Contents

STIHL®

This service manual contains detailed descriptions of all repair and servicing procedures specific to this powerhead.

You should make use of the illustrated parts lists while carrying out repair work. They show the installed positions of the individual components and assemblies.

Refer to the latest edition of the relevant parts list to check the part numbers or any replacement parts.

Refer to the "Technical Information" bulletins for engineering changes which have been introduced since publication of this service manual. Technical information bulletins also supplement the parts list until a revised edition is issued.

The special servicing tools mentioned in the descriptions are listed in the last chapter of this manual. Use the part numbers to identify the tools in the "STIHL Special Tools" manual.

Symbols are included in the text and pictures for greater clarity.
The meanings are as follows:

In the descriptions:

● = Action to be taken as shown in the illustration (above the text)

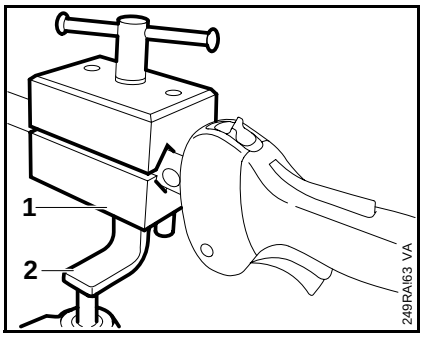
– = Action to be taken that is not shown in the illustration (above the text)

In the illustrations:

➔ Pointer

➔ Direction of movement

Service manuals and all technical Information bulletins are intended exclusively for the use of STIHL servicing dealers. They must not be passed to third parties.



Servicing and repairs are made considerably easier if the machine is mounted on assembly stand (2) 5910 890 3100 with the aid of clamp (1) 5910 890 8800.
The powerhead can then be swivelled to the best position for the ongoing repair. This leaves both hands free.

Always use original STIHL replacement parts.
They can be identified by the STIHL part number, the STIHL® logo and the STIHL parts symbol ®.
This symbol may appear alone on small parts.

If the engine is started up in the course of repairs or maintenance work, observe all local and country-specific safety regulations as well as the safety precautions and warnings in the owner's manual.

Gasoline is an extremely flammable fuel and can be explosive in certain conditions.

Improper handling may result in burns or other serious injuries.

Warning!
Do not smoke or bring any fire, flame or other source of heat near the fuel. All work with fuel must be performed outdoors only. Spilled fuel must be wiped away immediately.

3.1 Engine

STIHL single cylinder four-stroke engine with gasoil mixture lubrication

Displacement:	31.4 cm^3
Bore:	40 mm
Stroke:	25 mm
Engine power to ISO 8893	
at 7,000 rpm:	1.0 kW
Max. permissible engine speed without cutting attachment	
– with cut-off in ignition module:	10,500 ± 500 rpm
Bearings:	Crankshaft supported in heavy-duty ball bearings, needle cages on small and big ends, plain bearings on piston pin
Piston pin diameter:	8 mm
Clutch:	Centrifugal clutch, two clutch shoes without linings
Clutch engages at:	3,700 rpm

3.2 Spark Plug

Type	NGK CMR 6H
Electrode gap:	0.7 mm

3.3 Carburetor

Standard setting	
Low speed adjusting screw:	Open one full turn
High speed adjusting screw:	Open two full turns
Idle speed:	2,800 rpm
Max. engine speed:	10,500 ± 500 rpm

3.4 Tightening Torques

DG screws are used in polymer and lightmetal components. These screws form a permanent thread when they are installed for the first time. They can be removed and installed as often as necessary without impairing the strength of the screwed assembly, providing the specified tightening torque is observed.
For this reason it is **essential to use a torque wrench.**

Fastener	Thread size	For component	Torque Nm
Spline screw	IS-M6x25	Cover washer/Clutch shoe/Flywheel	12
Spline screw	IS-D4x18	Cover/Engine pan	4.5
Spline screw	IS-D4x18	Cover/Cylinder	4.5
Spline screw	IS-M5x21	Filter cover/Filter housing	3.5
Collar nut	M8	Filter housing/Carburetor	3.5
Spline screw	IS-M5x24	Shroud/Cylinder	6
Collar screw	M5x16	Rocker lever collar screw/Cylinder	9
Spline screw	IS-DG5x24	Engine pan/Cylinder	9
Spline screw	IS-M5x24	Fan housing/Shroud/Engine pan	6
Spline screw	IS-M5x24	Fan housing/Engine pan	6
Spline screw	IS-DG5x24	Muffler/Cylinder	9
Nut	M8x1	Flywheel/Crankshaft	17
Spline screw	IS-DG5x24	Starter cover/Cover/Engine pan	6
Spline screw	IS-DG5x24	Starter cover/Tank/Engine pan	6
Nut	M8x1	Starter cup/Crankshaft	17
Spline screw	IS-M5x30	Valve cover/Cylinder	3.5
Spline screw	IS-D5x32	Spacer flange/Cylinder	9
Spark plug	IS-M10x1	Spark plug	9
Spline screw	IS-D4x18	Ignition module/Cylinder	4.5

Use the following procedure when refitting a DG screw in an existing thread:

– Place the screw in the hole and rotate it counterclockwise until it drops down slightly.

– Tighten the screw clockwise to the specified torque.

This procedure ensures that the screw engages properly in the existing thread and does not form a new thread and weaken the assembly.

Note:
Power screwdriver settings for polymer:

DG screws max. 500 rpm

Condition	Cause	Remedy
Tool stops at full throttle under load	Clutch badly worn	Fit new clutch
	Clutch drum badly worn	Fit new clutch drum
Tool runs at idle speed	Idle speed too high	Readjust idle speed screw (counterclockwise)
	Clutch springs stretched or fatigued	Fit new clutch
	Spring hooks broken	Fit new clutch

4.2 Rewind Starter

Condition	Cause	Remedy
Starter rope broken	Rope pulled out too vigorously as far as stop or over edge, i.e. not vertically	Fit new starter rope
	Normal wear	Fit new starter rope
Rewind spring broken (starter rope does not rewind)	Spring overtensioned – no reserve when rope is fully extended	Fit new rewind spring
	Very dirty or corroded	Clean rewind spring or fit a new one
Starter rope can be pulled out almost without resistance (crankshaft does not turn)	Guide peg on pawl or pawl itself is worn	Fit new pawl
	Spring clip fatigued	Fit new spring clip
Starter rope is difficult to pull and rewinds very slowly	Starter mechanism very dirty (dusty conditions)	Thoroughly clean complete starter mechanism
	Lubricating oil on rewind spring becomes viscous at very low outside temperatures (spring windings stick together)	Apply a few drops of kerosine (paraffin) to spring, then pull rope carefully several times until normal action is restored. Then coat with resin-free oil.

Warning:
Exercise extreme caution while carrying out maintenance and repair work on the ignition system. The high voltages which occur can cause serious or fatal injuries!

Condition	Cause	Remedy
Engine runs roughly, misfires, temporary low of power	Spark plug boot is loose	Press boot firmly onto spark plug, and fit a new leg spring if necessary
	Spark covered in soot, smeared with oil	Install new spark plug
	Weak spark or no spark	Faulty insulation on ignition lead or short circuit wire. Use ohmmeter to check ignition lead for break. If break is detected or resistance is high, fit new ignition lead.
	Wrong air gap between ignition coil and flywheel	Reset air gap
	Flywheel cracked or damaged	Install new flywheel
	Crankcase damaged (cracks)	Install new crankcase
	Check operation of spark plug. Check slide control, ignition coil/ wire for damaged insulation and leakage current	Replace or clean spark plug, replace damaged parts of ignition system
	No spark	Check operation of slide control and ignition coil

Condition	Cause	Remedy
Carburetor floods, engine stalls	Inlet needle not sealing. Foreign matter in valve seat or cone damaged	Remove and clean or replace inlet needle, clean fuel tank, pickup body and fuel line if necessary
	Inlet control lever sticking on spindle	Free off inlet control lever
	Helical spring not located on nipple of inlet control lever	Remove inlet control lever and refit correctly
	Perforated disc on diamphragm is deformed and presses constantly against inlet control lever	Fit new metering diaphragm
	Inlet control lever too high (relative to design position)	Set inlet control lever flush with upper face of housing or bottom of metering chamber
	After five starting attempts with choke shutter closed	Open choke shutter after no more than five starting attempts
Poor acceleration	Idle jet too lean	Back off low speed screw slightly
	Main jet too lean	Back off high speed screw slightly
	Inlet control lever too low (relative to design position)	Set inlet control lever flush with upper face of housing or bottom of metering chamber
	Inlet needle sticking to valve seat	Remove inlet needle and clean valve seat
	Connecting bore to atmosphere blocked	Clean bore
	Diaphragm gasket leaking	Fit new diaphragm gasket
	Metering diaphragm damaged or shrunk	Fit new metering diaphragm

Condition	Cause	Remedy
Engine will not idle, idle speed too high	Throttle shutter opened too wide by idle speed screw	Reset idle speed screw (LA)
	Intake stub leaking	Seal or replace intake stub
Engine stalls at idle speed	Idle jet bores or ports blocked	Clean jet bores and ports and blow clear with compressed air
	Idle jet too rich	Screw dow low speed screw (L) slightly
	Setting of idle speed screw incorrect – throttle shutter completely closed	Set idle speed screw (LA) correctly
Engine speed drops quickly under load – low power	Air filter plugged	Clean air filter
	Tank vent faulty	Clean or replace tank vent if necessary
	Leak in fuel line between tank and fuel pump	Seal or renew connections and fuel line
	Pump diaphragm damaged or fatigued	Fit new pump diaphragm
	Main jet bores or ports blocked	Clean bores and ports
	Fuel pickup body dirty	Fit new pickup body
	Fuel strainers dirty	Clean fuel strainers

4.5 Engine

Always check and, if necessary, repair the following parts before looking for faults on the engine:

– Air filter
– Fuel system
– Carburetor
– Igniton system

Condition	Cause	Remedy
Engine does not start easily, stalls at idle speed, but operates normally at full throttle	Check compression	Check combustion chamber for excessive build-up of combustion deposits, check conditon of valves and valve clearance
	Gasket on carburetor spacer flange leaking	Install new gasket
	Decompression lever sticking	Install new cam gear
	Muffler carbonized	Clean muffler, or replace if necessary
Engine does not deliver full power or runs erratically	Secondardy air seepage through faulty gaskets on spacer flange	Install new gaskets
	Piston rings worn or broken	Install new piston rings
	Muffler / spark arresting screen carbonized	Clean muffler (inlet and exhaust openings), replace spark arresting screen (if fitted)
	Air filter element dirty	Fit new air filter element
	Fuel / impulse line kinked or cracked	Fit new lines or position without kinks
	Pump diaphragm torn	Install new pump diaphragm
	Decompression lever sticking	Install new cam gear

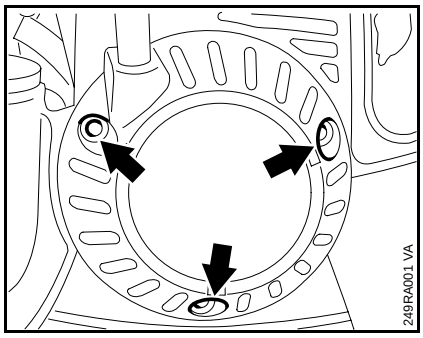
Condition	Cause	Remedy
Engine overheating	Insufficient cylinder cooling. Air inlets in fan housing blocked or cooling fins on cylinder very dirty	Thoroughly clean all cooling air passages and cooling fins

5 Rewind Starter / Shroud

5.1 General

5.2 Removing and Installing

If the action of the starter rope becomes very stiff and the rope rewinds very slowly or not completely, it can be assumed that the starter mechanism is in order but plugged with dirt. At very low outside temperatures the lubricating oil on the rewind spring may thicken and cause the spring windings to stick together. This has a detrimental effect on the function of the starter mechanism. In such a case it is sufficient to clean the rewind spring with a standard commercial cleaner and then coat it with resin-free oil.
Pull out the starter rope several times and allow it to rewind until its normal smooth action is restored.



- Remove the screws (arrows) from the rewind starter.

– Lift away the rewind starter.

Reassemble in the reverse sequence.

– Tighten down the screws to 6 Nm.

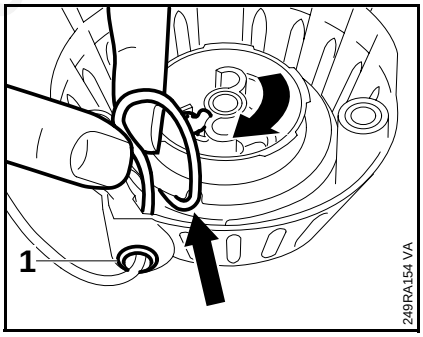
5.3 Rope Rotor

– Remove the rewind starter – see 5.2.

Relieving tension of rewind spring:

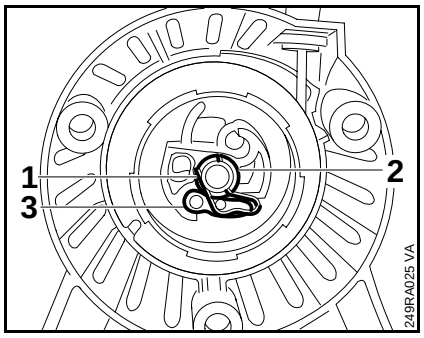
Note:
The spring will not be under tension if the starter rope is broken.

– Pull out the starter rope about 20 cm (8") and hold the rope rotor steady.

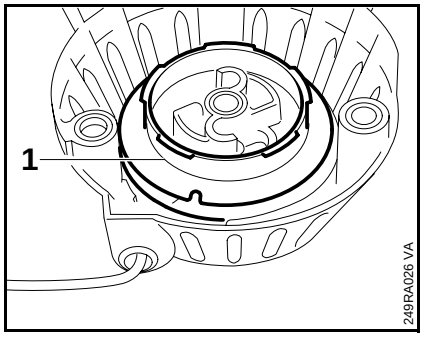


– Engage the rope in the notch on the rotor, and make a loop.

– Use the starter rope to turn the rotor clockwise until tension is relieved.

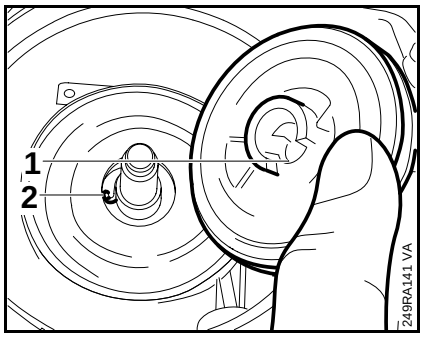


- To remove the rope rotor, ease the spring clip (1) out of the groove in the starter post.
- Remove the washer (2) and pawl (3).



- Carefully pull the rope rotor (1) off the starter post.

– To replace the rope rotor, remove the starter rope – see 5.4.

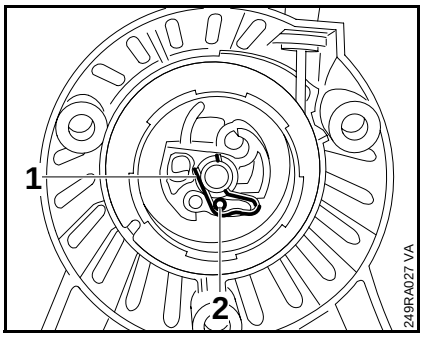


Installing:

Coat bore in rope rotor with STIHL special lubricant – see 11.

- Fit the rope rotor on the starter post so that the driver (1) on the rotor slips behind in the inner spring loop (2).

Note:
Turn the rope rotor a little and let it go. It must spring back.



– Fit the pawl and washer. Engage spring clip in the groove on the starter post.

Note:
The spring clip (1) must engage the guide peg (2) on the pawl and point it counterclockwise.

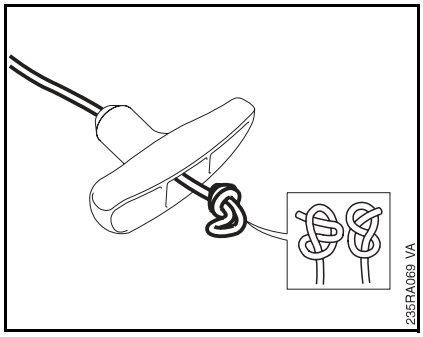
Handle the spring clip with care. The rewind starter may not function properly if the spring clip is deformed.

– Fit the starter rope – see 5.4.

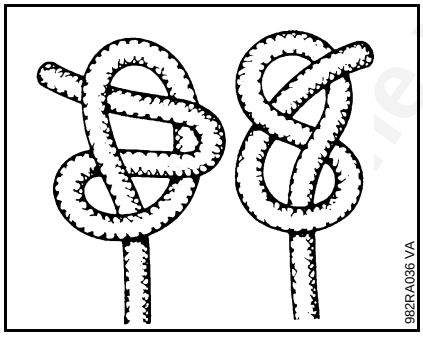
– Tension the rewind spring – see 5.4.1.

– Remove the rewind starter – see 5.2.

– Remove the remaining rope from the rope rotor and starter grip.

