

NORTON



CS1 P20

OPERATING 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 (Code):

CS1 P20 Ø500 (70184628865)

CS1 P20 Ø350 (70184630393)

is in conformity with the following Directives:

- ***European Machinery Directive 2006/42/EC***
- ***Electromagnetic Compatibility Directive 2004/108/EC***

and European standard:

- ***EN 13862 – Floor cutting-off machines – Safety***

A handwritten signature in grey ink, appearing to be "P. Mersch", is positioned above the printed name.

Pierre Mersch
Business Manager Machines Europe

CS1 P20

OPERATING INSTRUCTIONS

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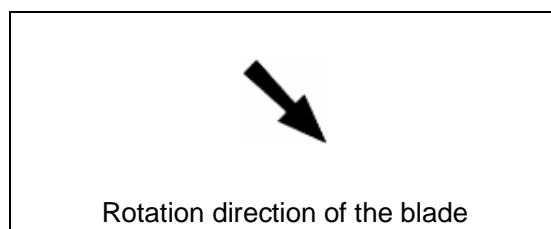
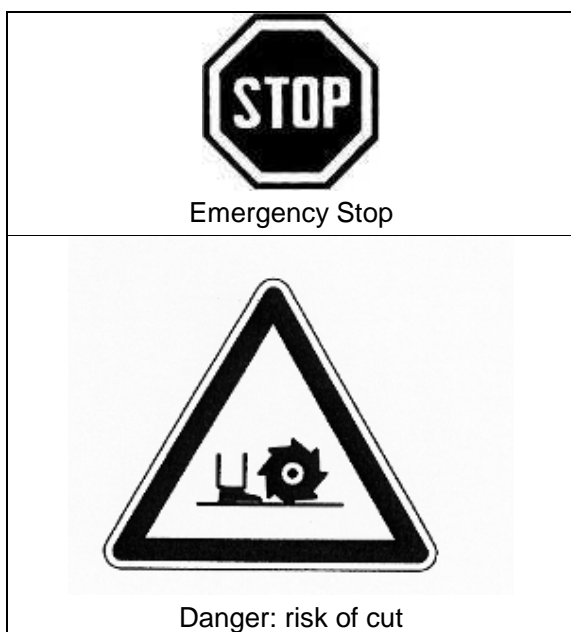
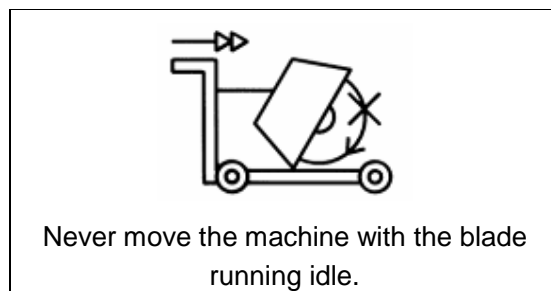
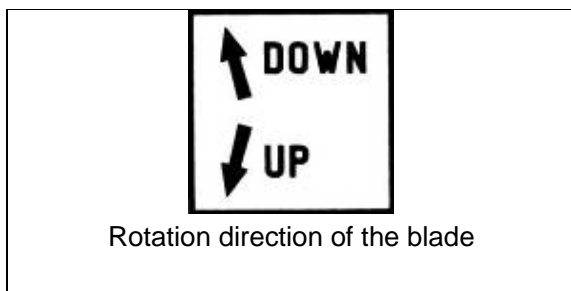
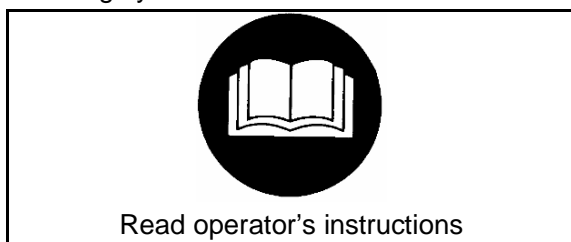
1 Basic Safety Instructions

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.

