

CM70 ALU

OPERATING INSTRUCTIONS

Translation of the original instructions



NORTON
SAINT-GOBAIN®

clipper®



The undersigned manufacturer:

SAINT - GOBAIN ABRASIVES S.A.
190, BD J.F. KENNEDY
L- 4930 BASCHARAGE

Declares that this product:

Masonry Saws: **CM70 ALU 230V**

Code: **70184602669**

is in conformity with the following Directives:

- **"MACHINES" 2006/42/CE**
- **"LOW VOLTAGE" 2014/35/UE**
- **"ÉLECTROMAGNÉTIQUE COMPATIBILITÉ" 2014/30/UE**
- **"NOISE" 2000/14/CE**

and European standard:

EN 12418 – Masonry and stone cutting-off machines – Safety

Valid for machines as of serial number : 180100000

Storage site for the technical documents :

Saint-Gobain Abrasives 190, Bd. J. F. Kennedy 4930 BASCHARAGE, LUXEMBOURG

This declaration of conformity loses its validity when the product is converted or modified without agreement.

Bascharage, Luxembourg, 16.10.2017.

François Chianese, executive officer.

CM70 ALU : OPERATING INSTRUCTIONS

TABLE OF CONTENTS

<u>1</u>	<u>BASIC SAFETY INSTRUCTIONS</u>	<u>6</u>
1.1	<i>Symbols</i>	6
1.2	<i>Machine plate</i>	7
1.3	<i>Safety instructions for particular operating phases</i>	7
<u>2</u>	<u>MACHINE DESCRIPTION</u>	<u>8</u>
2.1	<i>Short description</i>	8
2.2	<i>Purpose of use</i>	8
2.3	<i>Layout</i>	9
2.4	<i>Technical Data</i>	10
2.5	<i>Statement regarding the vibration emission</i>	11
2.6	<i>Statement regarding noise emission</i>	12
<u>3</u>	<u>ASSEMBLY AND COMMISSIONING</u>	<u>13</u>
3.1	<i>Tool assembly</i>	13
3.2	<i>Electrical connections</i>	14
3.3	<i>Water cooling system</i>	15
<u>4</u>	<u>TRANSPORT AND STORING</u>	<u>15</u>
4.1	<i>Securing for transport</i>	16
4.2	<i>Transport procedure</i>	16
4.3	<i>Long period of inactivity</i>	16
<u>5</u>	<u>OPERATING THE MACHINE</u>	<u>17</u>
5.1	<i>Site of work</i>	17
5.2	<i>Cutting methods</i>	17
<u>6</u>	<u>MAINTENANCE AND SERVICING</u>	<u>19</u>
<u>7</u>	<u>FAULTS: CAUSES AND CURES</u>	<u>21</u>
7.1	<i>Fault-finding procedures</i>	21
7.2	<i>Trouble-shooting guide</i>	21
7.3	<i>Circuit diagram</i>	22
7.4	<i>Customer service</i>	23

1 BASIC SAFETY INSTRUCTIONS

The CM70 ALU is exclusively designed for the cutting of construction products mainly on construction sites.

Uses other than the manufacturer's instructions shall be considered as contravening the regulations. The manufacturer shall not be held responsible for any resulting damage. Any risk shall be borne entirely by the user. Observing the operating instructions and compliance with inspection and servicing requirements shall also be considered as included under use in accordance with the regulations.

1.1 Symbols

Important warnings and pieces of advice are indicated on the machine using symbols. The following symbols are used on the machine:



