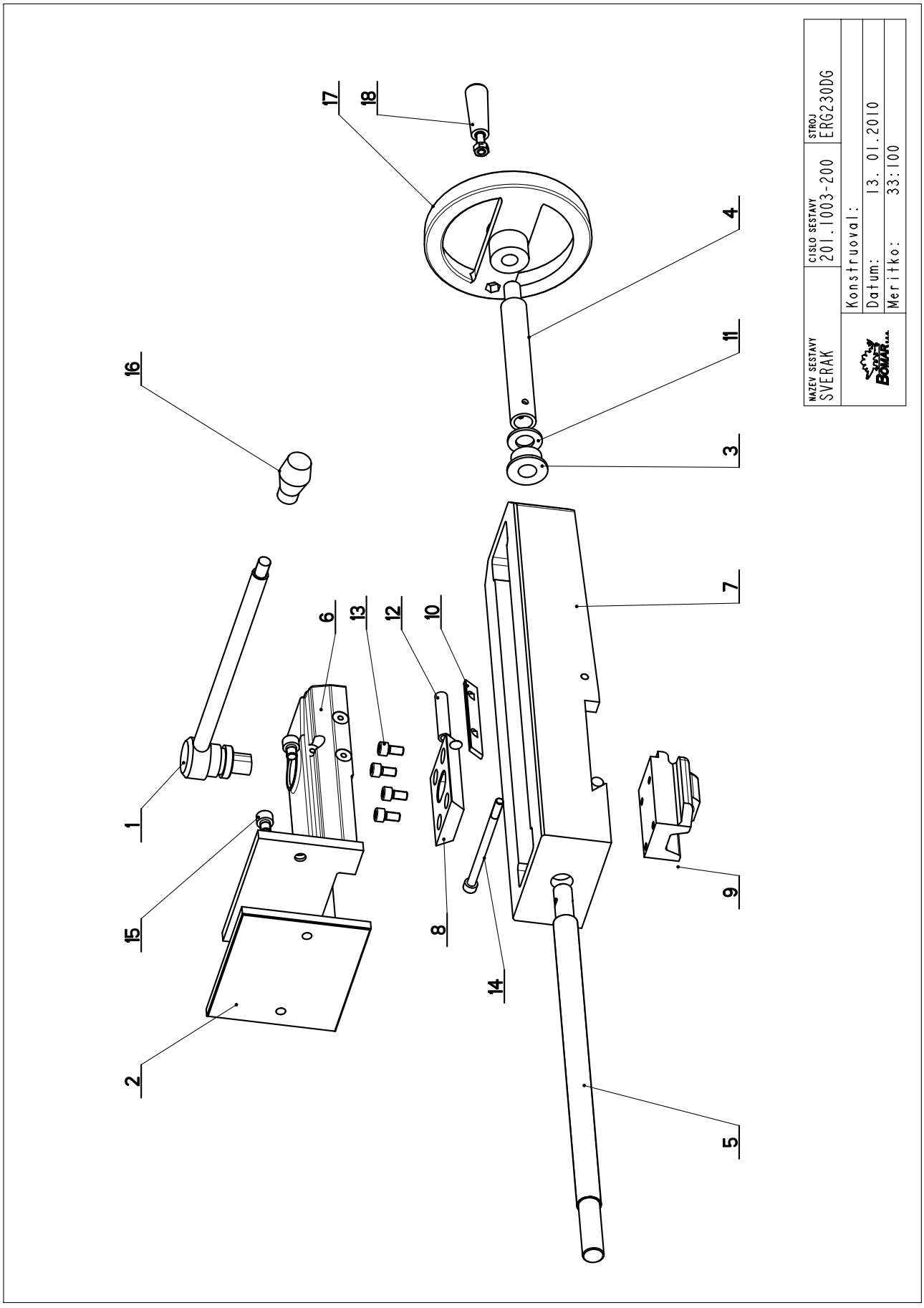
Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0702-008	0	POUZDRO / SLEEVE / BÜCHSE	TR 70x5	1
2	30.0702-012	0	VIKO / COVER / DECKEL	d 70	1
3	30.8002-311	0	TRUBKA / TUBE / ROHR	TR 38x4	1
4	30.8002-312	0	CEP / LUG / BOLZEN	D 30	1
5	30.8002-313	0	TYC / POLE / STANGE	D 16h9	1
6	30.8002-314	1	KONZOLA / CONSOLE / KONSOLE		1
7	30.8002-315	2	KONZOLA / CONSOLE / KONSOLE	ODLITEK	1
8	30.LK02-207	0	PAKA / LEVER / HEBEL	SVARENO	1
9	31.8002-009	1	MERITKO / MEASURE / SKALA	P 0.5 - 12	1
10	90.001.25.046	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X20	1
11	90.001.25.059	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M12X35	4
12	90.005.55.015	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8X20	3
13	90.005.55.019	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8X40	1
14	90.005.55.034	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M12X40	1
15	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE _ M8	4
16	90.100.55.007	0	MATICE / NUT / MUTTER	MATICE _ M12	1
17	90.100.55.010	0	MATICE / NUT / MUTTER	MATICE _ M24	1
18	94.004.502	0	RUKOJET / HANDLE / GRIFF	D22	1
19	94.102.025	0	RUKOJET / HANDLE / GRIFF	465366	1
20	95.300.002	0	LOZISKO KUZELIK / BEARING / LAGER	32008AX	2
21	95.800.007	0	SEGR HRIDEL. / OUTSIDE SAFETY RING / SICHERUNGSRING AUSSEN	POJISTNY KROUZEK 16	2
22	96.001.008	0	O-KROUZEK STATIC / STATIC O RING / O-RING STATISCH	26x2 NBR 70SH	1
23	96.001.018	0	TESNENI / SEALING / DICHTUNG		2

