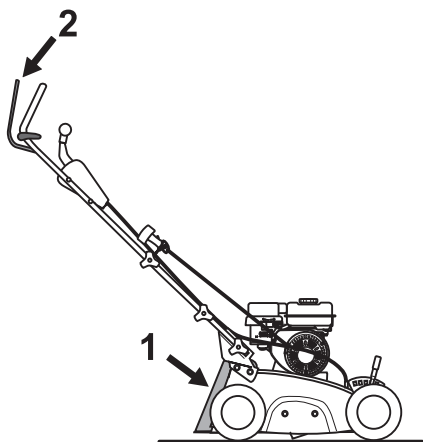
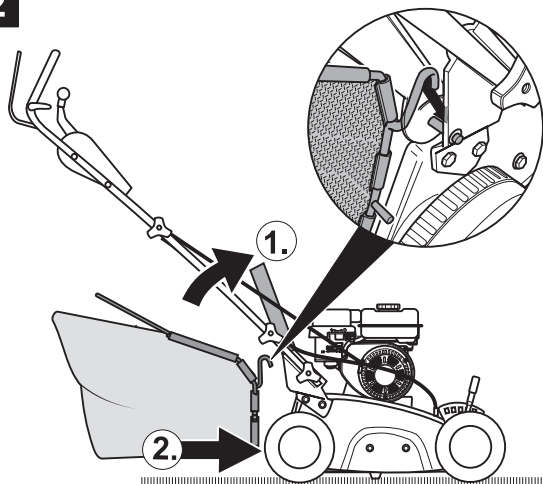