Read operator's instructions



Ear protection must be worn



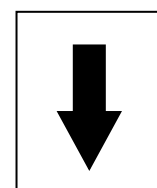
Hand protection must be worn



Eye protection shall be worn



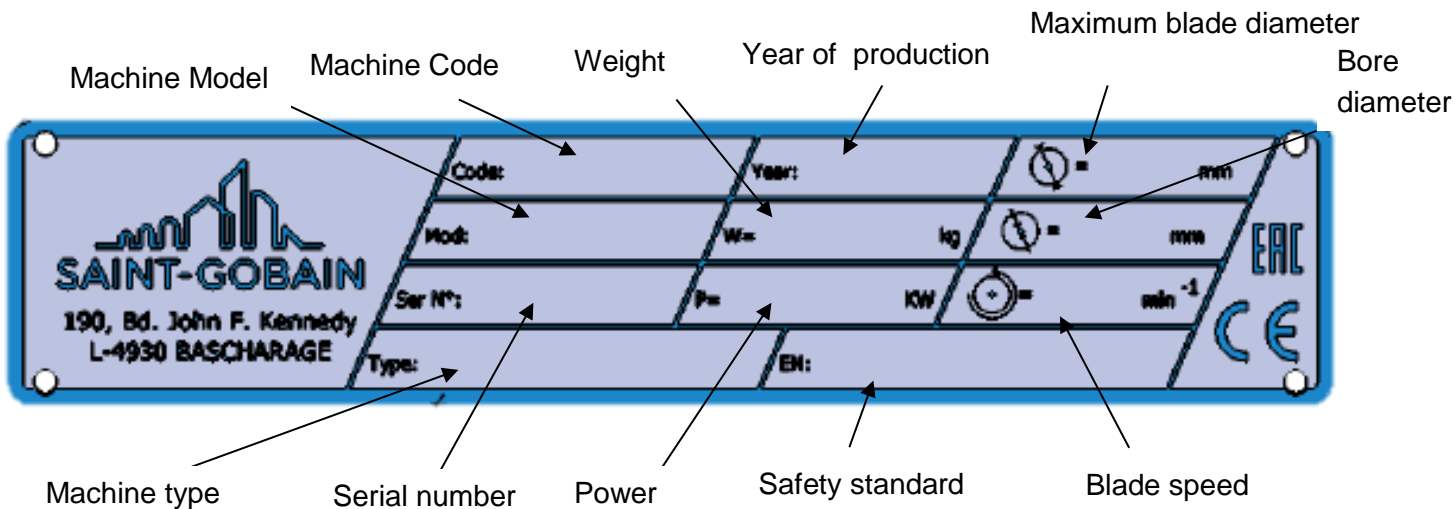
Danger: risk of cut



Rotation direction of the blade

1.2 Machine plate

Important data can be found on the following plate located on the machine:



1.3 Safety instructions for particular operating phases

Before commencing work

- Before commencing work, make yourself familiar with the working environment at the place of use. The working environment includes: obstacles in the area of work and manoeuvre, the firmness of the floor, necessary protection at the site relating to public thoroughfares and the availability of help in the event of accidents.
- Site the machine on an even, firm and stable base!
- During work, apply the brakes located on two of the four wheels.
- Check for correct mounting of the blade regularly.
- Immediately remove damaged or badly worn blades, as they endanger the operator whilst rotating.
- The material to be cut must be held securely in place on the conveyor cart to allow no movement during cutting operation.
- Always cut with the blade guard in position.
- Only fit NORTON diamond blades to the machine! The use of other tools can damage the machine!
- Read the blades' specifications carefully to choose the correct tool for your application.
- Attention is drawn to the use of BS2092 safety goggles in conformity with specified Processes No.8 of the Protection of Eyes Regulation 1974, Regulation 2(2) Part 1.

Electrical powered machine

- Always turn off the machine and separate it from the main source of electricity before any work on the machine is done.
- Make all electrical connections securely to eliminate contact of live wires with spray water or dampness
- When the machine is used with water, it is IMPERATIVE that you earth the machine properly.
- In the event of the machine breaking down or stopping for no apparent reason, switch off the main electricity supply. Only a qualified electrician is allowed to investigate the trouble and remedy the fault.

2 MACHINE DESCRIPTION

Any modification, which could lead to a change in the original characteristics of the machine, may be done only by Saint-Gobain Abrasives who shall confirm that the machine is still in conformity with the safety regulations.

- Raise and lower the cutting unit at different heights.
- Possible to adjust the cutting length by bringing the cutting unit closer.
- The material-holding table or cart has “U” shaped rollers that fit snugly into the slides.
- With 4 removable legs for easy transport.
- The cart is equipped with a graduated ruler that allows you to cut pieces at an angle.
- Equipped with a housing with racks for cooling the cutting blade.
- Machine protected against splashing by a curtain. Avoids the spraying of water towards the rear of the machine.
- Electrical components comply with EU safety standards.
- The material-holding table or cart is equipped with a safety element, which prevents any movement on the slides during transport.
- The material-holding table or cart is designed with an anti-tipping system. This device prevents the cart from falling or tipping over when the pieces to be cut are too large or poorly supported.
- This machine model is manufactured according to European directives.
- All motor bearings are sealed which gives them maximum service life.

