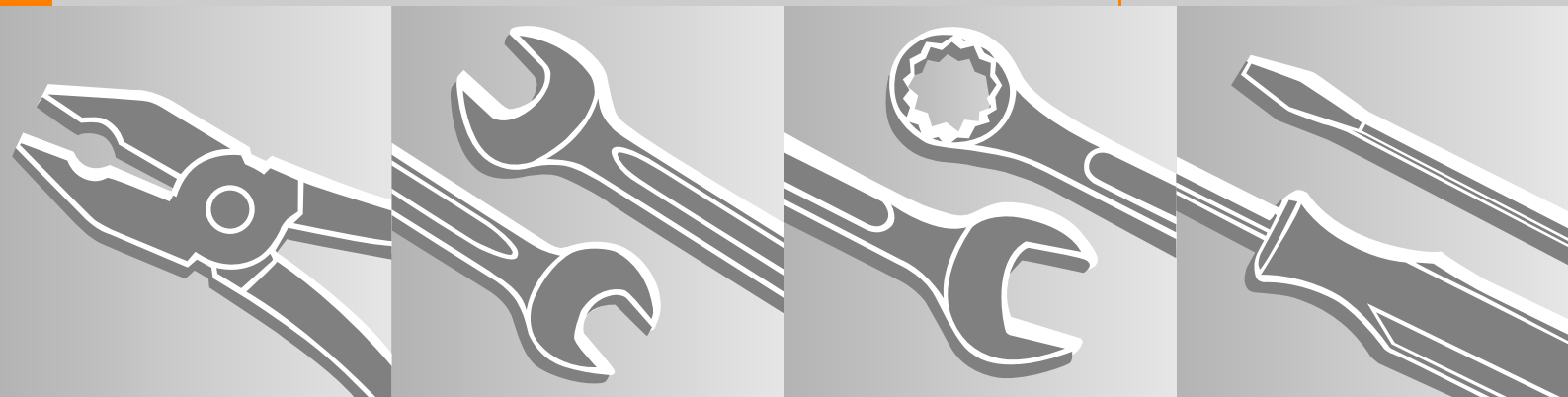


STIHL MS 192 T

2005-02



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1. Introduction

This service manual contains detailed descriptions of all the typical repair and servicing procedures for this power tool.

Refer to the illustrated spare parts lists during all repair work. These lists show the installation position and order in which the individual parts and modules should be assembled.

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

A fault on the machine may be due to several causes. To help locate the fault, consult the chapter on "Troubleshooting" and the "STIHL Service Training System" for all function groups.

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 and service manual until an updated edition is issued.

The special 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. It lists all the special servicing tools currently available from STIHL.

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

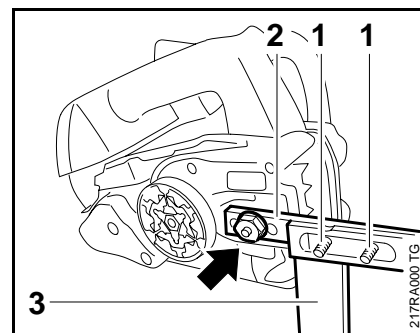
In the text:

- = Action to be taken as shown in the illustration above the text
- = Action to be taken but not shown in the illustration above the text

In the illustrations:

- ➡ Item pointer (short)
- ➡ Direction of movement (long arrow)
- 📖 4.2 = Reference to another chapter, i.e. to chapter 4.2 in this case.

Service manuals and technical information bulletins are intended exclusively for the use of properly equipped repair shops. They must not be passed on to third parties.



Servicing and repairs are made considerably easier if the machine is mounted on assembly stand (3) 5910 890 3100. For this purpose, secure the clamp (2) 5910 890 2000 to the assembly stand with two screws (1). Engage the adjusting screw and stud in the outer holes of the clamp and secure the chainsaw with the nut (arrow).

The sprocket cover and bar and chain must be removed first; pull the hand guard back against the front handle for this purpose.

Always use original STIHL replacement parts.

They can be identified by the STIHL part number

STIHL logo

and the STIHL parts symbol 

The symbol may appear alone on small parts.

2. Safety Precautions

Specific national safety regulations and the safety instructions in the instruction manual must be observed if the machine has to be started up during maintenance or repair work.

Petrol is highly inflammable and can also be explosive under certain conditions.

Improper handling may result in burns and other serious injuries.

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 Engine

MS 192 T

Displacement:	30.1 cm ³
Bore:	37 mm
Stroke:	28 mm
Engine power to ISO 7293	1.3 kW (1.8 HP) at 9500 rpm
Max. permissible engine speed (with bar and chain):	13500 rpm
Idle speed:	3000 rpm
Clutch:	Centrifugal clutch without linings
Clutch engages at:	4150 rpm
Crankcase leakage test at gauge pressure:	0.5 bar
under vacuum	0.5 bar

3.2 Fuel System

Carburetor leakage test at gauge pressure:	0.8 bar
Operation of tank vent at gauge pressure:	0.3 bar
Fuel:	as specified in instruction manual

3.3 Ignition System

Air gap between ignition module and fanwheel:	0.15...0.35 mm
Spark plug (suppressed):	NGK BPMR 7 A
Electrode gap:	0.5 mm

3.4 Chain Lubrication

Fully automatic, speed-controlled oil pump with rotary piston	
Oil delivery rate:	6.5 - 8.5 cm ³ at 10,000 rpm

3.5 Tightening Torques

DG screws are used in polymer and light metal components. These screws form a permanent thread when they are installed for the first time. Screws can be removed and installed as often as necessary without impairing the strength of the screwed assembly, provided that the specified tightening torque is observed.

For this reason, it is **essential to use a torque wrench**.

Fastener	Thread size	For component	Tightening torque Nm	Remarks
Screw	DG 4x15	Chain tensioner cover plate / engine housing	2,5	
Screw	D 6x13	Collar screw for guide bar, rear	6,0	
Collar screw	DG 8x18	Collar screw for guide bar, front	16,0	
Screw	B 4.2x9.5	Cover plate/ screen/ muffler	2,0	
Screw	P 4x12	Cover/ sprocket cover/ engine housing tensioner	2,5	
Nut	M 5	Filter base/ handle housing, 1st stage aluminium	1,5	
Nut	M 5	Filter base/ handle housing, 1st stage	2,0	
Nut	M 5	Filter base/ handle housing, 2nd stage aluminium	2,5	
Nut	M 5	Filter base/ handle housing, 2nd stage	3,5	
Screw	P 6x19	Handle housing/ front handle	6,0	
Screw	P 4x12	Handle moulding/ handle housing	1,5	
Screw	P 6x19	Retaining plate/ loop/ engine housing	6,0	
Screw	DG 5x20	Engine pan/ cylinder	8,0	
Screw	P 5x16	Bearing plug/ handle housing	4,0	
Screw	P 5x16	Bearing plug/ engine housing, sprocket side	4,0	
Screw	P 5x16	Bearing plug/ engine housing, fan side	4,0	
Screw	P 5x16	Fan housing/ engine housing	4,0	
	M 8x1 L	Carrier	25,0	
Screw	DG 5x20Z	Engine housing/ cylinder	8,0	
Screw	DG 4x20	Oil pump/ engine pan	4,5	
Screw	P 4x12	Annular buffer, support/ engine housing	2,5	
Screw	P 5x29.6	Annular buffer/ handle housing	5,0	
Screw	DG 5x20	Muffler / cylinder	9,0	
Nut	M 8X1	Flywheel/ crankshaft	18,0	
	M 14x1.25	Spark plug	25,0	
Screw	DG 4x20	Ignition module/ cylinder	4,5	

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

Place the screw in the hole and rotate it anticlockwise 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.

Screwdriver speed when used in plastic material: DG screws max. 500 rpm.

4. Troubleshooting

4.1 Clutch

Problem	Cause	Remedy
Saw chain stops under load at full throttle	Clutch shoes badly worn	Install new clutch
	Clutch drum badly worn	Install new clutch drum
Saw chain rotates at idle speed	Idle speed too high	Readjust with idle speed screw LA (anticlockwise)
	Clutch springs stretched or fatigued	Replace clutch springs or install new clutch
	Clutch spring hooks broken	Replace clutch springs
Loud noises	Clutch springs stretched or fatigued	Replace all clutch springs
	Needle cage damaged	Fit new needle cage
	Clutch shoe retainer broken	Fit new retainer
	Clutch shoes and carrier worn	Install new clutch

4.2 Chain Drive, Chain Brake, Chain Tensioner

Problem	Cause	Remedy
Chain sprocket wears rapidly	Chain not properly tensioned	Tension chain as specified
	Wrong chain pitch	Fit chain of correct pitch
	Insufficient chain lubrication	Check chain lubrication
	Chain sprocket worn	Fit new chain sprocket
Saw chain stops under load at full throttle	Clutch shoes badly worn	Install new clutch
	Clutch drum badly worn	Install new clutch drum
	Brake band stuck	Check freedom of movement and function of brake band
Saw chain rotates at idle speed	Idle speed too high	Readjust with idle speed screw LA (anticlockwise)
	Clutch springs stretched or fatigued	Replace clutch springs or install new clutch
	Clutch spring hooks broken	Replace clutch springs
Saw chain does not stop immediately when brake is activated	Brake spring stretched or broken	Fit new brake spring
	Brake band stretched, worn or broken	Fit new brake band
	Clutch drum worn	Install new clutch drum

4.3 Chain Lubrication

In the event of trouble with the chain lubrication system, check and rectify other sources of faults before disassembling the oil pump.

Problem	Cause	Remedy
Chain receives no oil	Oil tank empty	Fill up with oil
	Oil inlet hole in guide bar is blocked	Clean oil inlet hole
	Intake hose or pick-up body clogged or intake hose ruptured	Fit new intake hose and pick-up body
	Valve in oil tank blocked	Clean or replace valve
	Worm worn	Replace worm
	Oil pump damaged or worn	Replace oil pump
Machine losing chain oil	Oil pump housing defective	Replace oil pump
	Oil pump damaged or worn	Replace oil pump
Oil pump delivers insufficient oil	Oil pump worn	Replace oil pump

4.4 Rewind Starter

Problem	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
Starter rope does not rewind	Rewind spring broken	Replacing the rewind spring
	Spring insufficiently tensioned	Check rewind spring and increase tension
	Very dirty or corroded	Clean or replace rewind spring
Starter rope cannot be pulled out far enough	Rewind spring overtensioned	Check rewind spring and reduce tension
Starter rope can be pulled out almost without resistance (crankshaft does not turn)	Guide peg on pawls or pawls themselves are worn	Fit new pawls
	Spring clip fatigued	Fit new spring clip
Starter rope is difficult to pull and rewinds very slowly	Starter mechanism is very dirty	Thoroughly clean complete starter mechanism

4.5 Ignition System

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

Problem	Cause	Remedy
Engine runs roughly, misfires, temporary loss of power	Spark plug boot is loose	Press boot firmly onto spark plug and fit new spring if necessary
	Spark plug sooted, smeared with oil	Clean the spark plug or replace if necessary
	Incorrect air gap between ignition module and flywheel	Set air gap correctly
	Flywheel cracked or has other damage or pole shoes have turned blue	Install new flywheel
	Ignition timing wrong, flywheel out of adjustment, key in flywheel has sheared off	Install new flywheel
	Weak magnetization in flywheel – pole shoes have turned blue	Install new flywheel
	Irregular spark	Check operation of switch shaft and ignition module Faulty insulation on ignition lead or short circuit wire, check ignition lead / ignition module and replace if necessary. Check operation of spark plug Clean the spark plug or replace if necessary
	Crankcase damaged (cracks)	Replace crankcase

4.6 Carburetor

Problem	Cause	Remedy
Carburetor floods; engine stalls	Inlet needle not sealing. Foreign matter in valve seat or cone	Remove and clean inlet needle or clean carburetor
	Inlet control lever sticking on spindle	Restore easy movement of inlet control lever
	Helical spring not located on nipple of inlet control lever	Remove the inlet control lever and refit it correctly
	Perforated disc on diaphragm is deformed and presses constantly against the inlet control lever	Fit a new metering diaphragm
Poor acceleration	Idle jet too lean	Turn low speed screw L anticlockwise (richer), until engine accelerates smoothly
	Main jet too lean	Turn high speed screw H anticlockwise (richer), no further than stop
	Inlet control lever too low (relative to correct installed position)	Set inlet control lever flush with top edge of housing
	Inlet needle sticking to valve seat	Remove inlet needle, clean and refit
	Diaphragm gasket leaking	Replace diaphragm gasket
	Metering diaphragm damaged or shrunk	Fit new metering diaphragm
	Impulse hose damaged or kinked	Fit new impulse hose

Problem	Cause	Remedy
Engine will not idle, idle speed too high	Throttle shutter opened too wide by idle speed screw LA	Reset idle speed screw LA correctly
	Oil seals / crankcase leaking	Seal or replace oil seals / crankcase
Engine stops when idling	Idle jet bores or ports blocked	Clean the carburetor
	Idle jet too rich or too lean	Set 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 dirty	Clean the air filter
	Throttle shutter not opened fully	Check linkage
	Tank vent faulty	Clean tank vent or replace if necessary
	Fuel pick-up body dirty	Clean the pick-up body or replace if necessary
	Fuel strainer dirty	Clean fuel strainer in carburetor or replace if necessary
	Leak in fuel line between tank and fuel pump	Seal connections or install a new fuel line
	Setting of high speed screw H too rich	Turn the high speed screw H clockwise (leaner) – max. up to the stop.
	Main jet bores or ports blocked	Clean the carburetor
	Pump diaphragm damaged or fatigued	Fit new pump diaphragm
	Impulse hose damaged or kinked	Fit new impulse hose

4.7 Engine

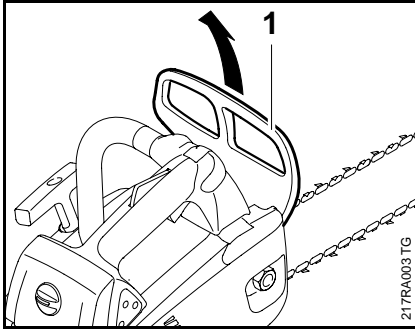
Always check and, if necessary, repair the following parts before looking for faults on the engine:

- Air filter
- Fuel system
- Carburetor
- Ignition System

Problem	Cause	Remedy
Engine does not start easily, stalls at idle speed but operates normally at full throttle	Oil seals in crankgear damaged	Replace the oil seals
	Crankcase leaking or damaged (cracks)	Seal or replace the crankcase
Engine does not deliver full power or runs erratically	Piston rings worn or broken	Replace piston rings
	Muffler / spark arresting screen carbonized	Clean the muffler (inlet and exhaust), replace spark arresting screen, replace muffler if necessary
	Air filter dirty	Replace air filter
	Fuel / impulse hose severely kinked or damaged	Fit new hoses and route them 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 openings and the cylinder fins

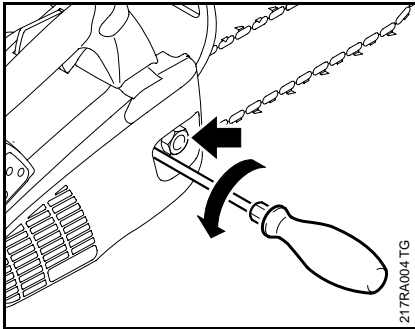
5. Chain/ Spiked Bumper

5.1 Chain and Chain Guide

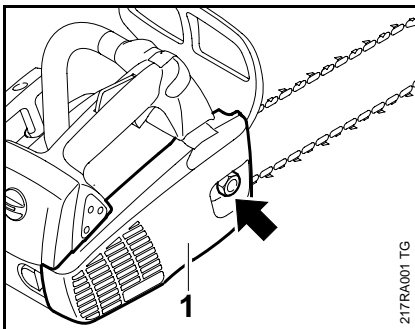


Wear protective gloves
– risk of injury –

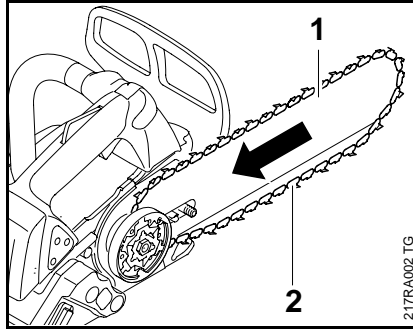
- Disengage the chain brake by pulling the hand guard (1) towards the front handle until it engages.



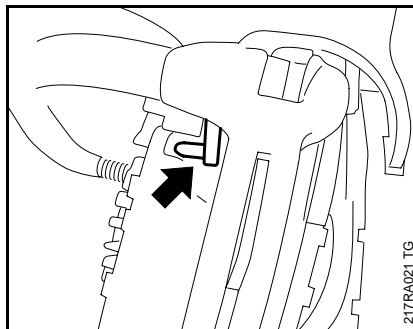
- Unscrew the hex nut (arrow).
- Turn the screw anticlockwise to relax the chain.



- Unscrew the nut (arrow) and remove the sprocket cover (1).



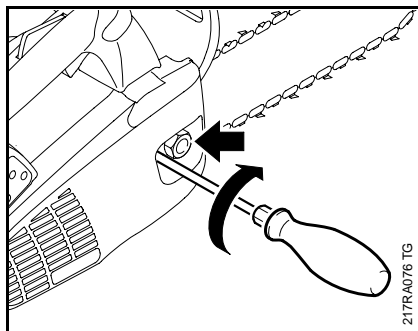
- Slide the guide bar (1) towards the clutch and remove the chain from the guide bar.
- Remove the guide bar (1).
- Remove the chain (2) via the sprocket.
- Reassemble parts in reverse order.



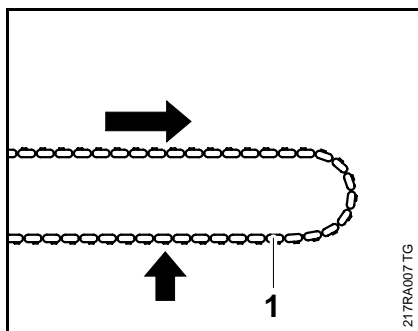
- Fit the sprocket cover, ensuring that the peg (arrow) engages in the hole.

- Reassemble remaining parts in reverse order.
- Tension the chain, 5.2
- Tightening torques, 3.5

5.2 Tensioning the Chain



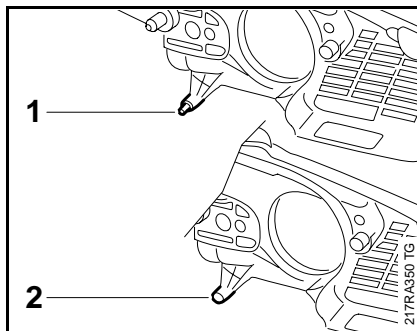
- Turn the screw clockwise to tension the chain.
- Tighten the hex nut (arrow).



The chain (1) is correctly tensioned when it rests against the underside of the chain guide (arrow) and can be pulled over the guide bar by hand when the chain brake is released.

