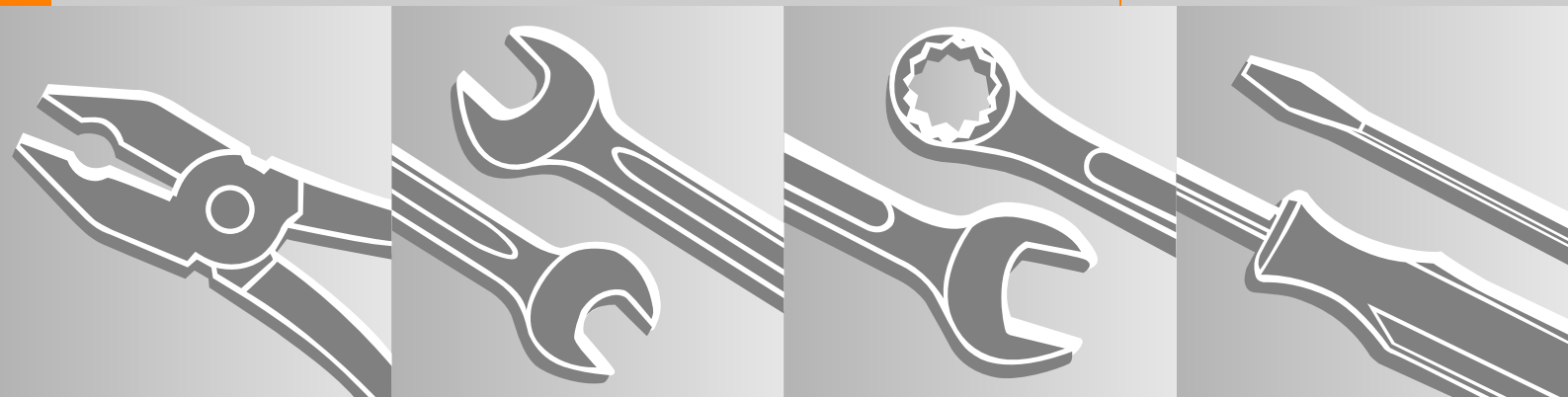


STIHL Components 4137

FC, FH, FS, HL, KM, KW

2004-06



FC 75, FC 85
FH 75
FS 75, FS 80, FS 85
HL 75
KM 85
KW 85
SP 81

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1. Introduction

This service manual contains detailed descriptions of all typical repair and servicing procedures for models FC 75, 85, FH 75, FS 75, 80, 85, HL 75, KM 85 and KW 85, which are based on the series 4137 powerhead.

If there is no specific reference to individual machines, the procedure is the same for all machines. The illustrations may differ depending on the machine, but the methods used and the sequence of operations are identical.

You will find detailed descriptions of procedures for servicing and repairing engine components and associated CombiTools in the service manual for the "Series 4137 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 of any replacement parts.

A fault on the machine may have several causes. To help locate the fault, consult the chapter on "Troubleshooting" in this manual and the "STIHL Service Training System" for all assemblies.

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 chapter "Special Servicing Tools" of this manual. Use the part numbers to identify the tools in the "STIHL Special Tools" manual. The manual lists all special servicing tools currently available from STIHL.

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

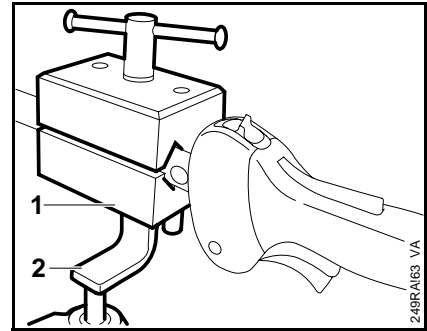
In the descriptions:

- = 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
- 📖 4.2 Reference to another chapter, i.e. chapter 4.2 in this example.


Service manuals and technical information bulletins are intended exclusively for the use of properly equipped repair shops. 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 893 3100 with the aid of clamping fixture (1) 5910 890 8800.

The powerhead can then be swivelled to the best position for the ongoing repair.

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.

2. Safety Precautions

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 instruction 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 bring any fire, flame, spark 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. Specifications

3.1 Fuel System

| | |
|--|---|
| Carburetor: | Diaphragm carburetor |
| Carburetor leakage test at gauge pressure: | 80 kPa (0.8 bar) |
| Fuel mixture: | Regular brand-name gasoline with min. 90 RON and STIHL 50:1 two-stroke engine oil; see instruction manual for further details |
| Rated idle speed: | 2,800 rpm |
| Rated cut-off speed: | 10,500 rpm |
| Operation of tank vent: | |
| - at gauge pressure: | 50 kPa (0.5 bar) |
| - under vacuum: | 20 kPa (0.2 bar) |

3.2 Tightening Torques

DG and P (Plastoform) screws are used in polymer and light metal 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 | | Remarks |
|----------|-------------|--|--------|------|--------------|
| | | | lbf.ft | Nm | |
| Screw | IS-P4x16 | Control handle/handle molding (outer/inner) | 0.75 | 1.0 | 1)3)4)5)6)8) |
| Screw | IS-M5x12 | Control handle/clamp/drive tube | 3.6 | 5.0 | 1)3)4)5)6)8) |
| Screw | IS-M5x30 | Control handle/handlebar/locknut with washer (bike handle) | 1.5 | 2.0 | 2)7) |
| Screw | IS-P4x16 | Control handle/handle molding (outer/inner) (bike handle) | 0.75 | 1.0 | 2)7) |
| Screw | IS-P4x16 | Control handle/handle molding (outer/inner) (loop handled machine) | 0.75 | 1.0 | 2)7) |
| Screw | IS-M5x12 | Control handle/clamp/right-hand screw (loop handled machine) | 3.6 | 5.0 | 2)7) |
| Screw | IS-DG5x16 | Loop handle | 1.8 | 2.5 | 1)3)8) |
| Screw | IS-M6x50 | Loop handle/drive tube/nut | 2.6 | 3.5 | 1)3)8) |
| Mutter | M5 | Filter housing/carburetor/flange/screw | 3.0 | 4.0 | |
| Screw | IS-B4.2x9.5 | Spark arresting screen/muffler | 0.75 | 1.0 | |
| Screw | IS-M5x84 | Gearbox housing, left/right | 1.1 | 1.5 | 6) |
| Locknut | M5 | Gearbox housing, left/right (locknut) | 4.4 | 6.0 | 6) |
| Screw | IS-M6x20 | Gearbox housing/drive tube | 7.5 | 10.0 | 4)6) |
| Screw | IS-M5x25 | Housing, fan side/starter side | 7.0 | 9.5 | 1)2)3)5)7)8) |
| Screw | IS-DG5x24 | Gearbox housing/drive tube | 6.6 | 9.0 | 2)7) |
| Screw | IS-M5x10 | Quadrant/gear housing | 5.9 | 8.0 | 6) |
| Screw | IS-M4x16 | Guard plate/gearbox cover | 2.6 | 3.5 | 6) |
| Screw | IS-M5x16 | Shroud/fan housing | 2.6 | 3.5 | |
| Screw | IS-M5x16 | Shroud/starter cover/crankcase | 2.6 | 3.5 | |
| Screw | IS-M5x20 | AV sleeve (clamp screw) | 4.0 | 5.5 | |

| Fastener | Thread size | For component | Torque | | Remarks |
|-------------|-------------|---|--------|------|----------|
| | | | lbf.ft | Nm | |
| Screw | IS-DG5x12 | AV sleeve/drive tube, location | 0.37 | 0.5 | |
| Screw | IS-DG5x60 | Retainer/deflector/drive tub | 1.5 | 2.0 | 8) |
| Screw | IS-M6x35 | Clamp/clamp block/clamp (bike handle) | 3.3 | 4.5 | 2)7) |
| Tommy screw | M6x30 | Coupling sleeve/tommy screw (version with split boom) | 4.4 | 6.0 | 2)7) |
| Screw | IS-M6x25 | Coupling sleeve/clamp nut (version with split boom) | 6.6 | 9 | 2)7) |
| | M8 | Clutch carrier/flywheel/crankshaft | 19.2 | 26.0 | |
| Screw | IS-M5x16 | Fan housing/crankcase | 5.9 | 8.0 | |
| Screw | IS-M6x25 | Clamp/loop handle (loop handled machine) | 3.3 | 4.5 | 2)4)6)7) |
| Nut | M5 | DS270 mm blade/screw | 7.0 | 9.5 | 6) |
| | M8 | Carrier | 10.3 | 14.0 | |
| Collar nut | P3.5x9.0 | Detent spring/slide control/control handle | 1.5 | 1.1 | 2)7) |
| Screw | IS-M5x22 | Clamp/drive tube/harness adjustment (version with split boom) | 2.2 | 3.0 | 2)7) |
| Screw | IS-P5.5x12 | Rope rotor/starter cover | 2.6 | 3.5 | |
| Screw | IS-5x33 | Clamp/deflector | 3.3 | 4.5 | 1) |
| Screw | IS-5x16 | Muffler/crankcase | 7.0 | 9.5 | |
| Screw | IS-5x16 | Muffler/cylinder | 8.5 | 11.5 | |
| Screw | IS-M6x14 | Clamp/drive tube/harness adjustment | 3.3 | 4.5 | 2)5)7) |
| Screw | IS-M5x18 | Clamp/bearing housing/locknut | 4.8 | 6.5 | 1) |
| Screw | IS-M5x16 | Starter cover/crankcase | 4.0 | 5.5 | |
| Screw | IS-M5x22 | Carrying ring/clamp | 2.2 | 3.0 | 4)6) |
| Screw | IS-M5x25 | Spacer flange/cylinder (with washer) | 4.0 | 5.5 | |
| Screw | IS-DG5x24 | Cylinder/crankcase | 7.0 | 9.5 | |
| Spark plug | M14x1.25 | Spark plug | 15.0 | 20.0 | |
| Screw | IS-M4x20 | Ignition module/cylinder (with washer) | 3.3 | 4.5 | |
| Screw | IS-M5x25 | Spacer flange/cylinder (with washer) | 4.0 | 5.5 | |

Remarks:

- 1) FS 75
 - 2) FS 80, 85
 - 3) FC 75
 - 4) HL 75
 - 5) KW 85
 - 6) FH 75
 - 7) KM 85
 - 8) FC 85
-

Use the following procedure when refitting a DG or P 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.

Power screwdriver settings for polymer:

| | |
|--------------------|--------------|
| Plastoform screws: | max. 600 rpm |
| DG screws: | max. 500 rpm |

Important:

Do not mix up screws with and without binding head

4. Troubleshooting

4.1 Clutch

| Condition | Cause | Remedy |
|--|---------------------------------------|--|
| Tool stops at full throttle under load | Clutch shoes badly worn | Install new clutch shoes or a new clutch |
| | Clutch drum badly worn | Replace clutch drum |
| Tool runs at idle speed | Idle speed too high | Readjust idle speed screw (counterclockwise) |
| | Clutch springs stretched or fatigued | Fit new clutch springs |
| | Clutch spring hooks broken | Fit new clutch springs |
| Loud noises | Clutch springs stretched or fatigued | Replace all clutch springs |
| | Clutch shoe retainer (carrier) broken | Fit new retainer (carrier) or clutch |
| | Clutch shoes and carrier worn | Install a new clutch |
| | Needle cage damaged | Install a new needle cage |

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 install new spring |
| 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) | Coat rewind spring with a standard solvent-based degreasant (containing no chlorinated or halogenated hydrocarbons). Then pull rope carefully several times until normal action is restored |

4.3 Fuel System

| Condition | Cause | Remedy |
|---|--|--|
| Engine stalls at idle speed | dle jet bores or ports blocked | Clean jet bores and ports and blow clear with compressed air |
| | Idle jet too rich or too lean | Reset low speed screw (L) correctly |
| | Setting of idle speed screw incorrect – throttle shutter completely closed | Reset idle speed screw (LA) correctly |
| Engine speed drops quickly under load – low power | Air filter plugged | Clean the air filter or replace if necessary |
| | Tank vent faulty | Clean the tank vent of replace 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 the bores and ports |
| | Fuel pickup body dirty | Install new pickup body |
| | Fuel strainer dirty | Fit new fuel strainer |
| | Setting of high speed screw (H) too rich | Reset high speed screw (H) correctly |
| | Throttle shutter not opened fully | Check linkage |
| Engine will not idle – idle speed too high | Throttle shutter opened too wide by idle speed screw | Reset idle speed screw LA correctly |

| Condition | Cause | Remedy |
|----------------------------------|---|---|
| Poor acceleration | Idle jet too lean | Turn low speed screw (L) counter-clockwise (richer), no further than stop |
| | Main jet too lean | Turn high speed screw (H) counter-clockwise (richer), no further than stop |
| | Inlet control lever too low (relative to correct installed position) | Set inlet control lever flush with top of carburetor body |
| | Inlet needle sticking to valve seat | Remove inlet needle, clean and refit |
| | Connecting bore to atmosphere blocked | Clean the bore |
| | Diaphragm gasket leaking | Fit new diaphragm gasket |
| | Metering diaphragm damaged or shrunk | Fit new metering diaphragm |
| 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 diaphragm is deformed and presses constantly against inlet control lever | Fit new metering diaphragm |
| | Inlet control lever too low (relative to correct installed position) | Fit new inlet control lever |

4.4 Engine

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

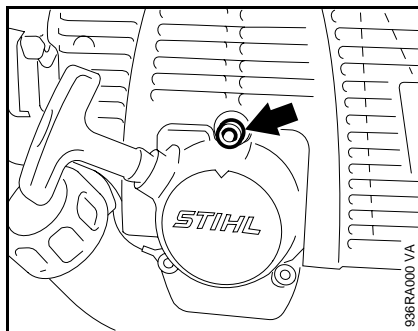
- Air filter
- Fuel system
- Carburetor
- Ignition system¹⁾

| Condition | Cause | Remedy |
|--|---|--|
| Engine does not start easily, stalls at idle speed, but operates normally at full throttle | Oil seals in crankcase faulty | Install new oil seals ¹⁾ |
| | Crankcase leaking / damaged (cracks) | Seal / replace the crankcase ¹⁾ |
| | Muffler leaking | Seal / replace the muffler |
| Engine does not deliver full power or runs erratically | Piston rings worn or broken | Install new piston rings ¹⁾ |
| | Muffler / spark arresting screen carbonized | Clean muffler (inlet and exhaust openings), replace spark arresting screen |
| | Air filter element dirty | Fit new air filter element |
| | Fuel / impulse line kinked or cracked | Fit new lines or position without kinks |
| 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 |

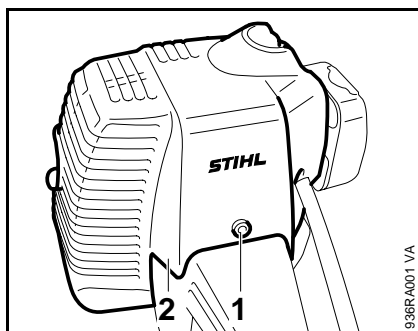
¹⁾ see "Series 4137 Powerhead" service manual"

5. Engine

5.1 Shroud

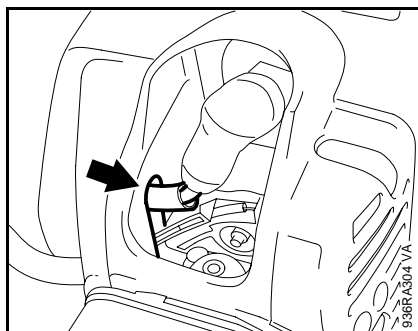


- Remove the screw (arrow) from the starter.



- Remove the screw (1) from the fan housing.
- Remove the shroud (2).

Install in the reverse sequence.



- Make sure the gaskets on either side of the cylinder, and the ignition lead (arrow), are located in the guides in the shroud.

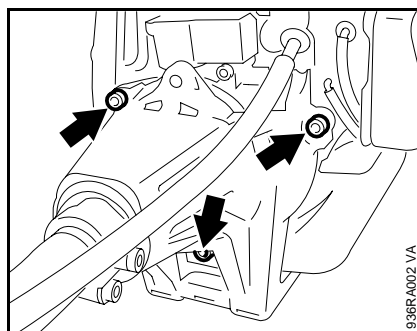
5.2 Clutch

5.2.1 Removing and Installing

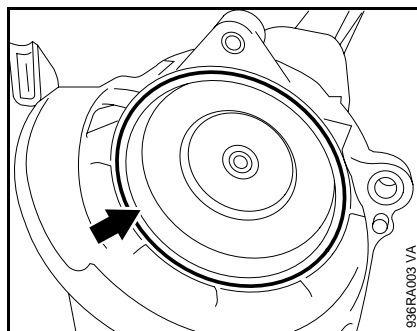
Troubleshooting chart, 4.1.

Removing

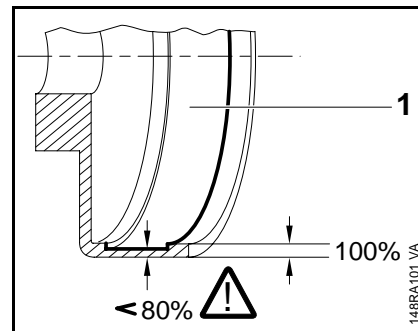
- Remove the shroud, 5.1



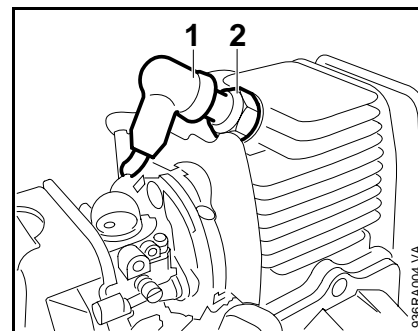
- Take out the screws (arrows).
- Remove the engine from the fan housing and put it to one side.



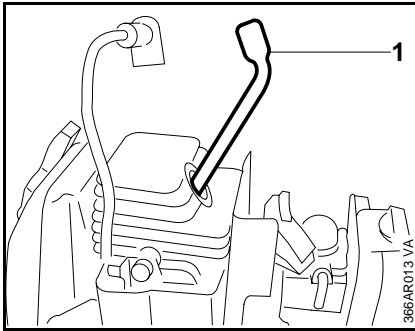
- Inspect the clutch drum. There should be no scores or signs of excessive wear.



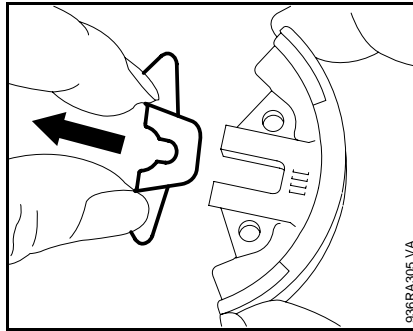
- If there are noticeable wear marks on the inside diameter of the clutch drum (1), check its wall thickness. If it is less than about 80% of the original thickness, fit a new clutch drum, 5.2.2



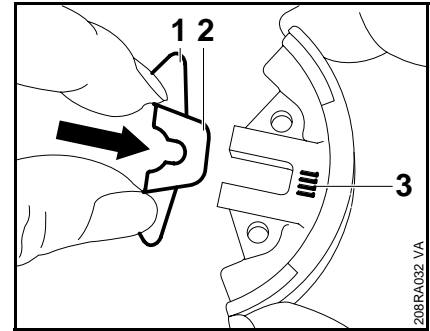
- Pull off the spark plug boot (1).
- Unscrew the spark plug (2).



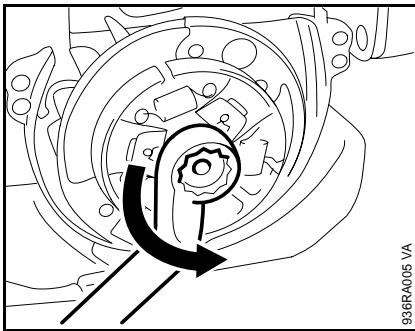
- Push the locking strip (1) 0000 893 5903 into the cylinder.



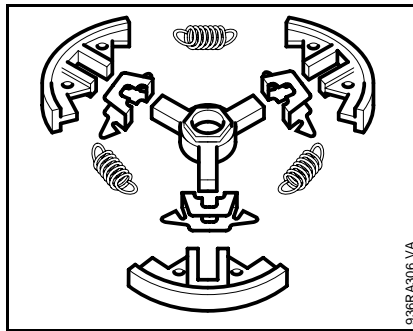
- Pull the clutch shoes off the carrier.
- Pull the retainers off the clutch shoes.



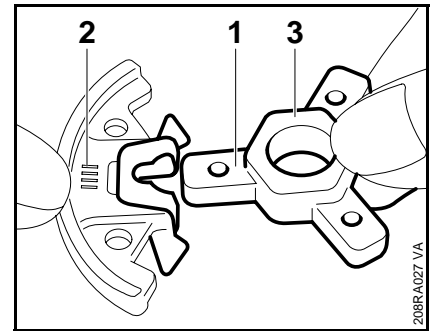
- Fit the retainers (1) on the clutch shoes so that the narrow side (2) is on the same side as the number (3).



- Unscrew the clutch from the crankshaft counterclockwise.



- Clean all parts, 12.
- Replace any damaged parts.

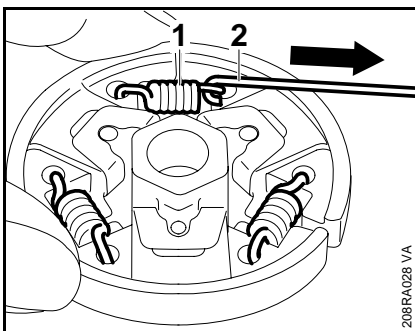


- Push the clutch shoes over the arms (1) of the carrier so that the number (2) is on the same side as the raised hexagon (3).

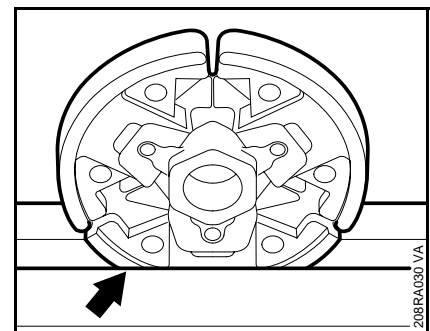
Installing

Recommendation:

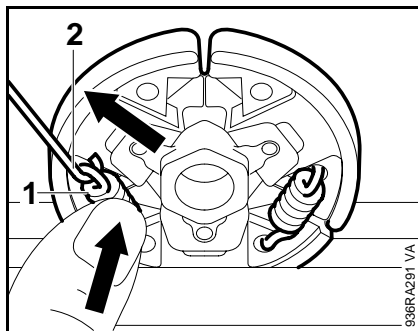
- If possible, always replace the clutch as a complete assembly.



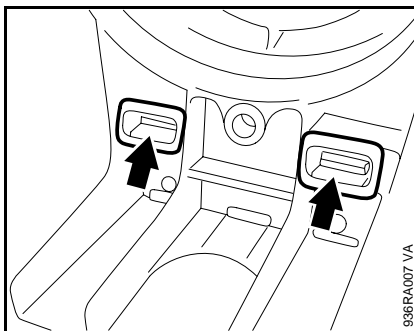
- Use hook (2) 5910 890 2800 to remove the clutch springs (1).



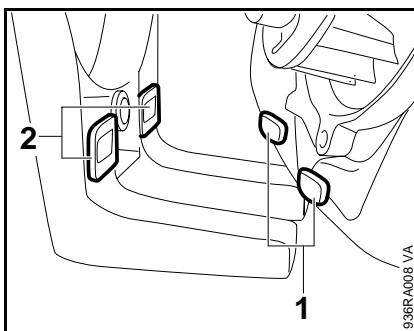
- Clamp the clutch in a vise with protective jaws.



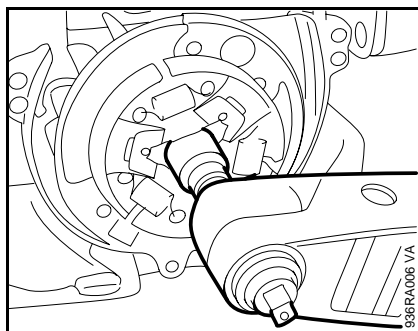
- Attach one end of each spring (1) to the clutch shoes.
- Use the hook (2) 5910 890 2800 to attach other ends of springs and press them firmly into the clutch shoes.



- Check that the plugs are in position in the fan housing, fit them if necessary.