2.1 *Short description*

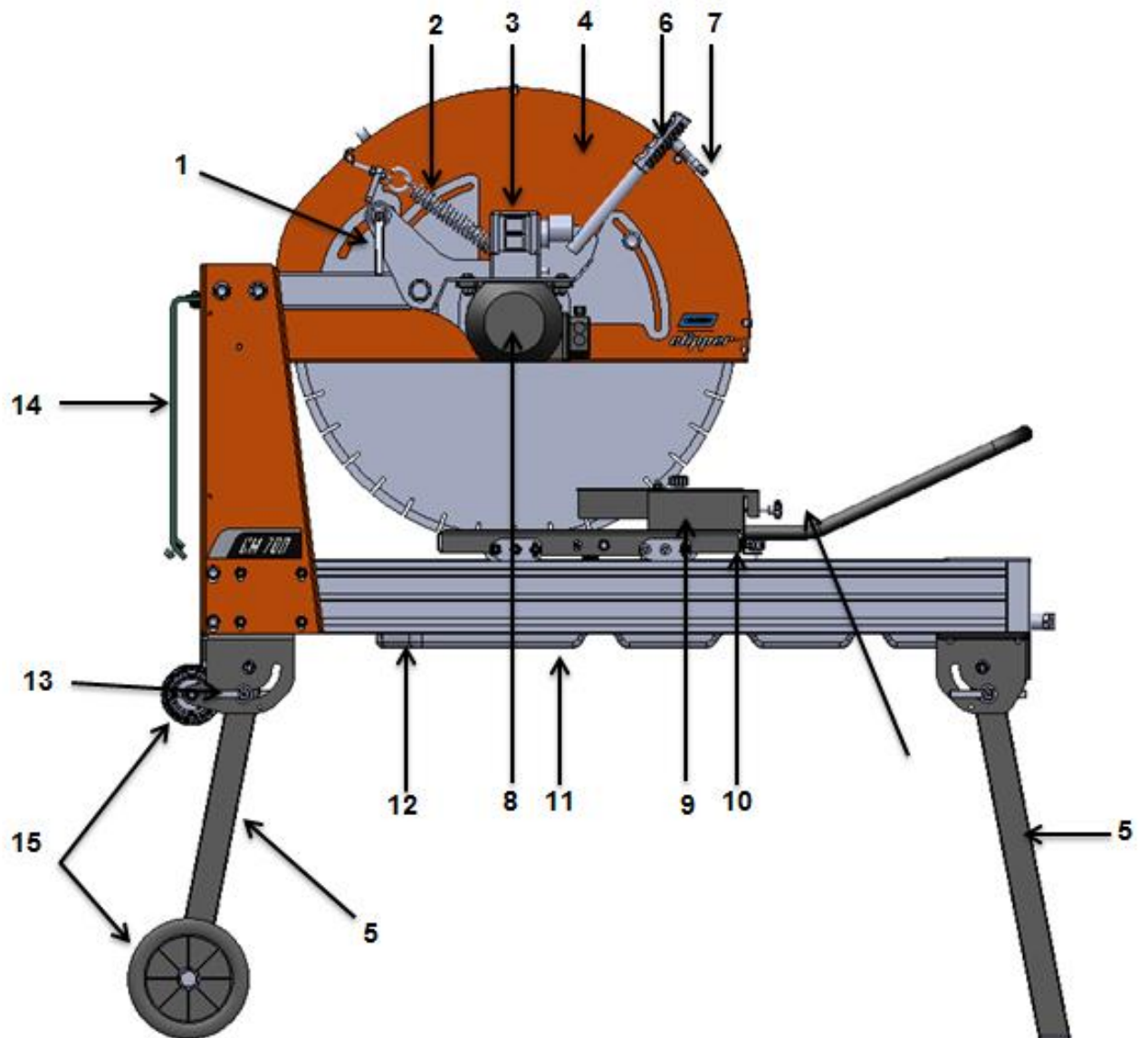
The CM70 ALU block saw is designed for durability and high performance for onsite wet cutting operations of a wide range of masonry, refractory and natural stone products.

As with all other NORTON products, the operator will immediately appreciate the attention given to detail and quality of materials used in construction. The machine and its component parts are assembled to high standards assuring long life and minimum maintenance.

2.2 *Purpose of use*

The machine is designed for cutting a large range of building and refractory materials. It is not designed for cutting wood or metals.

2.3 Layout



1. Quick release handle.
2. Spring.
3. Switch.
4. Blade protection.
5. Legs
6. Handle.
7. Cooling sistem.
8. Motor.
9. Block stopper.
10. Trolley
11. Water tray.
12. Chasis.
13. Leg stopper.
14. Anti splash curtain.

Electrical Motor

Motor with 3 kW. Low voltage trigger (NVR) prevents the motor to restart for example after a power cut.

The electric motor has overload protection. Thermal overload tripping can occur for two reasons:

- a. tripping under light load
 - If connection is incorrect
 - If a phase is not under load

Check the connections and the phase voltage before restarting the machine.

- b. tripping under heavy load
 - If motor has been overloaded

The ON-OFF switch also serves as emergency stop.

2.4 Technical Data

Voltage motor (V) / Phase	230 / Mono
Frequency (Hz) / Plug	50 / 3P
Kw (Hp)	3
Water tray capacity	42
Blade bore diameter (mm)	25,4
Blade diameter (mm - Pulg)	600/650/700 - 24 /25/27
Rotational Speed (Tr/min)	1500
Blade included (mm - Pulg)	Non
Maximum cutting length (mm)	540
Maximum cutting depth (mm)	Blade Ø700: 270 / 355 – Blade Ø600: 230 / 300
Net weight (Kg)	128
Packing dimensions LxIxh	1450 x 850 x 800
Folding legs	oui

2.5 Statement regarding the vibration emission

Declared value of vibration emission following **EN 12096**.

Machine Model / code	Measured value of vibration emission at m/s ²	Uncertainty K m/s ²	Tool used Model / code
CM70 ALU 70184602669	<2.5	0.5	PRO UNIVERSAL LASER

- The vibration value is lower and does not exceed 2.5 m / s.
- Values determined using the procedure described in the standard **EN 12418**.
- The measurements are made with new machines. Actual values may vary with site conditions, in terms of:
 - Materials worked
 - Wear Machine
 - Lack of maintenance
 - Inappropriate tool for application
 - Tool in poor condition
 - Unskilled operator
 - Etc...
- The exposure time to vibration is based on the performance of work (related to the adequacy Machine / Tool / worked material / operator)

When evaluating risks due to hand-arm vibration, you need to take into account effective usage at rated power of machine during a full day of work; quite often you will realise that effective utilisation time represents around 50% of overall duration of work. You have to consider, of course, breaks, water feeding, preparation of work, time to move the machine, disk mounting...

