

CS1 P21

OPERATING INSTRUCTIONS

Translation of the original instructions



clipper®



Declaration of conformity

The undersigned manufacturer:

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

Declares that this product:

« Floor saw »: **CS1 P21 Ø500**
CS1 P21 Ø350

Code : **70184645535**
70184645534

is in conformity with the following Directives :

- **"MACHINES" 2006/42/CE**
- **"ELECTROMAGNETIC COMPATIBILITY" 2004/108/CE**
- **"NOISE" 2000/14/CE**

And the European standard:

- **EN 13862 – Floor 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.

A handwritten signature in black ink, appearing to read "Olivier Plenert", written over a light grey horizontal line.

Olivier Plenert, executive officer.

CS1 P21

OPERATING INSTRUCTIONS

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1 BASIC SAFETY INSTRUCTIONS

The CS1 is exclusively designed for the cutting of floors made of asphalt, green and cured concrete (reinforced or not) as well as of industrial cement.

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



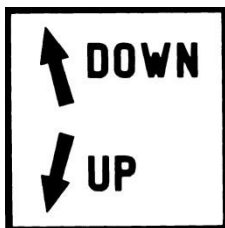
Ear protection must be worn



Hand protection must be worn



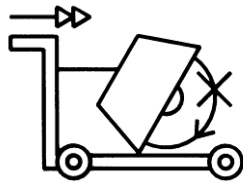
Eye protection shall be worn



The rotation of the hand wheel in the direction shown : up or down the blade



Danger: risk of cut



Never move the machine with the blade running idle.



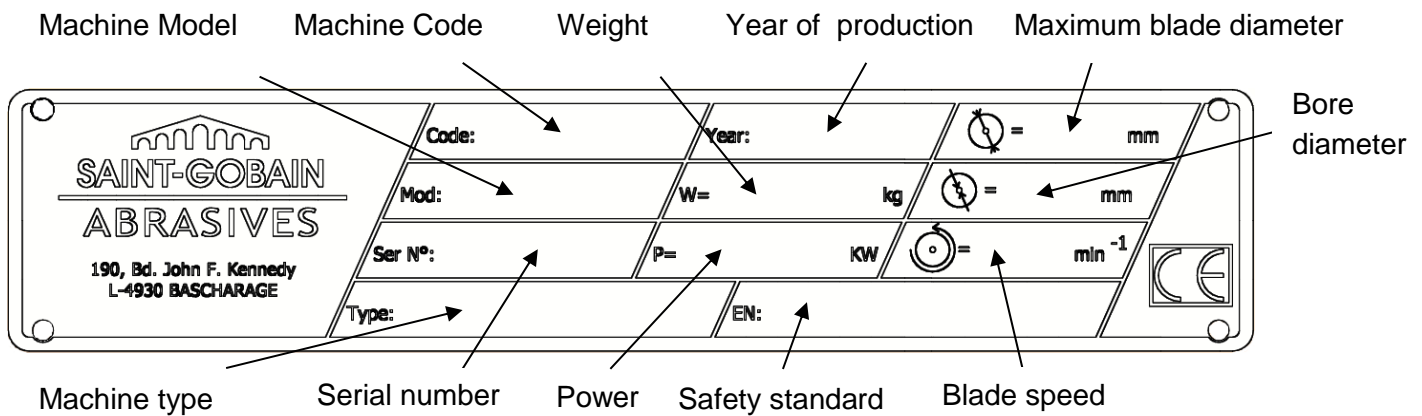
Rotation direction of the blade



Emergency Stop

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.

While the engine is running

- Do not move the machine whilst the blade is running idle.
- Always cut with the blade guard in position.
- Apply cooling water continuously whilst cutting and in good time!

Petrol powered machines:

- Always use the fuel advised.
- In confined areas, exhaust gases should be evacuated and the job site properly aerated.
- Petrol and diesel machines, which by their nature emit toxic exhaust gases, must not be used in places prohibited by the Health at Work etc. Act 1974 or which are prohibited by Factory Inspectors or Safety Officers.
- Fuel is flammable. Before filling the tank, shut down the engine, extinguish all open flames and do not smoke. Take care that no petrol is spilled on any motor part. Always wipe up spilled fuel.

