

## GB - ENGLISH

# Operating Instructions

Dear Customer,

Many thanks for the confidence you have shown in us with the purchase of your new JET-machine. This manual has been prepared for the owner and operators of a JET **MBS-823DGVI / MBS-827DGVI metal band saw** to promote safety during installation, operation and maintenance procedures. Please read and understand the information contained in these operating instructions and the accompanying documents. To obtain maximum life and efficiency from your machine, and to use the machine safely, read this manual thoroughly and follow instructions carefully.

### **...Table of Contents**

- 1. Declaration of conformity**
- 2. Warranty**
- 3. Safety**
- 4. Machine dimensions, Transport, Installation and Dismantling**
- 5. Functional parts of the machine**
- 6. Wie man die Bandsäge korrekt verwendet**
- 7. So stellen sie ihre Maschine richtig ein**
- 8. Routine und Sonderwartungen**
- 9. Technische Daten**
- 10. Wahl des Sägebandes**
- 11. Umweltschutz**
- 12. Lieferbares Zubehör**
- 13. Fehlersuche**

### **1. Declaration of conformity**

On our own responsibility we hereby declare that this product complies with the regulations\* listed on page 2. Designed in consideration with the standards\*\*.

### **2. Warranty**

The Seller guarantees that the supplied product is free from material defects and manufacturing faults. This warranty does not cover any defects which are caused, either directly or indirectly, by incorrect use, carelessness, accidental damage, repair, inadequate maintenance or cleaning and normal wear and tear.

Guarantee and/or warranty claims must be made within twelve months from the date of purchase (date of invoice). Any further claims shall be excluded.

This warranty includes all guarantee obligations of the Seller and replaces all previous declarations and agreements concerning warranties.

The warranty period is valid for eight hours of daily use. If this is exceeded, the warranty period shall be reduced in proportion to the excess use, but to no less than three months.

Returning rejected goods requires the prior express consent of the Seller and is at the Buyer's risk and expense.

Further warranty details can be found in the General Terms and Conditions (GTC). The GTC can be viewed at [www.jettools.com](http://www.jettools.com) or can be sent by post upon request.

The Seller reserves the right to make changes to the product and accessories at any time.

### **3. Safety**

#### **3.1 Authorized use**

This machine is designed for sawing machinable metal and plastic materials only.

Machining of other materials is not permitted and may be carried out in specific cases only after consulting with the manufacturer.

#### **Never cut magnesium-high danger to fire!**

The workpiece must allow to safely be loaded and clamped for machining.

The proper use also includes compliance with the operating and maintenance instructions given in this manual.

The machine must be operated only by persons familiar with its operation and maintenance and who are familiar with its hazards.

The required minimum age must be observed

The machine must only be used in a technically perfect condition.

When working on the machine, all safety mechanisms and covers must be mounted.

In addition to the safety requirements contained in these operating instructions and your country's applicable regulations, you should observe the generally recognized technical rules concerning the operation of metalworking machines.

Any other use exceeds authorization.  
In the event of unauthorized use of the machine, the manufacturer renounces all liability and the responsibility is transferred exclusively to the operator.

## **3.2 General safety notes**

Metalworking machines can be dangerous if not used properly. Therefore the appropriate general technical rules as well as the following notes must be observed.

Read and understand the entire instruction manual before attempting assembly or operation.

Keep this operating instruction close by the machine, protected from dirt and humidity, and pass it over to the new owner if you part with the tool.

No changes to the machine may be made.

Daily inspect the function and existence of the safety appliances before you start the machine.  
Do not attempt operation in this case, protect the machine by unplugging the mains cord.

Remove all loose clothing and confine long hair.

Before operating the machine, remove tie, rings, watches, other jewellery, and roll up sleeves above the elbows.

Wear safety shoes; never wear leisure shoes or sandals. Always wear the approved working outfit

Do **not** wear gloves while operating this machine.

For the safe handling of saw blades wear work gloves.

Wear goggles when working

Install the machine so that there is sufficient space for safe operation and workpiece handling.

Keep work area well lighted.

The machine is designed to operate in closed rooms and must be placed stable on firm and levelled ground.

Make sure that the power cord does not impede work and cause people to trip.

Keep the floor around the machine clean and free of scrap material, oil and grease.

Never reach into the machine while it is operating or running down.

Stay alert!

Give your work undivided attention. Use common sense.

Keep an ergonomic body position.  
Maintain a balanced stance at all times.

Do not operate the machine when you are tired.  
Do not operate the machine under the influence of drugs, alcohol or any medication. Be aware that medication can change your behaviour.

Keep children and visitors a safe distance from the work area.

Never leave a running machine unattended.  
Before you leave the workplace switch off the machine.

Do not operate the electric tool near inflammable liquids or gases.

Observe the fire fighting and fire alert options, for example the fire extinguisher operation and place.

Do not use the machine in a damp environment and do not expose it to rain.

Insure that the workpiece does not roll when cutting round pieces.

Use suitable table extensions and supporting aids for difficult to handle workpieces.

Always adjust the blade guide close to the workpiece.

Remove cut and jammed workpieces only when motor is turned off and the machine is at a complete standstill.

Work only with well sharpened tools.

Bearbeiten Sie nur ein Werkstück, das sicher auf dem Tisch aufliegt.

Specifications regarding the maximum or minimum size of the workpiece must be observed.

Do not stand on the machine.

Never operate with the guards not in place – serious risk of injury!

Connection and repair work on the electrical installation may be carried out by a qualified electrician only.

Have a damaged or worn cord replaced immediately.

Make all machine adjustments or maintenance with the machine unplugged from the power source.

Remove defective saw blades immediately

## **3.3 Remaining hazards**

When using the machine according to regulations some remaining hazards may still exist

The moving saw blade in the work area can cause injury.

Broken saw blades can cause injuries.

Thrown cutting chips and noise can be health hazards.  
Be sure to wear personal protection gear such as safety goggles and ear protection.

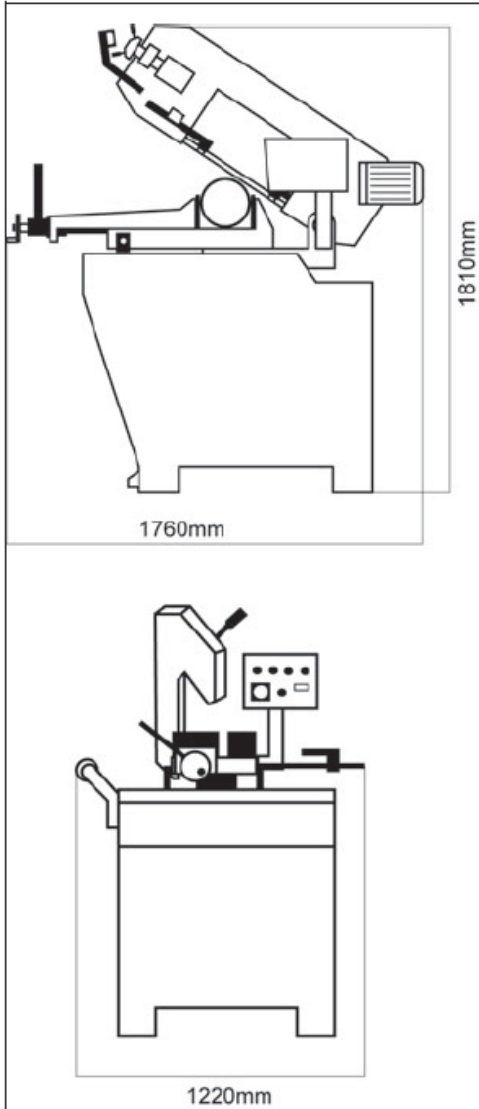
The use of incorrect mains supply or a damaged power cord can lead to injuries caused by electricity.