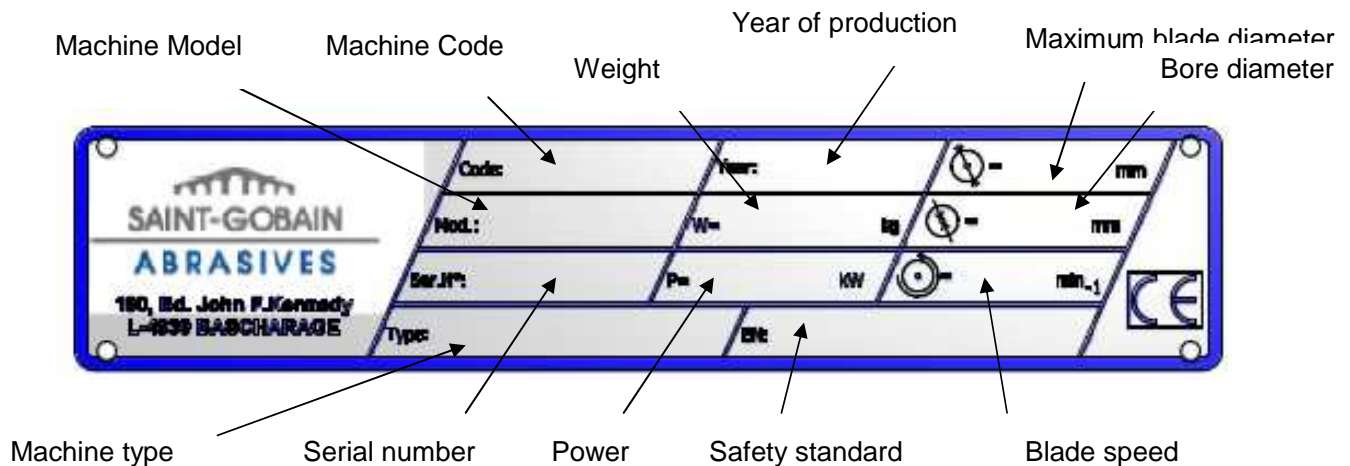
1.1 Symbols

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



1.2 Machine plate

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



1.2 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

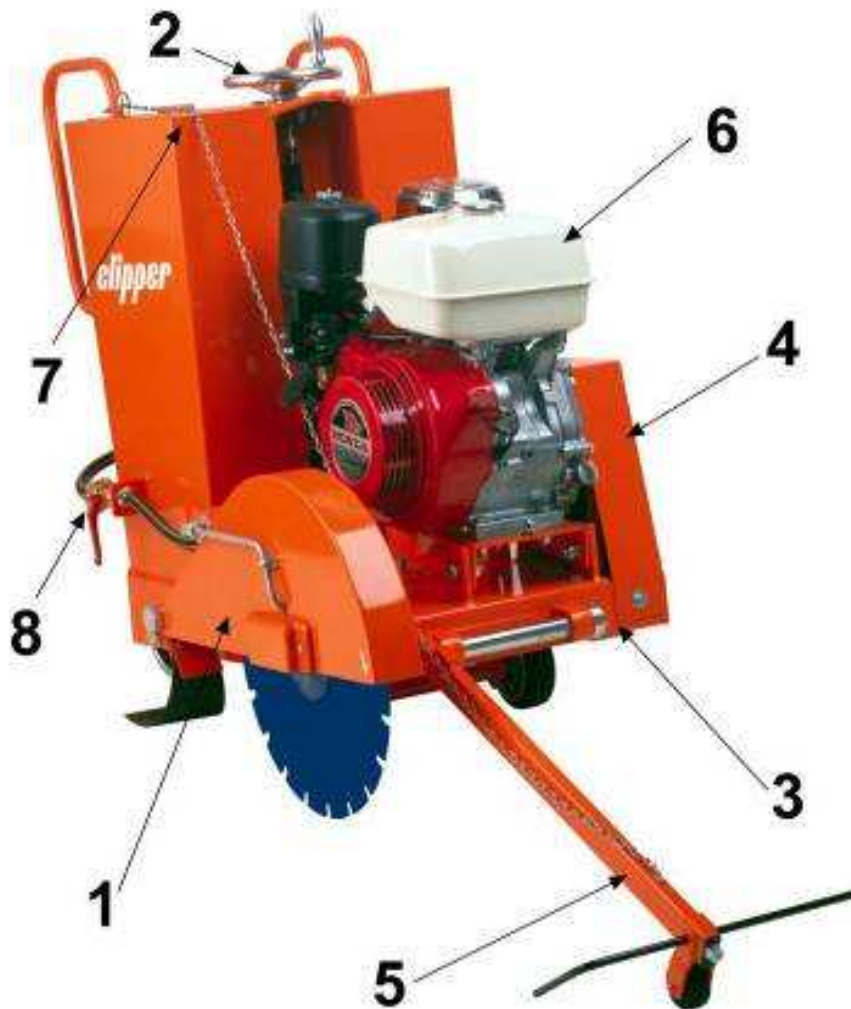
Any modification, which could lead to a change in the original characteristics of the machine, may be done only by Saint-Gobain Abrasives S.A. who shall confirm that the machine is still in conformity with the safety regulations. Saint-Gobain Abrasives S.A. keeps the right of making technical or design 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 GX620 engine (6) 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 (8) is composed of a 70 litres water tank, a