2.6 Statement regarding noise emission

Declared value of noise emission following **EN ISO 11201** and **NF EN ISO 3744**.

Machine Model / code	Sound Pressure level L_{Peq} EN ISO 11201	Uncertainty K (Sound Pressure level L_{Peq} EN ISO 11201)	Sound power level L_{Weq} NF EN ISO 3744	Uncertainty K (Sound power level L_{Weq} NF EN ISO 3744)
CM70 ALU 70184602669	100dB(A)	2.5 dB(A)	116 dB(A)	4 dB(A)

- Values determined using the procedure described in the standard **EN 12418**.
- The measurements are made with new machines. Actual values may vary with site conditions, in terms of:
 - Wear Machine
 - Lack of maintenance
 - Inappropriate tool for application
 - Tool in poor condition
 - Unskilled operator
 - Etc...
- Measured values relate to an operator in normal use, as described in the manual position.

3 ASSEMBLY AND COMMISSIONING

The machine is delivered fully equipped and assembled (although without diamond blade) and is ready for operation after connection to the appropriate power supply.

3.1 Tool assembly

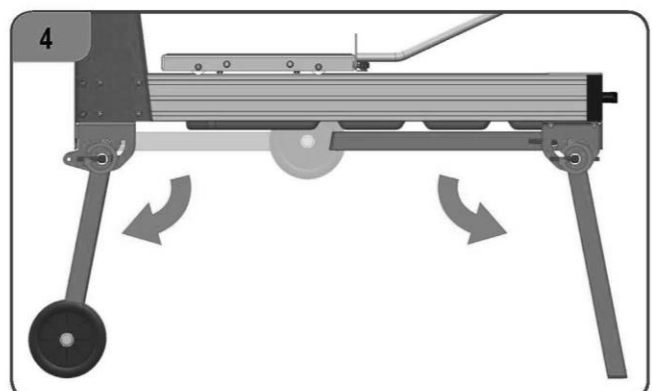
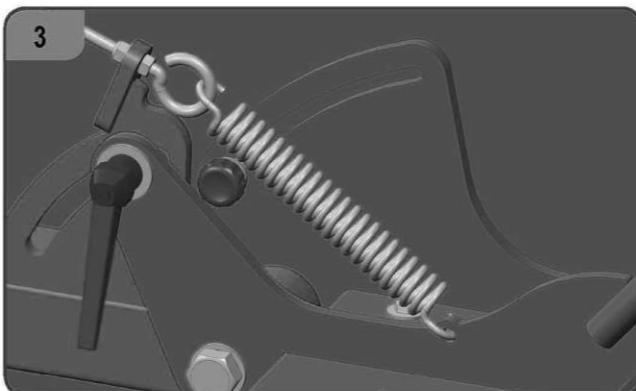
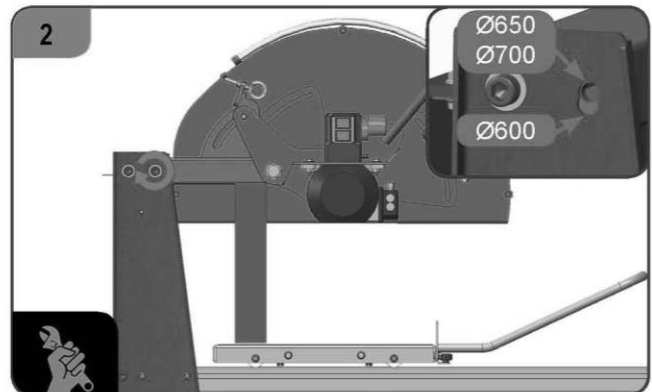
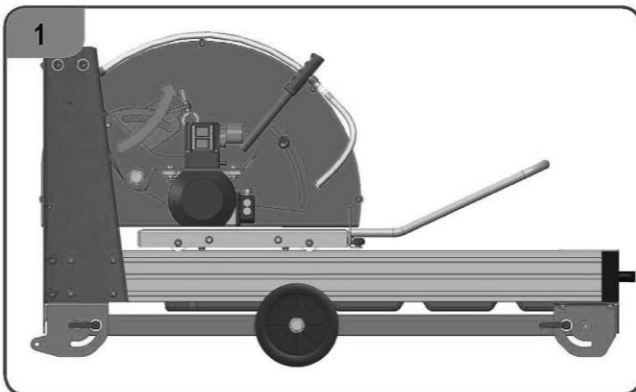
Only NORTON blades with a maximum diameter of 700 mm can be used with the CM70 ALU.

All tools used must be selected with regard to their maximum permitted cutting speed for the machine's maximum permitted rotation speed.