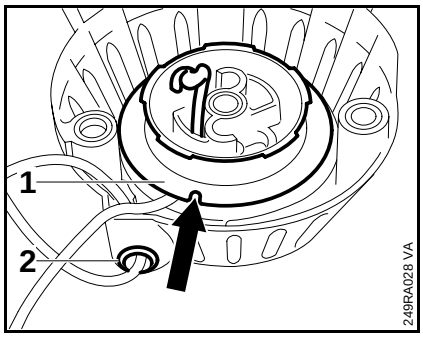


● Thread end of new rope through the underside of the starter grip and pull it out.



● Secure the end of the rope with one of special knots shown.

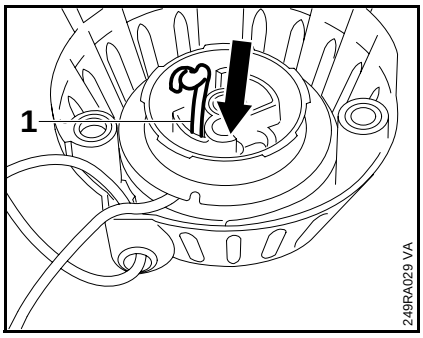
– Pull the rope back into the starter grip.



– Thread the other end of the rope through the guide bush (2) from outside.

– Thread the rope through the hole in the side of the rope rotor (1).

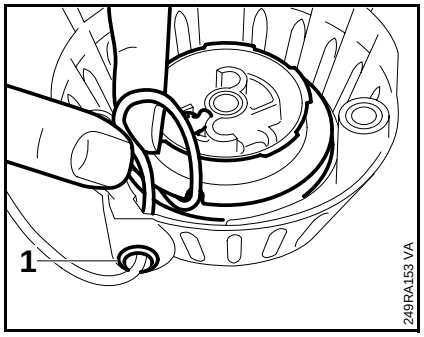
● Pull out the rope and secure it with a simple overhand knot.



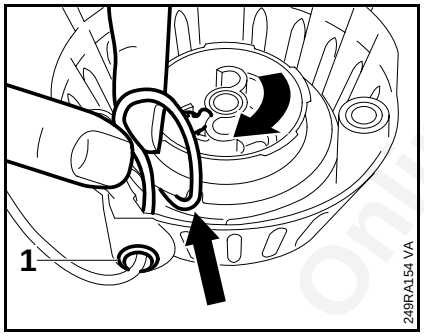
● Pull the rope back into the rotor so that the knot locates in the recess (1).

– Tension the rewind spring – see 5.4.1.

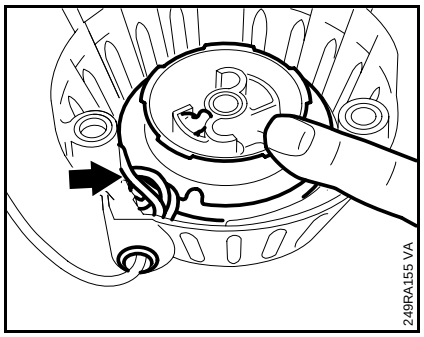
– Remove the rewind starter – see 5.2.



● Make a loop in the starter rope.



● Engage the rope in the notch on the rotor. Grip the rope close to the rotor and use it to turn the rope rotor six full turns clockwise.

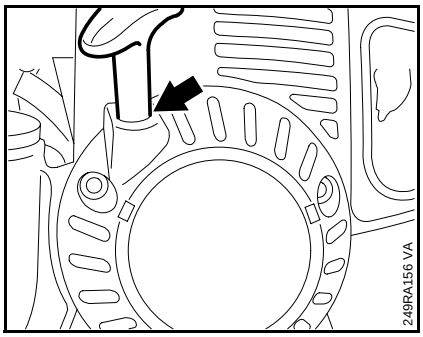


● Hold the rope rotor steady.

● Pull out the rope with the starter grip and straighten it out.

– Hold the starter grip firmly to keep the rope tensioned.

– Let go of the rope rotor and slowly release the starter grip so that the rope winds itself onto the rotor.

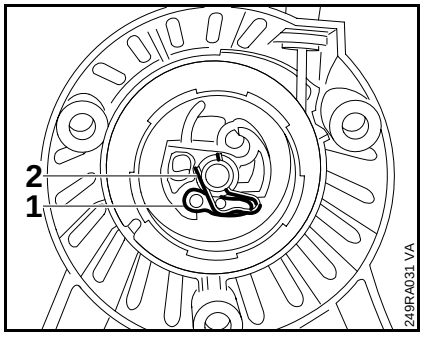


Note:
The starter grip must sit firmly in the rope guide bush without drooping to one side. If this is not the case, tension the spring by one additional turn.

When the starter rope is fully extended, it must still be possible to rotate the rope rotor at least another half turn before maximum spring tension is reached. If this is not the case, pull the rope out, hold the rope rotor steady and take off one turn of the rope.

– Install the rewind starter – see 5.2.

5.5 Pawl



- Ease the spring clip (1) off the starter post.

Note:
Do not take the rope rotor off the starter post.

- Pull the pawl (2) out of the rope rotor.

– Lubricate peg of new pawl with graphite grease – see 11.

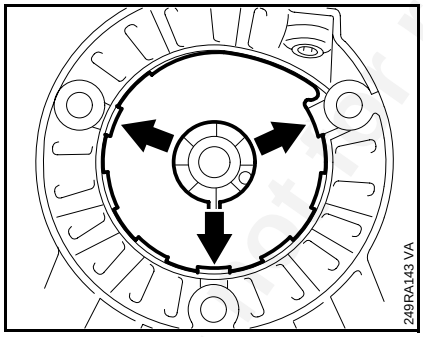
5.6 Replacing the Rewind Spring

– Remove the rope rotor – see 5.3.

Warning:
The pieces of broken spring may still be under tension and may fly apart unexpectedly when you remove them.
Wear face protection and gloves to reduce the **risk of injury**.

– Remove the spring housing and parts of the spring.

– Lubricate the new spring with a few drops of resin-free oil.



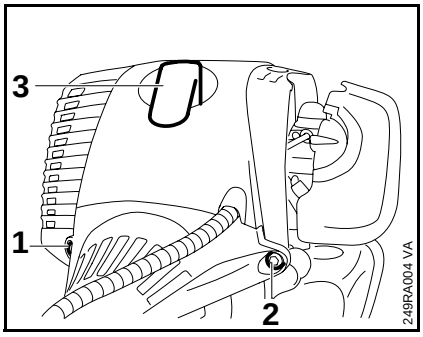
- Position the new spring housing (bottom plate must face up) against the points shown (arrows) and push home.

– Install the rope rotor – see 5.3.

– Install the starter rope – see 5.4.

Reassemble all other parts in the reverse sequence.

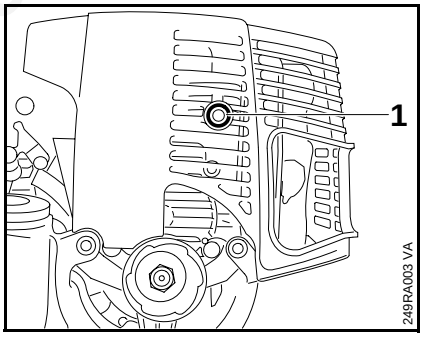
5.7 Removing the Shroud



– Remove the rewind starter – see 5.2.

- Take out the screws (1 and 2).

- Carefully pull off the spark plug boot (3) vertically.



- Take out the screw (1).

Remove the shroud upwards, and pull the spark plug boot through the shroud at the same time.

Install in the reverse sequence.

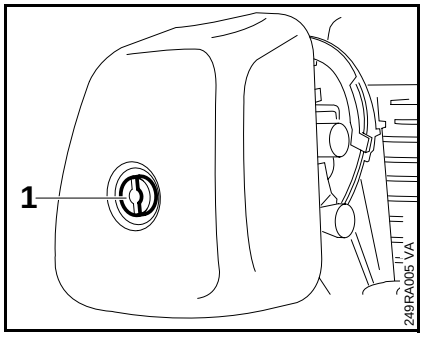
– Tighten down the screws to 6 Nm.

Dirty and clogged air filters reduce engine power, increase fuel consumption and make starting more difficult.

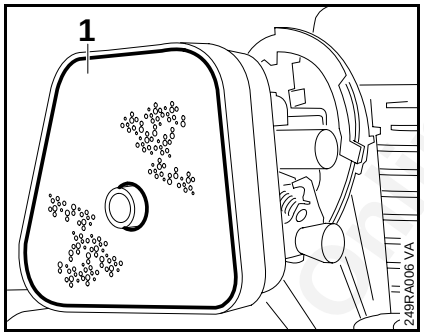
Note:
The air filter must be cleaned when there is a noticeable loss of engine power.

– Close the choke shutter.

– Clean away any loose dirt from around the filter and filter cover.

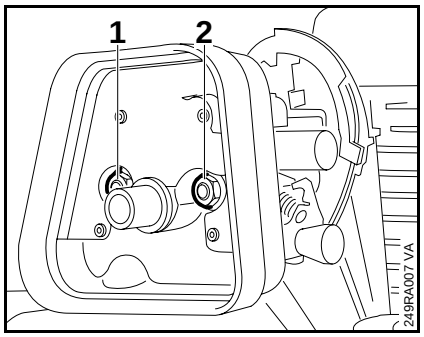


● Loosen the slotted screw (1) and lift away the filter cover.



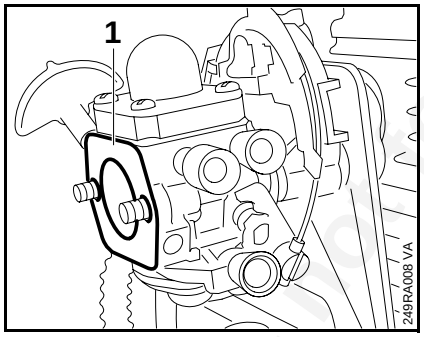
● Remove the filter (1).

Note:
The filter element is not washable. If it is heavily loaded with dirt, fit a new one.



● Take out the screws (1 and 2).

– Remove the air filter housing.



● Remove the paper gasket (1) and fit a new one.

Reassemble in the reverse sequence.

– Tighten down screws on air filter housing to 3.5 Nm.

– Tighten down screw air on filter cover to 3.5 Nm.

Troubleshooting chart – see 4.4.

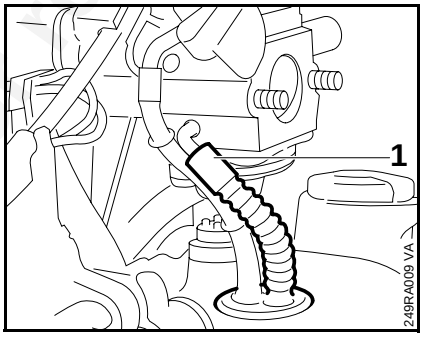
Important:
In the event of trouble with the carburetor or the fuel supply system, always check and clean the tank vent – see 6.4.

The carburetor can be tested for leaks with the carburetor and crankcase tester 1106 850 2905.

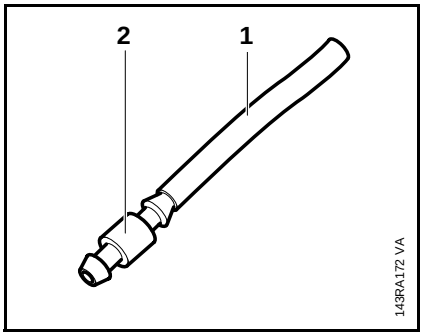
– Remove the air filter – see 6.1.

– Open the tank filler cap to relieve pressure.

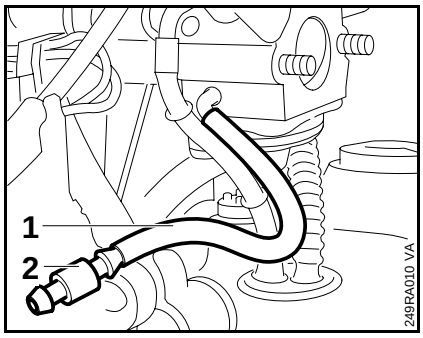
– Close the tank filler cap.



● Pull fuel hose (1) off carburetor's elbow connector.

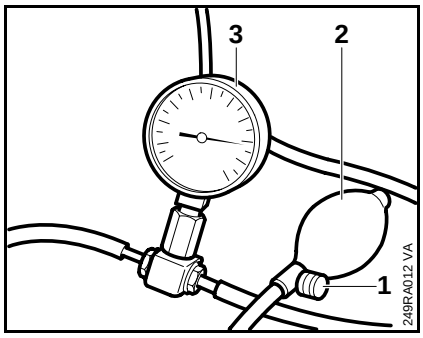


● Push the fuel hose (1) 1110 141 8600 onto the nipple (2) 0000 855 9200.



- Push the fuel hose (1) with nipple (2) onto the carburetor elbow connector.

– Push the nipple into the tester's* pressure hose (*carburetor and crankcase tester 1106 850 2905).



- Close the vent screw (1) on the rubber bulb.

- Pump air into the carburetor with the rubber bulb (2) until the pressure gauge (3) shows a reading of approx. 0.8 bar.

If this pressure remains constant, the carburetor is airtight.

– Disconnect pressure hose and carburetor tester.

– Refit the fuel hoses.

Reassemble all other parts in the reverse sequence.

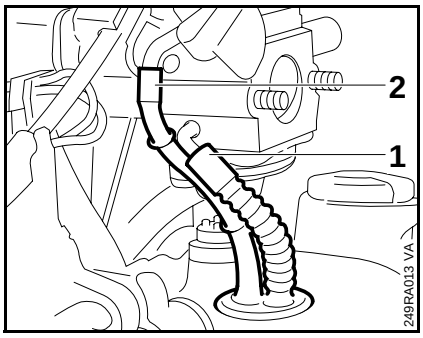
However, if the pressure drops, there are two possible causes:

1. The inlet needle is not sealing (foreign matter in valve seat or sealing cone of inlet needle is damaged or inlet control lever sticking).

2. The metering diaphragm is damaged.

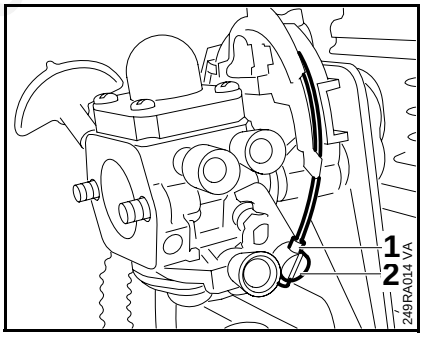
In either case the carburetor must be removed and serviced – see 6.3.

– After completing test, open the vent screw on the carburetor and crankcase tester and disconnect the test hose from the carburetor.

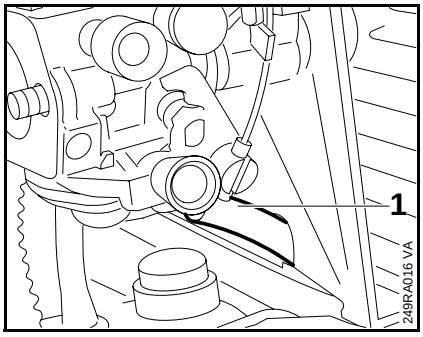


– Remove the air filter – see 6.1.

- Pull the fuel hoses (1 and 2) off the elbow connectors.



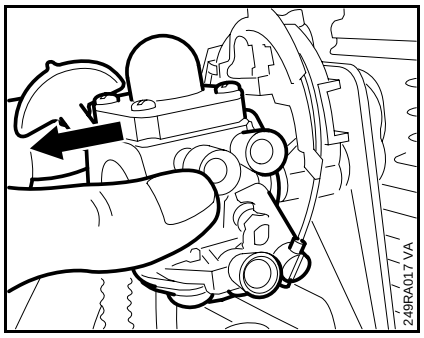
- Disconnect throttle cable nipple (1) from slotted pin (2) on the throttle lever.



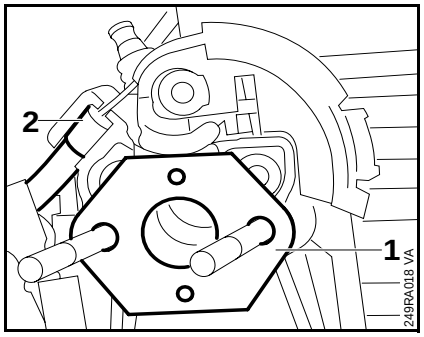
- Pull the impulse hose (1) off the metering diaphragm.

6.3 Servicing the Carburetor

6.3.1 Manual Fuel Pump



● Pull carburetor off the studs.

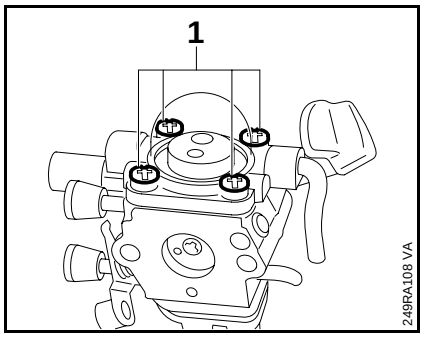


● Remove the gasket (1).

● Disconnect the cable (2).

