# **STEELMAX TOOLS**

### Variable Angle and Automatic Feed Bevelling Machine BEVELER SBM 20



### **Use and Maintenance Manual**

CE

Customer
----------

Model

Serial	number	-

Year

A copy of this manual is attached to every bevelling machine delivered.

All rights reserved.

Reproduction of any part hereof shall be subject to prior consent of the company Steelmax Tools.

#### Contents

1.	Gene	eral Information	
	1.1	Introduction	
	1.2	Testing	
	1.3	Warranty	
	1.4	Identification Data	
	1.5	Reference Standards (CE Declaration of Conformity)	5
2.	SAF	ЕТҮ	
	2.1	Safety Recommendations	5
	2.2	Safety Decals	6
	2.3	Qualification and Protection of Operators	7
	2.4	Other Risks	
3.	TEC	CHNICAL SPECIFICATIONS	
	3.1	Machine Description	9
	3.2	Technical Data	9
	3.3.	Noise Level	
	3.4	Working Environment Conditions	
4.	INST	FALLATION	
	4.1	Transport and Lifting	
	4.2	Setting-up and Connecting	
	4.3	Checks before Commissioning	
	4.4	Disposal	
5.	USA	.GE	
	5.1	Correct Usage	
	5.2	Description of Controls	
	5.3.	Preliminary Settings	
	5.4	Machining	
6.	Mair	ntenance and Adjustments	
	6.1	Recommendations	
	6.2	Mill disassembly and replacement of cutting plates	
	6.3	Lubrication	
7.	ACC	CESSORIES	
	7.1	Additional benches	
	7.2	Tube bevelling jig	
8.	SPA	RE PARTS	
	8.1	Ordering spare parts	
	8.2.	Parts most prone to wear:	
	8.3	Wiring diagram and parts list	

### 1. General Information

### 1.1 Introduction

Thank you for purchasing one of our machines and we hope this item works to your full satisfaction.

This manual contains all the instructions for installation, adjustment, operation and maintenance of the machine *BEVELER SBM 20* (further referred to as SBM20 only) in accordance with safety standards in force.

The information contained in this manual may be subject to changes due to further improvement of machinery. To avoid any doubts, any differences found should be consulted with Steelmax Tools.

Before conducting any operations on the machine, please read and make sure you understand the contents of this manual accordingly. Great numbers of accidents at the workplace is due to failure to comply with guidance and instructions contained in the manual.

Graphic icons found in this manual have been used to emphasize important information relevant to the machine operation and safety.

# A Attention:

Information important for safety of operating personnel.

## • Important:

Instruction to be followed to ensure correct operation of the machine.

### 1.2 Testing

The bevelling machine SBM20 is subject to testing at our technical laboratory. Such testing involves verification of correct operation of the electric system and correct edge bevelling function applied on metal sheets and sections of various types and sizes.

### 1.3 Warranty

The seller provides warranty to cover the edge bevelling system SBM 20 in terms of absence of material or production defects for the period of 12 months following the item delivery date.

Faultless operation of the item and materials used is covered by warranty of 12 months following the item delivery date.

The seller undertakes to remove any potential defects covered by the warranty without any unnecessary delay to enable proper usage of the item by the buyer. The seller shall be reimbursed for any costs incurred in case the buyer has exercised any rights relevant to liability not covered by the warranty provided.

The warranty period shall be suspended on the day, when the buyer has notified seller of relevant

defect covered by warranty and preventing the buyer from using the item and exercised his rights of liability for warranty provided, up until the data of actual defect removal by the seller.

Warranty does not apply to natural and regular wear of the item and defects caused due to improper use of the item in contradiction with training documentation provided. The warranty further excludes any defects caused by overload of the item or any defects incurred due to unauthorised tampering with the item or unskilled repair or alteration of this item. An unauthorised tampering, repair or alteration is defined as any interference, repair or alteration performed in contradiction with the training and documentation provided, or conducted by any other personnel besides the seller or a person duly authorised or approved by him.

Rights arising from defect liability shall be exercised at the seller without any unnecessary delay following the discovery of defect by the buyer, however still before the expiry of warranty period, otherwise these rights lapse.

Exercising of right arising from defect liability under warranty requires submission of the original warranty certificate, otherwise the rights cannot be granted to buyer.

Seller's liability for defects covered by warranty cannot be considered in case of defects caused after the transfer of damage risk to goods by means of external matters. External matters include mainly natural disasters, effects of force majeure or third party acts.

