

solo[®]

440 / 441

Instruction manual
Original instructions

Blower tube 440 /
Vacuum shredder 441


Important!

Read this instruction manual carefully before first operation and strictly observe the safety regulations!



Instruction manual

Original instructions

 **Caution!** Prior to operating the unit, please read the owner's manual carefully, and most importantly, observe all safety rules.

Dear Customer,

Congratulations for choosing this SOLO quality product.

A single-cylinder, two-stroke motor with nickel-coated cylinder in proven SOLO technology insures high performance and low fuel consumption and high machine serviceability.

This power tool has many special features - a powerful air stream, a unique anti-vibration system, which effectively removes motor vibrations from the handle, excellent operating convenience, easy conversion from blower to vacuum device (available as accessory for model 440) and excellent starting characteristics.

SOLO constantly strives to continuously develop its products. Consequently Solo must reserve the right to make changes in form, technology and fittings.

No claims can be derived from the illustrations or information contained in these operating instructions.

To maintain the function and the performance of this power tool over a long period of time you should precisely comply with the operating and maintenance instructions.

If you should have further questions after studying these operating instructions, your dealer would be pleased to help you.

EC declaration of conformity → The EC declaration of conformity **on a separate piece of paper** forms part of these operating instructions.

Packaging and disposal

Please keep the original packaging in order to protect the equipment against transport damage in case you ever need to ship it or transport it. If the packaging materials are no longer required then they must be disposed of properly in accordance with applicable local regulations. Cardboard packaging materials are raw materials which can be recycled or reused.

At the end of the equipment's service life, please make sure that you dispose of it properly, in accordance with the official directives and regulations that apply in your area.

Symbols / type plate

The following symbols are used in this manual and on the product:



Thoroughly read these operating instructions before undertaking any maintenance, installation and cleaning steps



Wear ear defenders and a face shield before starting the engine



Wear protective gloves when handling and working with the equipment



Wear solid shoes, preferably safety shoes with a good tread



Always handle this power tool with particular care



Please note: objects may be thrown out and high



Never smoke near the power tool or where the equipment is refuelled!



Keep open flames away from the power tool and the fuel can



- This equipment produces exhaust fumes and
- fuel vapours are poisonous;
never start or refuel in enclosed spaces



Choke open
Warm start and operating setting



Choke closed
Cold start setting

Type plate:



a: Type designation

b: Serial number


c: Build year (07 → 2007)

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1. Safety regulations

1.1 General safety instructions

The power tool may only be implemented in the designated application area and only for the specified application purpose listed under chapter 9 "Using".

 Read the operating instructions carefully before taking this equipment into service and keep them in a safe place. Use this power tool with particular caution.

Non-observance of safety instructions can lead to a risk to life. Also observe any regulations from your professional body. These operating instructions must always be available at the place of work. All individuals instructed to work with the equipment (including maintenance, care and repair), should read these instructions.

- You should request and receive instructions from the vendor on the safe operation if you are using this type of product for the first time.
- Children and young people under 18 years may not work with this power tool, with the exception of young people over 16 years of age who are being trained under supervision.
- Keep bystanders and animals away from the working area. The operator is responsible for any accidents or damage caused to parties or property.
- This machine may only be passed on or lent to third parties if they are familiar with the safe use of this product and with these instructions. Always supply the manual with the machine.
- Ensure you are rested and in good health when using this machine.
- Persons under the influence of alcohol or drugs, including prescription drugs, are not allowed to use this machine, as their ability to quickly react to potential danger may be impaired.
- Never alter, change or modify any safety equipment or functional assemblies on this machine.
- Only use this machine if it is in good, safe condition. Always check the machine prior to use. **Risk of accident!**
- Only those accessories and attachments may be used that have been supplied by the manufacturer and that are expressly approved for attachment.
- Always stop the engine and remove the spark plug cap when opening the blower cover.
- The reliability and safe operation of your machine depend on the quality of parts used with the machine. Only use original spare parts. Original spare parts are identical with genuine production parts and guarantee best quality in material, dimensions, function and safety. Original parts and accessories are available from your specialist dealer. Your dealer has been supplied with appropriate documentation to determine the correct parts. Your dealer is frequently supplied with updates about improvements to the equipment. Please note that the use of non-original parts will void your warranty.
- Always store the machine in a safe place and in such a way that it will not pose any danger. Stop the engine when the machine is not used.

Persons who disregard safety instructions, operating or maintenance instructions may be liable for any damage or consequential losses.

1.2 Working clothes

To prevent injuries, always wear suitable clothing and safety equipment when working with this power tool. This clothing should be practically oriented to the application (for example a tight fitting work suit), but should not be confining.


We recommend: **SOLO forest and countryside work jacket EN 340** Part no: 99 303 000 + size (2[s] - 6[xxl])

or **SOLO Outdoor Knee-breeches** Part no: 99 020 95 + size
SOLO Outdoor dungarees Part no: 99 020 94 + size

Never wear scarves, ties, jewellery or other items of clothing, which might get caught in the equipment, in brush or on branches. Safely tie back long hair (use a cap, helmet or similar).

 Wear sturdy shoes with a good tread - ideally safety shoes.
 We recommend: **SOLO leather forest boots** Part no: 99 305 10 + size (36 - 48)

 Wear protective gloves with non-slip palms.
 We recommend: **SOLO Fit** Part no: 99 390 12 + size.

 Use ear defenders and/or a visor for protection against flying objects or objects caught up in the turbulence (protective goggles for example).
 We recommend: **SOLO face/ear protection pack** Part no: 99 390 1002 (one size)

1.3 When performing any assembly, maintenance, repair and cleaning work

- Never assemble, maintain, repair or store the power tool near open flames.
- When performing any assembly, maintenance, repair or cleaning work – even initial equipment assembly – observe the following:
 - Set the ON/OFF switch to "0" (exceptions are the adjustment of the carburettor and the idle position),
 - Pull the spark plug cap before opening the fan cover, for example when fitting the vacuum pipe or for cleaning.
 - Prevent fuel spillages. Close the fuel tank by hand and test the entire tank for leaks. It is advisable to drain the tank before carrying out any work.
- Regularly service this machine. Only carry out those maintenance jobs and repairs, which are described in this manual. A specialised service centre will carry out all other jobs.
- For any repairs only use original parts from the manufacturer.
- Do not modify, alter or change the machine as this may impact on the safe operation of the machine and may lead to accidents and injuries!

1.4 Fuelling



Petrol is very light and highly flammable. Keep away from open flames and never spill fuel. Do not smoke at the operating site or at and near the refuelling site!