# J E T MBS-823DGUI / MBS-827DGUI

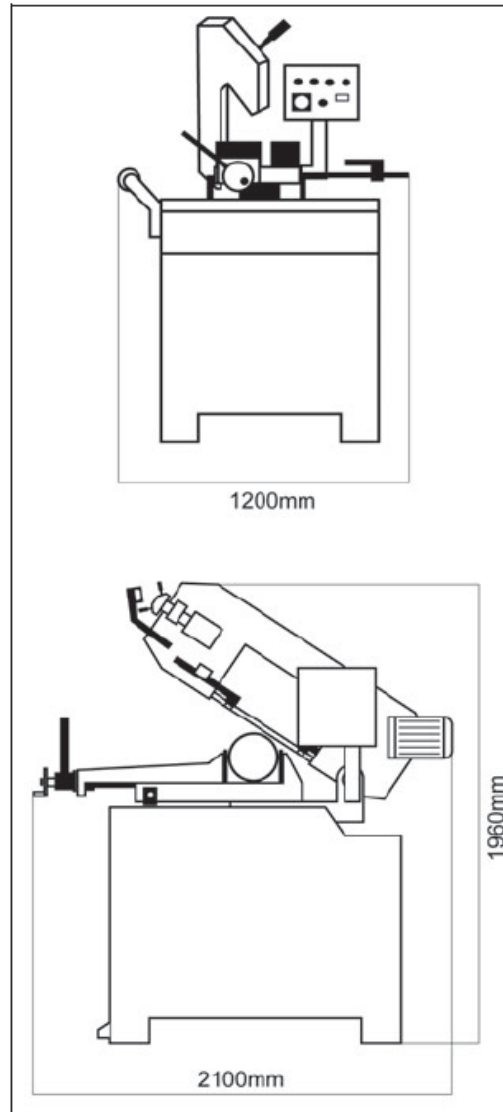
## 4. Machine dimensions, Transport, Installation and Dismantling

### 4.1 Machine dimensions

#### MBS-823DGUI



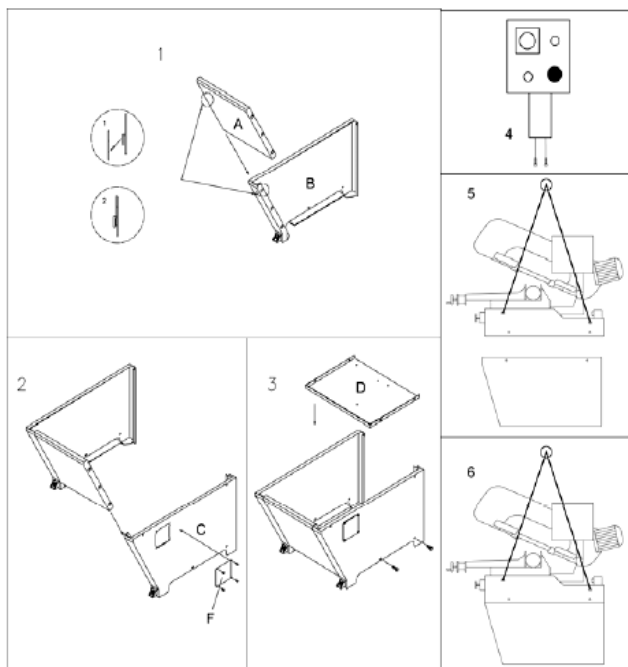
#### MBS-827DGUI



### 4.2 Assembling the Saw and the Base

- Join panels A, B, and C by inserting tenon into mortise as shown in circle diagram 1 and 2.
- Fasten bottom panel D into the joined panels A, B, and C using setscrews that are provided
- Attach panel F to panel C with provided setscrews.
- Attach control box with two provided setscrews.
- Mount the saw unit on the base as shown in drawing 5.
- Fasten the saw unit to the base with provided set screws.

# J E T MBS-823DGUI / MBS-827DGUI

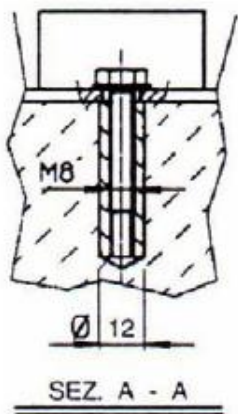


If the machine needs to be moved in its own packing, use a forklift truck or sling it with straps as illustrated in drawing above.

## 4.3 Minimum requirements for housing the machine

- Main voltage and frequency must comply with the machine's motor requirements.
- Environment temperature should fall within  $-10\text{ }^{\circ}\text{C}$  to  $+50\text{ }^{\circ}\text{C}$ .
- Relative humidity cannot be over 90%.

## 4.4 Anchoring the machine



Position the machine on a firm cement floor, maintaining, at the rear, a minimum distance of 800 mm from the wall; anchor it to the ground as shown in the diagram, using screws and expansion plugs or tie rods sunk in cement, ensuring that it is sitting level.

## 4.5 Instructions for assembly of the loose parts and accessories

Fit the components supplied:

Detail 1 Mount bar-stop rod

Detail 2 Mount and align the roll-supporting arm as per the counter-vice table.

## 4.6 Deactivation of machine

- If the sawing machine is to be out of use for a long period, it is advisable to proceed as follows:

- 1) Detach the plug from the electric supply panel
- 2) Loosen blade
- 3) Release the arch return spring
- 4) Empty the coolant tank
- 5) Carefully clean and grease the machine
- 6) If necessary, cover the machine.

## 4.7 Dismantling (due to deterioration and/or obsolescence)

### General rules

If the machine is to be permanently demolished and/or scrapped, divide the material to be disposed of according to type and composition, as follows:

- 1) Cast iron or ferrous materials, composed of metal alone; are secondary raw materials, so they may be taken to an iron foundry for re-smelting after having removed the contents (classified in point 3).
- 2) Electrical components, including the cable and electronic material (magnetic cards, etc.), fall within the category of material classified as being assimilated to urban waste according to the laws of your local, state, or federal government, so they may be set aside for collection by the public waste disposal service;
- 3) Old mineral and synthetic and/or mixed oils, emulsified oils and greases are considered hazardous or special refuse, so they must be collected, transported and disposed of at a special waste disposal service.

NOTE: The standards and legislation concerning refuse is in a constant state of evolution, therefore is subject to changes. The user must keep informed of the regulations at the time of disposal as these may differ from those described above.

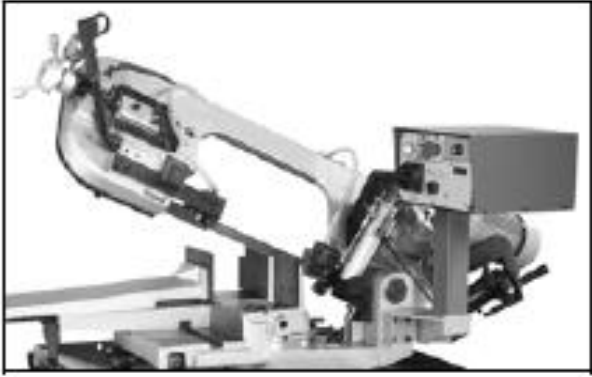
## 5 The machine's functional parts

### 5.1 The saw arm

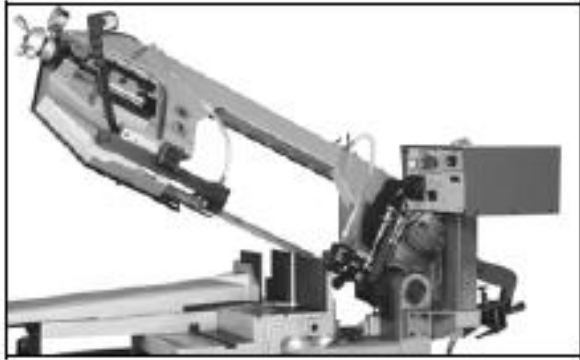
Machine parts consisting of drive members (gear motor or variable speed motor, flywheels), tightening and guide (blade tightening slide, blade guide blocks) of tool.