1.ZRUSEN DRZAK 30.8002-401 A NAHR.30.8002-402. 010/ZM008 22.1.2013 SLEZACKOVA

2.ZRUS.DRZAK 30.8002-402,SROUB M8x16(90.001.25.031),SROUB M12x85(90.005.55.068),MATICE M12(90.100.55.007) . 046/ZM040 21.2.2013 SLEZACKOVA

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

7.9. Svěrák / Schraubstock / Vice

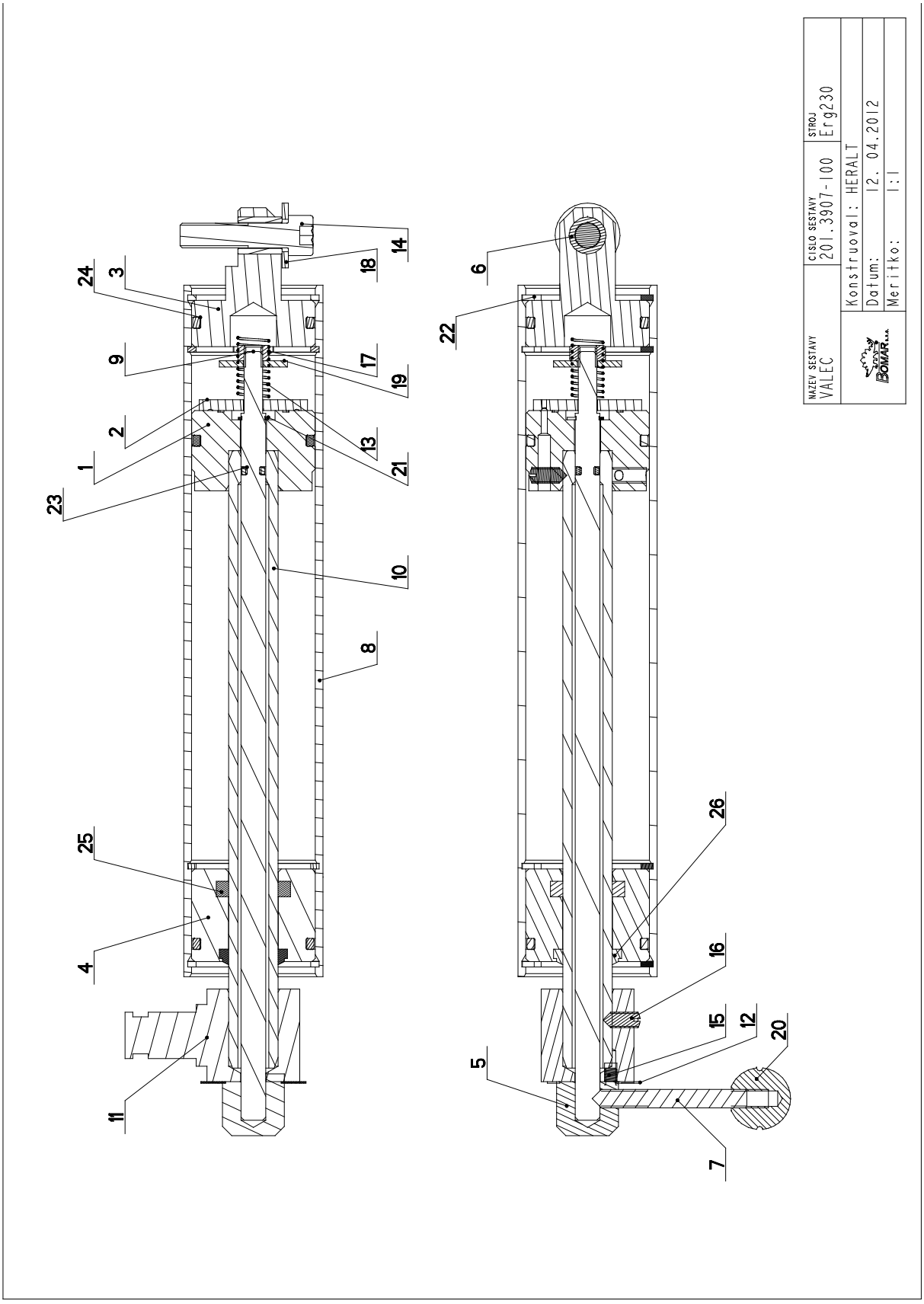


Manual version: 1.04 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.1003-200	0	SVERAK/VICE/SCHRAUBSTOCK

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	10.1003-015	1	EXCENTR / CAM / EXZENTER		1
2	30.0703-018	0	CELIST / JAW / BACKE	HR 130x10	1
3	30.1003-007	1	POUZDRO / SLEEVE / BÜCHSE	d 40	1
4	30.1003-009	1	NASTAVEC / EXTENSION / ANSATZ	TYC 25	1
5	30.1003-010	1	SROUB / BOLT / SCHRAUBE	TR24x5L	1
6	30.1003-011	3	CELIST / JAW / BACKE	ODLITEK	1
7	30.1003-012	0	TELESO SVERAKU / VICE BODY / SCHRAUBSTOCKKÖRPER	ODLITEK	1
8	30.1003-017	0	VEDENI / GUIDE / BACKENFÜHRUNG	HR 65x15	1
9	30.1003-018	2	MATICE / NUT / MUTTER		1
10	30.1003-021	0	LISTA / TRIM / LEISTE	HR 20x5	1
11	30.1003-022	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE		1
12	31.1003-016	0	PRUZINA / SPRING / FEDER	12x2.24x56x16	1
13	90.001.25.031	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x16	4
14	90.001.25.042	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X120	1
15	90.001.25.043	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M10X12	2
16	94.002.001	0	HLAVICE / HEAD / KOPF		1
17	94.010.001	0	KOLECKO / WHEEL / ROLLE		1
18	94.010.002	0	RUKOJET / HANDLE / GRIFF		1