2 GENERAL DESCRIPTION OF THE CS1

Any modification, which could lead to a change in the original characteristics of the machine, may be done only by Saint-Gobain Abrasives S.A. who shall confirm that the machine is still in conformity with the safety regulations. Saint-Gobain Abrasives S.A. keeps the right of making technical or design modification without prior notification.

2.1 Short description

The **Floor Saw CS1** you have chosen, is used for small repair works in concrete and asphalt, for cutting induction loops and installing cables as well as for cutting expansion joints. It can be used for either wet or dry cutting operations.

Being of small construction, it can be transported in a car or van. The water container is enclosed in the frame. All component parts on the **CS1** are assembled to a high quality standard, ensuring long life, reliability and a minimum of maintenance. Special types of blades are available for asphalt, green concrete, cured concrete (reinforced or not) as well as for industrial cement flooring.

2.2 Layout



Made of jig welded open profile steel, the **CS1** is stable but at the same time, easily transportable.

The one-piece blade guard (1) fully protects the operator and his working environment. It is firmly fixed to the main frame but can be opened by rotation to change blades.

A manually operated hand wheel mechanism (2) enables graduated depth setting. Turning the hand wheel clockwise or anti-clockwise will lower or raise the cutting blade.

The pivoting frame (3), hinged on the rear axle, is supporting the engine, the blade shaft assembly, and the protecting guards. Four heavy-duty belts drive the blade.

The precisely manufactured blade shaft is fitted into two heavy-duty self-aligning pillow block bearings, including grease nipples. A four-belt taper lock pulley is fitted on one end. The shaft is reduced to 25,4mm at the other end, allowing an inner flange complete with dowel pinholes to be fixed.

The steel belt guard (4) is bolted to the mainframe of the machine. It is covering the four drive belts and pulleys for protection of the environment while the machine is running. The pointer (5) allows the operator to make precise cut easily.

The Honda GX630 engine (6) is started by a key (8) and is connected to an emergency shut down switch (7) on the board of the machine. This allows an immediate stop of the machine in case of danger.

The water cooling system (9) is composed of a water tank tap and two water nozzles on the blade guard ensuring adequate flow of water to both sides of the blade. There is no water tank.

2.3 Technical data

Engine	Honda GX630, 4 strokes, 2 cylinder, 20.8HP (15.5kW)
Fuel	Automotive unleaded gasoline
Oil	Honda 4-Stroke, or equivalent high detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer's requirement for service classification SG, SF. (SG, SF designated on the oil container). SAE 10W-30 recommended
Starter	With key
Spark plugs	ZFR5F (NGK)
Max. blade diameter	500 mm (70184628865) 350 mm (70184630393)
Bore	25,4 mm
Max. cutting depth mm	190 mm (70184628865) 115 mm (70184630393)
Flange diameter	115 mm
Blade shaft speed	2272 min ⁻¹ (70184628865) 2556 min ⁻¹ (70184630393)
Driving belts	5
Water tank	-
Machine dimensions (length x width x height)	1088x580x925mm
Weight	180 kg
Max. operating weight	200 kg
Sound pressure level	92 dB (A) following ISO EN 11201
Sound energy level	106 dB (A) following ISO EN 3744

2.4 Statement regarding the vibration emission

Declared vibration emission value in accordance with **EN 12096**

Machine Model / code	Measured vibration emission value a m/s ²	Uncertainty K m/s ²	Tool used Model / code
CS1 P21 Ø500 70184645535	3.9	0.5	Clipper Super Beton Evo
CS1 P21 Ø350 70184645534			

- Values determined according to procedure described in annex F of **EN 13862**
- Measurements are made with new machines. Real values in the field could vary the simple one with the double according to operating conditions, depending on:
 - Material
 - Cutting depth
 - Machine wear
 - Lack of maintenance
 - Tool not adapted to application
 - Tool in bad shape
 - Non-specialised operator
- Vibrations exposure time depends on cutting performance too (adaptation machine / tool / 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...

2.5 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)
CS1 P21 Ø500 70184645535	92 dB(A)	2.5 dB(A)	106 dB(A)	4 dB(A)
CS1 P21 Ø350 70184645534				

- Values determined using the procedure described in the standard **EN 13862**.
- 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

Before beginning the work with the CS1, you have to assemble some parts.

3.1 Tool assembly

Only use NORTON blades with the CS1.

A blade with a maximum diameter of 450 mm can be fitted. 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, switch the machine off.

