

SPECTRUM

Products

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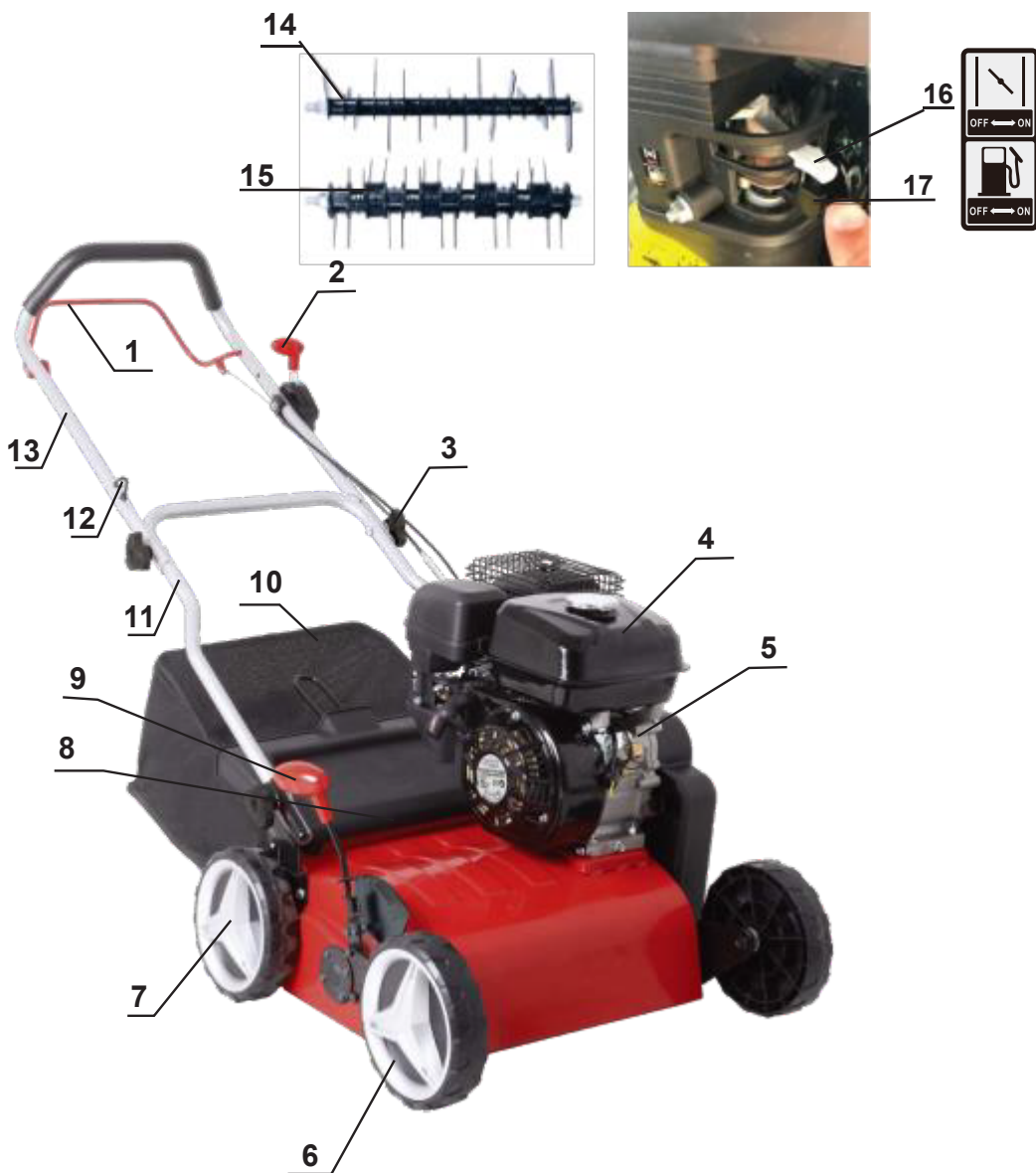
Products

2_{in}1



SW420 Expert
USER'S MANUAL

CE



Elements displayed:

1. Operator present control lever (On/Off).
2. Throttle lever.
3. Handle wing nuts and bolts.
4. Petrol tank.
5. Engine.
6. Front wheels.
7. Rear wheels.
8. Protective cover.
9. Working height adjustment lever.
10. Collector bag.
11. Lower handles.
12. Recoil holder.
13. Upper handles.
14. Aeration blades cassette
15. Spring tine cassette
16. Choke lever.
17. Fuel lever.

SPECIFIC CONDITIONS OF USE

This product is intended exclusively for use:

- to remove the top layer (plant residues, moss, weeds from the grass and for aeration meadow).
 - according to the relevant safety descriptions and instructions in these operating conditions.
- Any other use is not recommended.

If the product is used for purposes other than it's intended or if an unauthorised modification is made, the mandatory warranty and legal defect liability as well as any liability of the manufacturer will be void. Non-intended use will void the warranty and discharge any liability on the part of the manufacturer.