- Stop the engine prior to refuelling.
- Let the engine cool down before refuelling - fire risk!
- Open the tank lid slowly to allow any excess pressure in the tank to be reduced without the risk of petrol spraying out.
- Fuel may contain substances similar to solvents. Prevent products made from mineral oil coming into contact with skin and eyes. Wear protective gloves during filling with fuel. Frequently change and clean protective clothing.
- Avoid breathing in fuel vapour.
- The refuelling site should be well ventilated.
- Avoid any soil spillage of fuel or oil (protection of the environment). Use a suitable mat.
- Immediately clean any spilled fuel on the machine. Change contaminated clothing without delay.
- Firmly tighten all tank lids. This will reduce the risk of spillage from lids, which have become loose from engine vibrations.
- Check for petrol leaks. Do not start the machine or work with the machine if there is a petrol leak. Life threatening risk from burns!
- Store fuel and oil in approved and correctly labelled containers.

1.5 When transporting the equipment

- Always turn off the engine when transporting the machine.
- To prevent fuel running out and associated damages, secure the equipment against tipping over during vehicle transportation. Check the tank for leaks. It is advisable to drain the tank before transportation.
- Drain the tank before despatching the equipment.

1.6 Preparing the equipment for starting

Check the complete machine for operational safety.




- The stop switch should function properly.
- The throttle must have freedom of movement and return to the idle position on its own accord.
- The impeller and the blower casing must be in a problem-free condition. Damage to the blower casing can lead to an injury hazard through escaping foreign objects. In this case do not use the device, have it checked by a dealer
- Ensure the spark plug cap and the ignition cable are connected firmly. A loose connection may cause a spark, which can ignite any existing fuel:air mixture - fire hazard!

Should the check reveal any irregularities or recognisable damage (also to the frame), incorrect adjustments or reduced efficiency of the machine, do not commence work. Take the power tool to a specialised workshop and have it checked.

1.7 Starting

- Start the machine no less than 3 metres from the refuelling location. Never start the machine in an enclosed space.
- Ensure that you are standing firmly on the ground when starting. Always start on even ground, with a firm grip on the power tool.
- Only one person at the time may operate this power tool - no other people should be within a radius of 5 m - even when starting.
- Continue with the starting procedure as described in section 8. "Starting/Stopping the engine".

1.8 Working with the machine

- Only use this power tool when it is complete and in a safe condition.
-  As soon as the engine is running, the power tool generates toxic gases, which may be invisible and odourless. Never work with the power tool in enclosed spaces. In confined conditions such as pits or excavations, ensure adequate air changes during work.
-  Do not smoke at the work site and in the immediate vicinity of the power tool. There is an increased fire hazard!
- Work conscientiously, thoughtfully and calmly, and do not endanger third parties.
 - Pay attention to good visibility and lighting conditions.
 - Always remain within earshot of other people who can provide help in case of emergency.
 - Pay attention to possible hazards and take appropriate precautions. Be aware that wearing ear defenders reduces the ability to perceive noise. This includes sounds alerting to danger such as signals, shouts, etc. that can go unnoticed.
 - Always grasp the power tool firmly and always pay attention to safe and stable standing position.
 - Exercise caution when the ground is wet or covered in ice and snow, on overhangs, or uneven terrain. There is an increased risk of slipping!
 - Pay attention to the risk of stumbling and obstacles, such as tree roots and stumps, edges, etc. Pay particular attention to safety when working on slopes.
-  Never blow in the direction of other people, as smaller objects can be forced upward at high speeds.
- Use the power tool at lowest possible noise and exhaust levels. Only open the throttle when working, do not let the engine run unnecessarily. Please note that noise also impacts on the environment. Observe the quiet times that can vary from place to place.
- Switch the engine off if the device behaves in any way unusually.
- Never touch the exhaust or the silencer; as long as they are still hot, there is a risk of burns!
- Never work with a defective or missing silencer. There is a hazard of hearing damage and burning!

When using as vacuum shredder (model 441):

- For vacuuming, the power tool may only be used with attached collection bag. Hang the carrying strap over the shoulder. Always hold power tool with two hands by the two handles.
- Never vacuum up hot materials or burning materials, (no ashes, burning cigarettes etc.), there is a fire injury hazard. Also flammable liquids (for example gasoline), or materials, that are wet with such materials may not be vacuumed up. There is a hazard of fatal injury caused by explosion or fire!
- Ensure that no branches, fabric, rags, mineral material (gravel, stones, etc.), metallic materials or other substances are collected, for which the equipment is not designed. Such material could damage the machine.
- Never use the Hand-held Vac 441 on substrates covered by gravel or other hard materials, which might damage the equipment.
- If the vacuum tube is not mounted, then the blower cover must always be closed until it catches. Rotating parts can lead to serious injuries. Also damage could occur to the motor.

Note:
Over exposing persons with circulatory problems to vibrations can lead to damage to their nervous system or blood vessels. The following systems may occur from vibrations to fingers, hands or the wrists:
Numbness, itching, pain, twinges, changes to the colour of the skin or the skin itself. Seek medical advice if you experience any of these symptoms.

2. Specification

Blower tube / Vacuum shredder		440	441
Engine type		SOLO single cylinder two-stroke engine	
Engine capacity	cm ³	29	
Fuel tank capacity	l	0,34	
Carburetor		All-position diaphragm carburettor with primer and integrated fuel pump	
Fuel mix ratio:	with " SOLO 2T engine oil " with other two-stroke oils	1:50 (2%) 1:25 (4%)	
Air filter		Foam filter	
Ignition		Electronically controlled magneto ignition, maintenance free	
Sound pressure level LP _{eg} (EN 27917)	dB(A)	94	
Sound power level L _{Weg} to EN ISO 3744 actual / guaranteed 95%	dB(A)	104 / 105	
Weighted effective acceleration (ISO 7916) Handle / grip stand	m/s ²	1,9 / --	2,5 / 3,0
Weight ready to operate (tank empty)	kg	4,1	5,3
Air volume	m ³ /h	760	630 Vacuum operation 760 Blower operation
Dimensions length / width / height without tubes	mm	315 / 260 / 380	315 / 260 / 380
Fully fitted with pipes (and catcher)	mm	970 / 260 / 380	1100 / 1130 / 600
Medium idling speed	rpm	2900	
Max. permissible speed	rpm	7200	