7.11. Válec / Zylinder / Roller



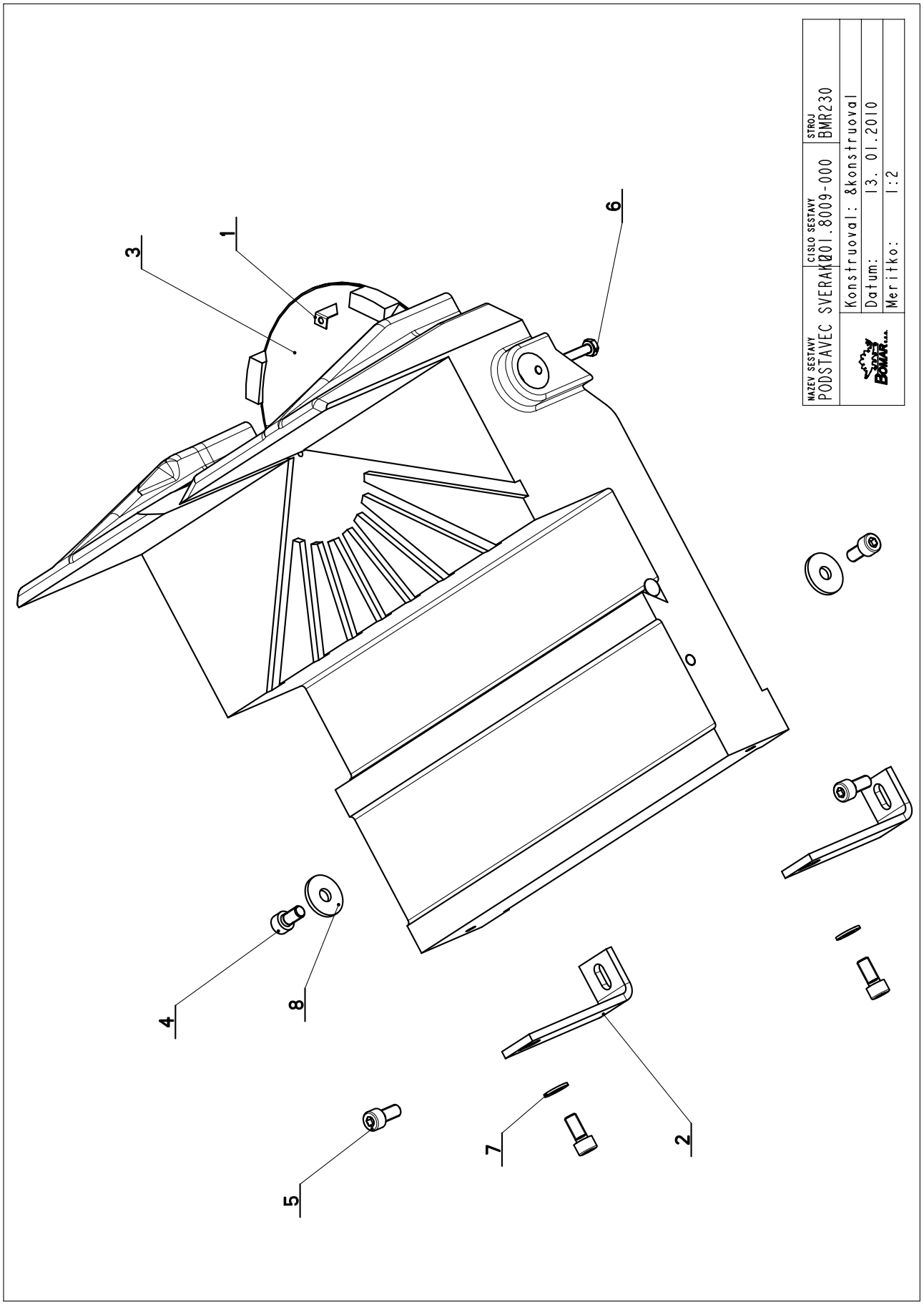
Manual version: 1.04 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.3907-100	0	VALEC/ROLLER/ZYLINDER

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0707-001	0	PIST / PISTON / KOLBEN	d 45	1
2	30.0707-004	0	KLAPKA / PULLEY / VENTILKLAPPE	d 35	1
3	30.0707-005	0	VIKO / COVER / DECKEL	d 40	1
4	30.0707-006	0	VIKO / COVER / DECKEL	d 45	1
5	30.0707-010	2	DORAZ / STOP PIECE / ANSCHLAG	TYC 20	1
6	30.0707-015	0	POUZDRO / SLEEVE / BÜCHSE	d 12	1
7	30.0707-016	0	SVORNIK / HINGE PIN / KLEMME	M6	1
8	30.0907-004	1	VALEC / ROLLER / ZYLINDER	TR 45/40	1
9	30.3907-001	0	HRIDEL / SHAFT / WELLE	d 8	1
10	30.3907-002	1	PISTNICE / PISTON ROD / KOLBENSTANGE	d 16	1
11	30.3907-101	0	DRZAK / HOLDER / HALTER	HR 30x 30	1
12	31.0707-013	0	STUPNICE / SCALE / SKALA		1
13	31.0707-014	0	PRUZINA / SPRING / FEDER	0.63x10x20x9.5	1
14	90.001.55.035	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X35	1
15	90.002.2D.001	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M4X6	1
16	90.003.2D.003	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M5X12	2
17	90.100.55.004	0	MATICE / NUT / MUTTER	MATICE _ M6	1
18	90.150.50.006	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 10,5	1
19	90.151.50.004	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 6	1
20	94.001.001	0	MADLO / HANDLE / RAIL / HANDGRIFF	M6	1
21	95.800.002	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 8	1
22	95.801.005	0	KROUZEK POJIST.VNITR / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 40	4
23	96.002.001	0	KROUZEK O DYNAMICKY / DYNAMIC O RING / O-RING DYNAMISCH	4X2	1
24	96.002.017	0	KROUZEK O DYNAMICKY / DYNAMIC O RING / O-RING DYNAMISCH	34X3	3
25	96.041.001	0	TESNENI / SEALING / DICHTUNG	d16	1
26	96.060.001	0	KROUZEK STIRACI / SCRAPER RING / ABSTREIFRING	KROUZEK STIRACI 16	1