water tank tap and two water nozzles on the blade guard ensuring adequate flow of water to both sides of the blade.

2.3 Technical data

Engine	Honda GX620, 4 strokes, 2 cylinder, 20HP (15kW)
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	ZGR5A (NGK) J16CR-U (DENSO)
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	70 l
Machine dimensions (length x width x height)	1088x580x925mm
Weight	150 kg
Max. operating weight	230 kg
Sound pressure level	88 dB (A) following ISO EN 11201
Sound energy level	107 dB (A) following ISO EN 3744

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

Fill the water tank with clean water.

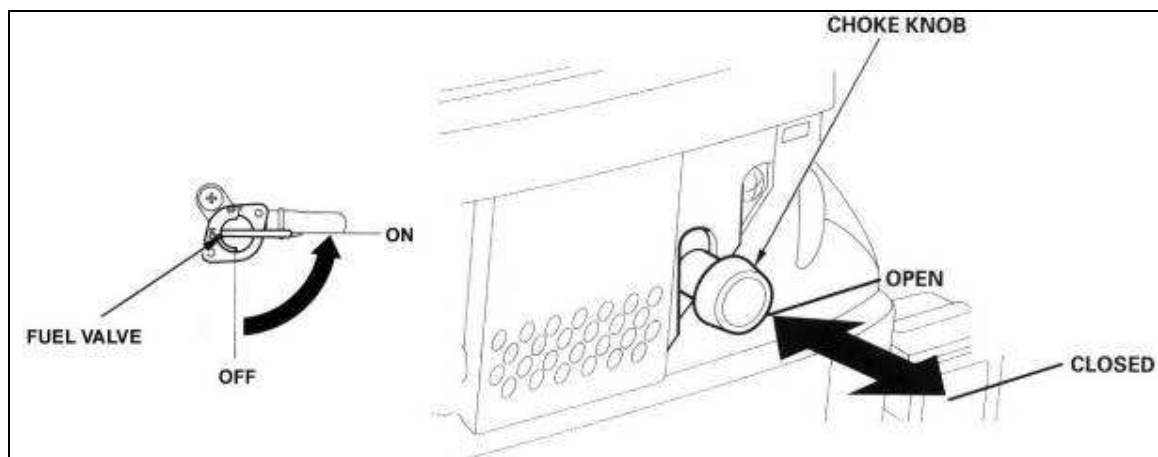
Open water-tap (note that handle on water-tap should be in line with water-flow).