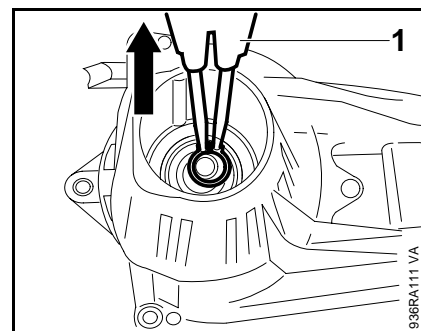


- Position the engine against the fan housing, making sure the lugs (1) engage the plugs (2).
- Fit fan housing mounting screws and tighten them down firmly, 3.2
- Remove the locking strip from the cylinder.
- Install the spark plug and tighten it down firmly, 3.2
- Check if spark plug has a detachable adapter nut. If so, make sure it is properly fitted and firmly tightened.
- Fit boot on the spark plug.
- Fit the shroud, 5.1

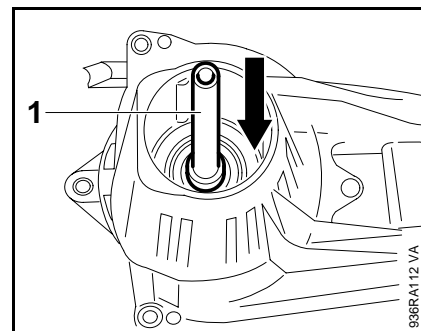


- Screw the clutch into position (lower hexagon facing outwards) and tighten it down firmly, 3.2

- Remove the engine, 5.2.1
- Remove the rubber element (AV system) from the fan housing, 7.1

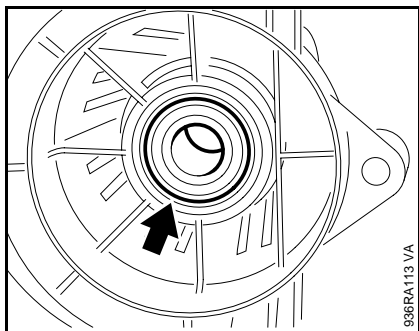


- Use pliers (1) 0816 610 1495 to remove the circlip from the clutch drum's output stub.



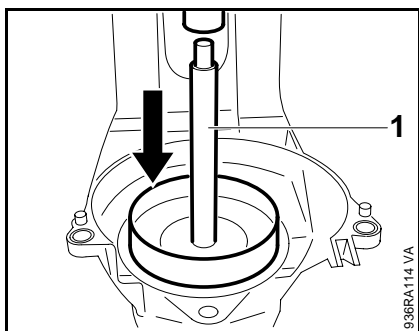
- Use drift (1) 4180 893 4400 to press the clutch drum out of the ball bearing.

5.3 Muffler/Spark Arresting Screen



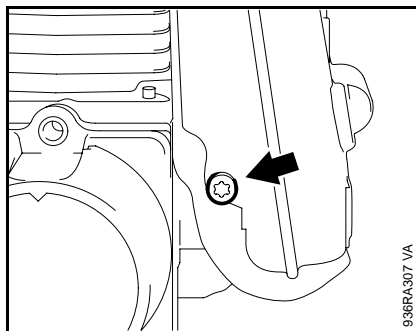
- Check the ball bearing (arrow).

If the ball bearing is faulty, the whole fan housing has to be replaced.



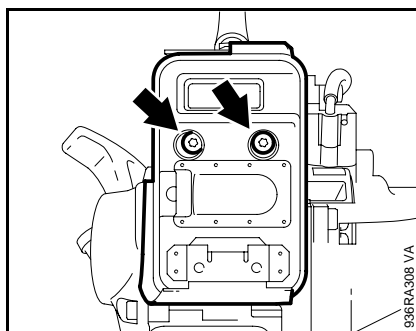
- Use drift (1) 1108 893 4700 to press home the clutch drum as far as stop.

Assemble all other parts in the reverse sequence.

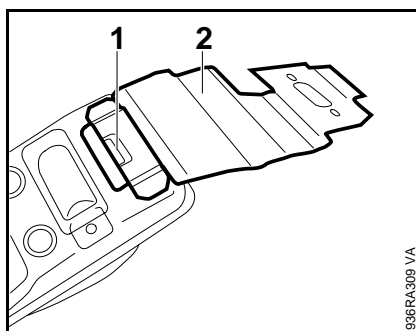


Muffler

- Remove the shroud, 5.1
- Take out the screw (arrow) at the side of the muffler.



- Take out the inner screws (arrows).
- Remove the muffler with gasket.

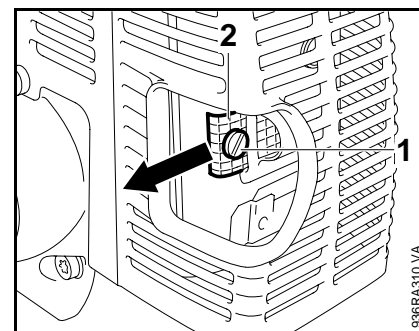


- Bend up the tab (1) on the retainer.
- Pull out the gasket (2).

Install in the reverse sequence.

- Bend the tab down again after fitting the gasket.
- Tighten down the muffler mounting screws, 3.2

Assemble all other parts in the reverse sequence.

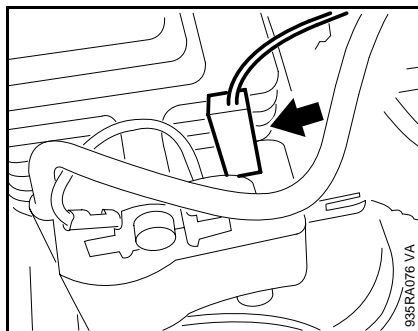


Spark arresting screen

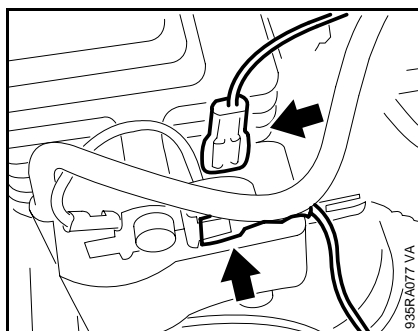
- Take out the screw (1).
- Pull out the spark arresting screen (2).
- Clean or replace the spark arresting screen as necessary.

Install in the reverse sequence.

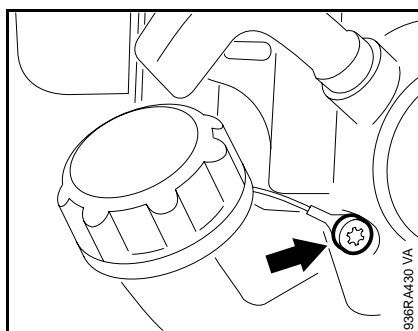
5.4 Removing and Installing the Engine



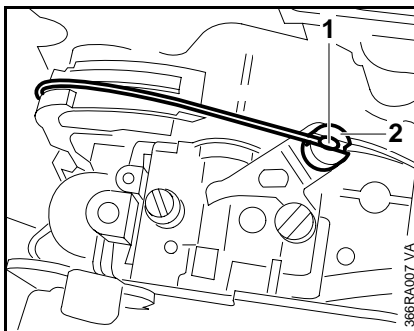
- Remove the shroud, 5.1
- Pull the short circuit wire connector (arrow) off the terminal on the ignition module.



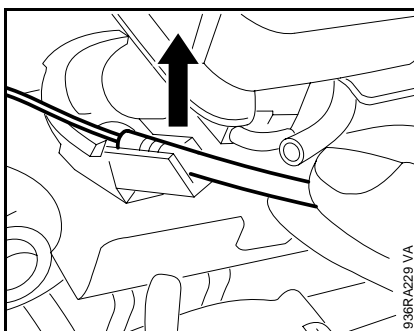
- On machines with two short circuit wires, pull the connectors (arrows) off the terminals on the ignition module.



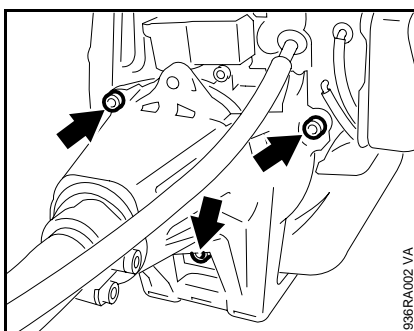
- On machines with one short circuit wire, remove throttle cable lug from lower screw (arrow).



- Disconnect throttle cable nipple (1) from slotted pin (2) on carburetor's throttle lever.



- Take the throttle cable out of the tensioner.



- Take out the screws (arrows).
- Remove the engine from the clutch housing.

Install in the reverse sequence.

6. Rewind Starter General

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 apply a few drops of a standard solvent-based degreasant (containing no chlorinated or halogenated hydrocarbons) to the rewind spring, 12.

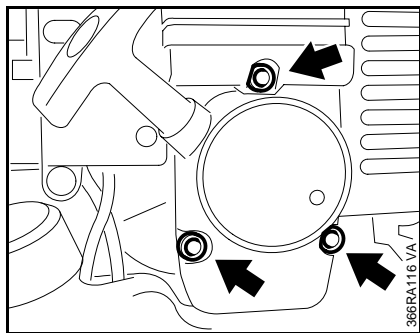
Carefully pull out the starter rope several times and allow it to rewind until its normal smooth action is restored.

If clogged with dirt or pitch, the entire starter mechanism, including the rewind spring, must be removed and disassembled. Take particular care when removing the spring.

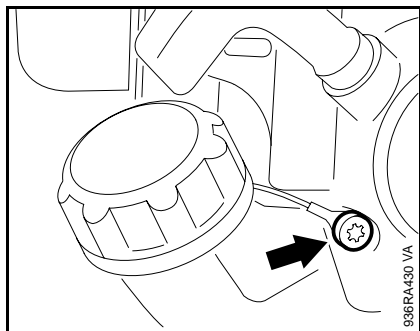
Clean all parts, 12.

Lubricate the rewind spring and starter post with STIHL special lubricant, see 12, before installing.

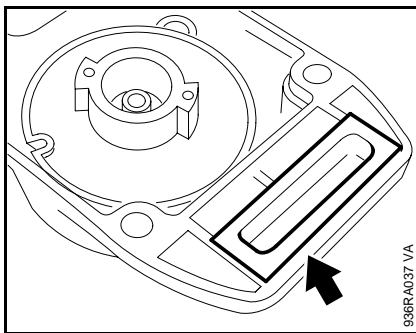
6.2 Removing and Installing



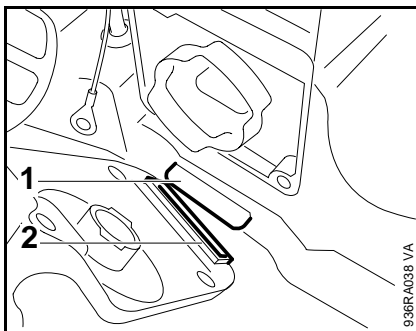
- Remove the shroud, 5.1
- Take out the screws (arrows).



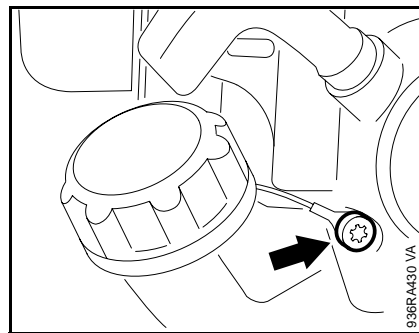
- On machines with one short circuit wire, remove throttle cable lug from lower screw (arrow).
 - Remove the rewind starter.
- Install in the reverse sequence.



- Check that the plug (arrow) in the rewind starter is correctly seated. Replace if damaged.



- Fit the rewind starter so that the lug (1) engages the plug (2).




- On machines with one short circuit wire, secure the throttle cable lug with the lower screw (arrow).
- Tighten down the screws firmly, 3.2

Assemble all other parts in the reverse sequence.

6.3 Rope Rotor/Rewind Spring

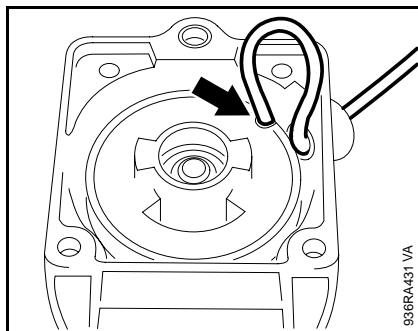
A replacement rope rotor comes with a new rewind spring.

- Remove the rewind starter,  6.2

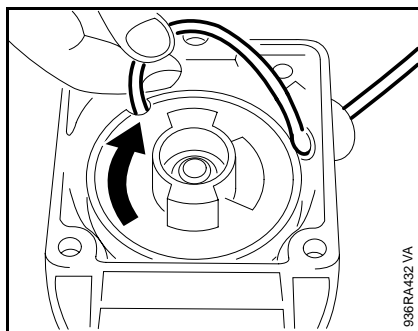
Relieving tension of rewind spring

There will be no tension if either the starter rope or rewind spring is broken.

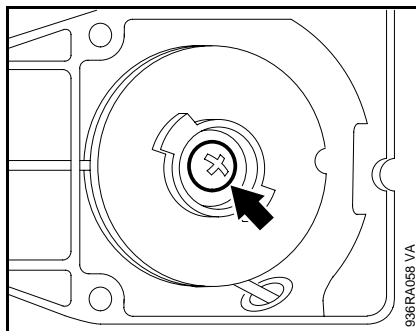
- Pull out the starter rope about 30 cm (12") and hold the rope rotor steady.



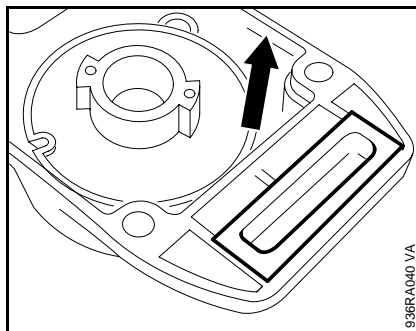
- Engage the rope in the notch (arrow) in the rotor and make a loop.



- Use the loop to rotate the rotor clockwise until the spring is no longer under tension.




- Take out the screw (arrow).



- Carefully pull the rope rotor off the starter post.

The rewind spring is installed in the rope rotor. The spring may pop out and uncoil if the rope rotor is not removed very carefully.

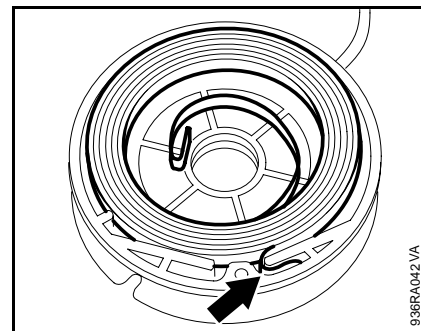
Always wear safety glasses

- Remove the pieces of broken spring from the rewind starter.
- To replace the rope rotor, remove the starter rope,  6.4

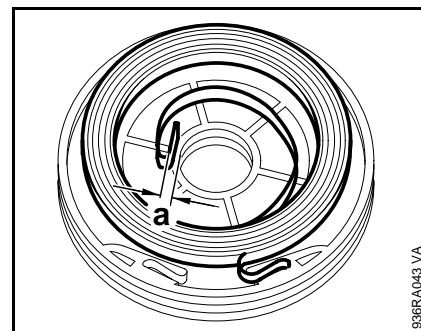
Install in the reverse sequence.

Pay attention to correct installed position of the rewind spring.

The rewind spring may pop out of the rope rotor and uncoil if it is not installed very carefully. Use the following procedure to fit the rewind spring:




- Engage the outer spring loop in the recess (arrow) and fit the rewind spring counterclockwise, starting outside and working inwards.

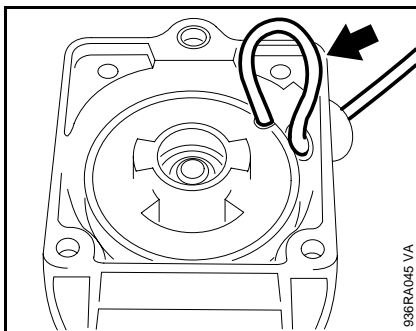


- Check the distance of the inner spring loop from the bore and correct if necessary. Dimension "a" must be 2 mm.

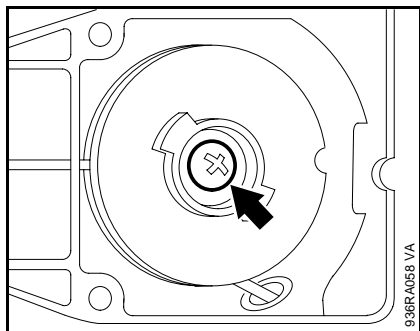
6.3.1 Tensioning



- Lubricate the bore with STIHL special lubricant,  12.
- Fit the rotor on the starter post so that the lug on the rotor engages the inner spring loop.

Turn the rope rotor a little and let it go – it must spring back.

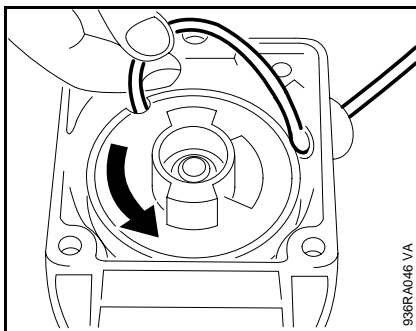


- Make a loop in the starter rope.
- Engage the starter rope in the notch in the rotor.

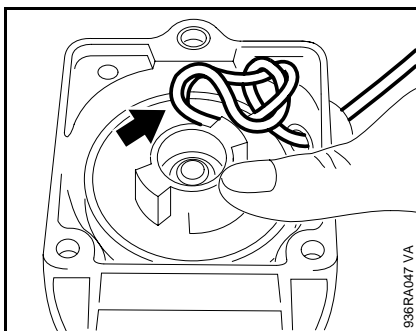


- Insert the screw (arrow) and tighten it down firmly,  3.2
- Tension the rewind spring,  6.3.1

Assemble all other parts in the reverse sequence.

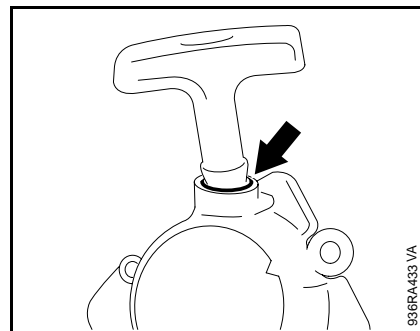


- Grip the rope close to the rotor and use it to turn the rotor about six full turns counterclockwise.



- 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 rope so that it can rewind properly.




The rewind spring is correctly tensioned when the starter grip sits firmly in the rope guide bushing without drooping to one side. If this is not the case, tension the spring by one additional turn.

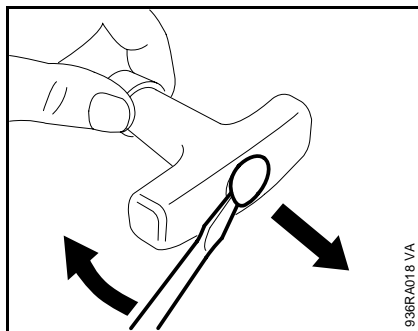
When the starter rope is fully extended, it must still be possible to rotate the rope rotor at least another half turn before maximum spring tension is reached. If this is not the case, pull the rope out, hold the rope rotor steady and take off one turn of the rope.

Do not overtension the rewind spring as this will cause it to break.

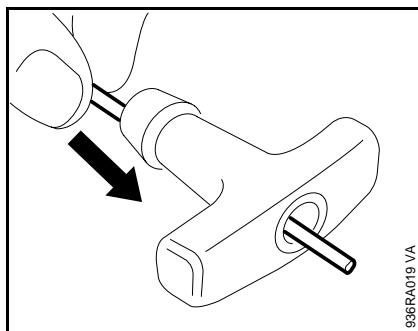
- Install the rewind starter,  6.2

6.4 Starter Rope

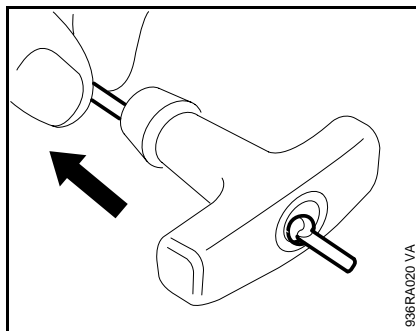
- Remove the rewind starter,  6.2
- Remove the remaining rope from the rope rotor if necessary.




- Pry the cap out of the starter grip.
- Pull the rope out of the starter grip.



- Thread end of new rope through the starter grip, from the bottom to the top.
- Tie a simple overhand knot in the end of the rope.





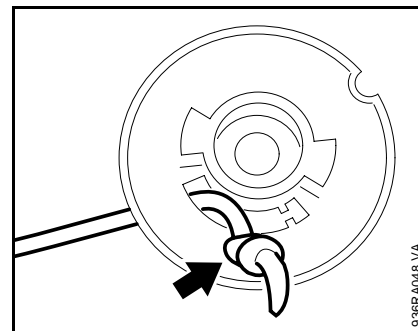
- Pull the rope back so that the knot locates in the starter grip.
- Refit the cap in the starter grip.
- Tension the starter rope,  6.3.1

Assemble all other parts in the reverse sequence.

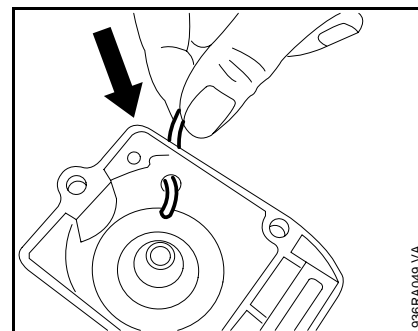
6.5 Starter Grip

The ElastoStart starter grip is supplied with starter rope.

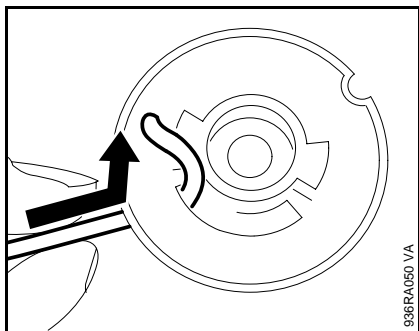
- Remove the rewind starter,  6.2
- Remove the rope rotor,  6.3



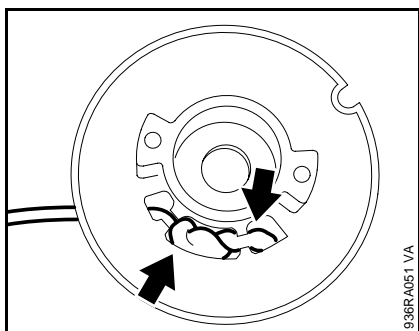
- Pull the knot out of the recess in the rope rotor.
- Undo the knot and pull the rope out of the rotor and starter mechanism.



- Thread the new starter rope through the rope guide bushing from outside.

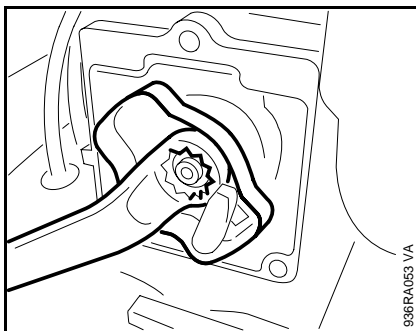


- Thread the starter rope through the hole in the side of the rotor.
- Secure the rope with a simple overhand knot.

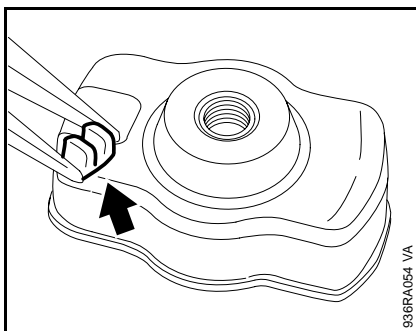


- Pull the rope back into the rotor until the knot locates in the recess.
- Press the end of the rope into the slot.
- Install the rope rotor, 6.3
- Tension the rewind spring, 6.3.1

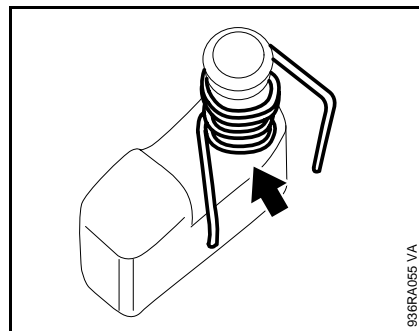
Assemble all other parts in the reverse sequence.



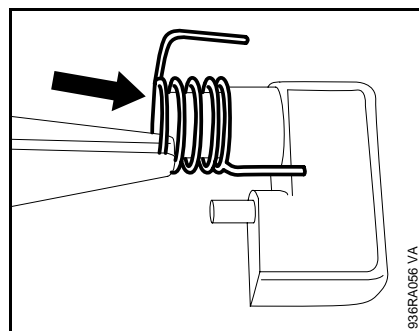
- Unscrew the spark plug and block the piston with the locking strip 0000 893 5903, 5.2
- Remove the rewind starter, 6.2
- Unscrew the carrier from the crankshaft.



- Squeeze the ends of the pawl's peg together.
- Take the pawl out of the carrier.



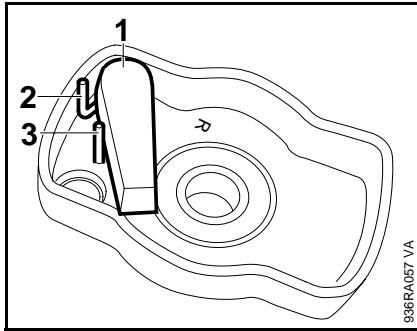
- Take the torsion spring (arrow) off the pawl.



- Push the torsion spring over the new pawl.