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

7.13. Podstavec svěráku / Schraubstockuntersatz / Vice base

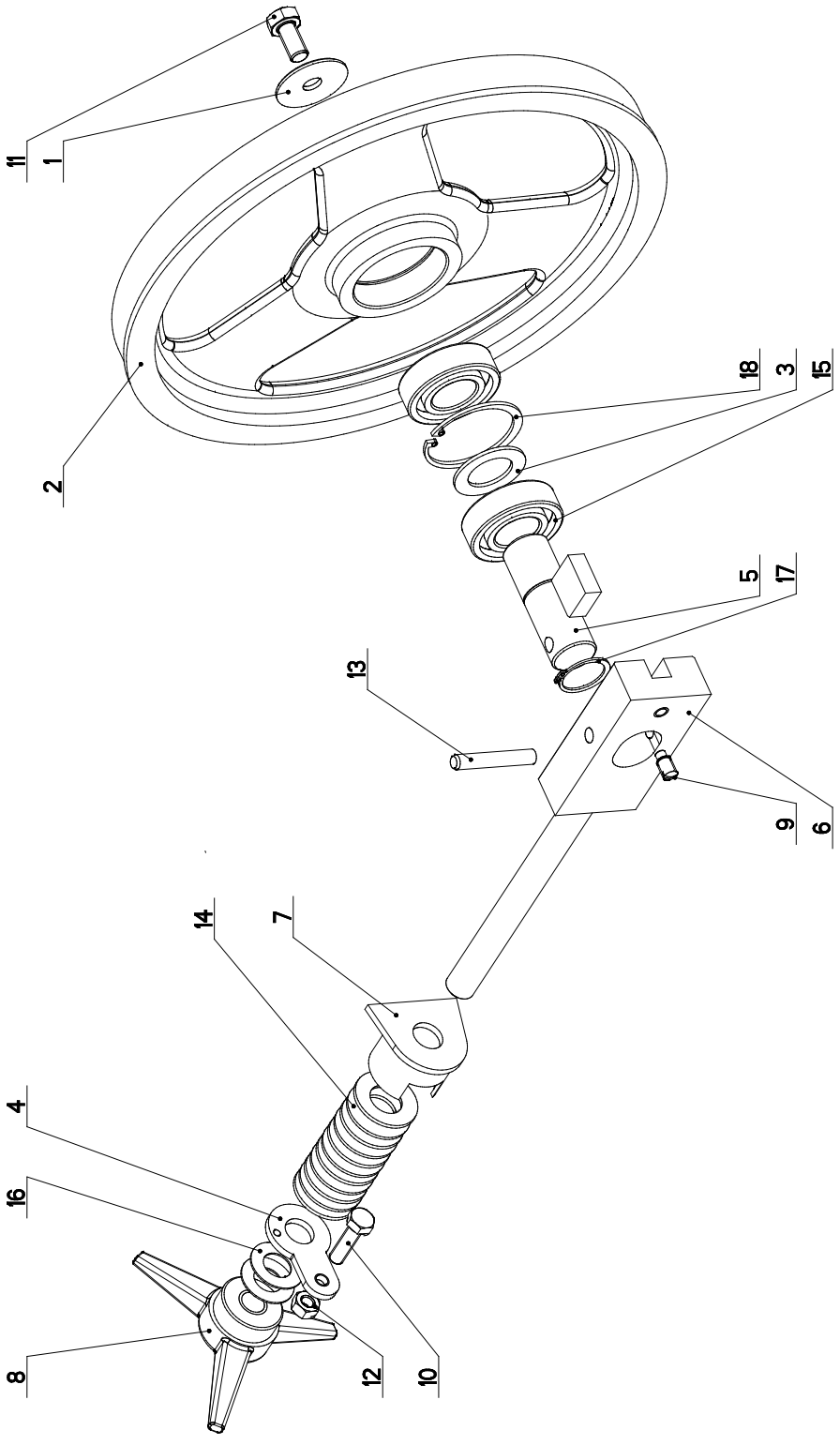


Manual version: 1.04 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.8009-000	2	PODSTAVEC SVERAKU/VICE BASE/SCHRAUBSTOCKUNTERSATZ

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.8002-302	0	UKAZATEL / INDICATOR / ZEIGER	P 0.5x10	1
2	30.8009-002	5	DRZAK / HOLDER / HALTER	TYC 30x5	2
3	30.8009-101	0	TELESO POD. SVERAKU / /		1
4	90.001.25.031	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	8x16	2
5	90.001.25.105	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X18	4
6	90.005.55.010	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M6X30	1
7	90.150.50.005	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 8,4	2
8	90.151.50.005	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 8	2