# J E T MBS-823DGVI / MBS-827DGVI

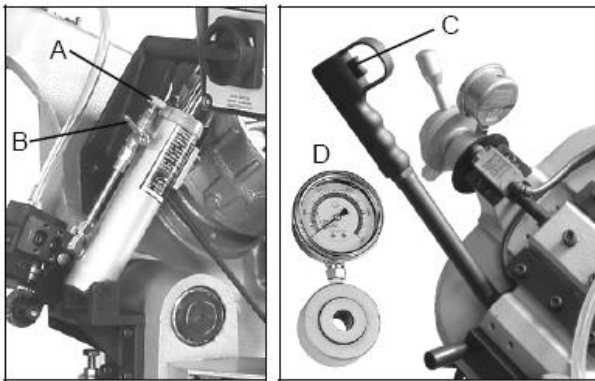
## MBS-823DGVI



## MBS-827DGVI

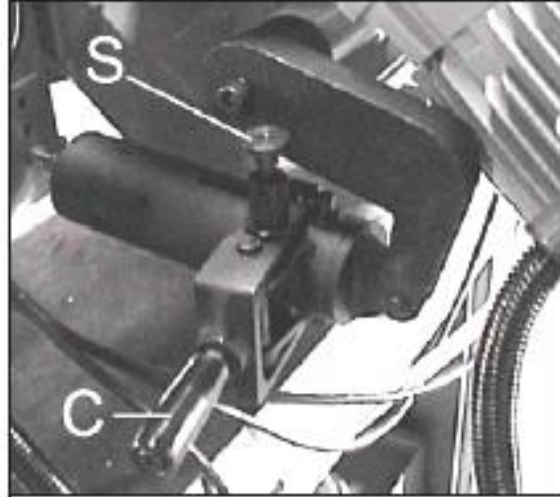


## 5.2 Controls

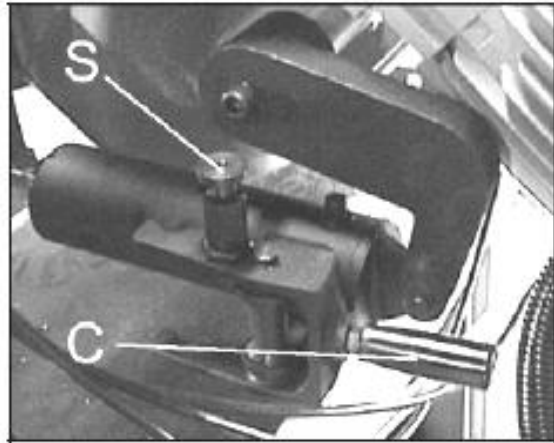


- A. Hydraulic Flow control valve
- B. Hydraulic regulation valve
- C. Trigger Switch
- D. Blade Tension gauge

## C1 Manual position



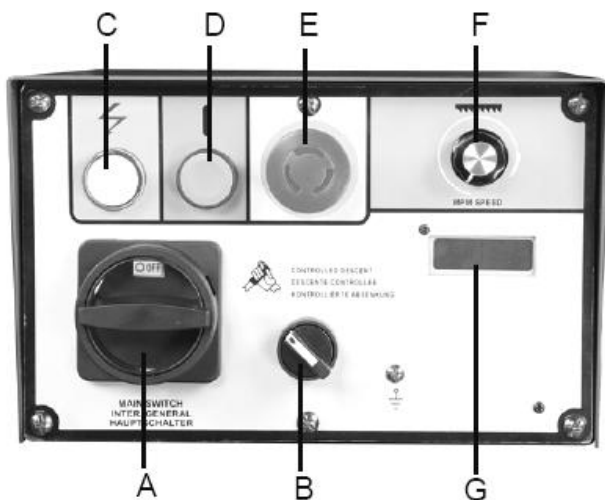
## C2 Auto position



- C. Fork handle
- S. Spring knob

# J E T MBS-823DGVI / MBS-827DGVI

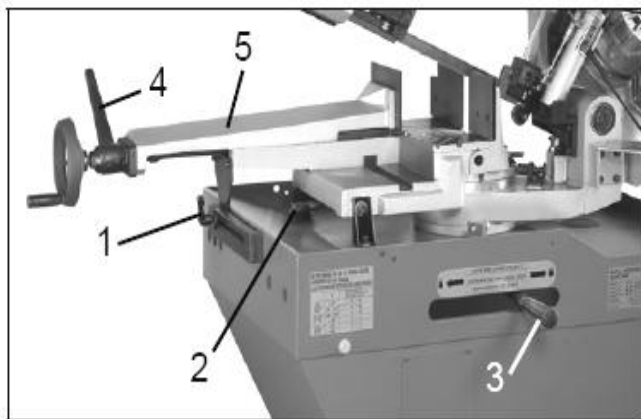
## MBS-823DGVI / MBS-827DGVI



- A. Main connect switch
- B. Manual/Auto selector
- C. Indicator light
- D. Auto start cutting button
- E. Emergency push button
- F. Blade Speed adjusting knob
- G. Blade Speed display

### 5.3 Vise adjustment

- The device does not require any particular adjustment; in case of excess play of the sliding guide, tighten slide screw more.



To move the vise in either direction, the vise jaw must be unlocked at two points.

- Release the track support by turning handle (1) counter-clockwise.
- Release the vise by moving the lever (2) to the left.
- The vise (5) may now be moved to right position (7) or left position (6) by pushing it with one hand on the vise and the other hand on the track handle (1).

- Once in position, move the lever (2) to the right to lock it into position.

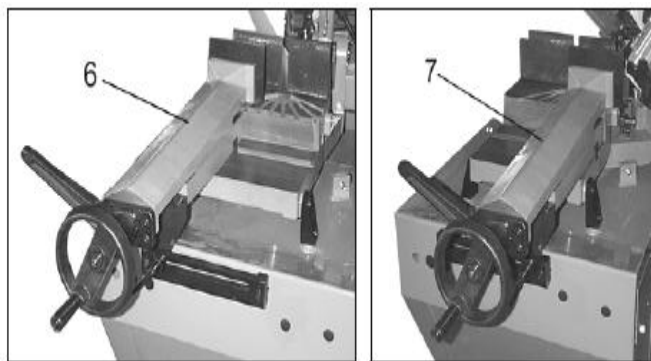
- Lock the track support (1) by turning handle clockwise.

### Clamping the Work Piece

- Place work piece between the jaws.

- Use the hand wheel to approach the vise jaws to the work piece, make the vise jaw to against the material. Lock the work piece by push down the lever (4). Push start cutting button (D). When the cutting cycle is finished, release vise by pulling lever (4) up. Upon releasing the lever (4), the vise jaw will open. This allows for rapid loading of same size material.

### 5.4 Cutting angle adjustment



### Cutting at angles

- Using the right side, angles can be cut up to 60 degrees. This requires that vise jaw to be set on the left side (6).

- Using the left side, angles can be cut up to 45 degrees. This requires the vise jaw to be set on the right side (7).

- Unlock lever (3) and rotate the saw frame arm until you reach mechanical stop and check if the index corresponds to 45 degrees; if not, operate on the set screws to make measures meet.

### 5.5 The base

- A structure supporting the SAW ARM (revolving arm for gradual cutting and respective blocking system), the VISE, the BAR STOP, the ROLLER for the support of the material. The base houses the cooling liquid TANK and PUMP.

# J E T MBS-823DGV / MBS-827DGV

**MBS-823 DGV**

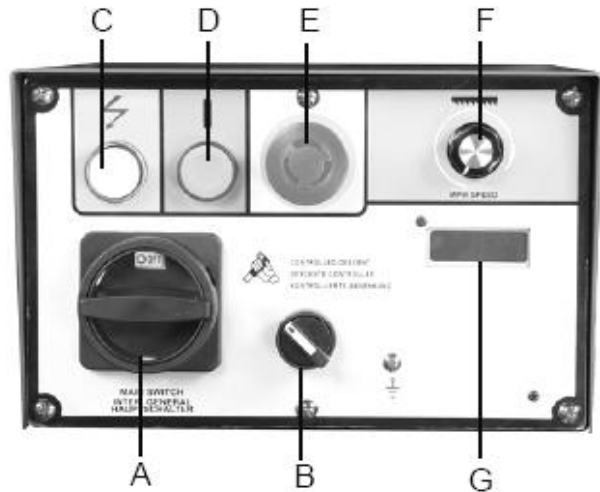


The hydraulic cylinder is ideal for the cutting of thin or stainless steel section bars that determines a constant lowering and consequently a good efficiency of the blade throughout the work phase.

By adjusting the flow control valve (A), this device can be accommodated to the different situations and applications. (B) level is on/off switch to control hydraulic flow.

