

CM 1000 Jumbo 400V

OPERATING INSTRUCTIONS

Translation of the original instructions



clipper®



CE Declaration of conformity

The undersigned manufacturer:

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

Declares that this product:

Masonry saw: **CM 1000 jumbo 400V**

Code: **70184607570**

Is in conformity with the following Directives:

- **"MACHINES" 2006/42/CE**
- **"LOW VOLTAGE" 2014/35/UE**
- **"ELECTROMAGNETIC COMPTABILITY" 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 :

1801XXXXX

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, the 15.05.2018 :

François Chianese, executive officer.

CM 1000 JUMBO 400V OPERATING INSTRUCTIONS

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1 BASIC SAFETY INSTRUCTIONS

The CM 1000 jumbo 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



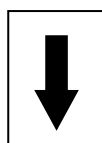
Ear protection must be worn



Hand protection must be worn



Eye protection shall be worn



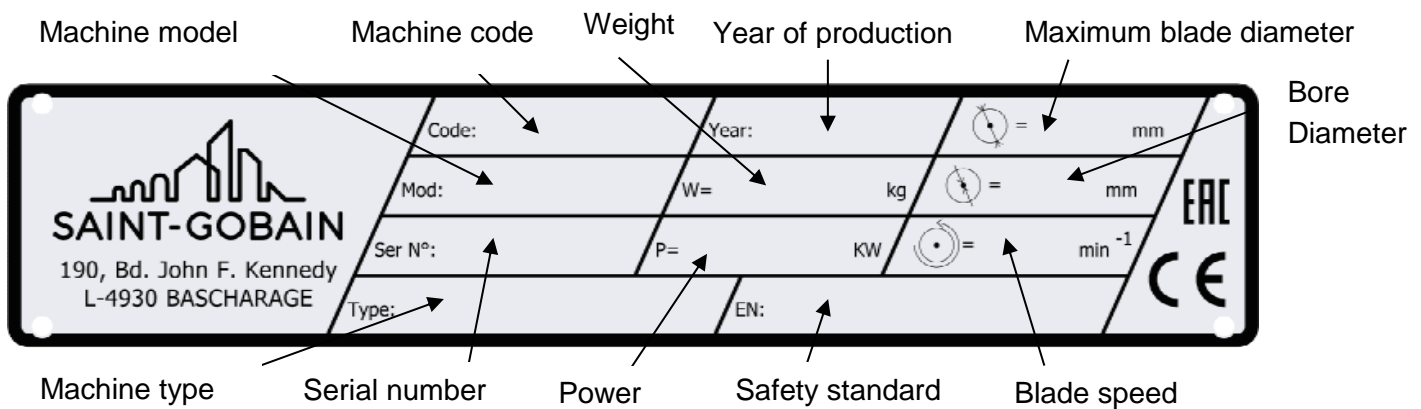
Rotation direction of the blade



Danger: risk of cut

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 cutting table allowing 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. Also use other safety equipment as mentioned in point 1.1.

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.
- You can lock the ON-OFF-switch using a padlock.



- Make all electrical connections securely to eliminate contact of live wires with spray water or dampness
- 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.