Steelmax Tools. will consider the warranty void in case of:

- Improper use of the machine;
- Use of the machine in contradiction with national or international standards;
- Incorrect installation;
- Faulty power supply;
- Serious deficiencies in maintenance;
- Unauthorised modifications and/or tampering;
- Use of other than OEM or spare parts or accessories not fit for specific model;
- Full or partial disobedience to instructions;
- Extraordinary circumstances, natural disasters or other.

### 1.4 Identification Data

Identification data for the edge bevelling machine has been includes on the CE aluminium label fixed on the bonnet of SBM20

### **1.5** Reference Standards (CE Declaration of Conformity)

### **EC Declaration of Conformity**

1.	Name of issuing part Address of issuing pa Englewood, CO 8011 Company reg. ID No	y: urty: 12 .:	Steelmax Tools. 112 Inverness Circle East. Suite F 272220754
2.	Subject matter of dec Name: Type: Manufacturer:	laration:	MOBILE BEVELLING MACHINE SBM20 Steelmax Tools.
3.	Purpose of applicatio	n:	Stationary automatic bevelling system for Bevelling of small and medium steel chunks
4. Di Di Di	The subject matter of stipulated in documen rective 2006/95/EC: rective 2004/108/EC: rective 2006/42/EC: EN ISO 12100.: EN ISO 13857: EN 953 al: EN 60204-1: EN 61000-6-3:	of declaration described above is compliant with requiremenents listed below: The low voltage directive – basic technical requirements Electromagnetic compatibility Safety of machinery – basic requirements Safety of machinery – Technical principles for design Safety of machinery - Safety distances to prevent hazard Being reached by upper and lower limbs Safety of machinery – safety guards design requirements Safety of machinery – Electrical equipment of machines Electromagnetic compatibility - Generic standards - Emi standard for residential, commercial and light-industrial environments	

5. Details of accredited/notified body:

6.	Date and place of issue:	1/1/14 Englewood CO
7.	Names and position of authorised representative:	Kevin Allen President

### 2. SAFETY

-----

### 2.1 Safety Recommendations

## Attention:

# Please read the following instructions carefully to prevent personal injuries and/or property damage.

- Cease any attempts to work with the machine until you have made yourselves familiar with its method of operation. Should you still have any doubts prevailing even after reading this manual, please contact the company Steelmax Tools.

- Make sure that all technical personnel to proceed with usage and maintenance of the machine have been made fully acquainted to all the relevant safety recommendations.

- Any transport and installation of the machine shall be limited to specialised personnel compliant with instructions stipulated in this manual only.

- Before stating the machine, its operator must make sure that all the safety devices are fully operational and all the safety guards are in place.

- Avoid using the machine for any purpose not specified in this manual. Avoid processing any other materials besides products listed in the instruction.

- Please consult Steelmax Tools before using the machine for any purposes not stated in this manual.

- The voltage used to power this machine is hazardous: make sure that connections are correct, avoid any act of maintenance or spare part replacements on the machine when connected to power supply and avoid branching of any electric connections.

- Any parts considered faulty or defective may be replaced with items recommended by the machinery manufacturer only. Use OEM replacement parts and components only.

- Avoid wearing any clothing or jewellery that may be tangled to moving parts of the machine. Safety footwear is advisable: footwear with anti-slip soles, ear protection and safety goggles.

# Important:

In case of any defects incurred during the machine service life and irremovable using the instructions from this manual Steelmax should be contacted to resolve the problem as soon as possible.

### 2.2 Safety Decals

Personal protection of operators is supported by means of safety decals placed on the edge bevelling machine.

Meaning of decals:

This decal is placed on the electric panel of edge bevelling machine and identifies presence of high voltage.



Do not remove this decal from the machine

### 2.3 Qualification and Protection of Operators

Employer shall be liable for informing operating personnel about safety standards, they shall ensure their compliance in full and verify that working space if sufficient and well lit.

The term "operator or operating personnel" means personnel to install, adjust, maintain, clean and repair the machine.

## **A**ttention:

The operator must be familiar with characteristics of the machine and contents of this manual before starting any work.