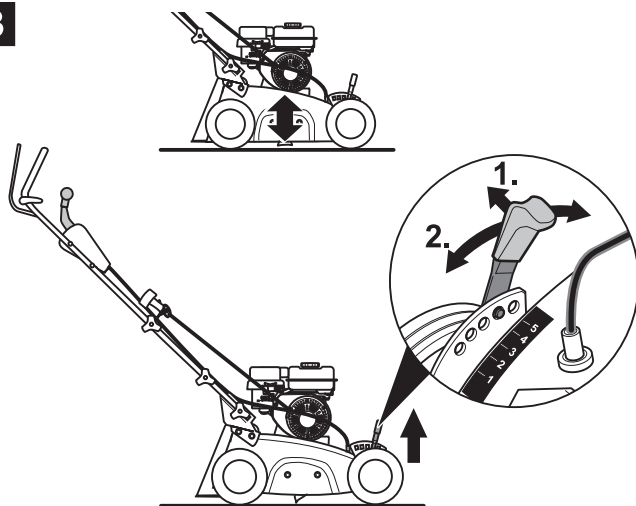
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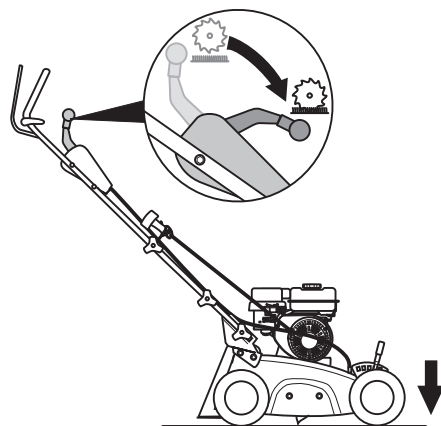
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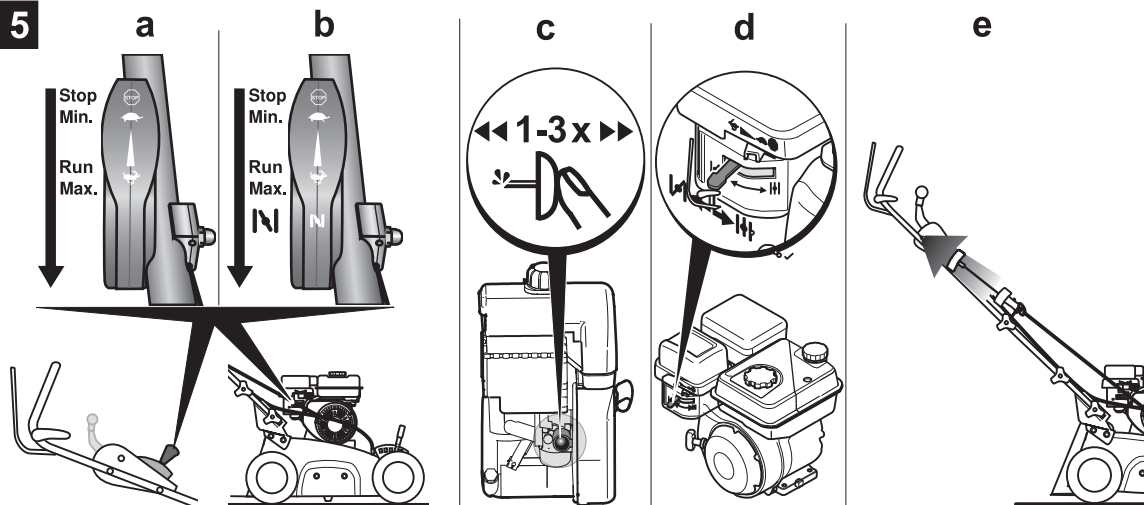
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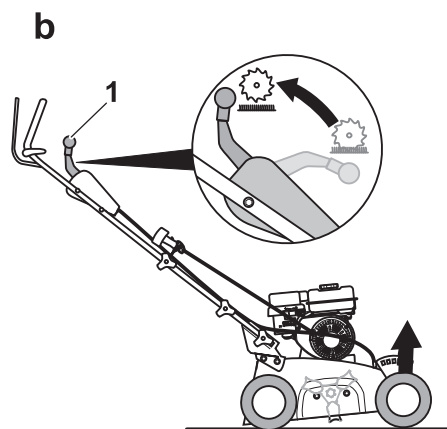
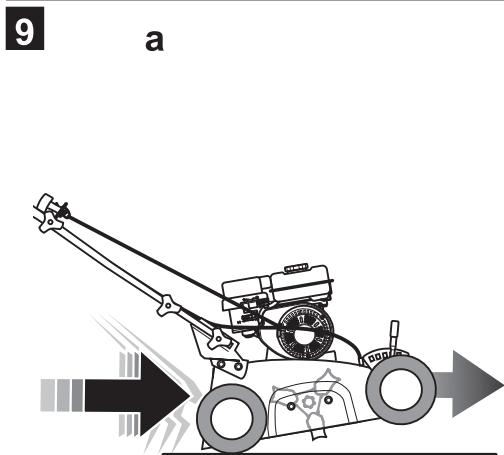
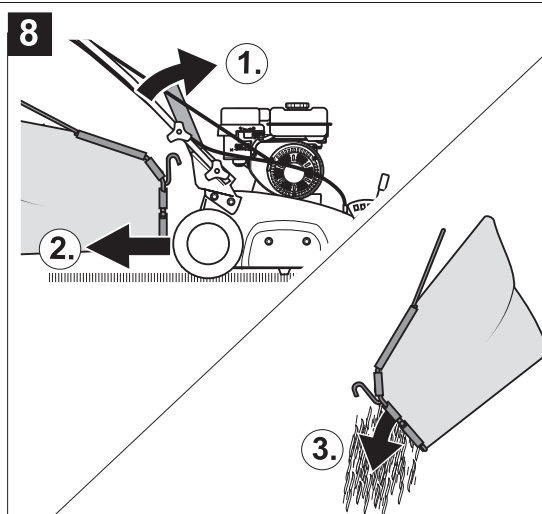
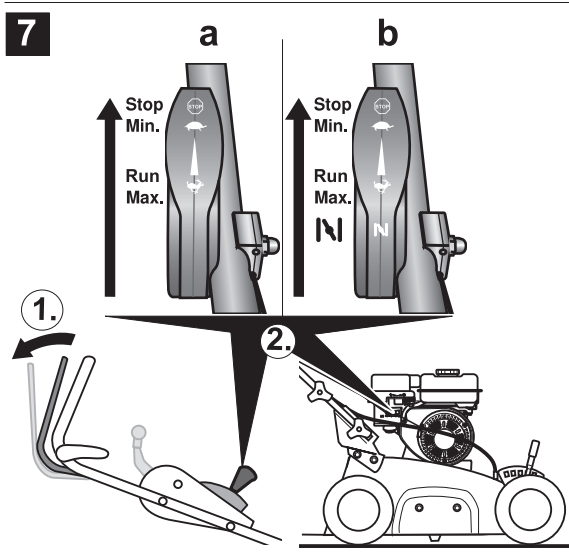
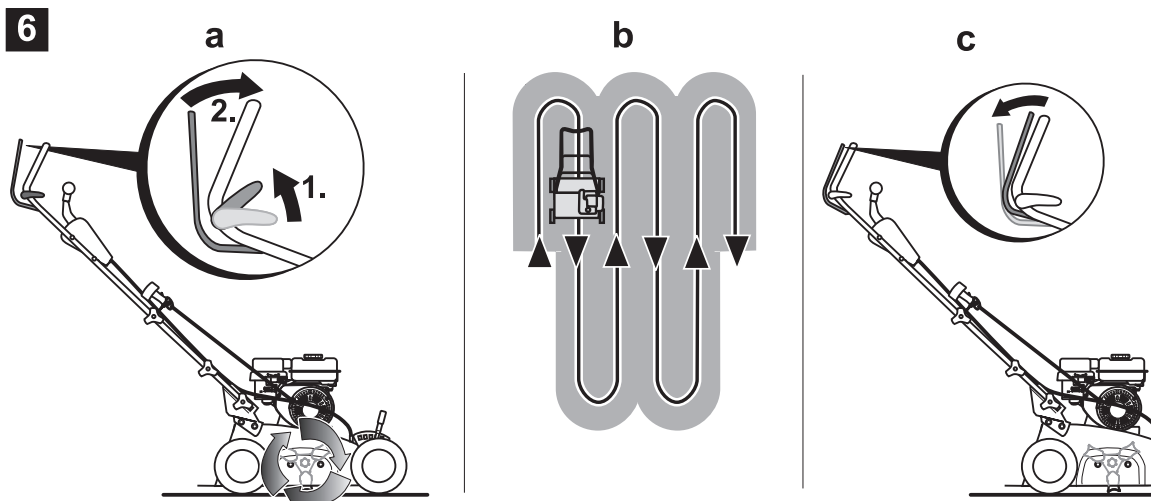