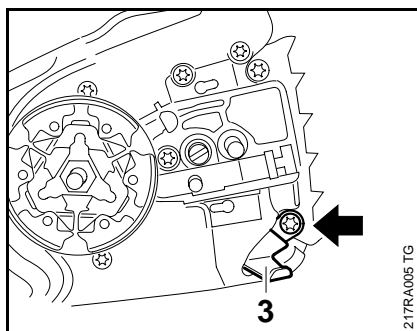
If the chain is tensioned excessively, this may result in damage to the chain, guide bar and sprocket, as well as its needle bearing.

5.3 Chain Catcher



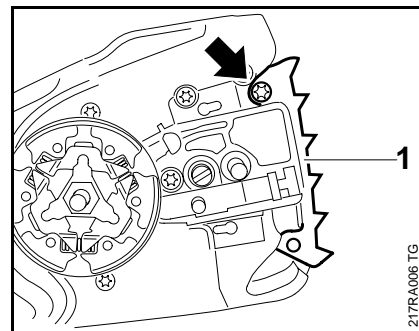
Sprocket cover with integrally moulded chain catcher (1).

If the chain catcher has broken (2), file down the stub and replace with a replacement chain catcher (3).



- Remove the sprocket cover and bar and chain, [5.1](#)
- Remove the screw (arrow).
- Remove the chain catcher (3).
- Reassemble parts in reverse order.

5.4 Bumper Spike




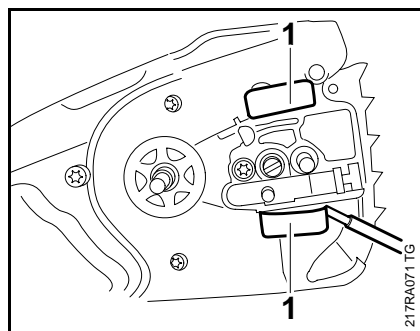
- Remove the sprocket cover and bar and chain, [5.1](#)
- Remove the chain catcher, [5.3](#)
- Remove the screw (arrow).
- Remove the spiked bumper (1).
- Reassemble parts in reverse order.

5.5 Bumper Strips

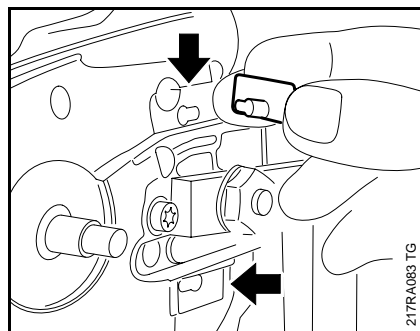
Bumper strips are fitted on the engine housing to guide the saw chain.

Worn bumper strips must be replaced, otherwise the engine housing may be damaged.

Remove the sprocket cover and bar and chain,  5.1





- Prise off the bumper strips (1) with a suitable tool.

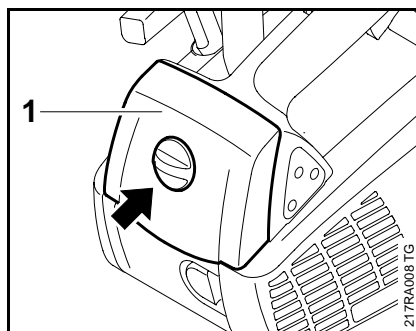


- Insert the bumper strips so that the peg is aligned in the recess (arrows).

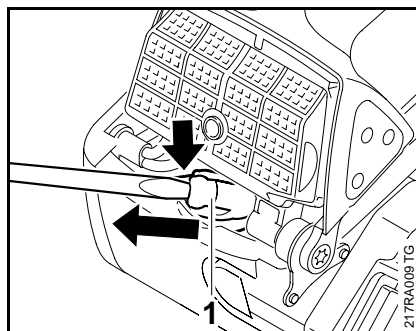
– Reassemble remaining parts in reverse order.

6. Clutch

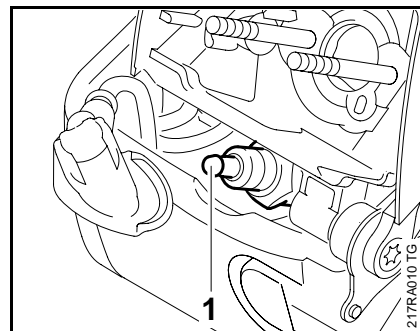
- Troubleshooting,  4.1
- Remove the sprocket cover and bar and chain,  5.1



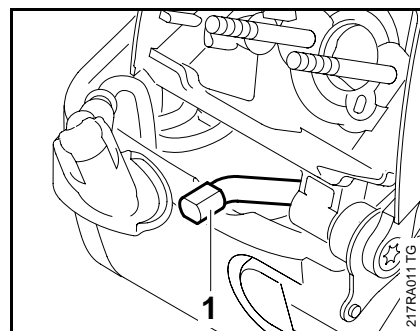
- Release the twist lock (arrow).
- Remove carburetor box cover (1) to the rear.



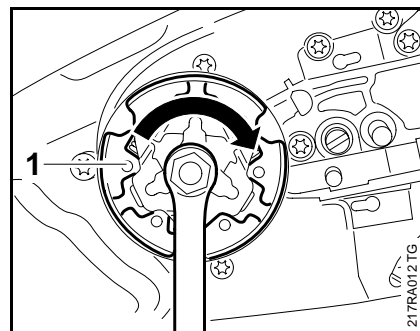
- Apply a suitable tool to the tab (arrow) to prise the boot off the spark plug (1).



- Unscrew the spark plug (1).

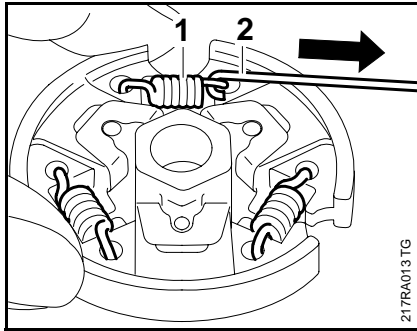


- Push the locking strip (1) 0000 893 5903 into the spark plug hole so that "OBEN-TOP" faces down.



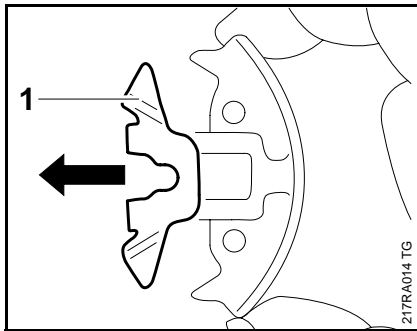
- Unscrew the clutch (1).

The clutch has a left-hand thread.

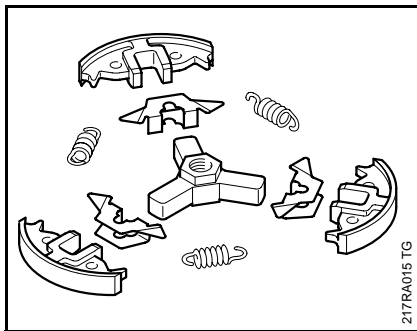


Disassembly

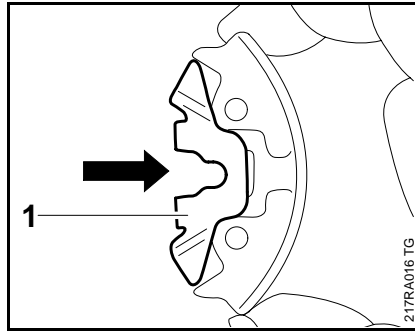
- Use hook (2) 5910 890 2800 to remove the clutch springs (1).



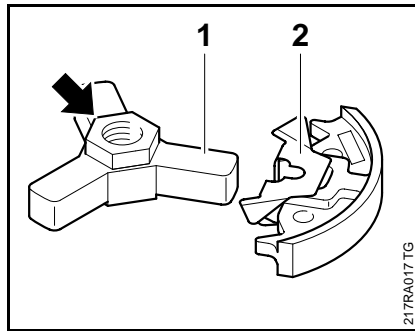
- Pull the clutch shoes off the carrier.
- Pull the retainers (1) off the clutch shoes.



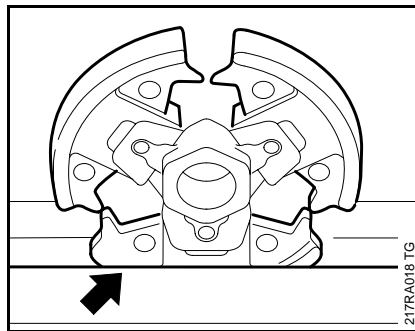
- Clean all parts.
- Replace any damaged parts.



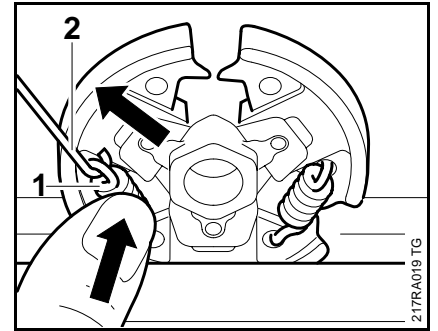
- Slip the retainers (1) onto the clutch shoes.



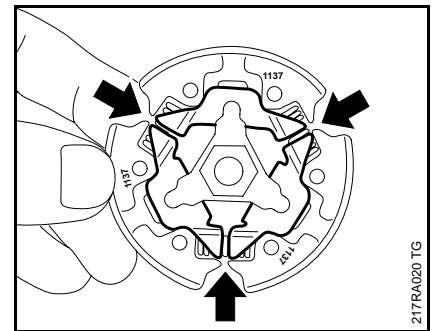
- Fit the clutch shoes over the arms (1) so that the series number (2) is on the same side as the raised hexagon (arrow).



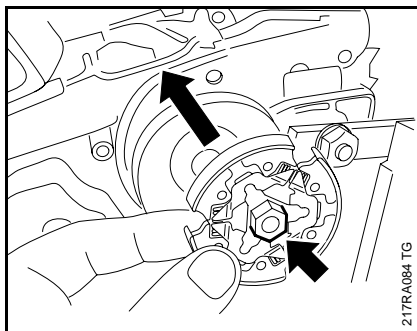
- Clamp the clutch in a vice (arrow).



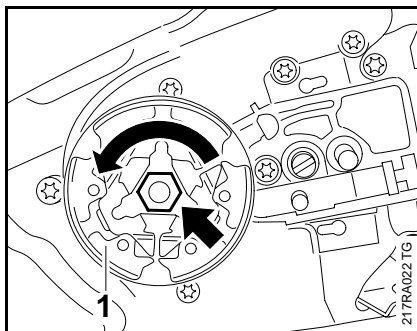
- Attach one end of the clutch spring (1) to the clutch shoes.
- Use the hook (2) 5910 890 2800 to attach the other end of the spring and press it firmly into the clutch shoe.



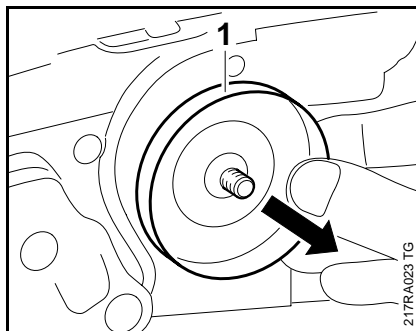
The tips of the retainers (arrows) must match one another on the side with the raised hexagon and the series numbers must be visible on the clutch shoes.



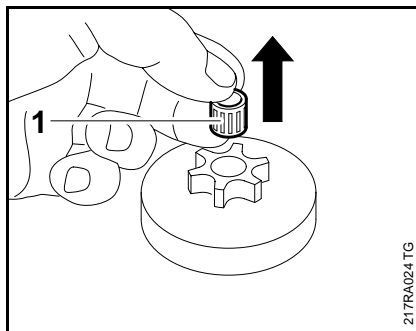
- Fit the clutch (1) on the crankshaft stub so that the raised hexagon (arrow) is visible.



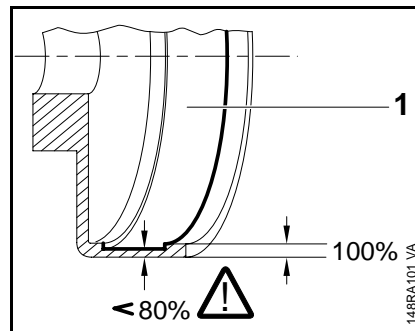
- Screw the clutch (1) with hexagon (arrow) onto the crankshaft stub and tighten it down.
- Tightening torques, 3.5
- Pull the locking strip out of the cylinder.
- Reassemble remaining parts in reverse order.



- Remove the clutch, 6
- Draw the sprocket (1) off the crankshaft stub.



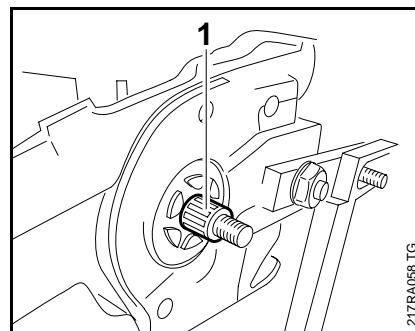
- Remove the needle cage (1) from the sprocket.
- Clean the needle cage and crankshaft stub with standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons.



- Examine the sprocket (1) for signs of wear.

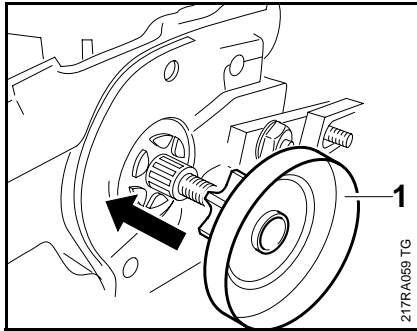
If there are distinct signs of wear on the inside diameter of the sprocket (1), the remaining thickness must be measured. The sprocket must be replaced if less than 80% of the original thickness remain.

- Reassemble parts in reverse order.

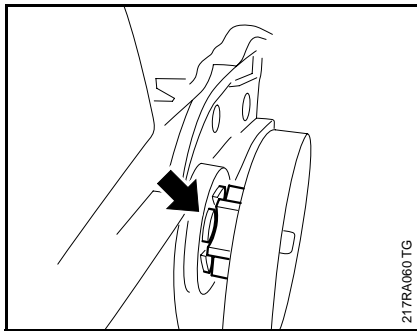


- Grease the needle cage and crankshaft stub, 16
- Slip the needle cage (1) onto the crankshaft stub.

7. Checking Operation of Chain Brake



- Slip sprocket (1) onto crankshaft stub.



The sprocket must engage the studs (arrow) of the wormwheel.

- Reassemble remaining parts in reverse order.

The chain brake is one of the most important safety devices on the chainsaw. Its efficiency is measured in terms of the chain braking time, i.e. the time that elapses between activating the brake and the saw chain coming to a complete standstill. The shorter the braking time, the better the efficiency and protection offered against being injured by the rotating chain.

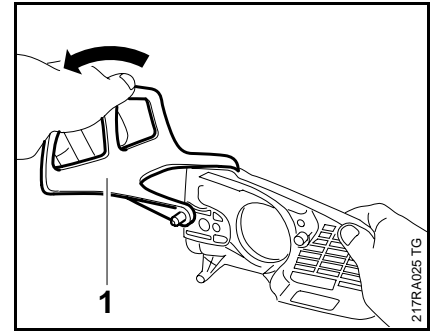
The coefficient of friction is impaired by contamination (with chain oil, chips, fine particles of abrasion, etc.) and smoothing of the friction surfaces on the brake band and clutch drum. This in turn reduces the frictional forces and thus prolongs the braking time. A fatigued or stretched brake spring has the same negative effect.

- Start the engine.
- With the chain brake activated (locked), open the throttle wide for a brief period (max. 3 seconds) – the chain must not rotate.
- With the chain brake released, open the throttle wide and activate the brake manually – the chain must come to an abrupt stop.

The braking time is in order if deceleration of the saw chain is imperceptible to the eye.

If the chain brake does not operate properly, see troubleshooting chart, 4.2.

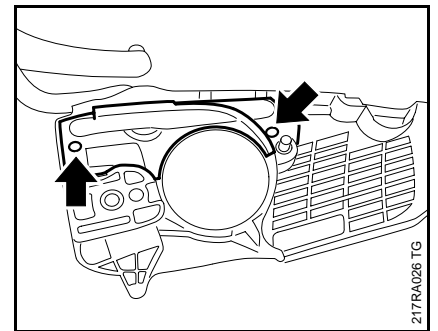
7.1 Removing and Installing



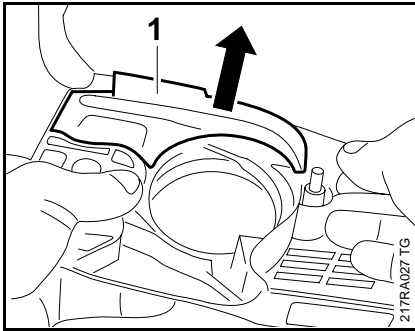
Removal

- Troubleshooting, 4.2
- Remove the sprocket cover and bar and chain, 5.1
- Engage the chain brake by pushing the hand guard (1) downwards.

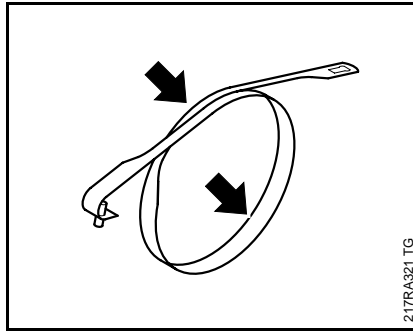
The brake spring of the brake band is now relaxed.



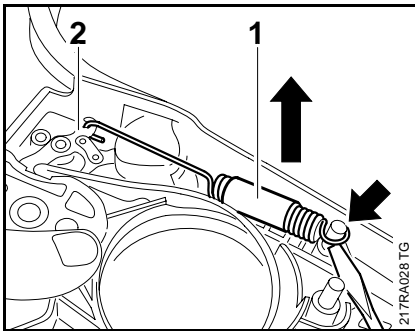
- Take out the screws (arrows).



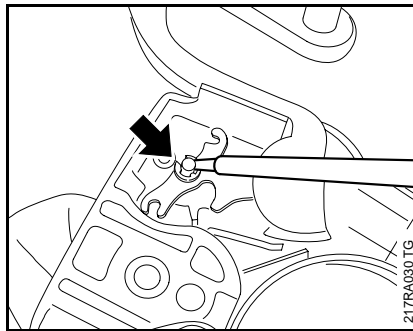
- Remove the cover (1).



Install a new brake band if there are noticeable signs of wear (large areas on inside diameter and/or parts of outside diameter) and its remaining thickness is less than 0.6 mm.

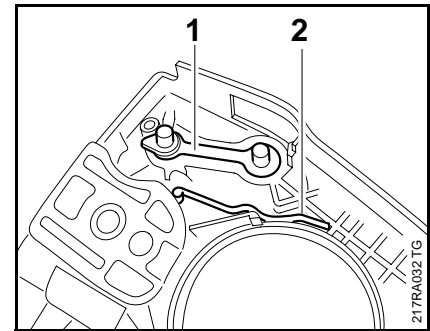


- Carefully ease the brake spring (1) off the anchor pin (arrow).
- Unhook the brake spring (1) from the brake lever (2).