2.1 Short description

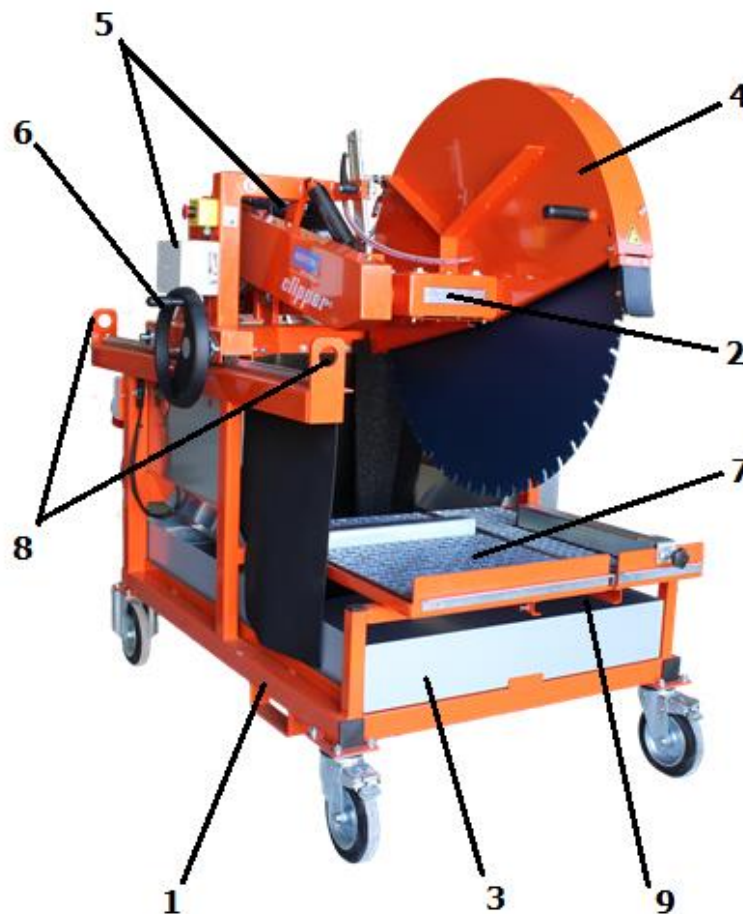
The CM 1000 jumbo block saw is designed for durability and high performance for onsite wet cutting operations of a wide range of masonry, refractory and natural stone products.

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



Frame (1)

Jig-welded, reinforced and all-steel construction ensures perfect rigidity. The frame includes a large capacity water tray with drain plug. Frame has built-in lift brackets (8) for easy transportation and is mounted on 4 wheels, 2 of which have a locking device to secure the machine during cutting.

Cutting head (2)

Jig-welded steel console equipped with pivot bar fixed to frame upright and housed in heavy-duty bearings. Console supports the electric motor, the belt drive with its guard and the blade shaft assembly. Bearings are machined for perfect fit and alignment. Precision-machined blade shaft held in ball bearings and is driven by three heavy-duty V-section drive belts. The blade shaft assembly is completely enclosed in a cutting head console, accessible for inspection by way of a removable plate. The removable blade flange is tightened by means of a hexagonal nut. The spring-loaded cutting head ensures smooth lowering of the cutting head. A depth-locking device fixed to cutting head and frame enables the operator to set the cutting head to desired or to maximum cutting depth. The movement of the head is ensured by a handwheel (6).

Water cooling system (3)

The coolant system comprises:

- A powerful, submersible electric water pump protected by a thermal protection
- Plastic suction pipe delivering the water from the water pan to the cutting head
- A large capacity water pan (pan is galvanised) supplied with drain plug
- The water supply system is mounted on the blade guard.
- Two water nozzles located on the blade guard ensure adequate flow of water to both sides of the cutting blade
- Water curtains, fixed to frame and blade guard to restrict water spray and to minimise water loss

Attention: The water pump must never run without water.

Blade guard (4)

Jig-welded steel construction with 1000mm-diameter blade capacity offers maximum operator protection and increased visibility of the work piece. Incorporated in the blade guard is an outer metal cover articulated on 2 hinges., which permits easy access to shaft for inspection and blade replacement when motor is switched off, while fully protecting the blade when in operation.

Electrical Motor(5)

Leroy - Somer motor with 7, 5kW. 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.

Cutting table (7)

Large, heavy-duty and galvanised table fitted with water flow-control vents. The table is equipped with a backstop and with a guide-a-cut device.

Slide front protection (9)

The slide front retrieves the projection water in front of the machine, and protects the blade zone that exceed of the table when we cut.

