

# CHW

## OPERATING INSTRUCTIONS

Translation of the original instructions



**clipper**®



The undersigned manufacturer:

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

Declares that this product:

Masonry Saws: **CHW 500 1.30.1 230V**

Code: **70184614039**

**CHW 600 1.30.1 230V**

**70184614040**

**CHW 600 1.20.1 115V UK**

**70184614078**

is in conformity with the following Directives:

- **"MACHINES" 2006/42/CE**
- **"LOW VOLTAGE" 2006/95/CE**
- **"ÉLECTROMAGNÉTIQUE COMPATIBILITÉ" 2004/108/CE**
- **"NOISE" 2000/14/CE**

and European standard:

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

Valid for machines as of serial number:

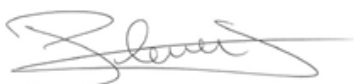
70100000

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, 01.02.2012.



Olivier Plenert, executive officer.

# CHW

## OPERATING INSTRUCTIONS AND SPARE PARTS LIST

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# 1 BASIC SAFETY INSTRUCTIONS

The CHW 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



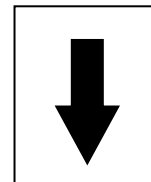
Hand protection must be worn



Eye protection shall be worn



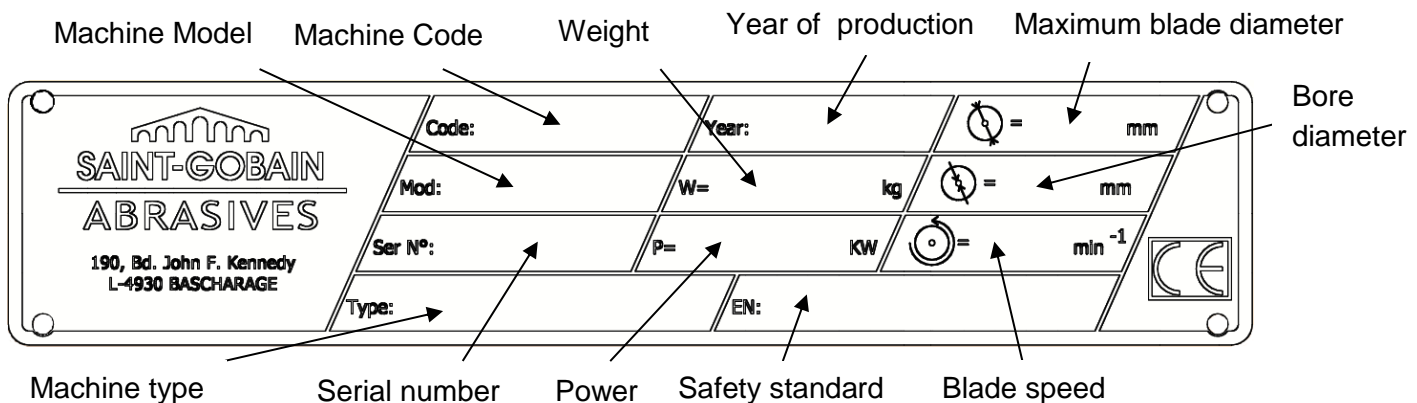
Danger: risk of cut



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.
- Check for correct mounting of the blade regularly.
- Immediately remove damaged or badly worn blades, as they endanger the operator whilst rotating.
- Only fit NORTON diamond blades to the machine! The use of other tools can damage the machine!
- 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.
- For security reasons, never leave the machine unattended, untied or unlocked.

### 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. Let a qualified electrician check in case of doubt.
- In case of emergency, you can stop the machine by pushing on the front cover of the switch.
- 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.