### Attention: The operator must always:

- 1. Make sure that safety guards are in place and safety devices are operational, before starting the machine.
- 2. Avoid wearing any types of clothes or jewellery that may be tangled to moving parts of the machine.
- 3. Wear approved safety clothing and means, e.g. safety boots with anti-slip soles, ear protection and safety goggles.
- 4. Apply safety standards, see that these are always followed and view this manual in case of any doubt, before proceeding with any measures.
- 5. Contact the machine manufacturer if unable to remove defects causing the machine inoperable, when such defects concern faulty parts or irregularities of operation.

### **Safety Devices**

The machine is equipped with safety guards to isolate zones that may be hazardous to the operator. These guards are either bolted onto machine frame or screwed together with the machine frame. They can be removed using suitable spanners. This operation may be needed during certain maintenance actions.

# **A** Attention:

# Removal of safety guards may be only performed with the machine at standstill with the power supply plug pulled out. Avoid using the machine with the safety guards removed.

The machine is equipped with mushroom shaped emergency button. The button is red and serves for immediate shutdown of the machine with priority from all other operations (positions A and B in Fig. 2.3.1).

Uses of the emergency button include:

- Immediate hazard or mechanical failure;

- Short-term interference, when the machine is at standstill, to perform maintenance under such condition.





### 2.4 Other Risks

The machine has been designed and manufactured with all the devices and accessories to ensure health and safety of its operators.

The machine is fully enclosed by safety guards to reduce the risk of contact with moving parts to maximum.

However, there is one risk remaining:

As stated above, the work zone is protected as much as possible but it must still remain partially open to enable insertion of material for bevelling.

There is an imminent possibility that operators could insert their fingers into this zone with both the cutting tool and work piece holder.

Attention: Always keep your hands as far away from the cutting zone as possible.

## **Attention:**

Always follow the safety instructions contained in this manual and ensure compliance with those at all times as well as exclusion of all other risks.

### 3. TECHNICAL SPECIFICATIONS

### **3.1** Machine Description

The edge bevelling machine SBM20 is a stationary device. One of its main characteristics is that the angle and size of bevel can be adjusted and the material feed is automatic.

The machine is fitted with a milling cutting tool, a robust work piece holder, a direct scale for adjustment of values (bevel size, machining angle) and a special guide for easier material insertion.

These characteristics enable easy adjusting of the operating angle without the need to replace any part while keeping precise control of the bevel size.

The edge bevelling machine SBM20 is reliable with minimum maintenance requirements only.

### 3.2 Technical Data

Mill motor	4	kW
Spindle speed	0 -4000	rpm
Tool diameter	95	mm
Number of cutting plates	7 four-sided	pc/pcs
Feed motor	0.45	kW
Feed rate	0.65-0.95	m/min
Scope of working angle settings	30°-60°	mm
Material thickness	4-100	kg
Machine weight	1000	mm
Working height	102-156	mm
Tube diameter scope		
dimensions	See Fig. No.	

\* Suitable length and cross-section of work piece must be always selected with respect to the total weight of component for machining. Any opposite conditions may result in overload of the feeding mechanism.

In case the feeding mechanism is unable to ensure gradual insertion of the work piece into cut, do not proceed with operation or shifting the work piece manually.

### **Maximum Setting Values**

α	H max [mm]	A max [mm]
30°	30	25
35°	26	21
40°	23	17,5
45°	21	14,5
50°	19	12
55°	17,5	10
60°	16	8





Fig.3.2.1.



### 3.3. Noise Level

The machine has been designed and manufactured to keep the emitted noise at the lowest level possible.

The level of continuous acoustic pressure shown by measurement a exceeded 85 DBA under certain operating conditions and circumstances. The operator must wear proper ear protection.

### 3.4 Working Environment Conditions

The environment for operation of this machine must comply with the following values:

Temperature:	0° C - 50° C
Humidity.	10% - 90% (uncondensed)

The machine must be placed indoors and protected from rain.

Working conditions different from the above mentioned may cause serious damage to the machine, especially its electric components.

When not in operation, the machine can be stored in a place with temperature fluctuating between:  $-10^{\circ}$  C and  $70^{\circ}$  C all other values remain unchanged.

### 4. INSTALLATION

### 4.1 Transport and Lifting

# • Important:

Operations described in this section may be performed by qualified personnel only.

The point of destination must be provided with suitable offloading and settling means (forklifts, etc.).

When delivered to the point of destination (while the carrier personnel are still present), make sure the machine matches specifications defined in the purchase order and that it has not suffered any damage in transport. Any damage or missing parts must be notified to Steelmax and carrier in detail immediately.