- Remove the E-clip (arrow).

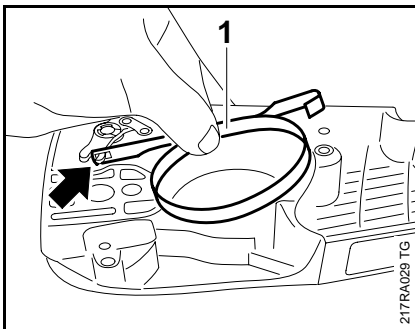
- Draw the hand guard (1) out through the opening in the cover (arrow).



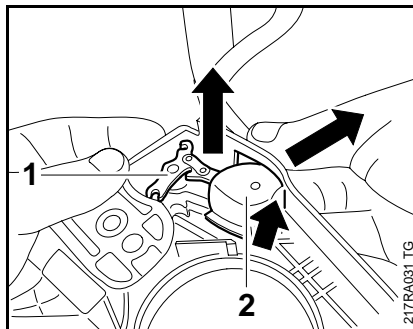
- Remove the inlay (1) and leaf spring (2).

Clean all disassembled parts with a little standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons.

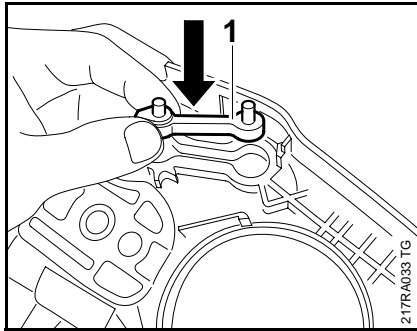
- Examine the inlay and leaf spring and replace if necessary.




- Disconnect the brake band (1) from the lever (arrow) and remove it.

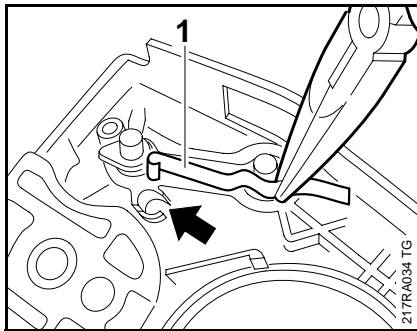


- Remove the hand guard (2) with lever (1) from the pivot pins.
- Pull the lever out of the hand guard.



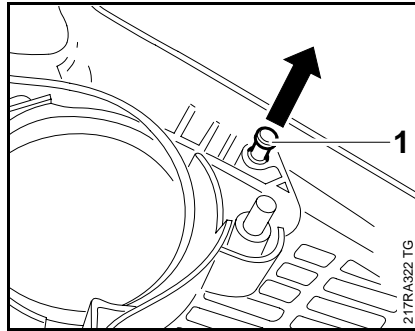
Wet the inlay (1) with Loctite before fitting it,  16

- Press the inlay (1) as far as possible into the opening in the cover.

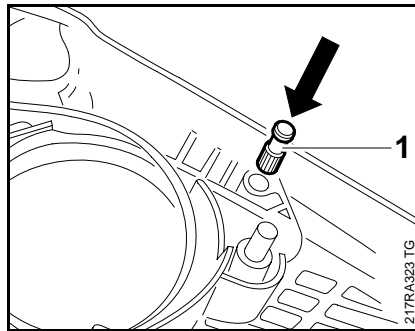



- Place the leaf spring (1) in the opening (arrow).
- Lightly grease both the leaf spring and the pin of the inlay.

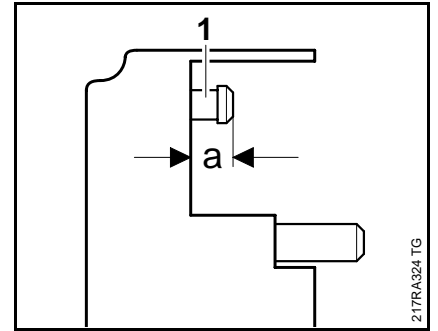
The anchor pin must be replaced if the groove in the brake spring anchor pin is worn. Proceed as follows:



- Pull the pin (1) out of the cover with a suitable tool.

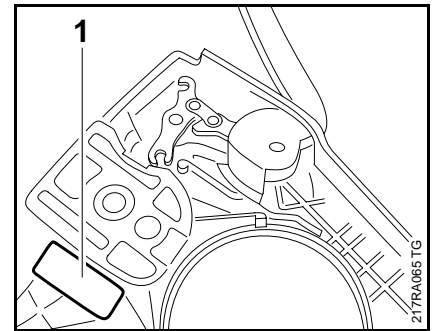


- Wet the knurled area of the new pin (1) with Loctite before fitting it,  16
- Position the new pin (1) in the bore so that the knurling on the pin meshes with the existing knurling in the bore. Turn the pin back and forth as necessary.

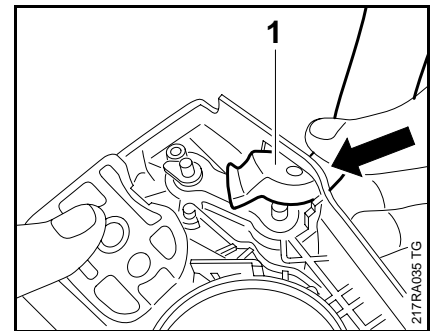


- Carefully drive the pin (1) home, tapping lightly, until value "a" approx. 4.3...4.7 mm is reached.

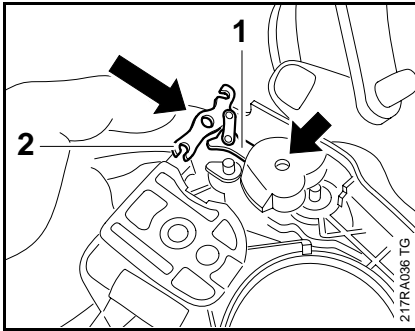
The pin must be driven in squarely.



- Prise off the bumper strip (1) with a suitable tool.
- Check the bumper strip and replace it if necessary.
- Reassemble parts in reverse order.

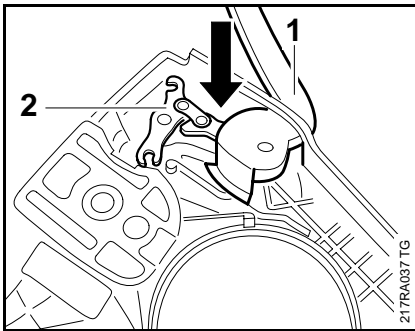


- Slide the lever (1) through the opening in the cover.



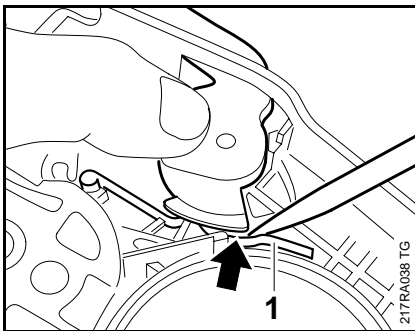
The forked opening (2) must face towards the brake band.

- Insert the lever (1) in the side of the bearing boss (arrow).




Ensure that the holes in the lever inside the hand guard are lined up.

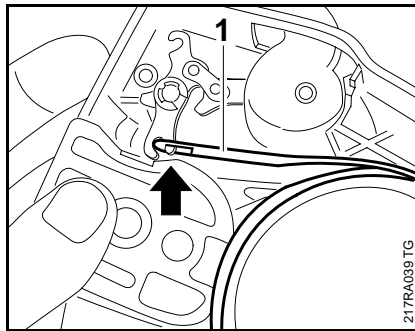
- Slip the bearing boss of the hand guard (1) and lever (2) onto the pivot pins.



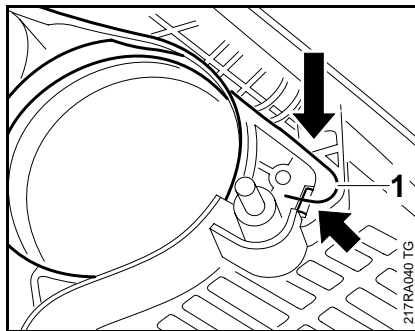
When fitting the parts, ensure that the cam (arrow) on the hand guard is guided past the leaf spring.

Coat all sliding and bearing points with STIHL multi-purpose grease,  16

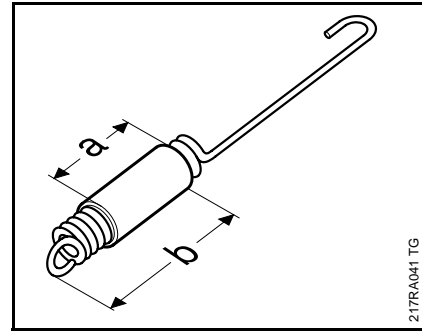
Do not grease the brake band.



- Attach the brake band (1) to the brake lever (arrow).



- Insert the brake band (1) in the opening (arrow).

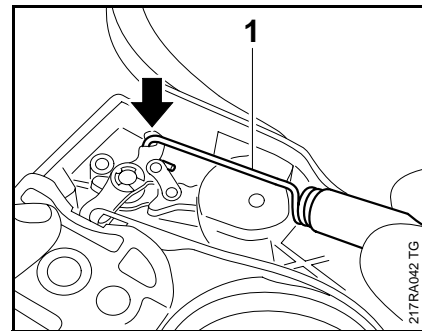


- The turns of the brake spring must lie tightly against one another when relaxed. If this is not the case, replace the brake spring.

Check correct position of the protective tube.

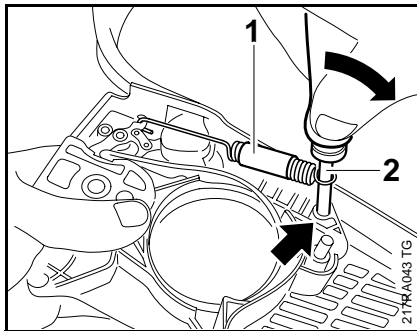
a = 31 mm

b = 44 mm



- Attach the brake spring (1) to the brake lever (arrow).

7.2 Chain Tensioner



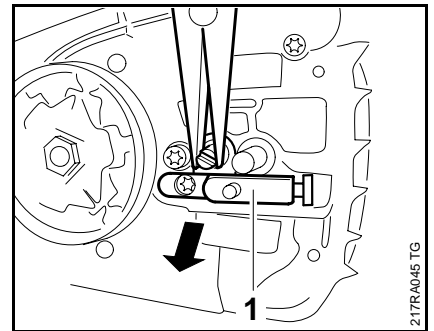
- Use the assembly tool (2) 1117 890 0900 to attach the brake spring (1) to the anchor pin (arrow).

- Reassemble remaining parts in reverse order.

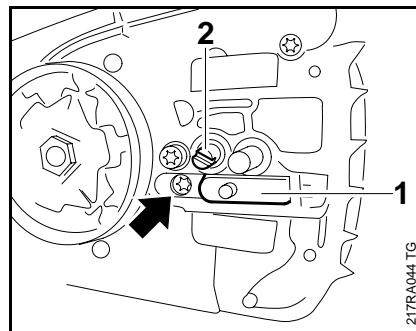
Before fitting the sprocket cover, pull the hand guard up until it engages. The chain brake is now open and can be slipped over the sprocket.

- Check operation of the chain brake, 7

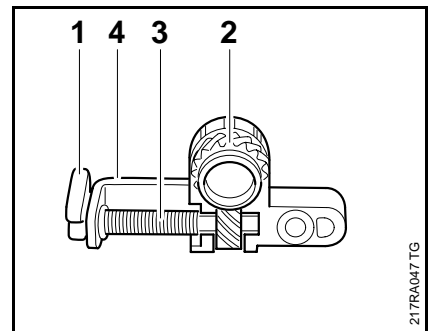
- Remove the sprocket cover and bar and chain, 5.1
- Troubleshooting, 4.2



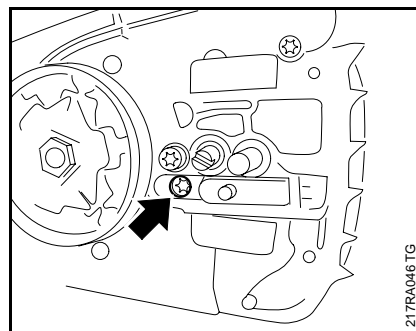
- Pull the complete chain tensioner (1) out with a suitable tool.



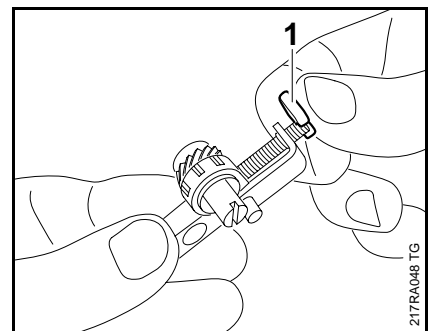
- Turn the spur gear (2) clockwise until the tensioner slide (1) makes contact on the right and the screw (arrow) is revealed.



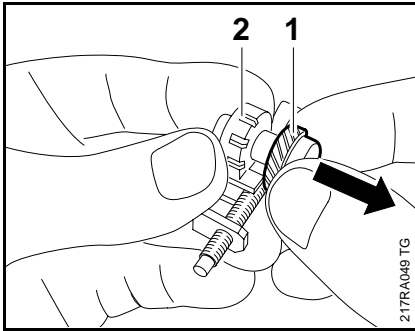
- Examine the thrust pad (1), spur gear (2), adjusting screw (3) and tensioner slide (4) and replace if necessary.



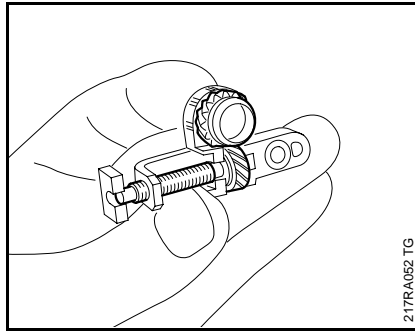
- Remove the screw (arrow).



- Pull the thrust pad (1) off the adjusting screw.



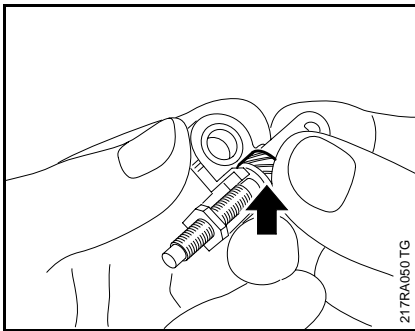
- Pull the spur gear (1) out of the hole in the cover (2).



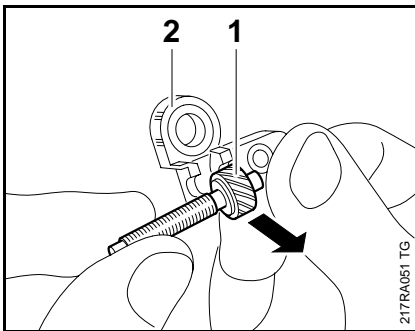
- Clean all disassembled parts with a little standard solvent-based degreaser not containing any chlorinated or halogenated hydrocarbons. Replace any damaged or worn parts.

Always replace the adjusting screw and spur gear together.

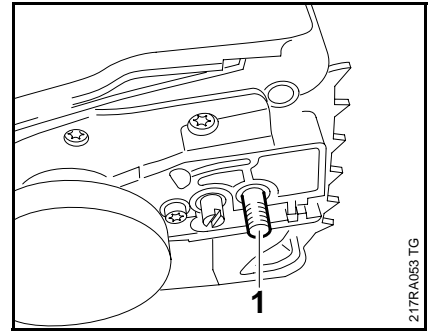
- Ensure that the parts are installed in the correct order.
- Check correct functioning.
- Coat the threads and gear wheels with STIHL multi-purpose grease, 16
- Reassemble remaining parts in reverse order.
- Check correct functioning again.



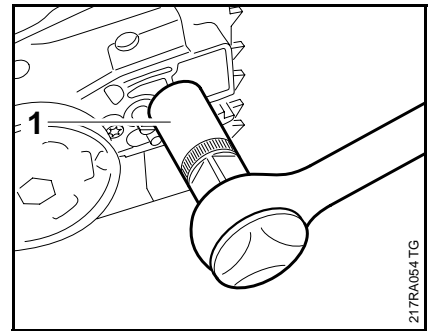
- Turn the adjusting screw (arrow) until the tensioner slide has been unwound completely.



- Remove the adjusting screw (1) from the cover (2).



- Remove the sprocket cover and bar and chain, 5.1
- Fit the stud puller on the collar stud (1).





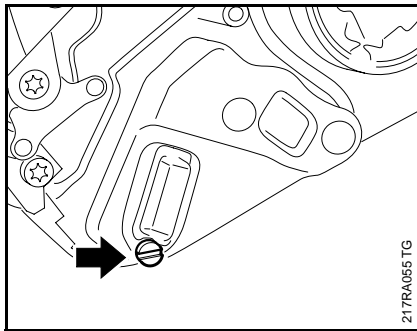
- Push the stud puller (1) 5910 893 0501 over the collar stud as far as possible and unscrew the collar stud anticlockwise.
- Reassemble parts in reverse order.
- Fit the collar stud and tighten it down firmly.
- Tightening torques, 3.5
- Reassemble remaining parts in reverse order.

8. Engine

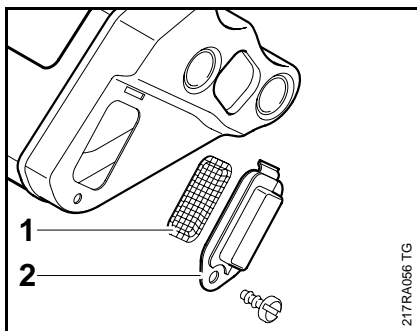
8.1 Muffler / Spark Arresting Screen

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

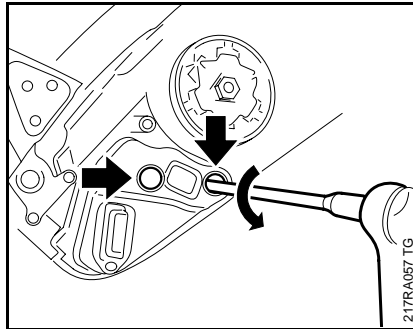
- Troubleshooting,  8.1
- Remove the sprocket cover and bar and chain,  5.1



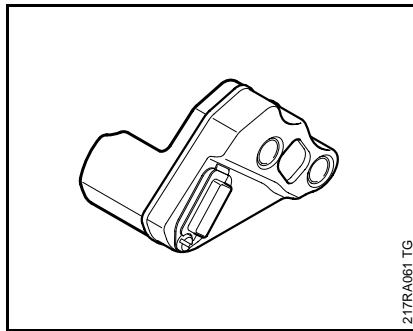
- Remove the screw (arrow).



- Remove the cover plate (2) and spark arresting screen (1) if fitted.
- Clean the spark arresting screen (1) or replace if necessary.



- Take out the screws (arrows).