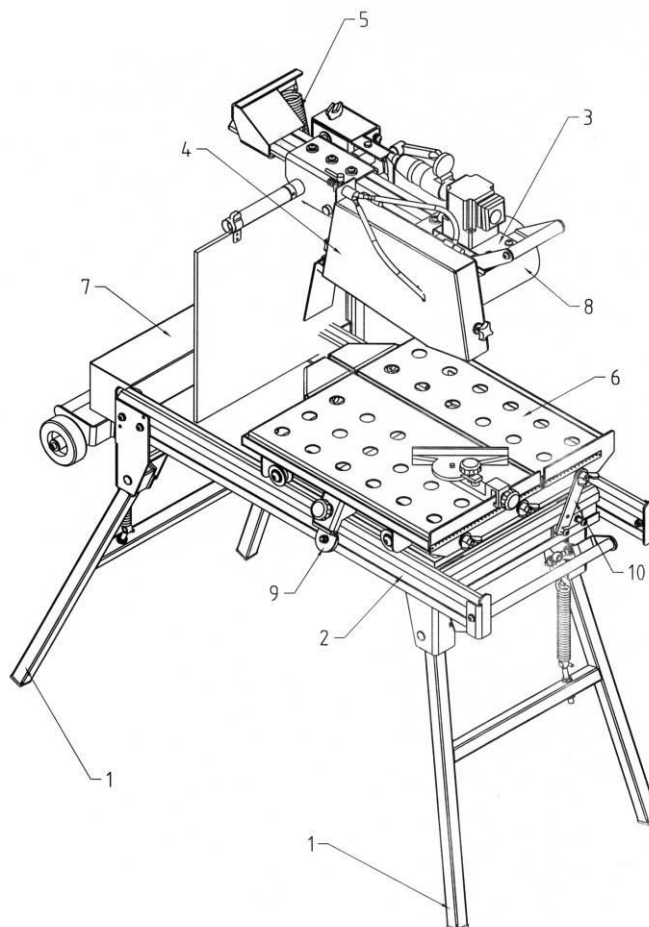
### 2.1 Short description

The CHW Masonry saw is designed for durability and high performance for onsite wet and dry 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



**Foot and handles (1)**

The jig-welded, reinforced all-steel construction of the feet ensures perfect stability. Precision springs allow the feet to be folded up. Handles can be used for the transport of the machine when the feet are folded up, and for locking the feet when the machine is standing on its feet.

**Frame (2)**

Built in aluminium profile, the frame is light and resistant.

**Cutting head (3)**

Jig-welded steel console. Console supports the electric motor and the blade guard. The balancing of the cutting head is achieved using a heavy-duty spring. 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.

**Blade guard (4)**

Jig-welded steel construction with 350mm-diameter blade capacity, which offers maximum operator protection and increased visibility of the work piece. Incorporated in the blade guard is an outer metal cover, which can be easily hinged opened. This allows easy access to shaft for inspection and blade replacement when motor is switched off, while fully protecting the blade when in operation.

**Down feed and cutting depth adjustment (5)**

The spring-loaded cutting head, activated by hand with the grip on the blade guard ensures smooth lowering of the cutting head for shock-free penetration of the work piece and improved control of the cutting pressure.

**Conveyor cart (6)**

Large, heavy-duty conveyor cart fitted with water flow-control vents, mounted on 4 rollers to give maximum stability and smooth movement. The conveyor cart is equipped with graduated scale on the backstop and with a guide-a-cut device.

**Water cooling system (7)**

The coolant system comprises:

- A powerful, submersible electric water pump.
- Plastic suction pipe delivering the water from the water pan to the cutting head.
- A removable large capacity aluminium water pan supplied with drain plug.
- A water-tap, fitted to the blade guard, permitting controlled water flow.
- Two water nozzles located on the blade guard ensure adequate flow of water to both sides of the cutting blade.
- A water curtain, fixed to head axle restricts water spray and minimises water loss.
- The pump switch is located on the right side of the main switch.

**Electrical Motor (8)**

Leroy-Somer motor. Low voltage trigger (NVR) built in the switch prevents the motor to restart for example after a power cut. The electric motor has an overload protection. Thermal overload tripping can occur for two reasons:

- a. tripping under light load  
    If connection is incorrect
- b. tripping under heavy load  
    If motor has been overloaded

The ON-OFF switch also serves as emergency stop.

**Anti-tipping device (9)**

Two sheaves located on each side of the conveyor cart stabilise the cart while its usage. It also prevents the cart from tipping from the frame.

**Blocking device (10)**

The cart can be fixed on the frame to allow the machine to be transported without danger.