## **A** Attention:

Follow the instructions below and make sure to keep handling of the machine safe:

- Keep distance from any loads being handled and make sure the lifting equipment and relevant tools are in flawless order and fit the weight of the machine as defined in section 3.2.
- Wear protective clothes, e.g. protective gloves, footwear with anti-slip soles and hard hat, when handling the machine.

- Any transport packaging must be removed from the machine and disposes of accordingly to comply with the relevant local legislation.

### 4.2 Setting-up and Connecting

### Important:

Operations described in this paragraph may be performed by qualified personnel only.

The machine must be set up on a straight plane. It is recommended to fix the machine on the floor using anchors and the relevant apertures in machine stilts (Fig. 4.2.1.), especially when using additional tables with the machine (see chapter Accessories)

Fig. No. 4.2.1.



The machine is delivered with open work bench (Fig. No. 4.2.2.). The bench must be tilted to operating position before starting the machine up. Proceed as follows:

- Swing the feed drive up and right (position A in Fig. 4.2.2.).
- Tilt the working bench (position B in Fig. 4.2.2.) to working position and tighten the locking bolts (position C in Fig. 4.2.2.).
- Close the feed drive again (position A in Fig. 4.2.2.). ATTENTION the drive lock must be released (position G in Fig. 5.2.1.).

Fig. No. 4.2.2.



When connecting the machine to power supply, proceed as follows:

- check the frequency and voltage details on the motor identification label;

- connect the cable end to power supply with plug conforming to your local mains.

### 4.3 Checks before Commissioning

## • Important:

### Never start the SBM20 without having finished checks described in this paragraph.

Before starting the machine, make sure it is operable; proceed with the following inspections and checks to ensure maximum efficiency and compliance with safety regulations:

### - make sure that none of the bolts or other parts are loose;

- make sure that all electric connections have been engaged properly and the power cable is held in place by means of the appropriate bushing;

- make sure the mill is not in collision with any other part of the machine and it can rotate freely.

To start the machine proceed as follows:
Unlock the machine using red button (positions A and B in Fig. 2.3.1.).
Use the green button (position C in Fig. 5.2.1.) to start the motor.
The mill must be rotating clockwise.
If that is not that case, you need to swap phases inside the plug.

- To stop the machine use red button located next to the power Button.

### 4.4 Disposal

When disposing of the machine SBM20, bear in mind it is not made of hazardous materials including mainly:

- Varnished or metal-coated steel;
- Stainless steel grade 300/400;
- Plastic material of various types;
- Transmission oil;
- Electric motor;
- Power cables and relevant shielding;
- Power monitoring and activation devices.

Follow this procedure:

- adhere the relevant local legislation applicable to safe working environment;
- disconnect the machine from power supply;
- proceed with disassembly of the machine and sort its parts with regards to chemical nature;
- Machine parts should be shredded in accordance with the local legislation in place;
- Any disassembly operations must comply with valid legislation applicable to work safety.

### 5. USAGE

### 5.1 Correct Usage

The edge bevelling machine SBM20 has been designed, manufactured and sold to serve the purpose of bevelling edges on metal parts and rolled metals as: **iron, steel, stainless steel**, brass, copper and aluminium.

SBM20 has been designed mainly for bevelling of larger batches of small-scale work pieces or long flat square bars. It can be also used for tube bevelling, see chapter Accessories.

The design of this machine enables very effective bevelling with a single setting.

For details on thickness of the material in machining or other technical specifications see chapter 3. Section 3.2 "Technical Specifications".

# Suitable length and cross-section of work piece must be always selected with respect to the total weight of component for machining. Any opposite conditions may result in overload of the feeding mechanism.

Using the machine for any other purpose different from the above mentioned will be considered unsuitable. To be more precise, it is forbidden to:

- process any products different from those considered for manufacturing and sale of the machine;
- modify operation of the machine in any way;
- replace components with any parts except OEM items;
- modify electric connections to by-pass internal safety devices;
- remove or modify safety guards in any way;
- use the machine in locations with aggressive atmosphere.

# **A** Attention:

# It is strictly forbidden to proceed with edge bevelling on materials different from materials defined here, as processing of such items may be hazardous for the operator and result in machine damage.

Any modifications shall be subject to prior consent granted by Steelmax Tools. Steelmax waives any liability if that is not the case.