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












11

Diagram 11 illustrates the assembly of the rear axle. The main diagram shows a rear axle with a central differential housing (a) and two axle tubes (b) extending to the left and right. The left axle tube is connected to a hub (c) and a brake disc (d). The right axle tube is connected to a hub (c) and a brake disc (d). The diagram includes four numbered callouts: 1. shows the hub (c) being moved towards the brake disc (d); 2. shows the hub (c) being moved away from the brake disc (d); 3. shows the hub (c) being moved towards the brake disc (d); 4. shows the hub (c) being moved away from the brake disc (d).



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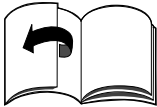
Identifying and eliminating malfunctions9

Information on rating plate

These details are very important as they will not only be needed for identifying your machine when ordering replacement parts but they will also be required by Customer Service. The rating plate is found near the engine. Enter all information on the rating plate of your unit in the following box.

This and other information about the unit can be found on the separate CE Declaration of Conformity which is a component of this operating manual.

Illustrations



Fold out the illustrated pages at the start of the operating manual. Various models are described in these operating instructions. The graphical representation may differ in detail from the unit which you purchased.

For your safety

Use the appliance properly

This appliance is approved solely for use

- in accordance with the descriptions and safety instructions specified in this user's guide
- as a scarifier for scarifying and aerating lawns.

Any other use is not as intended. Improper use is not covered by the warranty and the manufacturer will reject any liability. The user is liable for all damage caused to third parties and their property. Unauthorized modifications made to the appliance rule out any liability on the part of the manufacturer for damage resulting therefrom.

Observe the safety and operating information

Before using the appliance for the first time, read and follow these operating instructions carefully. Comply with the operating manual and keep it for subsequent use. Never allow children or other persons to use the appliance who do not know the operating instructions.

If the unit changes ownership, hand over the operating manual.