## 2.4 Technical Data

Electric motor	2,2 kW 230V with thermal overload protection (99788 and 99789) 1,5kW 115V with thermal overload protection (99993 and 99994)
Electric motor protection	IP54
Max. blade diameter	350 mm
Bore	25,4 mm
Rotation speed of the blade	2730 min <sup>-1</sup>
Flange diameter	90 mm
Cutting depth mm	110 mm (without reversing the material)
Water pan capacity	28l
Sound pressure level	80 dB (A) (ISO EN 11201)
Sound energy level	92 dB (A) (ISO EN 3744)

### 70184610052, 70184614039, 70184614077 : CHW500

Cutting length mm	500 mm
Table dimension	500x500 mm
Machine dimensions	1130x705x1350 mm
Weights	
Without water pan and conveyor cart:	60 kg
Water pan:	4 kg
Conveyor cart:	15 kg
Machine ready for work:	110 kg

### 70184610053, 70184614040, 70184614078 : CHW600

Cutting length mm	600 mm
Table dimension	600x500 mm
Machine dimensions	1195x705x1350 mm
Weights	
Without water pan and conveyor cart:	61 kg
Water pan:	4 kg
Conveyor cart:	16 kg
Machine ready for work:	112 kg

## 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 <sup>2</sup>	Uncertainty K m/s <sup>2</sup>	Tool used Model / code
<b>CHW 500 230V</b> 70184614039	<2.5	0.5	Clipper GRANITO
<b>CHW 600 230V</b> 70184614040			
<b>CHW 600 115V</b> 70184614078			

- 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)
<b>CHW 500 230V</b> 70184614039	80 dB(A)	2.5 dB(A)	92 dB(A)	4 dB(A)
<b>CHW 600 230V</b> 70184614040				
<b>CHW 600 115V</b> 70184614078				

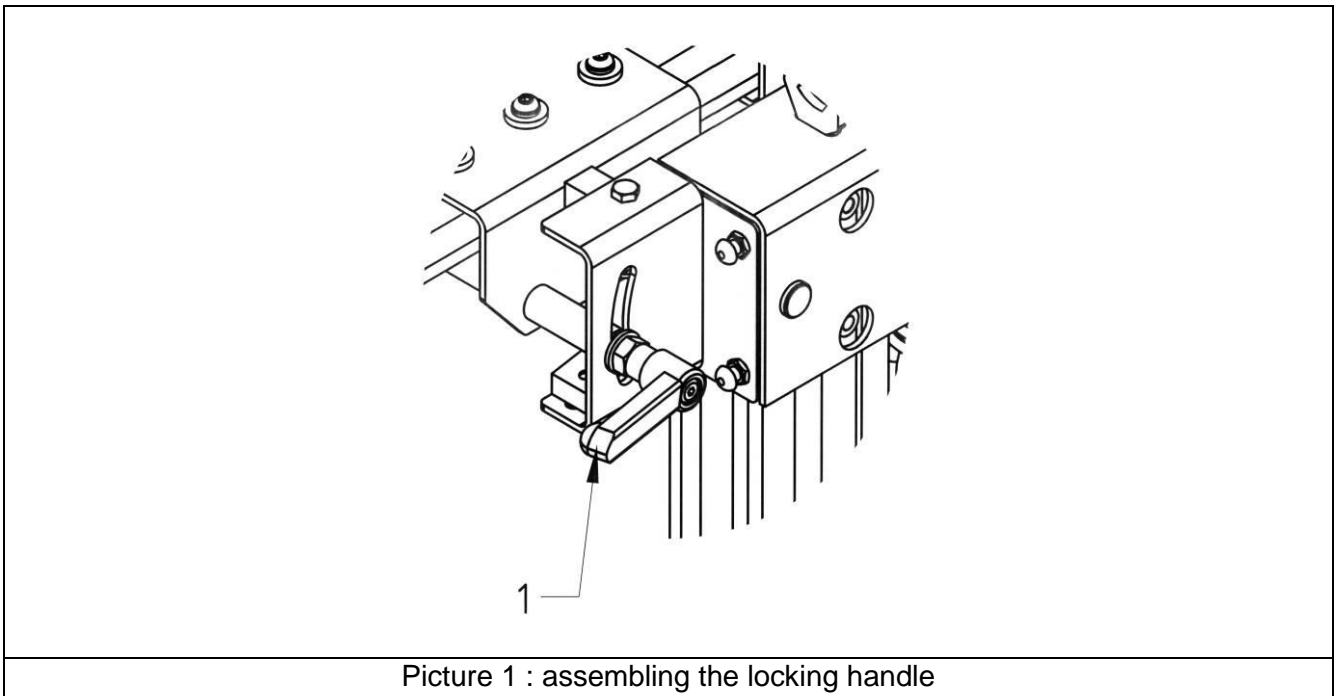
- Values determined using the procedure described in the standard **EN 12418**.
- The measurements are made with new machines. Actual values may vary with site conditions, in terms of:
  - Wear Machine
  - Lack of maintenance
  - Inappropriate tool for application
  - Tool in poor condition
  - Unskilled 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 Head locking

To make sure the machine is not damaged during transport, the locking handle of the head is removed. Remove the screw in the locking axle, and replace it by the locking handle (1) supplied as indicated on picture 1.