## 5.7 The operation cycle

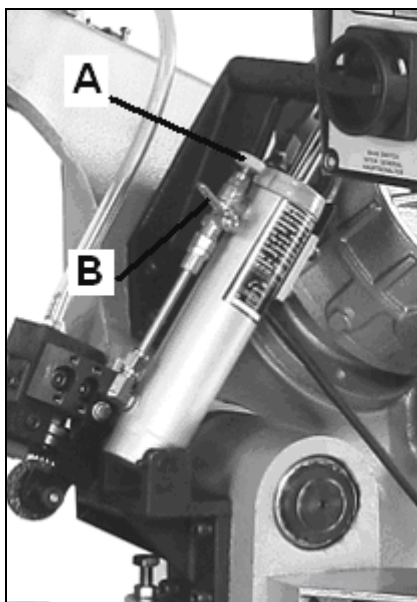
Before operating, all the main organs of the machine must be set in optimum conditions.



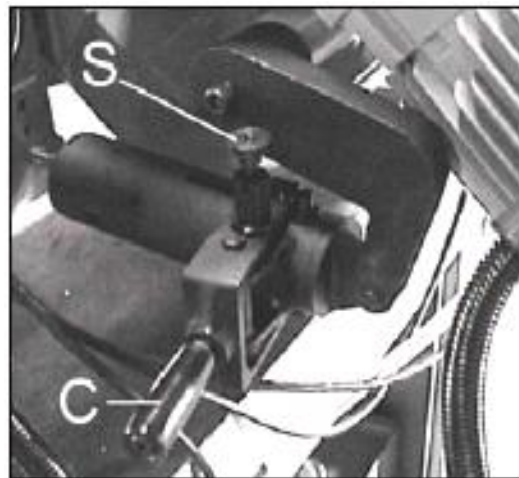
**MBS-827DGV**



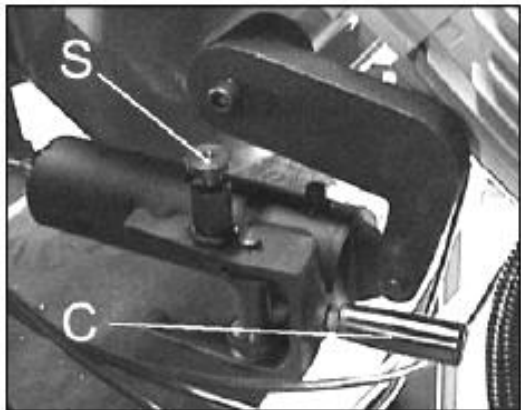
## 5.6 Saw frame moving down flow control



## C1 Manual position



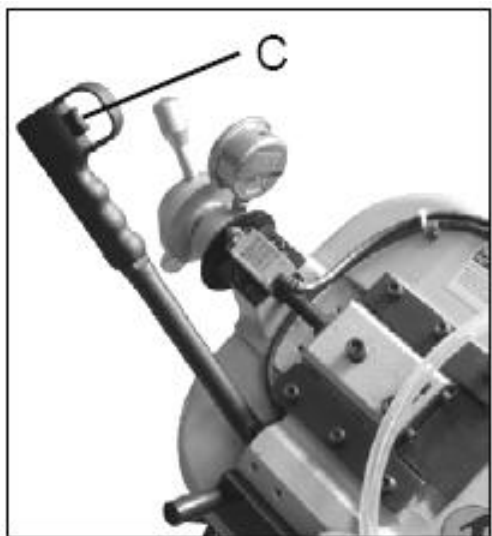
## C2 Auto position



### Operation Procedure:

#### A. Trigger switch operation by manual

- Raise the saw arm.
- Close the hydraulic flow control valve on the cylinder (B) (5.6) by turning the valve clockwise all the way to the end.
- Lift the spring knob (S) to release the pin from its slot. This will free the fork handle (C). Move the handle to the manual position (C1). Lift the spring knob (S) and secure its pin into its slot.
- Use manual/auto selector (B) to select handle icon.
- Preset cutting speed by turning speed selector knob (F).
- Turn main connect switch (A) to the ON position. Check that the indicator light (C) is on.
- Load work piece and clamp it properly.
- Fully open the hydraulic flow regulation valve (B) (5.6) by turning the valve counter-clockwise all the way to the end and also fully open the flow control knob (A) by turn it counter-clockwise.



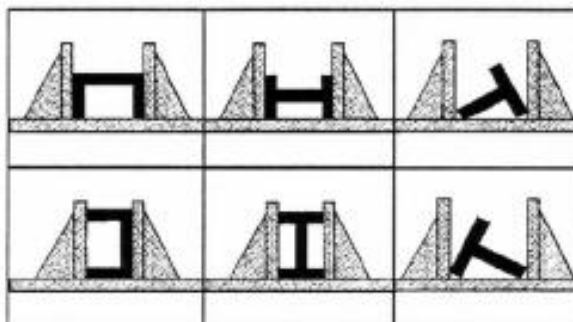
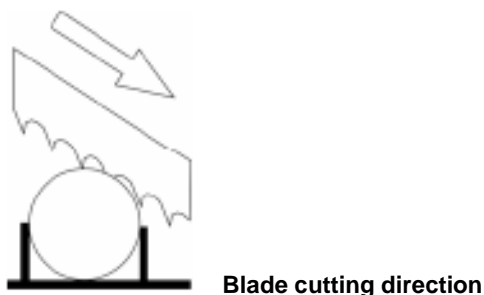
- Press trigger switch (C) to start operation.
- Reset blade speed.

- If cutting pipe with thin walls, reduce the saw arm descent rate by adjusting the flow control valve (A).
- Press the emergency push button (E) down to shut off all functions. To release the emergency push button rotate the mushroom shaped button (E) clock-wise. The button will pop up and then the cutting cycle can be restarted.
- In general, start cuts by slightly turning hydraulic flow control valve (A) counter-clockwise from 2 to 3 to control the saw arm descent rate. If the arm descends too quickly, turn the hydraulic flow regulation valve (B) clockwise all the way back to stop its descent. A saw arm dropping too quickly can cause the blade to stall on the work piece and the machine will shut off. Push down on emergency push buttons (E) on the panel and (K) MBS-823DG on the base to immediately stop all machine functions.

#### B. Auto cutting operation

- Raise the saw arm.
  - Close the hydraulic flow control valve (A) by turning the valve clockwise all the way to the end.
  - Lift the spring knob (S) to release the pin from its slot. This will free the fork handle (C). Move the handle to the auto position (C2). Lift the spring knob (S) and secure its pin into its slot.
  - Use manual/auto selector (B) to select auto.
  - Select cutting speed by turning speed selector (F).
  - Turn main connect switch (A) to the ON position.
- Check that the indicator light (C) is on.
- Load work piece and clamp it properly.
  - Press start button (D) to start machine. Check that the blade is running in the correct direction.
  - Slightly pull the saw arm down to get rid of air bubbles from the hydraulic cylinder.
  - Adjust hydraulic flow control valve (A) by slightly turning the valve counter-clockwise to let saw arm descend and start cutting.
  - Press the emergency push button (E) down to shut off all functions. To release the emergency shut off rotate emergency push button (E) clock-wise. The button will pop up and then the cutting cycle can be restarted.
  - In general, start cuts by slightly turning hydraulic flow control valve (A) counter-clockwise from 2 to 3 to control the saw arm descent rate. If the arm descends too quickly, turn hydraulic flow regulation valve (B)(5.6) clockwise all the way back to stop its descent. A saw arm dropping too quickly can cause the blade to stall on the work piece and the machine will shut off. Push down on emergency push button (E) to immediately stop all machine functions.



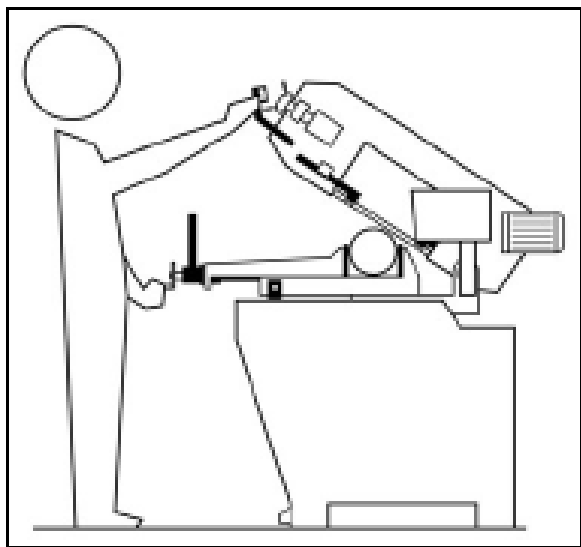


## 6. Advice on using your bandsaw

### 6.1 Recommendations and advice for using the machine

The machine has been designed to cut metal building materials, with different shapes and profiles, used in workshops, turner's shops and general mechanical structural work.