### 5.2 Description of Controls

The edge bevelling machine is operated using controls located on the machine and switchboard panel

### Machine

Fig No.5.2.1.



Α	Setting of feed disc height
B	Feed disc height setting lock
С	Setting of right/left position of feed disc
D	Bevel angle settings lock
E	Bevel angle setting lever
F	Feed rate control
G	Metal removal size control
Н	Feed arm lock in open position
Ι	Feed disc reach lock
J	Feed disc reach setting
K	Feed disc I. incidence setting
L	Work bench height setting
Μ	Feed disc II. incidence setting
Ν	Feed disc I. right/left lock position
0	Feed disc II. right/left lock position.

### **Switchboard Panel**

Fig. No.5.2.2.



Α	Mill spindle speed control
---	----------------------------

- **B** Rev counter
- **C** Mill drive start/stop button
- **D** Feed mechanism start/stop button
- **E** Emergency shutdown button
- **F** Main power switch

### 5.3. Preliminary Settings



Use protective gloves when adjusting the machine. Any operations must be performed on machine in standstill condition with disconnected power supply cable.

The following settings have to be done before starting any work:

### Adjustment of bevelling angle

The bevelling angle can range between  $30^{\circ}$  and  $60^{\circ}$ . Follow the adjustment procedure below:

- Loosen the angle setting lock (position D in Fig. 5.2.1) sufficiently, the lock is situated on the side panel of machine.
- Grasp the adjusting lever (position E in Fig. 5.2.1) and pull it to set the angle required.
- The size of set angle can be read off the graduated scale located on the adjusting lever.
- When the operation is completed, re-tighten the angle setting lock (position D in Fig. 5.2.1) situated on the machine side panel.

### Feed disc incidence setting

Setting of incidence of the feed disc enables changing of the feed route angle with respect to the vertical guide plate. In other words, we are able to affect the machine's ability to keep the machined material in contact with guide plates.

The machine SBM20 is provided with system to enable adaptation of this setting to match the existing material being processed, as well as the cutting conditions.

Follow the adjustment procedure below:

- Loosen or tighten bolts (positions K and M in Fig. 5.2.1) opposite one another to accomplish the required incidence.
- Bolts must be finally tightened against one another, i.e. locking arrangement.

Pursuant to our own experience, we recommend keeping the values of incidence and right/left position of the feed disc, see Fig. No. 5.3.1.





### Setting of feed disc reach

Setting of the feed disc reach changes the distance of feed disc from the vertical guide plate. That is convenient mainly when bevelling L-sections with desirable extension of feed disc reach depending on thickness of the L-section flange wall (Fig. No. 5.3.2.).

On the other hand, bevelling of flat material is recommended with adjustment of reach in such manner that the feed disc approaches the vertical guide plate as close as possible.

Fig. No.5.3.2.



Follow the adjustment procedure below:

- Release the feed disc reach lock (position I in Fig. No. 5.2.1)
- Use the control of feed disc reach setting (position J in Fig. No. 5.2.1) to adjust the feed disc reach as needed
- Re-tighten the feed disc reach lock (position I in Fig. 5.2.1)

### Setting of right/left position of feed disc

The setting of right/left position is changed when using a tube jig only, see chapter Accessories. When applied for bevelling of flat material, it is recommended to set the feed disc position as shown in Fig. 5.3.1.

There may be certain situations that require setting of a position different to the recommended one.

### Setting of feed disc height

The feed disc height must be adjusted before start of operations. The optimal height of feed disc above the horizontal guide plate is approximately 5 mm less than the actual work piece thickness. That means: When machining any 40mm thick material, set the disc height at 35 mm above the horizontal guide plate.

Follow the adjustment procedure below:

- Loosen the setting lock (position B in Fig. No. 5.2.1.)
- Rotate the setting dial to set the appropriate feed disc height (position A in Fig. 5.2.1.)

### **Removal and Machining Settings**

The machine SBM20 is able to create bevel height of up to 30 mm at certain angles. (See paragraph 3.2.). These values can be only achieved by gradual machining at various removal levels.

### Feed rate setting

The machine SBM20 is provided with feed rate control. The feed rate can be set within the interval of 0.65 - 0.95 m/min. setting of the most convenient feed rate must be based on a test using a sample of material. Optimal rate is affected by many factors as the condition of cutting plates, the size of removal, the quality of material being bevelled.

Rate settings are achieved by rotating the control dial (position F in Fig. 5.2.1.).