To mount a new blade, follow these steps:

- Turn the wheel until the cutting head is in the raised position.
- Loosen the screw maintaining the blade guard with the 19mm wrench, and turn it open.
- Loosen the hexagonal nut, which holds the removable outer flange with the 36mm wrench.
- Remove the outer flange.
- Clean the flanges and blade shaft and inspect for wear.
- Mount the blade on the shaft 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.
- Close the blade guard.

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

3.2 Water cooling system

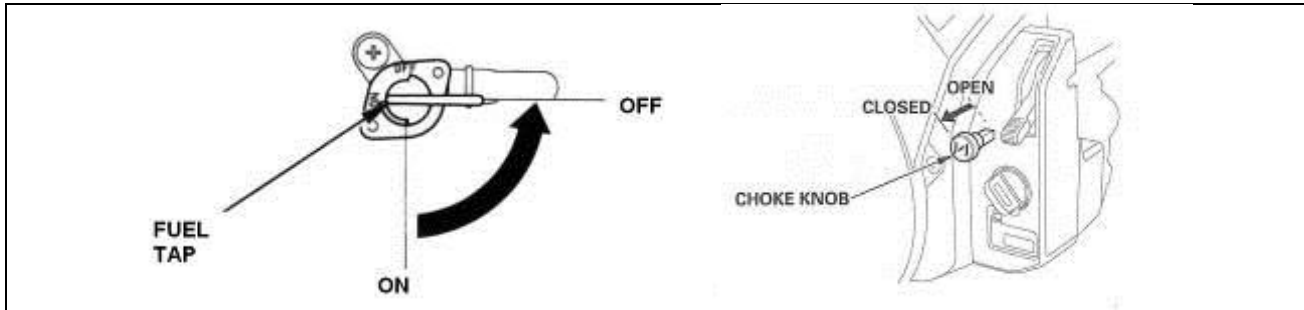
Open water-tap (note that handle on water-tap should be in line with water-flow).

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

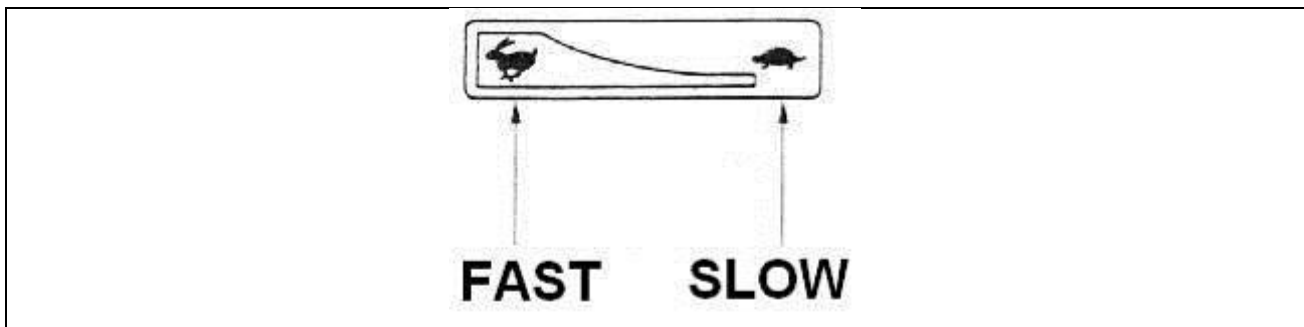
In case of frost, empty the water cooling system.