Picture 1 : assembling the locking handle

#### 3.2 Tool assembly

Only NORTON blades with a maximum diameter of 350 mm can be used with the CHW.

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:

- Open the outside cover of blade guard by loosening the two knobs on the side of the guard.
- Loosen the hexagonal nut on the blade shaft, which holds the removable outer flange.
- Remove the outer flange.
- Clean the flanges and blade shaft and inspect for wear.
- Mount the blade on arbor ensuring that direction of rotation is correct. Wrong direction of rotation blunts the blade quickly.
- Replace outer blade flange.
- Tighten hexagonal nut with spanner supplied for this purpose.

- Shut retractable blade guard cover and tighten the two knobs.

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.

### **3.3 *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 2.5mm<sup>2</sup>-section per phase.

### **3.4 *Water cooling system***

Fill the water pan with clean water to approximately 2cm from top (ensure that bottom of pump is fully immersed in water). Use the pump switch so you can use the pump.

Open water-tap at blade guard (note that handle on water-tap should be in line with water-flow).

Ensure that water is flowing freely in the circuit and is delivered adequately to both sides of the blade, as insufficient water supply may result in premature failure of the diamond blade.

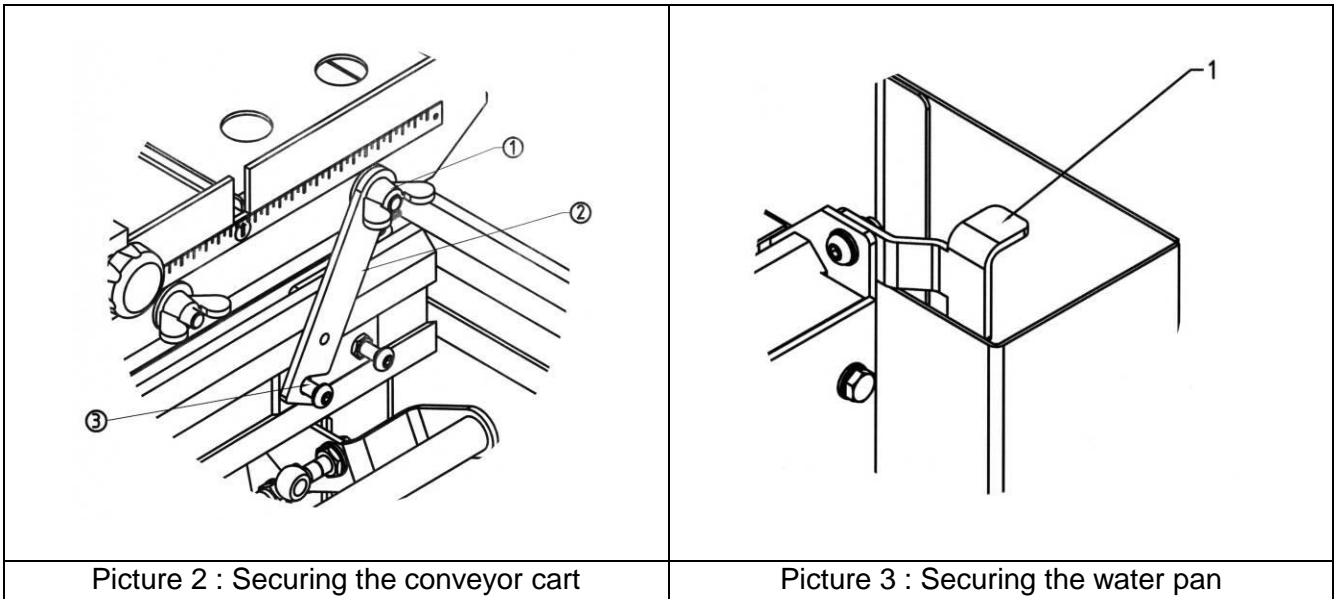
The water pump must never run without water. Always make sure that there is enough water in the pan and refill if necessary.

In case of frost, empty the water cooling system from its water.

## 4 TRANSPORT AND STORING

### 4.1 Securing for transport

Before transporting or lifting the machine, always remove the blade and empty the water pan. You can transport the machine mounted, or you can remove some parts from the machine so it is lighter.