7. AV System

7.1 Repair



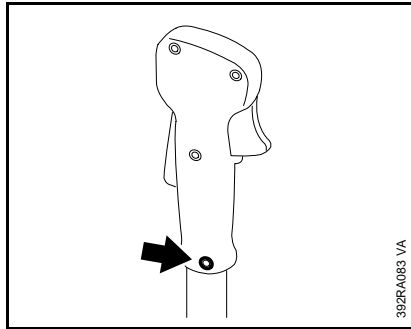
- Fit the pawl (1) in the hole in the carrier.
- The long leg (2) of the torsion spring must locate against the carrier and the short leg (3) against the pawl.
- Screw the carrier onto the crankshaft and tighten it down firmly, [Fig 3.2](#)
- Install the rewind starter, [Fig 6.2](#)
- Remove the locking strip.
- Install the spark plug and tighten it down firmly, [Fig 3.2](#)

Assemble all other parts in the reverse sequence.

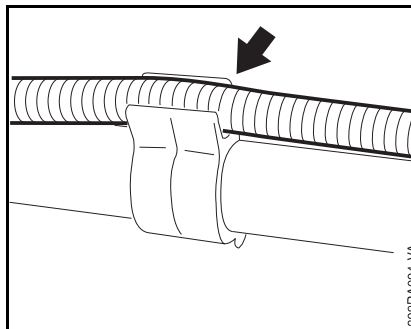
On these units the anti-vibration connection between the engine and drive shaft consists of a vibration-damping rubber element installed in the fan housing.

Removing

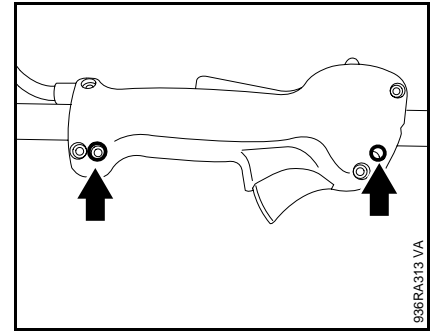
- Remove the shroud, [Fig 5.1](#)



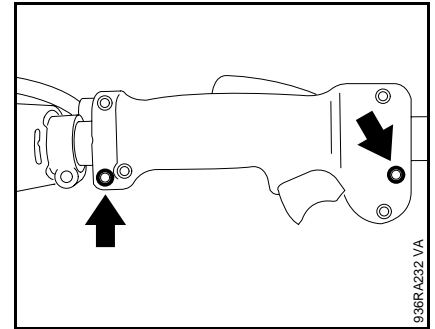
- On machines with a bike handle, take out the screw (arrow).
- Pull off the control handle.



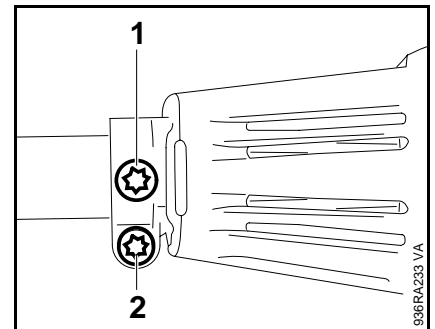
- Take the throttle cable's protective tube out of the retainer.



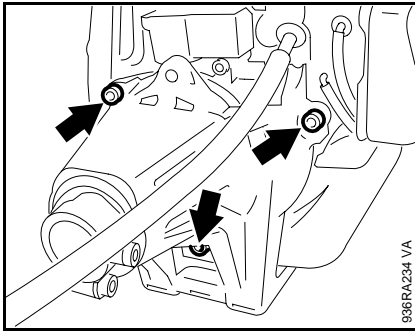
- On machines with a loop handle, loosen the clamp screws (arrows) on the control handle.



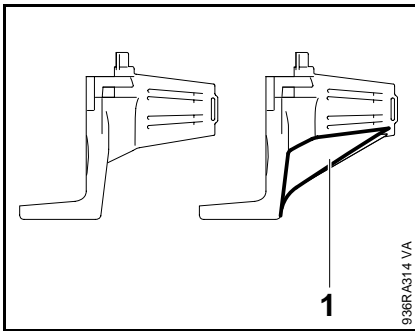
- On early machines with a loop handle, loosen the clamp screws (arrows) on the control handle.



- Remove the fixing screw (1) from the AV sleeve.
- Loosen the clamp screw (2).
- Pull out the drive tube.

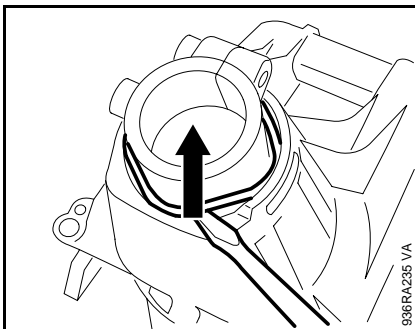


- Take out the screws (arrows).
- Remove the fan housing.

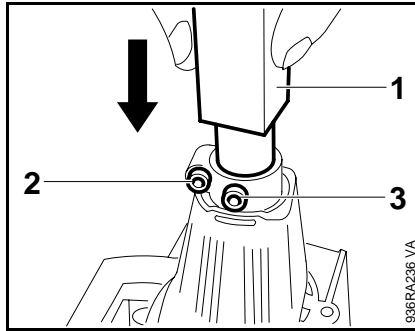



On newer machines the fan housing has been strengthened with ribs (1).

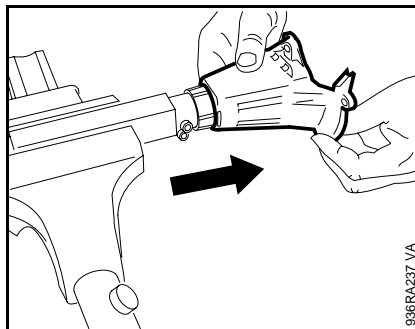
Left: Previous version
Right: New version



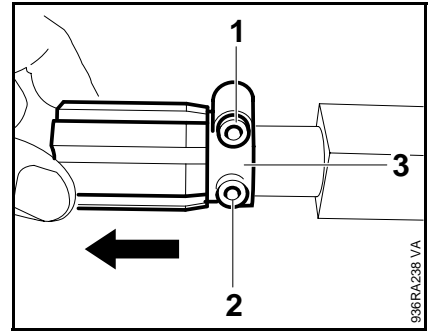
- Use a screwdriver to pry the retaining ring out of the fan housing.
- Slip the retaining ring off over the AV sleeve.



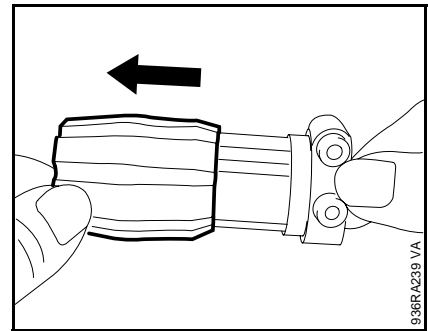
- Push the service tool (1) 4126 893 4900 into the AV sleeve as far as stop.
- Tighten down the clamp screw (2) firmly.
- If necessary, tighten the fixing screw (3) moderately.
- Apply a few drops of STIHL press fluid OH 723,  12, between the fan housing and rubber element.



- Clamp the service tool in a vise.
- Pull the fan housing off the rubber element.

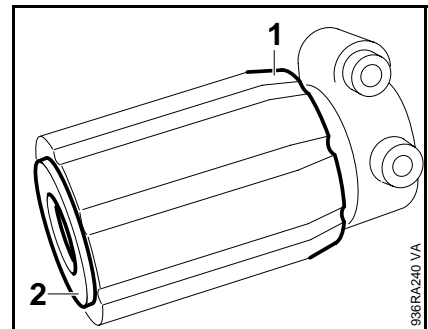


- Loosen the clamp screw (1) and, if necessary, the fixing screw (2).
- Pull the sleeve (3) off the service tool.

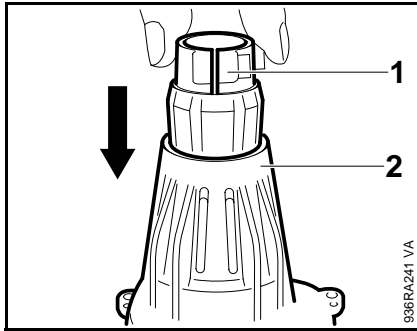



- Pull the rubber element off the sleeve.

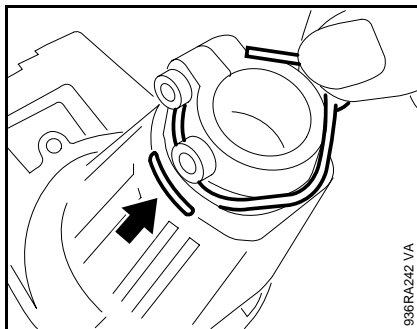
Installing



- Push the rubber element, tapered end (1) first, onto the sleeve until the flange (2) is behind the sleeve.

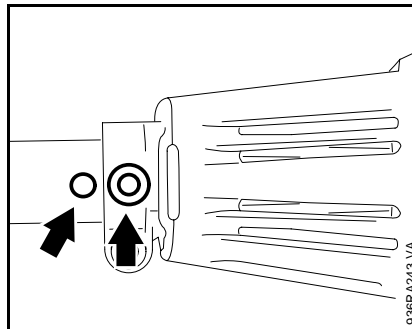



- Coat rubber element with STIHL Press Fluid,  12.
- Push the rubber element into the fan housing so that the slot (1) is on the round side (2) of the housing.



- Install the retaining ring (gap facing clamp screw) so that it locates in the slots (arrow) in the fan housing.

Assemble all other parts in the reverse sequence.



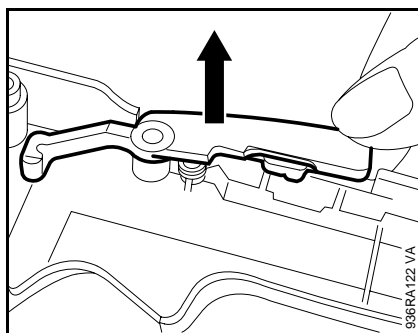
- Push home the drive tube until the holes line up.
- Tighten down the fixing screw and clamp screw firmly,  3.2

8. Throttle Control

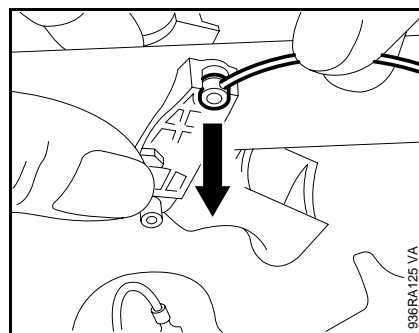
8.1 Control Handle on Loop Handle up to 1997

8.1.1 Throttle Trigger / Interlock Lever

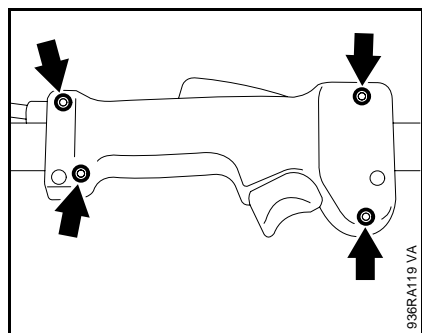
To avoid the risk of electrocution, do not start the engine while the control handle is exposed.



- Remove the interlock lever from the pivot.

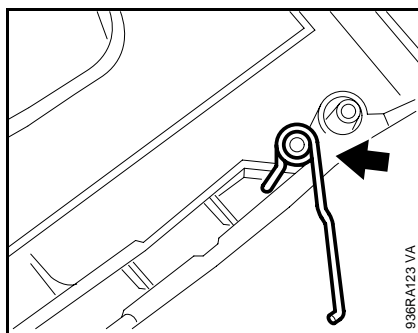


- Disconnect throttle cable nipple from the throttle trigger.
- Pull the throttle trigger off the drive tube.

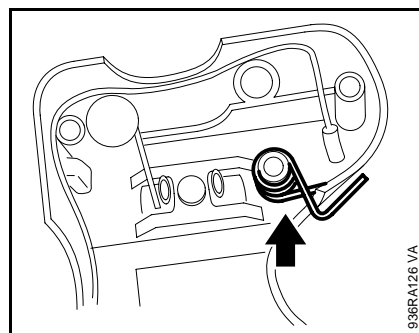


FC 75, FS 75, 80, 85, HL 75 only

- Take the screws (arrows) out of the outer half of the handle molding.
- Remove the handle molding.

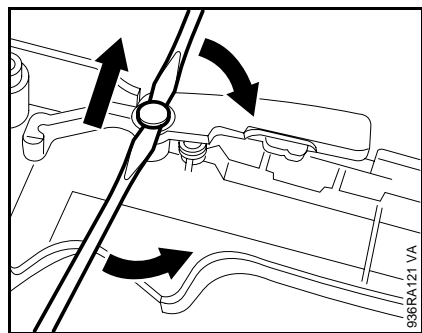


- Remove the torsion spring from the pivot.

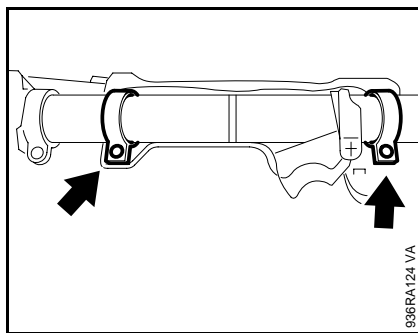


- Remove the torsion spring (arrow - if fitted) from the pivot.

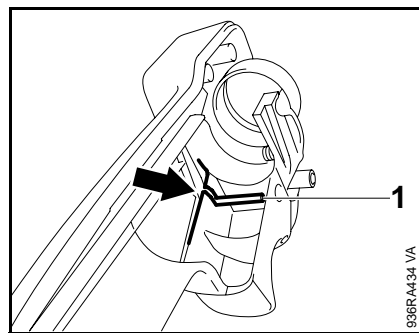
Install in the reverse sequence.



- Carefully remove the rivet (interlock lever) from the outer handle molding.



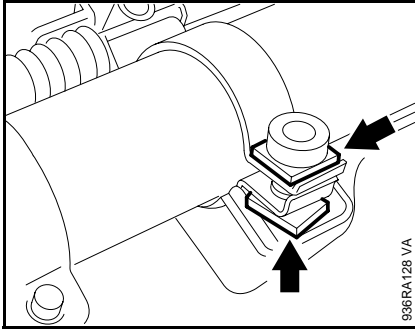
- Take out the clamp screws (arrows).
- Remove the inner handle molding from the drive tube.



- Push the throttle trigger (facing the engine) onto the drive tube.

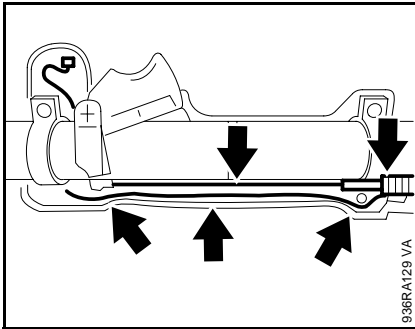
The bent leg of the torsion spring must engage the slot in the throttle trigger.

8.1.2 Detent/Torsion Spring




- Fit square washer on both sides of the clamps (arrows).

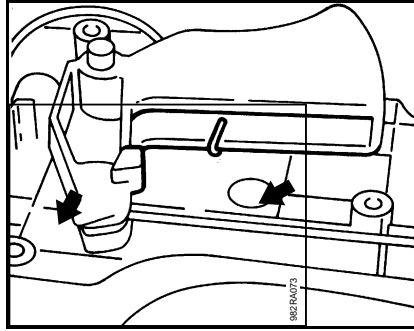
Secure screws only fingertight at this stage.




- Make sure the short circuit wires, throttle cable and tube are correctly positioned in the inner handle molding (arrows).

– Tighten down the screws firmly,  3.2

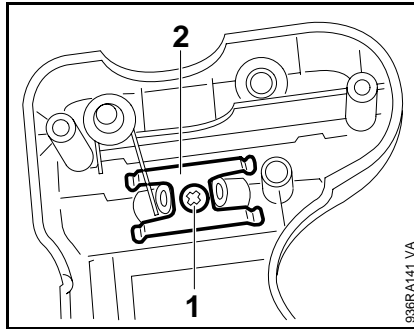
Assemble all other parts in the reverse sequence.



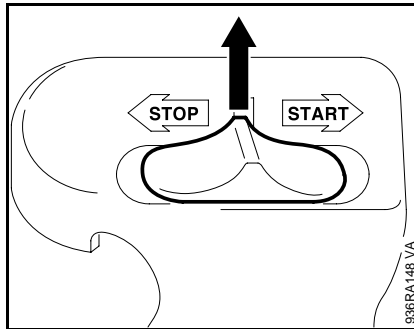
FC 75, FS 75, 80, 85, HL 75 only

– Remove the throttle trigger,  8.1.1

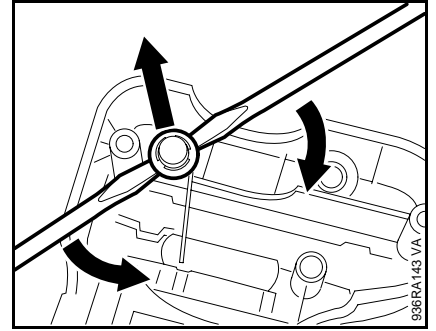
- Pull the short circuit wires (arrows) off the connector tags.



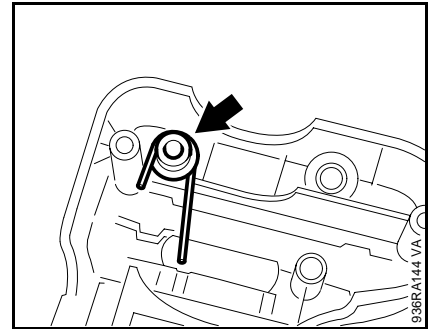
- Take out the collar screw (1).
- remove the detent spring (2).



- Pull the slide control out of the handle molding.



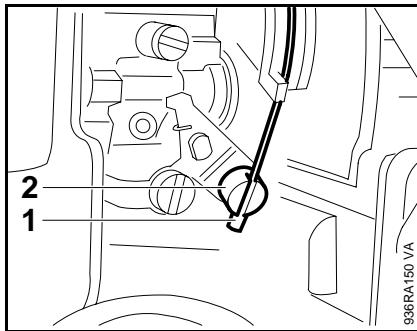
- Carefully pry the push nut off the pivot.



- Remove the torsion spring from the pivot.

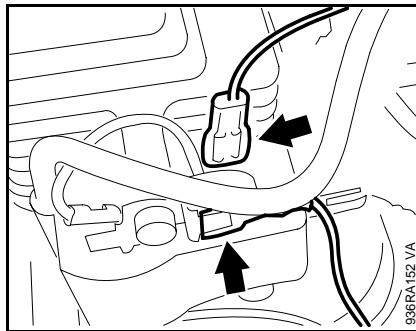
Install in the reverse sequence.

8.1.3 Throttle Cable



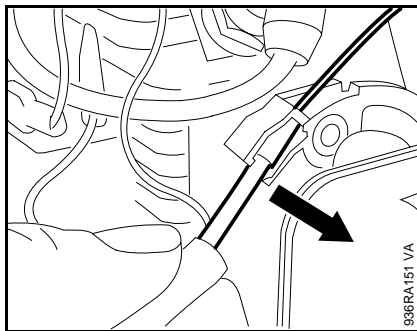
FC 75, FS 75, 80, 85, HL 75 only

- Remove the shroud, 5.1
- Disconnect throttle cable nipple (1) from slotted pin (2) on throttle lever.

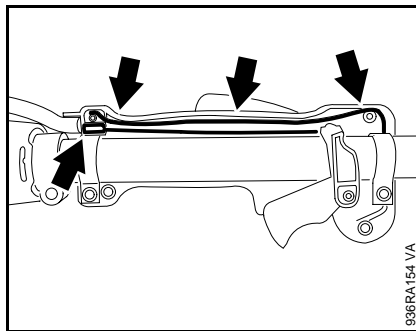


- Pull the connectors (arrows) off the tags on the ignition module.
- Remove the throttle trigger, 8.1.1
- Pull the short circuit wires off the connector tags in the control handle, 8.1.2

Install in the reverse sequence.



- Pull the throttle cable out of the tensioner.



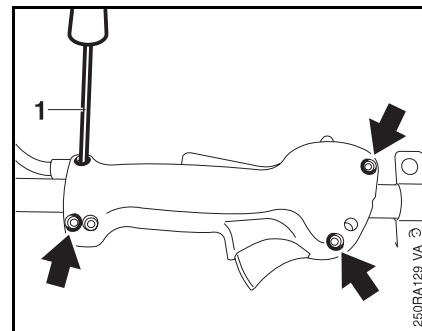
- Position the short circuit wires, throttle cable and tube in the inner handle molding.

Assemble all other parts in the reverse sequence.

8.2 Control Handle up to 2002

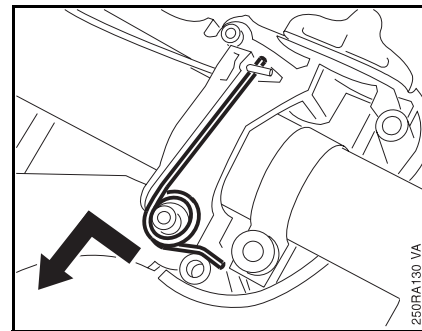
8.2.1 Throttle Trigger/Interlock Lever

To avoid the risk of electrocution, do not start the engine while the control handle is exposed.

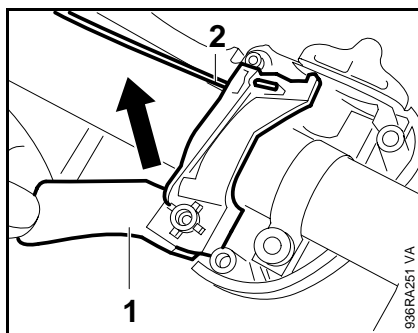


All models except KM 85

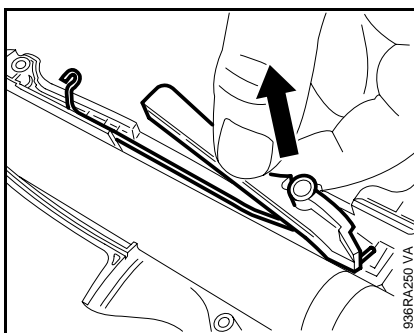
- Take out the screws (arrows).
- Remove the handle molding.



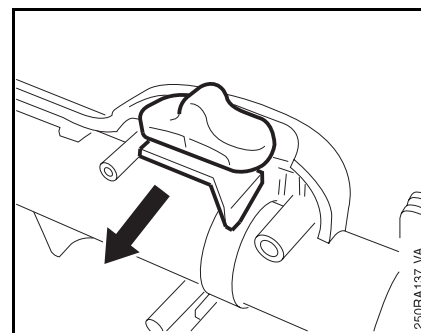
- Remove the torsion spring.



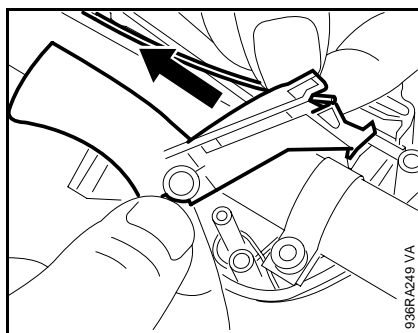
- Pull the throttle trigger (1) with attached throttle cable (2) from the pivot.



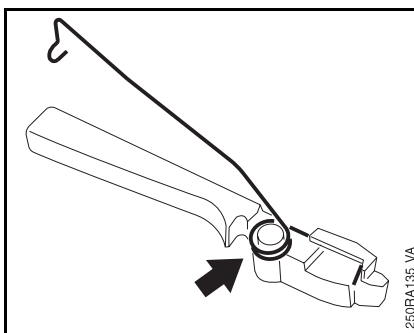
- Pull the interlock lever with contact spring off the pivot.



- Remove the interlock lever, 8.2.1
- Pull the slide control off the handle molding.

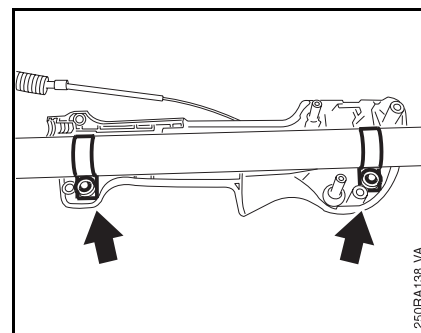


- Disconnect the throttle cable from the throttle trigger.

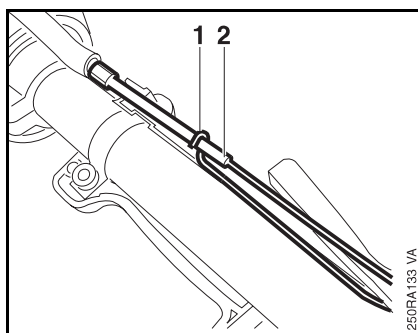


- Remove the contact spring (arrow) from the interlock lever.