3.3 Starting the machine

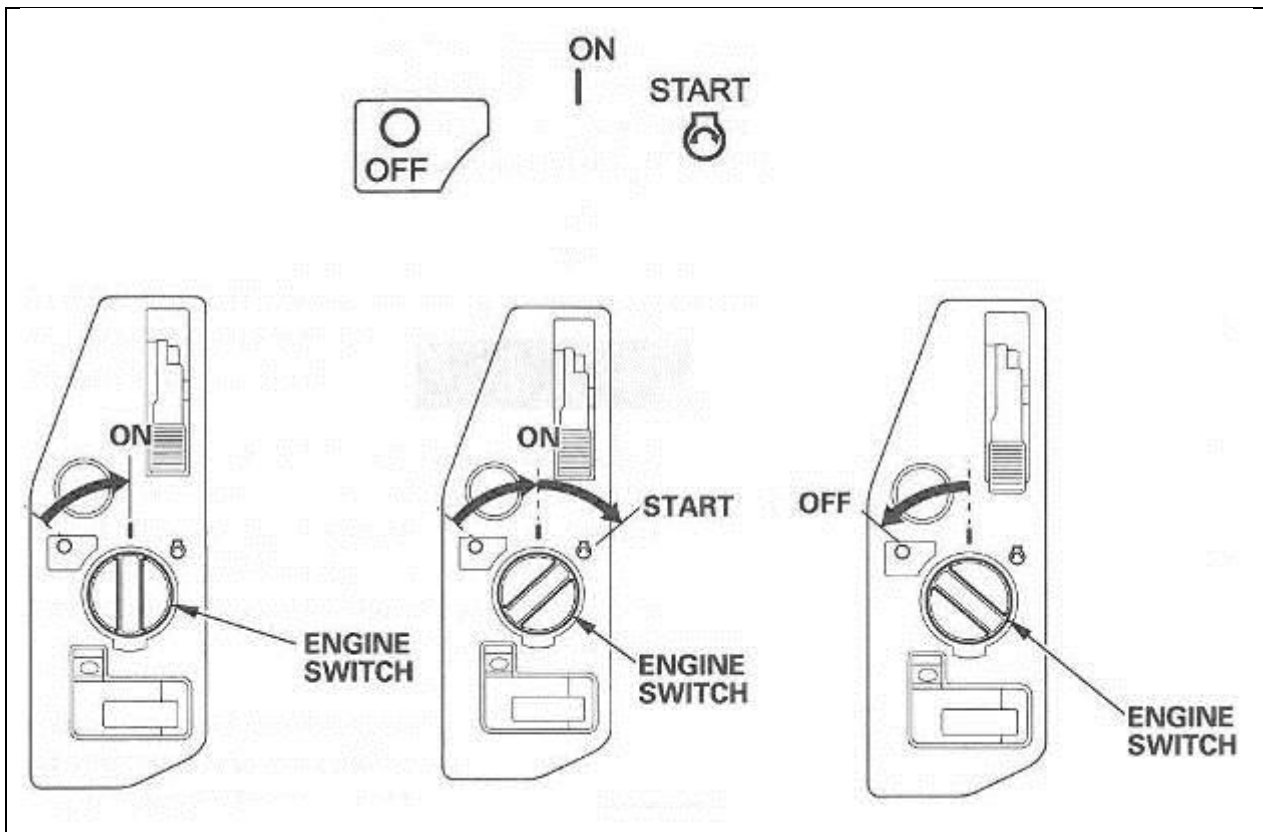
Make sure the blade is raised clear up the ground before starting the machine.



To put petrol in the fuel tank. Place the fuel tap on the position ON. To start a cold engine, leave the button choke on the CLOSED position. Do not use the choke when the engine is hot or when the atmospheric temperature is high.



Move the control lever of gases of $\frac{1}{3}$ towards the FAST position.



To start the engine:

Turn the key of starting towards the position START and maintain it 5 seconds or until the engine starts. Do not use the electric starter during more than 5 seconds of continuation. If the engine does not start, leave the key, and wait at least 10 seconds before actuating the key again.

When the engine starts, leave the key on the position START.

Move the button of choke on the position OPEN as soon as the engine heats sufficiently to turn regularly.

Place the control lever of gases according to the maximum speed.

To turn off the engine:

Put the lever of gases completely to the minimum speed, towards the position SLOW, then turn the switch of the engine to the off position. Place then the fuel tap on STOP.

Do not use the switch of emergency stop to turn off the engine under the normal conditions. Indeed, if the key remains in the position START, the battery discharges, leave your key on the off position.

4 TRANSPORT AND STORING

Take the following measures in order to transport and store the CS1 securely.

4.1 *Securing for transport*

Before transporting the machine:

- Remove the blade.
- Raise the guide-a-cut in its upright position.
- Raise the cutting frame to its highest position using the handwheel.

4.2 *Transport procedure*

The machine can be moved on a flat surface using its wheels. Use the metal hook located on the board of the machine over the motor to move the machine with a 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.
- Loosen the drive belts.
- Grease the threaded shaft.
- Possibly change the motor oil.
- Empty the water system.