General safety information

In this section you will find general information about safety. Warnings that apply specifically to individual parts of the scarifier, functions or activities are shown at the corresponding point in this user's guide.

Before working with the appliance

Persons using the appliance must not be under the influence of intoxicants, e.g. alcohol, narcotics, medication, etc.

Persons younger than 16 years of age must not use this appliance – local regulations can determine the minimum age of the users.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or

mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

Before starting work, familiarise yourself with all the equipment and controls as well as their functions.

Store fuel in permitted containers only and never near heat sources (e.g. cooker or hot water tank). Fuel the appliance outdoors only. Never refuel the unit while the engine is running or hot.

Replace a damaged exhaust, tank or tank cap.

Before using the appliance,

- whether the grass catcher works and the deflector closes correctly. Replace damaged, worn out or missing parts immediately.
- check for any wearing or damage to the cutters, fastening pins, and the whole cutter unit. Have worn or damaged parts replaced by a specialist company and only in sets to exclude imbalances.
- whether the scarifier shaft/aerator shaft is correctly and securely attached.

Spare parts and accessories must satisfy the requirements specified by the manufacturer. Therefore use original spare parts and original accessories only or spare parts and accessories authorised by the manufacturer. Have repairs carried out by a specialist company only.

When working with the appliance

When working with or on the appliance you must wear protective clothing. This includes:

- safety shoes,
- trousers,
- close-fitting garments,
- Ear protection
- protective goggles, etc.

All safety devices must be installed on the appliance, and they must be complete and in a fully functional condition.

Do not make any changes to the safety devices.

Operate the vehicle only when it is in good technical condition as stipulated and delivered by the manufacturer.

Never change the engine settings preset at the factory.

Avoid naked flames and sparking, and do not smoke.

Before all work on this appliance

If the appliance has an engine, always turn off it off before doing any working on it (e.g. repair work and adjustments) and before transporting it (e.g. lifting or carrying) in order to avoid injury

- switch OFF the engine,
- wait until all moving parts have come to a complete stop and the engine has cooled down,
- remove the spark plug connector on the engine in order to prevent the engine from accidentally being started,
- observe the additional safety information in the operating instructions for the engine.

After working with the appliance

Never leave the appliance unattended without first turning off the engine.

Safety equipment

Figure 1



Danger
Never use an appliance if it has damaged safety devices or if there are no safety devices fitted.

Discharge flap (1)

It provides protection against injuries that could be caused by the cutting blade(s) or any solid objects that might be thrown out. The lawn scarifier should never be operated with the deflector detached.

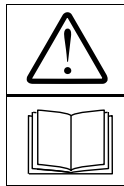
Safety lever (2)

The safety lever is provided for your own safety to enable you to stop the cutters immediately in an emergency.

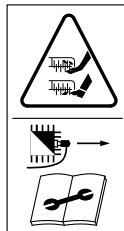
There must be no attempt to circumvent this function, which is crucial for your personal safety.

Symbols on the appliance

On the appliance you will find various symbols on adhesive labels. They have the following specific meanings:



Warning! Please read the operating instructions before putting appliance into operation!



Before working on the cutters, remove the spark-plug connector! Keep fingers and feet away from the cutters! Always switch off the appliance and remove the spark plug connector before adjusting, cleaning or checking it.



Keep third parties away from the danger area!



Always wear eye and ear protection!

Always keep these symbols on the appliance in a legible state.

Symbols in the user's guide

This manual uses symbols which identify dangers or indicate important information.

They have the following specific meanings:



Danger
Draws your attention to sources of potential danger associated with the task you are undertaking at the time which constitute a danger to persons.



Caution
They refer to dangers which are connected with the described activity and which may result in damage to the unit.



Note
Indicates important information and application tips.

Assembling the appliance

At the end of the operating instructions or as a supplement the assembly of the appliance is presented in pictures.



Disposal instructions
Dispose of packaging remnants, old units, etc., in accordance with local regulations.

Functional description

The lawn scarifier is pushed by hand over the area of grass to be cut. The cutters are driven by a petrol engine.

The depth of cut is set by varying the central height-adjustment mechanism individually.