Unauthorised changes exclude the manufacturer's liability for any resulting damage.

Do not overload! The product is designed for a specific purpose and should only be used for it's intended use.

ATTENTION! Follow the legal guidelines and regulations to prevent possible accidents occurring.

ATTENTION! The user is responsible for any damage caused to third parties or their property. Never use the product when it is near people, especially children or pets.

ATTENTION! Keep these instructions and use them whenever you need to refer to them. If you do not understand any of these instructions, contact your dealer. If the product is given to another person, it is necessary to provide this manual with the other party.

ATTENTION! This product is not intended for use by persons with impaired sensory or intellectual ability or lack of experience and knowledge - unless supervised by the person responsible for their safety or instructed by that person on how to use the product. The product is not intended for use by children or persons with reduced mobility or poor physical disposition. We strongly recommend that pregnant women contact their doctor before using this product.

Original Instruction Manual

Dear Customer,

Congratulations on the purchase of machinery from Spectrum. When properly installed and operating, these are safe and reliable machines.

Before using this machine, please carefully read these instructions for use.

In the interest of your safety and to ensure proper use, read these instructions carefully, including the recommendations and warnings. To avoid unnecessary errors and accidents, it is important that these instructions will remain available for future reference to all who will use the machine. If you sell it to a new owner, this manual must be supplied along with the machine to enable new users to become familiar with relevant safety and operating instructions.

Compass and Spectre Ltd. is an authorized representative of the manufacturer and owner of the trademark Spectrum.

Address: 60 Sunderland Road, Sandy, Bedfordshire, SG19 1QY. Tel +44 (0)1767 235098, www.compassgm.co.uk; email: sales@compassgm.co.uk

TECHNICAL DATA

Parameter	Unit	Value
Model	-	SW420 Expert
Engine type	-	Petrol, four stroke, single cylinder, air cooling
Fuel	-	Unleaded petrol
Engine displacement	cm ³	212
Power	kW	4.5
Max engine rotations per minute (no-load)	min ⁻¹	3000
Working width	mm	420
Working depth	mm	-12+12 mm
Crankcase oil capacity	L	0.6
Recommended oil	-	10W40
Fuel tank volume	L	3.6
Recoil start	-	Hand
Work blades quantity	pcs	17
Working tine quantity	pcs	26
Lawn area	m ²	2000
Collector bag capacity	L	45
Sound pressure (LpA)	dB	83.7
Sound Level (LwA)	dB	94.1
Vibrations (ah)	m/s ²	4.04
Ingress Protection Rating	-	IP24

SAFETY INSTRUCTIONS

- Do not allow the engine to run indoors where dangerous carbon monoxide may accumulate.
- Use the machine in daylight or in good artificial light. If possible, do not use the machine on wet grass.
- Keep in mind the good stability of the slopes.
- Check the device before use.

- For wheeled vehicles, it is necessary to move sideways on the slope, never up and down.
- Be especially careful when changing direction of slope.
- Do not work in steep places.
- Be especially careful when turning the machine or pulling it towards you.
- Stop the engine, if it will have to tilt the machine for inspection at any time. Pay special attention not to tip the machine to cause engine oil to leak.
- Do not change the engine position or tip the machine.
- Carefully start the engine. Keep your feet away from the blades.
- The appliance must not tilt when starting the engine. Tilt it only when needed, and if so, tilt the machine backwards, with the handles pushed towards the floor which is safer.
- Never touch behind or under rotating parts with hands or feet. Always keep them away from the drum.
- Never lift the machine or carry it while the engine is running.
- Switch off the engine and pull the spark plug lead off the machine before removing debris from the drum or after encountering an obstacle. Before restarting and operating, look for damage to the machine and make any necessary repairs. If the appliance starts to vibrate abnormally, it should be checked immediately.

1. PREPARATION

- 1.1. Check that the machine is in good condition, check that all screws, nuts and other fasteners are securely in place.
- 1.2. Keep all parts in their correct place and in good working order.
- 1.3. Remove any accumulated debris from the exhaust area. Check the exhaust for cracks, corrosion, or other damage.
- 1.4. Check the machine before each use to determine if any of the working parts are worn or damaged. If so, replace the worn or damaged parts.

2. USE OF PETROL MACHINES

- 2.1. Never use excessive force when operating a petrol machine. A machine designed for a specific job performs best when used for the right machine for a task.

2.3. ENGINE OPERATION

ATTENTION! The engine produces carbon monoxide during operation. It is a colourless, odourless poison gas. Breathing carbon monoxide can cause nausea, fatigue, health issues or even death.

- 2.3.1. Do not start the engine in a confined space as this may cause a carbon monoxide build up.

ATTENTION! The engine running generates heat. The engine and exhaust become extremely hot during operation. Touching them can cause severe burns. Do not keep the machine near flammable materials, e.g. leaves, grass, shrubs, etc.