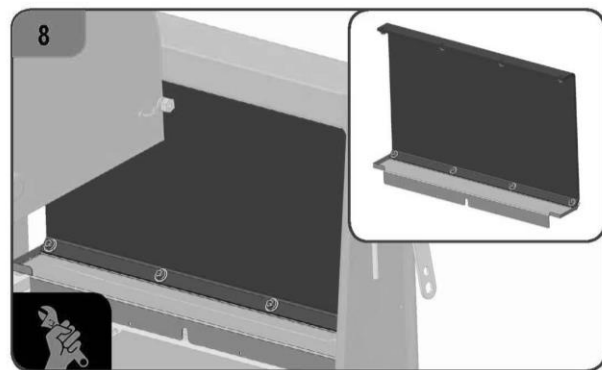
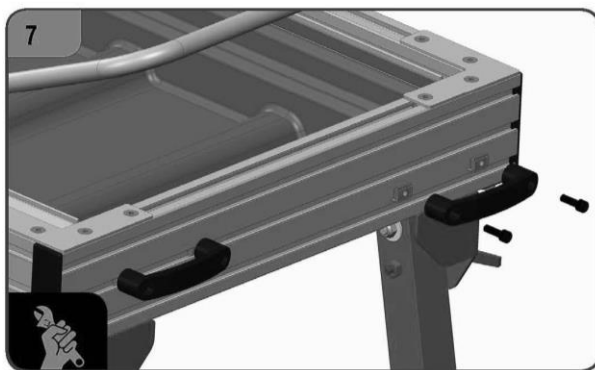
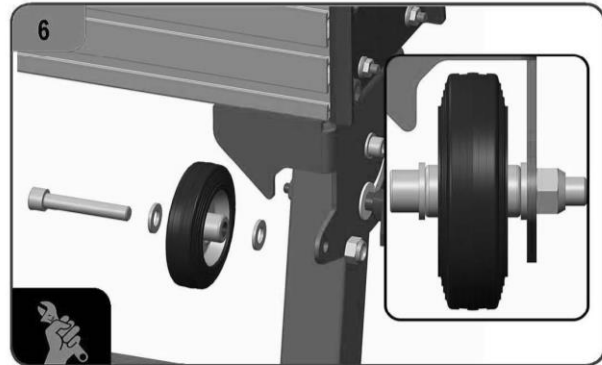
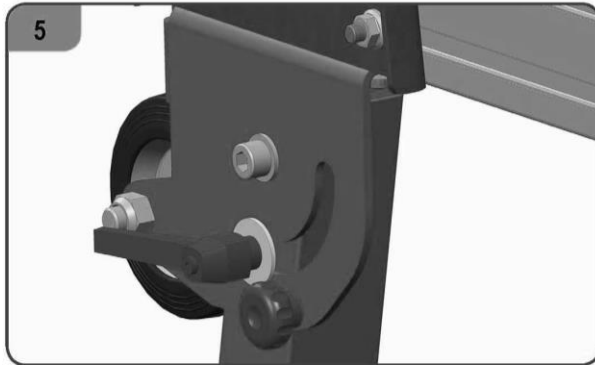
Before mounting a new blade into the machine, switch off the machine and isolate it from the main source of electricity.

To mount a new blade, follow these steps:

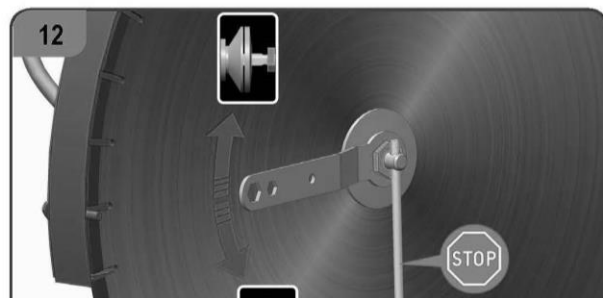
1. Use the cardboard accessory to support the head while you fix it in place
2. Depending on the size of blade you will use, fix the head in one position or another.
3. Install the spring.
4. Unfold the legs and fix them in place



5. Install the blocking Wheel so that the legs cannot collapse in transport.
6. Install the upper wheels.
7. Install the transport handle.
8. Install the antislash carpet



9. Install the ruler on the cutting surface.
10. Install the tool holder.
11. Mount the blade.



CAUTION: The blade bore must exactly match the diameter of the blade shaft. A cracked or damaged bore is dangerous for the operator and for the machine.

3.2 *Electrical connections*

Electrical connections

The electrical equipment of the CM70 ALU cutting tables manufactured by Norton Clipper has an IP54 protection degree. The power supply on this machine has an under-voltage coil to prevent the machine from starting up unexpectedly. When there is a power cut or voltage drop that causes the machine to stop, and once the normal power conditions have been re-established, the motor does not start until the green button is pressed.

Check that,

- the voltage/phase supply corresponds to the information indicated on the motor plate.
- Available power supply must have ground connection in conformity with safety regulations.
- The connecting cables should have at least a 2.5mm²-section per phase.

Switch on the machine

230V Motor

To start the machine, press the green button. To switch it off, press the red button.

Direction of rotation

The direction of rotation is indicated on the blade guard. If the direction of rotation does not correspond to the direction shown by the arrow, then reverse the motor polarity by turning the phase inverter inside the male plug with a screwdriver.

Emergency Stop

To restart the machine after an emergency stop, press green button. To stop the machine, press the red button.