- Remove and examine the muffler, replace if necessary.
- Clean the sealing faces.

A gasket is not fitted between muffler and cylinder.

- Reassemble parts in reverse order.

8.2 Leakage test

Defective oil seals and gaskets or cracks in housing are the usual causes of leaks. Such faults allow supplementary air to enter the engine and upset the fuel-air mixture.


This makes adjustment of the prescribed idle speed difficult, if not impossible.

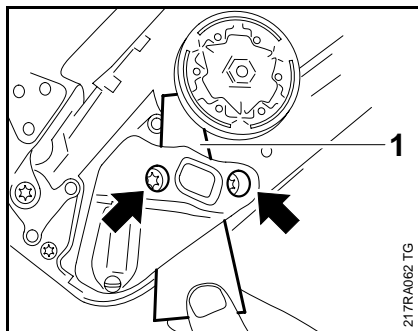
Moreover, the transition from idle speed to part or full throttle is not smooth.

Always start with the vacuum test and then continue with the pressure test.

The crankcase can be thoroughly checked for leaks with the carburetor and crankcase tester and the vacuum pump.

8.2.1 Preparations

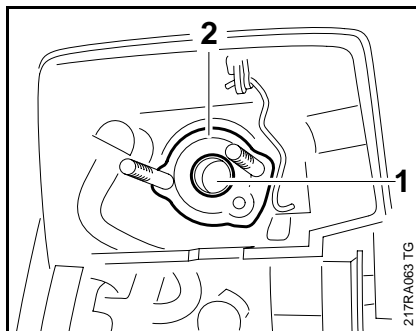
- Remove the sprocket cover and bar and chain,  5.1
- Set the piston to the top dead centre. This can be checked through the inlet port.
- Fit the spark plug and tighten it down firmly.



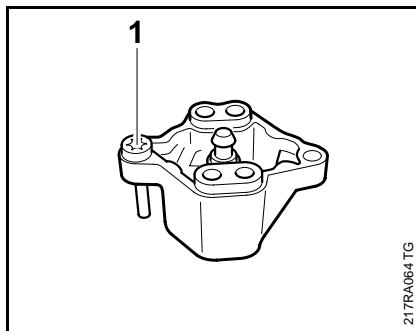
- Undo the screws (arrows).
- Fit the sealing plate (1) 0000 855 8106 between the muffler and cylinder exhaust port and tighten down the screws moderately.

The sealing plate must fill the full width between the screws.

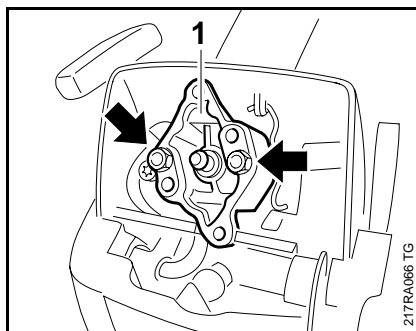
- Remove the carburetor,  14.2



- Ensure that the sleeve (1) and washer (2) are in place.



- Remove the socket head screw (1) from the test flange 1128 850 4200.

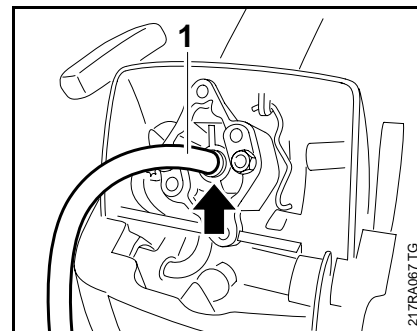


- Fit the test flange 1128 850 4200 (1).
- Screw on the nuts (arrows) and tighten them down firmly.

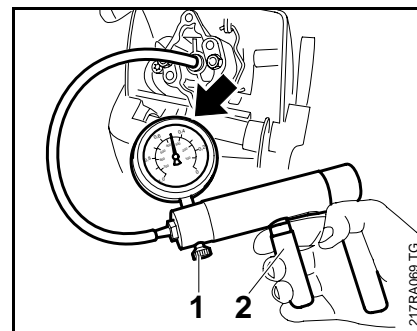
8.2.2 Vacuum test

Oil seals tend to fail when subjected to a vacuum. In other words, the sealing lip lifts away from the crankshaft during the piston's induction stroke because there is no internal counterpressure.

An additional test can be carried out with the vacuum pump to detect this kind of fault.






- Connect the suction hose (1) of the vacuum pump 0000 850 3501 to the nipple (arrow).




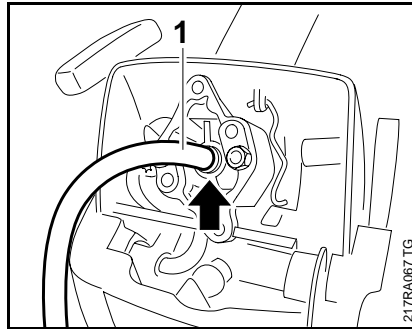
- Close the vent screw (1).
- Operate lever (2) until the pressure gauge (arrow) indicates a vacuum of 0.5 bar.

8.2.3 Pressure test

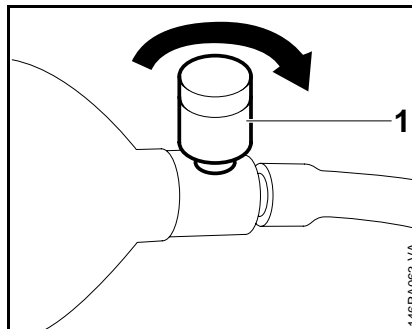
If the vacuum reading remains constant, or does not decrease by more than 0.3 bar within 20 seconds, it may be assumed that the oil seals are in good condition. If the vacuum in the crankcase is reduced further, the oil seals must be replaced.

- After finishing the test, open the vent screw and disconnect the hose.
- Remove the test flange.
- Install the carburetor,  14.2
- Release the muffler and pull out the sealing plate.
- Tighten down the muffler.
- Reassemble remaining parts in reverse order.
- Tightening torques,  3.5
- Continue with pressure test  8.2.3

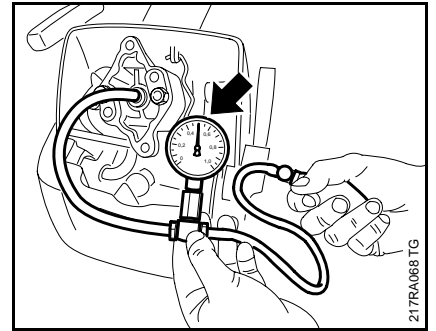
Carry out the same preparations as for the vacuum test,  8.2.2



- Connect pressure hose (1) of tester 1106 850 2905 to nipple (arrow).




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

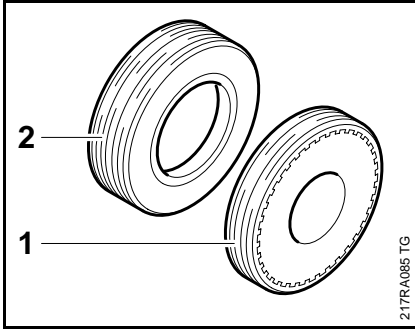


- Pump air into the crankcase with the rubber bulb until the gauge (arrow) indicates a pressure of 0.5 bar. If this pressure remains constant for at least 20 seconds, the crankcase is airtight.

- If the pressure drops, the leak must be located and the faulty part replaced.

To find the leak, coat the suspect area with oil and pressurize the crankcase. Bubbles will appear if a leak exists.

- After finishing the test, open the vent screw and disconnect the hose of tester 1106 850 2905.
- Continue with vacuum test  8.2.2

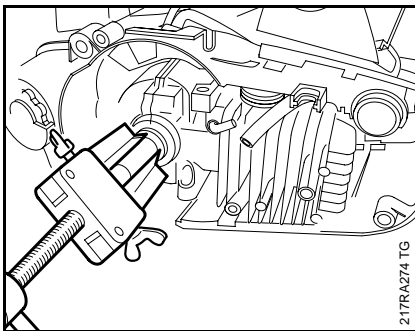


Use oil seal (1) 9639 003 1206 for installation on the closed crankcase.
Use oil seal (2) 9639 003 1205 for installation on the open crankcase.

It is not necessary to disassemble the complete engine in order to replace the oil seals.

Ignition side

- Remove fan housing, 10.2
- Remove the flywheel, 9.5

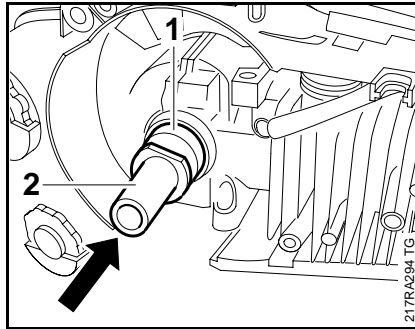


- Free off the oil seal in its seat by tapping it with a suitable tube or a punch.
- Apply puller 5910 890 4400 with No. 3.1 jaws 0000 893 3706.

- Clamp the puller arms.
- Pull out the oil seal.

Avoid damage to the crankshaft stub.

- Clean the sealing face with a little standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons.
- Grease the sealing lips of the oil seal, 16



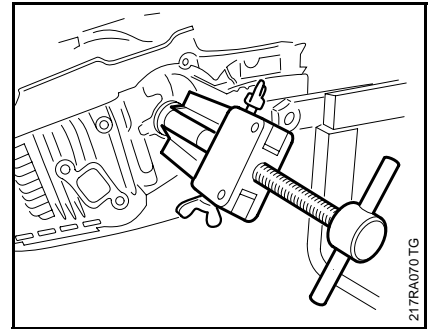
- Apply sealing compound to the outside diameter of the oil seals, 16
- Use the press sleeve (2) 4112 893 2401 to install the oil sleeve (1).

The seating face must be flat and free from burrs.

- Turn the crankshaft through several times after approx. 1 minute.
- The crankshaft taper must be free from grease, therefore clean it with a little standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons.
- Reassemble remaining parts in reverse order.

Clutch side

- Remove the sprocket cover and bar and chain, 5.1
- Remove the clutch, 6
- Remove the oil pump, 13.3



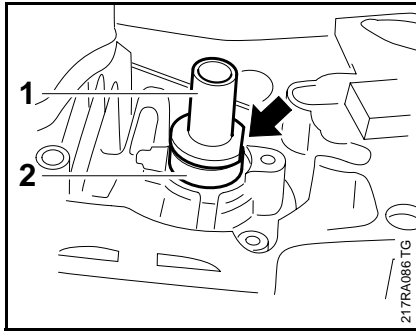
- Free off the oil seal in its seat by tapping it with a suitable tube or a punch.
- Apply puller 5910 890 4400 with No. 3.1 jaws 0000 893 3706.
- Clamp the puller arms.
- Pull out the oil seal.

Avoid damage to the crankshaft stub.

- Clean the sealing face with a little standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons.
- Grease the sealing lips of the oil seal, 16

8.4 Engine

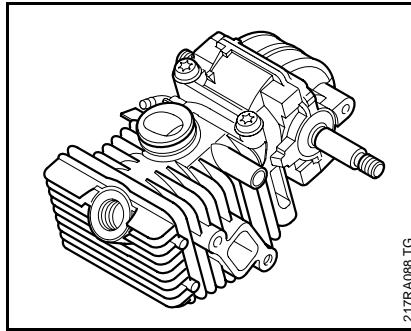
8.4.1 Removal



- Apply sealing compound to the outside diameter of the oil seals, 16

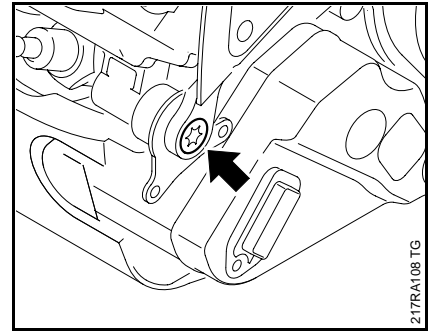
So that the oil seal can be pressed in as far as possible, the flat side of the press sleeve (arrow) must be aligned with the shoulder on the crankcase.

- Press in the oil seal (2) with press sleeve (1) 4112 893 2401.
- Turn the crankshaft through several times after approx. 1 minute.
- Reassemble remaining parts in reverse order.

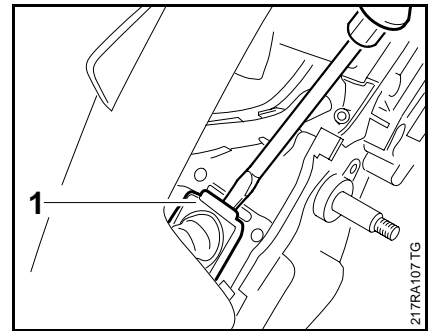


The complete engine must be removed before disassembling the piston or cylinder.

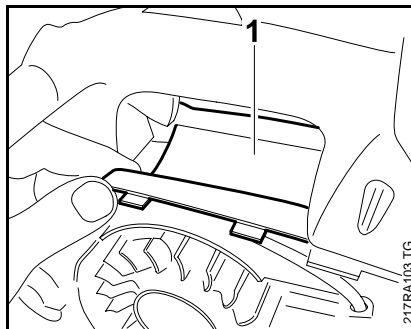
- Remove the sprocket cover and bar and chain, 5.1
- Remove the muffler, 8.1
- Remove the clutch, 6
- Remove the oil pump, 13.3
- Remove fan housing, 10.2
- Remove the ignition module, 9.1
- Remove the flywheel, 9.5



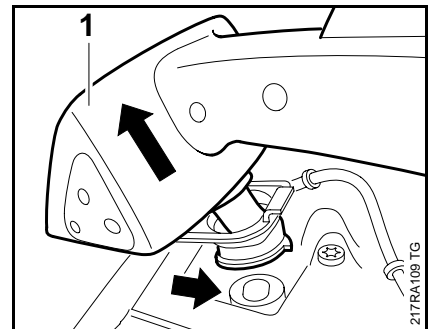
- Remove the screw (arrow).



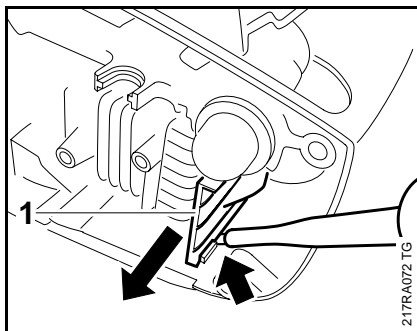
- Prise off the supporting plate (1) with a suitable tool.



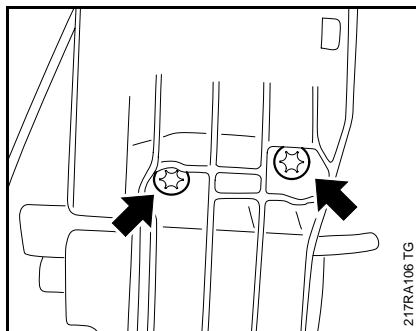
- Remove the cover (1).



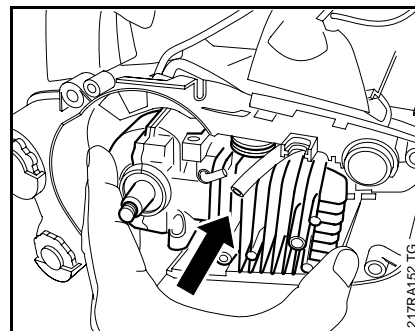
- Lift the handle housing (1) slightly and pull the manifold off the intake stub (arrow).



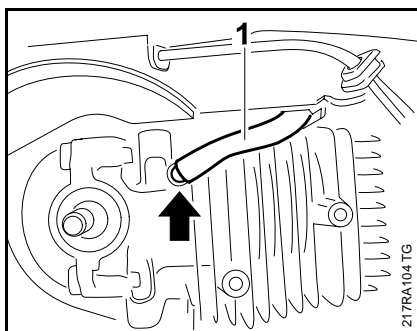
- Pull out the insulating plate (1), pressing the locking lug together at the bottom guide (arrow).



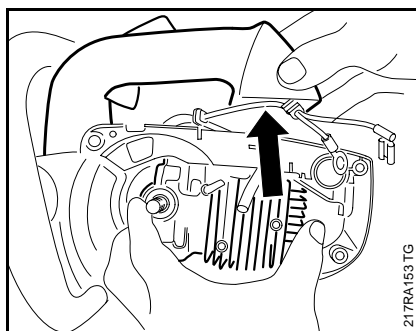
- Remove the screws (arrows) from underneath the engine housing.



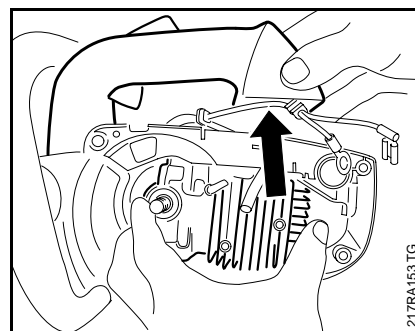
- Push engine into engine housing.



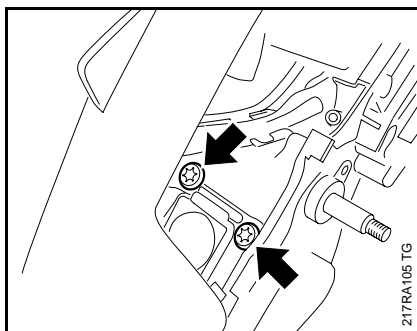
- Disconnect the impulse hose (1) from the stub (arrow).



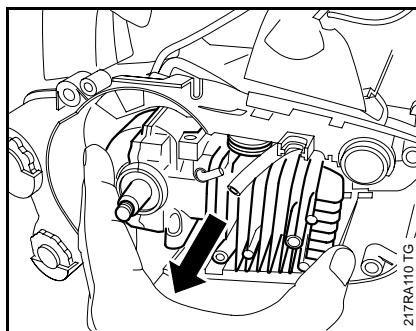
- Lift the handle housing slightly until the manifold flange lifts off the intake stub.



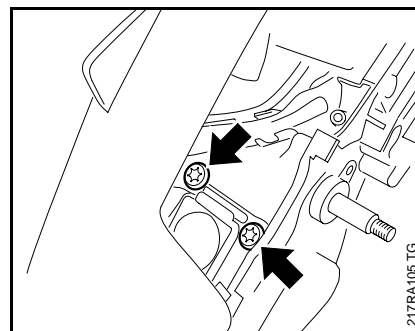
- Lift the handle housing slightly so that the intake stub can be positioned in relation to the manifold when fitting the engine.



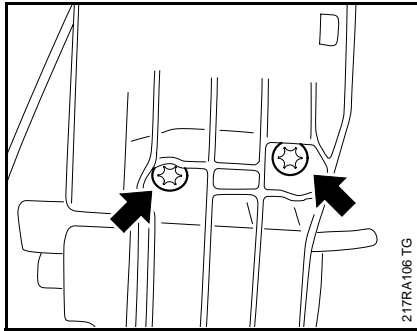
- Remove the screws (arrows) on the carburetor side.



- Pull the engine out of the engine housing.