Only one operator is needed to use the machine, that must stand as shown in the picture.



- Before starting each cutting operation ensure that the part is firmly clamped in the vise and that the end is suitably supported.

- These figures below show examples of suitable clamping of different section bars, bearing in mind the cutting capacities of the machine in order to achieve a good efficiency and blade durability

- Do not use blades of a different size from those stated in the machine specifications.

- If the blade gets stuck in the cut, release the running button immediately, switch off the machine, open the vise slowly, remove the part and check that the blade or its teeth are not broken. If they are broken, change the tool.

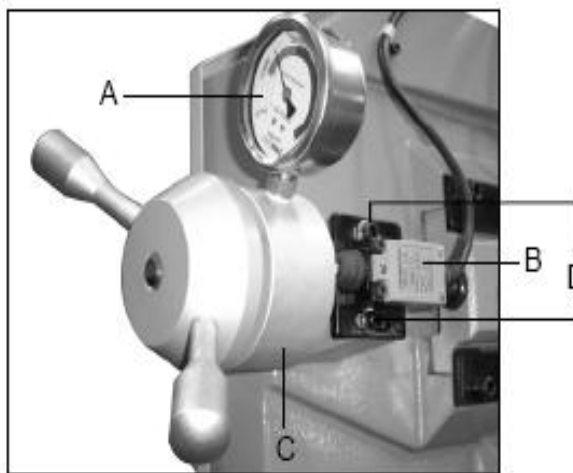
- Before carrying out any repairs on the machine, consult the dealer.

## 7. Adjusting your machine

### 7.1 Blade tension assembly

The ideal tension of the blade is achieved rotating the hand wheel until the needle reaches the proper blade tension on the tension gauge (A).

The machine will not operate if the micro switch does not actuate by contacting the tension device (C).



If the tension is set properly, but the micro switch (B) does not contact or trigger properly, make this adjustment.

If the tension is set properly, but the micro switch (B) does not contact or trigger properly, make this adjustment.

If the tension is set properly, but the micro switch (B) does not contact or trigger properly, make this adjustment.

- Loosen the setscrews (D).

- Push the micro switch (B) towards the tension device (C). Make sure that the plunger is pressed properly.

# J E T MBS-823DGV / MBS-827DGV

- Tighten down the setscrews (D) to secure the micro switch (B) in place.

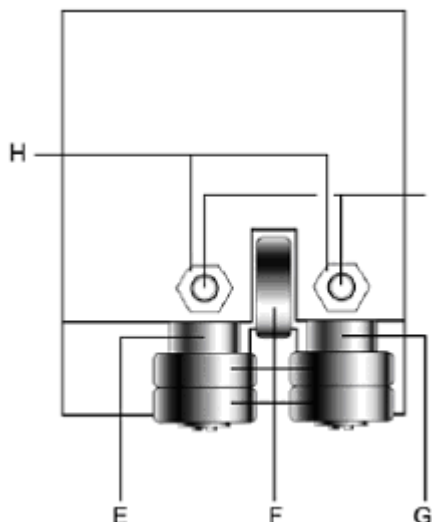
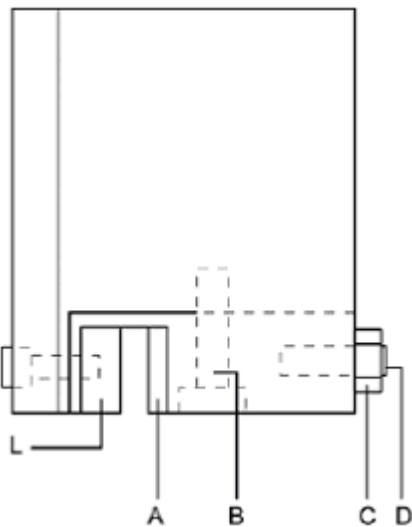
## 7.2 Adjusting the blade guide

- Disconnect the machine from the power source.
- Use a Hex. Wrench to loosen Hex. Socket screw (A) on the square lock plate.
- Hold the handle (B) and slide blade guide block as close as possible to the material without interfering with the cut
- Tighten the Hex. Socket screw (A).
- Reconnect the machine to power source.



### Blade guide blocks

The blade is guided by means of adjustable pads set in place during inspection as per the thickness of the blade with minimum play as shown in the figure.



In case the blade needs to be replaced, make sure to always install 0.9mm thick blades for which the blade guide pads have been adjusted. In the case of toothed blades with different thickness adjustment should be carried out as follows:

- Loosen nut (C), screw (B) and loosen dowel (D) widening the passage between the pads.
- Loosen the nuts (H) and the dowels (I) and rotate the pins (E - G) to widen the passage between the bearings (F).
- To mont the new blade: place the pad (A) on the blade, loosening the dowel, allow a play of 0.04 mm for the sliding of the toothed blade, lock the relative nut and screw (B), Rotate the pins (E - G) until the bearings rest against the blade as indicated in the figure and then secure the dowels (I) and nut (H).
- Make sure that between the blade and the upper teeth of the pad (L) this is at least 0.2 - 0.3 mm of play; if necessary, loosen the screws that fasten the blocks and adjust accordingly.

BEFORE PERFORMING THE FOLLOWING OPERATIONS, THE ELECTRIC POWER SUPPLY AND THE POWER CABLE MUST BE COMPLETELY DISCONNECTED.

## 7.Changing the blade

To change the blade:

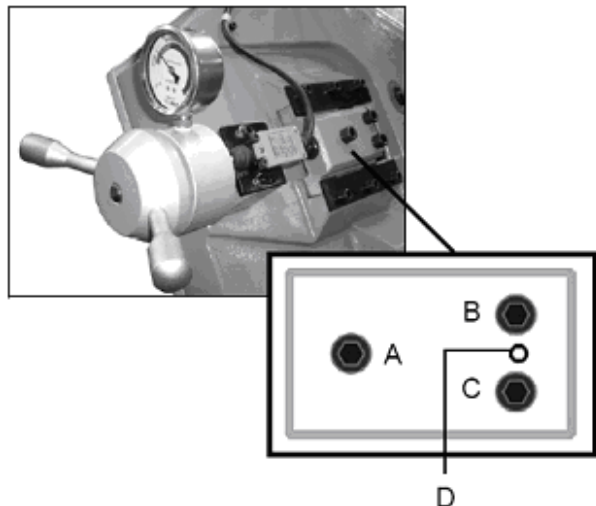
- Lift the saw arm.
- Loosen the blade with the hand wheel, remove the mobile blade-guard cover, open the flywheel guards and remove the old blade from the flywheels and the blade guide blocks.
- Assemble the new blade by placing it first between the pads and then on the race of the flywheels, paying particular attention to the cutting direction of the teeth.

# J E T MBS-823DGV / MBS-827DGV

- Tension the blade and make sure it perfectly fits inside the seat of the flywheels.

- Assemble the mobile blade-guide end, the flywheel guard, and fasten it with the relative knobs. Check that the safety micro switch is activated otherwise when electric connection will be restored the machine will not start.

## 7.4 Adjusting the blade to the blade wheels



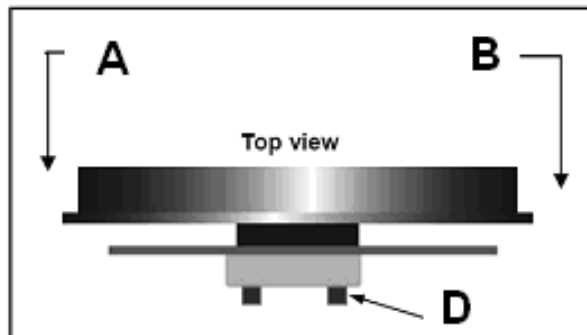
1. Loosen the hex nut screws A, B, and C.
2. Use an Allen wrench on setscrew D to adjust the tilt of the blade wheel.