7.15. Napínání / Spannung / Tensioning



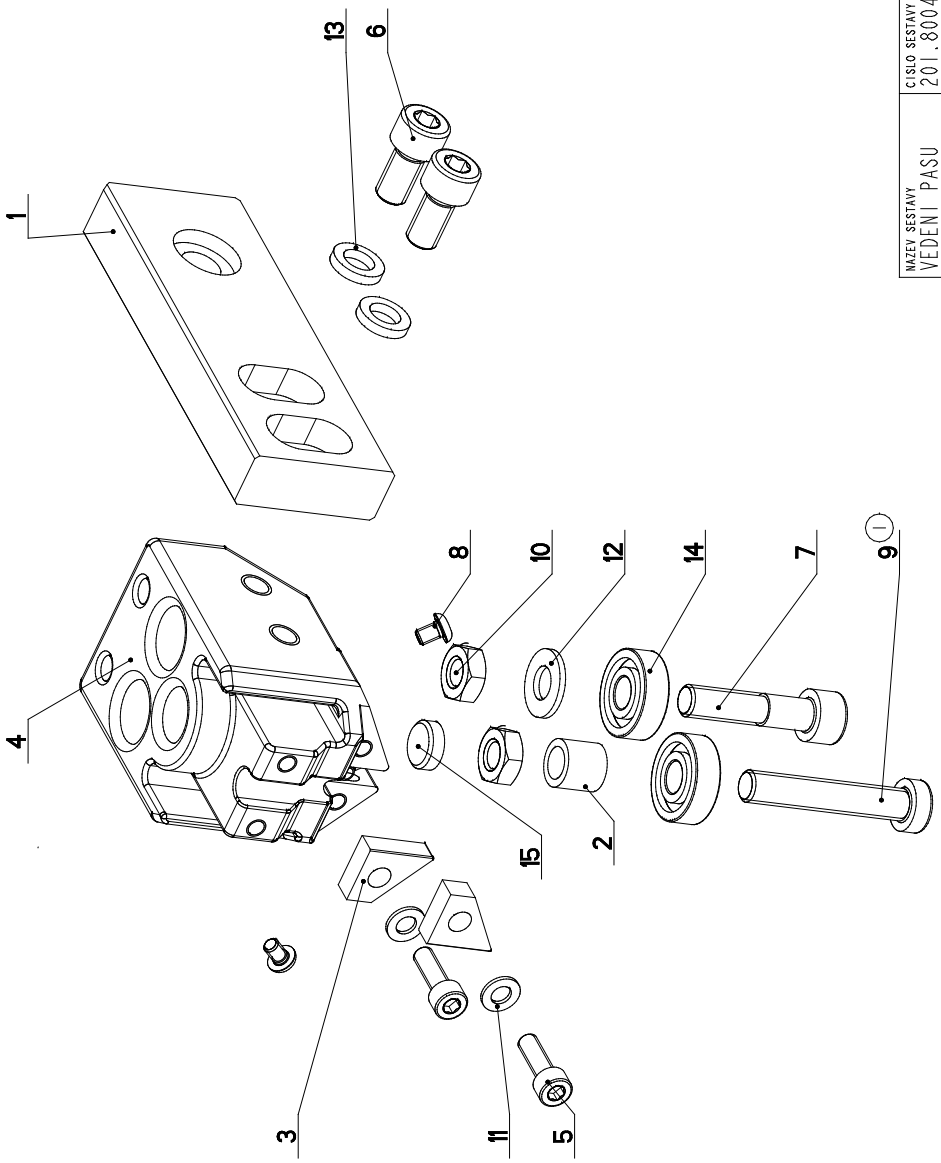
Manual version: 1.04 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.8004-410	0	NAPINANI/TENSIONING/SPANNUNG

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0505-011	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	TYC 40	1
2	30.0508-001	2	KOLO NAPINACI / TENSIONING WHEEL / UMLENKRAD		1
3	30.0702-023	0	KROUZEK DISTANCNI / DISTANCE RING / DISTANZRING		1
4	30.0704-025	1	PRILOZKA / STRAP / LASCHE	P 4x 36	1
5	30.0708-102	0	CEP NAPINANI / TENSIONING LUG / SPANNUNGSBOLZEN		1
6	30.8004-411	0	VEDENI / GUIDE / BACKENFÜHRUNG		1
7	30.8004-412	0	DRZAK / HOLDER / HALTER		1
8	31.0104-006	0	HVEZDICE / STAR WHEEL / STERN	PLAST	1
9	90.004.2D.008	0	SROUB STAVECI / ADJUSTMENT BOLT / STELLSCHRAUBE	SROUB M8X16	1
10	90.005.55.017	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M8X30	1
11	90.005.55.023	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M10X20	1
12	90.100.55.005	0	MATICE / NUT / MUTTER	MATICE _ M8	1
13	90.300.0Z.012	0	KOLIK VALC. KAL. / CYLINDRICAL PIN TEMPERED / ZYLINDERSTIFT GEHARTET	KOLIK 8X50	1
14	90.350.0Z.002	0	PRUZINA TALIROVA / DISC SPRING / TELLERFEDER	35,5X18,3X2,0X2,8	11
15	95.001.018	0	LOZISKO / BEARING / LAGER	6205 2RS	2
16	95.750.001	0	KROUZEK KU / KU RING / KU-RING	16x1	2
17	95.800.012	0	SEGR HRIDEL. / OUTSIDE SAFETY RING / SICHERUNGSRING AUSSEN	POJISTNY KROUZEK 25	1
18	95.801.009	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 52	1