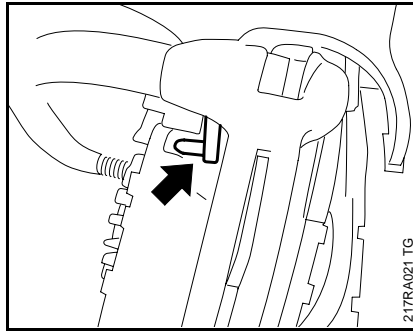


- Fit the screws (arrows) and tighten them down only moderately.

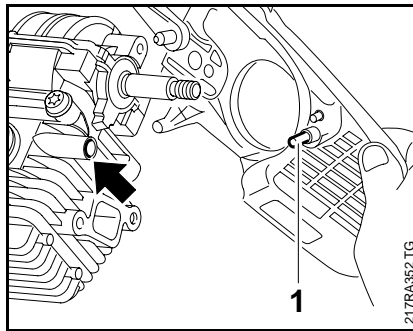


- Fit the screws (arrows) and tighten them down only moderately.

Before tightening the screws down firmly, the engine must be centred in relation to the sprocket cover and guide bar.

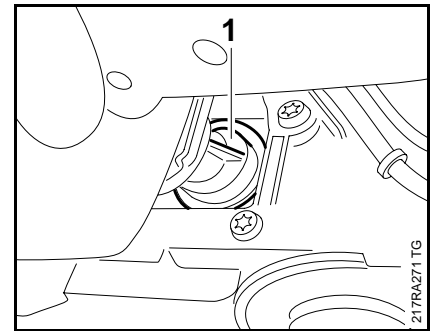


- Guide the peg (arrow) into the hole and fit the sprocket cover.

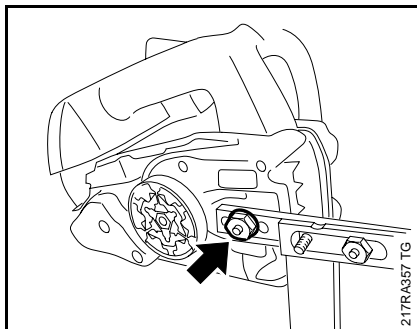


- The pin (1) must be lined up with the hole (arrow) when fitting the sprocket cover.

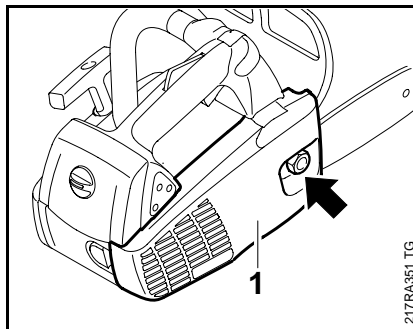
- Tightening torques, 3.5
- Remove the sprocket cover again.
- Mount the machine on the assembly stand again and continue with the installation procedure.



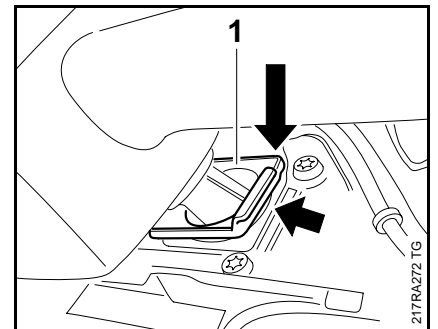
- Push the manifold (1) onto the intake stub.
- Coat the manifold with STIHL Press Fluid, 16



- Unscrew the nut (arrow) and remove the machine from the assembly stand.
- Fit the guide bar.



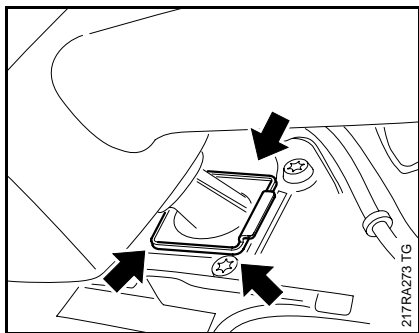
- Tighten down the nut (arrow) and secure the sprocket cover (1).
- Now tighten down the screws securing the engine.



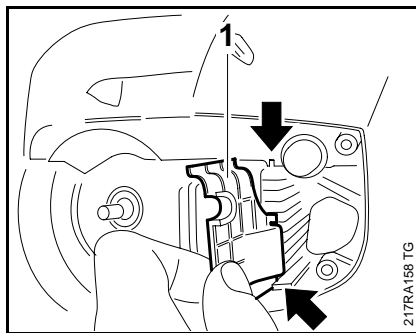
- The tab (arrow) must point towards the saw chain.
- Press in the supporting plate (1).

8.5 Crankshaft

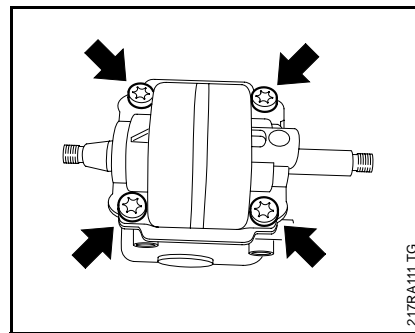
8.5.1 Removal



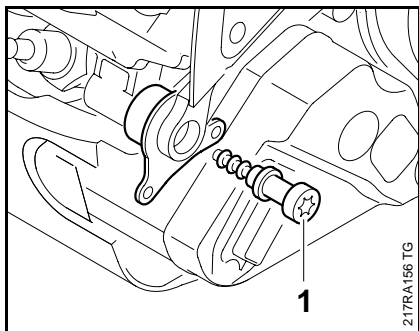
Ensure that the supporting plate rests securely on the engine housing at all points (arrows).



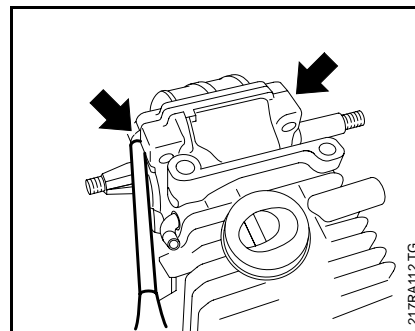
- Push the insulating plate (1) into the guides (arrows) until it engages at the bottom.
- Reassemble remaining parts in reverse order.



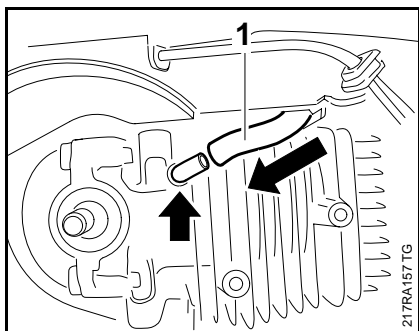
- Take out the screws (arrows).



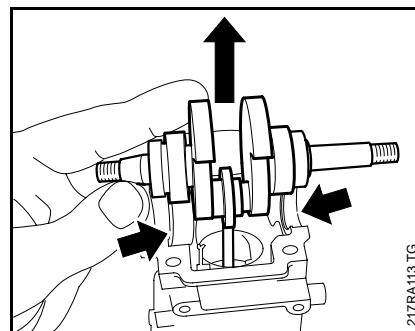
- Insert and tighten down the screw (1).
- Tightening torques, 3.5



- Apply a suitable tool at the projections (arrows) of the engine pan, then tap lightly to release and lift off the engine pan.

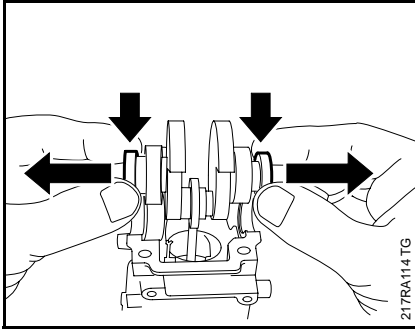


- Connect the impulse hose (1) to the stub (arrow).

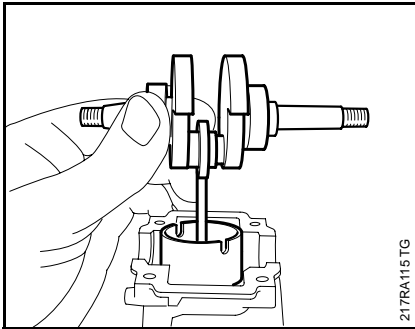


- Remove the crankshaft from the bearing seats (arrows).

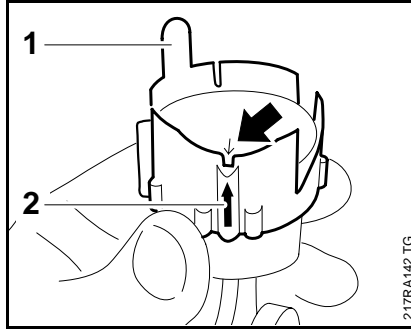
8.5.2 Installation



- Pull the oil seals (arrows) off the crankshaft stubs.



- Carefully pull the crankshaft and piston out of the cylinder.

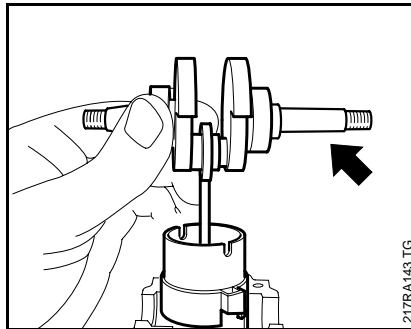


- Coat the piston, piston rings and inside of cylinder with oil.

- Use the clamping strap (1) 1137 893 2600 to compress the rings around the piston.

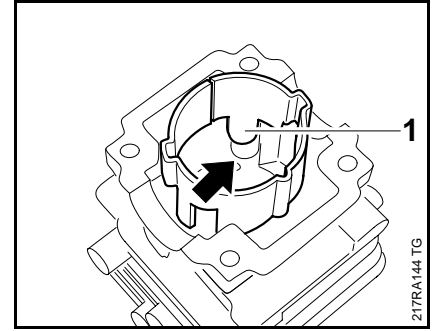
The clamping strap (1) must be fitted so that the arrow (2) points towards the cylinder exhaust port and is lined up with the arrow (arrow) at the bottom of the piston.

- Check that the piston rings have been installed correctly.



- Align the piston and crankshaft before inserting them in the cylinder.

The cylindrical crankshaft stub (arrow) must point towards the cylinder exhaust port.

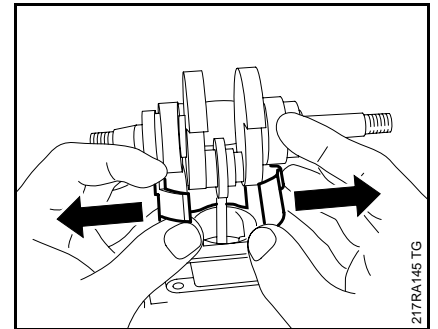


For clarity, the piston is not shown in this illustration of the clamping strap fitted in the cylinder.

- Insert the clamping strap with piston in the cylinder so that the tab (1) on the clamping strap engages the correspondingly shaped recess (arrow).

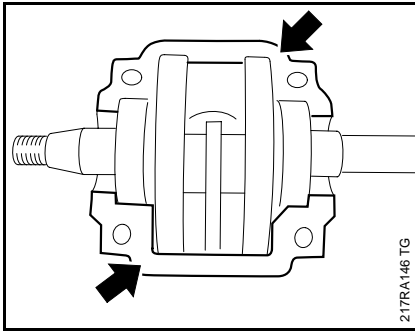
When sliding the piston into the cylinder, ensure that the clamping strap firmly encloses the piston and that none of the piston rings protrudes.

- risk of breakage –



- Slide the piston into the cylinder, the clamping strap moves backwards at the same time.

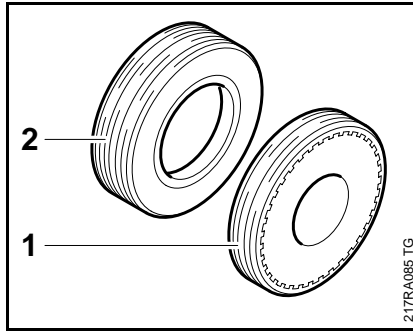
- Remove the clamping strap.



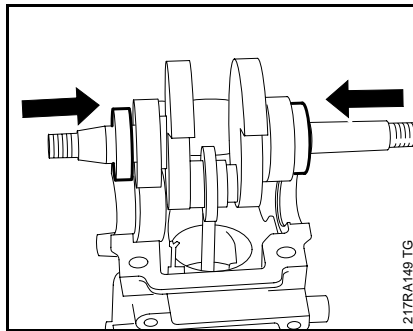
- Check and clean the mating faces (arrows) on the cylinder.

Mating faces must be absolutely clean and undamaged. Parts with damaged mating faces must be replaced.

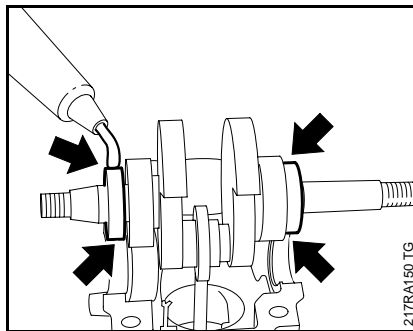
Whenever the engine pan has been disassembled, the mating faces must be cleaned and fresh sealing compound applied, 16



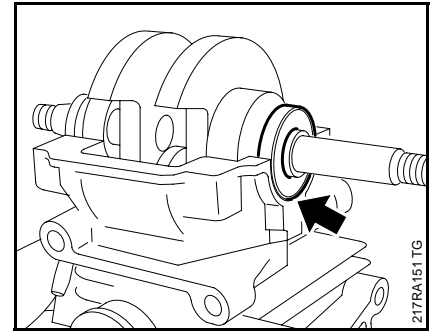
Use oil seal (1) 9639 003 1206 for installation on the closed crankcase.
Use oil seal (2) 9639 003 1205 for installation on the open crankcase.



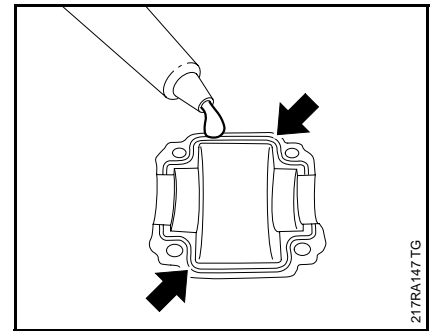
- Slip new oil seals onto the crankshaft stub with the open side facing the crankshaft.



- Apply sealing compound to the outside diameter (arrows) of the oil seals, 16



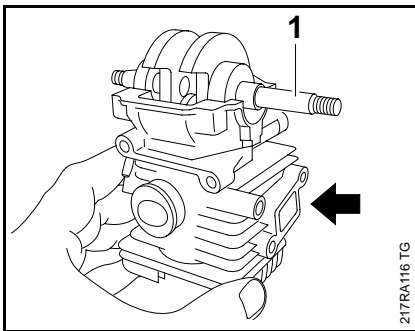
- Fit the crankshaft with bearings and oil seals in the bearing guides on the cylinder, taking care to ensure that the oil seals are flush (arrow).



- Check and clean the mating faces on the engine pan.

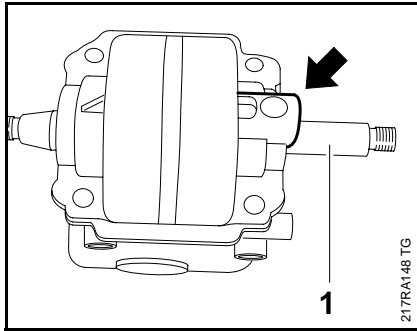
Mating faces must be absolutely clean and undamaged. Parts with damaged mating faces must be replaced.

- Apply sealing compound to the groove on the circumference (arrows) 16

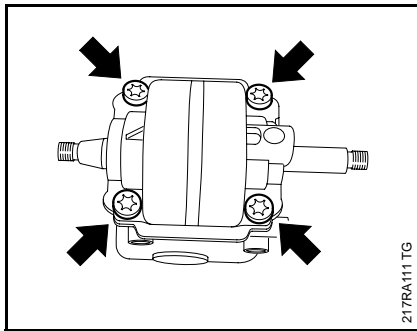


Before closing the crankcase, ensure that the cylindrical crankshaft stub (1) is on the side of the cylinder exhaust port (arrow).

8.5.3 Crankshaft / Bearing



- Place the engine pan on the sealing surface of the cylinder, ensuring that the lug (arrow) faces the cylindrical crankshaft stub (1).



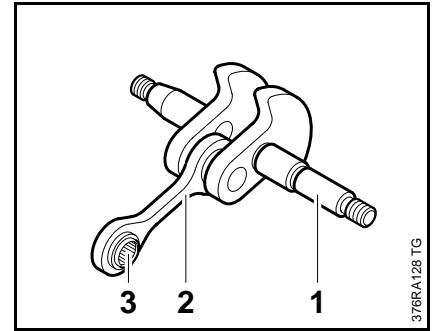
So that the sealing compound is distributed uniformly, fit the screws and gently press the engine pan down.

- Tighten the screws (arrows) down crosswise.
- Tightening torques, 3.5

Avoid damage to the crankshaft stub.

- Clean the crankshaft stub with standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons.
- Install the engine, 8.4.2
- Reassemble remaining parts in reverse order.

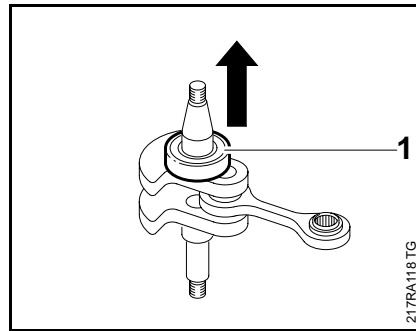
- Remove the engine, 8.4.1
- Remove the crankshaft, 8.5.1



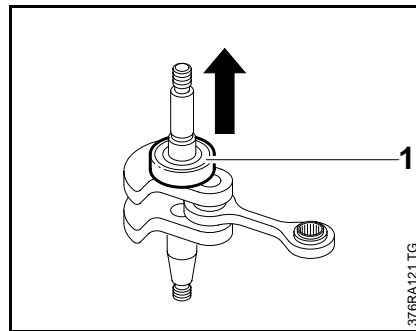
- The crankshaft (1), connecting rod (2), the needle bearing between them and the needle bearing (3) form an inseparable unit. They must always be replaced as a complete unit.

The deep groove ball bearings and oil seals must always be replaced when installing a new crankshaft.

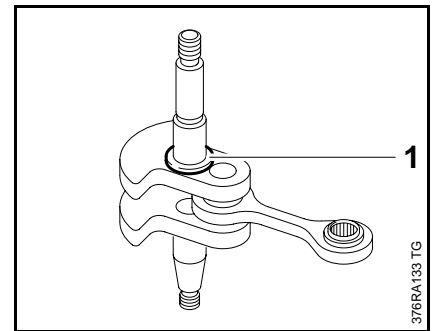
- Before installing the crankshaft, clean it with standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons.