2.4 Technical Data

Electric motor	7,5 kW 3-Phase 50Hz 1490 min ⁻¹
Voltage	• 400V 3 phases
Electric motor protection	IP54
Switch	Star-triangle switch with thermal overload protection, no volt release and emergency stop
Max. blade diameter	1000mm
Bore	60 mm
Cutting length mm	720 mm
Cutting depth mm	• 370 mm (Ø 900) • 420 mm (Ø 1000)
Table dimension	780x810 mm
Flange diameter	155 mm
Blade shaft speed	928 min ⁻¹
Machine dimensions	2000x1080x1700 mm
Weight	420kg
Max. operating weight	480kg
Sound pressure level	86 dB (A) (following ISO EN 11201)
Sound energy level	100 dB (A) (following ISO EN 3744)

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
CM 1000 JUMBO 400V 70184607570	<2.5	0.5	Norton Pro BS - 12

- The vibration value is lower and does not exceed 2.5 m/s².
- 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)
CM 1000 JUMBO 400V 70184607570	86 dB(A)	2.5 dB(A)	100 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 and is ready for operation after connection to the appropriate power supply.

3.1 Tool assembly

Use only NORTON blades with a maximum diameter of 1000 mm.

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:

- Disconnect water hoses from the blade guard.
- Open the blade guard.
- Loosen the hexagonal nut on the blade shaft while holding the shaft (with the two 36mm spanners supplied with the machine), which holds the removable outer flange.
- Remove the outer flange.
- Clean the flanges and blade shaft and inspect for wear.
- Mount the blade on arbour ensuring that direction of rotation is correct. Wrong direction of rotation blunts the blade quickly.
- Replace outer blade flange.
- Tighten hexagonal nut while holding the shaft with spanners supplied for this purpose.
- Close the blade guard cover and reconnect water hoses.

ATTENTION: The blade bore must correspond exactly to the diameter of the blade shaft. Cracked or damaged bore is dangerous for the operator and for the machine.

3.2 Electrical connections

Electrical connections

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.

3.3 Starting the machine

Machine 400V

Put the ON-OFF-Switch at ON. Then put the Star-Triangle-Switch on Y. The water pump begins to work. Wait until the blade reaches its maximum rotational speed, and then turn the Star-Triangle-switch on Δ .

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 (One-voltage 400V Motor)

To restart the machine after an emergency stop, turn the Star-Triangle-Switch on "0". Then turn the ON-OFF-Switch to ON.

3.4 Water cooling system

- Fill the water pan with clean water to approximately 2,5cm from top (ensure that bottom of pump is fully immersed in water).
- Ensure that water is flowing freely in the circuit and is delivered adequately to both sides of the blade
- If the water supply is insufficient, this may result in premature failure of the diamond blade. That is why we must avoid pipes and nozzles are clogged.
- Open the slide front protection. The slide front protect the blade exceeding of the table when we cut.
- Do not run the water pump without water. Always make sure that there is enough water in the pan and refill if necessary.
- The machines are equipped with a thermal protection to avoid to overload the. In case this protection trips, shut the machine down, and clean the water pump carefully before restarting the machine.
- In case of frost, empty the water cooling system.

4 TRANSPORT AND STORING

Take the following measures in order to transport the CM 1000 jumbo securely.

4.1 *Securing for transport*

Before transporting or lifting the machine, always remove the blade and empty the water pan. Secure the head with the locking hook and handle. Close and lock the slide front protection

4.2 *Transport procedure*

The machine can be moved on a flat surface using its wheels.

The machine can be moved with a forklift, use the specific support that there is under the frame for put the forks

Only use the lift brackets to lift the machine, as other parts of the machine are not designed for this purpose.