3. Accessories

Blower tube / Vacuum shredder	Order no. Type 440	Order no. Type 441
Refitting set vacuum fixture for blower 440	49 00 546	Included
Carrying strap for blower 440	49 00 159	Included
Spark protective grate for noise suppressor	20 48 378	
SOLO 2T engine oil 100 ml	00 83 103	
SOLO 2T engine oil 1 l	00 83 104	
SOLO 2T engine oil In a metering bottle 1 l	00 83 105	
SOLO leather forest boots	99 305 10 + size (36 - 48)	
SOLO face/ear protection pack	99 390 1002	
SOLO forest and countryside work jacket EN 340	99 303 000 + size (2[s] - 6[xxl])	
SOLO Outdoor Knee-breeches	99 020 95 + size	
SOLO Outdoor dungarees	99 020 94 + size	
Gloves SOLO Fit	99 390 12 + size	

4. Standard delivery

- **Standard equipment** partially pre-assembled; the following parts are included and must be fitted
- **Blower fittings:**
 - **Blower pipe** to be fitted to the standard machine
 - **Round air nozzle** to be fitted to the blower pipe
 - **Flat nozzle attachment** to be fitted to the round air nozzle (if required) with **edge protector clip**
- **Vacuum attachment** (only model 441; with model 440 as accessory; part no: 49 00 546)
 - **Vacuum pipe**
 - **Exhaust air elbow** to be fitted to the catcher with a **fixing clip**
 - **Catcher with strap system**
- **Combi tool** (spark plug spanner and screwdriver)
- **Instruction manual**, the **EC declaration of conformity** on a separate piece of paper

5. Control and function elements

Fig. 1 Blower operation:

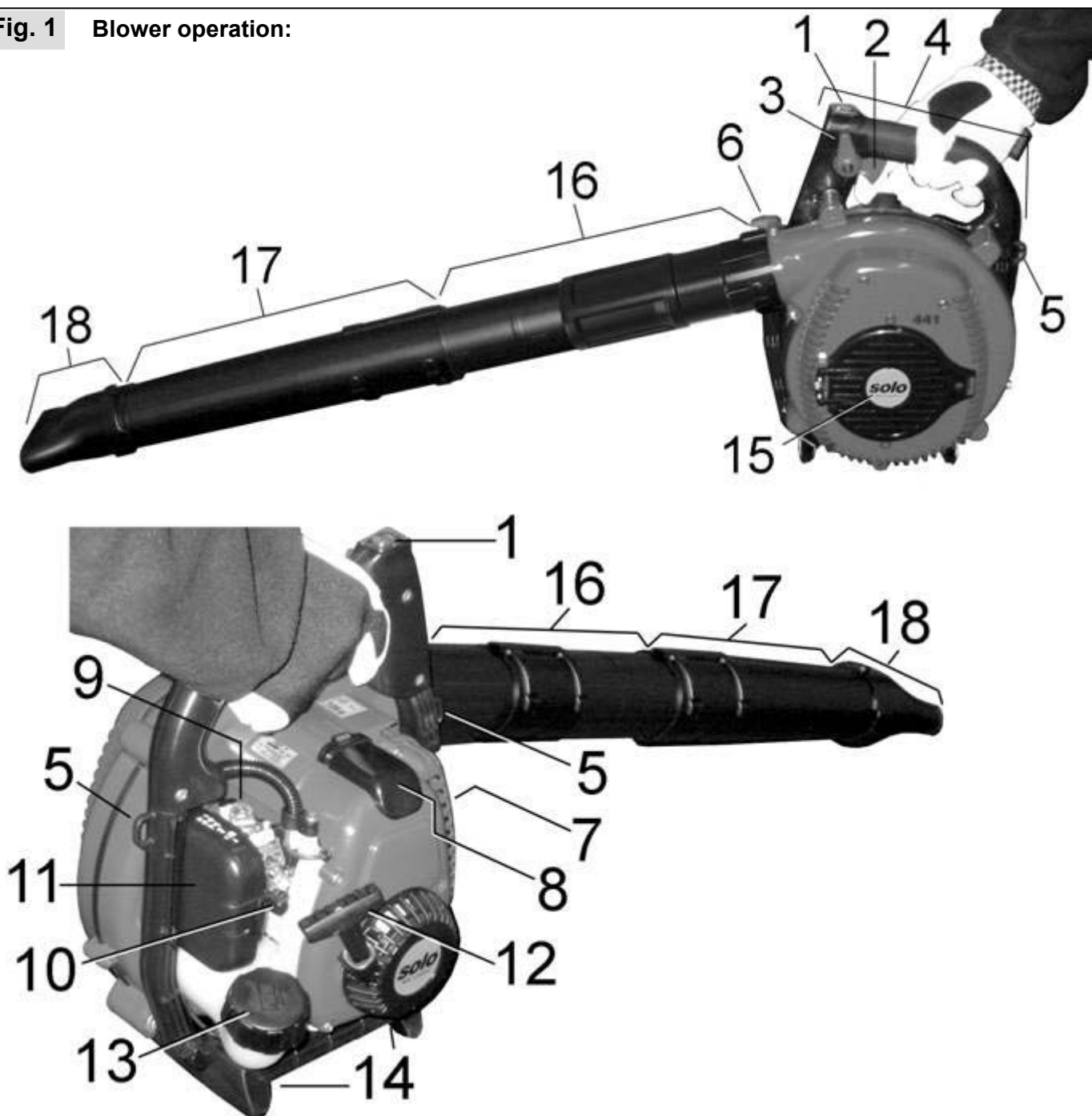


Fig. 2 Vacuum operation

– only model 441 (with model 440 as accessory)



- 1 ON/OFF switch (I / 0)
- 2 Hand throttle
- 3 Gas pre-select lever
- 4 Handgrip
- 5 Carrying strap eyelet
- 6 Catch
- 7 Noise suppressor

- 8 Sparkplug cover
- 9 Primer
- 10 Starter shutter
- 11 Air filter
- 12 Starter grip
- 13 Fuel tank filler cap
- 14 Stand (grip in vacuum operation)

- 15 Blower cover
- 16 Blower tube
- 17 Round air nozzle
- 18 Flat nozzle attachment
- 19 Vacuum pipe
- 20 Exhaust air elbow
- 21 Catcher

6. Preparing the equipment for use

Observe all safety instructions during assembly and dismantling work!