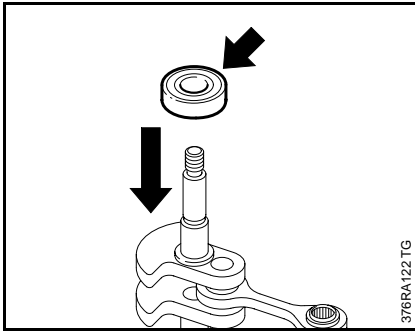
- Remove the ball bearing (1) and washer.



- Remove the ball bearing (1) and washer.

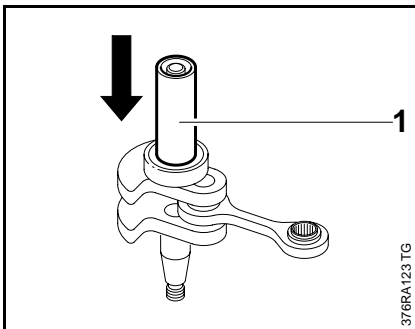


- Fit the washer (1).

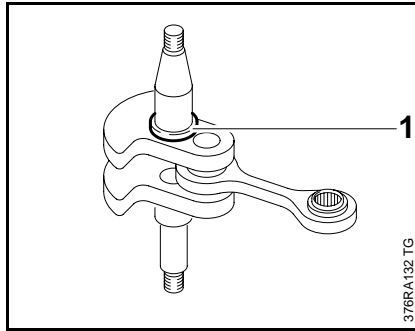


- Fit the ball bearing with the closed side (arrow) facing outwards.
- Heat the inner race of the deep groove ball bearing to approx. 150 °C (300 °F).
- Slip the deep groove ball bearing onto the crankshaft stub as far as the washer.

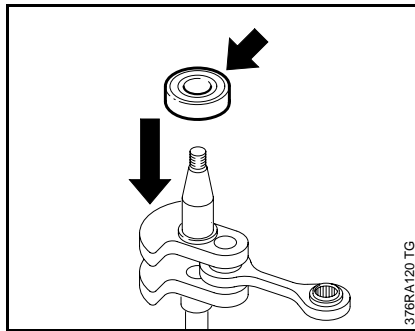
The ball bearing must be fitted rapidly as the heat is transmitted to the crankshaft stub and the inner raceway contracts again.



- If the ball bearing cannot be heated, it must be pressed in with a suitable sleeve (1) until the ball bearing rests against the washer.

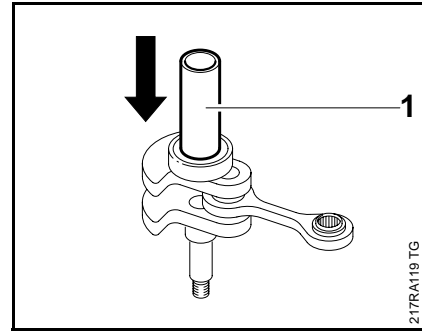


- Fit the washer (1).



- Fit the ball bearing with the closed side (arrow) facing outwards.
- Heat the inner race of the deep groove ball bearing to approx. 150 °C (300 °F).
- Slip the deep groove ball bearing onto the crankshaft stub as far as the washer.

The ball bearing must be fitted rapidly as the heat is transmitted to the crankshaft stub and the inner raceway contracts again.



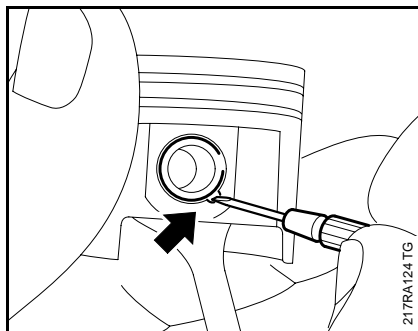
- If the ball bearing cannot be heated, it must be pressed in with a suitable sleeve (1) until the ball bearing rests against the washer.
- Coat the needle bearing with oil.
- Install the piston, [8.6.2](#)
- Install the crankshaft and oil seals, [8.5.2](#)
- Install the engine, [8.4.2](#)

8.6 Piston

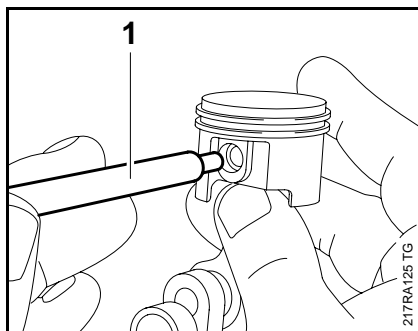
8.6.1 Removal

Remove the engine, 8.4.1

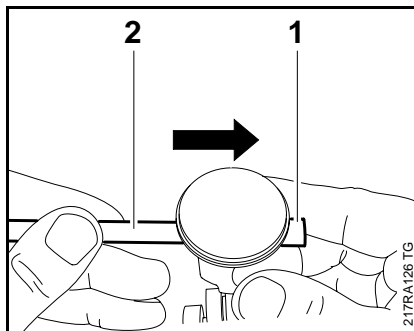
Remove the crankshaft, 8.5.1



- Use a suitable tool to prise the hookless snap ring out at the recess (arrow).



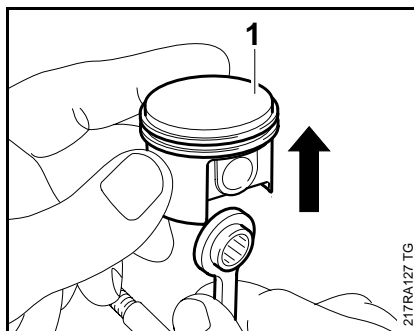
- Apply the assembly drift (1) 1114 893 4700 to the opposite side of the snap ring.



- Push the piston pin (1) out of the piston with the assembly drift (2) 1114 893 4700.

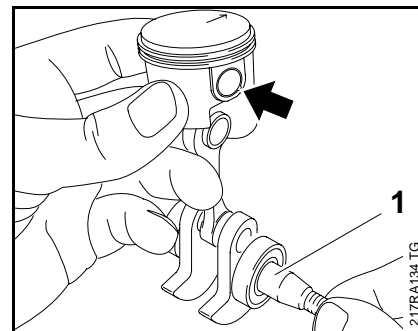
If the piston pin is stuck, lightly tap the end of the assembly drift with a hammer to loosen it.

The piston must be held steady during this process to ensure that jolts are not transmitted to the connecting rod.



- Remove the piston (1) from the connecting rod.
- Inspect the piston rings and replace if necessary, 8.7

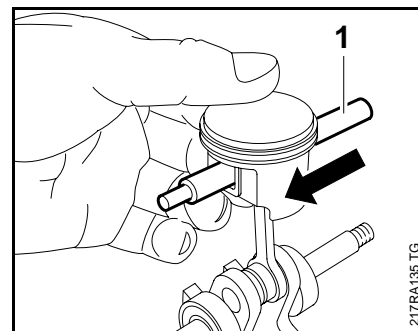
8.6.2 Installation



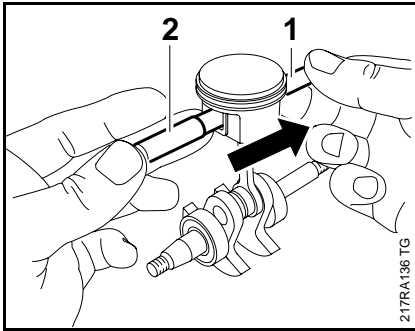
- Coat the needle cage with oil.

- Align the piston so that the side with the bulge for the snap ring (arrow) is on the same side as the tapered crankshaft stub (1).

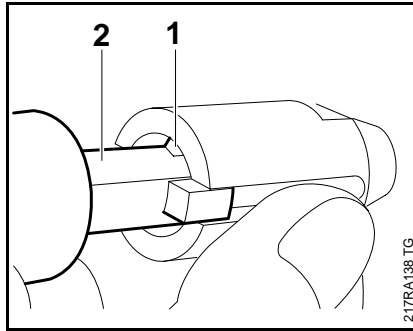
- Position the piston on the small end.



- Fit the assembly drift (1) 1114 893 4700, small diameter first, through the piston hole and small end (needle cage) and line up the piston.

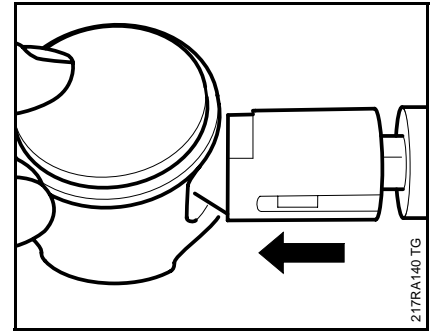


- Fit the piston pin (2) on the small diameter of the assembly drift (1) and slide it into the piston.



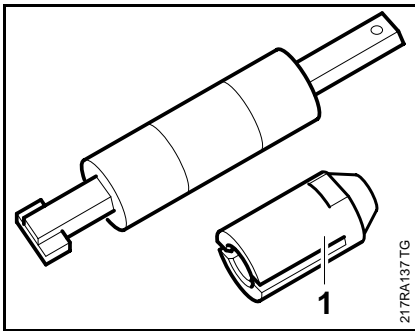
- Push the slotted diameter of the sleeve (2) over the magnet and snap ring.

The inner pin (1) must point towards the flat face (2) of the tool's shank.

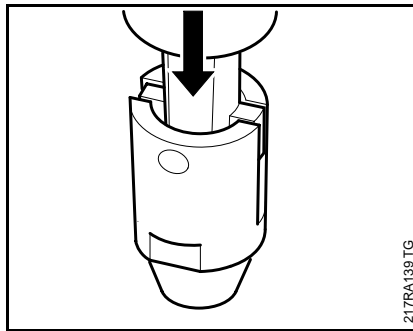


- Apply assembly tool 5910 890 2210 to the piston boss with the taper sleeve, hold the piston steady and press the tool shank home until the snap ring slips into the groove.

The tool must be precisely aligned in axial direction of the piston pin.

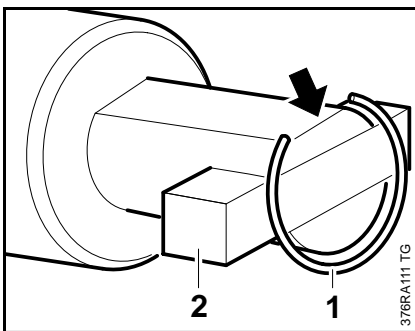


- Remove the sleeve (1) from assembly tool 5910 890 2210.

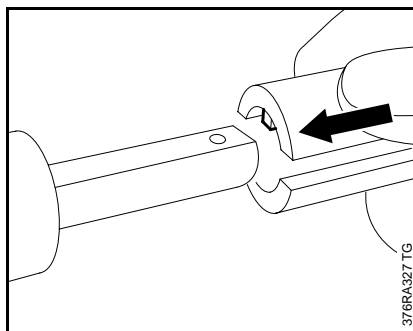


- Press the assembly tool down in the sleeve until the magnet is at the end of the guide slits.

Stand the tool on a suitable surface (wooden board).

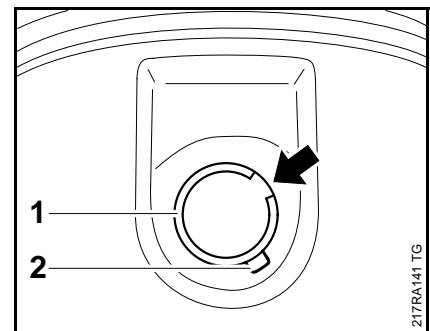


- Attach the snap ring (1) to the magnet (2) and align it so that the snap ring gap is on the flat side (arrow).



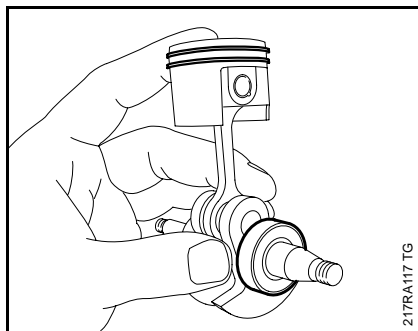
- Remove the sleeve and push it as far as possible over the opposite end of the assembly tool's shank.

The inner pin must point towards the flat face.



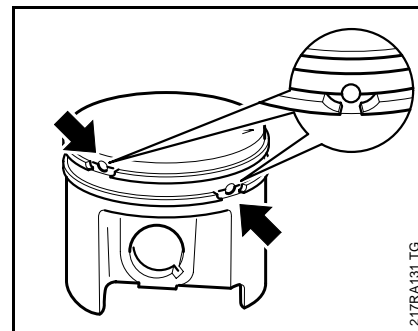
The snap ring (1) must be fitted in such a way that the snap ring gap (arrow) does not coincide with the recess (2).

8.7 Piston rings

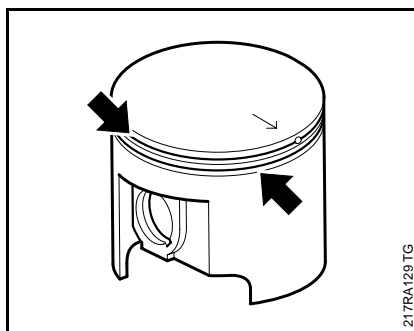


- Inspect the piston rings and replace if necessary, 8.7
- Inspect the ball bearings and replace if necessary, 8.5.3
- Install the crankshaft, 8.5.2
- Install the engine, 8.4.2

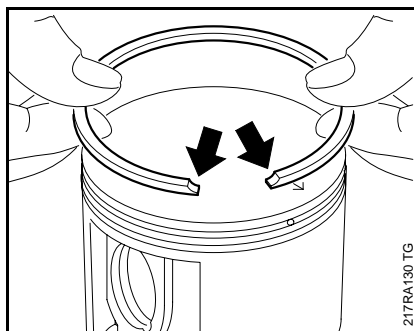
- Remove piston, 8.4.1
- Remove piston rings from piston.



- Position the piston rings so that the radii at the ring gaps meet at the fixing pins (arrows) in the piston groove.
- Check the correct installed position of the piston rings again (arrows).
- Install the piston, 8.4.2




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



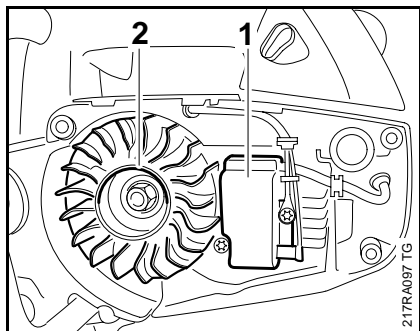
- Install the new piston rings in the grooves so that the radii at the ends of the rings (arrows) face towards the piston head.

9. Ignition System

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

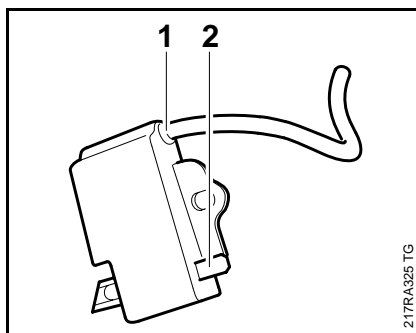
Troubleshooting on the ignition system should always start with the spark plug,  4.5

- Remove the fan cover,  9.1.1




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

9.1 Ignition Module



The ignition module accommodates all the components required to control ignition timing. There are two electrical connections on the coil body:

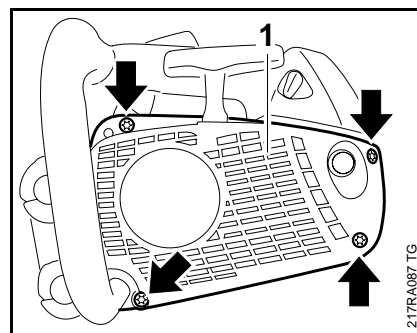
- High-voltage output (1) with permanently fitted ignition lead
- Connector tag (2) for the short circuit wire.

Testing in the workshop is limited to a spark test. A new ignition module with ignition lead must be installed if no ignition spark is obtained (after checking that the wiring and stop switch are in good condition),  9.1.1

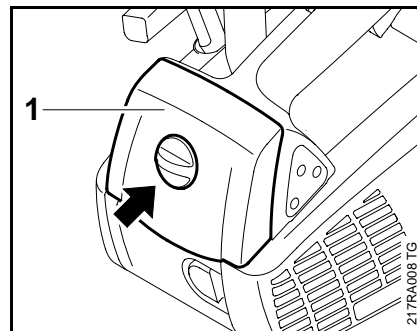
Ignition timing is fixed and cannot be adjusted during repair work.

Since there is no mechanical wear in these systems, ignition timing cannot get out of adjustment during operation.

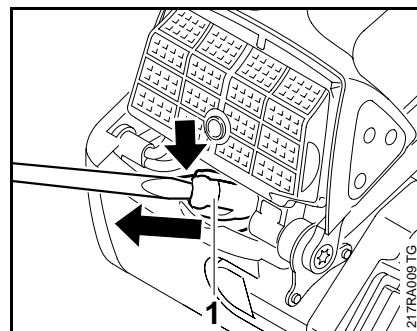
9.1.1 Removing and installing



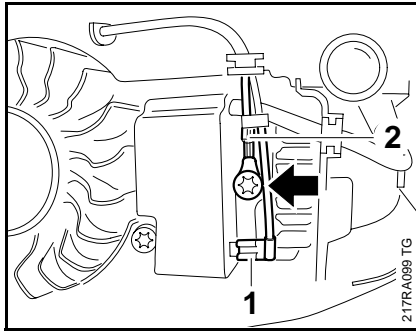
- Take out the screws (arrows) and remove the fan housing (1) with rewind starter.



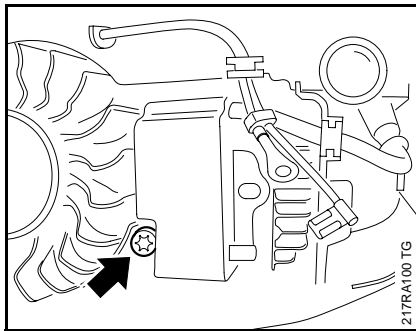
- Turn the twist lock (arrow) anticlockwise to release it and remove the carburetor box cover (1).



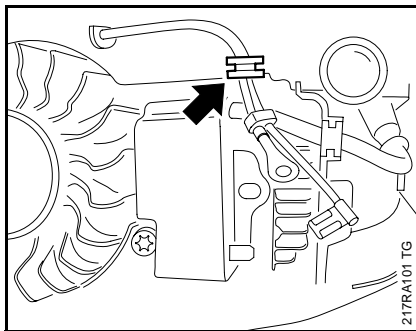
- Apply a suitable tool to the tab (arrow) to prise the boot off the spark plug (1).



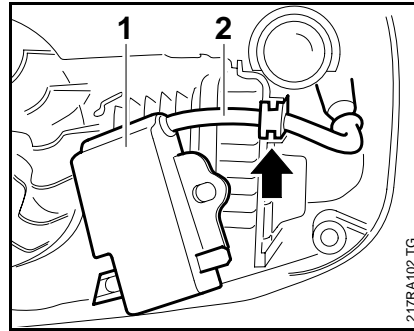
- Disconnect the short circuit line (1).
- Remove the screw (arrow).
- Disconnect the ground wire (2).



