

# CST

## OPERATING INSTRUCTIONS

Translation of the original instructions



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# CST: OPERATING INSTRUCTIONS

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# 1 BASIC SAFETY INSTRUCTIONS

The CST is exclusively designed for the cutting of abrasive materials with NORTON diamond blades, 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



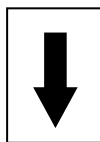
Ear protection must be worn



Hand protection must be worn



Eye protection shall be worn



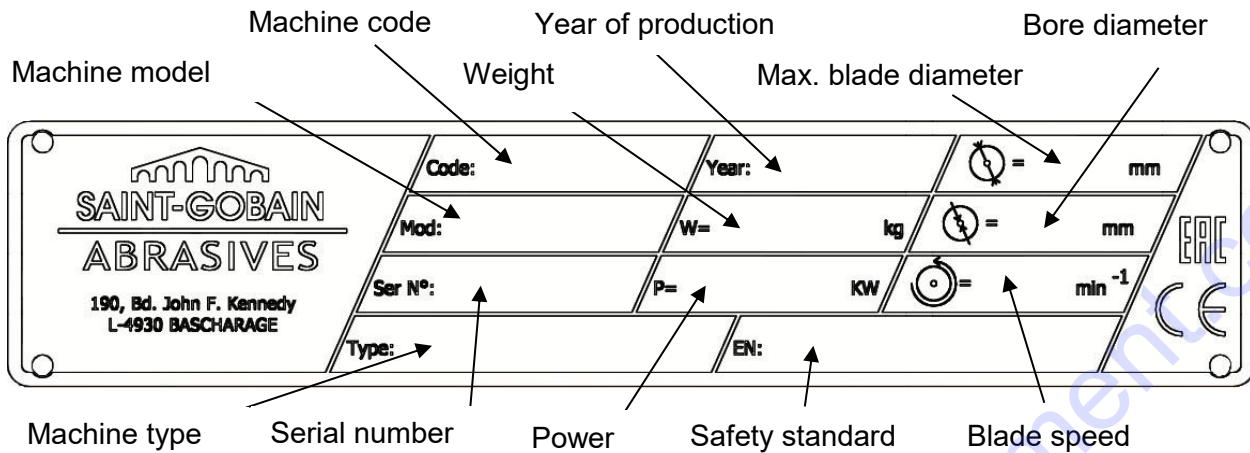
Rotation direction of the blade



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.
- Install the machine balanced on a flat and stable ground.
- 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!
- Firmly press the part to be cut against the machine abutting to prevent it from moving during cutting operation.
- Use the machine only with closed and fixed blade guard.
- Please use dust mask during dry cutting to minimize the dust effects.
- Check carefully the documentation about diamond blades to find the one who best meet the requirement with your application.

### Machine with electric motor

- Turn off the power of the CST and disconnect it from the network before any work on the machine itself.
- Avoid contact of electrical connections with water projections or moisture.
- The CST must be absolutely correctly grounded. In case of doubt, have the electrical connections checked by a qualified electrician.
- Turn off the CST main power supply if it stops with no apparent reason. Only a qualified electrician is authorized to investigate and resolve the issue.
- To shut down the machine in case of danger, push the red button on the switch.

## 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

CST type Masonry saw is a machine with fixed table and mobile head. Robust and powerful, it allows precise cuts in a wide variety of building materials. It can be used on construction and also on industrial sites. Combined with NORTON diamond blades, it offers a high degree of performance and cutting quality for large tiles, window sills or stair steps.

### 2.2 Purpose of use

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

### 2.3 Layout



**Frame (1)**

Jig-welded steel construction, the frame is robust and resistant. The side posts of the machine ensure that the rail is parallel to the table. The rails (4) assembly can also be tilted to 45° to make bevel cuts. The rail (2) guides the cutting head over the table.

**Blade guard (3)**

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 open. This allows easy access to shaft for inspection and blade replacement when motor is switched off, while fully protecting the blade when in operation. An arrow on the blade guard indicates the direction of the blade rotation.

**Emergency stop button (5)**

The red button stops the motor. It is also an emergency stop button.

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**2.4 Technical data**

Code	70184613977	70184614032	70184614025
Description	CST100 230V	CST120 230V	CST150 230V
Power	2,2 kW		
Voltage	230V 1~		
Motor protection	IP 54		
Sound pressure level	73,5 dB (A) (selon ISO EN 11201)		
Sound energy level	88,5 dB (A) (selon ISO EN 3744)		
Cutting length	1000 mm	1200 mm	1500mm
Max. cutting depth	110 mm		
Blade speed (RPM)	2800 min-1		
Blade diameter	350mm		
Blade bore	25.4 mm		
Flanges diameter	110 mm		
Length	1270 mm	1600 mm	1970 mm
Width	660 mm		
Height (with feet)	1350 mm		
Height (without feet)	780 mm		
Water pan capacity	62 L	71 L	85L
Weight (total)	105 kg	160 kg	180 kg