6.1 Assembly - blower operation

The total pipe for the blower operation consists of three parts:

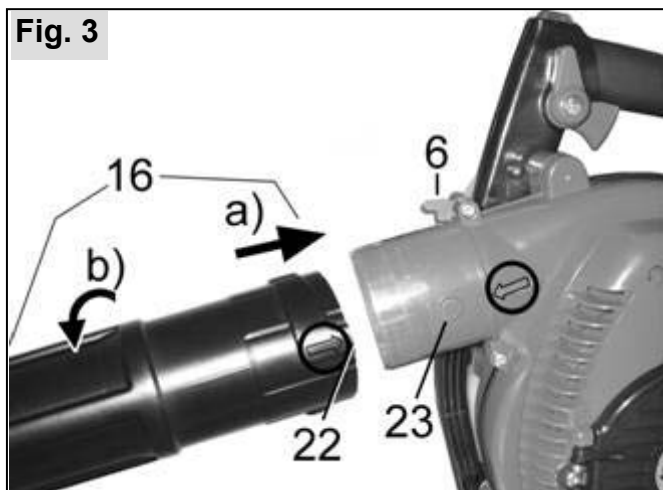
Blower pipe (16) to be fitted to the standard machine.

Round air nozzle (17) to be fitted to the blower pipe.

Flat nozzle attachment (18) (optional use) to be fitted to the round air nozzle.

These parts are fitted in the same manner. When pushed together, the respective arrows must be perfectly aligned, then secure the part by turning it 45°. For dismantling, initially turn the part again, until the arrows are aligned, then pull the components apart.

Blower pipe assembly (16)

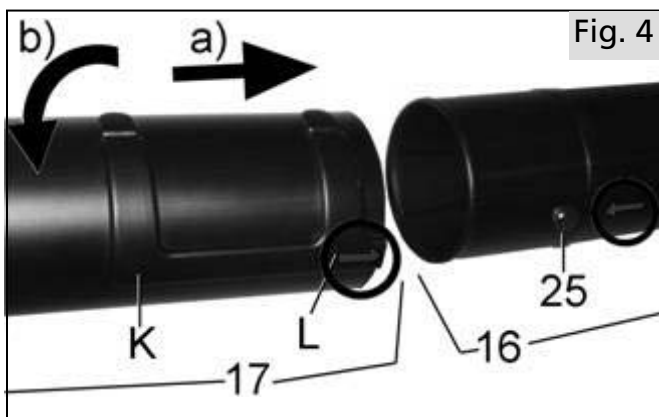


- Push blower pipe (16) with groove (22) over cam (23) of the standard machine. The arrows on the blower pipe and the standard machine must be aligned accurately, when the parts are pushed together (the wide groove (22) over the large cam (23), and the narrow groove over the smaller cam).
- Rotate the blower pipe through 45° so that the arrow on the blower pipe is rotated downwards until the blower pipe is clearly felt to engage and the lock (6) engages behind the groove on the blower pipe.

Blower pipe dismantling

- Gently lift up the lock (6) and rotate the blower pipe back at the same time until the arrows on the blower pipe and the standard unit are exactly lined up again.
- Pull the blower pipe from the standard equipment.

Round air nozzle assembly (17)

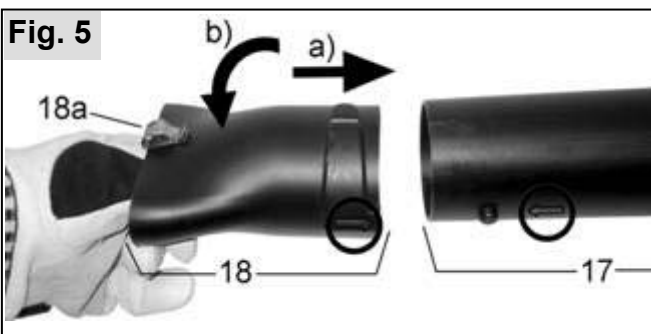


- The round air nozzle (17) has two longitudinal adjustments. Push the nozzle either into pos. L (long) or in pos. K (short) up to cam (25) on blower pipe (16) (when the nozzle is pushed onto the blower pipe, on the round air nozzle and on the blower pipe must be aligned accurately).
- Turn the round air nozzle 45°, so that arrow on the round air nozzle is turned down, until it audibly clicks into place.

To modify the **overall length of the pipe**, initially turn the round air nozzle back, so that the arrows are again aligned accurately. Then move the round air nozzle into alternative longitudinal position, and secure by turning it.

To **disassemble the round air nozzle**, initially turn it back, so that the arrows are aligned again accurately. Then pull the round air nozzle from the blower pipe.

Flat nozzle attachment (18)



- Push the flat nozzle attachment onto the round air nozzle in accordance with the arrows on the flat nozzle attachment and on the round air nozzle.
- Turn the flat nozzle attachment 45°, so that edge protector clip (18a) is turned down into its operating position. Edge protector clip (18a) protects the plastic pipe, when it contacts the ground during operation.

To dismantle the flat nozzle attachment from the round air nozzle, turn it back and pull it off, after aligning the arrows.

6.2 Assembly - vacuum operation – only model 441 (with model 440 as accessory)

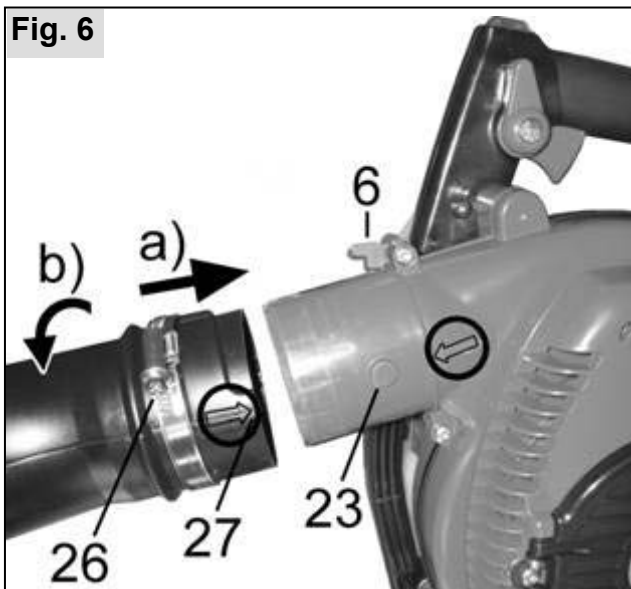
Fit the following parts for the vacuum operation:
Exhaust air elbow (20) to be fitted to the standard machine.

Catcher (21) to be fitted to the exhaust air elbow.

Vacuum pipe (19) to be fitted to the standard machine.

[Note: When preparing model 440 with vacuum operation accessory kit 49 00 546 for the first time, also fit the anti-static wire in accordance with the details supplied with the accessory kit. For model 441, the anti-static wire is already fitted as standard.]