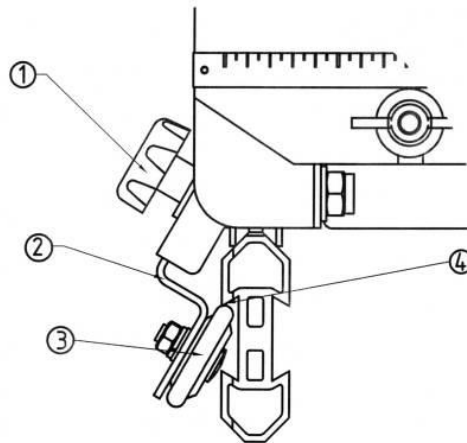


a) If you want to transport the machine mounted, you have to secure the conveyor cart and the water pan:

- To secure the cart (picture 2), loosen the wing nut (1) and turn the blocking device until it takes the screw (3). Then retighten the wing nut.
- To secure the water pan (picture 3), make sure the blocking device (1) is in the shown position.

b) You can also remove the conveyor cart and the water pan:

- To remove the cart, loosen the wing nut (1 on picture 2) and turn the blocking device until it is parallel to the scale. Loosen the knobs on each side of the conveyor cart (1 on picture 4), and put the anti-tipping device in its lower position. Then remove the cart.
- Before removing the pan, take the water pump out of it. Open the blocking device (1 on picture 3) and pull the pan out of the profiles.



Picture 4 : unlocking of the anti-tipping device

## **4.2 Transport procedure**

The machine can be moved on a flat surface using its wheels. You must first fold away the feet. Lift the rear handle and push lightly on the rear foot of the machine with your foot. The foot of the machine will automatically fold away. You can then put the rear of the machine on the floor. Then proceed the same way with the front foot.

## **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

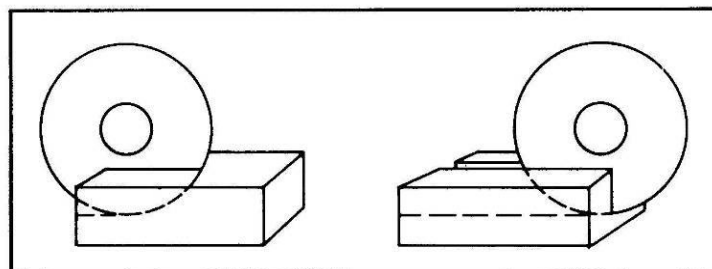
Leave 2 m in front of the machine and 1,5 m around it for usage and maintenance of the CHW.

### 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 conveyor cart. Always keep your hands away from the moving blade. Open the switch cover and press the green button to start the machine. To stop either use the red button or press directly on the switch front cover.

#### 5.2.1 Full depth or fixed cutting

In full depth 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. 3mm 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

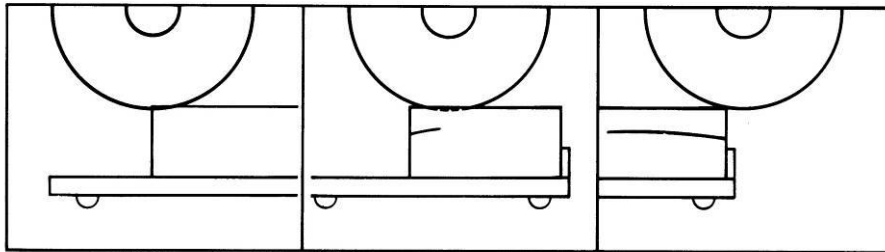


the material as shown on the picture.

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,



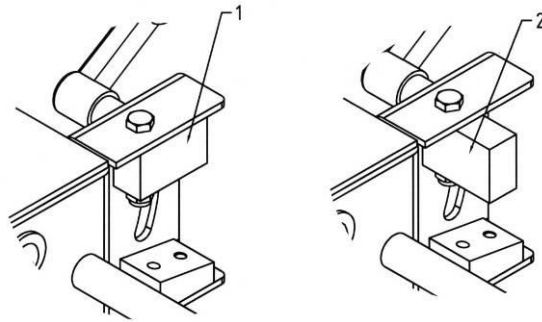
- Place the material to be cut on the conveyor cart firmly against the guide-a-cut and the backstop, keeping the hands well away from the blade.
- Move conveyor cart forward near the blade and pull down the cutting head until blade is lowered to a point where it will lightly contact the surface of the material.
- Then pass the material beneath with rapid full length strokes, taking a shallow cut (approximately 3 mm deep as shown on the picture) 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 Cutting thicker material