If spacer flange shows signs of damage or cracks, install a new one – see 7.11.

Reassemble in the reverse sequence.

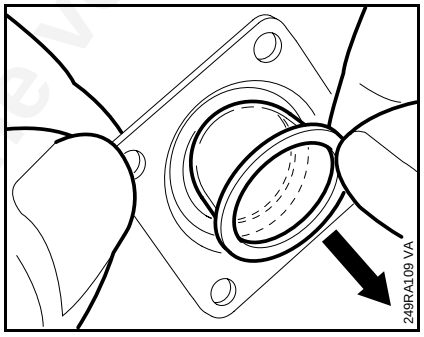


– Remove the shroud – see 5.7.

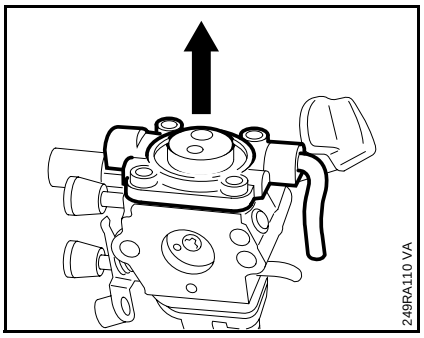
– Perform leakage test – see 6.2.1.

● Take out the screws (1).

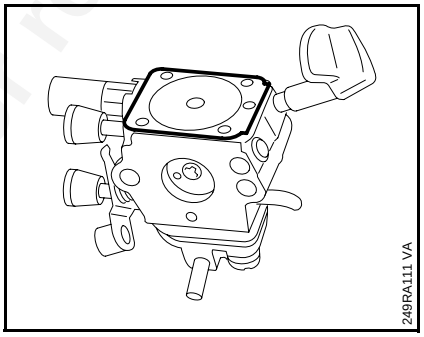
– Remove end cover with rubber pump bulb (2).



● Remove rubber bulb from the end cover.

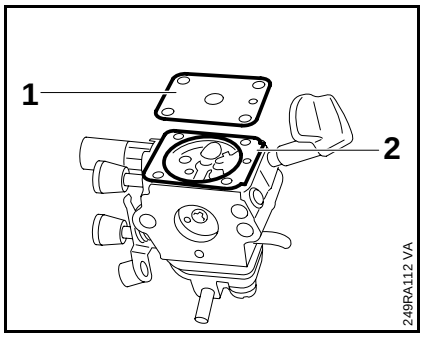


● Remove the flange.



● Examine the metering diaphragm and sealing ring. Replace if necessary – see 6.3.2.

Reassemble in the reverse sequence.



– Remove the flange – see 6.3.1.

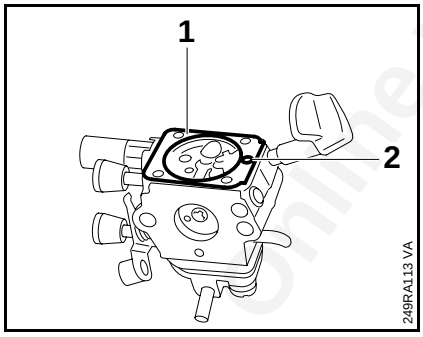
● Remove metering diaphragm (1) and gasket (2) from the carburetor body.

Note:
If the gasket and diaphragm are stuck together, separate them carefully.

● Check the diaphragm and gasket and replace if necessary.

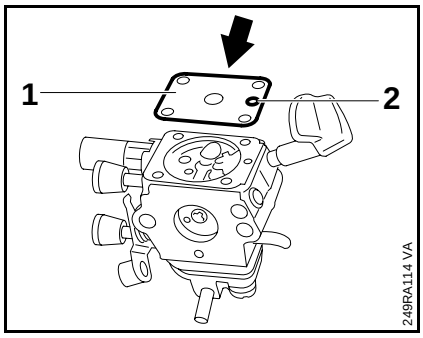
Note:
The diaphragm is the most delicate part of the carburetor. It is subjected to continuous alternating stresses and the material eventually shows signs of fatigue, i.e. the diaphragm distorts and swells and has to be replaced.

Reassemble in the reverse sequence.



● Place the gasket (1) on the carburetor body.

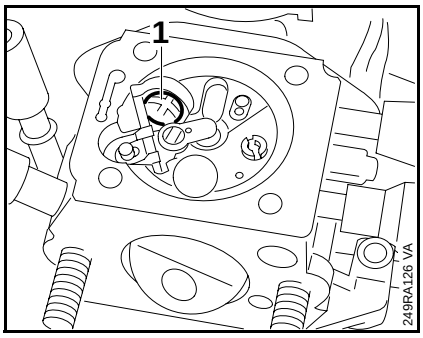
Note:
The cutout in the gasket (2) must line up with the compensating bore in the carburetor.



● Place the metering diaphragm (1) on the gasket.

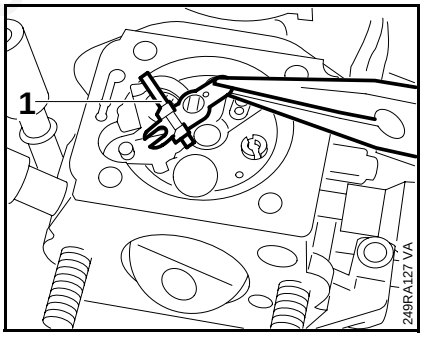
Note:
The cutout in the metering diaphragm (2) must line up with the compensating bore in the carburetor and the gasket.

To assemble all other parts – see 6.3.1.



– Remove the metering diaphragm – see 6.3.2.

● Remove the round head screw (1).



● Carefully remove the inlet control lever (1) with spindle.

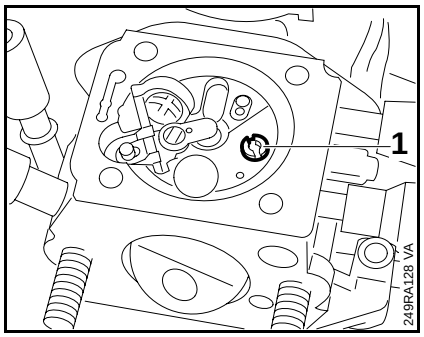
Reassemble in the reverse sequence.

– Engage clevis of inlet control lever in groove on inlet needle.

– Helical spring must locate in inlet control lever's recess.

Important:
Make sure the inlet needle and spring are properly seated.

6.3.4 Fixed Jet



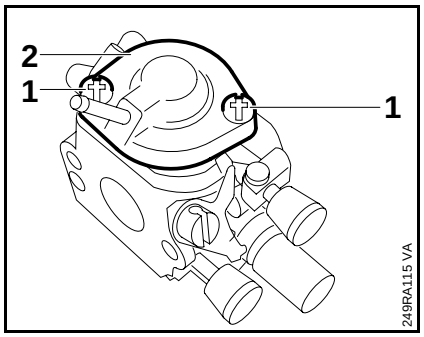
– Remove the metering diaphragm – see 6.3.2.

- Use a suitable screwdriver to unscrew the fixed jet (1).

Reassemble in the reverse sequence.

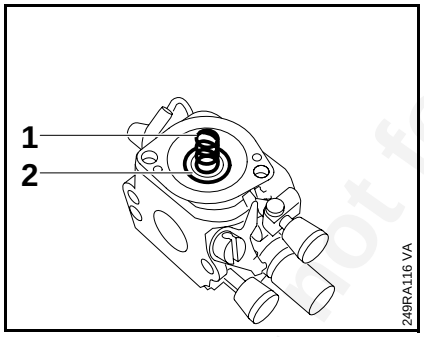
Important:
Take care not to damage the fixed jet with the screwdriver during assembly and installation.

6.3.5 Pump Diaphragm

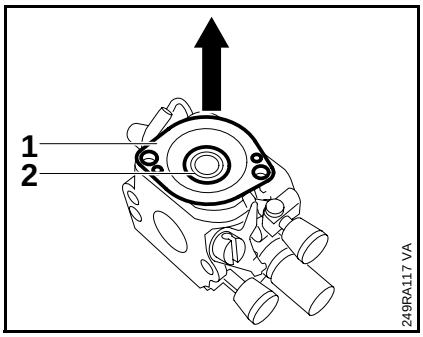


– Remove the carburetor – see 6.2.2.

- Take out the screws (1).
- Remove the end cover (2).



- Remove the spring (1) and spring retainer (2) from the diaphragm.

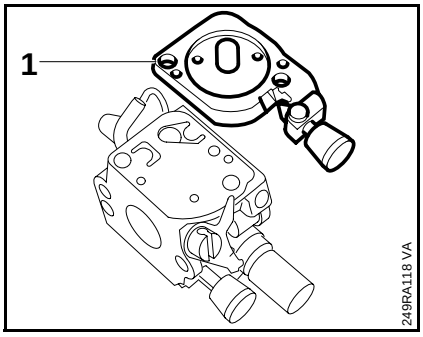


- Remove the gasket and pump diaphragm.

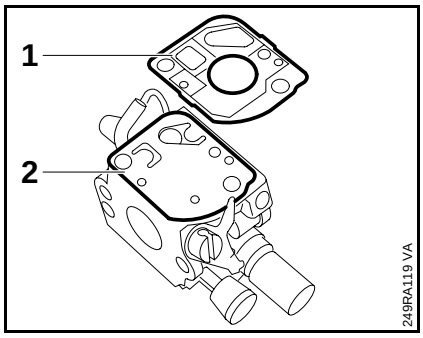
Note:
If the gasket and diaphragm are stuck together separate them carefully.

- Check diaphragm and gasket and replace if necessary.

Note:
The diaphragm is the most delicate part of the carburetor. It is subjected to continuous alternating stresses and the material eventually shows signs of fatigue, i.e. the diaphragm distorts and swells and has to be replaced.

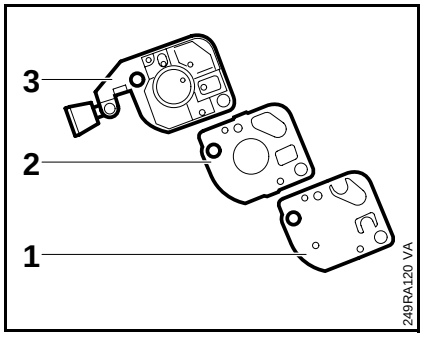


- Remove flange body (1) with idle speed screw.

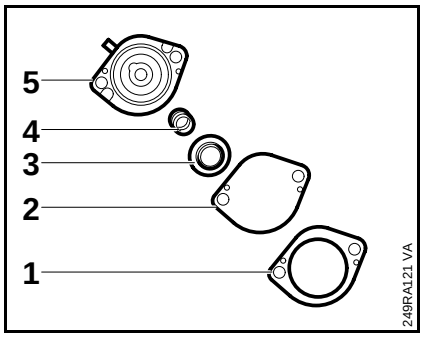


- Remove the gasket (1) and pump diaphragm (2).

Reassemble in the reverse sequence.



Note:
The pump diaphragm (1) and gasket (2) are held in position by the cast pegs on the flange body with idle speed screw (3).

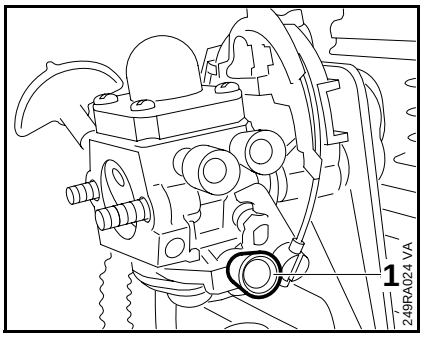


Note:
Gasket (1) and pump diaphragm (2) are held in place by the cast pegs on the end cover (5).

- Install the spring (4) and spring retainer (3) in the housing base (5). Fit the diaphragm (2) and gasket (1) and screw the assembly to the carburetor.

Note:
The spring retainer's integrally cast spring guide points toward the spring (4).

– Fit the screws and tighten them down firmly.



– Check the air filter and replace if necessary.

– Clean the spark arresting screen (if fitted) and replace if necessary.

– Start the engine and allow it to warm up.

- Use the idle speed screw LA (1) to adjust engine idle speed.

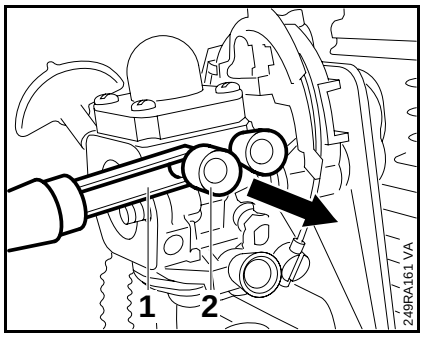
  Turn clockwise to increase engine speed.

  Turn counterclockwise to reduce engine speed.

– If the engine stops while idling, turn the idle speed screw clockwise until the tool begins to move. Then back off the screw one quarter turn.

– If the tool runs while the engine is idling, turn idle speed screw counterclockwise until the tool stops running. Then turn the screw about another quarter turn in the same direction.

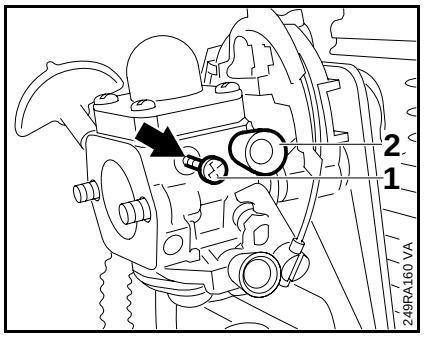
Note:
If you use a tachometer, note that there is an ignition spark on every revolution of the crankshaft.



Standard setting

If the carburetor has to be adjusted from scratch, first carry out the standard setting.

- Push the puller 5910 890 4501 (1), with the groove facing you, between the limiter cap (2) and carburetor body and pry the cap off. If the limiter cap is stuck on the adjusting screw, turn the puller over so that its groove faces the carburetor body. Pry off the limiter cap.

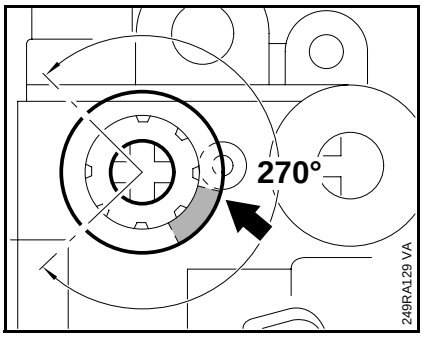


- Screw down the adjusting screws (1 and 2) clockwise until they are against their seats.

Now make the following adjustments:

Open the high speed screw H (1) two full turns so that the limiter cap can be fitted.

Open the low speed screw L (2) one full turn.



Note:
Do not re-install used caps because they are damaged during the removal process.

- Fit new cap for high speed screw (H) so that is positioned against the stop (arrow).
- Push cap home as far as the carburetor body.

Corrections using the high speed screw:

Note:
Corrections to the setting of the high speed adjusting screw affect the engine's performance. Use a tachometer. Corrections must be performed below the maximum engine speed of 10,500 rpm because the speed governor will otherwise be activated and produce incorrect tachometer readings.
If the setting is too lean, there is an increased risk of engine damage due to a lack of lubricant and overheating.

Note:
It no tachometer is available, do not turn the high speed or low speed screws beyond the standard setting to make the mixture leaner.

– Check the air filter and replace if necessary.

– Check the spark arresting screen and clean or replace if necessary.

– Run the engine until it is warm.

– Adjust idle speed correctly (tool must not run) – see 6.3.6.

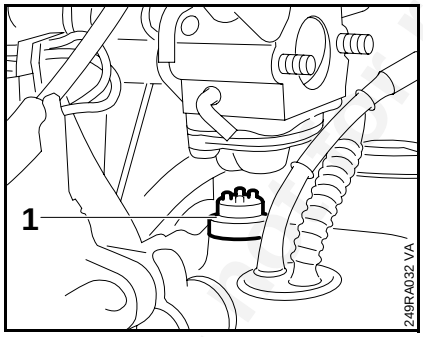
– Turn the low speed screw (L) clockwise for leaner mixture at high altitudes or counter-clockwise for richer mixture at sea level.

– Turn the screws very slowly and carefully – even slight movements produce a noticeable change in engine running behavior.

Note:
A correction at the low speed screw (L) usually necessitates a change in the setting of the idle speed screw (LA) – see 6.3.6.

Correct operation of the carburetor is only possible if atmospheric pressure and internal fuel tank pressure are equal at all times. This is ensured by the tank vent.

Important:
In the event of trouble with the carburetor or the fuel supply system, always check and clean the tank vent. Check function by performing pressure and vacuum tests on fuel tank via the fuel hoses.



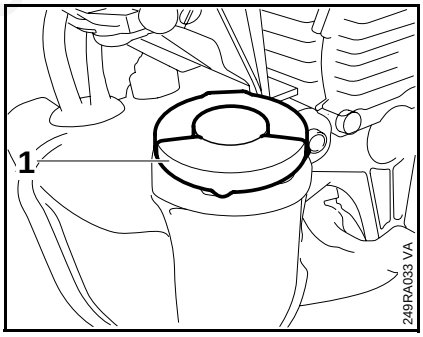
– Pull both fuel hoses off the carburetor.