- 2.3.2. Do not tip the machine to avoid petrol or oil moving into other engine compartments.

- 2.3.3. Do not tilt the machine when the engine is running.

- 2.3.4. Switch off the engine before leaving the machine or refueling. Observe the safety instructions and warnings in the “FUEL” section.

3. PROTECTIVE EQUIPMENT

- 3.1. Operating this machine can eject foreign objects that may cause serious eye injuries. Regular glasses, such as eyeglasses or sunglasses, are not sufficient—they lack special safety lenses and proper side protection.

- 3.2. Wear adequate noise protection equipment! Noise can cause hearing damage or hearing loss. Take frequent work breaks. Limit the amount of work per day.

- 3.3. Always wear sturdy shoes with non-slip soles. There is a greater risk of damage to the feet or risk of slipping when on a wet surface. The shoes protect against injury and provide a solid base

- 3.4. Wear safety gloves.

- 3.5. Safety equipment such as a dust mask or hard hat can be used to reduce injuries.

4. PERSONAL PROTECTION AND FIRST AID

- 4.1. Follow good health and safety procedures.

Note - we recommend that you always have:

- A suitable fire extinguisher at your disposal.
- A fully equipped and easily accessible first aid kit
- A mobile phone or other emergency caller.
- A companion familiar with first aid principles. They must be at a safe distance from the workplace but be able to see you at any time!

- 4.2. Always follow first aid principles in the event of injuries.

- 4.3. If there is a cut, cover the wound with a clean bandage and press it firmly to stop the bleeding.

- 4.4. If the skin burns, first avoid further exposure to the source of burns. Cool affected areas of smaller sizes with water, preferably about 4-8 °C. Do not place ointments, creams or powders on the affected area. The

best way is to use a wet compress, such as a towel or a piece. Then attach the sterile cap and seek medical attention if necessary.

4.5. If people with circulatory problems are often exposed to excessive vibration, they can damage the blood vessels or their nervous system. Vibrations can cause the following symptoms of fingers, hands or wrists to appear: numbness, itching, pain, tickling, discoloration of the skin or the skin itself. If any of these symptoms occur, consult a doctor.

4.6. Do not allow petrol or oil to come into contact with your skin. Keep fuel and oil away from eyes. If petrol or oil comes into contact with eyes, wash immediately with clean water. If irritation persists, consult a doctor immediately.

4.7. Carbon monoxide poisoning can lead to death! The early signs of carbon monoxide poisoning resemble flu-like symptoms such as headache, dizziness and / or nausea. If you have these symptoms, seek fresh air immediately! Seek medical attention if necessary.

5. IN THE EVENT OF FIRE:

5.1. If the engine starts to burn or smoke appears, switch off the machine and move it to a safe place.

5.2. Use a suitable extinguisher to extinguish any fire.

DON'T PANIC. Panic can cause injury.

6. RESIDUAL RISKS

6.1. Even if the product is used as directed, it is impossible to eliminate all the risks associated with its operation. Due to the design of the device, the following risks may occur:

- Thermal hazards leading to burns or burns and other injuries caused by possible contact with high-temperature objects or materials, including heat sources.

- Hazards caused by contact with harmful liquids, gas, smoke and dust or by inhalation.

- The dangers caused by the lack of ergonomic principles in the design of the machine, for example, the hazards caused by an unhealthy position of the body or the excessive strain on the human hand, are related to the design of the handle and the balance of the machine.

- The hazards caused by the inability to stop the machine under the best conditions relate to the strength of the handle and the installation of the engine shutdown device.

The hazards caused by a defect in the machine control system relate to the strength of the handle, the positioning of the drivers and the marking.

- Dangers caused by objects ejecting.

- Mechanical hazards caused by cutting and ejecting.

- Risk of noise leading to hearing loss (deafness) and other physiological disorders (eg loss of balance, loss of consciousness).

- Vibration risk (leading to vascular and neurological damage to the hands, for example, so-called "white finger disease").

- The risk of fire or explosion refers to the spillage of fuel.

ATTENTION! The product produces an electromagnetic field of very low intensity. This field may interfere with some pacemakers. To reduce the risk of serious or life-threatening injury, people with pacemakers should consult their doctor.

7. UNPACKING

7.1. Carefully remove the product from the box.

7.2. Check carefully all parts are with the machine.

7.3. Do not dispose of packaging materials until they have been carefully inspected for part of the product (we recommend 30 days minimum, in case the machine is needed to be returned).

7.4. Parts of the packaging (plastic bags, paper clips, etc.), do not leave the area accessible to children, as they can be a source of danger. Do not allow children to play with plastic bags, foil, or small parts. There is a risk of swallowing or suffocation!

7.5. If you notice any damage when unpacking or the delivery is incomplete, notify Compass Garden Machinery within 48 hours of delivery. Any notification of damage after 48 hours, only parts will be supplied. Do not operate the machine if damaged or parts missing!