3.3 *Water cooling system*

Material saws are designed to work with water-cooled diamond blades. This is why one of the essential components of its structure is the water tank that acts as a closed circuit cooling tank (water is pumped up to the blade).

- Put enough water in the tank (up to about 2.5 cm from the top edge), making sure the pump body is fully submerged.
- The blade should be sufficiently watered on both sides. You can adjust the amount of water using the tap in the blade housing.
- If the blade is not sufficiently watered, the segments may heat up, which accelerates damage and increases the risk of blade rupture. This is why the pipes and nozzles must not be clogged.

- In no case should the water pump run empty. Therefore, ensure that the water level in the tank never falls below the water suction of the pump.
- If there is a risk of frost, please empty the blade cooling system completely.
- During cutting operations, many impurities accumulate in the bottom of the tank. It is then necessary to frequently change the water in order to guarantee the proper functioning of the pump and optimal cooling of the blade. The tank is equipped with a drain plug which facilitates this task.

4 TRANSPORT AND STORING

Take the following measures in order to transport the CM70 ALU securely.

4.1 Securing for transport

Before transporting or lifting the machine, always remove the blade and empty the water pan.

The conveyor cart must be secured:

- move the conveyor cart to the end of the machine
- fix it using the pin on the rear post of the chassis and the eye screw on the conveyor cart.

4.2 Transport procedure

The machine can be moved on a flat surface using its wheels. Only use the lift brackets to lift the machine, as other parts of the machine are not designed for this purpose. The machine is not intended to be transported by crane.

4.3 Long period of inactivity

If the machine is not going to be used for a long period, please take the following measures:

- Completely clean the machine
- Empty the water system
- Take the water pump out of the slurry and clean it thoroughly.

The storage site must be clean, dry and at a constant temperature.

5 OPERATING THE MACHINE

5.1 Site of work

5.1.1 Siting the machine

- Remove from the site anything, which might hinder the working procedure!
- Make sure the site is sufficiently well lit!
- Observe manufacturer's conditions for connecting to power supplies!
- Place electric cables in such a way that damage by the device is excluded!
- Make sure you have a continual adequate view of the working area so you can intervene in the working process at any time!
- Keep other staff out of the area, so you can work securely.

5.1.2 Space required for operation and maintenance

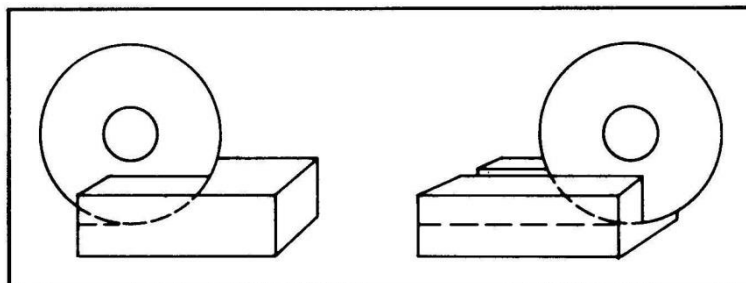
Leave 2 m in front of the machine and 1,5 m around it for usage and maintenance of the CM70 ALU.

5.2 Cutting methods

To use the machine correctly, you must face it with one hand on the handle of the cutting head, and the other on the handle of the conveyor cart. Always keep your hands away from the moving blade.

5.2.1 Jam or fixed cutting

In jam or fixed cutting, the cutting head is locked in a fixed position and the material is pushed into it as shown.



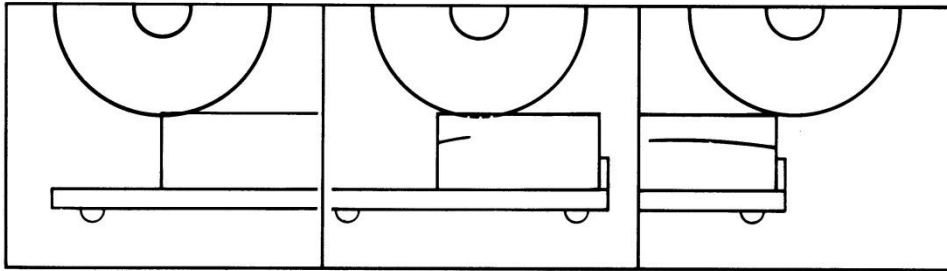
- Lower the cutting head to the desired cutting depth (in “through cutting”, lower cutting head until blade periphery reaches max. 3-5mm under the surface of the conveyor cart) by means of the handle on the blade guard
- Fix position by tightening the clamping device
- Put material on conveyor cart
- Push the conveyor cart slowly and without undue pressure towards the rotating blade and cut the material.

NOTE: While recommended, it is not absolutely necessary to lock the cutting head into a given depth position when jam cutting. The desired cutting depth can be maintained by holding firmly the depth feed handle on the blade guard.

If the full depth of cut requires excessive pressure (on very dense material e.g.) make 2 or 3 shallow cuts.