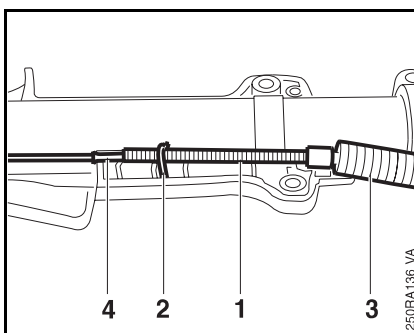
Install in the reverse sequence.



- Take out the clamp screws.
- Remove the handle molding from the drive tube.

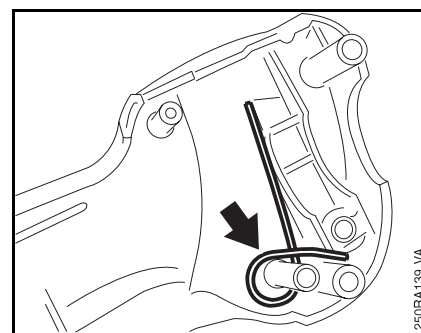


- Lift the contact spring (1) slightly and remove the throttle cable (2).



- Position the throttle cable (1), contact spring (2), protective tube (3) and insulator (4) correctly.

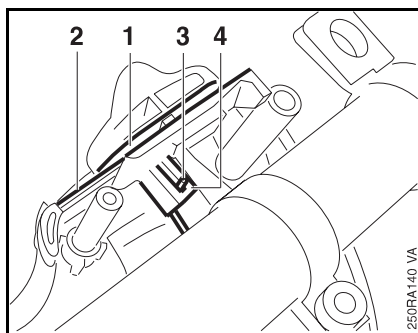
- Tighten down the screws firmly, 3.2



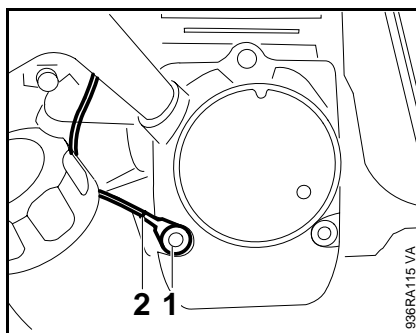
- Remove the torsion spring from the pivot.

Install in the reverse sequence.

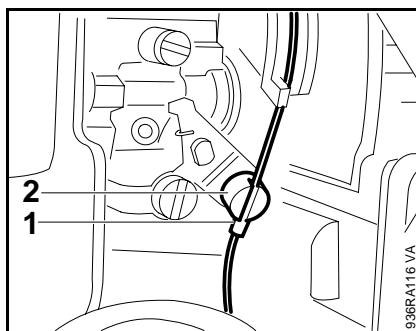
8.2.3 Throttle Cable



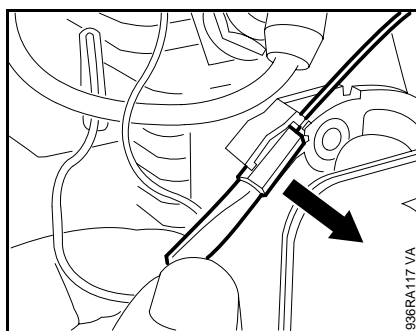
- Tighten down the clamp screws firmly, 3.2
- The slot (1) in the slide control must engage over the outer edge (2) of the handle molding.
- Torsion spring (3) must locate in recess (4) in slide control.



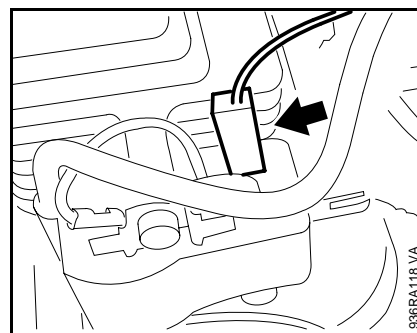
- Remove the shroud, 5.1
- Take out the screw (1).
- Remove the extended throttle cable (2).



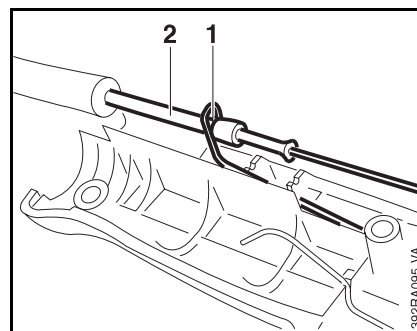
- Disconnect throttle cable nipple (1) from slotted pin (2) on carburetor's throttle lever.



- Pull the throttle cable out of the tensioner.

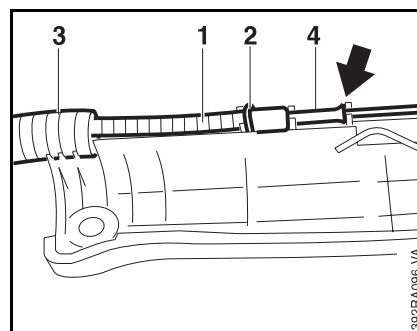


- Pull the short circuit wire connector off the tag on the ignition module.
- Remove the throttle trigger, 8.2.1



- Lift the contact spring (1) slightly and remove the throttle cable (2).

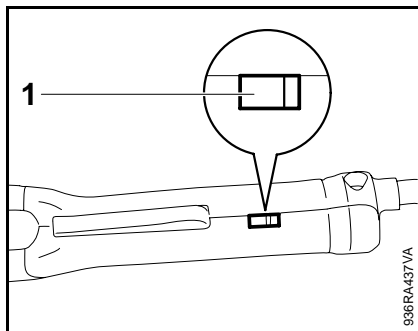
Install in the reverse sequence.



- Check that the throttle cable (1), contact spring (2), protective tube (3) and insulator (4) are properly seated.

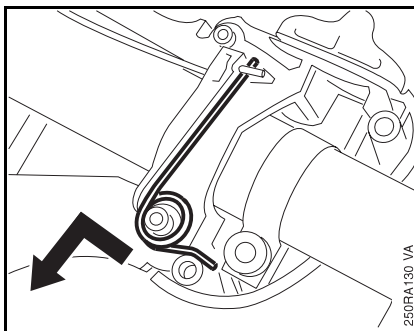
8.3 Control Handle from 2002

8.3.1 Throttle Trigger/Interlock Lever

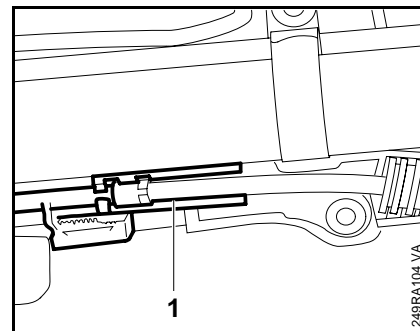


This control handle has a slide (1) for automatic adjustment of the throttle cable.

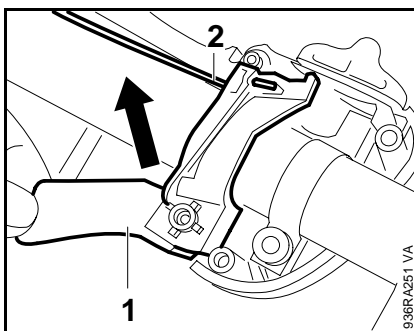
- Insert a screwdriver in the slot, press the slide down and push it in the direction of the engine.



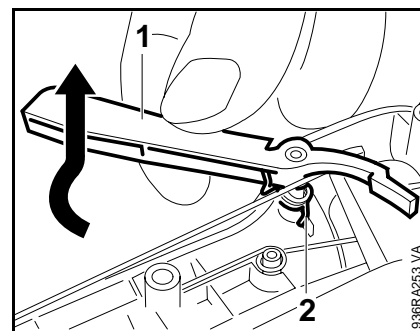
- Remove the torsion spring.



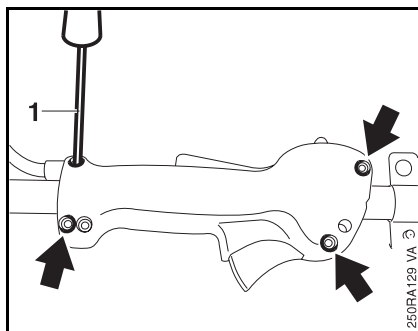
- Take the slide (1) out of the guide and remove the throttle cable.



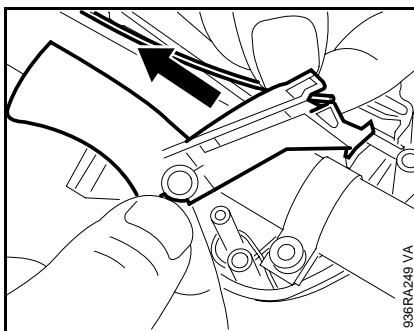
- Remove the throttle trigger (1) with attached throttle cable (2) from the pivot.



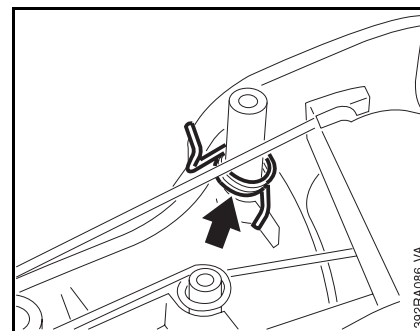
- Lift the interlock lever (1) slightly and turn it sideways until the torsion spring (2) is relaxed.
- Pull the interlock lever (1) off the pivot.



- Take out the screws (arrows) and remove the handle molding.




- Disconnect the throttle cable from the throttle trigger.

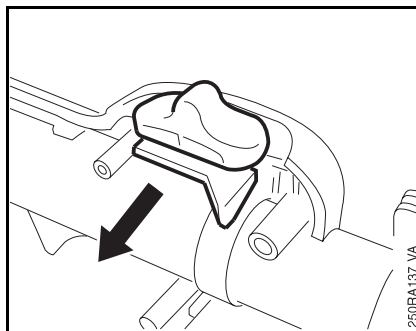



- Remove the torsion spring (arrow).

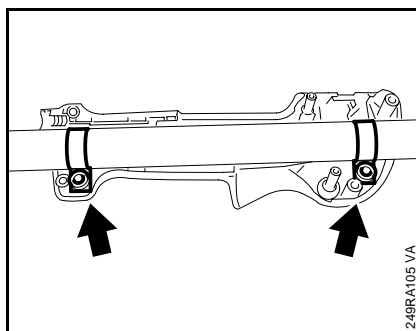
Install in the reverse sequence.

8.3.2 Contact/Detent Spring

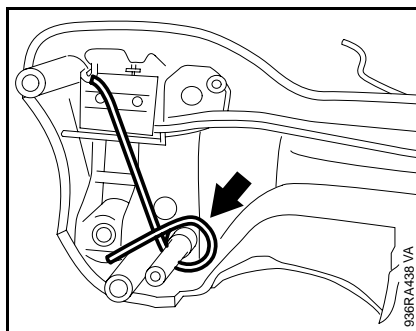
- Make sure the throttle cable and protective tube are correctly positioned.
- Tighten down the screws firmly,  3.2
- Open the throttle wide several times so that the slide automatically takes up any slack in the throttle cable.



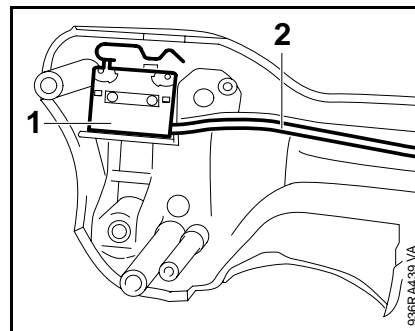
- Remove the interlock lever,  8.3.1
- Pull the slide control off the handle molding.



- Take out the clamp screws (arrows).
- Remove the handle molding from the drive tube.



- Remove the torsion spring from the pivot.



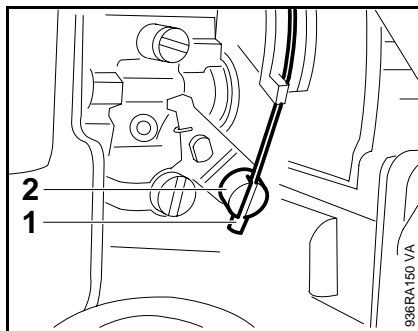
- Take out the stop switch (1).


Install in the reverse sequence.

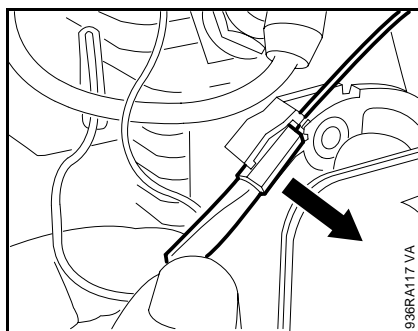
- Position the switch's wire in the channel (2).


Assemble all other parts in the reverse sequence.

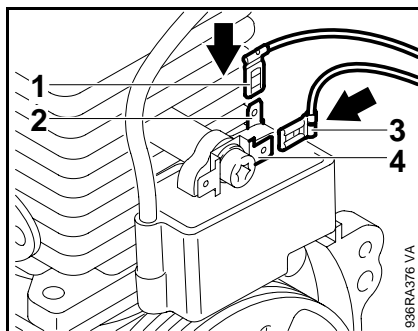
8.3.3 Throttle Cable



- Remove the shroud,  5.1
- Disconnect throttle cable nipple (1) from slotted pin (2) on carburetor's throttle lever.



- Pull the throttle cable out of the tensioner.
- Take the throttle cable out of the throttle trigger,  8.3.1




- Pull the short circuit wire's connector (1) off the tag (2).
- Pull the connector (3) off the tag (4).

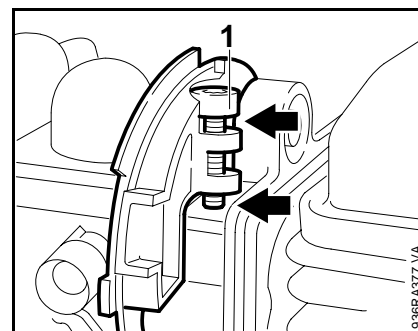
Install in the reverse sequence.

8.4 Adjusting the Throttle Cable

The carburetor's throttle lever must butt against the stop on the carburetor cover when the throttle trigger is fully depressed (full throttle) and against the idle speed screw (LA) when the throttle trigger is released (idle position).

Adjustments are carried out on the tensioner.

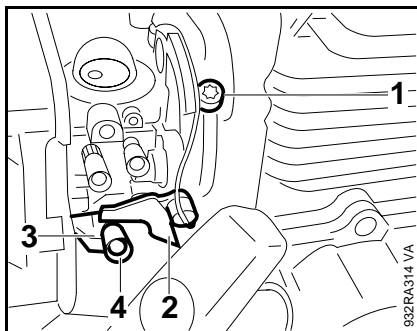
- Remove the shroud,  5.1



- Before starting the adjustment, center the adjusting screw (1) as shown.

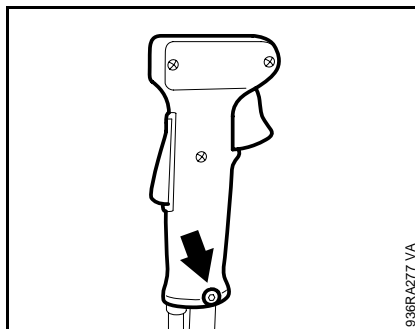
8.5 Control Handle on Bike Handle up to 1997

8.5.1 Throttle Trigger/Interlock Lever



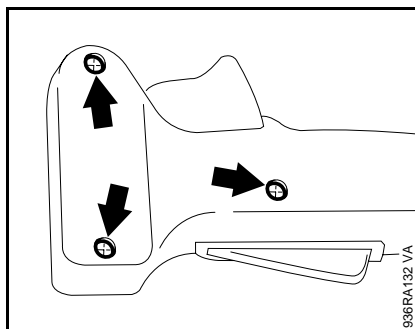
To avoid the risk of electrocution, do not start the engine while the control handle is exposed.

- To adjust, squeeze the throttle trigger as far as stop (full throttle position).
- Turn the adjusting screw (1) clockwise until the throttle lever (2) butts against the stop (3) on the carburetor cover.
- Release the throttle trigger (idle position). The throttle lever must butt against the idle speed screw (4).
- Fit the shroud, 5.1

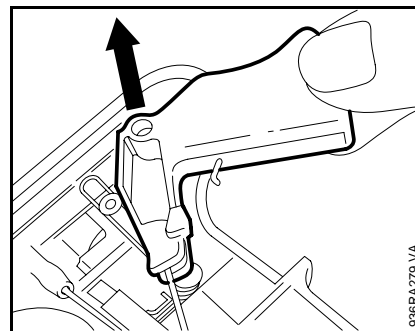


FS 75, 80, 85 only

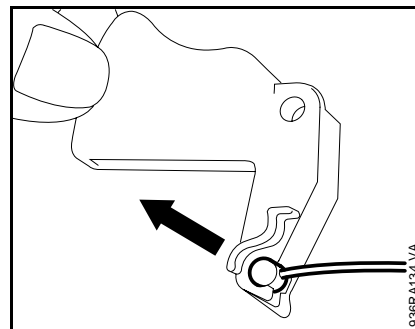
- Take the screw (arrow) out of the handle.
- Pull the handle off the handlebar.



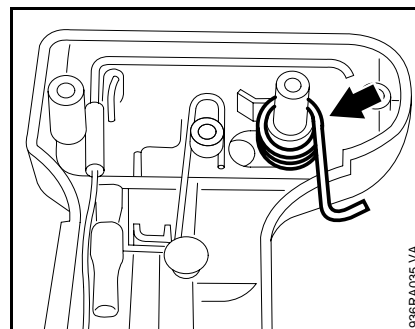
- Remove the mounting screws (arrows) from the handle moldings.
- Separate the two handle moldings.



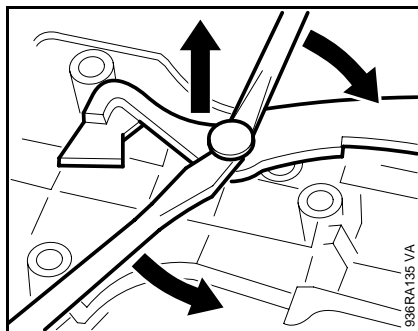
- Lift the throttle trigger slightly and turn it sideways until the torsion spring (2) is relaxed.
- Pull the throttle trigger off the pivot.



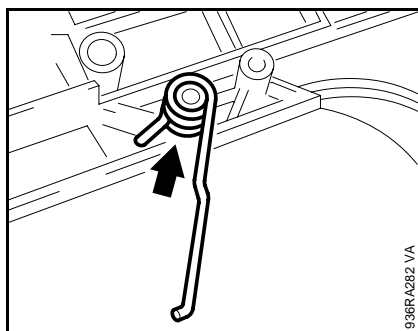
- Remove throttle cable's nipple from the trigger.



- Remove the torsion spring from the pivot.

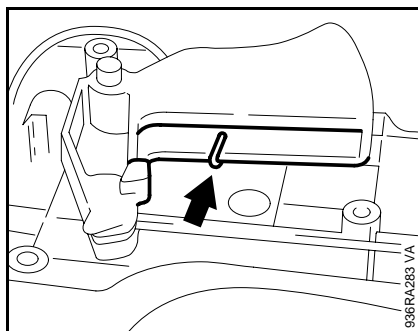


- Carefully remove the rivet (interlock lever) from the outer handle molding.
- Remove the interlock lever from its pivot.

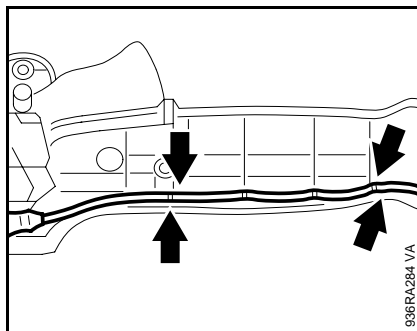


- Remove the torsion spring from the pivot.

Install in the reverse sequence.

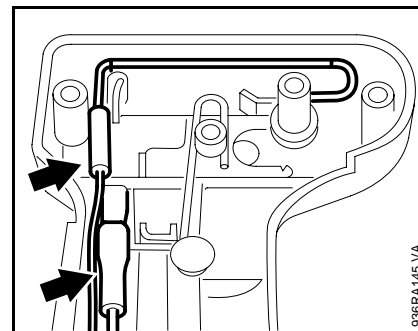


- Engage the torsion spring on the throttle trigger.



Make sure the short circuit wires and the throttle cable are correctly positioned in the handle molding (arrows).

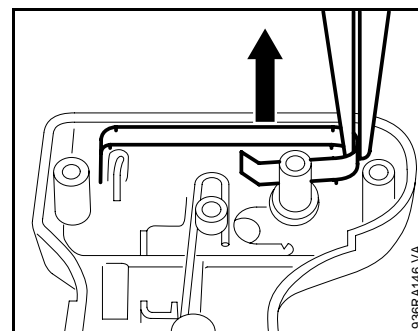
Assemble all other parts in the reverse sequence.



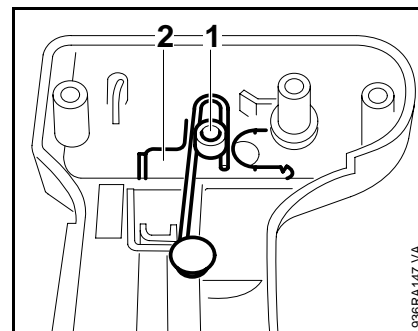
FS 75, 80, 85 only

- Remove the throttle trigger, 8.5.1

- Pull short circuit wires off the tags (arrows) on the contact springs.

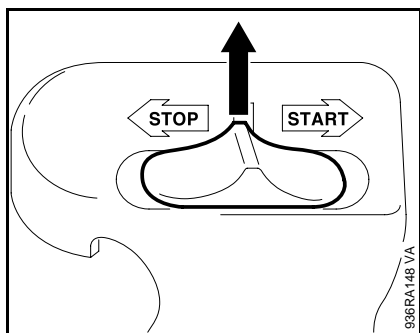


- Pull the contact spring out of the handle molding.

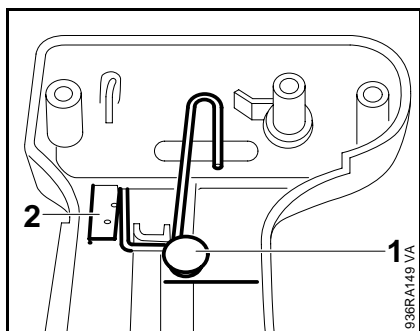


- Unscrew the collar screw (1) from the slide control.
- Remove the detent spring (2).

8.5.3 Throttle Cable



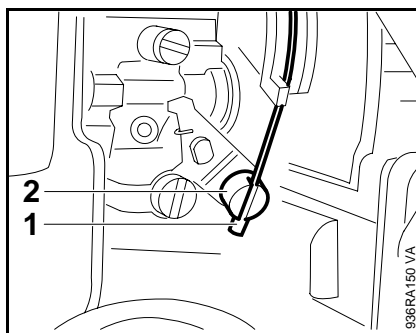
- Pull the slide control out of the handle molding.



- Pull out the rivet (1).
- Remove the contact spring (2).

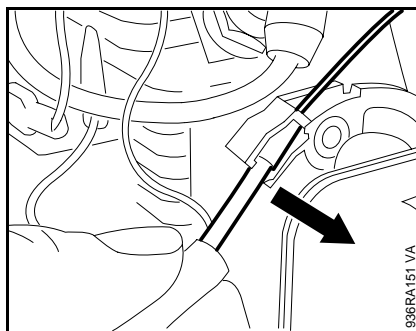
Install in the reverse sequence.

The contact spring must engage the annular groove in the collar screw.

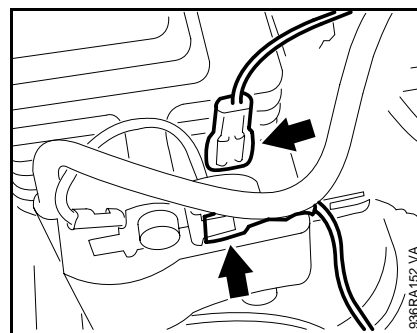


FS 75, 80, 85 only

- Remove the shroud, 5.1
- Disconnect throttle cable nipple (1) from slotted pin (2) on carburetor's throttle lever.



- Pull the throttle cable out of the tensioner.



- Pull the connectors (arrows) off the tags on the ignition module.
- Remove the throttle trigger, 8.5.1
- Pull the short circuit wires off the connector tags in the control handle, 8.5.2

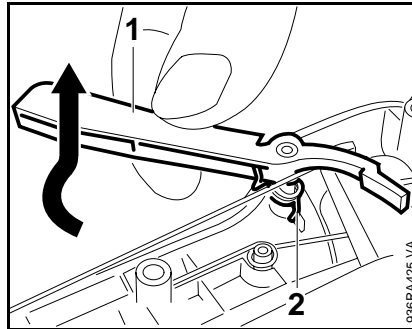
Install in the reverse sequence.