-Turning the setscrew D clockwise will tilt blade wheel so that the blade will ride closer to the flange.

-Turning the setscrew D counter-clockwise will tilt the blade wheels that the blade will ride away from the flange.

If the blade rides away too far then it will come off.

After the adjustment is finished, fasten the hex nut screws in this order: A, B, and C.

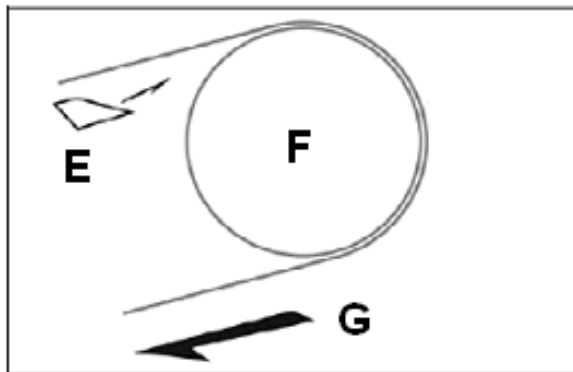


A- A tilt in this direction will cause the blade to ride towards the flange.

B- A tilt in this direction will cause the blade to ride away from the flange.

D- Set screw

## Checking the adjustment of the blade



E- Paper

F- Flywheel

G- Blade direction

Use a strip of scrap paper and slide it between the blade and the blade wheel while it is running.

- If the paper is cut then the blade is riding too close to the flange. Re-adjust.

- If you notice that the blade is riding away from the flange. Then re-adjust

**WARNING:** Always assemble blades having dimensions specified in this manual and for which the blade guide heads have been set; otherwise, see chapter on "Description of the operating cycle" in the section Starting-up.

## 8. Routine and special maintenance

THE MAINTENANCE JOBS ARE LISTED BELOW, DIVIDED INTO DAILY, WEEKLY, MONTHLY AND SIX-MONTHLY INTERVALS. IF THE FOLLOWING OPERATIONS ARE NEGLECTED, THE RESULT WILL BE PREMATURE WEAR OF THE MACHINE AND POOR PERFORMANCE.

### 8.1 Daily maintenance

- General cleaning of the machine to remove accumulated shavings.

- Clean the lubricating coolant drain hole to avoid excess fluid.

- Top off the level of lubricating coolant.

- Check blade for wear.

- Rise of saw frame to top position and partial slackening of the blade to avoid useless yield stress.

- Check functionality of the shields and emergency stops.

## 8.2 Weekly maintenance

- Thorough cleaning of the machine to remove shavings, especially from the lubricant fluid tank.
- Removal of pump from its housing, cleaning of the suction filter and suction zone.
- Clean the filter of the pump suction head and the suction area.
- Use compressed air to clean the blade guides (guide bearings and drain hole of the lubricating cooling).
- Cleaning flywheel housings and blade sliding surfaces on flywheels.

## 8.3 Monthly maintenance

- Check the tightening of the blade wheel screws.
- Check that the blade guide bearings on the heads are perfect running condition.
- Check the tightening of the screws of the gear motor, pump, and accident protection guarding.

## 8.4 Six-monthly maintenance

- Continuity test of the equipment potential protection circuit.

## 8.5 Maintenance of other machine parts

The worm drive gearbox mounted on the machine is maintenance-free guaranteed by its manufacture.

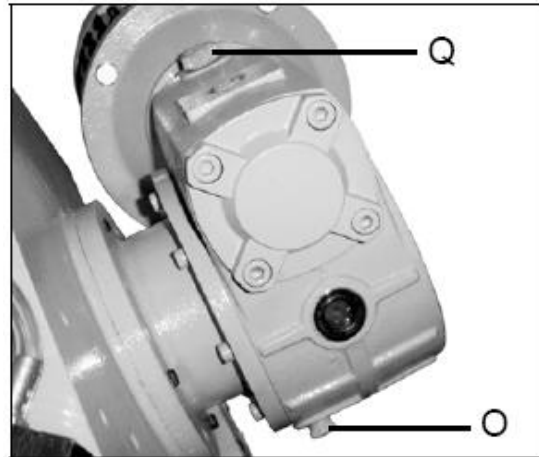
## 8.6 Öle für das schmierfähige Kühlmittel

Verwenden Sie das biologisch abbaubare Kühlschmiermittel Art.: 9176. DER MINIMALE PROZENTSATZ VON ÖL IN WASSER GELÖST SOLLTE 8 - 10 % BETRAGEN.

## 8.7 Oils for lubricating coolant

Considering the vast range of products on the market, the user can choose the one most suited to their own requirements, using as reference the type SHELL LUTEM OIL ECO. THE MINIMUM PERCENTAGE OF OIL DILUTED IN WATER IS 8 - 10 %.

## 8.8 The gear box



The gearbox requires periodic changing of oil. The oil must be changed by the first 6 months of a new machine and every year thereafter.

To change the gear box oil

- Disconnect the machine from the power source.
- Raise the saw arm to vertical position
- Release the drain hole (O) to draw off gear oil by loosening the hex socket screw (O).
- Replace the screw (O) after oil completely flows off.
- Place the saw arm back to horizontal position.
- Fill Gear box with approximately .3 liter of gear oil through the hole of the vent screw (Q)

For reference, use SHELL type gear oil or Mobile gear oil #90.

## 8.9 Special maintenance

Special maintenance must be conducted by skilled personnel. We advise contacting your nearest dealer and/or importer. Also the reset of protective and safety equipment and devices (of the reducer), the motor, the motor pump, and other electrical components requires special maintenance.




# JET MBS-823DGVI / MBS-827DGVI

## 9. Technical characteristics

### 9.1 Table of cutting capacity and technical details

#### MBS-823DGVI




Cutting capacity

			
90°	227mm	220mm	260x110mm
45°	150mm	145mm	200x125mm
60°	90mm	85mm	
45°(L)	110mm	110mm	160x110mm

Electric motor-blade rotation	1.1kW
Flywheel diameter	295mm
Blade dimensions	27x0,9x2460mm
Blade speed cutting	20-85 m/min
Opening vice	260mm
Saw frame tilting	40°
Working table height	900mm
Weight	280 kg

#### MBS-827DGVI

Cutting capacity

			
90°	270mm	260mm	350x220mm
45°	240mm	220mm	240x160mm
60°	160mm	150mm	
45°(L)	210mm	180mm	180x180mm

Electric motor-blade rotation	1.5kW
Flywheel diameter	380mm
Blade dimensions	27x0,9x3160mm
Blade speed cutting	20-85 m/min
Opening vice	355mm
Saw frame tilting	40°
Working table height	900mm
Weight	360 kg

### 9.2 Noise emission

Acoustic pressure level (EN 11202):

Idling	Lpa 71,0 dB(A)
Operating	Lpa 83,8 dB(A)

The specified values are emission levels and are not necessarily to be seen as safe operating levels.


As workplace conditions vary, this information is intended to allow the user to make a better estimation of the hazards and risks involved only.

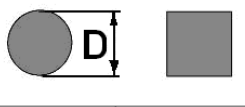
## 10. Choosing the saw band

Choose a tothing that is appropriate to the workpiece being processed. Ideally, at least 3 teeth should be in action at the same time.

The tothing should not be smaller than necessary, as the cutting speed is reduced if there are too many small teeth working on the workpiece simultaneously, which causes the saw band to wear more quickly, and makes the cuts crooked and distorts them.

The following table shows the approximate tothing of the saw bands for a specific material thickness. For further information please contact your saw band dealer.

	
S mm	T / "
< 3	18
2 - 5	10/14
4 - 8	8/12
6 - 12	6/10
8 - 15	5/8

	
D mm	T / "
< 30	10/14
20 - 50	8/12
25 - 60	6/10
35 - 80	5/8
50 - 100	4/6
80 - 150	3/4
>120	2/3

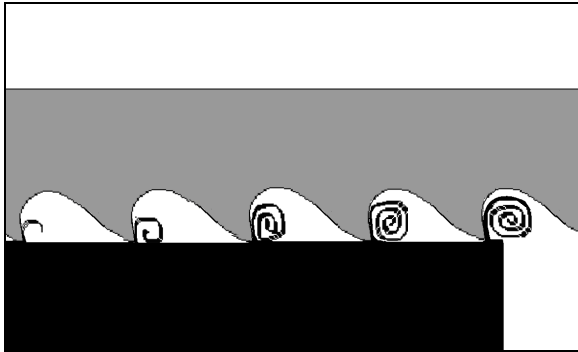
### Comments

10/14 tothing provides good cutting results for thin-walled pipes and profiles.