## 2.5 Statement regarding the vibration emission

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

Machines Modèle / code	Measured value of vibration emission at m/s <sup>2</sup>	Uncertainty K m/s <sup>2</sup>	Tool used Model / code
<b>CST 100 / 70184613977</b> <b>CST 120 / 70184614032</b> <b>CST 150 / 70184614025</b>	<b>&lt;2.5</b>	0.5	Duo Granit

- 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 Modèle / 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>CST 100 / 70184613977</b> <b>CST 120 / 70184614032</b> <b>CST 150 / 70184614025</b>	73.5 dB(A)	2.5 dB(A)	88.5 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. It is ready for operation when you mount the diamond blade, the handles and the conveyor cart and after you connect to the appropriate power supply.

#### 3.1 Tool assembly

Only NORTON blades should be used.

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:

- Loosen the screw in front of the blade guard and disconnect the water hose on its the left side and open it.
- Loosen the hexagonal nut on the blade shaft (**attention:** left threaded), which holds the removable outer flange, with the supplied wrench.
- 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 the hexagonal (**attention:** left threaded), nut with the supplied wrench.
- Close the blade guard, retighten the screw on the front of the blade guard and reconnect the water hose.

**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 Feet mounting

Use the provided screws to mount the feet on the frame.

#### 3.3 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 Starting the machine

Press the green button to start the machine. Press the red one to stop it. The red button is also an emergency stop button.

### **3.5 Water cooling system**

- Fill the water pan with clean water to approximately 1cm from top (ensure that bottom of pump is fully immersed in water).
- 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.

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## 4 TRANSPORT AND STOCKING

### ***4.1 Securing for transport***

Before transporting or lifting the machine, always remove the blade and empty the water pan. Also lock the cutting head on the rail. To do so, move the head in the middle of the rail and tighten the knob screw until the cutting head is secured on the rail.

### ***4.2 Transport procedure***

Conform yourself to work regulations, in order to transport the machine safely. The machine is fitted with 4 foldable handles. Fold these out of the machine to transport it easily. The machine is designed to be raised using a crane with hooks of lifting on the corners. The machine can also be transported by a forklift truck while passing the forks under the water vat.

### ***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.

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## 5 OPERATING THE MACHINE

In this part, you will find some safety tips to use the machine.

### 5.1 Site of work

#### 5.1.1 Sitting the machine

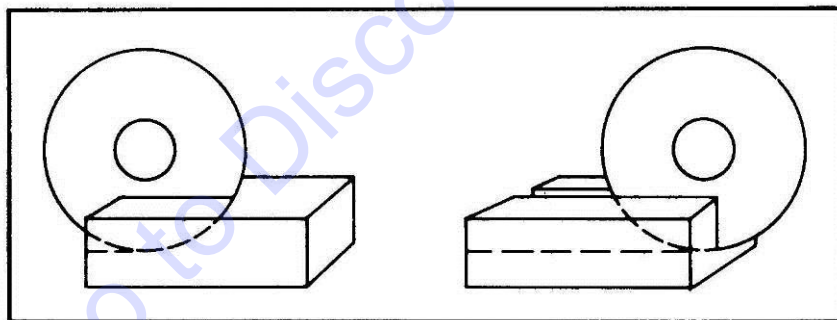
- Remove from the site anything, which might hinder the working procedure!
- Make sure the site is sufficiently well lit!
- Observe manufacturer's conditions for connecting to power supplies!
- Place electric cables in such a way that damage by the device is excluded!
- Make sure you have a continual 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 around the machine for usage and maintenance of the CST.

### 5.2 Cutting material

To use the CST correctly, you must face it with one hand on one of the 3 handles of the cutting head, and the other ready to shut the machine down in case of emergency. Always keep your hands away from the moving blade.



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 thanks to the hand wheel to the desired cutting depth. In “through cutting”, lower cutting head until blade periphery reaches max. 3mm under the surface of the conveyor cart (for maximal cutting depth).
- Put the material on the table and maintain it firmly against the butting. (or the cutting guide when appropriate).
- Pull the cutting head slowly and without undue pressure towards the material.
- You can tilt the head for bevel cuts. For this purpose, untighten the two black buttons on each side of the frame, and tilt the head to the desired position (from 0 to 45°). Tighten then the two buttons.
- To cut thicker materials, you can cut a first side, and then reverse it to cut the total depth. You can cut materials until 220mm depth. (370mm for the 500mm blade versions).

### 5.3 General advice for the cutting

- The CST is designed to cut materials with maximal dimensions of :

Machine	CST 100	CST 120	CST 150
∅ disc	350 mm	350 mm	350 mm
Maximal dimensions (L x W x h)	1000 x660 x120	1200 x660 x120	1500 x660 x120
Maximal weight of materials	66 kg	80 kg	99 kg

- The width of the table and of the material can be increased by adding a table extension.
- 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! Make sure the water pan contains enough water.
- When dry cutting, ensure sufficient dust extraction and wear a dusk protection mask!
- If the thermal protection trips, allow the thermal protection to cool down. 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 CST, 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						
Cutting table	Clean						
Water hoses and nozzles	Clean						
Water pump filter	Clean						
Rail	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.