- Remove the screw (arrow).



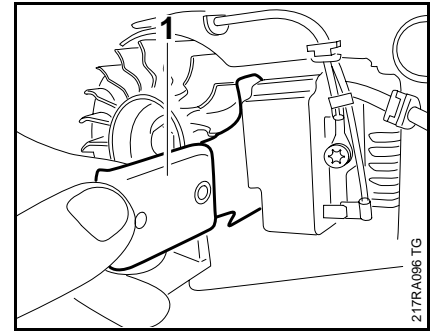
- Remove the cable guide (arrow).



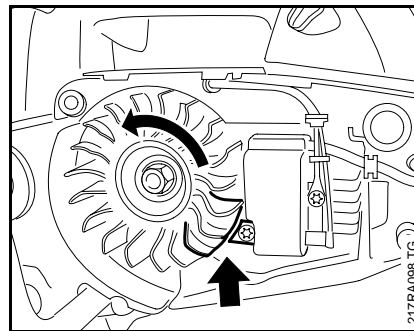
- Remove the ignition module (1) and cable guide (arrow) for the ignition lead (2).
- Pull the ignition lead with spark plug boot out of the engine housing.

A damaged ignition lead can only be replaced together with the ignition module.

- Examine the spark plug boot and replace it if necessary, [9.4](#)
- Reassemble parts in reverse order.
- Moderately tighten the screws on the ignition module.



- Slide the setting gauge (1) 4118 890 6401 between the arms of the ignition module and the magnet pole of the flywheel.
- Press the ignition module against the setting gauge.
- Tighten down the screws.
- Tightening torques, [3.5](#)
- Reassemble remaining parts in reverse order.



- Turn the flywheel until the magnet pole is lined up with the ignition module (arrow).

9.2 Ignition Timing

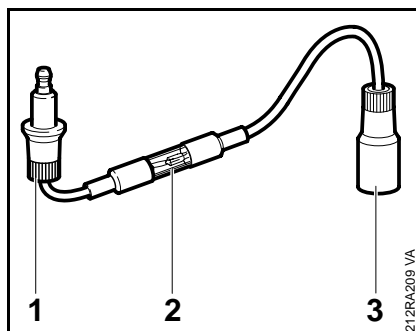
Ignition timing is fixed and cannot be adjusted during repair work.

Since there is no mechanical wear in these systems, ignition timing cannot get out of adjustment during operation.

9.3 Testing the Ignition Module

To test the ignition module, use either the ZAT 4 ignition system tester 5910 850 4503 or the ZAT 3 ignition system tester 5910 850 4520.

The ignition test refers only to a spark test, not to the ignition timing.



Using the ZAT 4 ignition system tester 5910 850 4503

- Before starting the test, install a new spark plug in the cylinder and tighten it down firmly.
- Tightening torques, 3.5
- Connect the spark plug boot to the input terminal (1). Push the tester's output terminal (3) onto the spark plug.

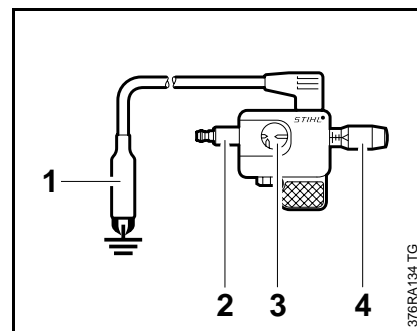
High voltage – risk of electrocution.

- Crank the engine quickly with the rewind starter and check sparkover in the window (2) of the ignition system tester.

The engine may start and accelerate during the test.

If a spark is visible, the ignition system is in order.

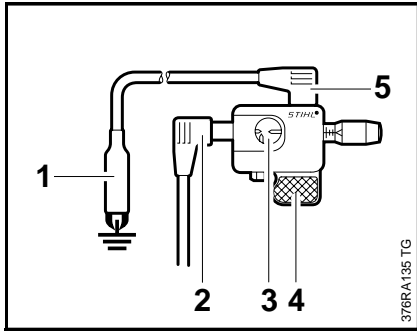
If no spark is visible in the window (2), check the ignition system with the aid of the troubleshooting chart, 9.7



Using the ZAT 3 ignition system tester 5910 850 4520

- Before starting the test, install a new spark plug and tighten it down firmly.
- Tightening torques, 3.5
- Connect the spark plug boot to the terminal (2).
- Attach ground terminal (1) to the spark plug.
- Use adjusting knob (4) to set the spark gap to approx. 2 mm, see window (3).

9.4 Ignition Lead / Spark Plug Boot



While using the ZAT 3, hold it only by the handle (4) or position it in a safe place. Keep fingers or other parts of your body at least 1 cm away from the spark window (3), high-voltage connection (2), ground connection (5) and the ground terminal (1).

High voltage – risk of electrocution.

- Crank the engine quickly with the rewind starter and check sparkover in the window (3) of the ignition system tester.

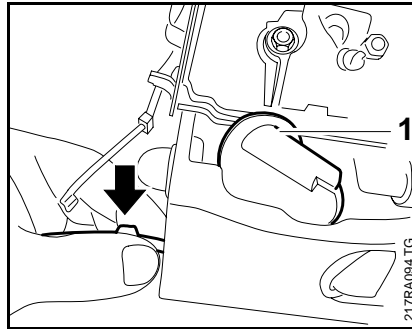
The engine may start and accelerate during the test.

If a spark is visible, the ignition system is in order.

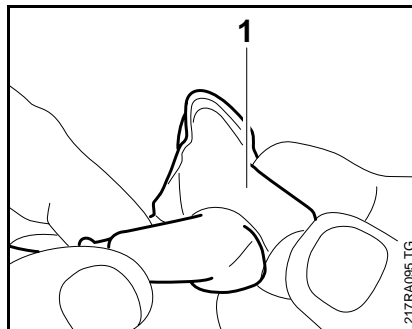
If no spark is visible in the window (3), check the ignition system with the aid of the troubleshooting chart, 9.7

The ignition lead cannot be replaced separately, as it is permanently connected to the ignition module.

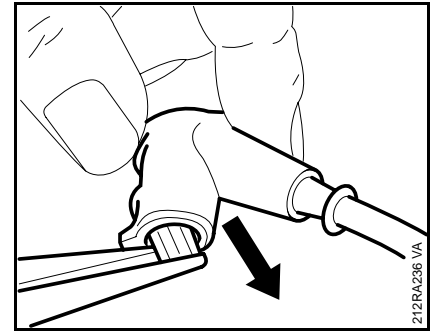
- Remove the ignition module, 9.1.1



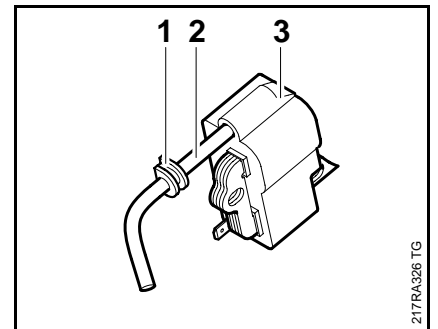
- Pull the spark plug boot (1) with ignition lead (arrow) out of the engine housing towards the ignition module.



- Remove the cover (1) from spark plug boot.



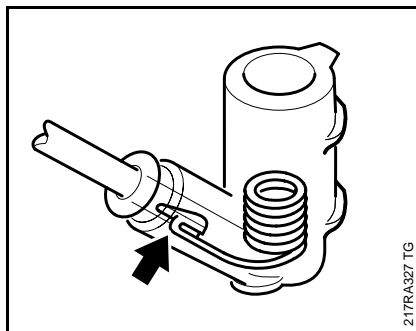
- Use suitable pliers to pull the torsion spring out of the spark plug boot.
- Unhook the torsion spring from the ignition lead.
- Pull the boot off the ignition lead.



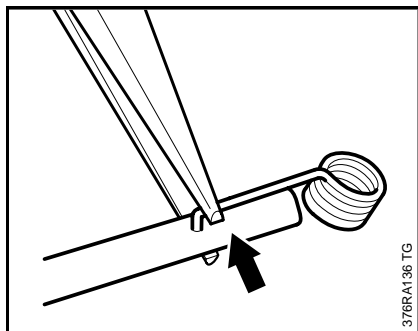
- Examine the ignition lead (2), ignition module (3) and grommet (1) and replace if necessary.

Ignition lead and ignition module can only be replaced as a complete unit.

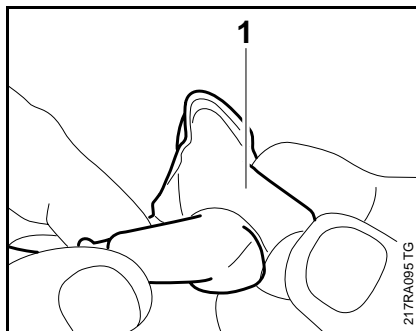
- Use a pointed tool to pierce the centre of the new lead's insulation about 15 mm from the end of the ignition lead.



- Ensure that the torsion spring engages in the opening (arrow).



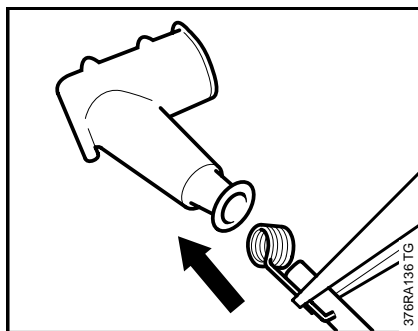
- Pinch the hook of the torsion spring into the centre of the ignition lead (arrow).



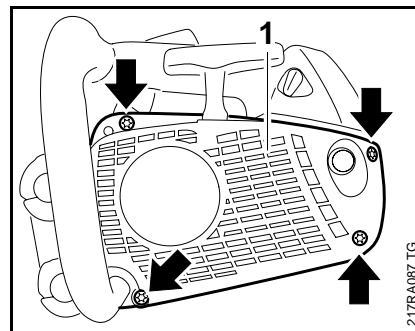
- Slide the cover (1) over the spark plug boot.

Do not use either graphite grease or silicone insulating paste.

- Install the ignition module, 9.1
- Reassemble remaining parts in reverse order.

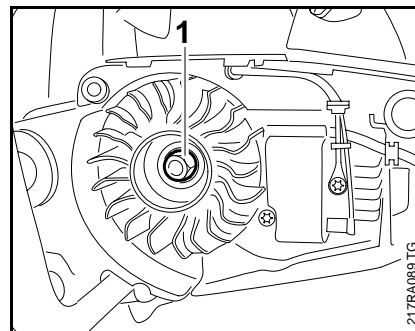


- Coat the inside of the spark plug boot with STIHL Press Fluid, 16
- Push the ignition lead and torsion spring into the spark plug boot.



Take out the screws (arrows) and remove the fan housing (1) with rewind starter.

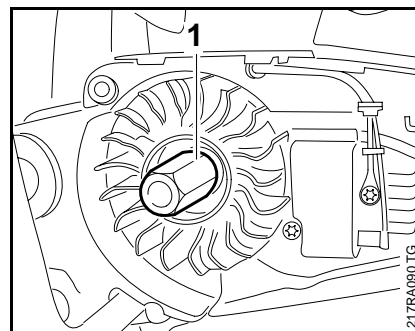
- Block the piston with the locking strip, 6



- Remove the flywheel nut (arrow).

- Remove the flywheel.

Use the puller if the flywheel is stuck.

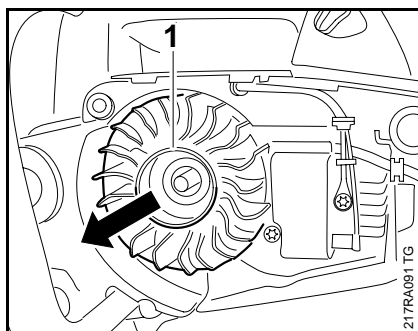


Screw on the puller (1) 1116 893 0800, but do not screw it tight, and then tap the end of the puller lightly to release the flywheel.

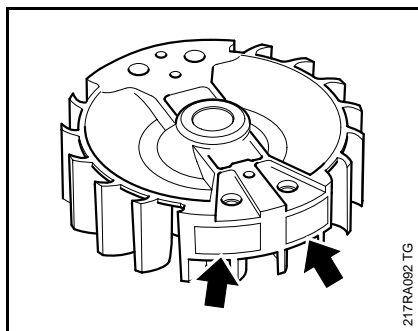
9.6 Short Circuit Wire

9.6.1 Testing

- Unscrew the puller (1) 1116 893 0800 from the crankshaft stub.



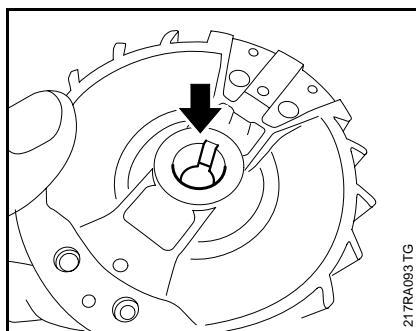
- Remove the flywheel (1).



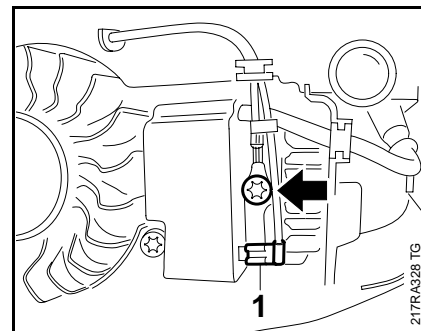
Flywheel and magnet poles (arrows) must not show any signs of damage or blue discoloration, otherwise the flywheel must be replaced.

Degrease the crankshaft stub and bore in the flywheel hub with standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons.

- Reassemble parts in reverse order.



- Ensure that the machined key (arrow) engages the slot in the crankshaft.
- Set the air gap between ignition coil and flywheel, 9.1.1
- Reassemble remaining parts in reverse order.
- Tightening torques, 3.5



Check the short circuit wire if the spark plug and ignition lead with spark plug boot are in order.

- Remove the fan cover, 8.4.1
- Disconnect the short circuit line (1).
- Connect the ohmmeter to ground (arrow) and the short circuit wire (1).
- Set the switch shaft to "0".

The resistance measured must be about 0 Ω . If it is much higher, the reason is a break in the wire and it must be replaced, 9.6




- Set the switch shaft to "I".

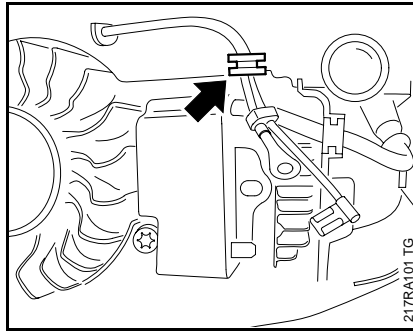
The resistance measured must be infinitely high, otherwise fit a new short circuit wire, 9.6

If no fault can be found, carry out further checks:

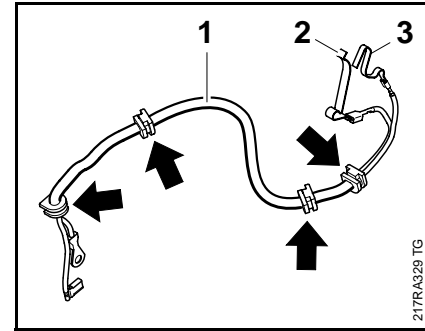
- Check the flywheel, 9.5
- Check the air gap between flywheel and ignition module, 9.1.1
- If neither of these checks reveals a fault, install a new ignition module, 9.1.1
- Reassemble parts in reverse order.

9.6.2 Removing and installing

- Remove fan housing,  10.2
- Remove the handle moulding and actuating levers,  12.1
- Remove the switch shaft,  12.3

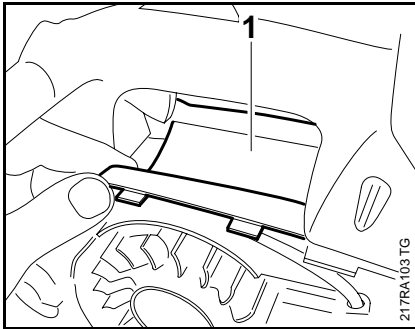


- Remove the cable guide (arrow).

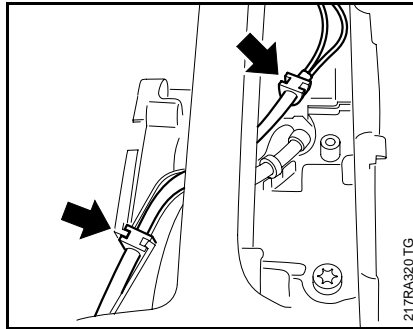


- Examine the wiring harness (1), contact spring (2), contact spring (3) and grommets (arrows) and replace if necessary.

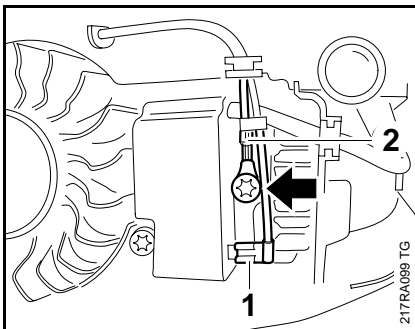
For safety reasons, contact spring (3) may only be replaced together with the wiring harness.



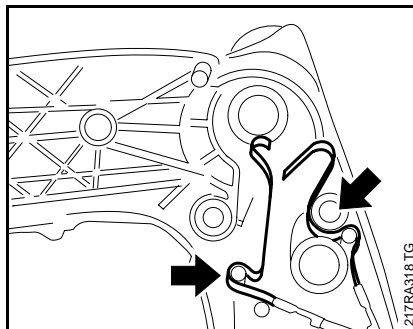
- Remove the cover (1).



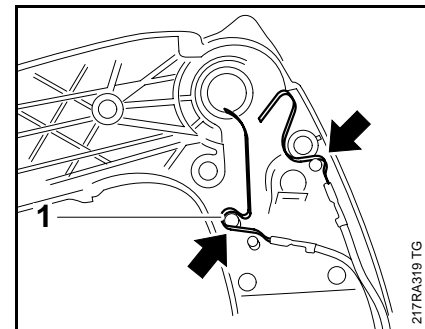
- Remove the cable guides (arrows).



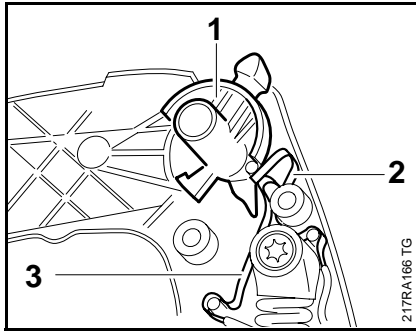
- Take out the screw (arrow) and remove the ground wire (2).
- Disconnect the short circuit line (1).



- Remove the contact springs (arrows) from the handle housing.



- Plug the contact spring (1) into the terminal socket of the wiring harness.
- Place the contact springs in the guides (arrows).