The feed rate setting operation can be performed with the feed disc running only. Rotating the control dial with the feed deactivated may result in damage of the variable speed gearbox.

### Setting of first removal size

- Use the chip setting dial (position G in Fig. 5.2.1) to set the removal size as required. For correct reading of values use the table (Fig. 5.3.3.) located on the top of the machine.

**O** Important: The maximum cut depth for particular removal sizes is defined by the settings table. Follow the recommended values plotted in settings table. Setting an excessive value of removal may result in immediate tool destruction. It is strongly recommended to verify the final settings by means of testing on material sample.



Fig. 5.3.3.

**O** Important: The machine SBM20 has been designed mainly for processing of large batches of product. Professional adjustment of the machine is one of the prerequisites for long-term operation with specific material. This reason prevents recommendation of one versatile setting of the feed mechanism and the whole machine.

Optimal setting of the machine is affected by factors as roughness of work piece surface - i.e. friction, weight, dimensions and shape of work piece, condition of cutting tool, etc.

It is also recommended to oil guide plates to improve feed of the material.

### 5.4 Machining

- Place the bevelled metal sheet or section on the right side of bench. The direction of machining is from right to left.
- Start the mill and feed motors and set convenient revolutions of the mill and feed rate depending on material quality, condition of cutting plates and the removal size.
- Guide the work piece under feed disc by applying gradual pressure. If the machine set-up is correct, the feed disc will grasp the material and pull it inside the machine. Work piece must be held in correct position (in contact with the ruler) for the first approx. 50 mm. The work piece beginning must get behind the milling window.
- The bevelling process may result in change of conditions and potential situation that requires changing the machine settings.

### **Further removal setting**

The machine SBM20 is able to create bevel height of up to 30 mm at certain angles. (See paragraph 3.2.). These values can be only achieved by gradual machining at various removal levels.

- Use the chip setting dial (position G in Fig. 5.2.1) to set further removal size as required. For correct reading of values use the table located on top of the machine (Fig. 5.3.3.).

# **Important:** The maximum cut depth for particular removal sizes is defined by the settings table. Follow the recommended values plotted in settings table. Setting an excessive value of removal may result in immediate tool destruction.

- Start the machining process. Proceed the same way as for machining of the first removal.
- All other removals are basically repetitions of the above mentioned, see chapter 5.4

**<u>HINT</u>**: Calculate individual removals accordingly to avoid large depth of the last one. Set the feed to lower values. That will result in improved final bevel surface.

### 6. Maintenance and Adjustments

### 6.1 Recommendations

### Important: The maintenance personnel must be qualified engineers.

Avoid working on parts in motion, not even using any tools or similar items.

Removal, modifications or tampering with safety devices is strictly forbidden. The manufacturer waives any responsibility for machine safety under such circumstances.

Always use OEM spare parts (see chapter 9 "Spare Parts").

# Attention: Always wear protective gloves during maintenance of the machine. Any maintenance operations must be performed with the machine at standstill and power supply disconnected.

Clean the machine before or even during every work shift as needed; use compressed air.

# **A**ttention:

# When using compressed air for cleaning operations, wear protective goggles and avoid using pressure that exceeds the level of 2 bar.

Check the level of waste in chip container (position A in Fig. 6.1.1.). If the container is full, it must be emptied using designated b.

Fig. No.6.1.1.



Adjustment and maintenance operations must be performed using tool delivered together with the machine only.

### 6.2 Mill disassembly and replacement of cutting plates

# **A**ttention:

### Use protective gloves when replacing tools.

The SBM20 uses face mill of our unique design, with cutting plates featuring four cutting sides each. To ensure maximum efficiency, these plates must be rotated due to blunting of specific sides. Each plate provides 4 cutting sides in total.

The condition of these blade plates must be checked on regular basis, these must be rotated when worn.

### Milling head removal:

To remove the machining tool, tilt the work bench down first (Fig. No. 4.2.2.). Proceed as follows:

- Swing the feed drive up and right (position A in Fig. 4.2.2.).
- Swing the work bench (position B in Fig. 4.2.2.)
- Secure the spindle to prevent its rotation. Use the special spanner provided (position A in Fig. 6.2.1).
- Using the spanner provided, loosen the main centre bolt that secures the milling head to spindle (Fig. 6.2.1).
- Remove the bolt including the centre insert and pull the milling head off the spindle by hand.

Fig. No. 6.2.1.