Scarification:

The cutter deck rotates and removes the felt layer formed by moss, lichen and weeds and conveys the scarified material to the outside or into the grass catcher. During cutting the cutters penetrate the ground and therefore ensure that the lawn is loosened and absorbs nutrients better.

We recommend scarifying the lawn in spring (April/May) and autumn (October).

Aerating (with optional aerator shaft):

The cutter deck (aerator shaft) rotates and combs the lawn or aerates the slightly mossy areas. The removed moss is conveyed outwards or into the grass catcher. During aeration the surface of the ground is scratched; this improves water drainage and facilitates the absorption of oxygen. We recommend aerating the lawn during the entire growing period as and when required.

Operating

Also follow the instructions in the engine handbook.

Danger

Accident

- Persons, particularly children or animals, must never be near the appliance when scarifying. Risk of injury due to ejected stones or other objects.

Falling over

- Operate the vehicle at walking speed only.
- When cutting grass on a steep slope, the lawn scarifier could tip over and cause an injury. Steer the appliance directly across inclines, never up and down them. Never scarify on slopes with an inclination of more than 20%.
- Be particularly careful when changing the direction and always pay attention to a good position.
- Be especially careful if pulling the unit backwards towards yourself.
- There is a risk of injury when scarifying along borders. Scarifying near edges of lawns, hedges or steep banks can be dangerous. Always keep the safety distance when scarifying.
- If aerating damp grass, the unit may slip due to reduced adhesion and you may fall. Only scarify the lawn when the grass is dry.
- Work only by daylight or in good artificial lighting.
- Do not use the unit in adverse weather conditions, e.g. if there is a probability of rain or a storm.

Injury

- Always maintain a safe distance from the rotating tool by means of the steering handle.
- The working area of the operator is behind the steering handle during operation.
- Never place your hands, feet, or other parts of the body near rotating parts.
- Never stand in front of the ejection holes when starting the scarifier.
- When the engine is switched off, the cutter continues turning for several seconds. Keep hands and feet away.
- Turn off the engine and wait until the blade has stopped:
 - before tilting the appliance,
 - for transporting over surfaces other than grass.
- Turn off the engine and remove the spark plug connector on the engine to prevent the engine from being accidentally started:
 - before you clear the ejector of blockages and other hindrances;
 - before you check, clean, adjust or work on the scarifier;
 - immediately after a foreign object. Check scarifier for damage and contact a specialist workshop in the event of damage;
 - immediately after the appliance starts to vibrate with unusual violence and before you check the appliance.
- Never lift or carry the appliance when the engine is running.
- When removing the grass catcher you or other persons could be injured by ejected material or by foreign bodies. Never empty the grass sack while the engine is running. Switch off the scarifier.
- Check the terrain on which the unit is being used and remove all objects which may be picked up and ejected.
- If the cutter strikes a foreign object (e.g. stone) or if the unit starts vibrating unusually: Switch off the engine immediately and remove the spark-plug terminal.

Before continuing to use the unit, have it checked for damage by a service centre.

- Never start the unit with both front wheels in the working position. The cutting tool is touching the ground and the appliance can start moving.

Asphyxiation

- Danger of asphyxiation due to carbon monoxide poisoning. Run the internal combustion engine outdoors only.

Explosion and fire hazard

- Petrol vapours are explosive, and petrol is highly flammable.
- Fill the fuel before starting the engine. Keep the fuel tank closed when the engine is running or still hot.
- Fill with fuel only when the engine has been switched OFF and has cooled down. Avoid naked flames and sparking, and do not smoke. Fuel the appliance outdoors only.
- Do not start the engine when fuel has spilt. Remove the appliance from the surface soiled with fuel and wait until the fuel vapours have evaporated.
- To avoid fire hazard, please keep the following parts free of grass and escaping oil:
 - engine
 - exhaust
 - petrol tank.

Attention

Damage to the lawn scarifier

- Stones, branches or similar objects lying about may damage the unit and its mode of operation. Remove all objects from the appliance's path before every use.
- Do not operate the machine if it is not in perfect working order. Subject the appliance to a thorough visual check before using it. Check in particular the safety equipment, controls and threaded connections for damage and secure attachment. Replace damaged parts before operating the unit.
- Operate the unit on short, dry grass only. The height of the grass should be approx. 4–5 cm.