The choice of tothing (i.e. the number of teeth per inch) should be such that at least 3 teeth are always in action at the same time.

# J E T MBS-823DGVI / MBS-827DGVI

When cutting thick material, a coarse Tooth Pitch "T" is needed to accommodate the big chips.



## Cutting speed selection

The general rule is the harder the material being cut, the slower the blade speed.

### 20 m/min

for stainless steel, alloy steel and bearing bronzes.

### 30-50 m/min

for mild steel, hard brass or bronze.

### 65 m/min

for soft brass, aluminium or other light materials.

## Saw band lubricant

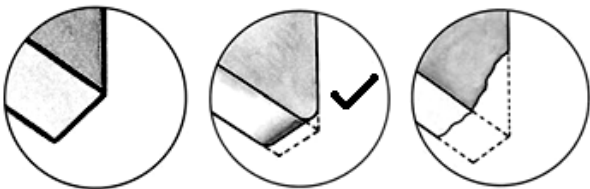
The lifetime of the saw band can be extended significantly by lubricating it with stick wax item no. 100103.

## NOTE

Some materials, such as stainless steel or aluminium, require specific oils.

## Rounding of teeth

A carefully broken in blade lasts much longer and gives better performance.



To break in your new blade, run it at only 30% of normal pressure for ten minutes. Then gradually increase to normal pressure.

## Feed pressure selection:

A good indication of proper feed pressure is the shape of the cutting chips.



Perfect:  
Loose curled chips

If the chips are thin or powdered increase the feed pressure.

If the chips are burned reduce the cutting speed and decrease the feed pressure.

## 10.1 Blade structure

Bi-metal blades are the most commonly used. They consist of a silicon-steel blade backing by a laser welded high speed steel (HSS) cutting edge. The type of stocks are classified in M2, M42, M51 and differ from each other because of their major hardness due to the increasing percentage of Cobalt (Cc) and molybdenum (Mo) contained in the metal alloy.

## 10.2 Blade type

They differ essentially in their constructive characteristics

### - Shape and cutting angle of tooth,- Pitch

REGULAR TOOTH: 0° rake and constant pitch.



Most common form for transversal or inclined cutting of solid small and average cross-sections or pipes, in laminated mild steel and gray iron or general metal.

POSITIVE RAKE TOOTH: 9° - 10° positive rake and constant pitch.



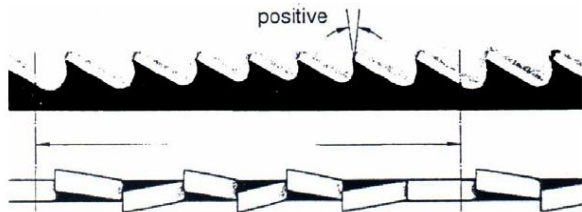
Particular use for crosswise or inclined cuts in solid sections or large pipes, but above all harder materials (highly alloyed and stainless steels, special bronze and forge pig iron).

COMBO TOOTH: pitch varies between teeth and consequently varying teeth size and varying gullet depths. Pitch varies between teeth, which ensures a smoother, quieter cut and longer blade life owing to the lack of vibration.



Another advantage offered in the use of this type of blade in the fact that with an only blade it is possible to cut a wide range of different materials in size and type.

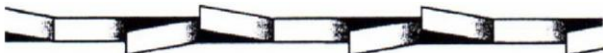
COMBO TOOTH: 9° - 10° positive rake.



This type of blade is the most suitable for the cutting of section bars and large and thick pipes as well as for the cutting of solid bars at maximum machine capacity. Available pitches: 3-4/4-6.

**SETS**

Saw teeth bent out of the plane of the saw body, resulting in a wide cut in the workpiece.



**REGULAR OR RAKER SET:** Cutting teeth right and left, alternated by a straight tooth.



Of general use for materials with dimensions superior to 5 mm. Used for the cutting of steel, castings and hard nonferrous materials.

**WAVY SET:** Set in smooth waves.



This set is associated with very fine teeth and it is mainly used for the cutting of pipes and thin section bars (from 1 to 3 mm).

**ALTERNATE SET (IN GROUPS):** Groups of cutting teeth right and left, alternated by a straight tooth.



This set is associated with very fine teeth and it is used for extremely thin materials (less than 1mm).

**ALTERNATE SET (INDIVIDUAL TEETH):** Cutting teeth right and left.



This set is used for the cutting of nonferrous soft materials, plastics and wood.

**10.3 Workpiece materials and characteristics**

TYPES OF STEEL						CHARACTERISTICS		
USE	I UNI	D DIN	F AF NOR	GB SB	USA AISI- SAE	Hardne ss BRINEL L HB	Hardness ROCKWE LL HB	R=N/mm <sup>2</sup>
Constructi on Steel	Fe360 Fe430 Fe510	St37 St44 St52	E24 E28 E36	---- 43 50	---- ---- ----	116 148 180	67 80 88	360÷480 430÷560 510÷660
Carbon Steel	C20 C40 C50 C60	CK20 CK40 CK50 CK60	XC20 XC42H1 ---- XC55	060 A 20 060 A 40 ---- 060 A 62	1020 1040 1050 1060	198 198 202 202	93 93 94 94	540÷690 700÷840 760÷900 830÷980
Spring Steel	50CrV4 60SiCr8	50CrV4 60SiCr7	50CV40 ----	735 A 50 ----	6150 9262	207 224	95 98	1140÷13 30 1220÷14 00
Alloyed steels for hardening and tempering and for nitriding	35CrMo4 39NiCrMo4 41CrAlMo7	34CrMo4 36CrNiMo4 41CrAlMo7	35CD4 39NCD4 40CADG 12	708 A 37 ---- 905 M 39	4135 9840 ----	220 228 232	98 99 100	780÷930 880÷108 0 930÷113 0
Alloyed casehardening steels	18NiCrMo7 20NiCrMo2	---- 21NiCrMo2	20NCD7 20NCD2	En 325 805 H 20	4320 4315	232 224	100 98	760÷103 0 690÷980
Alloyed steel for bearings	100Cr6	100Cr6	100C6	534 A 99	52100	207	95	690÷980
Tool steel	52NiCrMoK U C100KU X210Cr13K U 58CrMo171 3	56NiCrMoV7C1 00K C100W1 X210Cr12 ----	---- ---- Z200C12 Y60SC7	---- BS 1 BD2- BD3 ----	---- S-1 D6-D3 S5	244 212 252 244	102 96 103 102	800÷103 0 710÷980 820÷106 0 800÷103 0
Stainless steel	X12Cr13 X5CrNi1810 X8CrNi1910 X8CrNiMo1 713	4001 4301 ---- 4401	---- Z5CN18. 09 ---- Z6CDN1 7.12	---- 304 C 12 ---- 316 S 16	410 304 ---- 316	202 202 202 202	94 94 94 94	670÷885 590÷665 540÷685 490÷685
Copper alloys , Special brass, Bronze	Aluminium copper alloy G-CuAl11Fe4Ni4 UNI 5275 Special manganese/silicon-brass G-CuZn36Si1Pb1 UNI5038 Manganese bronze SAE43-SAE430 Phosphor bronze G-CuSn12 UNI 7013/2a					220 140 120 100	98 77 69 56.5	620÷685 375÷440 320÷410 265÷314
Cast iron	Gray pig iron G25 Spheroidal graphite cast iron GS600 Malleable cast iron W40-05					212 232 222	96 100 98	245 600 420



# **J E T** MBS-823DGVI / MBS-827DGVI

## **11. Environmental protection**

Protect the environment.

Your appliance contains valuable materials which can be recovered or recycled. Please leave it at a specialized institution.


## **12. Available accessories**

Refer to the JET-Pricelist for various saw blades.