7.6. We recommend that you save the package for future reference. Packaging materials must be recycled or disposed of in accordance with applicable legislation.

This product requires installation. The device must be properly installed before use.

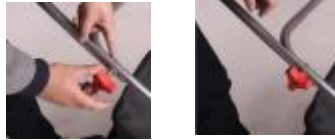
8. ASSEMBLING

8.1. HANDLE

8.1.1. Secure the bottom of the handle to the chassis using the retaining bolts and handwheels.



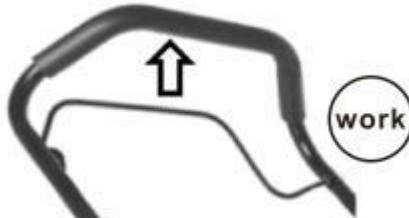
8.1.2. Attach the upper handles to the already assembled lower handles in the same way.



8.1.3. Secure the brake lever cable to the handle with the cable clips and screw the brake cable into the brake lever at the top of the handle.



8.1.4. Install the Operator Control Lever (OCL (if not installed)) on the upper right side of the handle with two screws.



8.2. ADJUSTING THE HANDLE ANGLE

Loosen and remove the wingnuts and bolts, adjust the desired tilt angle, rotate the bolts and lock the washers. The left and right sides of the handle must be installed in the same holes.

8.3. INSTALLATION OF THE COLLECTOR BAG

Lift the protective cover (grassbox flap) and hook it in place. Before removing the basket, first lift the lid and then remove the basket.

ATTENTION! The engine must not be started and the blades stopped while handling the collector bag.

8.4. STARTING RECOIL THE MACHINE

Insert the handle of the starter cable into the cable holder on the right hand side of the upper handles.

9. BEFORE STARTING THE ENGINE

9.1. FUEL

ATTENTION! Due to transportation, the machine is delivered without engine oil and fuel. Fill the crankcase with clean 5W30, 10W30 or 10W40 oil and fresh, clean premium unleaded fuel before starting! The engine requires unleaded petrol - 95 (SUPER 95). Use clean, fresh, unleaded, commercial grade fuel;

ATTENTION! The machine is equipped with a four-stroke engine and should only run on pure petrol **WITHOUT** an oil mixture! **ATTENTION!** Petrol is highly flammable and explosive, as are its vapors. You may be severely burned or injured when refueling.

9.2. REFUELING

ATTENTION! Turn off the engine. Never remove the fuel cap or add fuel when the engine is running or hot. After the engine has stopped, allow the engine and exhaust components to cool completely.

9.2.1. Remove the fuel tank cap.

9.2.2. Fill with fresh, clean, premium Unleaded Fuel.

9.2.3. Don't overfill! Before starting the engine, wipe off any spilt petrol.

9.2.4. All fuel tank and container caps of fuel must be tightened.

ATTENTION! Never add petrol to the engine indoors.

9.2.5. Do not smoke or use an open flame when near the engine.

9.2.6. Make sure you are away from heat, sparks and flames. If petrol is spilt, do not start the engine. Clean spilt petrol immediately. Move the machine out of the spilt area and wait for the fuel vapors to disappear to avoid the possibility of fire.

9.2.7. Only use E5 or E10 petrol. Do not mix oil with the petrol. For engine protection, we recommend that you use the fuel stabiliser to help keep the fuel fresh.

9.2.8. Make sure that water and dirt do not enter the fuel tank.

9.2.9. The fuel should not be older than 14 days.

Note: When pouring fuel into the tank, be careful and try not to spill any. Damage caused by fuel spills is not covered by the warranty.

9.3. MACHINE OIL

ATTENTION! This engine is supplied without oil in the crankcase. Be sure to put oil in the engine before starting. Use only the recommended oil types – 5W30 / 10W30 / 10W40.



9.3 Select the optimum viscosity of the oil that corresponds to the ambient temperature at which you will operate the machine. DO NOT mix oils!

9.4. OIL LEVEL CHECK AND ADD

Note: Check the oil level only when the engine is off and cooled down. The machine must be level.

9.4.1. Remove the oil filter cap / oil dipstick and dry it thoroughly.

9.4.2. Fully insert the oil filter / oil gauge cap into the oil filler neck, do not screw in. Then remove it. After pulling out, look at the oil level.

9.4.3. If the oil level is near or below the lower boundary marker, remove the oil filter cap / dipstick and add oil to the engine between the upper and lower markings. Do not overfill.

9.4.4. Replace the oil filter cap / dipstick.

9.4.5. ATTENTION! Make sure the fuel switch and the choke lever is closed (see the attached photo).



Change oil according to MAINTENANCE / OIL CHANGE.

ATTENTION! Improper filling or insufficient oil may cause irreparable damage to the engine.

9.5. CHECKING THE ENGINE BEFORE OPERATION

9.5.1. For your safety and for the maximum service life of your equipment, it is very important to take a few minutes to check the condition of the engine before operating.