### **Replacement or rotation of cutting plates:**

- Place the milling head on a suitable pad. The mill on SBM20 is fitted with seven plates.
- Use the spanner provided to loosen the bolt on cutting plate (Fig. 6.2.2.) and either rotate or replace the plate.
- Re-fit the mill again.

Important: Keep all the components of milling head (plates, bolts, mill bolt, centre insert) clean.

Otherwise the cutting plates can be aligned incorrectly and their service life would be reduced or the milling head can be blocked on spindle resulting in subsequent problems with disassembly in future.



### 6.3 Lubrication

The oil level in feed gearbox must be subject to regular checks for potential leaks. These checks are aided by means of aperture in side panel of gearbox housing. Presence of oil in the aperture means everything is all right. The oil in variable speed gearbox must be replaced after every 300 operating hours. The oil volume amount to 0.7 l.

We recommend using SHELL SPIRAX S4 ATF HDX. Oil filling hole (position A in Fig. No. 6.3.1.) and used oil drain hole (position B in Fig No. 6.3.1.).

Fig. 6.3.1.



The machine SBM20 is also provided with several grease nipples (Fig. 6.3.2.) to be kept clean and filled with lubricant at least once a week. The recommended grease is Shell Alvania RL 2.

Fig. 6.3.2.



### 7. ACCESSORIES

### 7.1 Additional benches

The machine SBM20 can be further equipped with additional left and right benches, order No. 25,908. The bench length is 2x 1,000mm.

Every bench is fitted with an adjustable ruler.

When assembling benches, follow Fig. No. 7.1.1.

Important: Be careful during installation adjustable supporting rulers (position B in Fig. 7.1.1.). The shorter ruler must be installed on left bench provided with a recess to enable easy access for angle and chip control, see Fig. No. 7.1.1.

Fig. No.7.1.1.



Benches are installed using the bolts provided (position C in Fig. 7.1.1.) using ready-made thread on sides of the machine SBM20 (Fig. No. 7.1.2.). Bench height must be centred after installation. That is aided by adjusting stilts (position A in Fig. 7.1.1.).

Fig. No. 7.1.2.



### 7.2 Tube bevelling jig

The machine SBM20 can be also used for bevelling of tubes. Jig listed under order No. 25 902 enables bevelling of tubes in diameter of 105 - 156 mm.

Max. Tube length is 1,000 mm.

The jig is mounted onto threaded holes (Fig. 7.2.1.)





# Operation of the machine in premises with especially hazardous risks of AD and more requires higher level of protection against electric shock!

Power supply - the power supply must be cut off in case of failures immediately.

Any works on the electrical installations of this machine are limited to professional electrician or duly authorised personnel supervised by such expert to ensure compliance of the works with regulations applicable to the electrical engineering field.



None of the parts subject to maintenance and repairs may be live. These parts switched off the power supply must be checked using a double-pole gauge to verify they are not live, they must be further ground and any parts still live must be insulated properly!

Set the power switch to "0" position to cut the voltage off.



Electric equipment must be subject to regular checks or potential testing. Any deficiencies, loose connections, burnt cables must be replaced immediately.

#### 8. **SPARE PARTS**

#### **Ordering spare parts** 8.1

Any purchase order for spare parts must contain the following details:

- Machine type;
- Serial number;
- Description and number of part requiredQuantity.

#### 8.2. Parts most prone to wear:

Order No.	Description	Picture
25909	Cutting plates 1 pc	8026
25911	Milling head (including plates and screws)	Ó
25903	Feed disc	
Alvania	Lubrication grease for machine SBM20	Alvania RL 2 Alvania RL 2

### 8.3 Wiring diagram and parts list

The converter installed for control of feed rate is provided with default software settings from the factory. It is locked to prevent any unauthorised tampering. The converter lock password is: 2599











243-APLIKOVAT STREDNEPEVNOSTNI ZAJISTENI (LOCTITE 243)

Т

Dehted Zadul	1         000000000000000000000000000000000000
DITABLE PARTICIPACITY OF THE P	
	( <u>s</u> ) ( <u>a</u> )

A copy of this manual is attached to every bevelling machine delivered. All rights reserved. Reproduction of any part hereof shall be subject to prior consent of Steelmax Tools.

### Address of manufacturer and distributor:

*Steelmax Tools. 112 Inverness Circle East Suite F Englewood, CO 80112 www.Steelmax.com*