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

5 OPERATING THE CS1

5.1 *Site of work*

Before you start working, please check the following points:

- Remove from the site anything, which might hinder the working procedure.
- Make sure the site is sufficiently well lit.
- 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.

5.2 *Cutting method*

In this section, you can find instructions to make a straight cut at the desired depth.

5.2.1 Preparing your cut

Before starting the machine,

- Draw a line on the floor over the cutting length.
- Make sure you have filled the engine tank with fuel. No petrol is supplied with the machine.
- The engine is shipped with oil. Check oil level before starting. Top up if required.
- Make sure you have mounted the correct blade 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 efficiency required.
- Make sure that the flanges securely hold the diamond blade.
- Make sure that the blade is not touching the floor before starting.
- Roll the machine until the blade is over the line.
- Lower the guide-a-cut so it touches the line.

5.2.2 Cutting the floor

You can now start the engine.

To make your cut,

- Turn the depth hand wheel until the blade slightly touches the floor.
- Open water valve to control the amount of water required for the type of blade, using 15 to 25l/min for wet and 1-2l/min for dry cutting, dust control.
- Turn the hand wheel to lower blade into the cut.
- Once the required depth of cut is reached, push the machine forward with steady and gentle pressure and follow the line with the pointer. The feed speed must be adjusted depending on the material being cut, and depth of cut.
- At the finish of the cut, raise the blade out of the cut by turning the hand wheel, switch off the engine and shut-off the water.

6 MAINTENANCE AND SERVICE

ATTENTION : to perform maintenance on the machine, always switch it off. Always wear a face mask and safety goggles while performing the maintenance of machine.

6.1 Maintenance of the machine

To ensure a long-term quality from the cutting with the CS1, please follow the maintenance plan below:

	Regular service period Perform at every indicated period →	After one hour of work	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							
Belts tension	Control							
Water hoses and nozzles	Clean							
Depth screw	Grease							
Engine housing	Clean							
Reachable nuts and screws	Tighten up							

Adjustment and replacement of the belts

After one hour of work, the belts heat and stretch. Therefore, you have to re-tension them.

To adjust the belts, firstly remove the belt guard by unscrewing the 2 nuts. Loose the 2 bolts at the back of the engine-plate and shift the engine by using the screw on the back of the plate to retighten the belts (60N by belt for a displacement of 10mm where the belt is unloaded).

To replace the belts, move the engine completely down by unscrewing the screw at the back of the engine-plate. Adjust the belts and retighten them using the screw at the back of the engine plate.

Always use a matched set of belts. Do not replace single belts. After controlling or retightening the belts, reassemble the belt guard on the frame of the machine.

Lubrication

The CS1 uses life-lubricated bearings. Therefore, you don't need to lubricate them at all.

Grease the depth screw every day.

Cleaning of the machine

Your machine will last longer if you clean it thoroughly after each day of work.

6.2 Maintenance of the engine

	Regular service period Perform at every indicated month or operating hour interval, whichever comes first →	Each use	First month or 20 hours	Every 3 months or 50 hours	Every 6 months or 100 hours	Every 6 months or 100 hours
Engine oil	Check level					
	Change					
Air cleaner filter	Check					
	Clean					
	Change paper filter element					
Fuel strainer cup	Clean					
Spark plug	Check-Clean					
Fuel line	Check (Replace if necessary)	Every 2 years				

All information of maintenance related to the engine is available in the handbook of the engine. For other maintenance, please contact a center of maintenance of the engine.

The handbook of the engine and all information referring itself are also available in download in the language of the country at this address:

<http://www.honda-engines-eu.com>

7 FAULTS: CAUSES AND CURES

7.1 *Fault-finding procedures*

Should any fault occur during the use of the machine, turn it off. Let only qualified staff make any intervention other than the one described in the previous section.

7.2 *Trouble-shooting guide*

Trouble	Possible source	Resolution
Hard starting	Not enough fuel	Fill fuel tank
	Low oil level	Add oil
	Fuel filter clogged	Clean fuel filter
	Spark plug faulty	Inspect spark plug
	Stronger fault	Contact nearest engine maintenance centre
Engine lacks power	Air filter restricted	Clean or replace air filter
	Stronger fault	Contact nearest engine maintenance centre

7.3 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 and 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 is claim, the part must always be returned for evaluation.

Spare parts for the engine can be ordered with the manufacturer of the engine 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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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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