Position the short circuit wires, throttle cable and tube correctly in the inner handle molding.

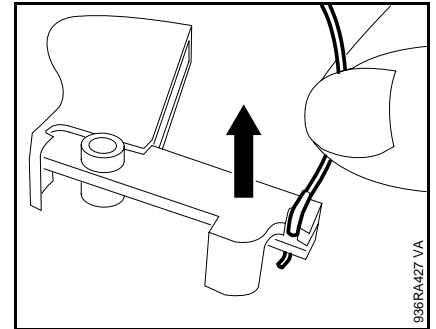
8.6 Control Handle on Bike Handle up to 2002

8.6.1 Throttle Trigger/Interlock Lever

To avoid the risk of electrocution, do not start the engine while the control handle is exposed.

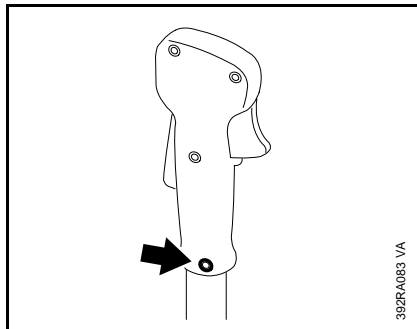


- Lift the interlock lever (1) slightly and turn it sideways until the torsion spring (2) is relaxed.
- Pull the interlock lever off the pivot.



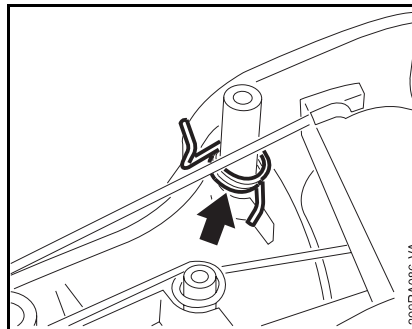
- Disconnect throttle cable from the throttle trigger.

Install in the reverse sequence.

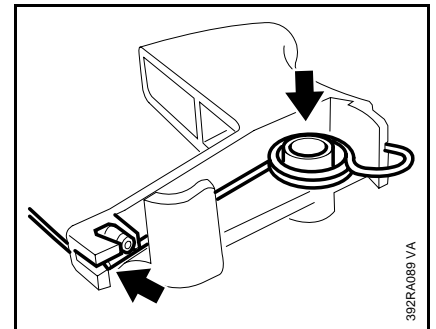


FS 75, 80, 85 only

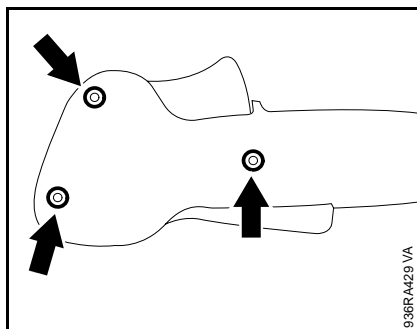
- Take out the screw (arrow).
- Pull the handle off the handlebar.



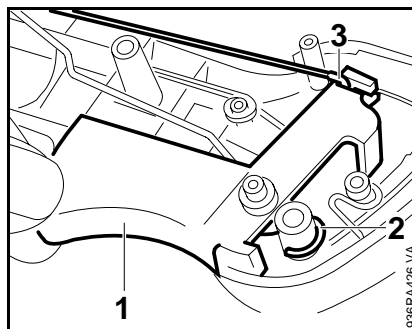
- Remove the torsion spring (arrow).



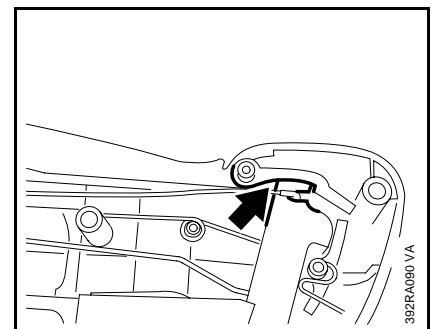
- After attaching the throttle cable, fit the torsion spring over the pivot (arrow) and push its long leg into the slot.



- Take out the screws (arrows).
- Separate the handle moldings.

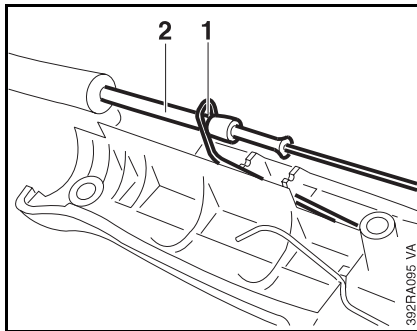


- Pull the throttle trigger (1) with torsion spring (2) and attached throttle cable (3) off the pivot.



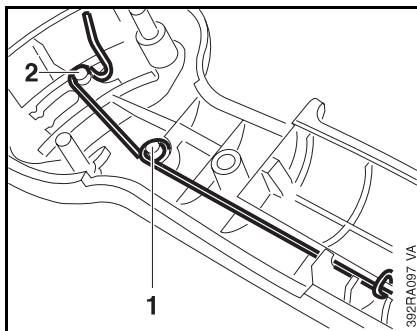
- The interlock lever must be behind the throttle trigger.
- Tighten down the handle molding mounting screws firmly, [3.2](#)

8.6.2 Contact / Detent Spring

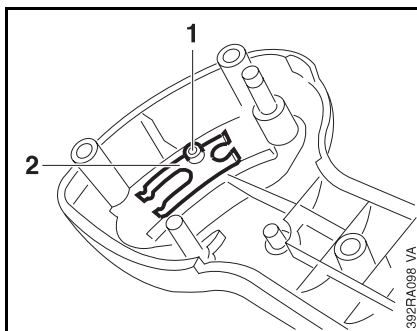


FS 75, 80, 85 only

- Remove the throttle trigger, 8.6.1
- Lift the contact spring (1) and remove the throttle cable (2).

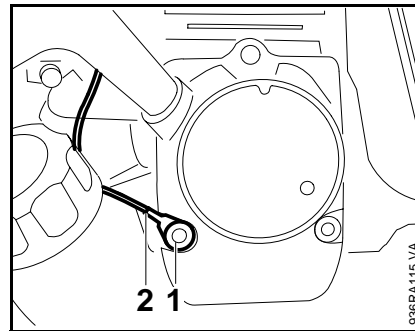


- Remove the contact spring from the pivot (1) and the collar screw (2).



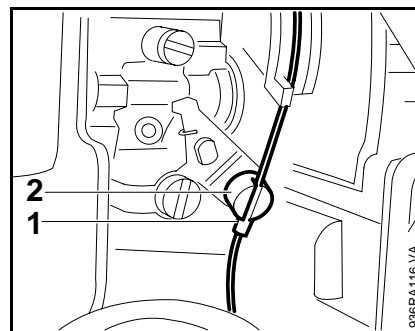
- Unscrew the collar screw (1) from the slide control.
- Remove the detent spring (2).

8.6.3 Throttle Cable

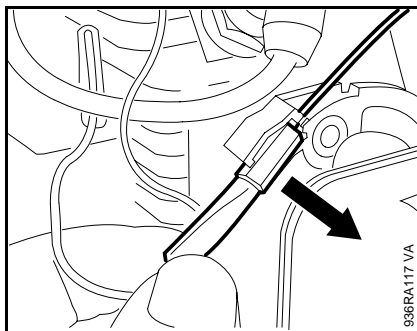


FS 75, 80, 85 only

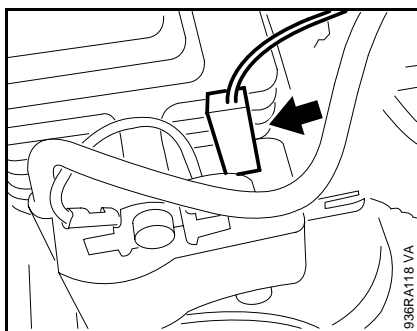
- Remove the shroud, 5.1
- Take out the screw (1).
- Remove the extended throttle cable (2).



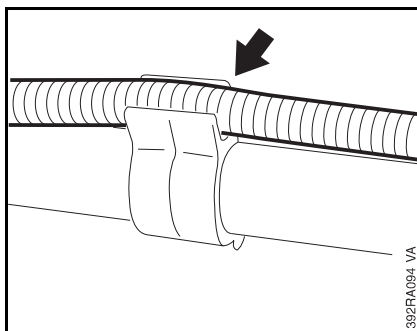
- Disconnect throttle cable nipple (1) from slotted pin (2) on carburetor's throttle lever.




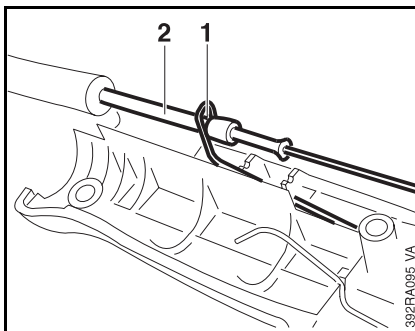
- Pull the throttle cable out of the tensioner.



- Pull short circuit wire's connector (arrow) off the tag on the ignition module.

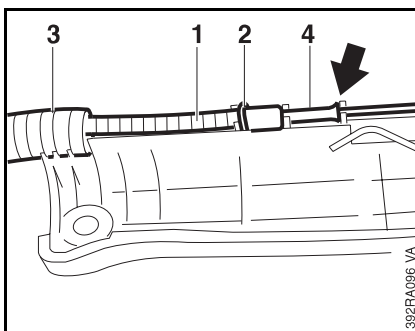


- Take throttle cable's protective tube out of the retainer.
- Remove the throttle trigger,  8.6.1



- Lift the contact spring (1) and remove the throttle cable (2).

Install in the reverse sequence.

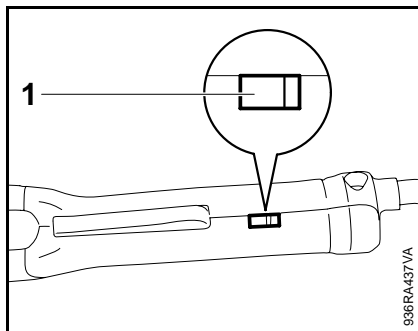


- Make sure the throttle cable (1), contact spring (2), protective tube (3) and insulator (4) are properly seated.

Check that the short circuit wire (arrow) is making good contact.

8.7 Control Handle on Bike Handle from 2002

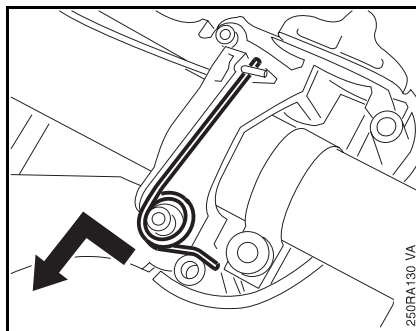
8.7.1 Throttle Trigger/Interlock Lever



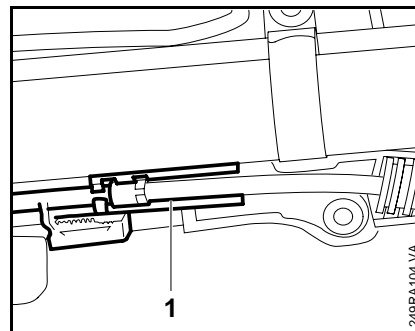
FS 75, 80, 85, KM 85 only

This control handle has a slide (1) for automatic adjustment of the throttle cable.

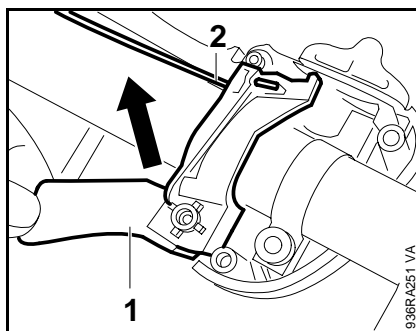
- Insert a screwdriver in the slot, press the slide down and push it in the direction of the engine.



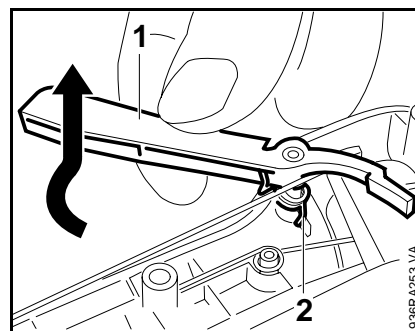
- Remove the torsion spring.



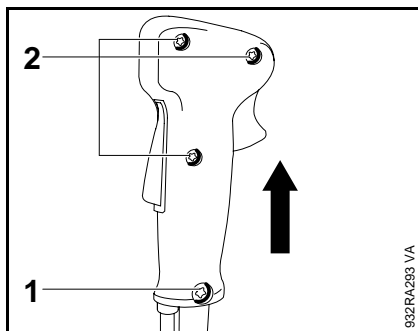
- Take the slide (1) out of the guide and remove the throttle cable.



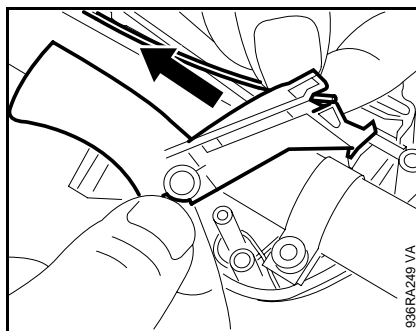
- Remove the throttle trigger (1) with attached throttle cable (2) from the pivot.



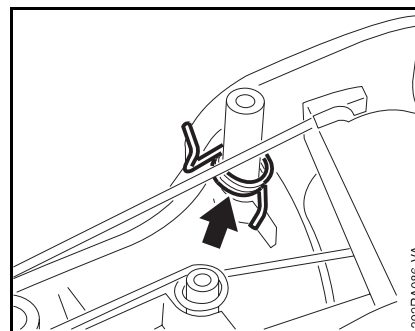
- Lift the interlock lever (1) slightly and turn it sideways until the torsion spring (2) is relaxed.
- Pull the interlock lever (1) off the pivot.



- Take out the screw (1) and remove the control handle.
- Take out the screws (2) and remove the handle molding.




- Disconnect the throttle cable from the throttle trigger.

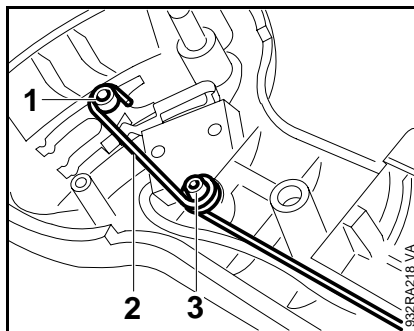



- Remove the torsion spring (arrow).

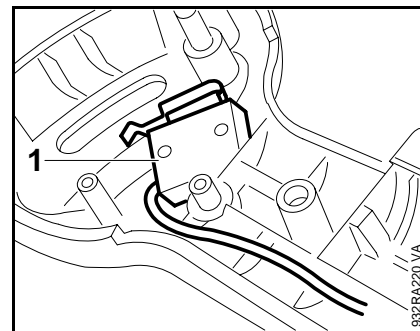
Install in the reverse sequence.

8.7.2 Contact/Detent Spring

- Make sure the throttle cable and protective tube are correctly positioned.
- Tighten down the screws firmly,  3.2
- Open the throttle wide several times so that the slide automatically takes up any slack in the throttle cable.

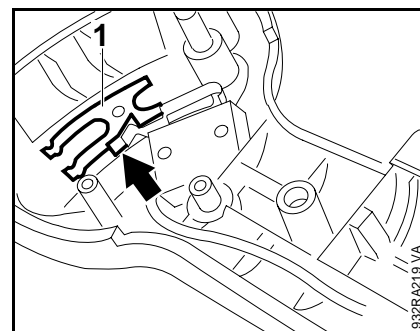


- Remove the throttle trigger with interlock lever,  8.7.1
- Unscrew the collar screw (1) from the slide control.
- Remove the contact spring (2) from the pivot (3).



- Pry the stop switch (1) with wires out of the handle molding.

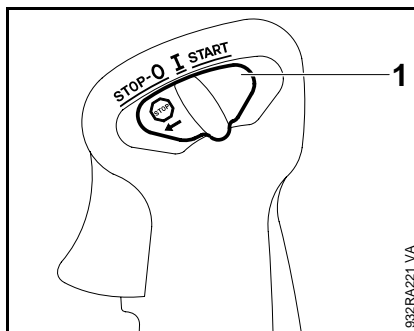
Install in the reverse sequence.



Make sure the short circuit wires are correctly positioned.

- When fitting the detent spring (1), make sure that the connector tag (arrow) points up in the direction of the stop switch.


Assemble all other parts in the reverse sequence.

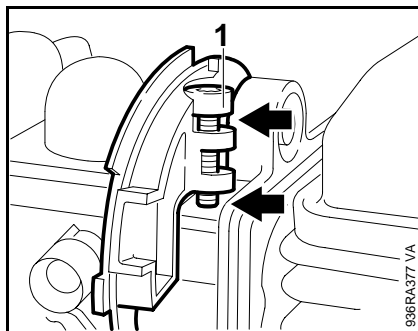


- Pull the slide control (1) out of the handle molding.

8.8 Adjusting the Throttle Cable


The carburetor's throttle lever must butt against the stop on the carburetor cover when the throttle trigger is fully depressed (full throttle) and against the idle speed screw (LA) when the throttle trigger is released (idle position).

- Remove the shroud,  5.1

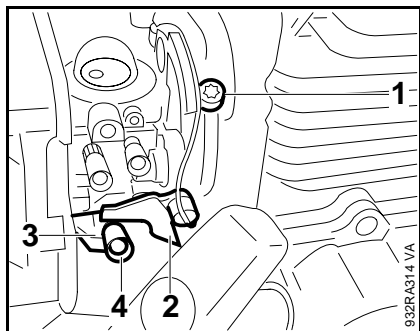


Version with Control Handle from 2002 only

The throttle cable is **no longer** adjusted at the tensioner. However, if the basic setting of the automatic throttle cable adjuster does not produce a satisfactory result, rotate the adjusting screw slightly.

- Remove the shroud,  5.1
- Before starting the adjustment, center the adjusting screw (1) as shown.

Install in the reverse sequence.



Version with Control Handle up to 2002 only

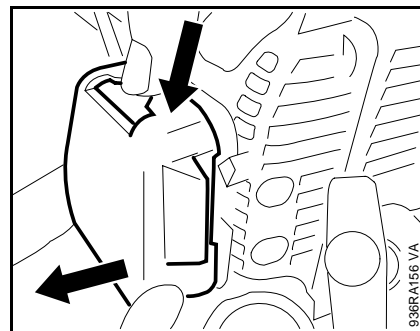
- To adjust, squeeze the throttle trigger as far as stop (full throttle position).
- Turn the adjusting screw (1) clockwise until the throttle lever (2) butts against the stop (3) on the carburetor cover.
- Release the throttle trigger (idle position). The throttle lever must butt against the idle speed screw (4).

9. Fuel System

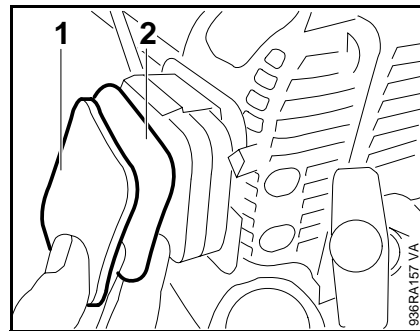
9.1 Air Filter

Dirty air filters reduce engine power, increase fuel consumption and make starting more difficult. The air filter must be cleaned if there is a noticeable loss of engine power.

- Close the choke shutter.
- Remove all loose dirt from around the filter housing and cover.




- Push back the tab on the filter housing.
- Pull off the filter cover.



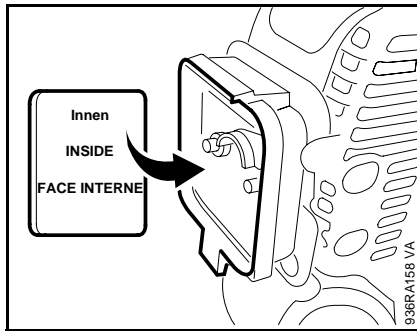
- Remove the foam element (1) and felt element (2).

9.2 Carburetor

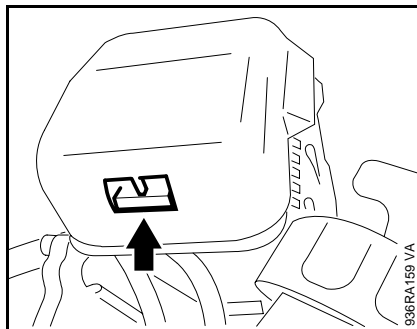
9.2.1 Leakage Test

- Wash the foam filter element in a standard commercial solvent-based degreasant containing no chlorinated or halogenated hydrocarbons and dry,  12.
- Replace the felt filter. As a temporary measure, knock the filter out on the palm of your hand or blow clear with compressed air. Do not wash.
- Replace any damaged parts.


Install in the reverse sequence.




- Fit the foam element in the filter cover.
- Fit the felt element in the filter housing ("INSIDE" must face engine).




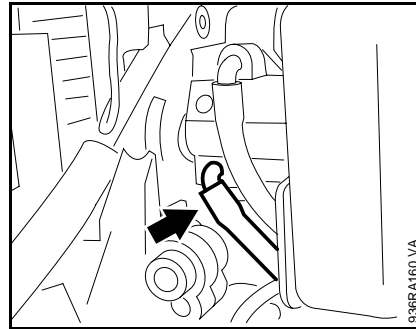
- Make sure that the slot in the filter cover engages the lug on the filter housing (arrow).

If you suspect a fault in the fuel system,  4.3

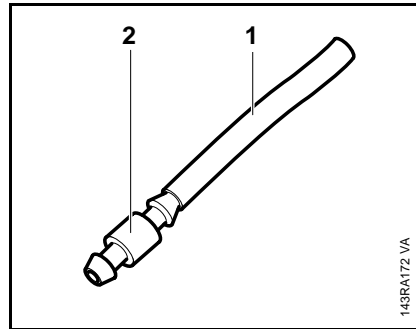
In the case of problems with the carburetor or fuel supply system, also check and clean or replace the tank vent,  9.5.

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

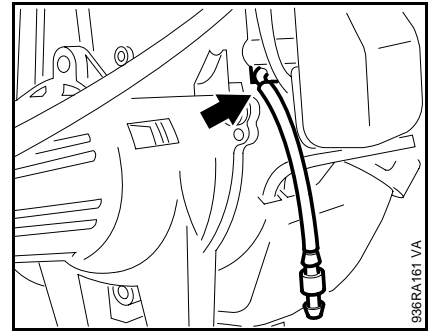
- Remove the shroud,  5.1



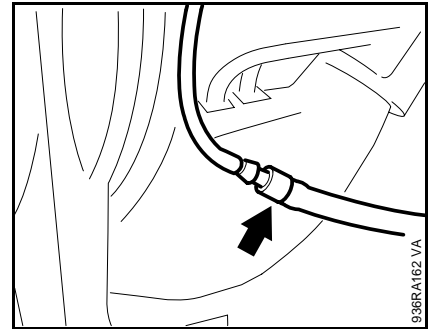
- Disconnect the fuel hose from the carburetor's elbow connector (arrow).



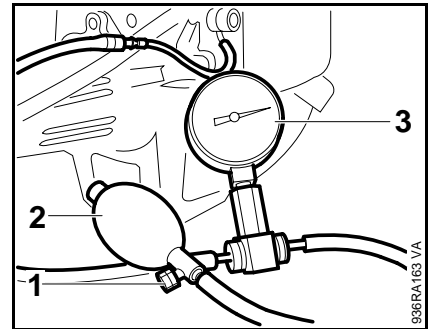
- Push the fuel hose (1) 1110 141 8600 onto the nipple (2) 0000 855 9200.



- Push the fuel hose with nipple onto the carburetor's elbow connector (arrow).



- Connect the tester's pressure hose to the nipple (arrow).




- Close the vent screw (1) on the rubber bulb (2) and pump air into the carburetor until the pressure gauge (3) shows a reading of approx. 0.8 bar.

9.2.2 Removing and Installing


If this pressure remains constant, the carburetor is airtight. However, if it drops, there are two possible causes:

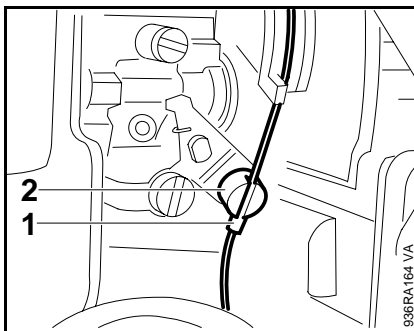
The inlet needle is not sealing (foreign matter in valve seat or sealing cone of inlet needle is damaged or the inlet control lever is sticking).


Metering diaphragm is damaged.

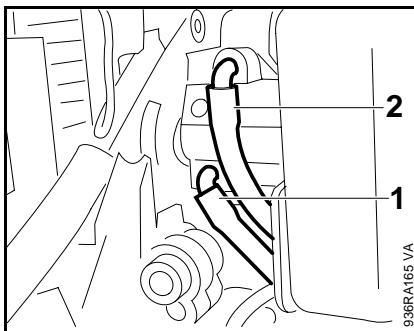
In either of these cases the carburetor has to be serviced,  9.3

After completing the test, open the vent screw and pull the fuel hose off the carburetor.