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

7.17. Vedení pásu / Sägebandführung / Belt guide



Manual version: 1.04 / Feb. 2013
Manual rev.: 1

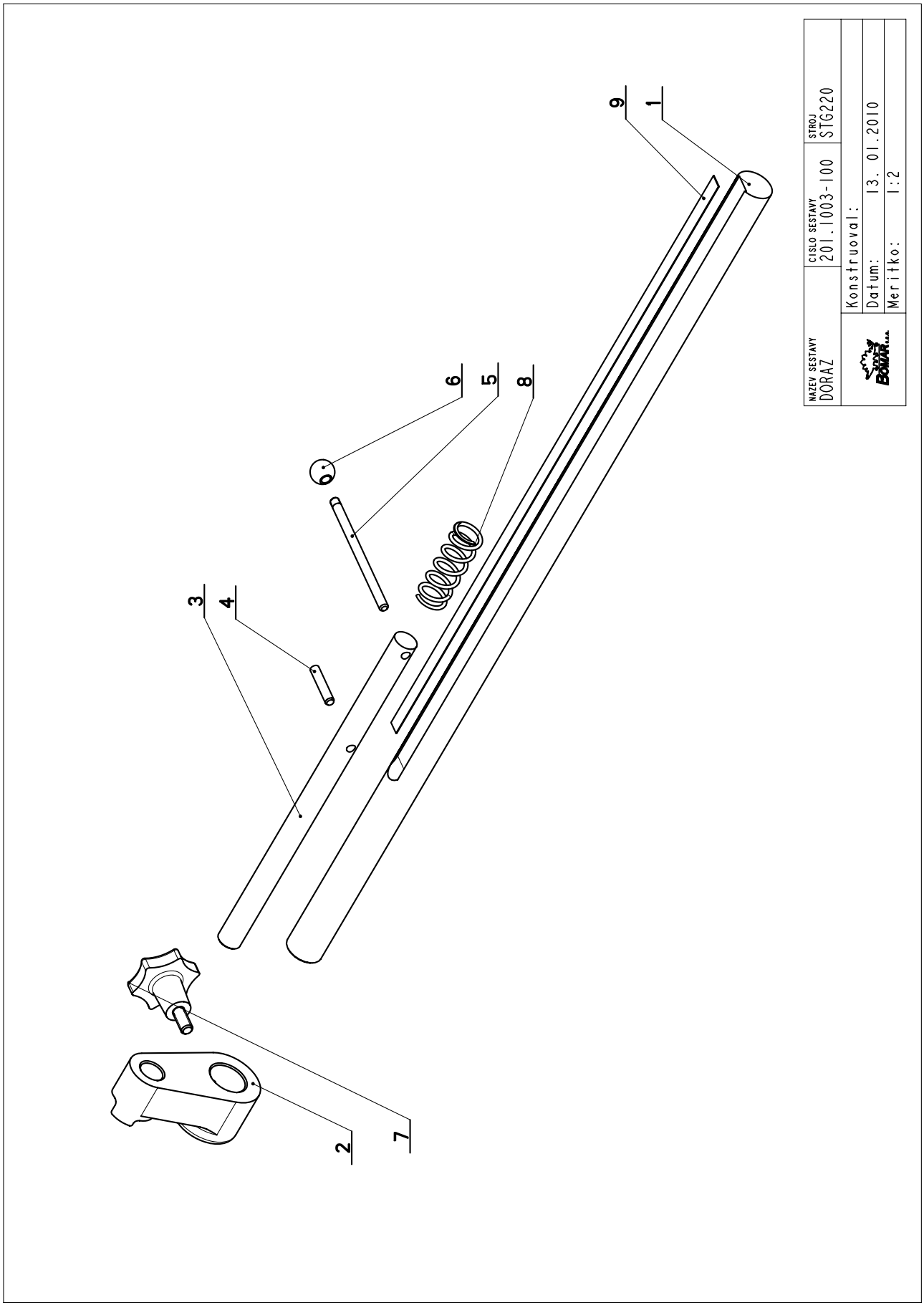
Cislo Sestavy	Ver.	Nazev sestavy
201.8004-430	I	VEDENI PÁSU/BELT GUIDE/SÄGEBANDFÜHRUNG

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
I	30.8004-431	0	LISTA / TRIM / LEISTE	TYC 40x15	I
2	30.LK10-006	I	TRUBKA / TUBE / ROHR	TR 12x2	I
3	31.LK10-007	0	TVRDOKOV / HARD METAL / HM-SEGMENT	HR 18.1x15.5	2
4	85.LK10-201	0	KOSTKA VODICI / LEAD CUBE / FÜHRUNGSKLOTZ	ODLITEK	I
5	90.001.25.009	0	SROUB IMBUS CERNENY / /	M5X16	2
6	90.001.25.031	0	SROUB IMBUS CERNENY / /	8x16	2
7	90.001.55.035	0	SROUB IMBUS CERNENY / /	M8X35	I
8	90.013.27.017	0	SROUB PULKULATY / HALF ROUND BOLT / HALBRUNDSCHRAUBE	M4x6	2
9	90.015.25.033 (I)	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8x45	I
10	90.101.55.001	0	MATICE / NUT / MUTTER	MATICE M8	2
11	90.150.50.003	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 5,3	2
12	90.150.50.005	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 8,4	I
13	90.163.00.001	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	M8 NORD-LOCK	2
14	95.001.001	0	LOZISKO / BEARING / LAGER	608 2RS	2
15	99.040.002	0	TVRDOKOV / HARD METAL / HM-SEGMENT	d 12	I