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.

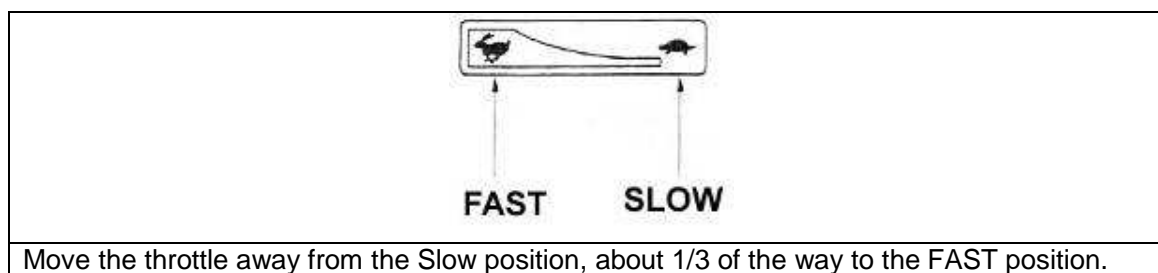
In case of frost, empty the water cooling system.

3.3 Starting the machine

Make sure the blade is raised clear up the ground before starting the machine. For hydrostatic drive machines, also ensure the clutch is disengaged.



Turn the fuel valve to the ON position. To start a cold engine, pull the choke knob out to the CLOSED position. To restart a warm engine, leave the choke knob in the OPEN position.



Move the throttle away from the Slow position, about 1/3 of the way to the FAST position.

Turn the key to the START position, and hold it there until the engine starts. If the motor fails to start within 5 seconds, release the key, and wait at least 10 seconds before operating the starter again.

When the engine starts, release the key, allowing it to return to the ON position.

If the choke has been pulled to the CLOSED position to start the engine, gradually push it to the OPEN position.

You can now put the throttle on the FAST position.

To stop the engine, move the throttle control lever fully to the right, then turn the engine switch to the OFF position. Do not use the emergency stop button to stop the machine, because leaving the key on the ON position will empty your battery.

You can find a light on the board of the machine. If this light is red while your machine is switched off, it means that the key is on the ON position, and that your battery is supplying current. Please set the 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.
- Empty the water tank.
- 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, and the water tank with water. 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. Check for minimum water level regularly.
- 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.

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.

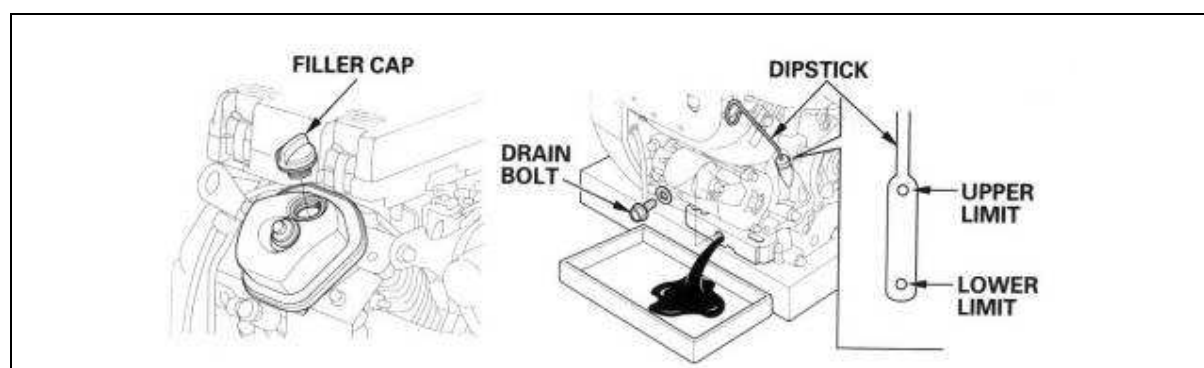
Grease the depth screw every day.