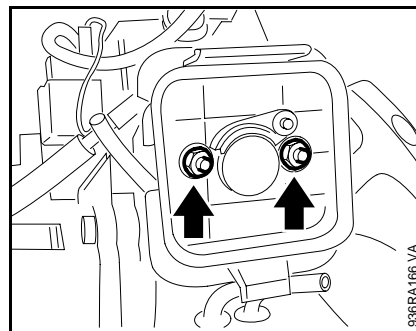
- Push the fuel hose onto the carburetor's elbow connector.
- Fit the shroud,  5.1




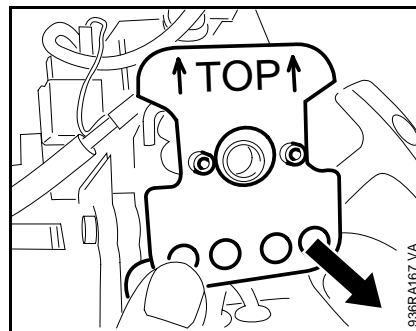
- Remove the shroud,  5.1.
- Disconnect throttle cable nipple (1) from slotted pin (2) on carburetor's throttle lever.



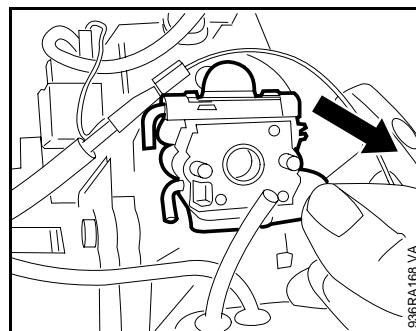
- Disconnect the fuel hose (1) from the fuel pump flange.
- Disconnect the fuel hose (2) from the carburetor.



- Remove the air filter,  9.1
- Unscrew the nuts (arrows).
- Remove the filter housing.

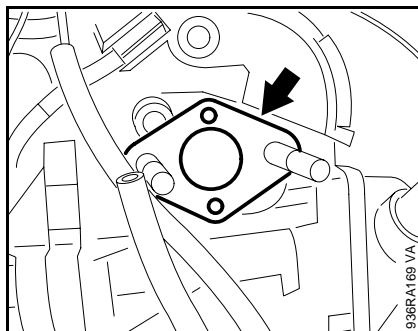


- Remove the heat shield (note its installed position).



- Pull the carburetor off the screws.

9.2.3 Spacer Flange



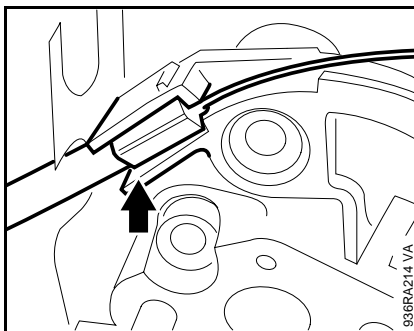
- Remove the gasket (arrow).
- Remove the spacer flange with gasket, 9.2.3

Replace the spacer flange if it is damaged or cracked.

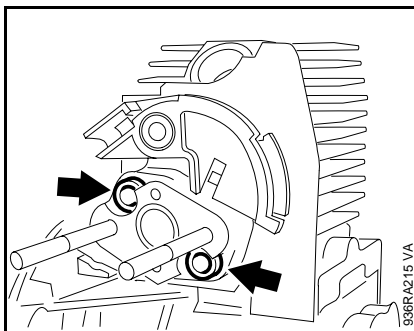
Always use new gaskets.

Install in the reverse sequence.

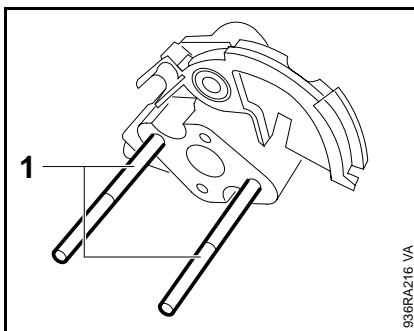
- Tighten down the nuts firmly, 3.2



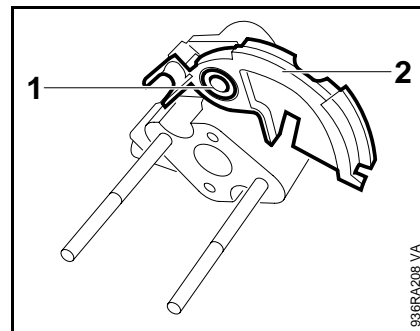
- Remove the carburetor, 9.2.2
- Take the throttle cable out of the tensioner (arrow).



- Take out the screws with washers (arrows).
- Remove the spacer flange with gasket.

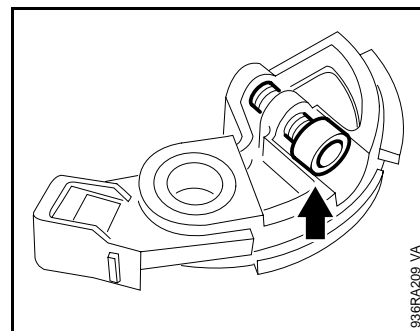


- If necessary, pull the hex head screws (1) out of the spacer flange.



- Remove the screw with bushing or push nut with pin (1).
- Take the tensioner (2) off the spacer flange.

On version with push nut, always install a new push nut.

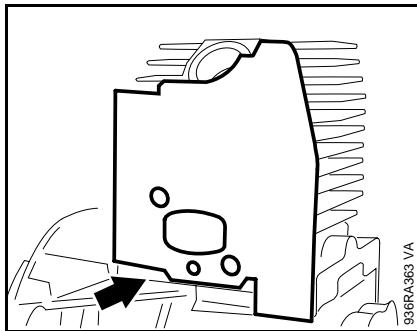


- Take the adjusting screw (arrow) out of the tensioner.

Install in the reverse sequence.

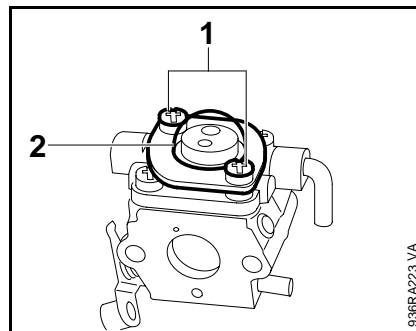
9.3 Servicing the Carburetor

9.3.1 Flange Mounting with Oval End Cover

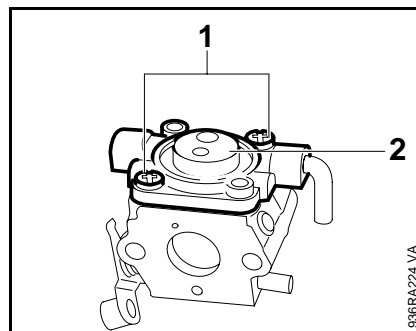


- Use a new gasket (arrow).
- Mount the spacer flange and tighten down the screws firmly, 3.2

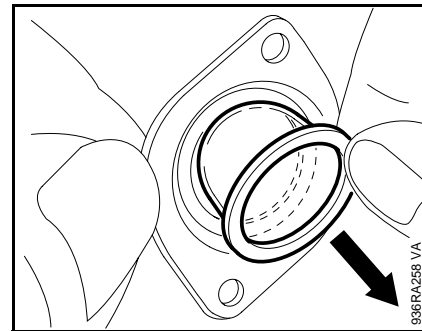
Assemble all other parts in the reverse sequence.



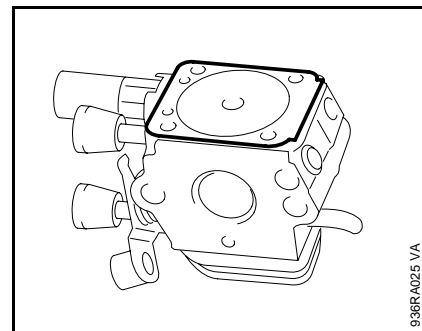
- Take out the M3x12 screws (1).
- Remove the end cover with cap (2).



- Take out the M3x8 screws (1).
- Remove the flange (2).



- Take the cap out of the end cover.



- Inspect the metering diaphragm and gasket and replace if necessary, 9.3.3

Install in the reverse sequence.



Additional holes in the gasket and diaphragm (if there are any) must line up with those in the carburetor and flange.

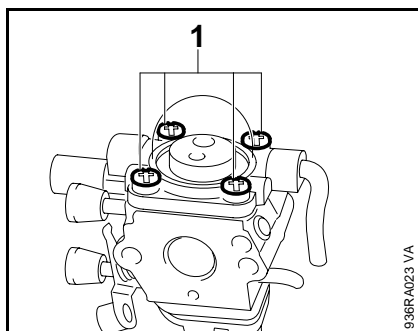
- Insert the M3x8 screws in the flange mounting holes (without integrally cast spacers) and carburetor and tighten them down.

Note:

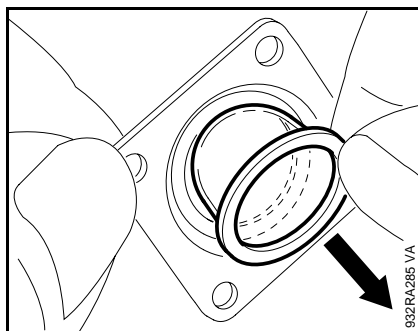
STIHL recommends that the flange mounting with an oval end cover be converted to the later version with a square end cover, 9.3.2

9.3.2 Flange Mounting with Square End Cover

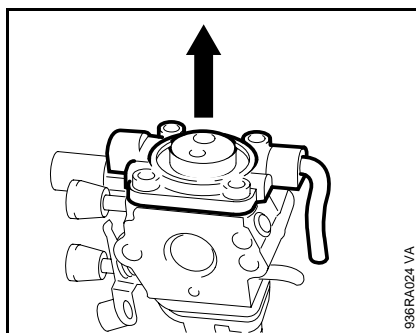
- Remove the shroud,  5.1
- Carry out leakage test,  9.2.1



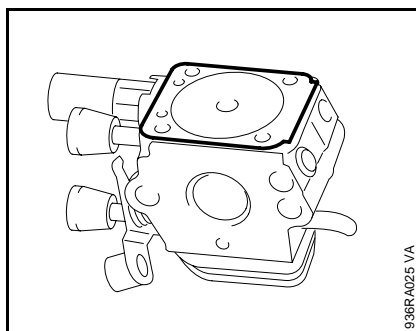
- Take out the screws (1).
- Remove the end cover with cap.




- Take the cap out of the end cover.



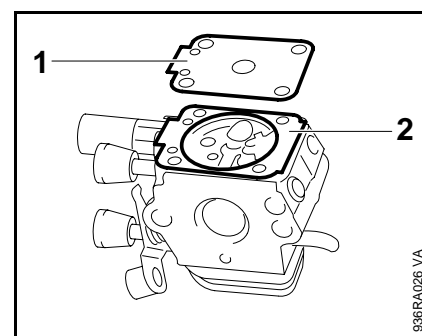
- Remove the flange.





- Inspect the metering diaphragm and gasket and replace if necessary,  9.3.3

Install in the reverse sequence.

9.3.3 Metering Diaphragm



- Remove flange secured with an oval end cover,  9.3.1
- Remove flange secured with a square end cover,  9.3.2
- Remove the metering diaphragm (1) and gasket (2) from the carburetor body.

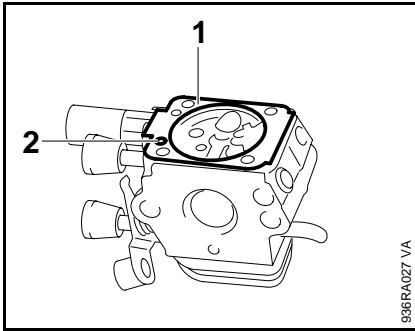
If the gasket and diaphragm are stuck together, remove and separate them very carefully.

- Inspect the diaphragm and gasket and replace if necessary.

The diaphragm is a very delicate component. As a result of the alternating stresses the material eventually shows signs of fatigue, i.e. the diaphragm distorts and swells and has to be replaced.

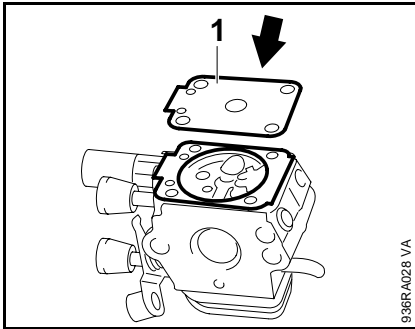
Install in the reverse sequence.

9.3.4 Inlet Needle



- Fit the gasket (1) on the carburetor body.

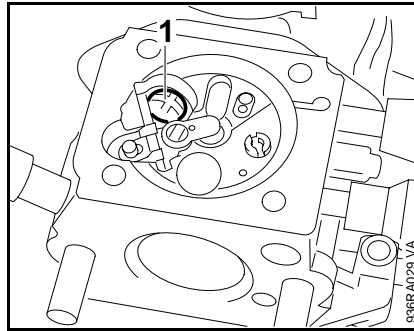
Line up the hole in the gasket (2) with the compensating bore in the carburetor.



- Place metering diaphragm (1) on the gasket.

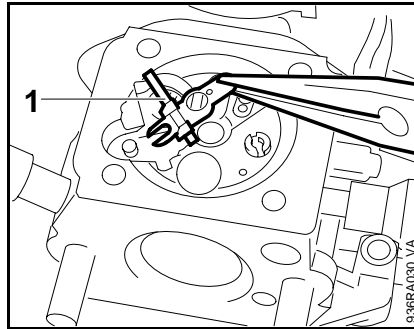
Line up the hole in the metering diaphragm with the compensating bore in the carburetor and gasket.

Reassemble other parts, [9.2.2](#)



- Remove the metering diaphragm, [9.3.3](#)

- Take out the screw (1).



- Carefully lift away the inlet control lever (1) with spindle.

Install in the reverse sequence.

- Engage clevis in annular groove on head of the inlet needle.

- The spring must locate in the control lever's nipple.

Check that inlet needle and spring are properly seated.

Install in the reverse sequence.

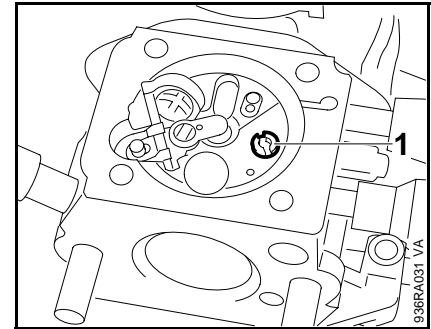
9.3.5 Fixed Jet

- Remove the metering diaphragm, [9.3.3](#)

Take care not to damage the fixed jet with the screwdriver.

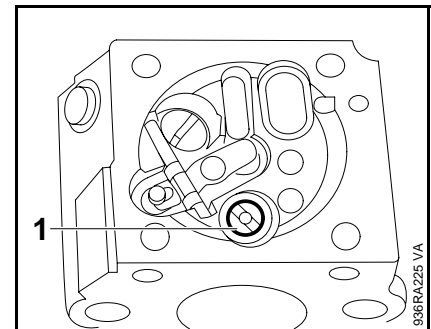
The fixed jet cannot be removed on carburetors not listed below. Clean the jet or replace the carburetor if necessary.

C1Q-S63, C1Q-S69, C1Q-S78 and C1Q-S80 carburetors



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

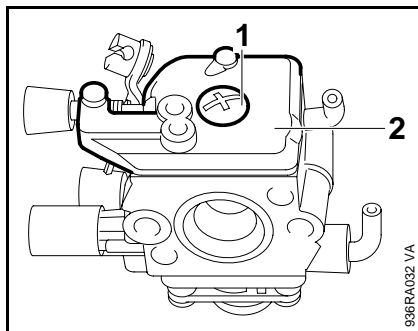
C1Q-S60, C1Q-S56, C1Q-S45 carburetors



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

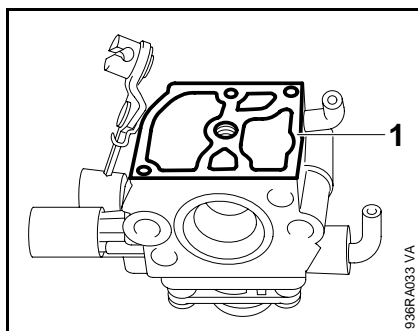
Install in the reverse sequence.

9.3.6 Pump Diaphragm

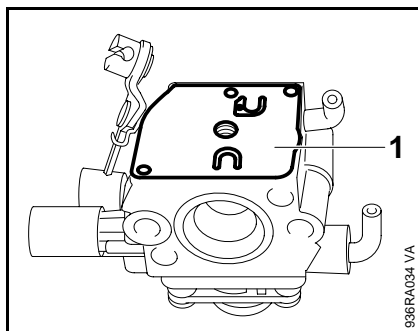


– Remove the carburetor, 9.2.2

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



- Remove the gasket (1).

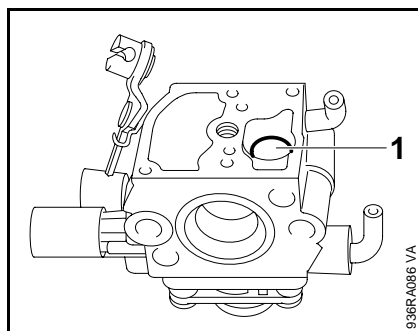


- Remove the pump diaphragm (1).

If the gasket and pump diaphragm are stuck together, remove and separate them very carefully.

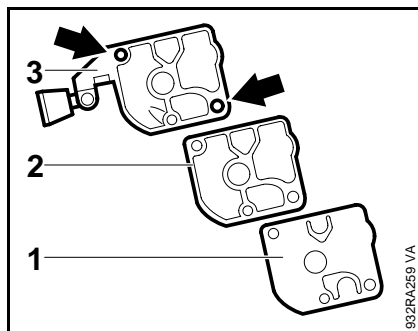
- Inspect the diaphragm and gasket and replace if necessary.

The diaphragm is a very delicate component. As a result of the alternating stresses the material eventually shows signs of fatigue, i.e. the diaphragm distorts and swells and has to be replaced.



- Examine the fuel strainer (1) for contamination and damage and replace if necessary.

Install in the reverse sequence.



- The pump diaphragm (1) and gasket (2) are held in position by the pegs (arrows) on the end cover (3).

9.4 Adjusting the Carburetor

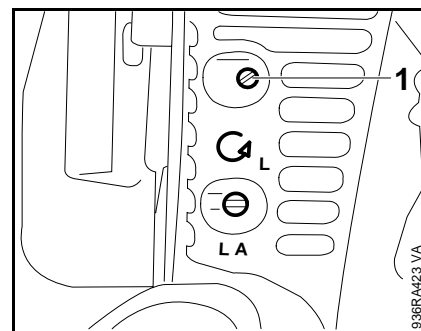
9.4.1 Carburetor with Two Adjusting Screws

Carburetor has no high speed screw (H).

The carburetor is tuned so that the engine receives an optimum fuel-air mixture under all operating conditions.

Emissions at idle speed and part load are reduced by limiting the flow of idle mixture.

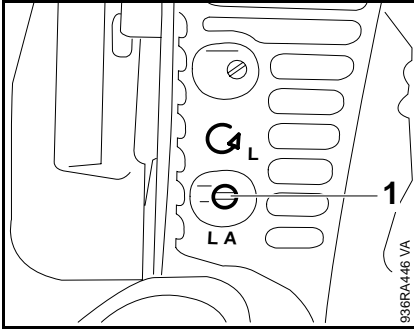
Standard setting



When adjusting from scratch, first carry out the standard setting.

- Carefully turn the low speed screw (1) clockwise until it is firmly against its seat.
- Open the low speed screw (1) one full turn.
- Mount the cutting tool, attachment or CombiTool (KM) properly.
- Check the air filter and clean or replace as necessary.
- Adjust the throttle cable (if adjustment is possible).
- Start the engine and allow it to warm up.

9.4.2 Carburetor with LD Screw



Adjusting idle speed

- Carry out the standard setting.

Engine stops while idling

- Turn the idle speed screw **LA** (1) clockwise until the cutting tool begins to run, then turn the screw back half a turn from that position.

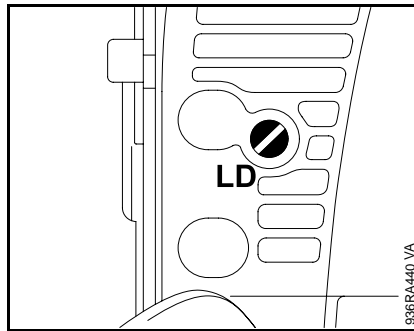
Cutting tool runs when engine is idling

- Carry out the standard setting.
- Turn the idle speed screw **LA** (1) counterclockwise until the cutting tool stops running, then turn the screw another half turn in the same direction.

The carburetor is tuned at the factory so that the engine receives an optimum fuel-air mixture under all operating conditions.

Standard setting

- Mount the cutting tool, attachment or CombiTool (KM) properly.
- Clean or replace the air filter if necessary, 9.1
- Clean or replace the spark arresting screen if necessary, 5.3



- Carefully turn the idle speed screw (**LD**) counterclockwise down onto its seat. Then open it two full turns.

Adjusting idle speed

- Carry out standard setting.
- Start the engine and allow it to warm up.

Engine stops while idling

- Turn the idle speed screw (**LD**) slowly clockwise until the engine runs smoothly. The cutting tool must not run.

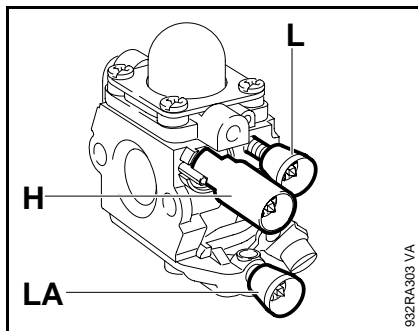
Cutting tool runs when engine is idling

- Turn the idle speed screw (**LD**) counterclockwise until the cutting tool stops running, then turn the screw about another one turn in the same direction.

Erratic idling behavior, poor acceleration

- Turn the idle speed screw (**LD**) slowly no more than half a turn counterclockwise.

9.4.3 User Adjustment, Carburetor with Limiter Cap

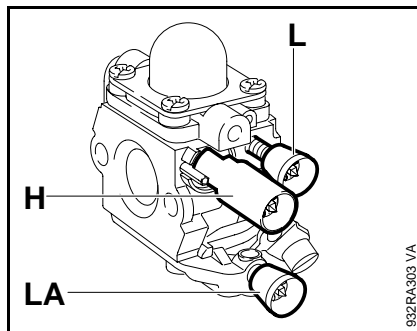


Standard setting

The limiter cap must not be removed from the high speed screw (**H**) to carry out the standard setting.

With this carburetor it is only possible to correct the setting of the high speed screw (**H**) within fine limits.

- Check the air filter and replace if necessary, 9.1
- Check the spark arresting screen, clean or replace if necessary, 5.3
- Check throttle cable adjustment (if fitted) and adjust if necessary, 8.8
- Mount the cutting tool, attachment or CombiTool (KM) properly.



Now make the following adjustments:

- Turn the high speed screw (**H**) counterclockwise as far as stop (no more than 3/4 turn)
- Carefully turn the low speed screw (**L**) clockwise until it is against its seat, then open it one full turn counterclockwise.
- Start the engine and allow it to warm up.
- Use the idle speed screw (**LA**) to adjust idle so that the tool does not run.

A minor correction may be necessary when operating at high altitude or at sea level. Note that even very slight corrections to the high speed screw (**H**) produce a noticeable change in engine running behavior.

- Carry out the standard setting.
- Start the engine and allow it to warm up.
- Open the throttle wide.

- At high altitude (mountains): Turn the high speed screw (**H**) clockwise (leaner), but no further than stop, until there is no noticeable increase in engine speed.

It is possible that the standard setting will produce the highest engine rpm.

Adjusting idle speed

- Open the low speed screw (**L**) one full turn.
- Allow the engine to warm up.

Engine stops while idling

- Turn the idle speed screw (**LA**) slowly clockwise until the engine runs smoothly.

Erratic idling behavior, poor acceleration

- Idle setting is **too lean**. Turn the low speed screw (**L**) counterclockwise (about a quarter turn) until the engine runs and accelerates smoothly.

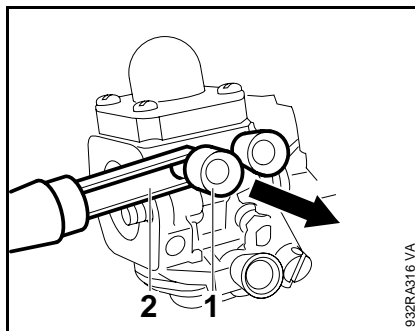
Erratic idling behavior

- Idle setting is **too rich**. Turn the low speed screw (**L**) clockwise (about a quarter turn) until the engine runs and accelerates smoothly.