– Seal one of the two fuel hoses with a suitable plug.

– Connect other hose to vacuum pump 0000 850 3501 and test fuel tank under vacuum.

● Equalization of pressure takes place via the tank vent (1). There must be no build-up of vacuum in the tank. If the tank vent does not operate properly, replace it with the round gasket.

The diaphragm pump draws fuel out of the tank and into the carburetor via the fuel hose. Any impurities mixed with the fuel are retained by the pickup body. The fine pores of the pickup body eventually become clogged with minute particles of dirt. This restricts the passage of fuel and results in fuel starvation.



Important:
In the event of trouble with the fuel supply system, always check the fuel tank and the pickup body first. Clean the fuel tank if necessary.

Cleaning the fuel tank

● Unscrew the filler cap (1) and drain the tank.

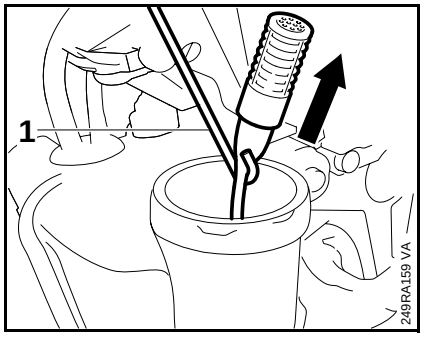
– Pour a small amount of clean gasoline into the tank and shake the unit vigorously.

– Open the tank again and drain it.

Note:
Dispose of fuel properly at approved disposal site.

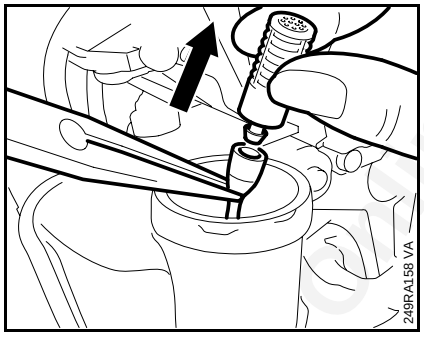
Pickup body

– Unscrew the filler cap.



● Use the hook 5910 893 8800 (1) to pull the pickup body out through the tank filler opening.

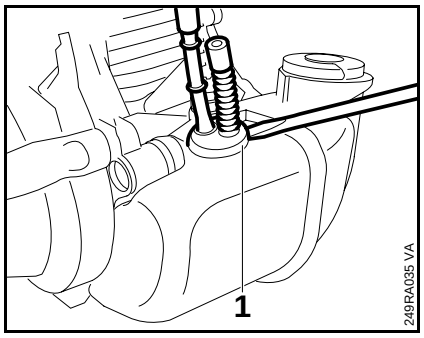
Note:
Do not over-stretch the suction hose.



– Pull the pickup off the suction hose.

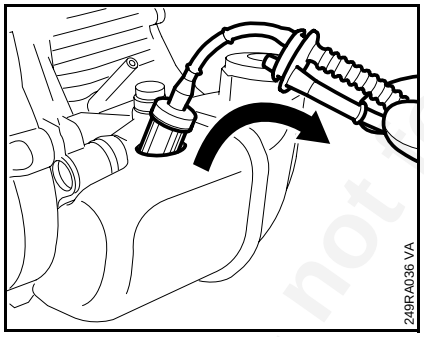
– Fit a new pickup body.

Install in the reverse sequence.



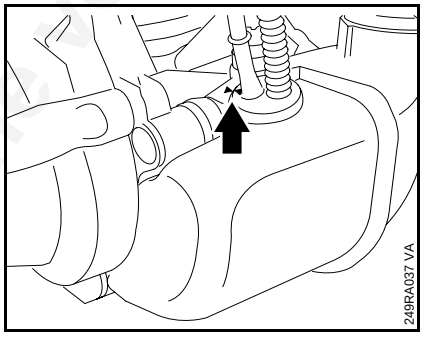
– Pull the fuel hoses off the carburetor – see 6.2.2.

● Pry the grommet out of the fuel tank.



● Remove the fuel hoses with the pickup body.

Install in the reverse sequence.



● Mark on fuel hose grommet must line up with mark on tank.

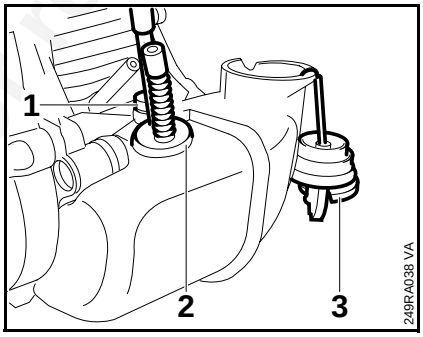
– Drain the fuel tank.

– Remove the rewind starter – see 5.2.

– Remove the shroud – see 5.7.

– Remove the air filter – see 6.1.

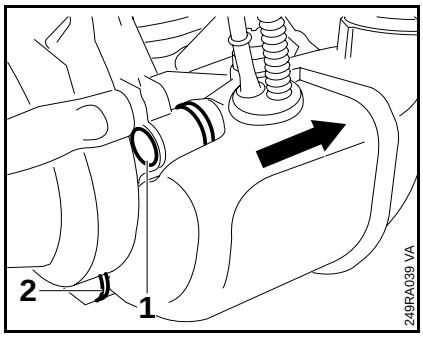
– Pull the fuel hoses off the carburetor – see 6.2.2.



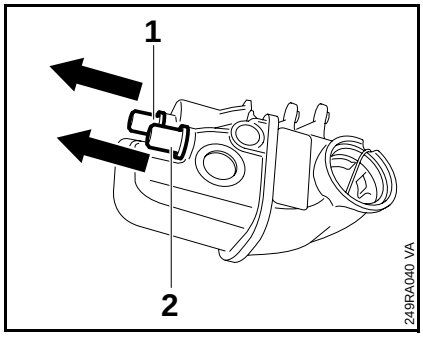
● Pry the fuel hose (2) with pickup body out of the tank.

● Remove the tank vent (1) with gasket.

● Unscrew the fuel filler cap (3) and remove it together with the cap retainer.

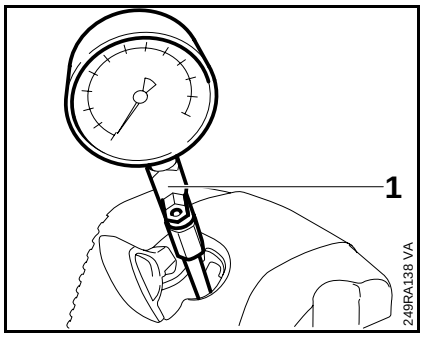


● Pull out the fuel tank with sleeves (1 and 2).



● Remove the sleeves (1 and 2).

Reassemble in the reverse sequence.



– Pull off the spark plug boot.

– Unscrew the spark plug.

● Screw compression tester 5910 850 2000 (1) into the spark plug hole.

– Move slide control to "Start".

– Set choke shutter to open.

– Pull starter rope vigorously and quickly several times.

– Note compression pressure.

Note:
If compression pressure is below 5 bar, check valve clearance and readjust if necessary – see 7.2.
If this produces no improvement, check the cylinder, valve seat, piston and piston rings for scores or other damage.

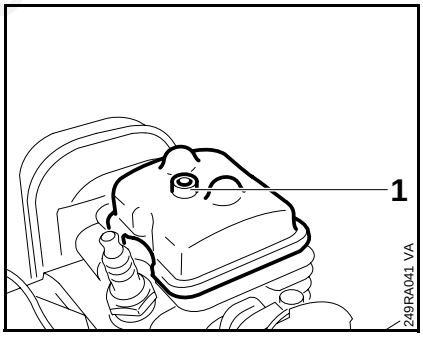
The design specification is 6...7 bar.

Reassemble in the reverse sequence.

Note:
Check and adjust valve clearances only when engine is cold.

– Remove the rewind starter – see 5.2.

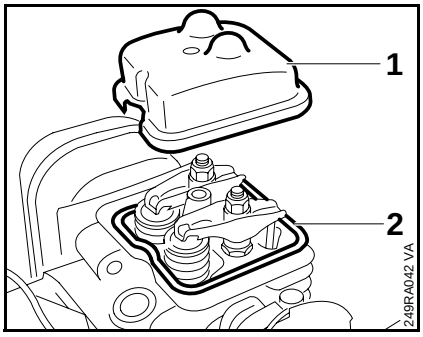
– Remove the shroud – see 5.7.



● Take out the screw (1).

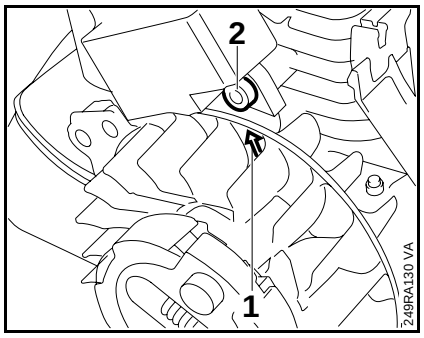
– Remove the sealing ring.

– Use combination wrench 4180 890 3400 to unscrew the spark plug.



● Remove the valve cover (1).

● Remove the gasket (2).

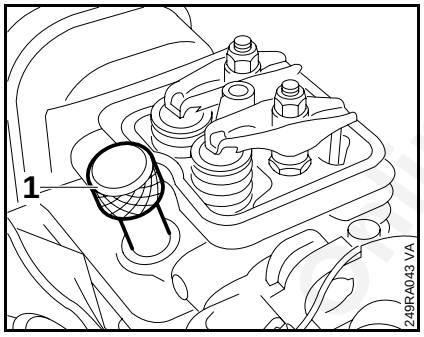


- Rotate the crankshaft until the arrow (1) is in line with the screw (2) on the right-hand side of the ignition module.

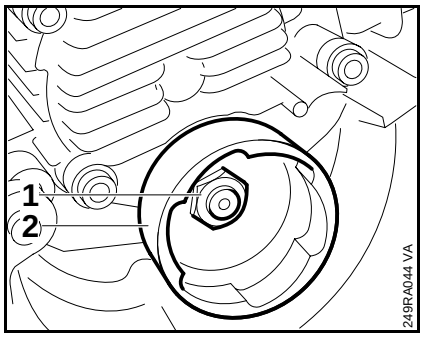
Important:
Check and adjust valves only when they are cold.

Note:
Observe rocker arms while rotating the fanwheel up to the mark. If the valves are operated by the rocker arms in this position (valve overlap), rotate the crankshaft another turn until the valves are idle and the arrow (1) lines up with the screw (2). Make sure the valves are not operated in this position by turning the crankshaft back and forth.

Important:
If there is no noticeable valve overlap the cam gear must be checked for wear and proper positioning, proceed as follows. Otherwise see page 29 for valve adjusting instructions.



- Fit locking screw (1) 4180 890 2700 in spark plug hole.

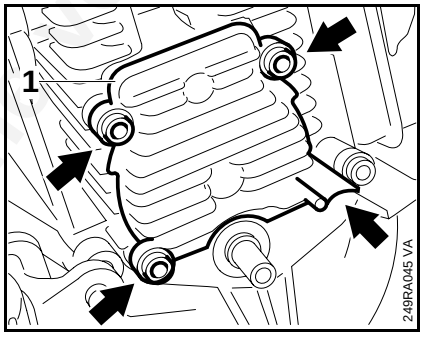


– Rotate crankshaft counter-clockwise until the piston butts against the locking screw.

- Remove the hex. nut (1).

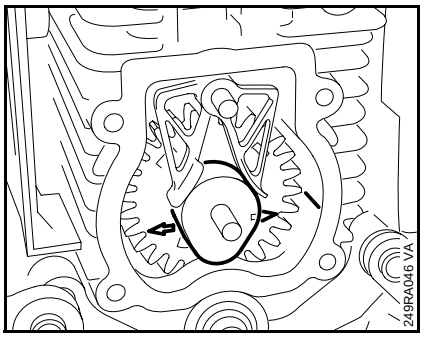
- Remove the starter cup (2).

– Remove the locking screw.

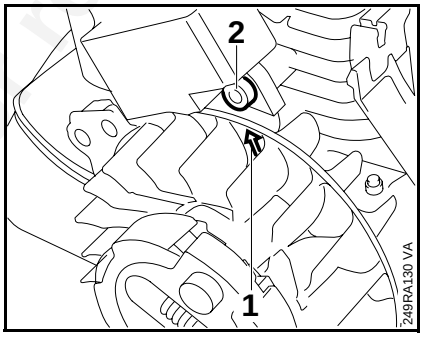


- Take out the screws (arrows).

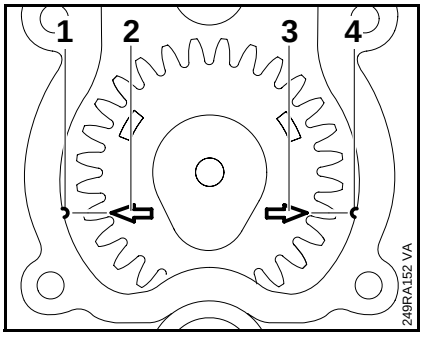
- Carefully lift away the cam gear cover (1).



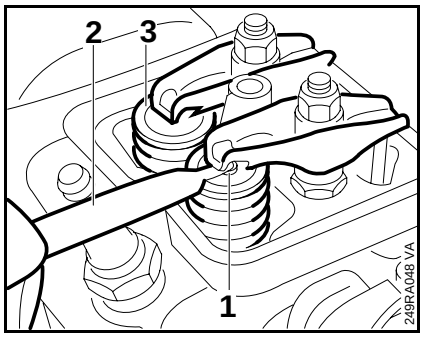
- Rotate crankshaft clockwise until cam lobe points downward.



- Check that arrow (1) lines up with the right-hand screw (2) on the ignition module.



- Marks (arrows) on (2 and 3) must line up with the notches (1 and 4) in the cylinder.

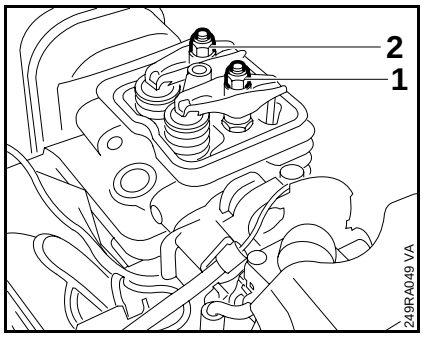


Warning:
Cam gear cover must be fitted before checking and adjusting valve clearances.

- Insert feeler gauge 4180 893 6400 (2) between rocker arm and valve stem.

Note:
The feeler gauge must slip through with a certain resistance.

Inlet valve (1): 0.10 ± 0.02 mm
Exhaust valve (3): 0.10 ± 0.02 mm



Adjusting Valves

Valve clearance is adjusted with the locknuts (1 and 2).

To increase valve clearance: Turn nut counterclockwise

To reduce valve clearance: Turn nut clockwise

– Turn engine over several times and then check valve clearance again.

Assemble all parts in the reverse sequence.

– Thoroughly clean the sealing faces on the cylinder and cover.

– Apply thin coating of sealant to cylinder sealing face.

Important:
Follow maker's instructions.

– Tighten down cam gear cover screws in crosswise pattern to 4.5 Nm.

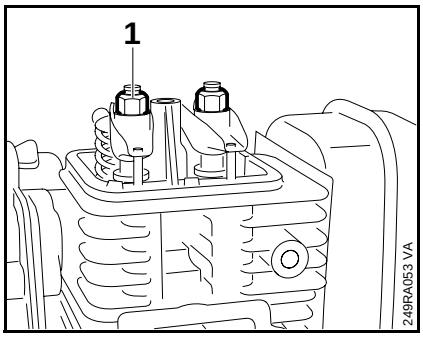
– Install new gasket for valve cover.

– Use new sealing ring for spline socket head screw.

– Tighten down valve cover screw to 3.5 Nm.

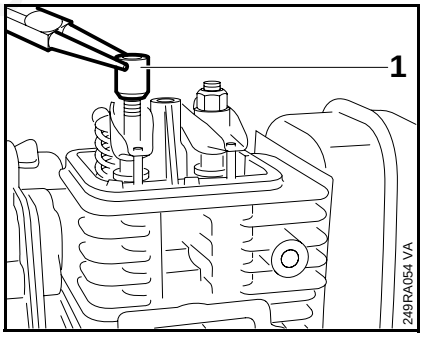
– Tighten down nut on starter cup to 17 Nm.

– Tighten down spark plug to 9 Nm.

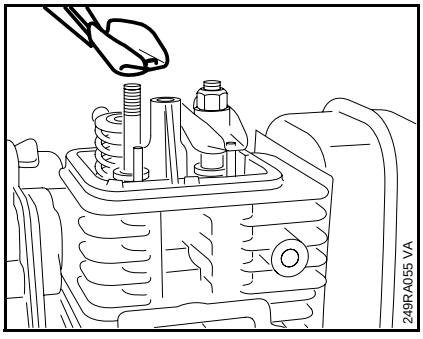


– Remove the valve cover and cam gear cover. Set piston to T.D.C. – see 7.2.