**13. Troubleshooting**

This chapter lists the probable faults and malfunctions that could occur while the machine is being used and suggests possible remedies for solving them.

**13.1 Blade and cut diagnosis**

<b><u>FAULT</u></b>	<b><u>PROBABLE CAUSE</u></b>	<b><u>REMEDY</u></b>
<p><b>Tooth Breakage</b></p> 	<p>Too fast advance</p> <p>Wrong cutting speed</p> <p>Wrong tooth pitch</p> <p>Chips sticking onto teeth and in the gullets or material that gums</p> <p>Defects on the material or material too hard</p> <p>Ineffective gripping of the part in the vise</p> <p>The blade gets stuck in the material</p> <p>Starting cut on sharp or irregular section bars</p> <p>Poor quality blade</p> <p>Previously broken tooth left in the cut</p> <p>Cutting resumed on a groove made previously</p> <p>Vibrations</p>	<p>Decrease advance, exerting less cutting pressure. Adjust the braking device.</p> <p>Change speed and/or type of blade. See chapter on "Material classification and blade selection", in the section <i>Blade selection table according to cutting and feed speed</i>.</p> <p>Choose a suitable blade. See Chapter "Material classification and blade selection".</p> <p>Check for clogging of coolant drain holes on the blade-guide blocks and that flow is plentiful in order to facilitate the removal of chips from the blade.</p> <p>Material surfaces can be oxidized or covered with impurities making them, at the beginning of the cut, harder than the blade itself, or have hardened areas or inclusions inside the section due to productive agents used such as casting sand, welding wastes, etc. Avoid cutting these materials or in a situation a cut has to be made use extreme care, cleaning and remove any such impurities as quickly as possible.</p> <p>Check the gripping of the part.</p> <p>Reduce feed and exert less cutting pressure.</p> <p>Pay more attention when you start cutting.</p> <p>Use a superior quality blade</p> <p>Accurately remove all the parts left in.</p> <p>Make the cut elsewhere, turning the part.</p> <p>Check gripping of the part.</p>

**FAULT**

**Tooth Breakage**

**PROBABLE CAUSE**

Wrong tooth pitch or shape

Insufficient lubricating, refrigerant, or wrong emulsion

Teeth positioned in the direction opposite the cutting direction

**REMEDY**

Replace blade with a more suitable one. See "Material classification and blade selection" in the *Blade Types* section. Adjust blade guide pads. Check level of liquid in the tank. Increase the flow of lubricating refrigerant, checking that the hole and the liquid outlet pipe are not blocked. Check the emulsion percentage. Turn teeth to correct direction

**FAULT**

**Premature blade wear**



**PROBABLE CAUSE**

Faulty running-in of blade

Teeth positioned in the direction opposite the cutting direction

Poor quality blade

Too fast advance

Wrong cutting speed

Defects on the material or material too hard

Insufficient lubricating refrigerant or wrong emulsion

**REMEDY**

See "Material classification and blade selection" in the *Blade running-in* section.

Turn teeth in correct direction.

Use a superior quality blade.

Decrease advance, exerting less cutting pressure. Adjust the braking device.

Change speed and/or type of blade. See chapter on "Material classification and blade selection," in the section *Blade selection table according to cutting and feed speed*.

Material surfaces can be oxidized or covered with impurities making them, at the beginning of the cut, harder than the blade itself, or have hardened areas or inclusions inside the section due to productive agents used such as casting sand, welding wastes, etc. Avoid cutting these materials or perform cutting with extreme care, cleaning and remove such impurities as quickly as possible.

Check level of liquid in the tank. Increase the flow of lubricating coolant, checking that the coolant nozzle and pipe are not blocked. Check the emulsion percentage.

**FAULT**

**Sawblade breakage**



**PROBABLE CAUSE**

Faulty welding of blade

Too fast advance

Wrong cutting speed

Wrong tooth pitch

Ineffective gripping of the part in the vice

Blade touching material at beginning of cut

Remedy

**REMEDY**

The welding of the blade is of utmost importance. The meeting surfaces must perfectly match and once they are welded they must have no inclusions or bubbles; the welded part must be perfectly smooth and even. They must be evenly thick and have no bulges that can cause dents or instant breakage when sliding between the blade guide pads. Decrease advance, exerting less cutting pressure. Adjust the braking device.

Change speed and/or type of blade.

See chapter on "Material classification and blade selection", in the section *Blade selection table according to cutting and feed speed*.

Choose a suitable blade. See Chapter "Material classification and blade selection."

Check the gripping of the part.

At the beginning of the cutting process, never lower the saw bow before starting the blade motor



Blade guide pads not regulated or dirty because of lack of maintenance

Blade guide block too far from material to be cut

Improper position of blade on flywheels

Insufficient lubricating coolant or wrong emulsion

Check distance between pads (see "Machine adjustments" in the *Blade Guide Blocks* section): extremely accurate guiding may cause cracks and breakage of the tooth. Use extreme care when cleaning.

Approach head as near as possible to material to be cut so that only the blade section employed in the cut is free, this will prevent deflections that would excessively stress the blade.

The back of blade rubs against the support due to deformed or poorly welded bands (tapered), causing cracks and swelling of the back contour.

Check level of liquid in the tank. Increase the flow of lubricating refrigerant, checking that the hole and the liquid outlet pipe are not blocked. Check the emulsion percentage.

**FAULT**

**PROBABLE CAUSE**

**REMEDY**

<p><b>Steaked or etched blades</b></p>	<p>Damaged or chipped blade guide pads Tight or slackened blade guide bearings.</p>	<p>Replace them. Adjust them (see Chapter "Machine adjustments" in <i>Blade guide</i> section).</p>
<p><b>Cuts off the straight</b></p>	<p>Blade not parallel as to the counter service</p> <p>Blade not perpendicular due to the excessive play between the guide pads and maladjustment of the blocks</p> <p>Too fast advance</p> <p>Worn out blade</p> <p>Wrong tooth pitch</p> <p>Brooken teeth</p> <p>Insufficient lubricating refrigerant or wrong emulsion</p>	<p>Check fastenings of the blade guide blocks as to the counter-vice so that they are not too loose and adjust blocks vertically; bring into line the position of the degrees and if necessary adjust the stop screws of the degree cuts.</p> <p>Check and vertically re-adjust the blade guide blocks; reset proper side guide play (see Chapter "Machine adjustments" In <i>Blade guide</i> section).</p> <p>Decrease advance, exerting less cutting pressure. Adjust the braking device.</p> <p>Approach it as near as possible to material to be cut so that only the blade section employed in the cut is free, this will prevent deflections that would excessively stress the blade.</p> <p>Replace it. Blade with major density of teeth is being used, try using one with less teeth (see Chapter "Material classification and blade selection" in the <i>Blade Types</i> section).</p> <p>Irregular work of the blade due to the lack of teeth can cause deflection in the cut; check blade and if necessary replace it.</p> <p>Check level of liquid in the tank. Increase the flow of lubricating coolant, checking that the hole and the liquid outlet pipe are not blocked. Check the emulsion percentage.</p>

**FAULT**

**PROBABLE CAUSE**


**REMEDY**

**Faulty cut**

Worn out flywheels  
Flywheel housing full of chips

The support and guide flange of the band are so worn out that they cannot ensure the alignment of the blade, causing faulty cutting; blade rolling and drawing tracks can have become tapered. Replace them. Clean with compressed air.

**Streaked cutting surface**



Too fast advance

Poor quality blade  
Worn out blade or with chipped and/or broken teeth  
Wrong tooth pitch

Blade guide block too far from material to be cut

Insufficient lubricating coolant or wrong emulsion

Decrease advance, exerting less cutting pressure. Adjust the braking device.

Use a superior quality blade.  
Replace it.

Blade used probably has too large teeth, use one with more teeth (see "**Material classification and blade selection**" in the *Blade Types* section). Approach it as near as possible to material to be cut so that only the blade section employed in the cut is free, this will prevent deflections that would excessively stress the blade.

Check level of liquid in the tank. Increase the flow of lubricating coolant, checking that the hole and the liquid outlet pipe are not blocked. Check the emulsion percentage.

**Noise on guide blocks**

Chipped bearings  
Worn out or damaged pads

Dirt and/or chips between blade and guide bearings. Replace them.  
Replace them