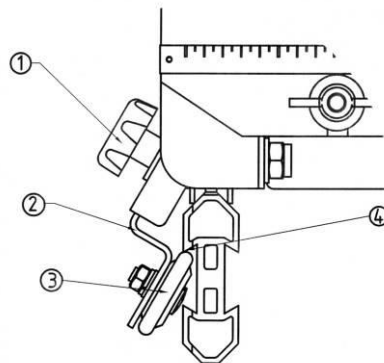
You can cut thicker material by reversing the material on the cart. In order to raise the head to pass the material under it, you have to turn the upper head stop from position 1 to position 2 as shown on the picture 5. You can then cut up to 220mm thick material. When you want to cut again under 110mm, turn the stop from position 2 to position 1.



Picture 5: cutting with reversing the material

#### 5.2.4 General advice for the cutting

- Material weighting under 30 kg and having dimensions smaller than 500x500x220mm for the CHW500 and 600x500x220mm for the CHW600 can be cut with the machine.
- Before commencing work make sure tools are firmly seated!
- Before using the machine, make sure the two anti-tipping devices are tighten correctly. Loosen the knob (1 on picture 6), and tighten the anti-tipping device (2) so the sheave (3) leans firmly on the profile (4).



Picture 6: tightening of the anti-tipping device

- Select the right tools as recommended by the manufacturer depending on the material to be worked, the working procedure (dry or wet cut) to be carried out and the required efficiency.
- Apply cooling water continuously whilst cutting and in good time! Make sure the water pan contains enough water.
- When dry cutting, ensure sufficient dust extraction and wear a dusk protection mask!
- When cutting work is finished, close the water-tap so you can remove the cut pieces from the conveyor cart without getting wet.
- In case the thermal protection trips, wait until the motor has cooled down before starting the machine again.

## 6 MAINTENANCE AND SERVICING

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

		Begin of the day	During the changing of tool	End of the day or more often if required	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 pump	Clean						
Water pan	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.

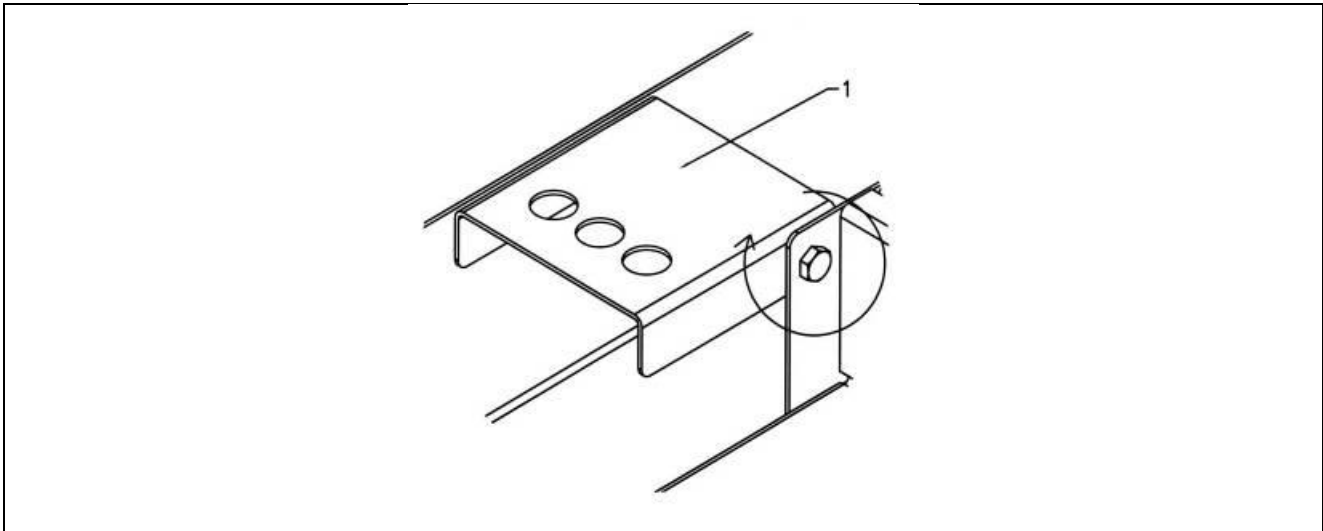
### Lubrication

The CHW 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 (which can be removed for easy cleaning), motor and blade flange.