Exhaust air elbow assembly (20)



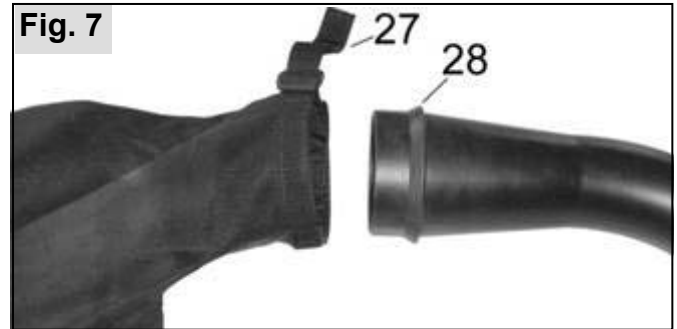
Tip: To make the assembly easier, the standard machine can be positioned on a level surface, air filter side down. For this, ensure that the tank cap is tightly secured to prevent fuel spillage.

- Undo clip (26) on exhaust air elbow (20).
- a) Push exhaust air elbow (20) with groove (27) over cam (23) of the standard machine. The arrows on the exhaust air elbow and the standard machine must be aligned accurately, when the parts are pushed together (the wide groove (27) over the large cam (23), and the narrow groove over the smaller cam).
- b) Rotate the exhaust air elbow through 45° over the stand until the lock (6) engages behind the groove on the exhaust air elbow; **do not tighten excessively!**
- Secure clip (26).

Dismantling the exhaust air elbow

- Undo clip (26).
- Gently lift up the lock (6) and rotate the exhaust air elbow back at the same time until the arrows are exactly lined up again.
- Pull the exhaust air elbow from the standard equipment.

Catcher assembly (21)



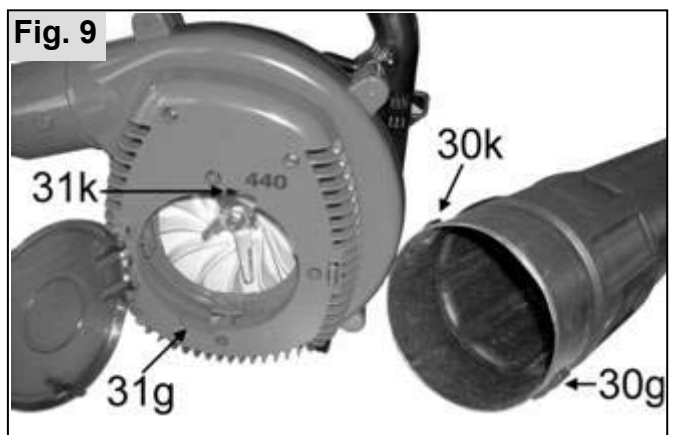
- Open Velcro strap (27) on catcher.
- Push the catcher so far over the elbow, that the entire width of the Velcro strip is located behind the bead (28) on the reducing part of the elbow.
- Tighten and close the Velcro strip.
- Secure the shoulder strap to the catcher eyes.

To **dismantle the catcher**, open the Velcro strip and remove the catcher from the exhaust air elbow.

Vacuum pipe assembly (19)



With a screwdriver, push into the side opening of the fan cover to release it.



Open the fan cover wide. Push vacuum pipe cams (30) into grooves (31) on the inner ring of the fan casing. Ensure that the large cam (30g) is located in the wide groove (31g) and the small cam (30k) in the narrow groove (31k).

Rotate the vacuum pipe clockwise until it is clearly felt to engage.

Note: To enable the power tool which has been attached for vacuum operation to be stored on stand (14) again → first loosen the clip (26) and lift up the lock (6), then rotate the exhaust air elbow back so that the arrows on the exhaust air elbow and the standard unit are exactly lined up again.

7. Fuelling

7.1 Fuel information

A high performance two-stroke engine operated with a petrol:oil mixture (petrol + oil = fuel mixture) or with a special fuel mixture for two-stroke engines available from specialists powers this machine. The fuel mixture can be made up with standard lead-free petrol or with lead-free premium grade petrol. The minimum octane rating for petrol is 92 ROZ.

Unsuitable petrol or deviations in the mixing ratio may lead to serious engine damage!



Avoid direct skin contact with petrol and avoid inhaling petrol fumes - health hazard!

7.2 Mixing ratio

Always use a fuel:oil ratio of 25:1 (4%) for the first five tank fillings.

After that we recommend a ratio of 50:1 (2%) with the use of special two-stroke oil "SOLO 2T engine oil" which we can supply.

With the use of other brand two-stroke oils we recommend a ratio of 25:1 (4%).

Never store fuel mixture longer than 3 - 4 weeks.

Fuel mixture table

Petrol in litres	Oil in litres	
	SOLO 2T engine oil 2% (50 : 1)	Other two-stroke oils 4% (25 : 1)
1	0,020	0,040
5	0,100	0,200
10	0,200	0,400

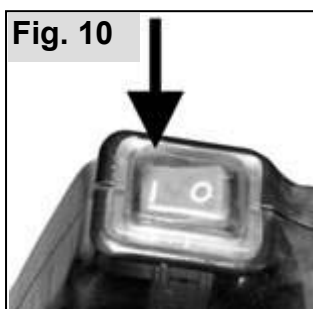
7.3 Fuelling

While fuelling always follow all safety instructions and take all safety precautions.

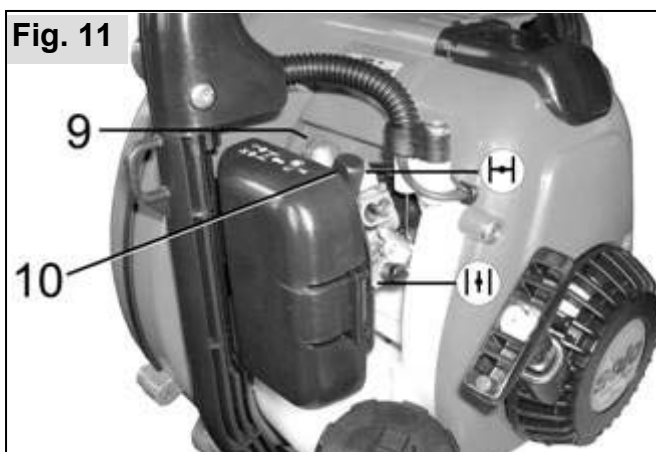
Handle fuel only with the engine turned off. Carefully clean the area around the filler inlet. Place the machine with the fuel inlet pointing upwards. Unscrew the tank lid and fill the fuel mixture up to the lower edge of the filler neck. Use a funnel with filter to prevent tank contamination. After filling the tank replace the tank lid and tighten firmly.

8. Starting / Stopping the engine

8.1 Start settings



Set the **ON/OFF switch (1)** to "I".