ALWAYS CHECK THE FOLLOWING ELEMENTS BEFORE STARTING THE ENGINE:

- Fuel level
- Oil level
- Air filter (if any)

General management: Make sure there are no leaks, inspect for loose or damaged parts.

- Check engine power.

ATTENTION! Make sure that you have taken care of any problems you find, or, if you are not sure, have the machine serviced by an authorised workshop to correct the fault before operating the machine. Improper maintenance of this engine or an inability to correct a problem before you start working can cause an injury or even death.

9.6. HIGH ALTITUDES

9.6.1. Engines operating at high altitudes (over 1600 meters above sea level) require special attention as

the saturation of the fuel mixture is reduced and saturation is achieved. This results in loss of power and higher fuel consumption. Contact an authorised service center for more information.

10. WORK

ATTENTION: THE MACHINE IS INTENDED FOR OPERATION ONLY DRIVING FORWARD. As you move back, firstly, switch off the machine.

10.1. VERTICAL CUTTING DEPTH

Move the height adjuster lever up or down to set the required working depth.



10.2. TO START THE ENGINE

The engine start lever (Throttle lever) is located on the upper handles. Move it to the **START** position and start the scarifier by pulling the recoil rope.



Fast running position



Slow running position.



10.2.1. Place the machine into the highest working position prior to starting the machine.

10.2.2. The ignition is connected by a spark plug lead.

10.2.3. Move the throttle lever to the up position.

10.2.4. Open the fuel valve (if equipped).

10.2.5. Hold in the operator present control lever.

10.2.6. Grasp the starter handle and gently pull until it starts to tension, then pull it quickly and firmly.

10.2.7. Slowly return the starter handle to the recoil holder after starting the engine.

10.2.8. Once the machine has started and you are ready to scarify, lower the height

lever to your preferred working depth.

10.2.9. **ATTENTION!** After starting the machine, move the choke and fuel levers to the position shown in the picture:



ATTENTION! Keep your hands and feet away from rotating parts. Start the engine carefully according to the instructions and with your feet away from the blades.

Do not tilt the machine when starting the engine. Start the machine on a level surface without tall grass or obstacles. Keep hands and feet away from rotating parts.

ATTENTION! The machine is designed to work and collect whilst moving forward. When moving

backwards, stop the blades. The pickup does not work if the blades are turning and pulled backwards. This can damage the machine.

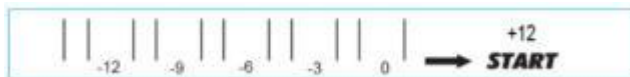
10.3. TO STOP THE ENGINE

10.3.1. Release the operator control lever to stop the engine and blades..

10.4. ADJUSTING THE WORKING DEPTH

ATTENTION! Firstly, start on a higher setting!

Use the height adjusting lever to select the required working depth.



10.5. FOR THE BEST RESULTS

WHY IS SCARIFYING NECESSARY?

Different climatic seasons throughout the year result in dead, dry grass and moss, leaving the grass susceptible to infection where the roots cannot absorb vital nutrients, water and air in sufficient quantities to promote a healthy lawn. Scarifying and vertical cutting opens the soil, eliminates the areas where there is a moisture build up, and thus provides a better supply of nutrients.

HOW TO SCARIFY?

This should be done twice a year. Spring is best when the soil is not frozen, in summer until the end of September. No further scarifying should be carried out for the grass to be prepared for the winter. Discarded material must be removed from the lawn. This machine is to be used in a domestic capacity whose annual use does not exceed 50 hours. It is not suitable for use in public facilities, parks, sports areas, agriculture and forestry.

CAUTION: If you hit an object, stop the engine. Disconnect the spark plug lead, carefully inspect the device for damage and repair the damage before restarting and operating the machine. Strong vibration of the machine is an indication of damage (especially to the blades and shaft). The machine must be inspected and repaired immediately. Contact an authorised service center.

10.6. AERATING AND SCARIFICATION

10.6.1. We recommend that you scarify your lawn in the spring and autumn.

10.6.2. To promote healthy grass growth in the spring, the absorption of water, air and nutrients in the root area must be increased.

10.6.3. To achieve the best results and extend the life of the machine, mow the grass before scarifying (less than 4 cm).

10.6.4. Select the working depth according to the grass condition.

10.6.5. In the case of a very mossy lawn, you may need to scarify an area more than once and possibly on a lower setting.

10.6.6. When working on slopes, always position yourself perpendicular to the slope and provide a secure base. Do not work on steep slopes.

10.6.7. Empty the collector box when it is full to prevent the blades from locking and potentially overloading the machine.

10.6.8. Mow the grass once more after scarifying.

10.6.9. Treat areas with grass seed that may form after scarifying.

10.6.10. Put the fertilizer on the grass after the new seeds have taken root.

ATTENTION! To ensure proper operation of the machine, it must be annually serviced by qualified personnel at an authorised service center.