Never use acid-based cleaning products, as the aluminium parts (water tray, rails, motor housing) can be corroded by these cleaning products. Always clean the machine when any cutting dust and debris is still fresh, never allow the deposits to solidify. To make the cleaning of the pump tank easier, you can open it as shown on picture 7:



Picture 7: open the water pump tank to clean it

## 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.

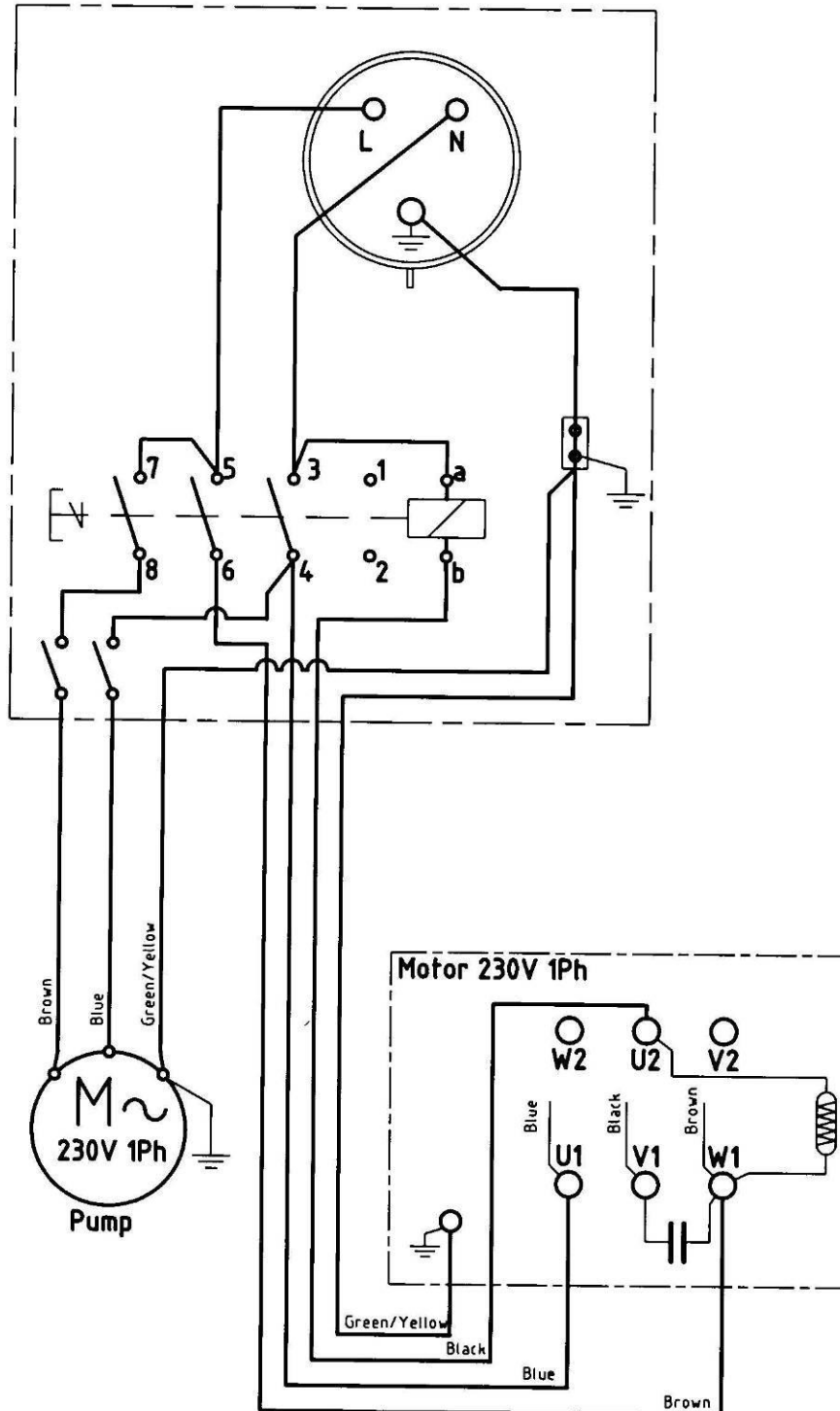
### 7.2 *Trouble-shooting guide*

Trouble	Possible source	Resolution
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 (overload protection)	Cutting advance too quick	Cut slowly
	Blade is blunt or glazed	Sharpen the blade in calcareous stone
	Defective blade	Change blade
	Wrong blade specification for the application	Change blade
No water on the blade	Not enough water in the pan	Refill the water pan