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
- Loosen the drive belts
- 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

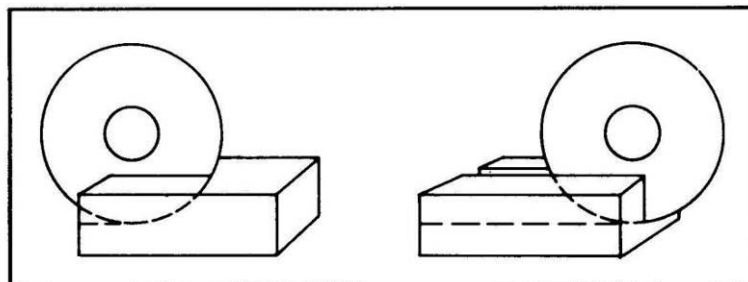
- Remove from the site anything, which might hinder the working procedure!
- Make sure the site is sufficiently well lit!
- Observe manufacturer's conditions for connecting to power supplies!
- Place electric cables in such a way that damage by the device is excluded!
- Make sure you have a continual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

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 CM 1000 jumbo.

5.2 Cutting methods

To use the machine correctly, you must be on the side of the machine with one hand on the handwheel, and the other ready to stop the machine in case of emergency. Always keep your hands away from the moving blade.



- 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 cutting table) by means of the handle on the blade guard and the scale over the head.
- Fix position by tightening the clamping device.
- Put material on cutting table.
- Turn the handwheel slowly and without undue pressure towards the rotating blade and cut the material.
- Open the slide front protection. The slide front protect the blade exceeding of the table when we cut.
- Start the machine.
- When your cut is finished, turn the handwheel so that the blade is completely out of the material before stopping the machine.
- If the full depth of cut requires excessive pressure (on very dense material e.g.) make 2 or 3 shallow cuts.

5.2.1 General advice for the cutting

- Material weighing up to 100 kg and having dimensions smaller than 720x800x370mm can be cut with the CM 1000 jumbo.
- Before commencing work make sure the diamond blade is firmly seated!
- Select the right diamond blade 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.
- Open the slide front protection. The slide front protect the blade exceeding of the table when we cut.
- Make your sure that the water is flowing correctly. If the water supply is insufficient, this may result in premature failure of the diamond blade. That is why we must avoid pipes and nozzles are clogged.
- When cutting work is finished, stop the machine so you can remove the cut pieces from the cutting table without getting wet.
- If the thermal protection trips, wait a few minutes to allow the motor to cool down before restarting the machine.

6 MAINTENANCE AND SERVICING

To ensure a long-term quality from the cutting with the CM 1000 jumbo, 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, water tightness)						
	Clean						
Flange and blade fixing devices	Clean						
Motor cooling fans	Clean						
Belts tension	Check tension and adjust						
Water pan	Clean						
Water pump	Clean						
Water hoses and nozzles	Clean						
Water pump filter	Clean						
Head 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.

Adjustment and replacement of the belts

To adjust the belts, firstly remove the belt guard by unscrewing the 6 nuts. Loosen the 4 motor bolts and shift the motor by using the two screws on the side.

To replace the belts, move the motor completely forward. Adjust the belts and retighten them by shifting the motor to the left.

Always use a matched set of belts. Do not replace single belts.

Lubrication

The CM 1000 jumbo 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, blade flange and cutting head rails.