5.2.2 Multiple step cutting

Multiple step cutting consists of moving the conveyor cart with the material to be cut back and forward under the rotating blade,



- Place the material to be cut on the conveyor cart firmly against the guide-a-cut and the backstop, keeping the hands well away from the blade.
- Move conveyor cart forward near the blade and pull down the cutting head until blade is lowered to a point where it will lightly contact the surface of the material.
- Then pass the material beneath with rapid full length strokes, taking a shallow cut (approximately 3 mm deep) on the forward. On the backward stroke, lift the blade just clear over the cutting line.
- Complete each rapid stroke backward and forward by passing the material beyond the centre of the blade before starting the reverse movement of the conveyor cart.

NOTE: the harder the material, the more rapid should be the forward and backward strokes.

Step cutting lessens the area of the blade circumference in contact with the material, keeping the blade cool, running free and cutting at peak efficiency.

5.2.3 General advice for the cutting

- Material weighing under 30 kg and having dimensions smaller than 600x500x265mm can be cut with the CM70 ALU.
- Before commencing work make sure tools are firmly seated!
- Select the right tools as recommended by the manufacturer depending on the material to be worked, the working procedure (wet cut) to be carried out and the required efficiency.
- Apply cooling water continuously whilst cutting and in good time!
- When cutting work is finished, close the water-tap so you can remove the cut pieces from the conveyor cart without getting wet.
- If the thermal protection trips, wait a few minutes to allow the motor to cool down before restarting the machine.
- In case of the triggering of the thermal protection, press the black button on the switch (230V motor) .

6 MAINTENANCE AND SERVICING

To ensure a long-term quality from the cutting with the CM70 ALU, please follow the maintenance plan below:

		Begin of the day	During the changing of the tool	End of the day	Every week	After a fault	After a damage
Whole machine	Visual control (general aspect, watertightness)						
	Clean						
Flange and blade fixing devices	Clean						
Motor cooling fans	Clean						
Water pan	Clean						
Water pump	Clean						
Water hoses and nozzles	Clean						
Water pump filter	Clean						
Cart guiding bars	Clean						
Motor housing	Clean						
Reachable nuts and screws	Tighten up						

Maintenance of the Motor

Always perform the maintenance of the motor with the machine isolated from the electrical supply.

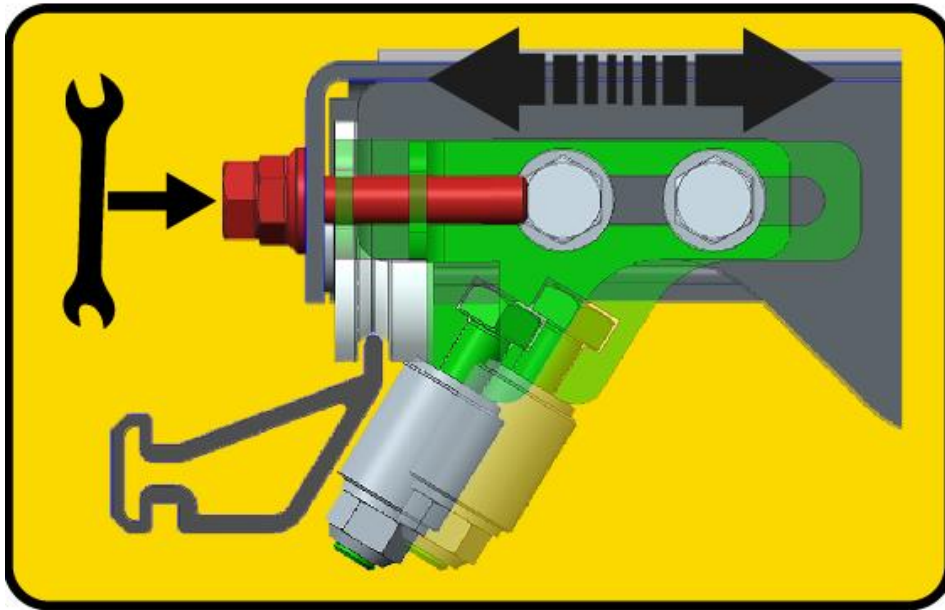
Lubrication

The CM70 ALU uses life-lubricated bearings. Therefore, you don't need to lubricate the machine at all.

Cleaning of the machine

Your machine will last longer if you clean it thoroughly after each day of work, especially water pump, water pan, motor and blade flange.

The conveyor cart has an anti-tipping system so that it does not derail. If you want to remove the cart for any maintenance operation, you should loosen the red bolt as shown in the image. Then you must slide the anti-tipping system to extract the cart from the slides.