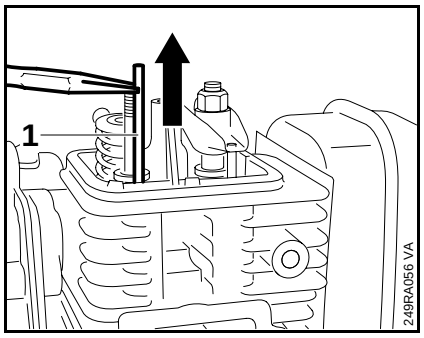
- Remove the locknut (1).



- Remove the sleeve (1).



- Remove the rocker arm.

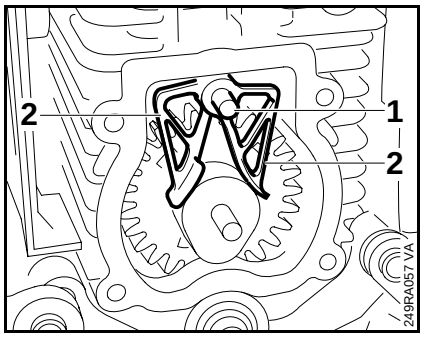


● Take out the pushrod (1).

Reassemble in the reverse sequence.

Important:
Make sure that the pushrod is firmly seated in the rocker arm and cam follower.

– Adjust valves – see 7.2.



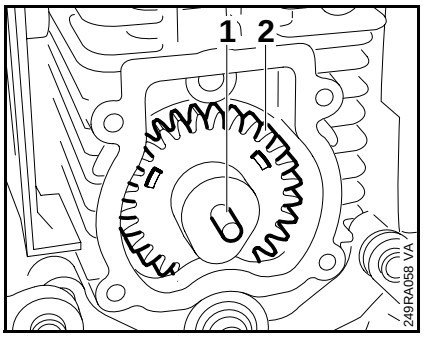
– Remove the pushrods – see 7.3.

● Pull out the pin (1).

● Remove the cam followers (2).

Install in the reverse sequence.

Note:
Make sure the left-hand cam follower is installed first. It controls the inlet valve.

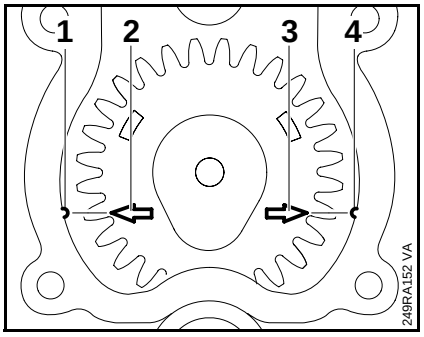


– Remove the cam followers – see 7.4.

● Pull out the pin (1).

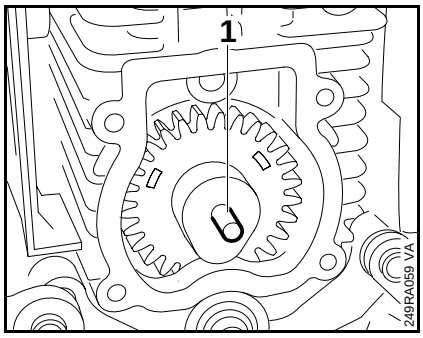
● Remove the cam gear (2).

Install in the reverse sequence.



– Set crankshaft to T.D.C. – see 7.9.3.

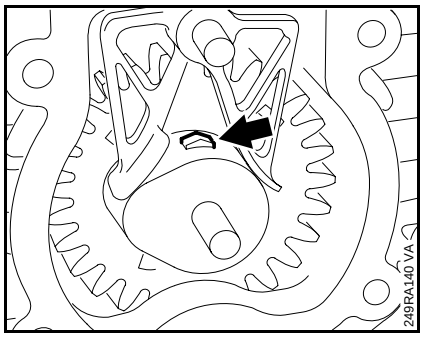
● Fit the cam gear so that the marks (1 and 2) and (3 and 4) are in alignment.



● Install the pin (1).

Important:
The marks must not move out of position while the cam gear is being fitted.

– Install cam followers – see 7.4.



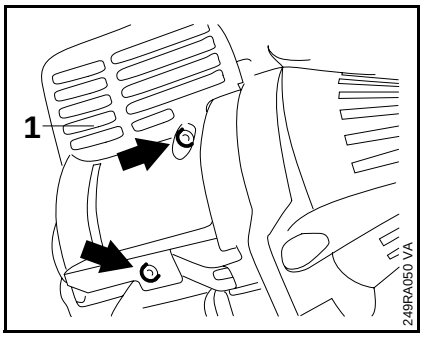
– Remove cam gear cover – see 7.2.

● Check free movement and function of decompression system lever (arrow).

– Lever must project about 2 mm from cam.

– Push decompression system lever counterclockwise. The lever must move freely and retract fully.

Note:
If the lever is difficult to move, worn or not visible, install a new cam gear.

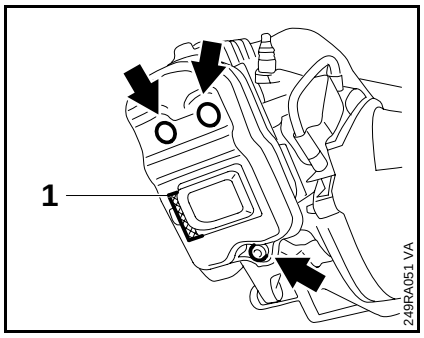


– Remove the rewind starter – see 5.2.

– Remove the shroud – see 5.7.

● Take out the screws (arrows).

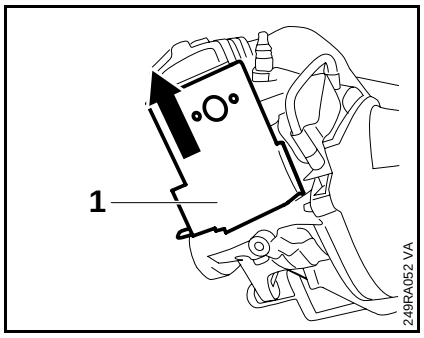
● Remove the cover (1).



- Use a screwdriver to lift up and pull out the spark arresting screen (if fitted).

– Clean the spark arresting screen or, if necessary, install a new one.

- To remove the muffler, take out the screws (arrows).



- Remove the exhaust gasket (1).

Reassemble in the reverse sequence.

– Use a new exhaust gasket.

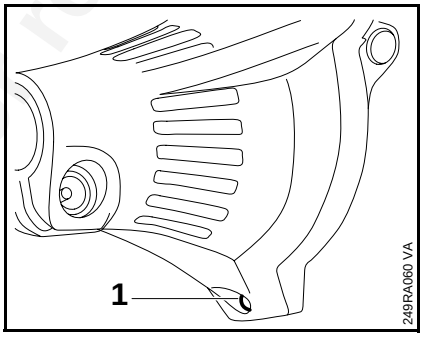
– Tighten down muffler mounting screws to 9 Nm.

– Tighten down cover screws to 4.5 Nm.

Troubleshooting chart – see 4.1.

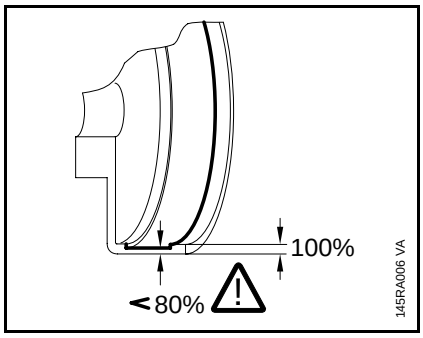
– Remove the shroud – see 5.2.

– Remove the throttle cable and wiring of ignition module – see 8.2.2.



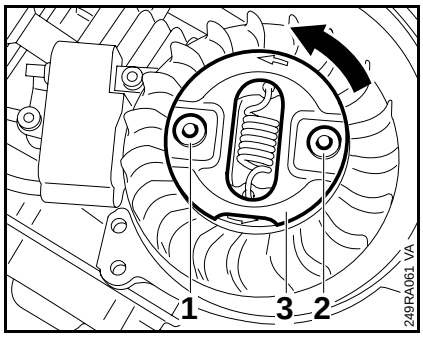
- Take out screw (1) on fan housing and remove the engine.

Caution:
Support engine while removing the screw.

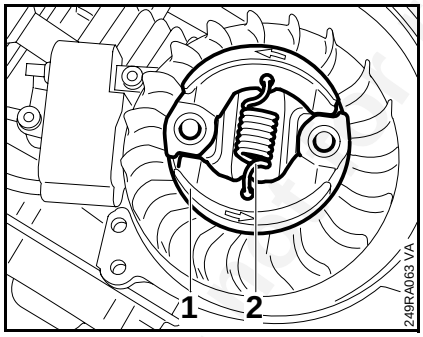


- Inspect the clutch drum. There should be no scores or signs of excessive wear.

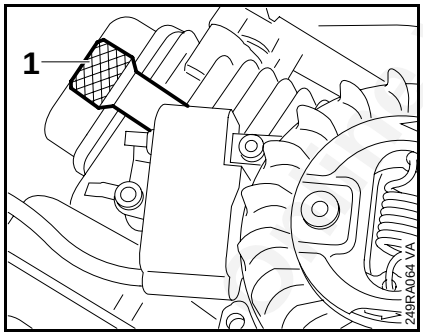
Important:
If there are signs of serious wear on the inside diameter of the clutch drum, check the remaining wall thickness. If it is less than about 80% of the original thickness, fit a new clutch drum – see 7.7.3.



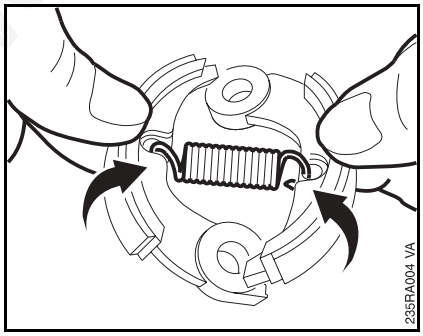
- Take out the clutch shoe screws (1 and 2).
- Remove the cover plate (3).



- Remove the clutch shoes (1) together with the spring (2) and lower cover plate.

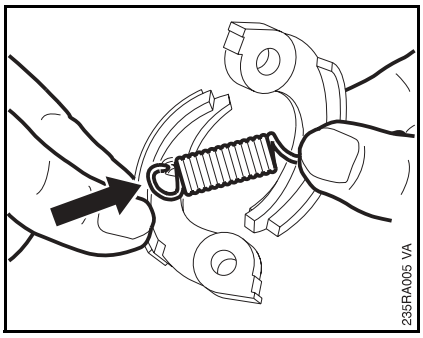


- Remove the spark plug. Fit the locking screw 4180 890 2700. Rotate the crankshaft counter-clockwise until the piston butts against the locking screw.

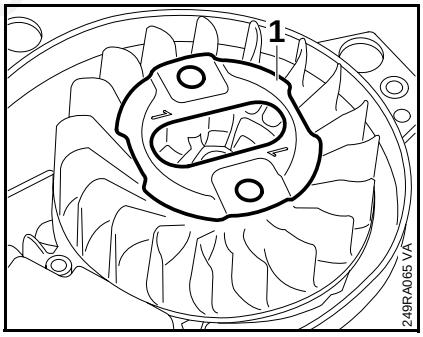


- Tilt the clutch shoes and unhook the spring.

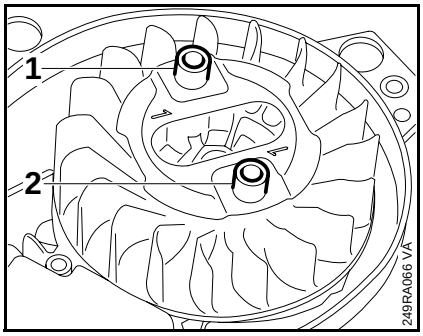
Important:
Clutch shoes must always be replaced in pairs.



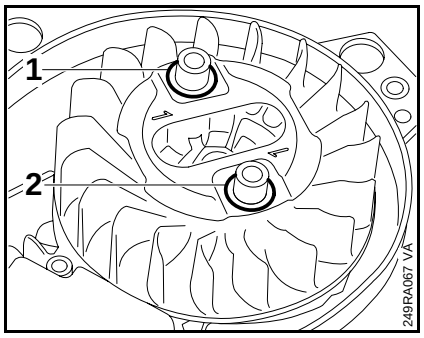
- Attach spring to clutch shoes.



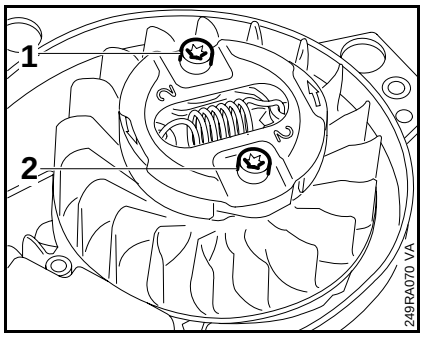
- Place cover plate (1), with "1" facing up, on the flywheel.



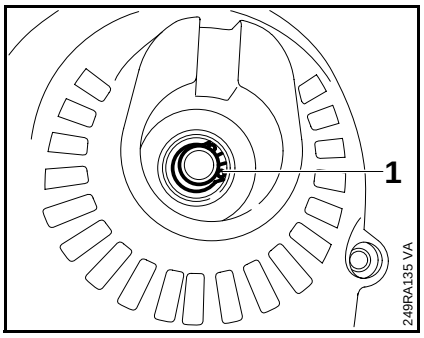
- Fit sleeves (1 and 2) on cover plate and press into the flywheel.



- Fit corrugated washers (1 and 2).

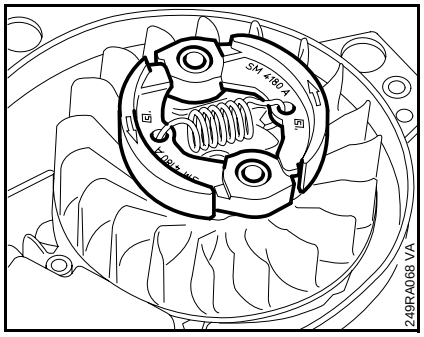


- Fit screws (1 and 2) and tighten down to 12 Nm.

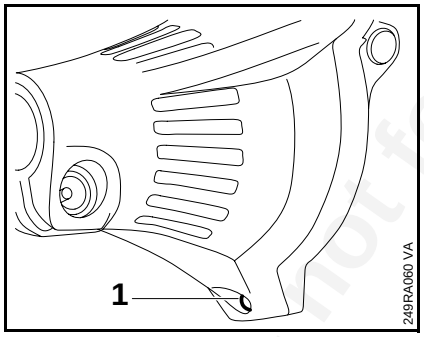


– Remove the engine – see 7.7.1.

- Remove retaining ring (1) at tool end.

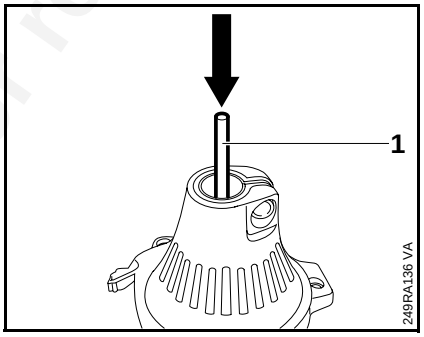


- Fit clutch shoes with lettering facing up.



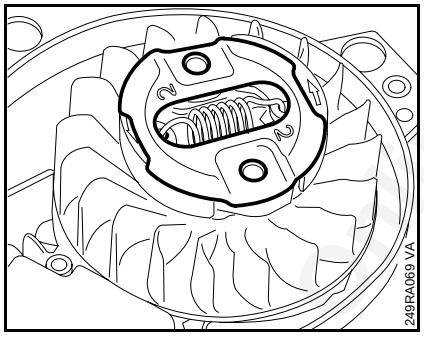
– Marry engine to tool.

- Tighten down screw (1) to 6 Nm.

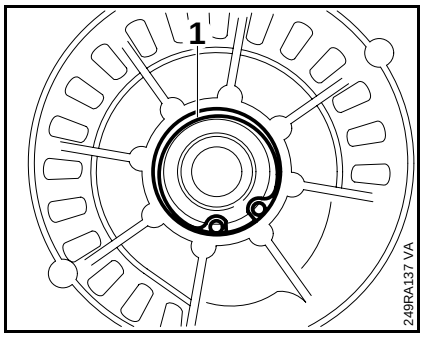


- Insert extension 4180 893 4400 in square hole and use bench press to push out clutch drum in direction of engine.

Reassemble in the reverse sequence.



- Fit cover plate with "2" facing up.

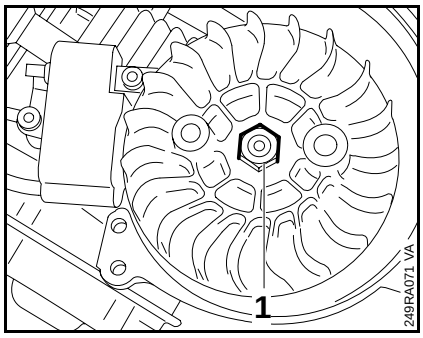


– Remove the clutch drum – see 7.7.3.

● Remove the retaining ring (1).