Adjust choke (10) as follows:

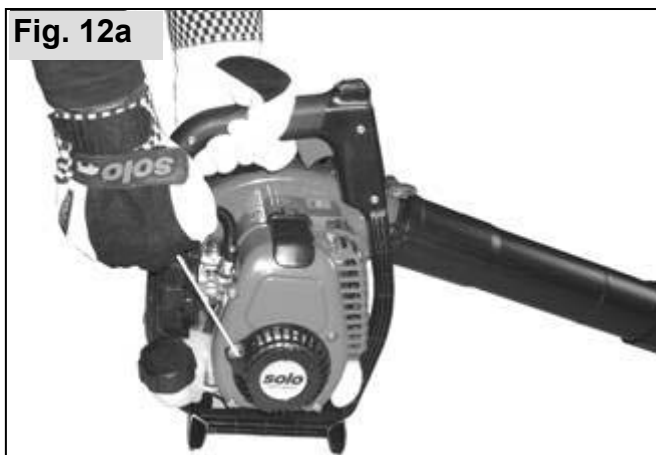
- With a cold engine, position **choke lever (10)** up towards "Close" \uparrow .
- With a warm engine, position **choke lever (10)** down towards "Open" \downarrow .

When first starting or if the fuel tank has been completely drained and has been refilled, press **primer (9)** several times (at least 5x) until the fuel is visible in the plastic bulb.

8.2 Starting

Observe the safety instructions when starting. Insure a stable stance.

Power tool starting position in blower operation:



- Place the power tool on the stand (14) on level ground.
- Use one hand to hold the handle (4) and hold the power tool firmly on the ground.
- Use your other hand to operate the starter grip.

Power tool starting position in vacuum operation**Fig. 12b**

Model 441 only
(model 440 as
accessory):

- Rest the power tool on the vacuum pipe on the ground.
- Using your right hand, firmly grip the power tool by the stand (14).
- Use your left hand to operate the starter grip.

Starting:

- First pull out the starter grip carefully until a resistance is felt (this corresponds to the piston being at top dead centre), then pull through quickly and firmly in a straight line. Do not be tentative or hesitant when starting.
- Always pull the rope out in a straight line, do not let the rope drag across the edge of the rope eyelet.
- Do not pull rope all the way out - risk of the rope breaking.
- Always manually guide the rope back into its start position with your hand on the starter grip - do not let it retract on its own.

If the motor is cold:

With the starter shutter in position $\leftarrow \rightarrow$ start until the motor is audible and briefly starts (ignites). Then immediately place the starter shutter in position $\left| \updownarrow \right|$. Continue starting until the motor turns over.

If the motor is warm:

With the starter shutter in position $\left| \updownarrow \right|$ start until the motor turns over.

8.3 When the motor starts:

Adjust the gas pre-selector switch (3) all the way up (idle position) if you had it on a middle position. You can now start working. The ideal RPM speed can be set either with the gas throttle or the gas pre-selector switch.

8.4 Engine will not start:

If the motor does not start in idle position (**ON/OFF switch (1) on "I"?**), press the throttle (2) half-way down and bring the gas selector lever (3) into a middle position. Do not start with throttle fully open! If the motor still does not start, then the combustion chamber is flooded.

In that case we recommend you proceed as follows:

- Remove the spark plug cover.
- Pull the spark plug cap off the spark plug.
- Remove the spark plug and dry fuel mixture from the electrodes.
- Move the throttle lever up to full throttle. Pull the starter handle several times (with removed spark plug) to clear the combustion chamber.
- Move the throttle lever down to idling position, refit the spark plug, the plug cap and the plug cover.
- Start the engine with the choke lever down ($\left| \updownarrow \right|$) and the stop switch in the "I" position.

8.5 Turning off the engine:

Release gas throttle, and if required bring the pre-gas selector switch into idle position. The stop switch is placed in pos. "0".

Emergency stop Should the engine – due to a faulty ON / OFF switch – fail to stop, it can also be stopped by closing the choke (choke lever in position $\leftarrow \rightarrow$). After such an event, do not restart the engine, but have the equipment checked by an authorised service shop.

9. Using**9.1 Blower operation - Fig. 1**

The device is designed as a one-hand device. It can be carried with the right hand or also the left hand on the operating handle.

Leaves, grass cuttings, shavings, grains can be blown away - even on uneven terrain.

Through lower engine RPMs the strength of the blower jet can be lessened and the effective area can be reduced.

Watch for small animals!

9.2 Vacuum operation – only model 441 (with model 440 as accessory) - Fig. 2

The vacuum shredder is conceived as a two-hand device. It must be carried with the right hand on the pedestal grip and with the left hand on the operating handle. The carrying strap of the collection bag is placed over the left shoulder and the right arm goes through the carrying strap.

With the vacuum tube leaves, grass clippings, pieces of cardboard, pieces of bark etc. can be vacuumed up.

The suction force can be reduced by lower RPM speed and the effective area can be decreased. Always watch out for small animals when vacuuming.

Attention:

When vacuuming wet leaves or clumps of grass the blower can become plugged! Before opening the blower cover - even to remove clumped or jammed suctioned material - always place the stop switch on "0" and pull off the sparkplug connector!

10. Operating and maintenance instructions

10.1 General operating and maintenance instructions

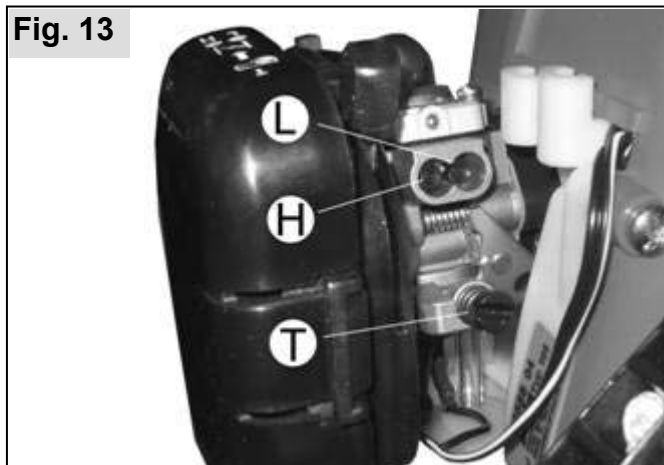
The maintenance and the repair of modern machines as well as their safety-relevant assemblies require qualified specialised training and a workshop equipped with special tools and test equipment. Consequently the manufacturer recommends that all tasks not described in these operating instructions be carried out by a specialised workshop. That specialist has the required training, experience, and equipment at his disposal, to provide you with the most cost-effective solution for such work. He will provide additional help in word and deed.

After a running-in time of app. 5 hours, all accessible screws and nuts (except the carburettor adjusting screws) must be checked for tightness and they must be retightened, if required.