It is usually necessary to change the setting of the idle speed screw (**LA**) after every correction to the low speed screw (**L**).

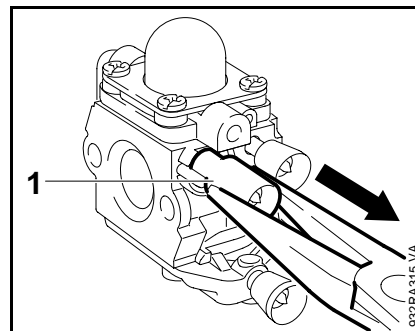
The limiter cap has to be removed from the high speed screw (**H**) only if it is necessary to replace the high speed screw (**H**), clean the carburetor or adjust it from scratch.

After removing the limiter cap it is necessary to carry out the basic setting.



Removing short limiter cap

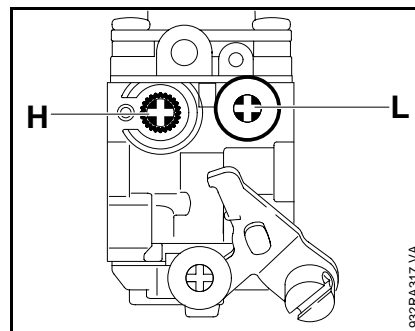
- Push puller (2) 5910 890 4501, open side facing you, between the limiter cap (1) and carburetor body and pry the cap off. If the limiter cap is stuck on the screw, turn the puller over so that its open side faces the carburetor body. Pry off the limiter cap.



Removing long limiter cap

- Use suitable pliers to pull off the limiter cap.
- Screw down the high speed screw (**H**) and low speed screw (**L**) clockwise until they are against their seats.

Carrying out basic setting



- Open the high speed screw (**H**) 1 1/2 turns counterclockwise.
- Open the low speed screw (**L**) one full turn counterclockwise.

- Adjust idle speed with a tachometer. Adjust specified engine speeds within a tolerance of +/- 200 rpm.

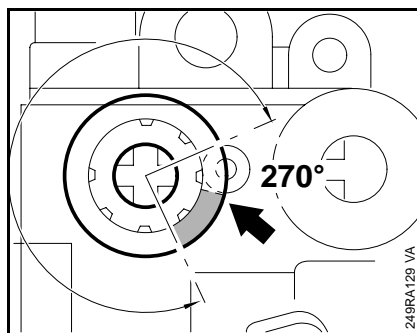
1. Adjust engine speed with idle speed screw (**LA**) to 3,300 rpm.
2. Turn low speed screw (**L**) clockwise or counterclockwise to obtain maximum engine speed.

If this speed is higher than 3,700 rpm, abort the procedure and start again with step 1.

3. Use the idle speed screw (**LA**) to set engine speed again to 3,300 rpm.
4. Set the engine speed to 2,800 rpm with the low speed screw (**L**).

Always install new limiter caps.

Limiter caps that have been removed once may be damaged and must not be re-used.

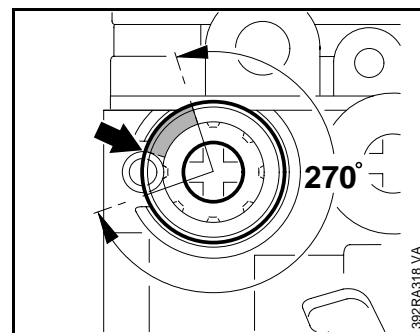


Installing short limiter cap

- Line up the **new cap** for the high speed screw (**H**) against the rich stop and press it on only as far as the **second noticeable detent position**.

The stop limits the adjustment range of the high speed screw (**H**) to a 3/4 turn. Do not press the cap against the carburetor body as it will otherwise be damaged.

- Carry out the user adjustment, 9.4.3



Installing long limiter cap

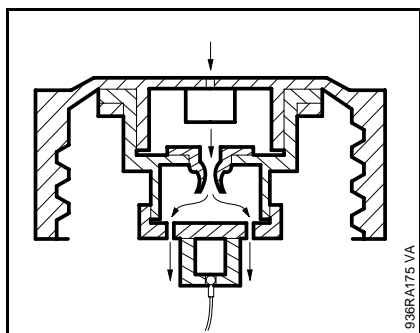
- Line up the **new cap** for the high speed screw (**H**) against the rich stop so that the high speed screw (**H**) can only be rotated a 3/4 turn clockwise.
- Push on the limiter cap until it butts against the carburetor body.
- Carry out the user adjustment, 9.4.3

9.5 Tank Vent

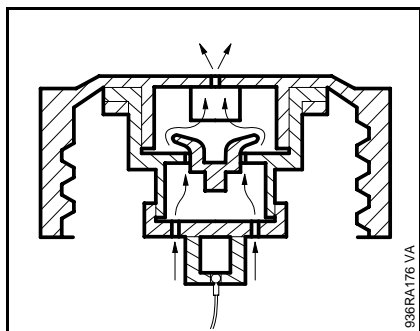
Correct operation of the carburetor is only possible if atmospheric pressure and internal fuel tank pressure are equal at all times. This is ensured by the tank vent.

In the event of trouble with the carburetor or the fuel supply system, always check the tank vent and replace it if necessary.

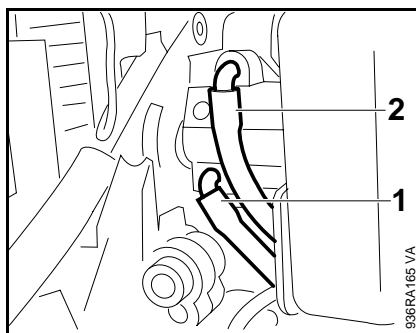
Check function by performing pressure and vacuum tests on fuel tank via the fuel hoses.



Equalization of pressure from the outside inwards takes place through the hole in the filler cap, the sintered filter, the valve and the holes in the cap.

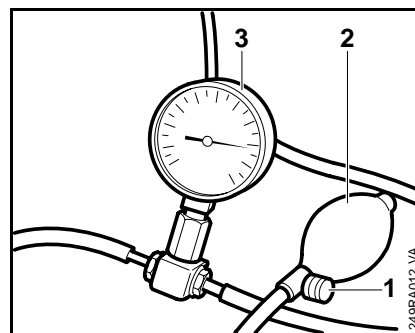


Equalization of pressure from the inside outwards takes place through the hole in the cap, the holes in the valve body, the sintered filter and the hole in the filler cap.



Testing

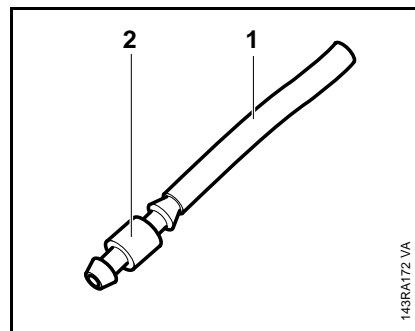
- Remove the shroud, 5.1
- Pull fuel hose (1) off the elbow connector on the fuel pump flange.
- Pull the fuel hose (2) off the elbow connector on the carburetor.
- Seal fuel hose (1) with a suitable plug.
- Connect pressure hose of carburetor/crankcase tester 1106 850 2905 to fuel hose (2).



- Close the vent screw (1) on the rubber bulb (2).
- Pump in air with the rubber bulb (2) until the pressure gauge (3) shows a reading of about 0.8 bar.

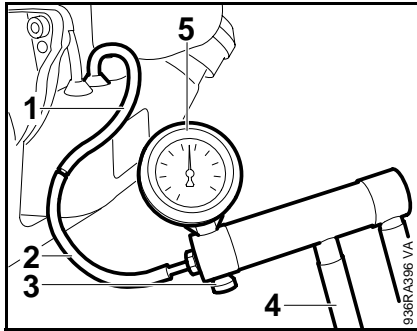
This pressure must drop gradually. If it remains constant, the tank vent is faulty or needs to be cleaned.

- Disconnect the carburetor/crankcase tester 1106 850 2905 from the fuel hose.



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

9.6 Pickup Body





- Connect suction hose (2) of vacuum pump 0000 850 3501 to the fuel hose (1).
- Close the vent screw (3) on the pump.
- Operate the lever (4) until the pressure gauge (5) shows a vacuum of 0.4 bar.

This vacuum must gradually disappear. If it remains constant, the tank vent is faulty and must be replaced.

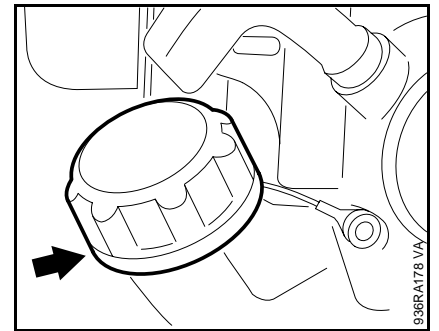
The diaphragm pump draws fuel out of the tank and into the carburetor via the fuel hose. Any impurities mixed with the fuel are retained by the pickup body. The fine pores of the pickup body eventually become clogged with minute particles of dirt. This restricts the passage of fuel and results in fuel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

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.

9.7 Fuel Tank/ Fuel Hoses

- Drain the fuel tank.
- Remove the rewind starter,  6.2
- Pull the fuel hoses off the elbow connectors on the carburetor,  9.2.2

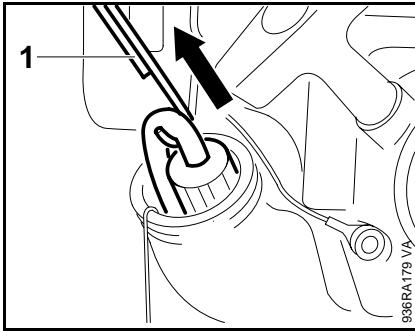
Dispose of fuel and lubricants properly at approved disposal site.



Cleaning the fuel tank

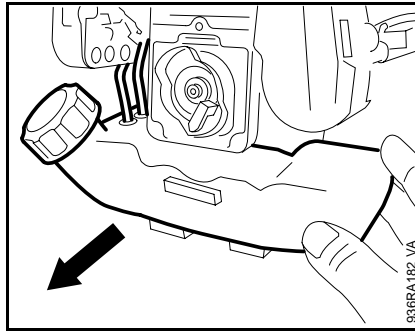
- Unscrew the filler cap (1) and drain the tank.
- Pour a small amount of clean gasoline into the tank and shake the unit vigorously.
- Open the tank again and drain it.

Dispose of fuel and lubricants properly at approved disposal site.



Pickup body

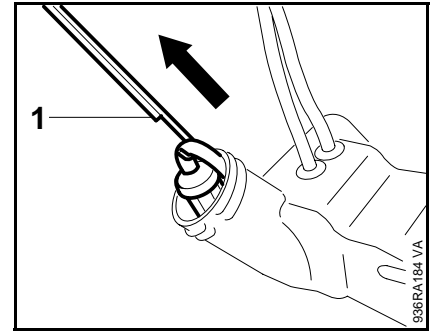
- Use hook (1) 5910 893 8800 to pull the pickup body out of the fuel tank. Take care not to overstretch the fuel hose in the process.



Fuel tank

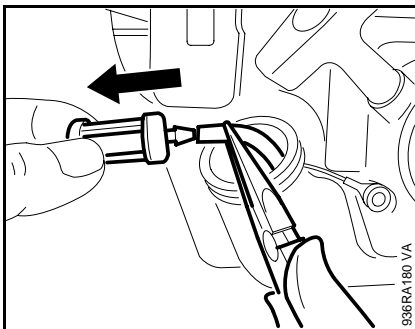
- Remove the fuel tank.
- Remove the fuel hoses if necessary.

Install in the reverse sequence.



Fuel hoses

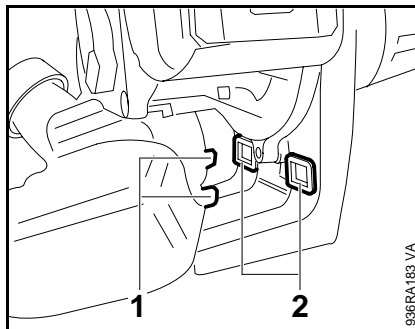
- Unscrew the filler cap and remove it together with the cap retainer.
- Use hook (1) 5910 893 8800 to pull out the pickup body.



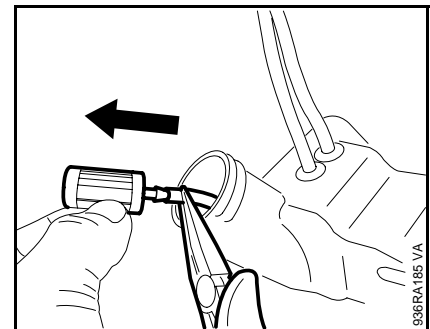
- Pull the pickup body off the fuel hose.

– Fit a new pickup body.

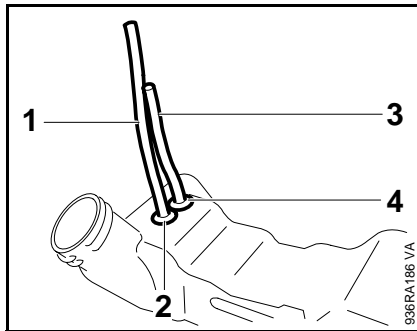
Install in the reverse sequence.



- The lugs (1) must engage the plugs (2).

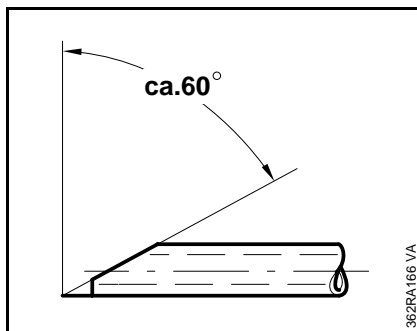


- Pull the pickup body off the fuel hose.



- Pull out the vent hose (1) with grommet (2) and fuel hose (3) with grommet (4).

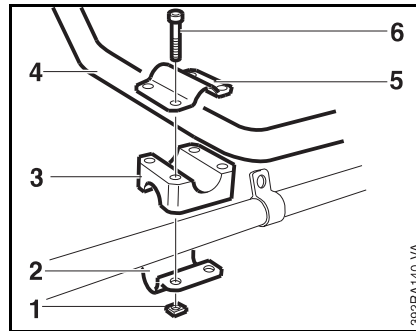
Install in the reverse sequence.



To ease installation, cut the end of the vent hose to an angle of about 60°.

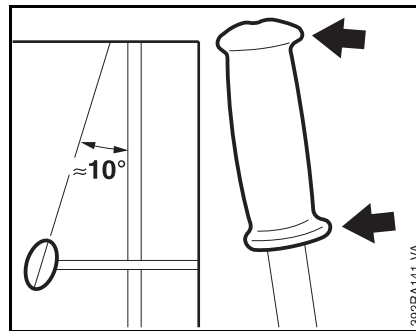
10. Drive Tube

10.1 Bike Handle



FH 75, FS 80, 85, 85 T, KM 85 only

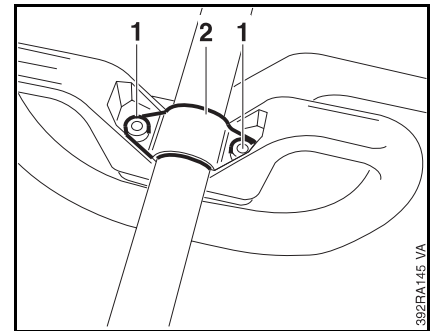
- Remove the control handle, 8.5
- Unscrew the nuts (1) (if fitted).
- Remove the lower clamp (2), clamp block (3), bike handle (4) and upper clamp (5) with screws (6).
- To replace left grip, carefully cut it open and pull it off.
- Use protective jaws (prism jaws) to clamp the bike handle in a vise.
- Coat inside of opening in new grip with a little STIHL press fluid, 12.



- Push the grip into position so that the longer ends (arrows) point towards the gearbox at an angle of 10 - 15 degrees to the drive tube.

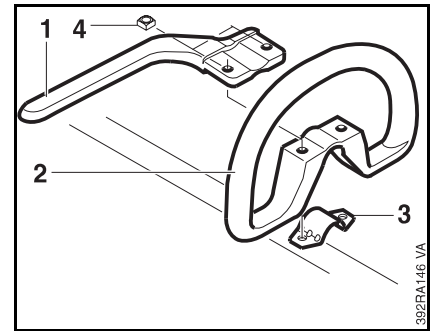
10.2 Loop Handle

10.2.1 Loop Handle with Barrier Bar



FH 75, HL 75, KW 85 only

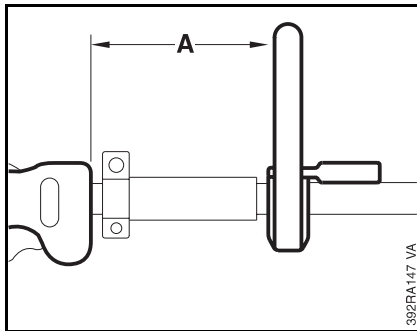
- Take out the screws (1).
- Remove the lower clamp (2).



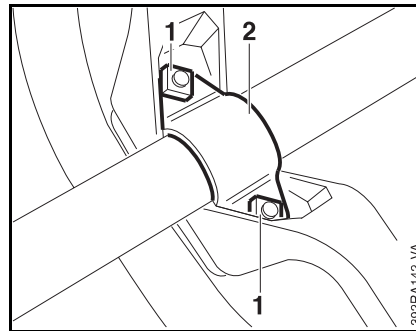
- Remove the barrier bar (1), loop handle (2) and upper clamp (3).
- Take the square nuts (4) out of the barrier bar.

Install in the reverse sequence.

10.2.2 Loop Handle without Barrier Bar

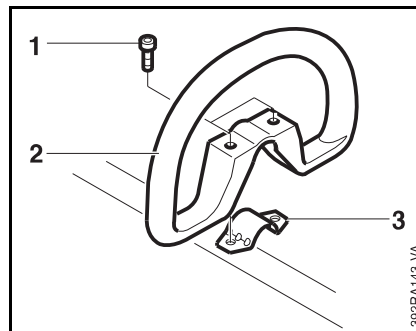


- Position the loop handle (1) about 20 cm (distance "A") forward of the control handle and tighten it down firmly.



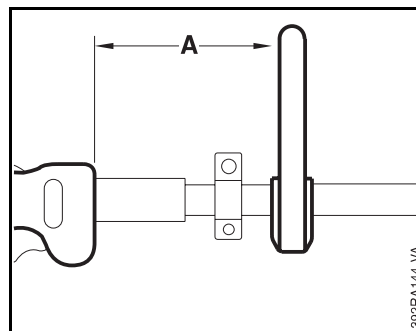
FS 75, KW 85 only

- Unscrew the nuts (1).
- Remove the lower clamp (2).



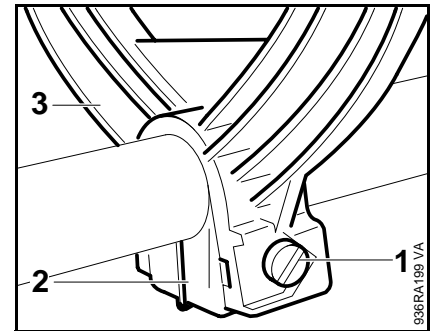
- Take out the screws (1).
- Remove the loop handle (2) and upper clamp (3).

Install in the reverse sequence.



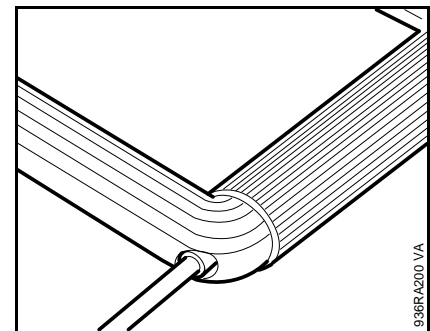
- Position the loop handle about 20 cm (distance "A") forward of the control handle and tighten it down firmly.

10.2.3 Loop Handle with Handle Hose

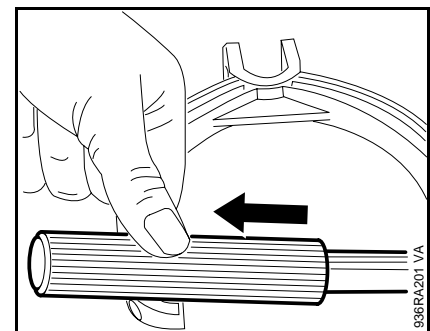


FC 75, 85, FS 75 only

- Take out the screw (1), pull out the clamp block (2) and remove the loop handle (3) from the drive tube.

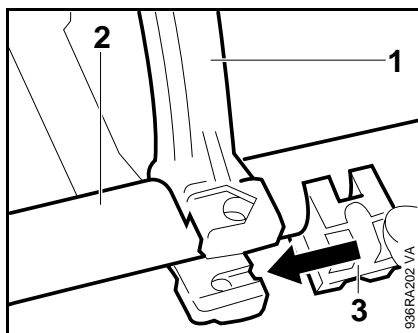


- To replace the handle hose, take out the screw.

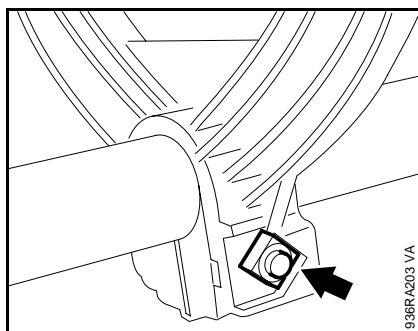


- Turn the top of the loop handle to one side and pull off the handle hose.

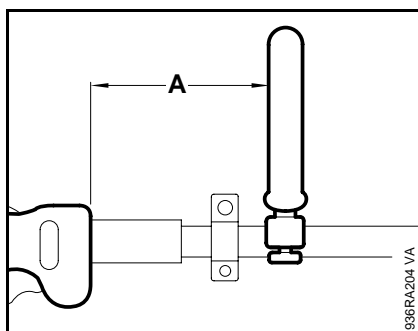
Install in the reverse sequence.



- Place the loop handle (1) on the drive tube (2).
- Position the clamp block (3) against the drive tube and slide it into the loop handle.



- Fit the square nut (arrow).
- Insert the screw and tighten it down moderately.

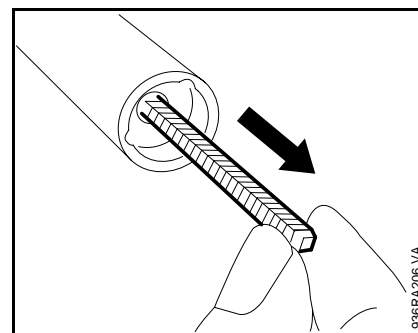


- Position the loop handle about 15 cm (distance "A") forward of the control handle and tighten it down firmly.

Assemble all other parts in the reverse sequence.

The drive shaft is supported inside the drive tube in a flexible liner. The ends of the flexible liner are sealed with plugs.

- Remove the bearing housing/gearbox – see "CombiTools" service manual.




Drive shaft in FS 75, 80, FC 75

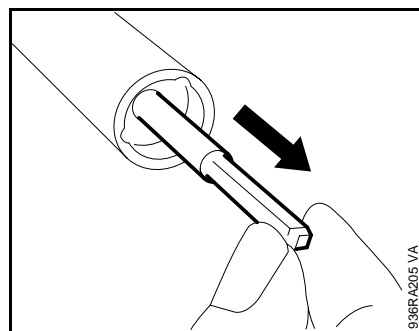
- Pull the flexible drive shaft out of the drive tube.

Drive shaft (all models)

If the drive shaft has turned blue, always install a new one.

All models except FS 75

- Coat the drive shaft with STIHL gear lubricant for hedge trimmers,  12, before installing it in the drive tube.



Drive shaft in FC 85, FH 75, FS 85, HL 75, KW 85


- Pull the rigid drive shaft out of the drive tube.

FS 85 only

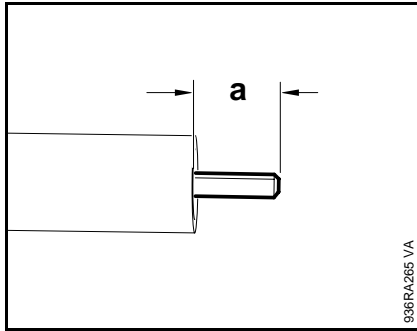
A hollow lightweight shaft with a diameter of 8 mm was installed in the FS 85 for a period. If the drive shaft is faulty, use the 6 mm diameter solid shaft as a replacement. Make sure the flexible liner is changed at the same time.

The 8 mm diameter hollow lightweight shaft is still used, but only in the FS 85 RX (USA/CAN version).

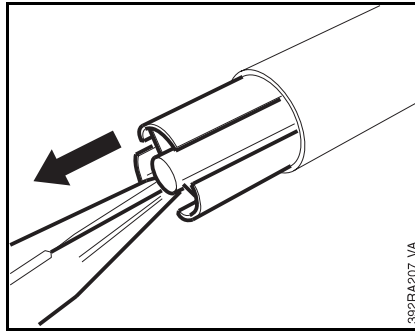
FS 75 only

- Coat the drive shaft with STIHL gear lubricant for brushcutters,  12, before installing it in the drive tube.