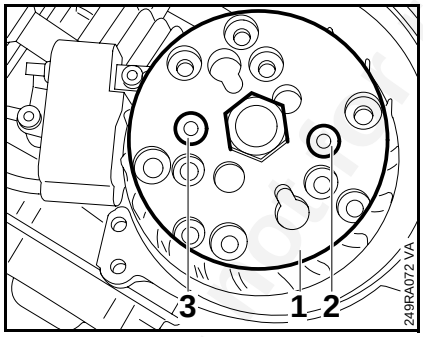
– Use bench press to press out the ball bearing in the direction of the engine.

Reassemble in the reverse sequence.

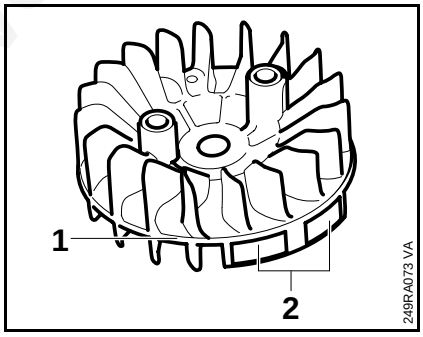


– Remove the clutch – see 7.7.1.

● Remove the hex. nut (1).



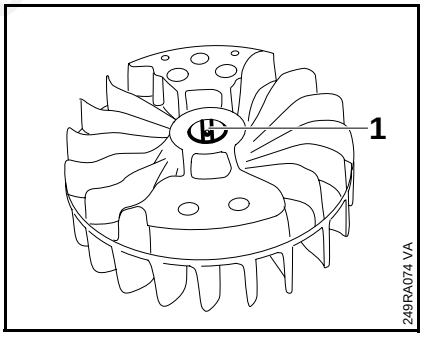
● Mount puller (1) 4119 890 4501 to the flywheel with M6 x 25 screws (2 and 3).



Flywheel (1) and magnet poles (2) must show no signs of cracks or other damage.
If this is the case, install a new flywheel.

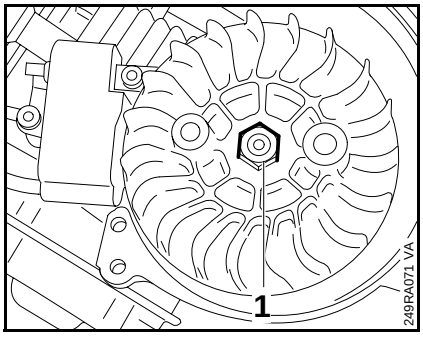
Installing the Flywheel:

Important:
Clean the stub of the crankshaft and the flywheel hub bore with a standard commercial, solvent-based degreasant containing no chlorinated or halogenated hydrocarbons – see 11.



● Fit the flywheel in position.

– Check that flywheel is properly seated.
Key (1) in flywheel must engage slot in crankshaft stub.



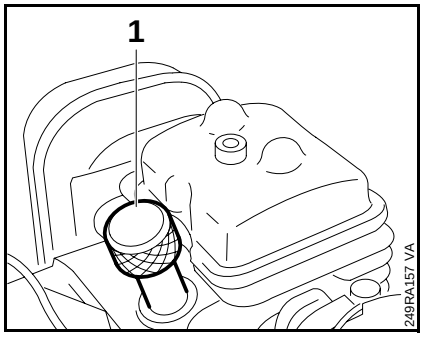
● Fit hex. nut (1) and torque down to 17 Nm.

– Install the clutch – see 7.7.2.

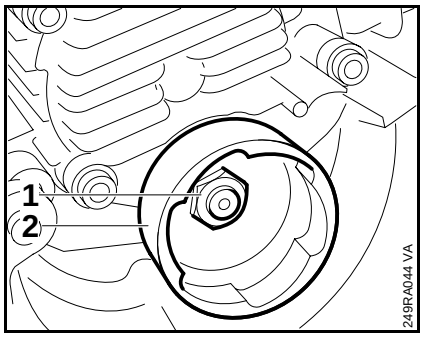
Note:
It is not necessary to disassemble the complete engine to replace leaking oil seals.

Starter side

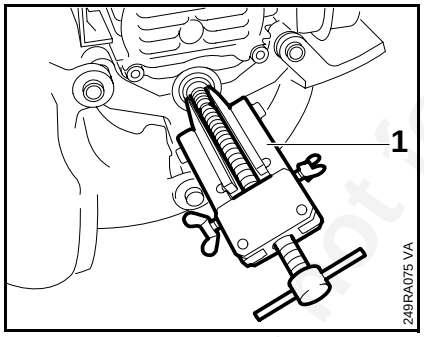
– Remove the rewind starter – see 5.2.



– Use combination wrench 4180 890 3400 to remove the spark plug.
Fit locking screw 4180 890 2700 (1). Rotate crankshaft counter-clockwise until the piston butts against the locking screw.



- Remove the hex. nut (1).
- Remove the starter cup (2).



- Apply puller 5910 890 4400 (1) with No. 3.1 jaws and clamp the arms.

– Pull out the oil seal.

Important:
Take special care not to damage the crankshaft stub.

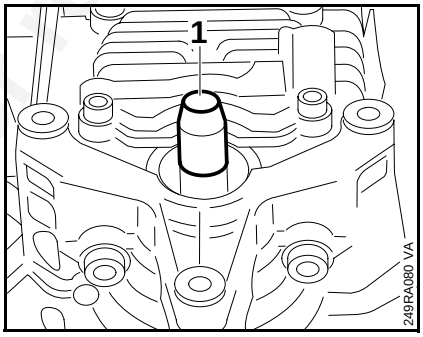
Installing oil seal at starter side

– Inspect crankshaft running face for scores.

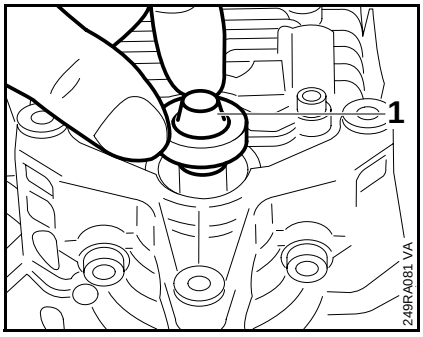
– Clean sealing face in crankcase.

– Lubricate sealing lips of oil seal with grease – see 11.

– Apply thin coating of sealant to outside diameter of oil seal – see 11.

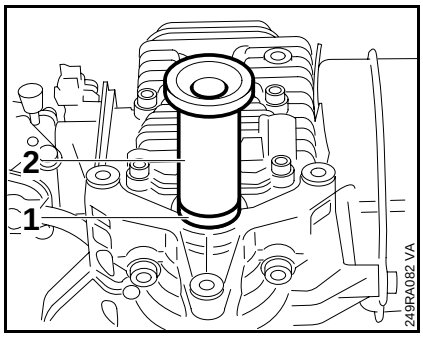


- Slip installing sleeve 4112 893 2400 (1) over the end of the crankshaft.



- Slip oil seal (1) over the installing sleeve and up against the crankcase.

Important:
Closed side of oil seal must face rewind starter.



- Press home the oil seal (1) with press sleeve 1115 893 4600 (2) so that it is flush with the crankcase.
- Remove the installing sleeve (2) and press sleeve (1).

– Fit the starter cup on the crankshaft.

– Tighten down hex. nut to 17 Nm.

– Remove the locking screw 4180 890 2700. Fit spark plug and tighten down to 9 Nm.

– Install the rewind starter – see 5.2.

– Install the shroud – see 5.7.

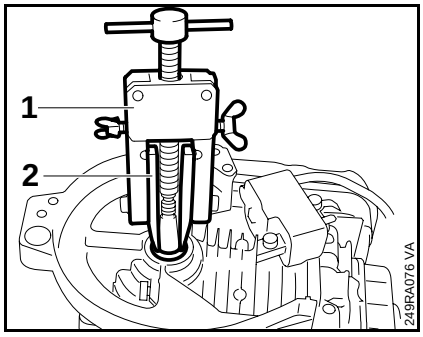
Flywheel side

Remove the rewind starter – see 5.2.

– Remove the shroud – see 5.7.

– Remove complete clutch – see 7.7.1.

– Remove the flywheel – see 7.8.



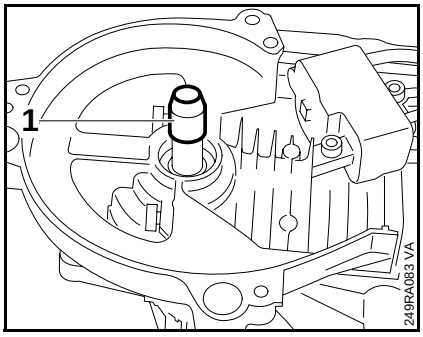
- Apply puller 4112 890 4502 (1) with No. 3.1 jaws (2) and clamp the arms.
- Pull out the oil seal.

Important:
Take special care not to damage the crankshaft stub.

Installing oil seal at flywheel side

– Inspect crankshaft running face for scores.

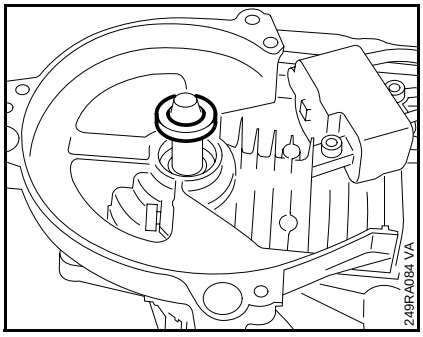
– Clean sealing face in crankcase.



- Slip installing sleeve 4112 893 2400 (1) over the end of the crankshaft.

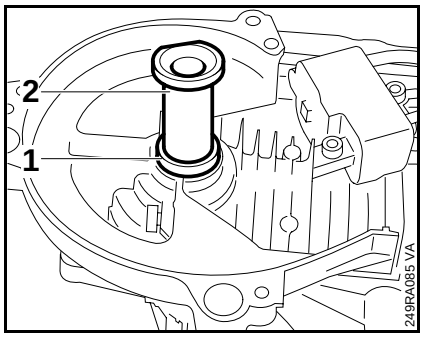
– Lubricate sealing lips of oil seal with grease – see 11.

- Apply thin coating of sealant to outside diameter of oil seal – see 11.



- Push on the oil seal as far as the crankcase.

Important:
Closed side of oil seal must face flywheel.



- Press home the oil seal (1) with press sleeve 4112 893 2401(2) so that it is flush with the crankcase.
- Remove the installing sleeve.

– Fit the flywheel – see 7.8.

– Install the clutch – see 7.7.2.

– Remove the locking screw 4180 890 2700.

– Fit spark plug and tighten down to 9 Nm.

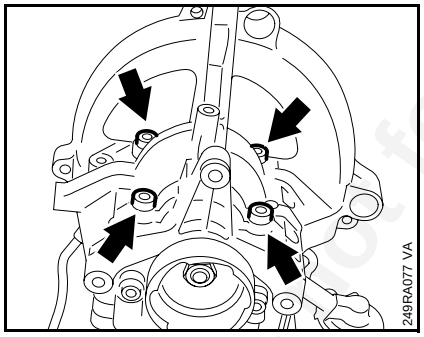
– Fit the shroud – see 5.7.

– Fit the rewind starter – see 5.2.

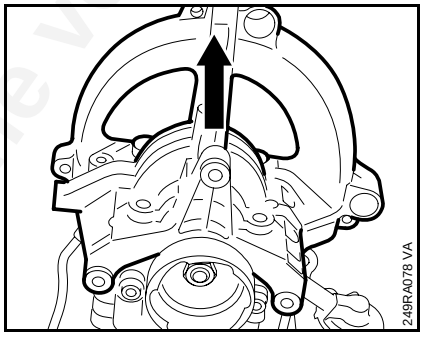
– Remove the tank – see 6.7.

– Remove the muffler – see 7.6.

– Remove the flywheel – see 7.8.



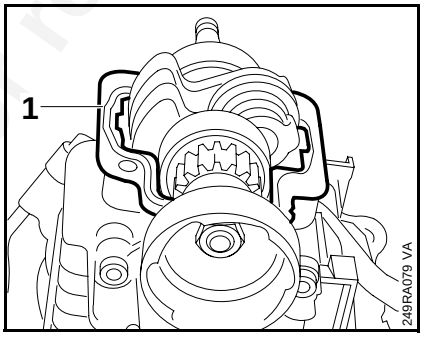
- Take out the screws (arrows).



- Lift away the lower half of the crankcase.

Warning:
Do not take the crankshaft out of the bearings because this will alter cam gear timing – see 7.5.

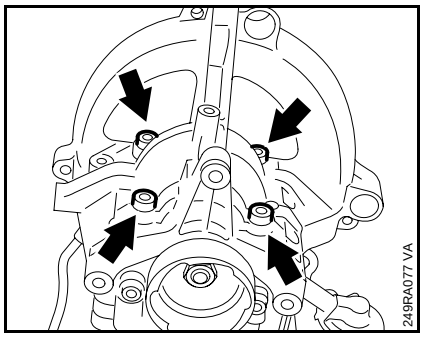
Install in the reverse sequence.



- Clean the sealing face (1) of the upper half of the crankcase and the oil seals.

– Clean the sealing face of the lower half of the crankcase.

– Check oil seals for leaks, damage and cracks.



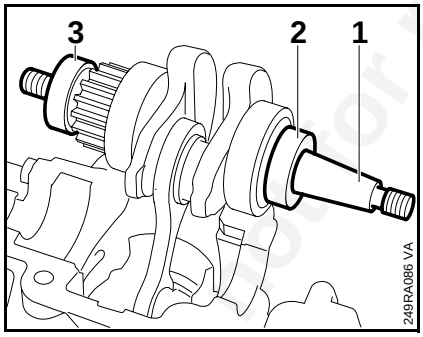
– Apply thin coating of sealant to gaskets faces – see 11.

● Tighten down screws (arrows) in crosswise pattern to 9 Nm.

Always check and, if necessary, repair the fuel system, carburetor, air filter and ignition system before looking for faults on the engine.

Troubleshooting chart – see 4.1.

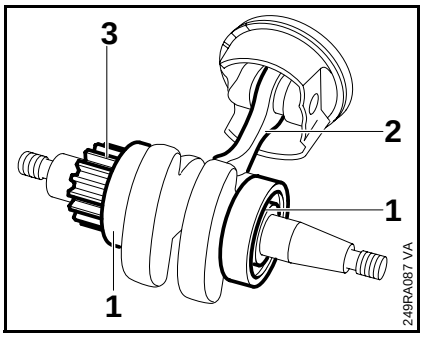
– Remove the lower half of the crankcase – see 7.9.2.



● Lift the crankshaft (1) and pull the piston out of the cylinder at the same time.

– Pull off the oil seals (2 and 3).

– Inspect cylinder running face fro signs of damage and serious scores. Install new cylinder if necessary – see 7.11.



● Examine ball bearings (1), connecting rod (2) and gear (3).

– If one of these parts is damaged, install a new crankshaft assembly.

– Coat piston and piston rings with oil.

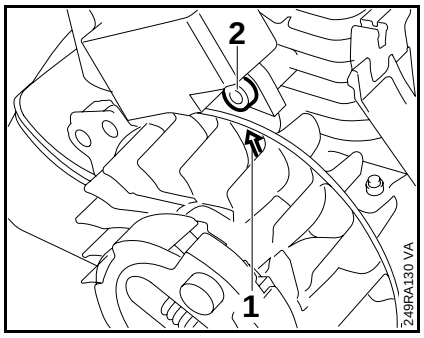
– Fit piston rings so that their gaps are offset 120 degrees.

– Use new oil seals.

– Lubricate sealing lips of oil seal with grease – see 11.

– Apply thin coating of sealant to outer diameter of oil seal – see 11.

– Fit oil seals over crankshaft with their open sides facing inwards.



– Carefully fit piston in the cylinder.

– Install the crankshaft with new oil seals.

– Fit lower half of crankcase – see 7.9.2.

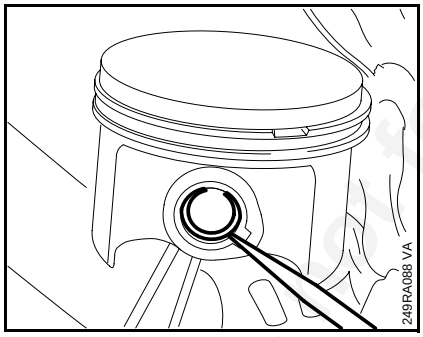
– Fit the flywheel – see 7.8.

● Rotate flywheel until mark (1) is in line with screw head (2).

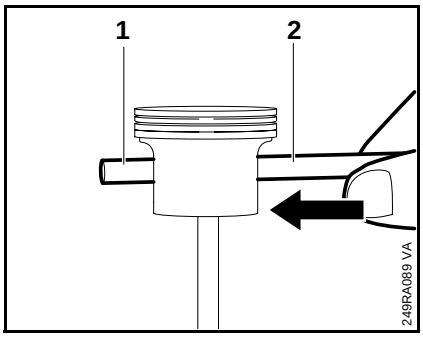
– Adjust valve timing – see 7.5.

– Remove the crankshaft – see 7.9.3.