7 FAULTS: CAUSES AND CURES

7.1 *Fault-finding procedures*

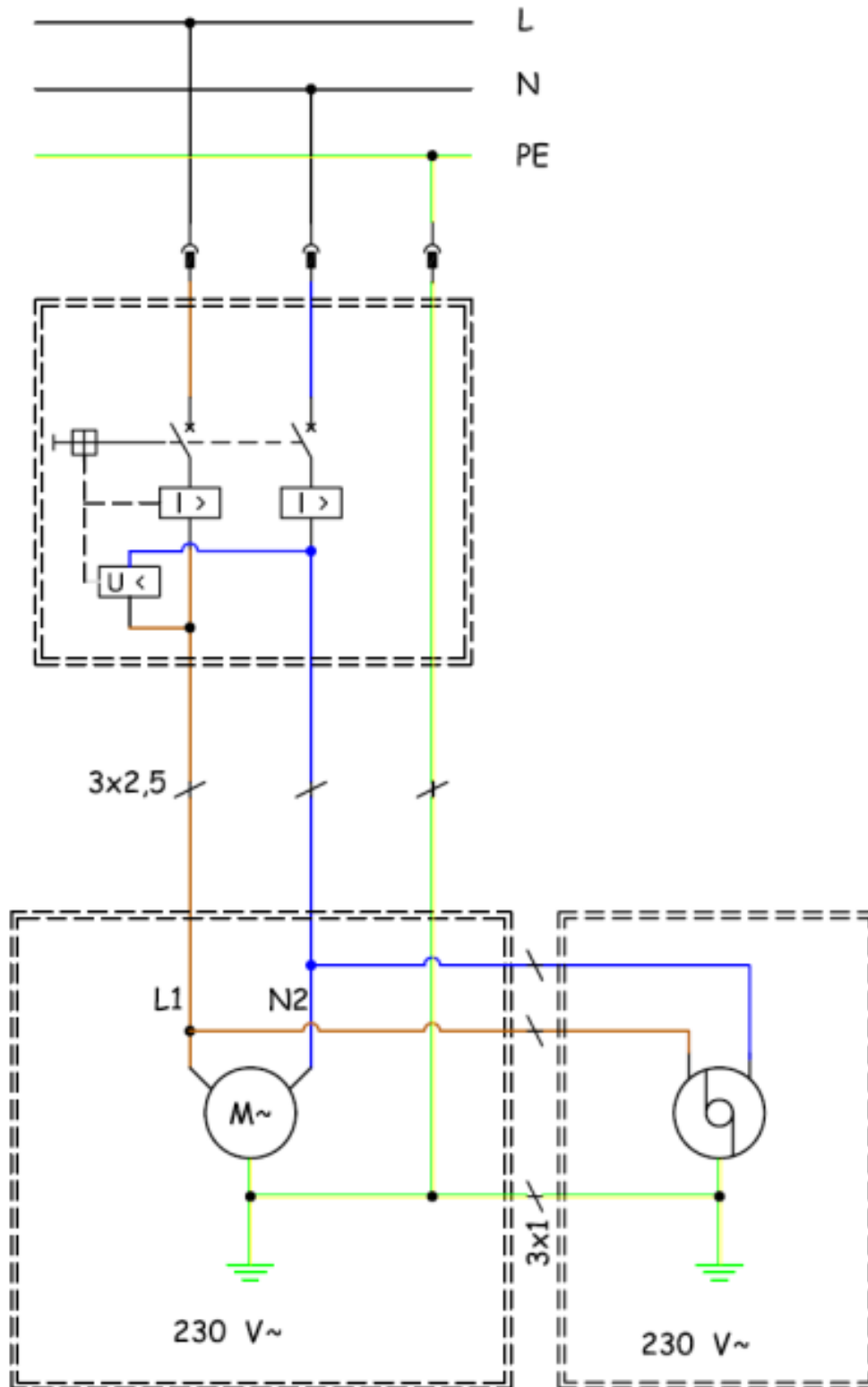
Should any fault occur during the use of the machine, turn it off, and isolate it from the electrical supply. Any works dealing with the electrical system or supply of the machine can only be carried out by a qualified electrician.

7.2 *Trouble-shooting guide*

Trouble	Possible source	Resolution
Wrong direction of rotation	Wrong motor polarity	Invert polarity on male plug
Motor is not running	No electricity	Check the electrical supply (fuse for example)
	Connection cable section too small	Change connection cable
	Defective connection cable	Change connection cable
	Defective switch	CAUTION : can only be solved by qualified electrician
	Defective motor	Change motor or contact motor manufacturer
Motor stops during the cutting, but can be restarted after a short period	Cutting advance too quick	Cut slowly
	Blade is blunt or glazed	Sharpen the blade in calcareous stone
	Defective blade	Change blade
	Wrong blade corresponding to the application	Change blade
No water on the blade	Water tap is closed	Open tap on blade cover
	Water supply system is blocked up	Clean water supply system
	Water pump is not working	Check that pulley is driven by belts Change the pump

7.3 Circuit diagram

- 2P+ T



7.4 Customer service

When ordering spare parts, please mention:

- The serial number.
- The code of the part.
- The exact denomination.
- The number of parts required.
- The delivery address.
- Please indicate clearly the means of transportation required such as "express" or "by air".
Without specific instructions, we will forward the parts through the means which seem appropriate to us --- but which is not always the quickest way.

Clear instructions will avoid problems and faulty deliveries.

If not sure, please send us the defective part.

In the case of a warranty claim, the part must always be returned for evaluation.

Spare parts for the motor can be ordered with the manufacturer of the motor or with their dealer, which is often quicker and cheaper.

This machine has been manufactured by Saint-Gobain Abrasives S.A.

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e-mail: sales.nlx@saint-gobain.com

Guarantee can be claimed and technical support obtained from your local distributor where machines, spare parts and consumables can be ordered as well:

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