Bear in mind when using this power tool that the engine and its various components such as carburetor and ignition system can become very hot, particularly at full-throttle operation. So that no consequential damages occur in this regard, the motor should run for some time in idle after longer periods of full-throttle operation. When you are finished with the work, let the motor cool down. It is best to store the equipment in a dry, safe location with a full fuel tank. There should be no open flame or similar nearby. For longer periods without using the equipment (longer than four weeks), see chapter "10.7 Shutdown and storage".

10.2 Carburettor adjustment

The carburettor has been adjusted optimally at the factory. Subject to the operational altitude (mountains or low lying areas), the carburettor may require readjustment.



The carburettor has 3 adjusting screws:

- Idling end-stop screw "T"
- Low speed mixture screw "L"
- High speed mixture screw "H"

Only qualified mechanics must adjust the regulating screws for idle mixture "L" and full load mixture "H".

Turn the idling end-stop screw "T" to adjust the idling speed in accordance with the details provided in the specification. Use an engine rev counter for this job.

- If the idling speed is too high, turn the idling end-stop screw "T" anti-clockwise.
- If the idling speed is too low (engine stops) turn the idling end-stop screw "T" clockwise until the engine runs smoothly.


If the idling speed cannot be set correctly with the idling end-stop screw "T", request an authorised service centre to tune the carburettor.

The following instructions are for authorised service shops

Use the D-CUT carburettor key to adjust the idle mixture screw "L" and the full load mixture screw "H".

Clean the air filter before adjusting the low speed screw!

Let the engine run warm before adjusting the engine speed.

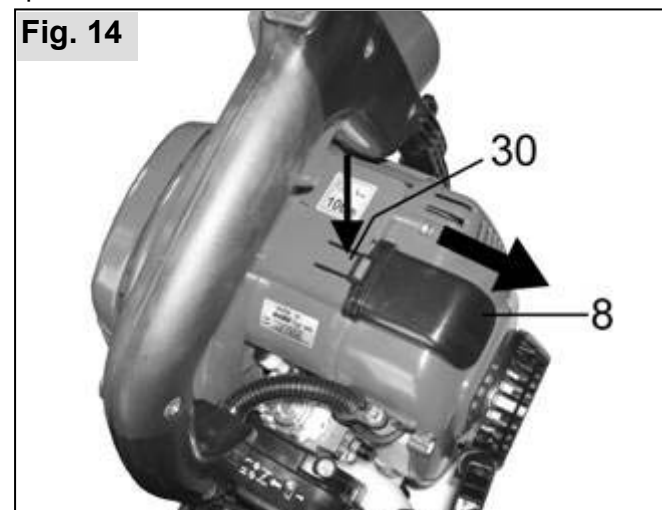
 The carburettor is tuned for optimum engine performance. Use a rev counter to tune the carburettor correctly!

Do not adjust the engine to a higher speed.

Excessive engine speed can lead to major engine damage!

10.3 Information about the spark plug

Check the spark plug regularly after 50 hours of operation.



- Push in tab (30) on the standard equipment casing and push out spark plug cap (8).
- Disconnect the spark plug cap.
- Unscrew the spark plug and dry the electrodes.

The spark plug should be replaced after 100 hours of operation or if the electrodes are badly worn.

Do not turn the engine over while the spark plug has been removed or the spark plug cap has been disconnected from the high-tension ignition cable. A spark may cause a fire!

Spark plugs with resistor (thermal value 200) are available in different brands under the following description:

BOSCH WSR6F
 CHAMPION RCJ-6Y or comparable.

The correct electrode gap is 0.5 mm.

Only use spark plugs, where the contact nut has been firmly fitted. Loose connectors may produce sparks, which can cause a fire.

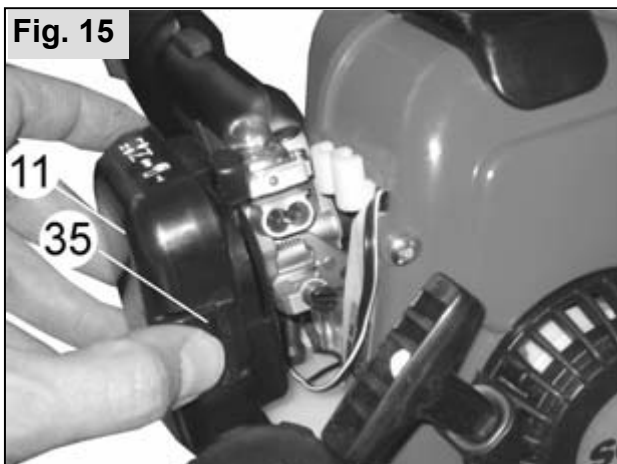
- Insert the spark plug into the cylinder head and tighten it.
- Push the spark plug cap firmly over the spark plug.
- Push the spark plug cover back on again and lock with tab (30).


Before restarting the engine, check the high-tension ignition cable for any damage to its insulation and ensure the cable is connected securely to the plug cap.

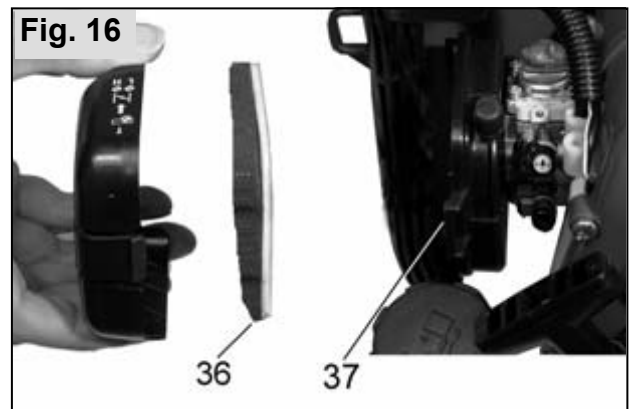
10.4 Air Filter Maintenance

Dirty air filters cause a reduction in engine performance and increase fuel consumption with more pollutants in the exhaust gas. Engines are less likely to start readily with a dirty and soiled air filter.

The following maintenance jobs should be carried out frequently.



Before opening the air filter, close the choke  to prevent dirt entering the carburettor. Press clip (35), tilt and remove the filter cover (11). Clean around the filter.