I.ZRUS.SROUB M8x45 DIN912(90.001.25.037) A NAHR.M8x45 DIN7984(90.015.25.033). 286/ZM342 5.12.2012

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

7.19. Doraz / Anschlag / Stop piece

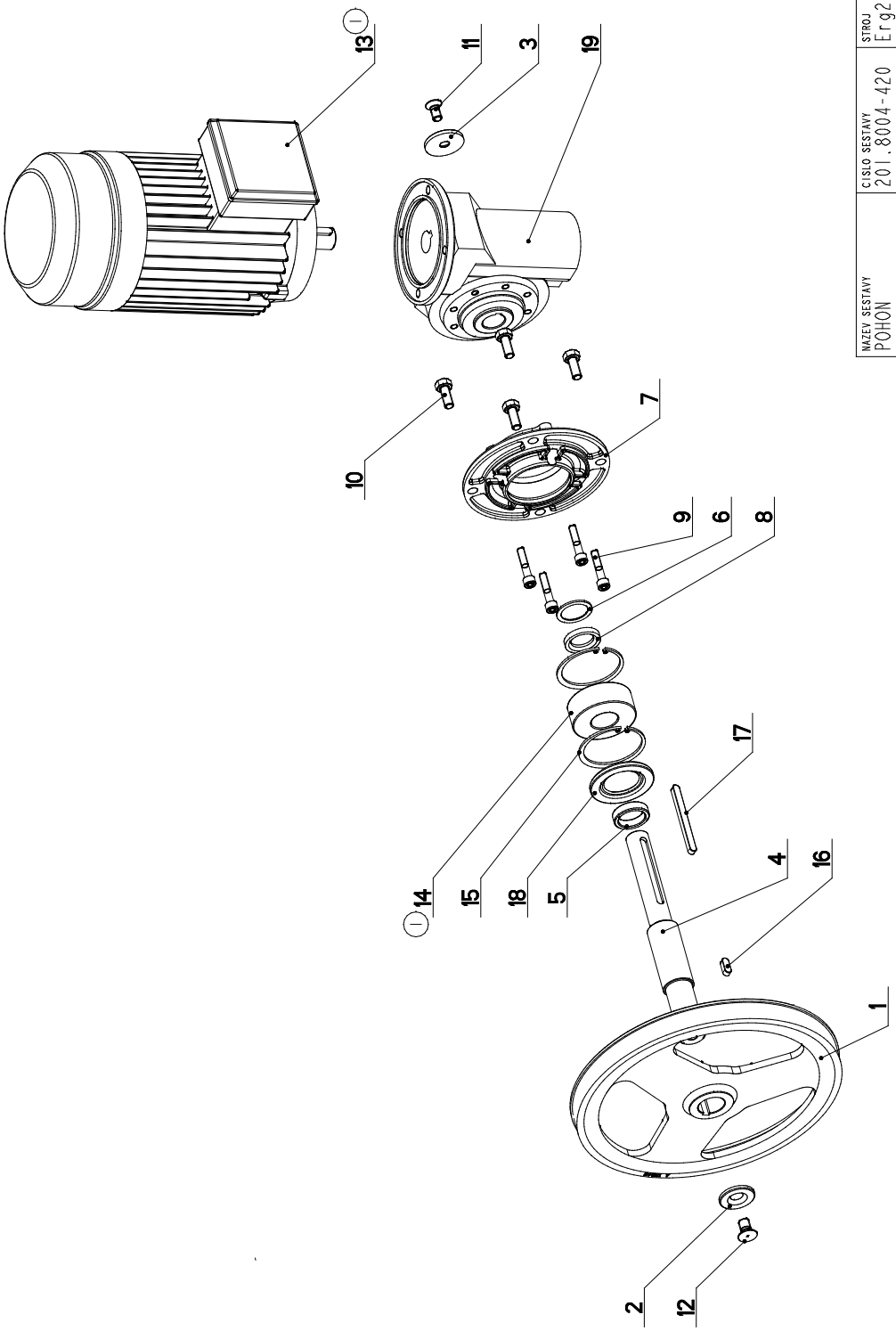


Manual version: 1.04 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.1003-100	0	DORAZ/STOP PIECE/ANSCHLAG

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0703-010	0	TYC / POLE / STANGE	d25	1
2	30.0703-013	0	TELESO DORAZU / STOP BODY / ANSCHLAGKÖRPER	ODLITEK	1
3	30.1003-101	1	TYC / POLE / STANGE	d 16	1
4	90.300.0Z.006	0	KOLIK VALCOVY KALENY / CYLINDRICAL PIN TEMPERED / ZYLINDERSTIFT GEHÄRTET	KOLIK 6X32	1
5	30.0703-016	1	PAKA / LEVER / HEBEL	d6	1
6	94.001.001	0	RUKOJET / HANDLE / GRIFF	M6 PRUMER 16	1
7	94.006.001	0	SROUB / BOLT / SCHRAUBE	M8x17	1
8	31.0304-013	0	PRUZINA / SPRING / FEDER	2.5x21.5x60x7	1
9	99.120.001	0	PRAVITKO / RULER / SKALENBANDMAß	0.5m	1

7.21. Pohon / Antrieb / Drive



Manual version: 1.04 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.8004-420	I	POHON/DRIVE /ANTRIEB

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
I	30.0505-006	I	KOLO HNACI / DRIVE WHEEL / ANTRIEBSRAD	ODLITEK	I
2	30.0508-002	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	d 40	I
3	30.1502-465	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	d 45	I
4	30.8004-421	0	HRIDEL / SHAFT / WELLE	D 35	I
5	30.8004-422	0	KROUZEK / RING / RING	TR 42x7	I
6	30.8004-423	0	KROUZEK / RING / RING	TR 40x5	I
7	30.8004-426	0	PRIRUBA / FLANGE / FLANSCHE	ODLITEK	I
8	30.8004-427	0	KROUZEK DISTANCNI / DISTANCE RING / DISTANZRING	D 40	I
9	90.001.25.036	0	SROUB IMBUS / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M8X40	4
10	90.005.55.024	0	SROUB 6HRANNY / 6 SIDED BOLT / SECHSKANTSCHRAUBE	SROUB M10X25	4
11	90.011.27.008	0	ZAPUSTNY IMBUS / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M10X20	I
12	90.011.27.009	0	ZAPUSTNY IMBUS / COUNTERSINK BOLT / SENKSCHRAUBE	SROUB M12X20	I
13	91.001.125 (I)	0	ELEKTROMOTOR / ELECTRIC MOTOR / ELEKTROMOTOR	90L-8/4-B14	I
14	95.201.009 (I)	0	LOZISKO / BEARING / LAGER	NU2306	I
15	95.801.021	0	SEGR DIRA / INSIDE SAFETY RING / SICHERUNGSRING INNEN	POJISTNY KROUZEK 72	2
16	95.810.006	0	PERO TESNE / SPRING / FEDER	PERO 8X7X20	I
17	95.810.028	0	PERO TESNE / SPRING / FEDER	PERO 8X7X90	I
18	95.830.005	0	GUFERO / GIT SEAL / DICHTUNG	GUFERO 40X72X7	I
19	99.006.004	0	PREVODOVKA SNEKOVA / WORM GEAR TRANSMISSION / SCHNECKENGETRIEBE	FCPDK63A	I