Important:
Wear safety glasses when working with spring washers and snap rings.

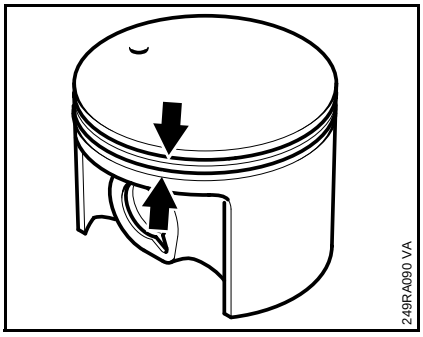


● Ease the hookless snap ring out of the groove.

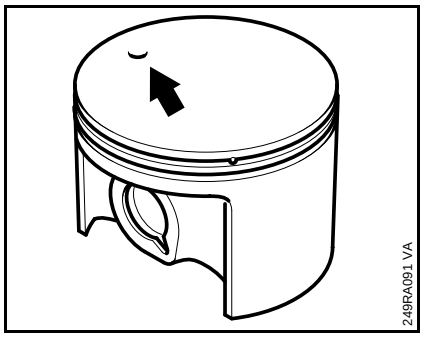


● Use the assembly drift (2) 1110 893 4700 to push the piston pin (1) out of the piston.

Note:
If the piston pin is stuck, tap the end of the drift lightly with a hammer if necessary. Hold the piston steady to ensure that no jolts are transmitted to the connecting rod.

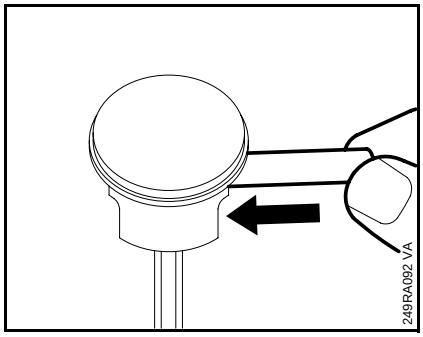


● Inspect piston rings and replace if necessary – see 7.9.5.

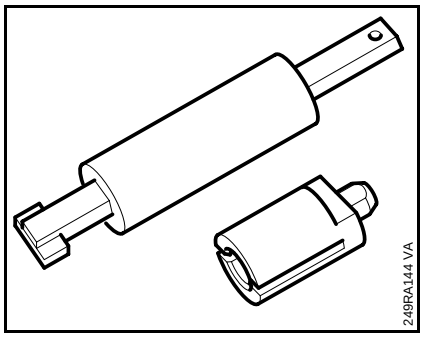


– Reassemble in the reverse sequence.

● Indentation (arrow) in piston crown faces the spark plug hole.

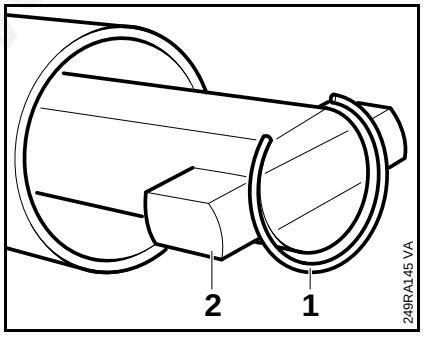


● Use the assembly drift 1114 893 4700 to push the piston pin through the piston and connecting rod.

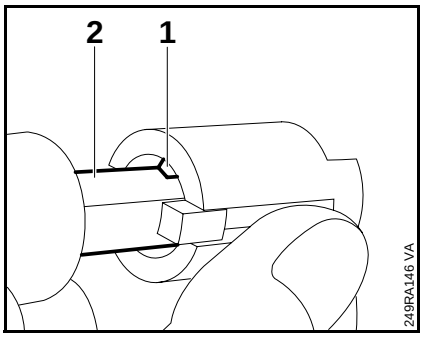


Note:
Use installing tool 5910 890 2206 to fit the snap ring – see 12.
If installing tool 5910 890 2208 is available, it can equipped with a new sleeve 5910 893 1703 and used for this operation.

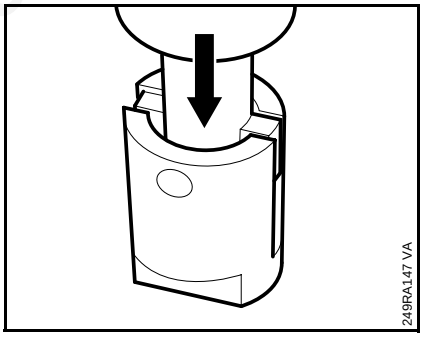
● Remove sleeve from the tool.



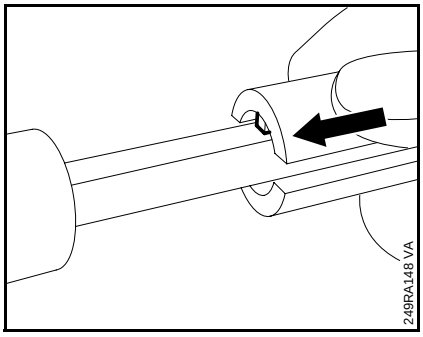
● Attach the snap ring (1) to the magnet (2) so that the snap ring gad is on the flat side of the tool's shank.



● Push the large slotted diameter of the sleeve over the magnet and snap ring. Position the sleeve so that the inner pin (1) points towards the flat face (2) of the tool's shank.

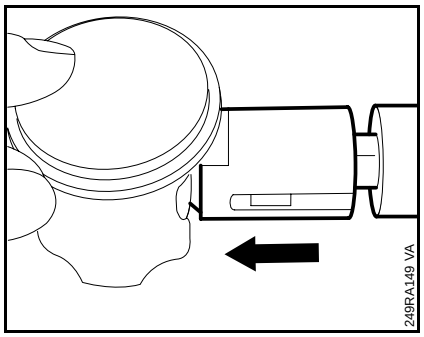


● Stand the installing tool, sleeve downward, on a flat surface (wooden board) and press vertically downwards until the sleeve butts against the tool's shoulder.

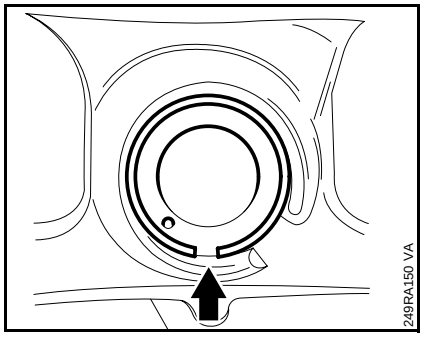


● Remove the sleeve and slip it onto the other end of the shank.

Note:
Inner pin must point towards flat face.



- Apply the installing tool to the piston boss, hold the piston steady, center the tool shank exactly and press home until the snap ring slips into the groove.

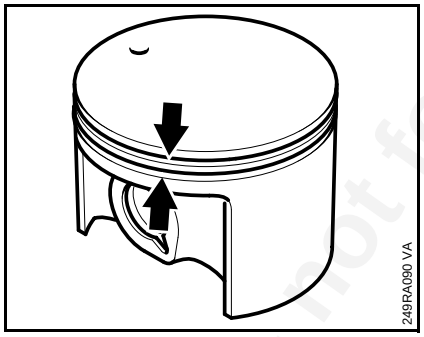


Note:
Fit the snap ring so that its gap is on the piston's vertical axis (it must point either up or down).

– Install the piston – see 7.9.3.

– Remove the piston – see 7.9.4.

– Remove rings from piston.



– Use a piece of old piston ring to scrape the grooves clean.

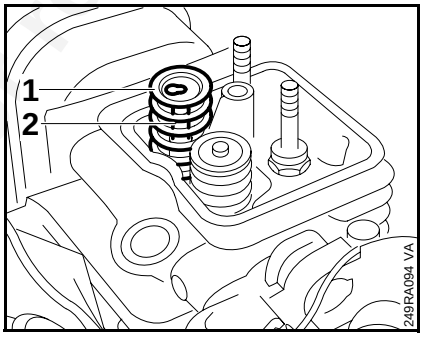
– Install new piston rings.

– Check that piston ring gaps are offset 120 degrees.

– Install the piston – see 7.9.4.

– Remover rocker arms/pushrods – see 7.3.

– Remove the crankshaft – see 7.9.3.

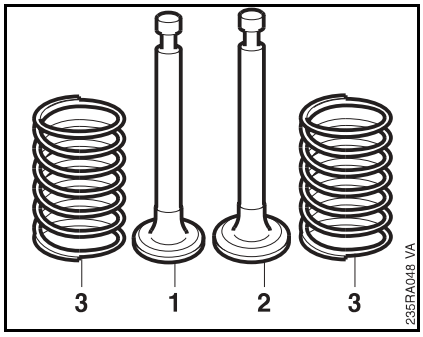


Caution:
Do not mix up the inlet and exhaust valves.

- Press valve spring retainer (1) down and move it sideways so that the valve stem is in the large hole.

- Let go of valve spring retainer (1) and remove it together with the valve spring (2).

– Take the valves out of the cylinder.



- Inspect seats on valve heads (1 and 2) and replace parts as necessary.

– Inspect valve seats in cylinder head and valve heads for any damage. Replace if necessary.

Valve spring retainer must engage properly in groove of valve stem.

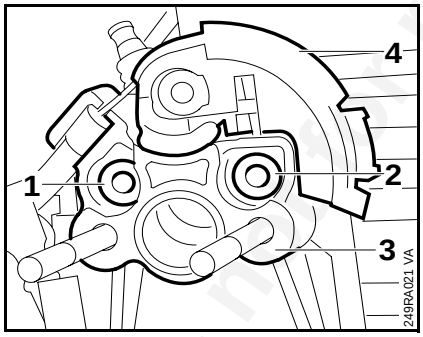
Reassemble in the reverse sequence.

– Remove the valves – see 7.10.

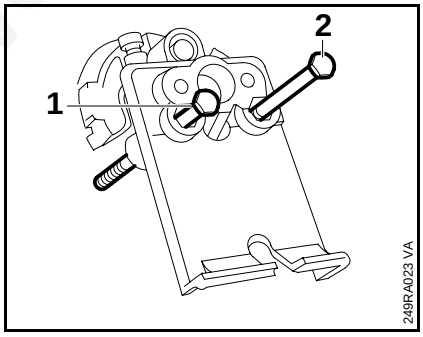
– Remove the cam gear – see 7.5.

– Remove the muffler – see 7.6.

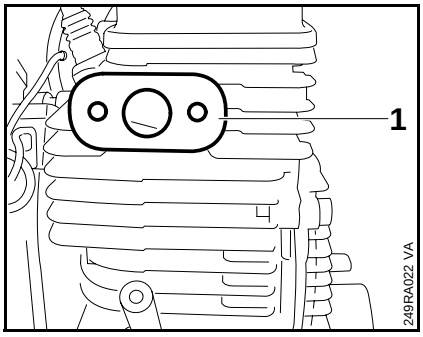
– Remove the carburetor – see 6.2.2.



- Take out the screws (1 and 2).
- Remove spacer flange (3) and tensioner for throttle cable (4).



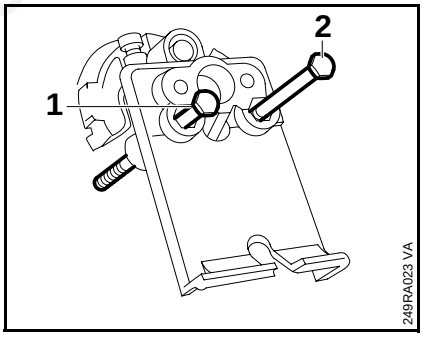
- Take screws (1 and 2) out of the spacer flange.



- Remove gasket (1) from the cylinder head.

Reassemble in the reverse sequence.

– Use a new gasket.

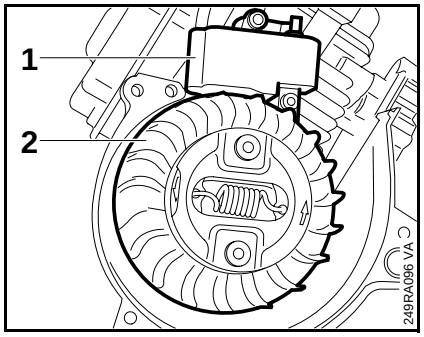


- Tighten down the screws (1 and 2) to 9 Nm.

Important:
Screw heads (1 and 2) must be completely recessed in spacer flange after installation.

Warning!
Exercise extreme caution when carrying out maintenance and repair work on the ignition system. The high voltages which occur can cause serious or even fatal accidents.

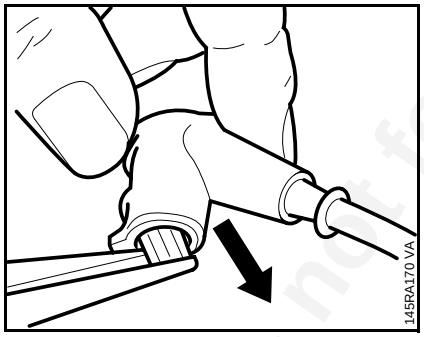
Troubleshooting on the ignition system should always begin at the spark plug – see 4.4.



Note:
The electronic (breakerless) ignition system basically consists of an ignition module (1) and flywheel (2).

– Remove the shroud – see 5.7.

Note:
The ignition lead is molded to the ignition module.



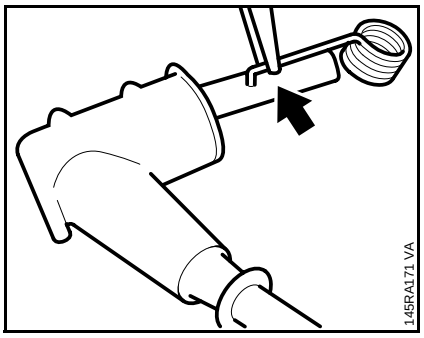
- Use suitable pliers to pull the leg spring out of the spark plug boot.

– Unhook the leg spring from the ignition lead.

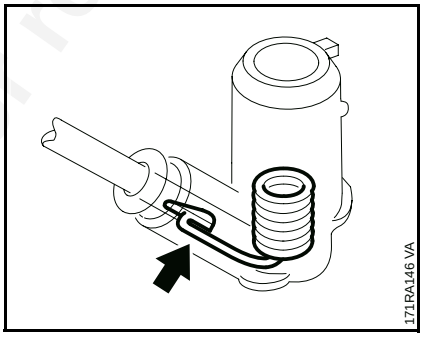
– Push the spark plug boot back a little in the direction of the ignition module.

– Take about 10 mm off the end of the ignition lead.

– Coat end of ignition lead with oil.

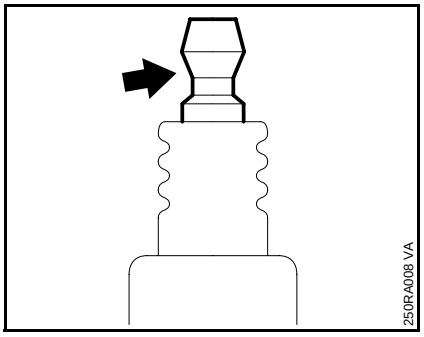


- Pinch the hook of the leg spring into the center of the lead, i.e. about 15 mm from the end of the lead.

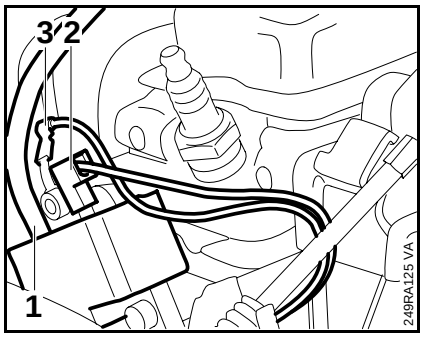


- Pull the lead back into the boot so that the leg spring locates properly inside it.

Reassemble in the reverse sequence.



- Check if spark plug has a detachable adapter nut (arrow). If so, make sure it is properly fitted and firmly tightened.



The ignition module accommodates all the components required to control ignition timing.

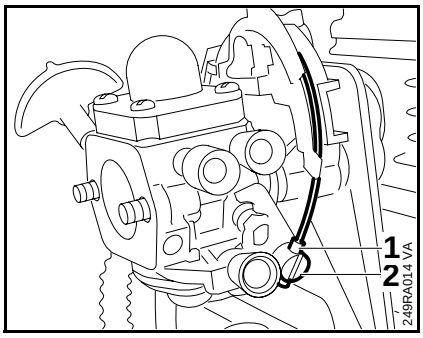
Three are three electrical connections on the coil body:

- High voltage output with ignition lead (1)
- Connector tag (2) for the short-circuit wire
- Connector tag (3) for the ground wire

Accurate testing of the ignition module is only possible with special test equipment.
For this reason it is only necessary to carry out a spark test in the workshop.
A new ignition module must be installed if no ignition spark is obtained (after checking that wiring and stop switch are in good condition).

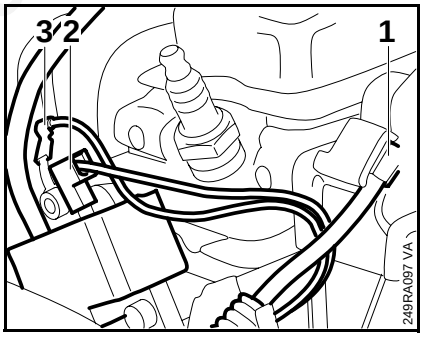
Ignition timing is **not adjustable**.