Proper maintenance is essential for safe, trouble-free operation of the machine.

Failure to follow the maintenance instructions and safety precautions can result in serious injury or even death. Always follow the procedures, safety precautions, recommended maintenance and recommended checks as outlined in this manual.

ATTENTION! Before operating the machine (maintenance, inspection, replacement of parts, service) or before storing it, ALWAYS switch off the engine, wait for all moving parts to stop and allow the machine to cool down. Avoid accidental starting of the engine. If the machine is equipped with a trigger switch, remove it.

THESE GUIDELINES ARE NOT IN ORDER!

Follow this recommendation for the checks, maintenance, and intervals specified in this user guide. Other repairs that are more complex or require special tools should be taken to authorised service dealer.

11. MAINTENANCE OF THE MACHINE

11.1. Keep the machine in good condition.

11.2. Careful maintenance and regular cleaning ensure that the machine remains functional and efficient for a longer time.

11.3. In the case of abnormal vibration, follow the instructions (see troubleshooting instructions).

11.4. Keep all nuts, bolts and screws tightened to ensure that the equipment is in good working order.

11.5. Always make sure that the vents are clean.

11.6. Replace worn or damaged safety parts. Only use original spare parts.

11.7. Check the condition of the cutting blades before each use and replace them if necessary.

12. CLEANING

ATTENTION! Do not wash the engine with water. Water can damage the engine or contaminate the combustion system.

12.1. If engine is running, allow it to cool for at least half an hour before cleaning.

12.2. Clean all exterior surfaces, repair damaged paint, and cover other areas that may rust with a rust paint.

12.3. Clean the surface of the machine and the chassis with a dry cloth.

12.4. Never use harsh detergents or solvents for cleaning.

13. ENGINE MAINTENANCE

13.1. INSPECTION AND MAINTENANCE PLAN

The instructions in this manual refer to normal operating conditions. If you are operating the engine under severe conditions, such as constant high load, high temperature or unusually high humidity or dust, contact your service department for recommendations that apply to your individual needs and how the machine is used in your case.

13.2. FIRST 5 HOURS OF WORK

- Check that all nuts are tightened
- Replacing the engine oil

13.2. ALL 25 HOURS OF WORK

- Check that all nuts are tightened
- Replacing engine oil
- Engine oil condition monitoring
- Clean around the exhaust (when cooled down)
- Cleaning the air filter
- Inspection, cleaning and eventual candle replacement *

13.3. FOR EVERY 100 HOURS OF WORK

- Spark plug replacement. *
- Check the condition of the fuel hose
- Carburettor adjustment check **

Highlighted items

* See instructions

** This should be done at an authorised service center

14. OIL CHANGE

It is recommended that you have the engine oil changed regularly (please see below).

Note: The first oil change must be done after 5 working hours, when working under heavy load, another change must be made after 25 working hours.

Drain the engine oil when the engine is warm. The oil will drain quickly when warm. Caution: Do not drain the oil when the engine is running!

When draining the oil from the upper oil filler pipe, the fuel tank must be empty otherwise the fuel may leak out and cause a fire or explosion.

14.1. Place a suitable container next to the engine to collect the used oil.

14.2. Remove the oil filter cap / dipstick.

14.3. Remove the drain plug - if any - and allow the used oil to drain completely into the container.

14.4. For a non-drainage engine, we recommend using a suction pump or pulling the oil into the container, tilting the engine slightly to the oil filter cap / dipstick. Remove the fuel from the tank before tilting the machine, pointing the engine spark plug towards the sky.

14.5. With the engine level, fill up to the upper limit of the oil level cap / dipstick.

14.6. Replace the oil filter cap / dipstick.

Note: Please dispose of used engine oil in an environmentally compatible manner.

We recommend disposing of used oil in a sealed container to your local recycling center. Do not dispose of it in the rubbish, on the ground or in the sewers.

- Running a low grade oil engine can cause engine damage.
- Wash your hands with soap and water after handling used oil.

15. AIR FILTER

A dirty air filter will limit the flow of air to the carburettor and result in poor engine performance. Check the air filter prior to the engine running. You will need to clean the air filter more often if you are working in very dusty conditions.

Note: Operating the machine without an air filter or with a damaged air filter will allow dirt to enter the engine, resulting in potential engine wear / damage. This type of damage is not covered by the warranty.

15.1. AIR FILTER CLEANING OR REPLACING

ATTENTION! The air filter must be serviced (cleaned) after 25 hours of normal operation. Do this more often when working in extremely dusty places.

15.1.1. Release the air filter cover.

15.1.2. Remove the air filter cover. Be careful to prevent dirt and debris from getting into the base of the air filter.

15.1.3. Remove the pre-filter and air filter from the base of the air filter.

15.1.4. Check the air filter elements. Clean contaminated items.

15.1.5. To clean the debris, carefully tap the filter over a hard surface. Never attempt to clean the dirt by brushing, as this may cause the dirt to be pushed inside the filter. If the filter is too dirty, replace it with a new filter.