Operating times

Follow the national/ municipal regulations with respect to times of usage (if required ask your local authority).

Directions

Details of specific locations on the lawn scarifier (e.g. left, right) are always quoted as seen from the steering handle and while facing forward.

1. Preparing the machine for use

Caution

For reasons of transportation the unit is delivered without engine oil.

- Therefore, you must fill the engine with oil before putting into operation for the first time.
- Fill up with lead-free petrol (see Engine manual).
- Fill petrol tank with regular unleaded petrol. Never fill the tank to the rim, but no higher than 2 cm below the filler neck's bottom edge.
- Screw the tank cap on tight.

2. Hang the grass catcher (optional, depending on model) Figure 2

- Lift up the deflector flap and hook the grass sack onto the lawn scarifier.

3. Setting the depth of cut Figure 3

Caution

The working depth must be set correctly before the unit is used for the first time. The height adjustment lever may be moved to the first working depth setting only (position 1).

Note

If the blades/aerator tines are worn, the working depth must be re-adjusted subsequently. An optimum working depth is obtained when the blades/aerator tines of the cutter are inserted 2–3 mm into the ground.

If the working depth is too great, the unit may be overloaded and cause damage. Therefore, ensure that the working depth is set correctly.

- Set height adjustment lever (depending on model) according to wear. Settings **2, 3, 4** and **5** are not required until the blades/aerator tines are worn. Depending on the degree of wear, gradually set the blades lower, starting at **2**.

4. Starting the engine

Also follow the instructions in the engine handbook.

Danger

Keep hands and feet well away from the cutting blade.

Caution

Before starting the engine, disengage the clutches for all cutters and drives. Do not tip the appliance when starting.

- Keep the appliance on an even surface with little or the shortest possible grass.

Setting the controls

Figure 5

Information on throttle


The throttle (Fig. 5) is either located on the engine or on the guide stems of the appliance.

- Open fuel cock (if one is available – please see engine operating instructions).


Information about the engine

- Observe the information in the engine manual.
- Even if the engine is warm, it may be necessary to actuate the choke or the primer.



Starting with a cold engine

- Set throttle to  (appliances with choke) – Fig. 5a

or

- Set throttle to  /Max/Run and firmly press primer 1 to 3 times (appliances without choke) – Fig. 5b/c


or

- Set throttle to  /Max/Run and set choke lever (on the engine) to “Choke” – Fig. 5b/d.



Starting with a warm engine

- Move the throttle to  /Max/Run.


Starting the engine

- Move transport lever to the transport position  to prevent the cutter deck from touching the ground (Fig. 9b).
- Stand behind the appliance.
- Slowly pull the starter cable grip until you feel resistance, and then pull quickly and strongly. Do not let the starter cable grip snap back, but let it return slowly – Fig. 5e.

Setting the controls after engine start


- Push back the choke lever on the engine (depending on model) to  /Max/Run/.
- Set the throttle to the required engine speed.

Note

Always set the throttle to full speed to scarify  /Max/Run. You can refer to the engine manual for further information on operating the engine.



5. Stopping the engine

Figure 7

- Release the safety lever to turn off the cutters.
- Move the throttle to  /Stop.

6. Scarifying/aerating

Figure 6

- Start the engine as indicated.
- Pull switch lever (Fig. 6a):
 - Pull and hold locking lever.
 - Pull and hold switch lever.
 - Release locking lever.
 The cutter deck is running.
- Move transport lever from the transport position  to the operating position  – Figure 4.

Note

When the cutter deck is in contact with the ground, the unit can move.

- Guide the unit in parallel swaths (Fig. 6b).
- Release switch lever to stop the cutter deck (Fig. 6c). The cutter deck stops after a short time.

7. Remove and empty grass catcher

(optional, depending on model)


Figure 8

- Stop the engine and wait until it comes to a stop.
- Lift the deflector flap and unhook the grass sack.
- Empty out the contents.

8. Working without the grass sack

Whenever you detach the grass sack, the deflector flap drops down. When scarifying without the grass sack attached, the cuttings are ejected straight onto the ground.