7 FAULTS: CAUSES AND CURES

7.1 *Fault-finding procedures*

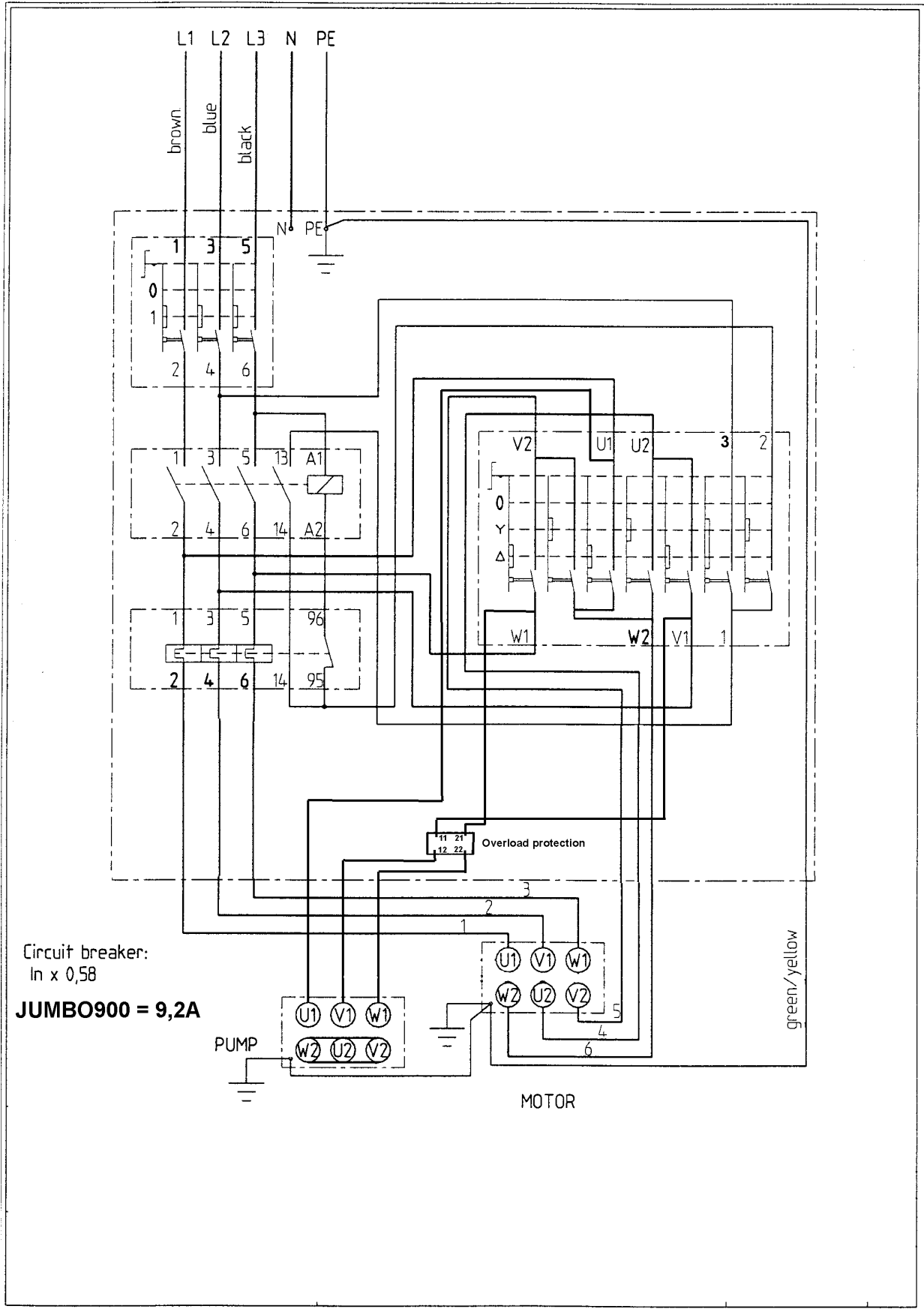
Should any fault occur during the use of the machine, turn it off, and isolate it from the electrical supply. Any works dealing with the electrical system or supply of the machine can only be carried out by a qualified electrician.

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
Blade is not turning	Belts not tightened or defective	Check the belts tension and change them if needed
Motor does not have its full power, or the thermal protection trips as soon as you start the machine	Wrong voltage	Check if the voltage of the electric supply correspond to the voltage of your machine
	Stronger fault	Contact nearest engine maintenance centre
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	Not enough water in the pan	Refill the water pan
	Water supply system is blocked up	Clean water supply system
	Water pump is not working	Turn the machine off and clean the pump thoroughly Reactivate security switch CAUTION : if switch trips again, problem can only be solved by a qualified electrician

7.3 Circuit diagram

Machine 400V



7.4 Customer service

In order to consult the spare parts lists, we invite you to visit the after-sales website of Norton Clipper by using the following address:

<https://spareparts.nortonabrasives.com>

For a quick access, you can also use the QR Code shown below using your mobile phone:



This electronic catalogue provides exploded views and spare parts lists for different machines designed by Norton Clipper so you can find references you need.

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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