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				



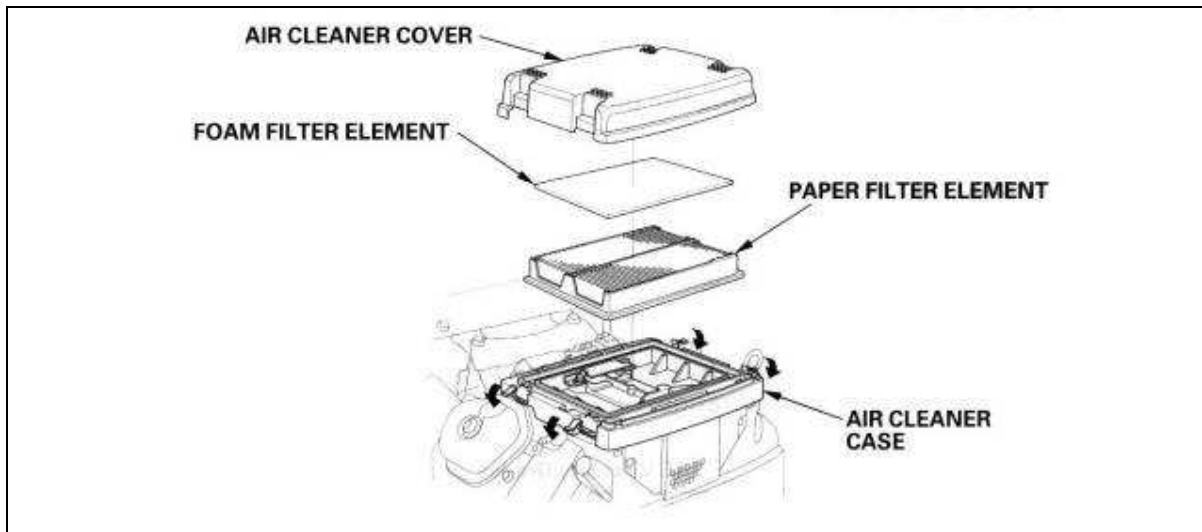
Engine oil

Drain the oil while the engine is warm. Warm oil drains quickly and completely.

CAUTION : the oil is very hot!

To change the oil,

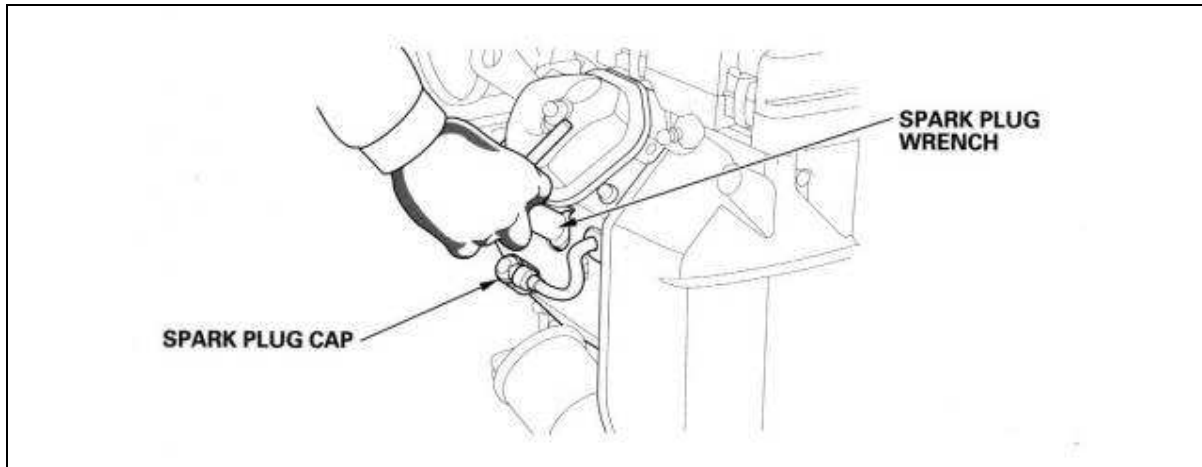
- Place a suitable container below the engine to catch the used oil, then remove the filler cap and the drain bolt.
- Allow the used oil to drain completely, then reinstall the drain bolt, and tighten it securely. Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you to take used oil in a sealed container to your local recycling centre or service station for reclamation. Do not throw it in the trash, pour it on the ground or down in a drain.
- Fill the crankcase up to the upper limit mark with the recommended oil.
- Reinstall the filler cap and dipstick securely.