9. After finishing work

- Stopping the engine.
- Wait until all moving parts have come to a complete stop and the engine has cooled down,
- Move transport lever to the transport position .
- Close fuel cock (if available – please see engine manual).
- Disconnect the spark plug terminal on the engine.
- Empty grass catcher.

Note

Leave engine to cool down before placing unit in closed room.

10. Installing the aerator shaft

(optional, depending on model)

This step is described in the section “Servicing/cleaning”.

About scarifying/aerating

In order that a healthy lawn can develop in the spring, it is necessary for greater amounts of air to penetrate the area around the roots of the grass. During this period the lawn must be scarified more frequently than in the summer.

Scarify the lawn

- more frequently in the spring,
- when required in the summer,
- more frequently in the summer as well if the lawn has large areas of shade.

Aerating the lawn

- during the entire growing period as and when required.

Do not scarify/aerate the lawn if the grass is longer than 4 cm. If the grass is longer, the lawn should be mown before it is scarified/aerated. Apply fertiliser to the areas that have been scarified and water it in, so that fresh grass can grow more quickly.

Transporting the appliance

Caution

The cutting blades and the unit as a whole could be damaged if the scarifier is wheeled over a hard surface, for example, with the engine switched off. Avoid bringing the cutter deck into contact with the ground. Always guide the unit in a tilted position and only on the back wheels (Fig. 9a) or when the front wheels are in the transport position (Fig. 9b). Never lift or carry the unit without first stopping the engine and removing the spark-plug terminal.

Moving front wheels into transport position

Figure 9b

- Move transport lever (1) backwards to position .

Short distances by hand

- Stopping the engine.
- Tilt the unit backwards slightly until the front wheels are off the ground (Fig. 9a) or move the front wheels to the transport position to prevent the cutter deck from touching the ground (Fig. 9b).
- Push the scarifier.

When using a vehicle

Danger

Before transportation, always stop the engine and leave to cool down. Remove spark-plug terminal.

The appliance must not be tilted when it is transported.

When transporting the scarifier in or on a vehicle, ensure that it does not move around unintentionally.

Empty the fuel tank before transporting the unit. Filler cap must be closed tightly.

Figure 10

- The steering handle can be folded down to facilitate storage.

Servicing/cleaning

Danger

To protect against injury before all work on the appliance

- switch OFF the engine,
- wait until all moving parts have come to a complete stop and the engine has cooled down,
- remove the spark plug connector on the engine in order to prevent the engine from accidentally being started,
- which takes into account additional safety information in the engine manual.

Caution

When tilting the unit, always ensure that the spark plug is face up to prevent fuel or oil damaging the engine.

Servicing

Danger

To prevent injuries from the cutter deck, have all work, such as changing or regrinding individual cutters/aerator tines, performed by a service centre (special tools required).

Caution

Observe the servicing instructions in the engine manual. At the end of the grass-cutting season, have the lawn scarifier checked and serviced in a specialist workshop.

Attention

Environmental hazard caused by engine oil.

Waste oil resulting from a routine oil change should be taken to an approved collection point or specialist disposal company.

After the first 2–5 operating hours

- Change oil (please see engine manual enclosed).

Once a season

- Change oil (please see engine manual enclosed).
- Lubricate the joints and twist springs on the deflector flap.
- At the end of the season the appliance must be checked and serviced at a specialist garage.

Cleaning



Caution

Clean the appliance after every use. A unit which is not cleaned will result in damaged materials and impaired function.

Do not clean the unit with a high-pressure cleaner.

Cleaning the grass sack

The best method is to clean the grass sack straight after you have finished scarifying.

- Detach and empty the grass sack.
- The grass catcher may be cleaned with a powerful jet of water (garden hose).
- Allow the grass sack to dry out thoroughly before using it again.

Cleaning the scarifier



Danger

Work on the cutters can cause injury. Wear safety gloves for your protection.

Whenever possible, clean the lawn scarifier straight after you have finished working on the lawn.

- Clean the cutting compartment and the discharge flap with a bristle brush, hand brush or cloth.
- Stand the scarifier on its wheels again, and remove any remaining grass cuttings or dirt that can still be seen.

Changing scarifier shaft/aerator shaft



Danger

Work on the cutters can cause injury. Wear safety gloves for your protection.