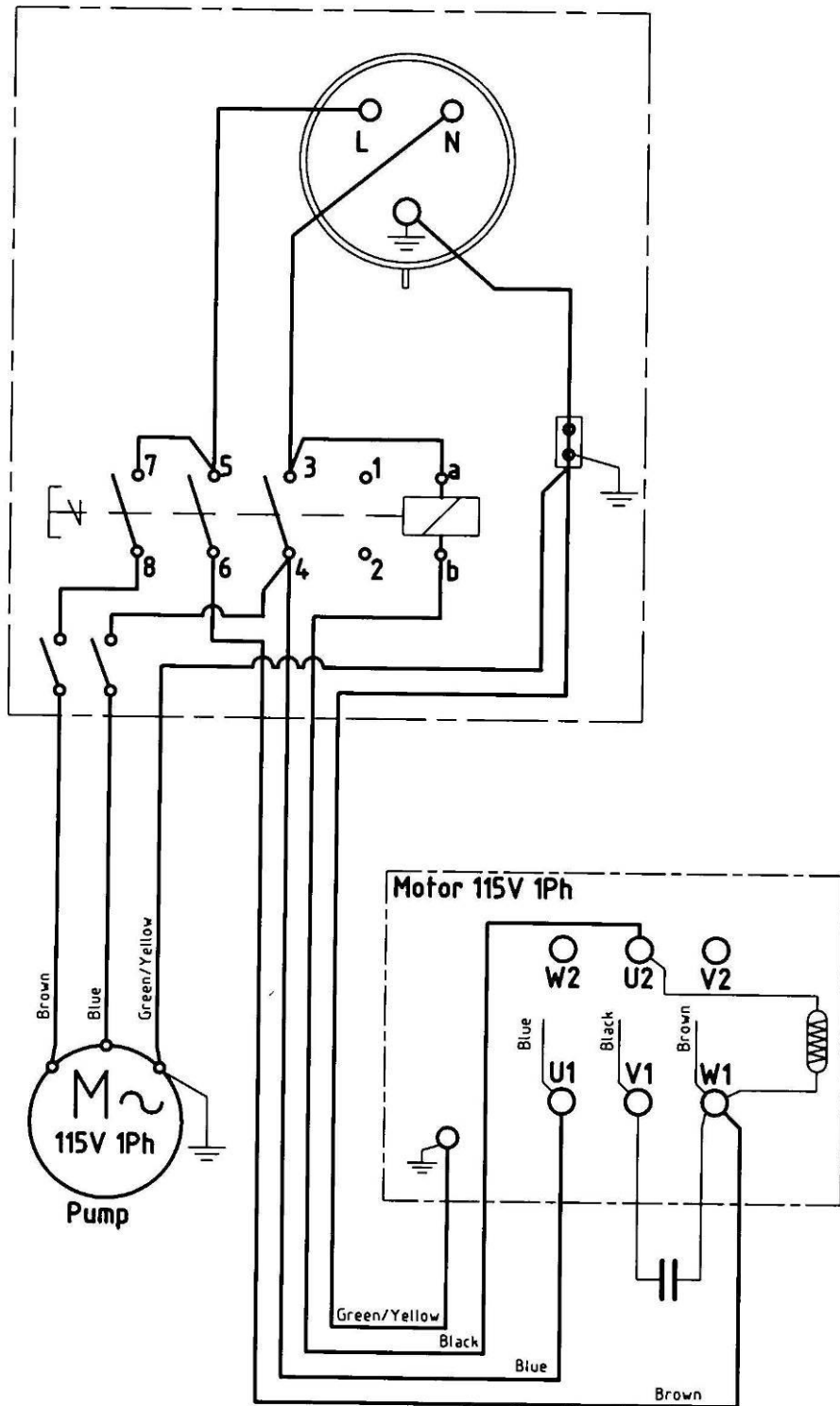
	Water pump is switched off	Switch the water pump on
	Water tap is closed	Open tap on blade cover
	Water supply system is blocked up	Clean water supply system
	Water pump is not working	Prime the pump Reactivate switch CAUTION : if switch trips again, problem can only be solved by a qualified electrician

### 7.3 Circuit diagram

#### 230V Motor



115V-Motor



## **7.4 Customer service**

When ordering spare parts, please mention:

- The serial number (7 digits).
- 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](mailto: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:

SAINT-GOBAIN ABRASIVES NV/SA  
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