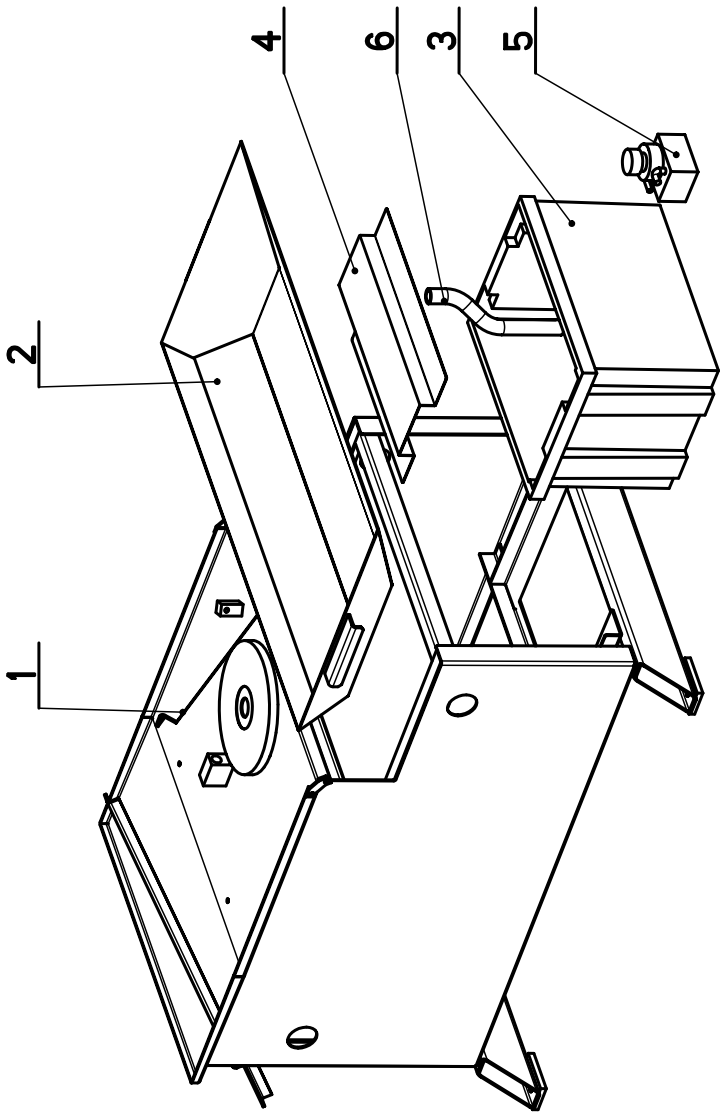
I.ZRUS.LOZISKO 95.300.004 A NAHR.95.201.009,ZRUS.ELEKTROMOTOR 91.00.023A NAHR.91.001.125. 253/ZM3I7I9.II.2012 SLEZACKOVA

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

7.23. Podstavec / Untersatz / Base

Cislo Sestavy	Ver.	Nazev sestavy
201.8001-500	0	PODSTAVEC/BASE/UNTERSATZ

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.8001-051	3	PODSTAVEC / BASE / UNTERSATZ		1
2	30.0501-602	1	VANA / TANK / WANNE		1
3	94.403.001	0	NADRZ / CONTAINER / BEHÄLTER	POLYPACK	1
4	30.8006-001	0	VIKO / COVER / DECKEL	P 0,8 - 30l	1
5	91.020.019	0	CERPADLO CHLAZENI / COOLING PUMP / KÜHLMITTELPUMPE		1
6	42.020.003	0	HADICE / HOSE / SCHLAUCH	19x3	1



Manual version: 1.04 / Feb. 2013
Manual rev.: 1

Cislo Sestavy	Ver.	Nazev sestavy
201.0704-100	0	KARTAC/BRUSH/BÜRSTE

Poz.	Objednaci cislo	Ver.	Nazev polozky	Rozmer	Ks
1	30.0104-022	0	DRZAK / HOLDER / HALTER	HR 16x16	1
2	30.0704-029	0	HRIDEL / SHAFT / WELLE	d 14	1
3	31.0704-031	0	KARTAC / BRUSH / BÜRSTE		1
4	90.150.50.006	0	PODLOZKA DIN125 / WASHER / UNTERLEGSCHEIBE	PODLOZKA 10,5	1
5	90.100.55.006	0	MATICE / NUT / MUTTER	MATICE _ M10	1
6	90.150.50.004	0	PODLOZKA / WASHER / UNTERLEGSCHEIBE	PODLOZKA 6,4	1
7	95.800.001	0	KROUZEK POJIST.VNEJS / OUTSIDE SAFETY RING / SICHERUNGSRING AUßEN	POJISTNY KROUZEK 6	1
8	90.001.25.019	0	SROUB IMBUS CERNENY / ALLEN HEAD BOLT / IMBUSSCHRAUBE	M6X25	1