15.1.6. Reinstall the filter and pre-filter.

15.1.7. Close the cover and secure it.

Note: Replace the filter if it is distorted, torn, damaged or cannot be cleaned.

16. SPARK PLUG

For best results, replace the spark plug every 100 hours of operation. Use only the recommended spark plug, which is the correct heat range for normal engine operating temperatures. To find the latest types of recommended spark plug, please contact an authorised service center.

ATTENTION! If the engine has been ran, the exhaust and spark plug would be very hot. Be careful not to touch these parts.

Note: Incorrect spark plugs can cause engine damage. For good work, the spark plug must be properly opened and free of damage.

16.1. Disconnect the spark plug cap and remove any contamination from the spark plug area.

16.2. Use the correct spark plug wrench to remove the spark plug.

16.3. Check the spark plug. Replace it if damaged or if the washer is in poor condition or if the electrode is worn.

16.4. Measure the electrode distance with a suitable tool. The correct distance is described in the SPECIFICATIONS in the manual. If you need to change the distance, bend the electrode slightly.

16.5. Carefully install the spark plug by hand to avoid cross threading.

16.6. Once the spark plug is inserted, tighten the correct size wrench to tighten the washer.

16.7. When inserting a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer.

16.8. When reinstalling the original spark plug, tighten 1/8 - 1/4 turn after the spark plug seats to compress the washer.

16.9. Attach the spark plug cap to the spark plug.

Note: A loose candle can get very hot and damage the engine. Excessive tightening of the spark plug can damage the thread in the cylinder head.

17. EXHAUST

17.1. Allow the exhaust, engine cylinder and fins to cool before touching.

17.2. Remove accumulated residues from the exhaust area and the cylinder area.

17.3. Make sure the exhaust is free of cracks, corrosion or other damage.

17.4. If the exhaust system is fitted with a spark guard, it must be kept clean. After removing the fuse and cleaning the dirt, clean the fuse with a fine brush (such as a toothbrush) from any debris. After cleaning, reassemble it.

18. Carbon sediments that have built up should be cleared, such as between the spark plug gap.

It is recommended to remove the carbon build up from the engine cylinder, between the upper side of the piston and the cylinder head. However, we recommend you leave these procedures to an authorised service centre to be carried out at regular service intervals.

19. FUEL SYSTEM

ATTENTION! Spare parts of the fuel system (plugs, hoses, tanks, filters, etc.) must be replaced with genuine parts, otherwise there is a risk of fire.

19.1. Check the condition of the fuel line regularly.

19.2. Replace the fuel line every 2 years. If there is a fuel leak from the fuel hose, replace immediately.

20. CORRECTIONS OF THE ENGINE

ATTENTION! Do not alter rated engine speed (carburettor or the governor).

Your engine is factory tuned. If the engine settings are changed in any way, the warranty will be void. If additional adjustment is required (e.g. at high altitude), contact an authorised service center!

21. STORAGE

ATTENTION! Store this machine in a place where fuel vapors cannot be reached by open flames or sparks. Remove any fuel before storing for a long period. Always let the device cool down before storing it.

21.1. Keep the machine in a dry, clean and frost-free place out of the reach of unauthorised persons.

21.2. Be careful not to bend or break the cables.

21.2. Replace worn or damaged safety parts. Only use original spare parts.

22. STORAGE OF THE ENGINE

22.1. PREPARATION

Proper storage preparation is essential for keeping the engine running smoothly and looking good. The

following steps will help you keep rust and corrosion from damaging your engine function and appearance and will make it easier to start the engine when you use it again.

23. MAINTENANCE / CLEANING OF SAFETY PRECAUTIONS

ATTENTION! Use approved containers for fuel storage.

23.1. If your engine is to be stored with petrol in the fuel tank and carburettor, it is important to reduce the risk of burning petrol vapors. Choose a well-ventilated storage area, away from any flame-treating appliance, such as a furnace, boiler or clothes dryer.

23.2. Also, avoid any area with an electric motor producing sparks or when using power tools.

23.3. If possible, avoid high humidity storage areas as this will result in rust and corrosion.

23.4. If there is fuel in the fuel tank, set the fuel tap to OFF.

23.5. Store the engine on a level surface. Tilting can cause fuel or oil to leak.

23.6. When the engine and exhaust is cooled, cover the engine to prevent dust from accumulating. A hot engine and exhaust can ignite or melt some materials.

24. ADDING A FUEL STABILIZER TO EXTEND THE LIFE OF FUEL STORAGE

24.1. To protect the carburettor, use the fuel stabiliser available to buy.

24.2. When adding a petrol stabiliser to the fuel, follow the guidelines as per the stabiliser you purchase.

24.3. After adding a petrol stabiliser to the machine, run the engine outdoors for 10 minutes to make sure that the processed petrol has replaced the untreated fuel in the carburettor.