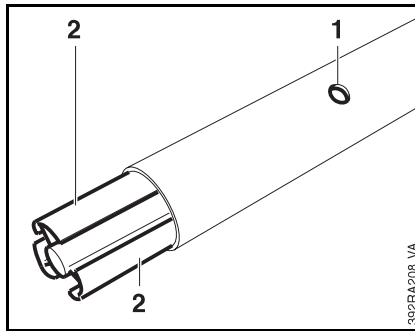
Apply the lubricant uniformly to the drive shaft. **Never** pump lubricant directly into drive tube.



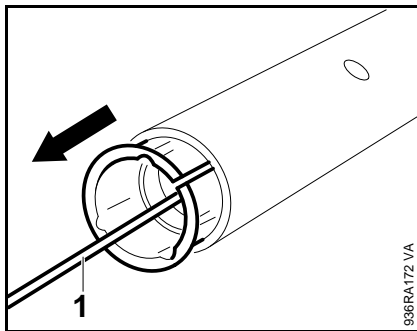
- Push the drive shaft into the drive tube until dimension "a" is obtained (rigid shaft should project 20 mm and the flexible shaft 17 mm). If necessary, apply slight pressure to the shaft and rotate it slowly until it can be pushed in to the specified dimension.
- Install the bearing housing – see "CombiTools" service manual.



- Pull out the flexible liner.



- The hole (1) must be between the spokes (2).
- Fit the plug and then the drive shaft.

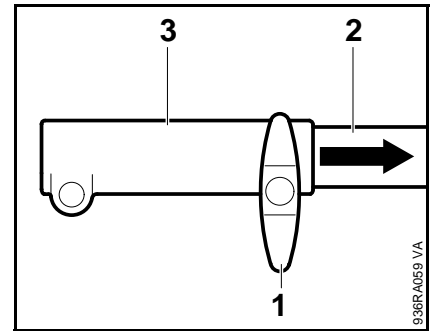


Flexible liner

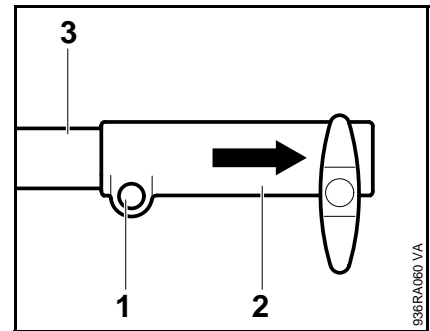
- Remove the drive shaft.
- Use hook (1) 5910 890 2800 to pull out the plug.

10.3.1 Drive Shaft in Upper End of Drive Tube (KM 85 only)

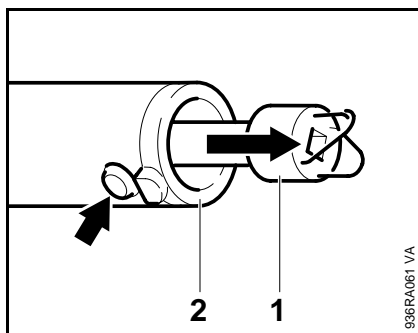
The drive shaft in the upper end of the drive tube is supported in a flexible liner. The top end of the flexible liner is sealed with a plug and the bottom end with a sleeve.



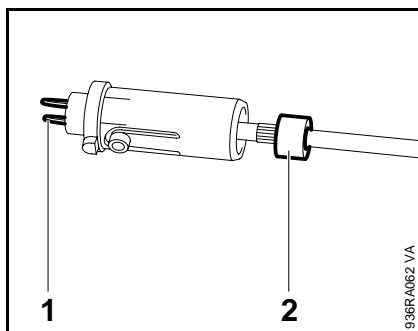
- Loosen the wing screw (1).
- Pull the lower end of the drive tube (2) out of the coupling sleeve (3).



- Loosen the clamp screw (2).
- Pull the coupling sleeve (2) off the upper end of the drive tube (3).

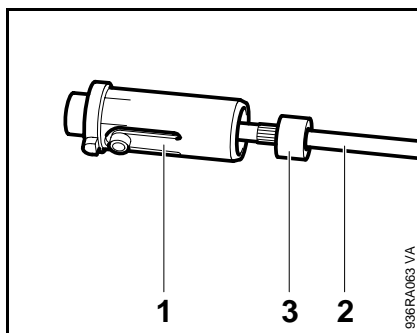


- Press down the lock button (arrow) and hold it in that position.
- Pull out the drive shaft (1) together with the sleeve (2).



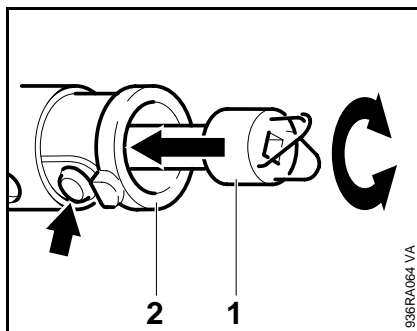
- Pull out the clips (1).
- If the sleeve (2) is fitted, heat it with a hot air blower.
- Remove the sleeve.

If the drive shaft has turned blue, always install a new one.

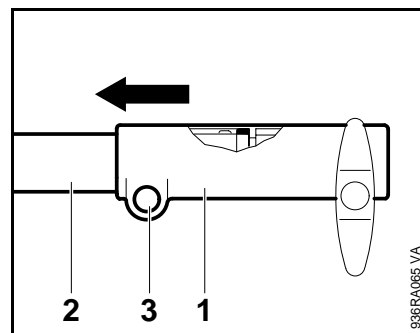


- Push the sleeve (1) onto the drive shaft (2).
- Press the sleeve (3) on to the knurling.
- Fit the clips.
- Before installing the drive shaft, coat it with STIHL gear lubricant 0781 120 1109, 12.

Apply the lubricant evenly to the drive shaft. **Never** pump lubricant directly into the drive tube.



- Push the drive shaft (1) with sleeve (2) into the drive tube.
- Press down the lock button (arrow) and push the sleeve (2) home as far as stop.



- Push the coupling sleeve (1) onto the drive tube (2) as far as stop.

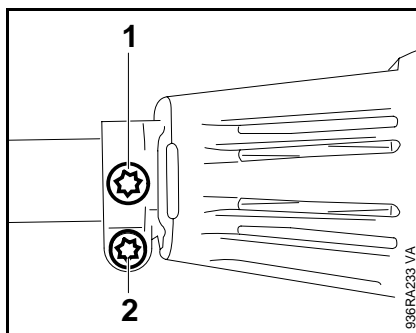
Line up the coupling sleeve so that the slot engages the lug and the gap in the clamp points down.

- Tighten down the clamp screw (3) firmly.
- Fit the drive tube.
- Tighten down the wing screw firmly.

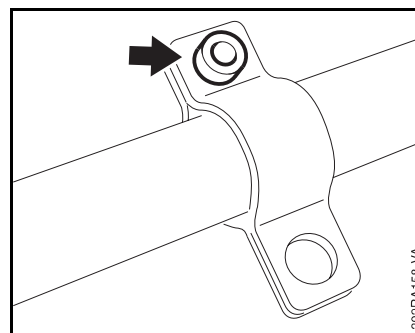
10.4 Drive Tube

10.4.1 FS 80, 85, FH 75, HL 75

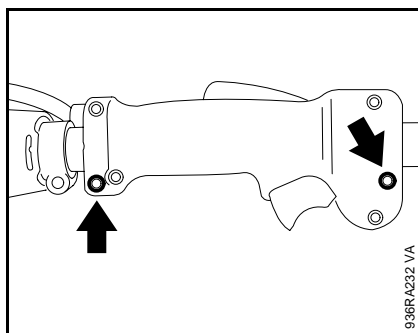
- Remove the drive shaft, 10.3
- Remove the bike handle, 10.1
- Remove the loop handle, 10.2



- Take the fixing screw (1) out of the AV sleeve.
- Loosen the clamp screw (2).

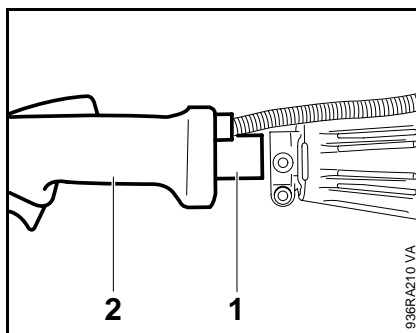


- Remove the screw (arrow) from the carrying ring.

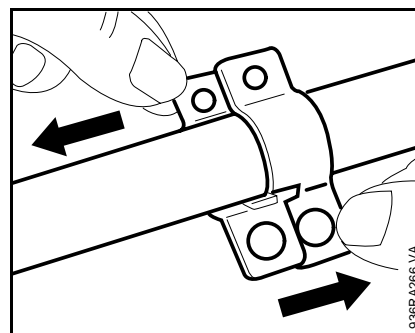


Version up to 2002

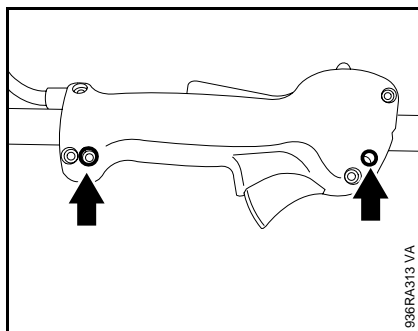
- On loop-handled machines, loosen the clamp screws (arrows) in the control handle.



- Pull out the drive tube.
- On loop-handled machines, pull the drive tube (1) out of the control handle (2) at the same time.

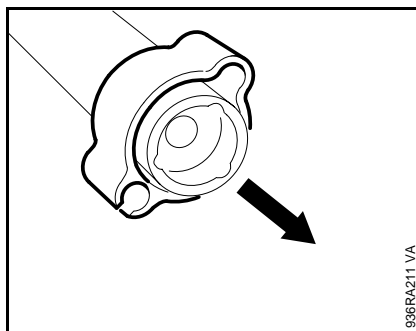


- Pull the carrying ring apart and take it off the drive tube.

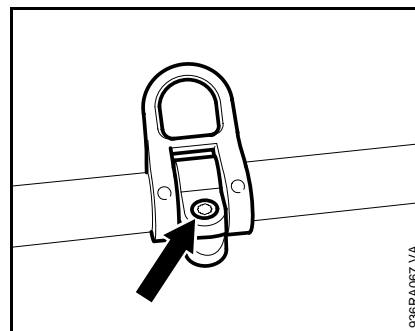


Version from 2002

- Loosen the clamp screws (arrows) in the control handle.



- Pull off the throttle cable retainer (if fitted).

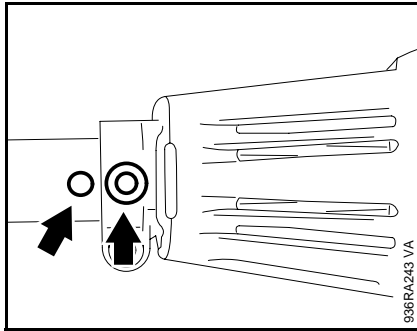


- Loosen the screw (arrow) on the carrying ring.

– Pull off the carrying ring.

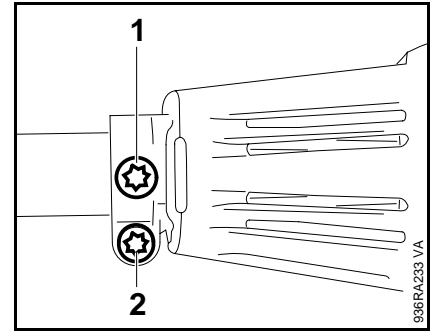
Install in the reverse sequence.

10.4.2 Split Drive Tube (KM 85 only)

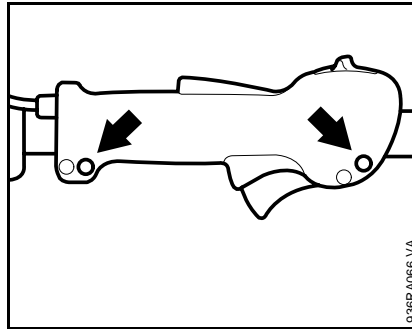


- Push home the drive tube until the holes (arrows) line up.
- Tighten down the fixing screw and clamp screw firmly, 3.2

- Remove the drive shaft, 10.3.1
- Remove the bike handle, 10.1
- Remove the loop handle, 10.2

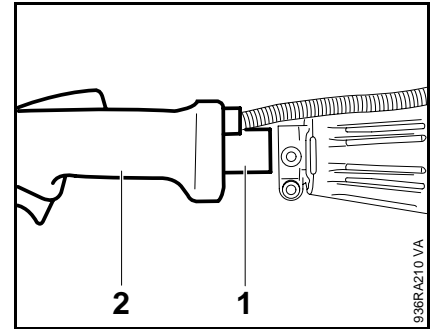


- Take the fixing screw (1) out of the AV sleeve.
- Loosen the clamp screw (2).

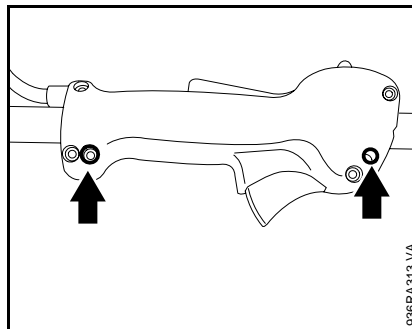


Version with loop handle up to 2002

- Loosen the clamp screws (arrows) in the control handle.

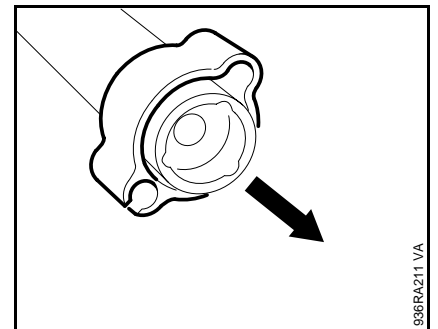


- Pull out the drive tube.
- On loop-handled machines, pull the drive tube (1) out of the control handle (2) at the same time.



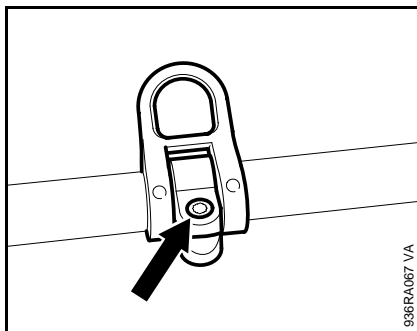
Version with loop handle from 2002

- Loosen the clamp screws (arrows) in the control handle.



- Pull off the throttle cable retainer (if fitted).

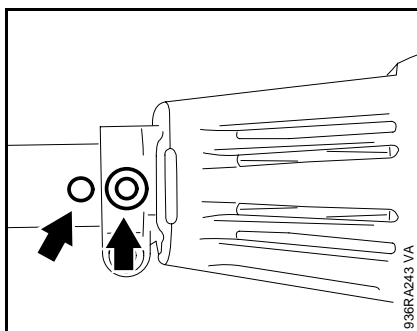
10.5 Bearing Housing (FS 75 only)



- Loosen the screw (arrow) on the carrying ring.

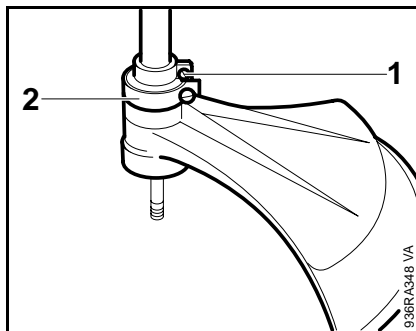
– Pull off the carrying ring.

Install in the reverse sequence.



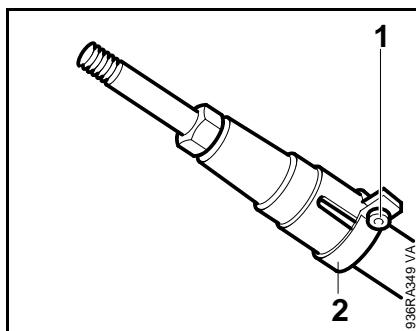
- Push home the drive tube until the holes (arrows) line up.

– Tighten down the fixing screw and clamp screw firmly, 3.2



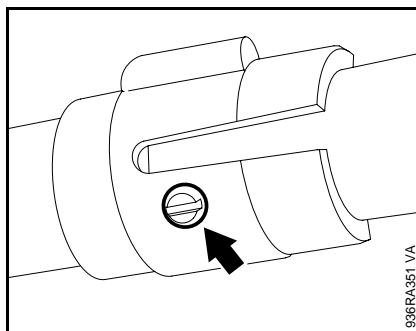
- Loosen the screw (1) on the clamp (2).

– Pull the deflector off the bearing housing.



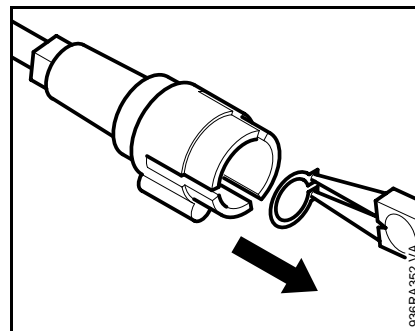
- Loosen the screw (1) on the clamp (2) on the bearing housing.

– Remove the clamp.

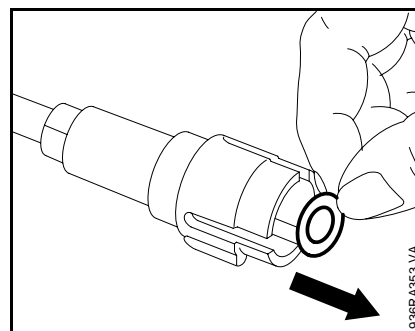


- Take out the fixing screw (arrow).

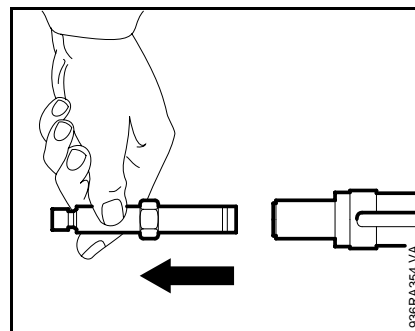
– Pull the bearing housing off the drive tube.



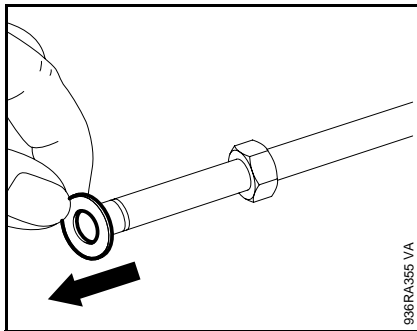
- Remove the circlip from the output shaft.



- Remove the washer from the output shaft.



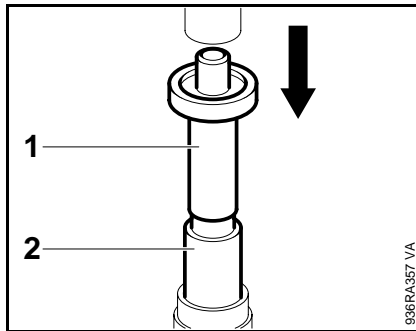
- Pull out the output shaft.



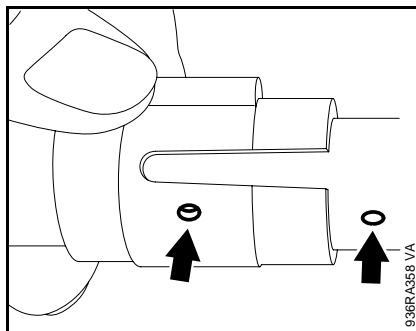
- Remove the washer (if fitted) from the output shaft.
- Carefully drive both needle sleeves out of the bearing housing.

Install in the reverse sequence.

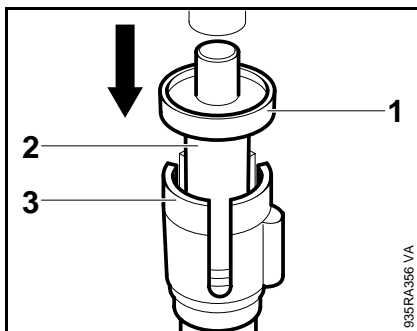
Carry out the following operations carefully.



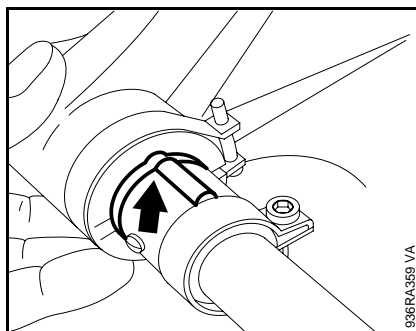
- Press home the needle sleeve until the press arbor (1) 4119 893 7200 butts against the bearing housing (2).



- Push the bearing housing onto the drive tube. Make sure the holes (arrows) are in alignment.
- Insert the fixing screw and tighten it down firmly.



- Press home the plain bearing until the shoulder (1) of the press arbor (2) 4119 893 7200 butts against the bearing housing (3).



- Line up the recess (arrow) in the neck of the deflector with the bead on the bearing housing and then push home the deflector as far as stop.
- Tighten down the clamp screws firmly, 3.2

11. Special Servicing Tools

| No. | Part Name | Part No. | Application | Rem. |
|-----|---------------------------------|---------------|---|------|
| 1 | Locking strip | 0000 893 5903 | Blocking crankshaft | |
| 2 | Puller | 5910 890 4500 | Removing limiter cap on carburetor | |
| 3 | Torque wrench | 5910 890 0301 | 0.5 to 18 Nm | 1)2) |
| 4 | Torque wrench | 5910 890 0311 | 6 to 80 Nm | 1)3) |
| 5 | Socket, DIN 3124 SW 13 | 5910 893 5608 | Flywheel nut | |
| 6 | Socket, DIN 3124-S19x12.5L | 5910 893 5613 | Clutch | |
| 7 | Socket, T 27 x 125 | 0812 542 2104 | Installing and removing spline socket head screws with electric or pneumatic screwdrivers. Use torque wrench for tightening | |
| 8 | Fuel hose | 1110 141 8600 | Testing carburetor for leaks | |
| 9 | Drift | 4180 893 4400 | Removing clutch drum | |
| 10 | Drift | 1108 893 4700 | Removing and installing clutch drum | |
| 11 | Hook | 5910 890 2800 | Detaching springs from clutch shoes | |
| 12 | Hook | 5910 893 8800 | Removing pickup body, pulling plug out of drive tube | |
| 13 | Assembly stand | 5910 890 3100 | Mounting machine to workbench | |
| 14 | Clamp | 5910 890 8800 | Holding FS units by drive tube for repairs (in conjunction with assembly stand) | |
| 15 | Nipple | 0000 855 9200 | Testing carburetor for leaks | |
| 16 | T-handle screwdriver, T 27x150 | 5910 890 2400 | IS screws | 4) |
| 17 | Vacuum pump | 0000 850 3501 | Testing crankcase for leaks, testing tank vent | |
| 18 | Carburetor and crankcase tester | 1106 850 2905 | Testing crankcase and carburetor for leaks | |
| 19 | Pliers, DIN 5254-A10 | 0816 610 1495 | Removing and installing external circlips | |
| 20 | Press arbor | 4119 893 7200 | Installing plain bearing or needle bearing in bearing housing | |
| 21 | Service tool | 4126 893 4900 | Installing rubber element in AV sleeve | |

Remarks:

- 1) Always use torque wrench for tightening DG or P screws.
- 2) Alternative: Torque wrench 5910 890 0302 with optical/acoustic signal.
- 3) Alternative: Torque wrench 5910 890 0312 with optical/acoustic signal.
- 4) Only use for releasing/removing DG or P screws.

12. Servicing Aids

| No. | Part Name | Part No. | Application |
|-----|--|---------------|---|
| 1 | Lubricating grease (225 g tube) | 0781 120 1111 | Oil seals |
| 2 | STIHL special lubricating oil (100 ml bottle) | 0781 417 1315 | Bearing bore in rope rotor, rewind spring |
| 3 | STIHL gear lubricant for hedge trimmers | 0781 120 1109 | Ignition module, drive shaft in flexible liner |
| 4 | STIHL gear lubricant for brushcutters | 0781 120 1117 | Drive shaft in flexible liner (FS 75) |
| 5 | Dirko HT rot sealant (90 g tube) | 0783 830 2000 | Crankcase, oil seals (outside) |
| 6 | Standard commercial solvent-based degreasant containing no chlorinated or halogenated hydrocarbons | | Cleaning sealing faces |
| 7 | STIHL OH 723 press fluid (100 ml bottle) | 0781 957 9000 | Handle hose on drive tube, AV rubber element in fan housing |
| 8 | Graphite grease | | Peg on pawl |
| 9 | Medium-strength threadlocking adhesive (Loctite 242) | 0786 111 1101 | |
| 10 | High-strength threadlocking adhesive (Loctite 270) | 0786 111 1109 | |
| 11 | High-strength threadlocking adhesive (Loctite 649) | 0786 110 0126 | |