### Cleaning of the machine

Your machine will last longer if you clean it thoroughly after each day of work, especially water pump, water pan, cutting head rail, motor and blade flange. To easily clean the water pan, open the table. Always clean the machine when any cutting dust and debris is still fresh; never allow the deposits to solidify.

### Lubrication

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

## 7 FAULTS: CAUSES AND CURES

### 7.1 Fault-finding procedures

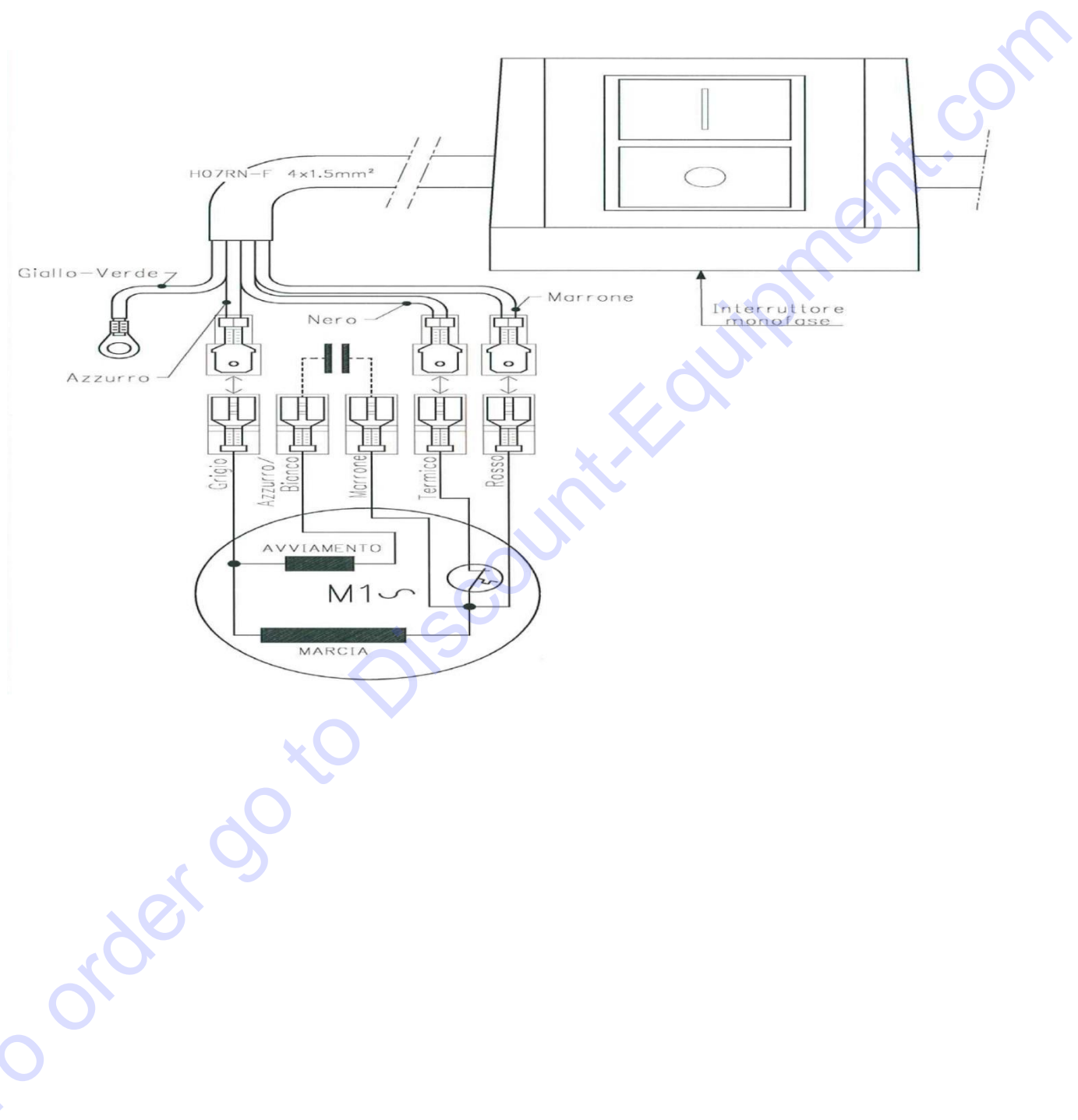
Should any fault occur during the use of the machine, turn it off, and isolate it from the electrical supply. Any works dealing with the electrical system or supply of the machine can only be carried out by a qualified electrician.

### 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
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 tap is closed	Open tap on blade guard
	Water supply system is blocked up	Clean water supply system
	Water pump is not working	Change the pump

### 7.3 Circuit diagram

#### 230V Motor



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