Since there is no mechanical wear in these systems, ignition timing cannot get out of adjustment. However, an internal fault in the circuit can alter the switching point in such a way that a spark test will still show the system to be in order although timing is outside the permissible tolerance. This will impair engine starting and running behavior.

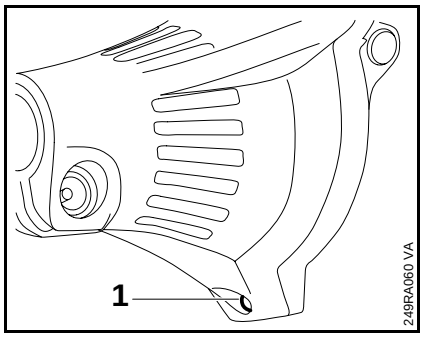


– Remove the shroud – see 5.7.

- Disconnect throttle cable nipple (1) from the slotted pin (2) on the throttle lever.

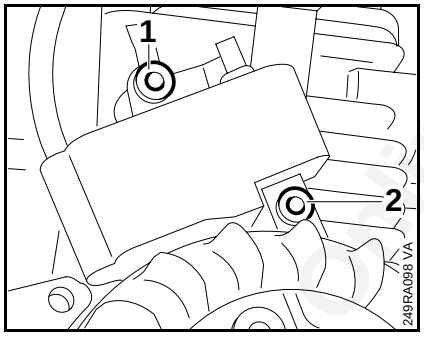


- Pry the cable (1) out of the spacer flange.
- Pull the short-circuit wire (2) and ground wire (3) off the ignition module.

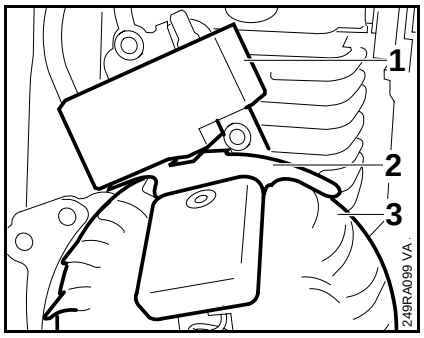


- Take out screw (1) on fan housing and lift away the engine.

Important:
Support the engine while removing the screw.



- Release and remove screw (1) with connector tag.
- Take out the screw (2) with washer.
- Remove the ignition module.

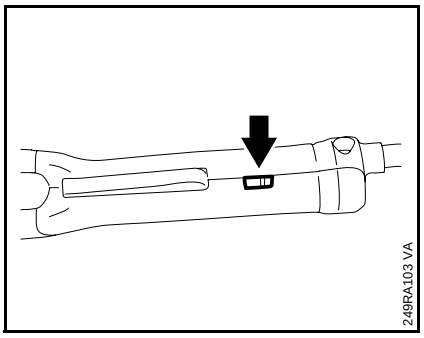


- Slide the setting gauge 4118 890 6401 (2) between the arms of the ignition module (1) and the flywheel (3).

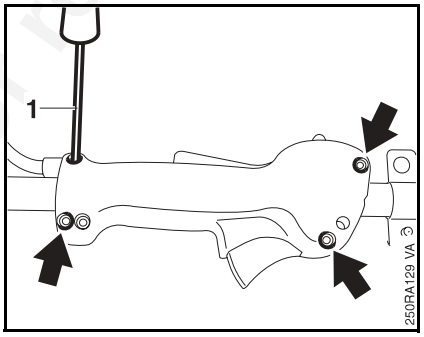
– Press the ignition module against the setting gauge.

– Tighten down screws to 4.5 Nm.

Reassemble all other parts in the reverse sequence.



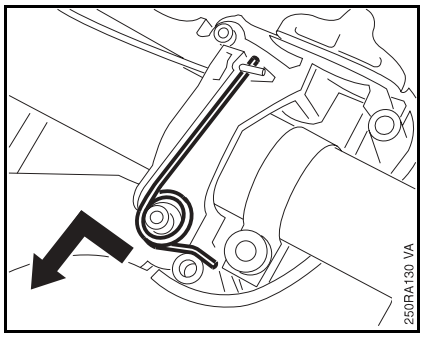
- Insert screwdriver in slot (arrow), press it down and push slide in direction of engine.



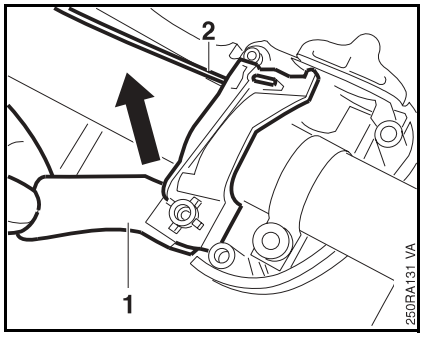
Warning!
To avoid the risk of electrocution, do not start the unit while the control handle is open.

- Take out the screws (arrows).

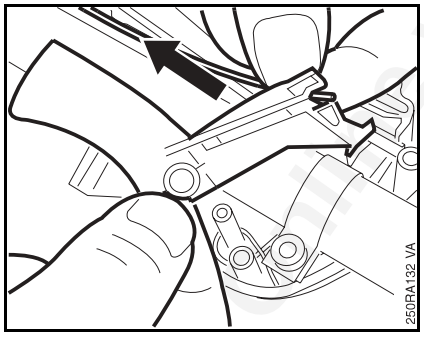
– Remove handle molding.



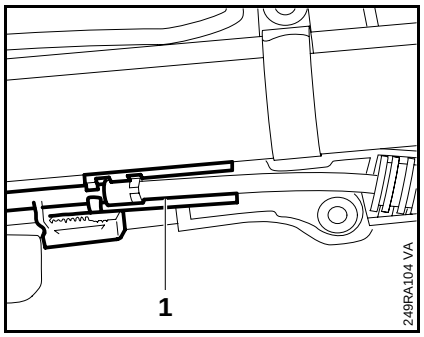
● Remove the torsion spring.



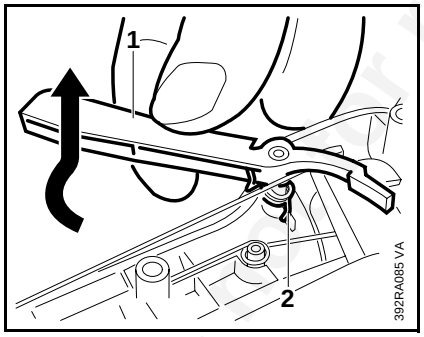
● Remove throttle trigger (1) with attached throttle cable (2) from the pivot.



● Unhook the throttle cable from the throttle trigger.

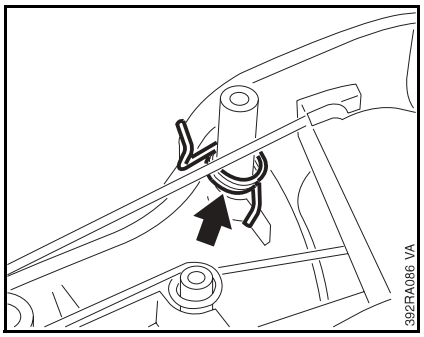


● Take tensioner out of guide and remove the throttle cable.



● Lift the interlock lever (1) a little and turn it to the side until the torsion spring (2) is relieved of tension.

– Pull the interlock lever off the pivot.



● Remove the torsion spring.

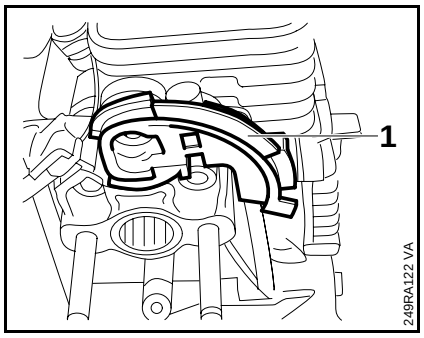
Reassemble in the reverse sequence.

– Make sure the throttle cable and protective tube are correctly positioned.

– Tighten down screws to 1.0 Nm.

– Open the throttle fully several times so that the slide automatically adjusts throttle cable tension.

9.2 Tensioner



– Remove the carburetor – see 6.2.2.

● Swing tensioner (1) vertically upwards and pull it off forwards.

Reassemble in the reverse sequence.

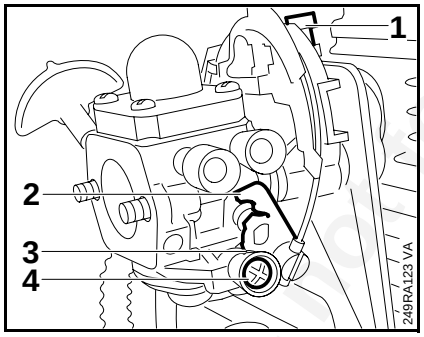
9.3 Adjusting Throttle Cable

Note:
Throttle lever must butt against the stop on the carburetor cover when the throttle trigger is squeezed as far as stop (full throttle), and butt against the idle speed screw (LA) when the throttle trigger is in the idle position.

Adjustment is effected by moving the tensioner.

– Remove the shroud – see 5.7.

– Adjust idle speed screw correctly.



Important:
Note adjustment range of the idle speed screw.

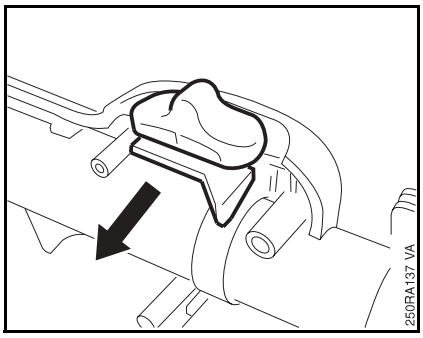
– To make adjustment, squeeze throttle trigger as far as stop (full throttle position).

● Turn adjusting screw (1) clockwise until throttle lever (2) butts against stop (3).

– Let go of throttle trigger (idle position). The throttle lever must butt against the idle speed screw (4).

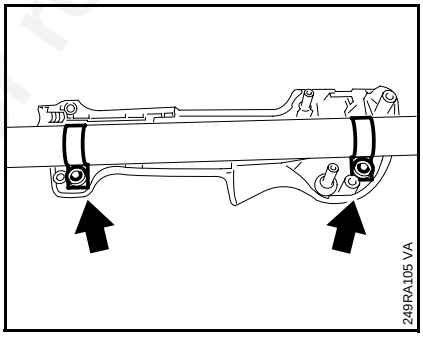
– Fit the shroud.

9.4 Slide Control



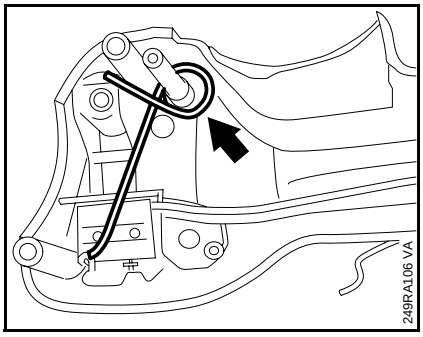
– Remove the interlock lever – see 9.1.

● Pull slide control off the handle molding.

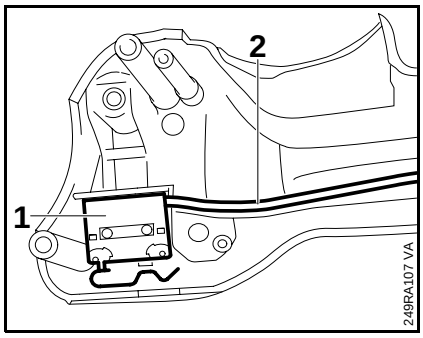


● Remove screws (arrows) from clamps.

– Remove the handle molding from the drive tube.



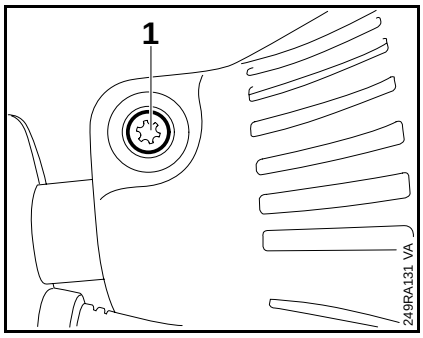
● Remove the torsion spring from the pivot.



● Take out the switch (1).

Reassemble in the reverse sequence.

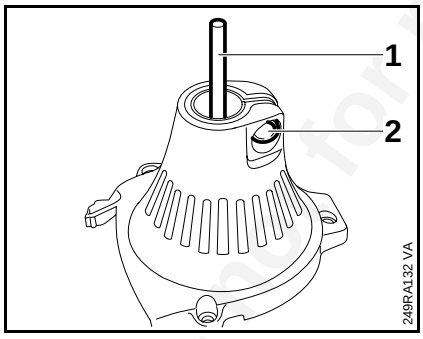
● Position wire for switch in guide (2).



– Remove the engine – see 7.7.1.

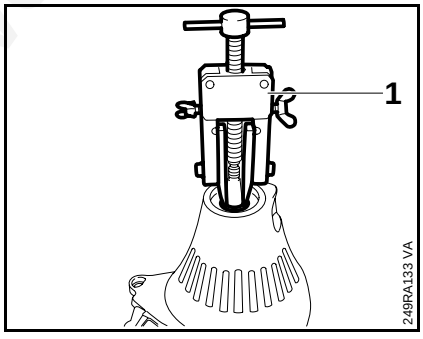
● Take screw (1) out of fan housing.

– Remove the fan housing.

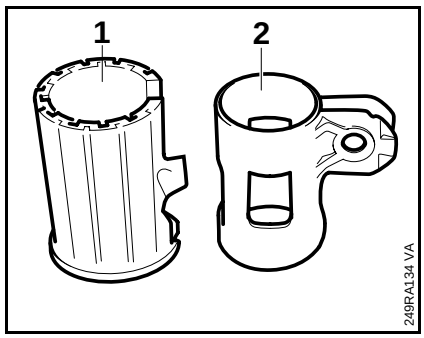


● Remove the sleeves (2) together with rubber mounting.

● Insert extension 4180 893 4400 (2) in square hole in clutch drum.



● Apply puller 5910 890 4400 (1) with No. 2 jaws and clamp the arms.



Note:
Jaws must engage cutouts in the clamp (2).

● Pull clamp (2) with rubber element (1) out of fan housing.

Note:
Coat rubber element and rubber mounting of sleeves with press fluid – see 11.

– Push AV element into clamp first, then press it into the fan housing.

Note:
AV element with clamp is recessed about 2 mm in the fan housing. It is therefore necessary to use press sleeve 4119 893 2400 for this operation.

– Reassemble all other parts in the reverse sequence.

No.	Part Name	Part No.	Application
1	Lubricating grease (370 g tube)	0781 120 1111	Oil seals
2	Press fluid	0781 957 9000	Rubber elements of AV system
3	STIHL special lubricant	0781 417 1315	Bearing bore in rope rotor, rewind spring in rope rotor
4	Dirko sealant (100 g tube)	0783 830 2120	Crankcase sealing faces
5	Standard commercial, solvent-based degreasant containing no chlorinated or halogenated hydrocarbons		Cleaning crankshaft stub

No.	Part Name	Part No.	Application
1	Clamp	5910 890 8800	Holder for item 2
2	Compression tester	5910 850 2000	Testing valves and piston rings for leaks
3	Locking screw	4180 890 2700	Blocking crankshaft
4	Sleeve	4180 893 4400	Removing/installing clutch drum on press
5	Press arbor	4119 893 2400	Removing/installing clutch drum bearing
6	Installing tool	5910 890 2206	Snap ring on piston pin
7	Installing tool	5910 890 2208	Snap ring on piston pin
8	- with sleeve	5910 893 1703	
9	Carburetor and crankcase tester	1106 850 2905	Testing crankcase and carburetor for leaks
10	Vacuum pump	0000 850 3501	Testing crankcase for leaks
11	Feeler gauge	4180 893 6400	Adjusting valve clearance
12	Puller	4119 890 4501	Removing fanwheel
13	Puller	4112 890 4502	Universal puller
	- Jaws (No. 2)		Removing AV element
	- Jaws (No. 3.1)		Removing oil seals
14	Installing sleeve	4112 893 2400	Installing oil seal
15	Press sleeve	4112 893 2401	Installing oil seals at starter side
16	Press sleeve	1115 893 4600	Installing oil seal at clutch side
17	Wrench, 13mm	5910 893 5608	Removing starter cup / fanwheel
18	Combination wrench	4180 890 3400	Spark plug
19	Assembly drift	1108 893 4700	Removing piston pin
20	Assembly drift	1114 893 4700	Installing piston pin
21	Setting gauge	4118 890 6401	Setting air gap for ignition
22	Screwdriver	5910 890 2301	Screws
23	Test line	1110 141 8600	Carburetor leakage test
24	Nipple	0000 855 9200	Carburetor leakage test
25	Extension	4180 893 4400	Removing AV element, clutch drum
26	Puller	5910 890 4501	Removing limiter cap