Caution

Use only original scarifier/aerator shafts approved by the manufacturer.

Figure 11

- Switch off engine and leave to cool down.
- Remove spark-plug terminal.
- Remove the grass catcher (optional).
- Depending on engine type, raise the unit slightly at the front or back – the spark plug must be pointing upwards.



Note

Do not raise too far – fuel may run out of the tank. If required, drain fuel beforehand.

- Removing scarifier shaft (a) or aerator shaft (b):
 - Open fixing bracket (c).
 - Open bearing shell half (d).
 - Push complete shaft to the right out of the hexagonal socket (e) and remove downwards.
- Installing scarifier shaft (a) or aerator shaft (b):
 - Push complete shaft from below a little way into the hexagonal socket (e) and insert the shaft bearing (g) into the bearing shell half (f) and hold.
 - Close bearing shell half (d).
 - Close fixing bracket (c). Ensure that it engages correctly!
- Check that scarifier shaft/aerator shaft is seated correctly.

Laying up the appliance



Danger

of explosion and risk of being burnt.

When there is fuel (petrol) in the tank, never keep the appliance in rooms where fuel vapours can come into contact with naked flames or sparking.



Attention

Damage to appliance materials.
Store the unit (with cooled engine) in a clean and dry room only. Protect the appliance when storing it for longer periods of time e.g. against rust in winter.

At the end of the season or when the vehicle will not be used for longer than a month.

- Drain fuel into a suitable container and disconnect the engine as described in the engine manual.



Caution

Drain fuel outdoors only.

- Clean the scarifier and the grass sack.
- To protect metal parts from rust, wipe them all down with an oiled cloth (resin-free oil) or apply an oil spray.

Warranty

The warranty rules issued by our company or the importer apply to every country. As part of the warranty, we remedy malfunctions on your appliance free of charge provided that this malfunction is caused by a material or manufacturing defect. In the event of a warranty claim, please turn to your dealer or the nearest branch office.

Engine

The manufacturer of the engine is liable for all engine-related problems with respect to output power, power measurement, specifications, warranties, and service. Information can be found in the owner's/user's handbook supplied separately by the engine manufacturer.

Identifying and eliminating malfunctions

Malfunctions that occur during the operation of your appliance often have simple causes that you should know and be able to repair on your own. In cases of doubt your specialised garage will be pleased to assist you further.

Problem	Possible cause(s)	Remedial action
Starter cable resists pulling.	Engine defective.	Contact a specialist garage
Engine does not start.	Throttle is not in the right position.	Set throttle to position N/CHOKE (if the engine is cold). Turn throttle to position  /Max/Run or START (if the engine is warm).
	No fuel in the tank.	Fill tank with clean, fresh fuel.
	Spark plug terminal not connected	Connect spark plug terminal.
	Spark plug dirty or defective, electrode gap wrong.	Remove and check spark plug; clean, if required, replace; adjust electrode gap (see engine manual).
	Fuel old or dirty.	Replace with new fuel.
	Air filter clogged	Clean air filter (see engine manual).
	Primer/Choke not pressed during cold-start.	Press primer/choke (see engine manual).
Motor speed drops off.	Depth of cut too great.	Set to smaller depth of cut.
	Grass too high.	Mow the lawn before scarifying.
	Ejector channel blocked.	Pull out spark plug connector, remove blockage.
	Air filter clogged	Clean air filter (see engine manual).
Poor scarification results.	Depth of cut too small.	Set to greater depth of cut.
	Worn cutting blades.	Have cutting blades replaced in a specialist workshop.
Grass stays on the ground/ grass catcher never fills.	Grass catcher is full/clogged.	Stop scarifier. Unload grass catcher or clean it.
	Ejector channel blocked.	Pull out spark plug connector, clean ejection channel.
Unusual noises (jangling, rattling, clattering).	Bolts, nuts or other mounting parts slack.	Tighten parts. If the noises persist, contact a specialist workshop.
Jolting, vibrations.	Cutter deck damaged, twisted.	Switch off motor immediately. Have cutting blades replaced in a specialist workshop
	Engine attachment slack.	Switch off motor immediately. Engine must be secured at specialist garage.