Remove the assembled filter element (36) from the filter retainer (37). **Please note: Never separate the filter element**

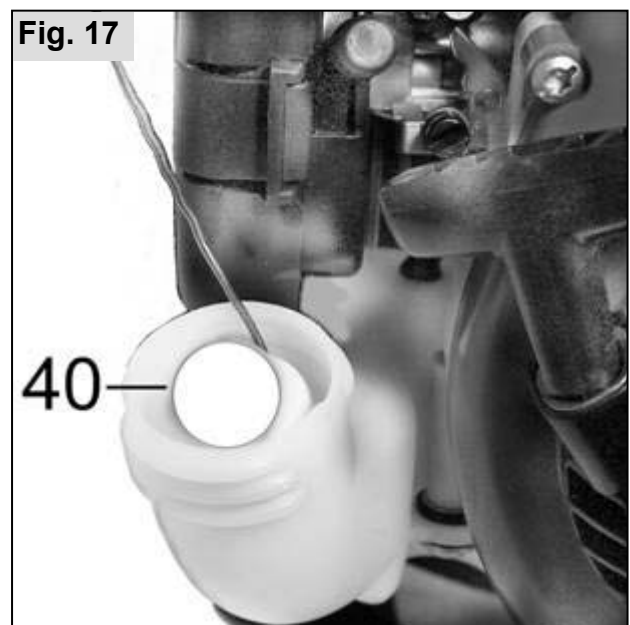
Please note: Never separate the filter element. Clean the filter more often in extreme dust conditions. For daily cleaning jobs simply tap the filters against a hard object or use compressed air. Damaged air filters should be replaced immediately. Warranty does not apply to engine damage caused by the lack of or improper maintenance.

Insert the new or cleaned filter element in accordance with Fig. 16 into the filter retainer. Then close the filter cover and secure it by clicking it into position.

Never insert moist or wet filter elements!

10.5 Replacing the fuel filter

We recommend having the fuel filter (40) changed annually by a specialised service centre.



A trained mechanic can carefully remove the fuel filter via a wire loop through the fuel tank filler. Ensure that the thicker part of the fuel hose on the tank wall is not drawn into the fuel tank.

10.6 Scheduled maintenance

The following information is based on standard operating conditions.
For special conditions, such as prolonged daily use, the recommended maintenance intervals should be reduced accordingly.

		after the first 5 hours	before starting work	weekly	after every 50 hours	after every 100 hours	as required	once per year
Carburettor	Check idling speed		X					
	Adjust idling speed						X	
Air filter	Clean		X					
	Replace						X	
Spark plug	Check the electrode gap and adjust, if required				X			X
	Replace					X	X	
Cooling air inlet	Clean			X			X	X
Cylinder fins	Clean						X	X
Fuel tank	Clean				X			X
Fuel filter	Replace							X
All accessible screws (except for adjusting screws)	Retighten	X					X	X
Controls (stop switch, throttle lever, starter)	Check function		X					
Silencer	Visual inspection		X					
Complete machine	Visual inspection		X					
	Clean			X			X	X

Implement all maintenance jobs regularly. If required, authorise a specialist service centre to maintain the machine for you. The owner of the machine is responsible for:

- Any damage caused by a lack of maintenance, incorrect or late maintenance and repairs
- Consequential losses - including corrosion - from incorrect storage

10.7 Shutdown and storage

Preferably, store the equipment in a dry and secure place with a full fuel tank. Open flames or similar must not be nearby. Prevent unauthorised use – particularly by children.

For stops longer than four weeks the following steps should be carried out:

- Empty and clean the fuel tank at a well-ventilated location.
- Start the engine with an empty fuel tank. Run the engine until the carburettor is empty and the engine stalls. Otherwise the carburettor nozzles could become encrusted with residual fuel mixture and make a subsequent start harder.
- Clean the power tool well (particularly the air intake openings, the cylinder fins, the air filter and the fuel filler area).

11. Parts subject to wear and tear

Various parts are subject to application-specific or normal wear and must be replaced in good time, when required. The following parts are subject to normal wear and are not covered by the manufacturer's guarantee:

- Air filter
- Fuel filter
- All rubber parts which come into contact with fuel
- Shredder blade
- Spark plug
- Starter

12. Guarantee

The manufacturer guarantees trouble-free quality and will cover the cost of replacing parts which are found to be faulty in material or workmanship within the prescribed guarantee period after the date of purchase. Please note that specific guarantee conditions may vary from country to country. If in doubt, ask your equipment vendor. He is responsible for guarantee matters.

We hope you will understand that we cannot be liable for damage resulting from the following causes:

- Non-compliance with the operating instructions.
- Neglecting essential maintenance and repair work.
- Damage caused by incorrect carburettor adjustment.
- Wear in normal use.
- Obvious overload by continuously exceeding the maximum performance limit of the product.
- Using non-authorized tools.
- Use of force, incorrect treatment, misuse and accidents.
- Damage from excessive heat due to dirt build-up around the cooling fan housing.
- Attempted adjustments and repairs by unqualified persons.
- Use of unsuitable spare parts or third party parts, if these are the cause of the defect.
- Use of unsuitable or stale fuel.
- Damage caused by using the product in the hire or rental industry.

Normal cleaning, adjustments or maintenance work fall outside the guarantee provisions.

A service centre authorised by the manufacturer must carry out all guarantee work.



For **USA** only

Emissions Control Warranty Statement

The Environmental Protection Agency and Solo are pleased to explain the emission control system on your small non-road power equipment engine. In the US new small non-road engines must be designed, built, and equipped to meet the Environmental Protection Agency's standards. Solo must warrant the emission control system on your small non-road engine for the period of time listed below provided there has been no abuse, neglect, or improper maintenance of your small non-road engine.

Your emission control system includes parts such as the carburetor, the ignition system, and the exhaust system.

Where a warrantable condition exists, Solo will repair your small non-road power equipment engine at no cost to you including diagnosis, parts, and labor.

Manufacturers Warranty Coverage

Solo's small non-road power equipment engines are warranted for a period of two years. If any emission control related part on your engine is defective, the part will be repaired or replaced by Solo.

Contact Information for Authorized Service Center Locations, Replacement Parts, Warranty and Technical Information

Warranty repairs **must** be completed by a SOLO Authorized Service Center.

SOLO USA, Inc.

5100 Chestnut Avenue

Newport News, VA 23605

1-800-765-6462

techserv@solousa.com

In the best interest of continued technological progress we reserve the right to change the design and configuration of any product without prior notice.

For that reason, no claims can be accepted with reference to text and illustrations in this manual.

solo[®]

Made in Germany



SOLO
Postfach 60 01 52
D 71050 Sindelfingen
Tel. 07031-301-0
Fax 07031-301-130
info@solo-germany.com

SOLO
P.O.Box 60 01 52
D 71050 Sindelfingen
Germany
Phone+49-7031-301-0
Fax +49-7031-301-149
export@solo-germany.com