25. STORAGE OUT OF THE SEASON

If your machine stores petrol in the fuel tank and carburettor, it will deteriorate over time. Old, stale petrol will cause a difficulty when starting and may leave deposits that clogs the fuel system. If petrol in the engine deteriorates during storage, you may need to replace the carburettor and other components of the fuel system. The fuel cannot be in the engine for more than 14 days. Leaving it there for a long time may cause engine damage, these damages are not covered by the warranty. Adding a fuel stabiliser to petrol can extend the life of the fuel but does not guarantee the machine to start with older fuel in the tank.

The following steps should be taken to prepare the storage machine.

25.1. Empty the petrol tank with the suction pump after the last use for the season or run until empty.

ATTENTION! Do not run the machine indoors, near open flames, etc.

Don't smoke! Fuel vapors can cause an explosion or fire.

25.2. Start the engine and allow it to run until all fuel is exhausted.

25.3. Remove the spark plug. Add 20 ml of clean, oil in to the combustion chamber. Pull the starter cord slowly to distribute the oil evenly into the combustion chamber.

25.4. Replace the spark plug.

25.5. Replace with freshly treated fuel or leave the tank empty until the next season.

26. USE AFTER STORAGE

Check the engine as described in the BEFORE STARTING section of this manual.

If fuel has been drained to prepare for storage, fill the petrol tank with clean, fresh premium unleaded fuel. If you have stored petrol, make sure it is fresh before adding back to the machine. Petrol deteriorates over time, causing it to make the machine hard to start.

If the machine has been treated with oil during storage preparation (as per Section 25), the engine will briefly smoke at startup. This is normal.

27. ADVICE SPECIFIC TO THE MACHINE

27.1. Keep the machine in a dry, clean and frost-free place out of the reach of unauthorised persons.

27.2. Cover the device with a suitable protective coating that does not retain moisture. Do not use plastic as a powder coating. A pore-free coating will capture moisture around the machine, which will help with rust and corrosion.

27.3. Keep the machine in good condition, if necessary, change the warning labels and machine instructions.

Note: When storing, care must be taken to protect the rust of the equipment. Use light oil or silicone, cover the equipment, especially all metal parts and all moving parts.

28. TRANSPORTATION

ATTENTION! Do not transport the machine while the engine is running. Allow engine to cool before transporting the machine. The fuel tank must be empty. Spilt fuel or fuel vapor can ignite.

28.1. Empty the fuel tank with the suction pump. Start the engine and allow it to run until all fuel has run out.

28.2. Close the fuel cap.

28.3. Turn the engine switch and fuel lever (if equipped) to the off or stop position.

28.4. Allow engine to cool before transportation.

28.5. Be careful not to drop or hit the machine during transportation.

28.6. Put the machine in a safe position in the upright position while transporting.

28.7. Be careful not to hit the machine during transport. Do not place objects on the device.

29. TROUBLESHOOTING.

The table below shows symptoms of faults and how you can help yourself if your scarifier stops working. If you cannot find and correct the problem by following the instructions in the table, contact an authorised repair centre. **Attention!** Before you start troubleshooting, stop the machine.

Faults	Reasons	Removal
The engine does not start	Empty tank	Fill the tank to its full capacity; check that the carburettor contains fresh fuel; checking the deaeration of the tank
	Dirty air filter	Clean the air filter
	Low spark ignition	Clean the spark plug or install a new one if necessary; check the ignition cable; the ignition must be checked by an authorised service dealer
	Filled engine	Unscrew the spark plug, clean it and dry it; pull the starter cord several times with the spark plug undone (no throttle)
	Old fuel	Clean the carburettor, empty old petrol and pour new
Engine interruptions occur	The ignition cable is loose	Place the spark plug lead firmly on the spark plug
	Fuel lines are clogged or fuel is poor	Clean the fuel line, use fresh petrol
	The air inlet of the fuel tank cap is blocked	The air inlet of the fuel tank cap is blocked
	There is water or dirt in the fuel lines	Drain the fuel and replace with clean and fresh fuel
	The air filter is dirty	Clean the air filter
The engine smokes a lot	Too much oil in the air filter	Clean the air filter or replace if needed
The engine often stops at idle	The ignition distance is too long, the spark plug is defective	Adjust or replace the spark plug
	The carburettor is not set up correctly	Have it checked by a workshop
	Dirty air filter	Clean the air filter
Excessive vibration	The fixing screws are loosened	Tighten the retaining screws

My Spectrum Product Details

MODEL NUMBER	
SERIAL NUMBER	
DATE OF PURCHASE	

Compass and Spectre Ltd

60 Sunderland Road
Sandy
Bedfordshire
SG19 1QY
01767 235098
sales@compassgm.co.uk

www.compassgm.co.uk

Company No: 10621602