Air cleaner

To service the air cleaner filter, follow these instructions:

- Release four latch tabs from the air cleaner cover, and remove the cover.
- Remove the foam filter from the cover.
- Remove the paper filter from the air cleaner case.
- Inspect both air filter elements, and replace them if they are damaged. Always replace the paper air filter element at the scheduled interval.
- Clean the air filter elements if they are to be reused.
- **Paper element:** tap element lightly several times on a hard surface to remove excess dirt or blow compressed air (max. 30psi or 207kPa) lightly through the filter from the air cleaner case side. Never brush the dirt off; brushing will force dirt into the fibres. Replace this element if it is excessively dirty.
- **Foam element:** clean in warm soapy water, rinse and allow to dry thoroughly, or clean in nonflammable solvent and allow to dry thoroughly. Do not put oil to the foam element.
- Wipe dirt from the inside of the air cleaner body and cover, using a moist rag. Be careful to prevent dirt from entering the air chamber that leads to the carburettor.
- Place the foam air filter element to the air cleaner cover, then reinstall the paper air filter element and cover to the air cleaner case. Hook the four latch tabs securely.

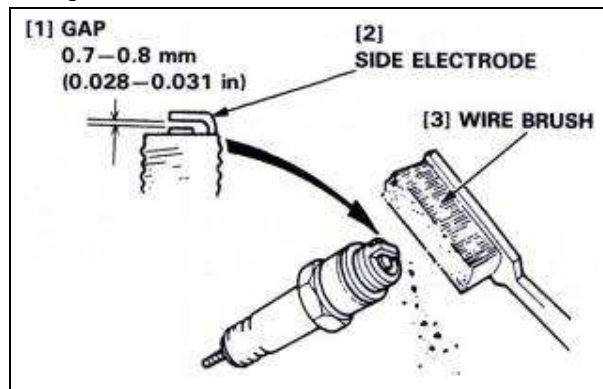


Spark plug

To service the spark plug, follow these instructions:

- Disconnect the spark plug caps, and remove any dirt from around the spark plug area.
- Remove the spark plug with a 13/16-inch spark plug wrench.
- Inspect the spark plugs. Replace them if the electrodes are worn, or if the insulator is cracked or chipped. Clean the spark plugs with a wire brush if you are going to reuse them.
- Measure the spark plug electrode gap with a suitable gauge. The gap should be 0.7-0.8mm). Correct the gap, if necessary, by carefully bending the side electrode.
- Install the spark plug carefully, by hand, to avoid cross-threading.
- After the spark plug seats, tighten with a 13/16-inch spark plug wrench to compress the washer.
- If reinstalling the used spark plugs, tighten 1/8-1/4 turn after spark plug seats, if installing a new spark plug, tighten 1/2 turn after the spark plug seats.

Attach the spark plug caps.



Further maintenance

For further maintenance, please contact the nearest engine maintenance centre.

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
	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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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:

Benelux and France:

From Saint-Gobain Abrasives
in the Grand-Duché de Luxembourg
Free telephone numbers:
Belgium : 0 800 18951
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