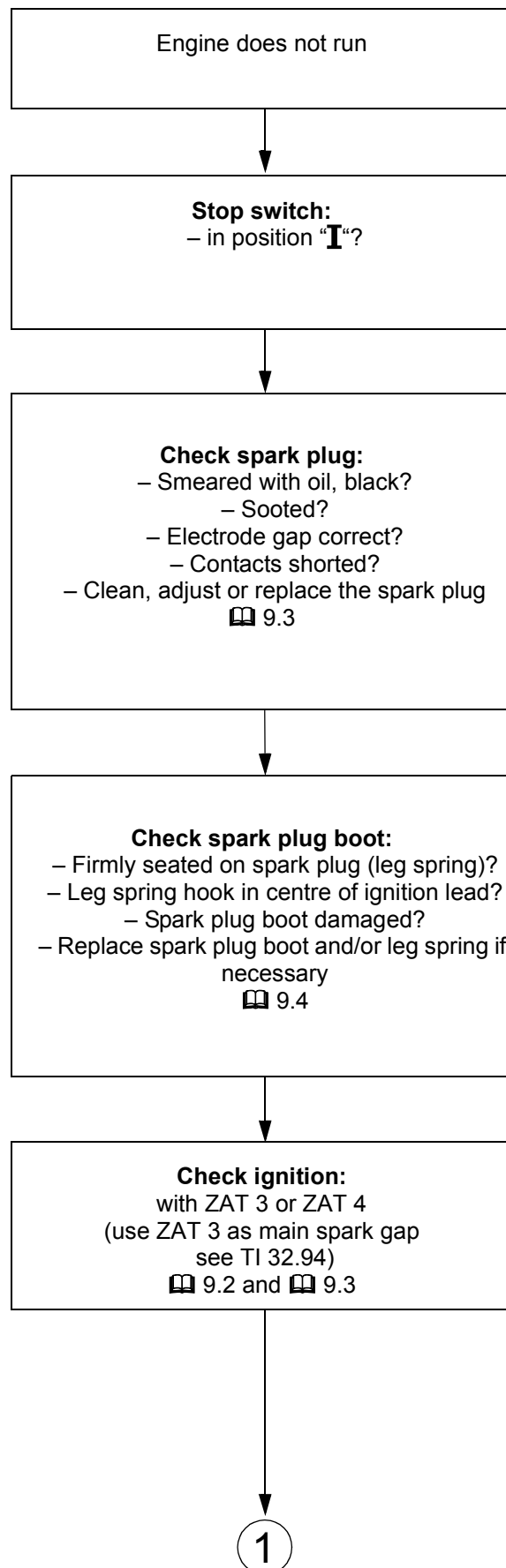


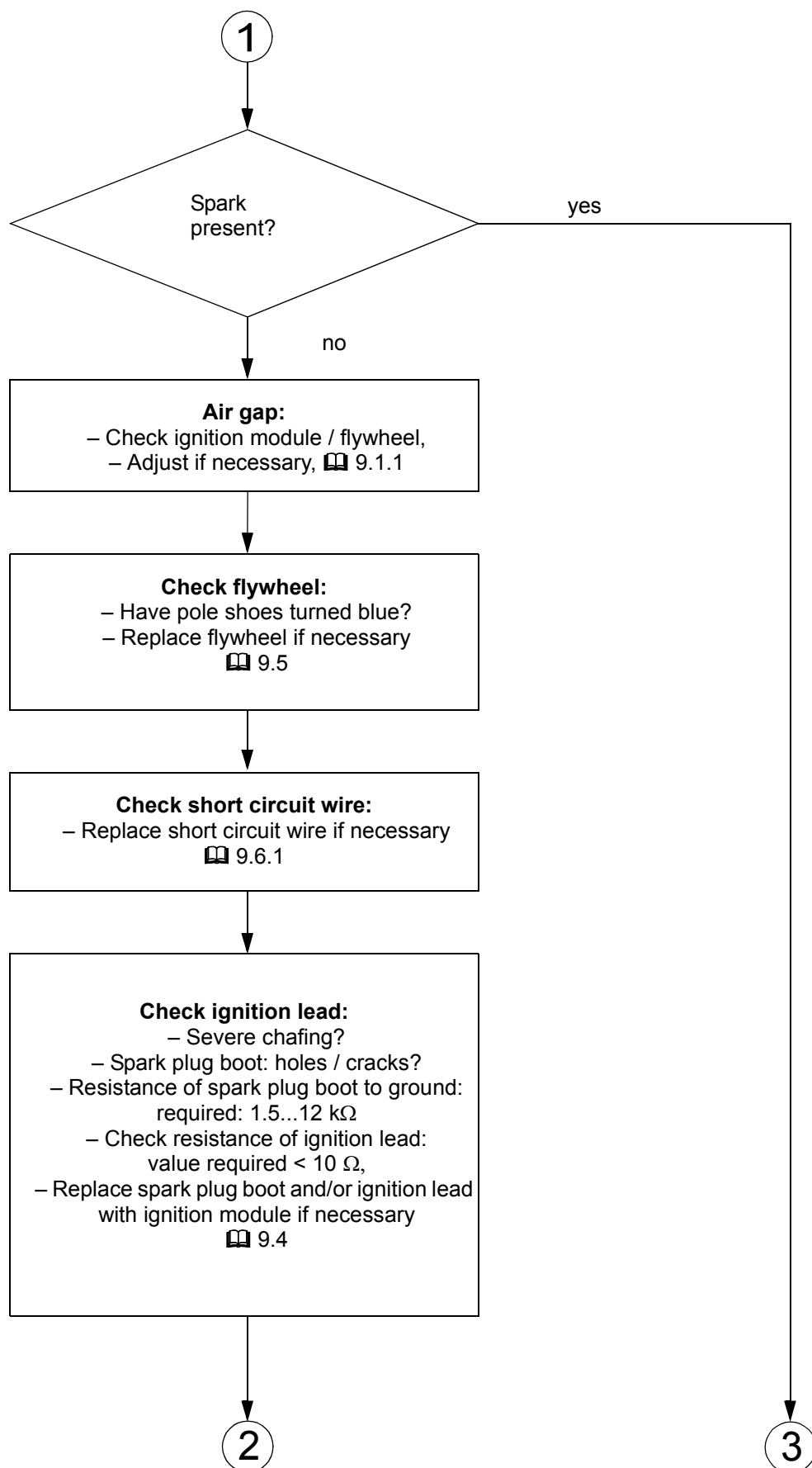
- Fit the switch shaft (1), pushing the rear contact spring (3) slightly to the side.

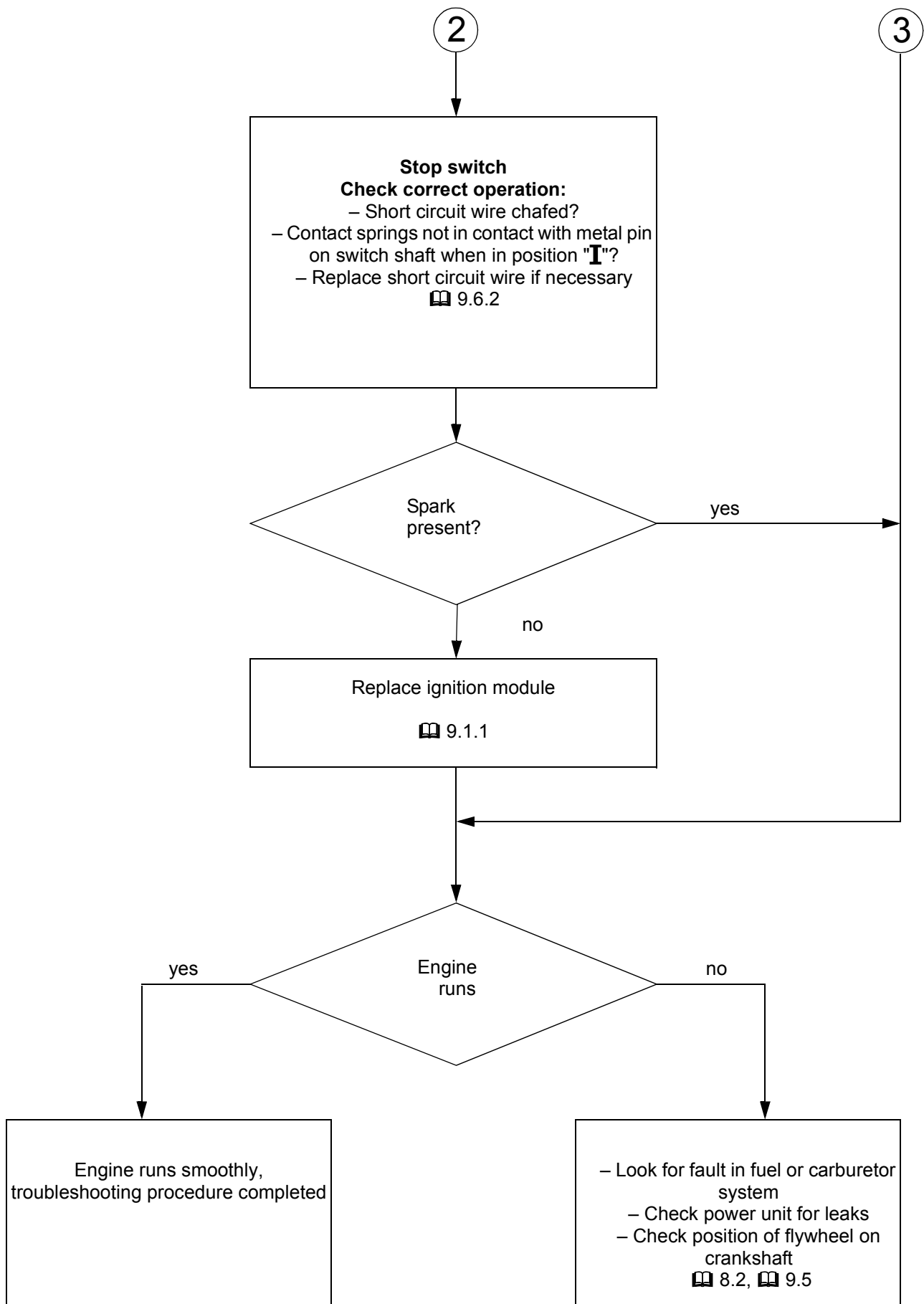
Check operation:

The contact springs are fitted in the handle housing at different depths. This means that the rear contact spring (3) and the front contact spring (2) must make contact with the metal pin of the switch shaft (1) when the switch shaft (1) is in position "0".

- Reassemble parts in reverse order.
- Set the air gap between ignition coil and flywheel
 9.1.1
- Reassemble remaining parts in reverse order.
- Tightening torques, 3.5








10. Rewind starter

10.1 General

If the action of the starter rope becomes very stiff and the rope rewinds very slowly or not completely, it may 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.

To clean the rewind spring, it is sufficient to apply a few drops of a standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons to the rewind spring.

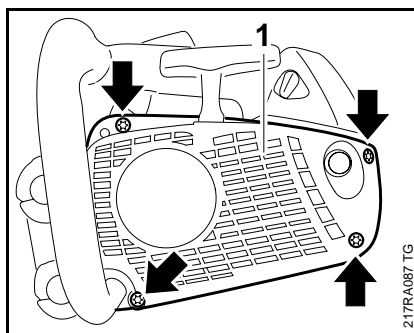
Carefully pull out the starter rope several times and allow it to rewind until its normal smooth action is restored.

Before installing, lubricate the rewind spring and starter post with STIHL special lubricant,  16

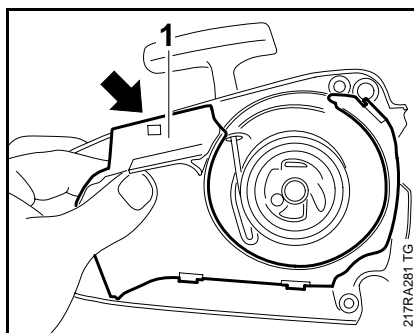
If clogged with dirt or pitch, the entire starter mechanism, including the rewind spring, must be removed and disassembled. Take particular care when removing the spring.

- Clean all components.

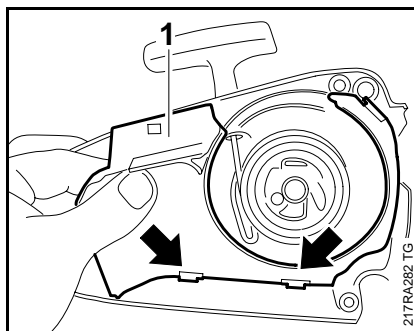
10.2 Removing and Installing




- Take out the screws (arrows).
- Remove the fan housing (1).

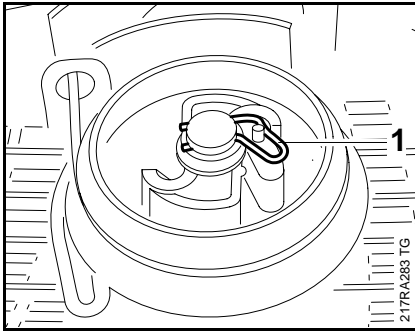


- Press the locking lug (arrow) together slightly and remove the segment (1) from the fan housing.
- Examine the fan housing and segment, replace if necessary.

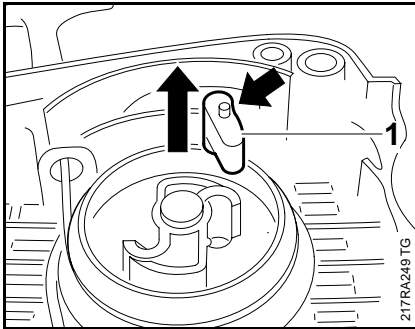


- Fit the segment (1) in the slits (arrows) on the fan housing, then push it down until the segment engages.

- Reassemble remaining parts in reverse order.
- Tighten down the screws.
- Tightening torques,  3.5



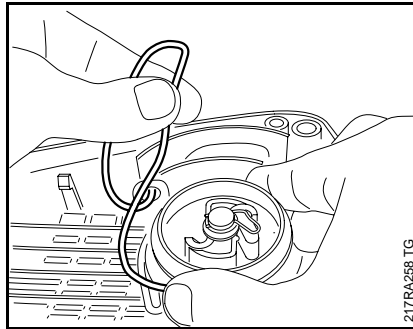
- Remove fan housing, 10.2
- Carefully ease the spring (1) off the starter post.



- Remove the pawl (1).
- Grease the pegs (arrow) of the new pawl, 16
- Reassemble parts in reverse order.

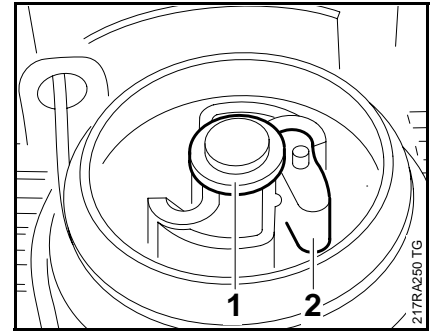
- Remove fan housing, 10.2
- Remove the spring, 10.3

Relieve tension of rewind spring



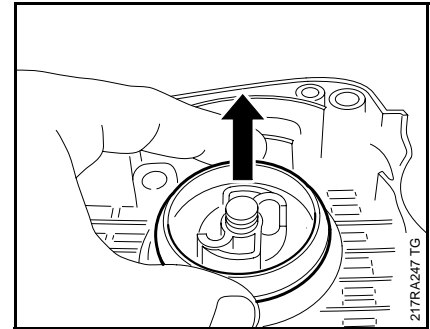
- Pull out the starter rope about 5 cm and hold the rope rotor steady.
- Still holding the rope rotor steady, take three full turns off the rope rotor.
- Pull out the rope with the starter grip and carefully release the rope rotor.

The system will not be under tension if the starter rope or rewind spring is broken.



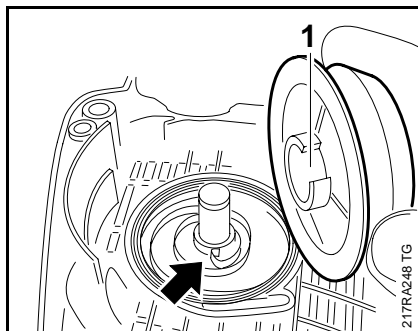
- Remove the washer (1).
- Remove the pawl (2).

The rewind spring must be relieved.



- Carefully remove the rope rotor.
- Remove the starter rope or remaining rope from the rope rotor.
- Examine the rope rotor and replace it if necessary,
- Remove any remaining rope from the fan housing if necessary.
- Install a new starter rope, 10.5

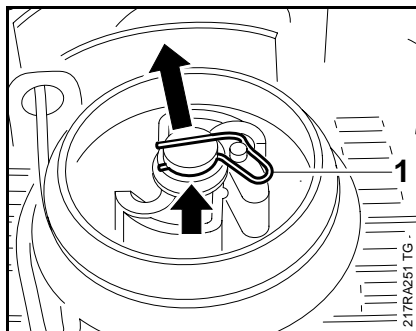
Lubricate the hole in the rope rotor with STIHL special lubricant oil, 16



- Fit the rotor on the starter post so that the inner loop of the spring (arrow) enters the recess (1).

The recess in the hub of the rope rotor acts as carrier for the spring loop.

- Reassemble remaining parts in reverse order.



- Position the spring (1) so that the loop of the spring encloses the peg of the pawl and the curved part of the spring (arrow) is located in the groove in the starter post.

- Then slide the straight part of the spring over the starter post until it engages in the groove.

- Tension the rewind spring, 10.6

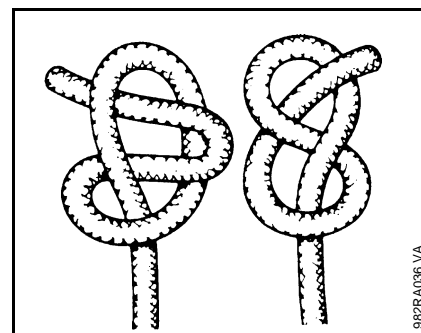
- Grease the pegs of the pawls, 16

- Remove the fan housing, 10.2

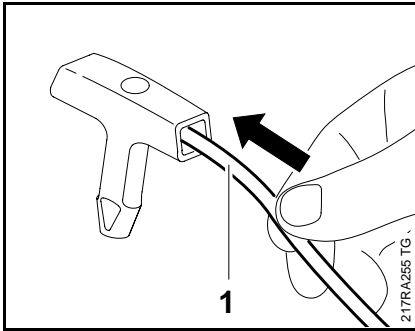
- Relieve the tension of the rewind spring and remove the rope rotor, 10.4

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

- Remove any remaining scraps of rope from the rope rotor and starter grip.

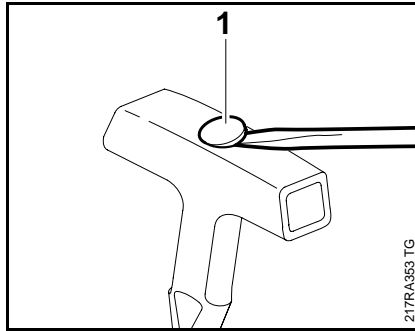


- Tie one of the two special knots shown above at the end of the rope in the starter grip.



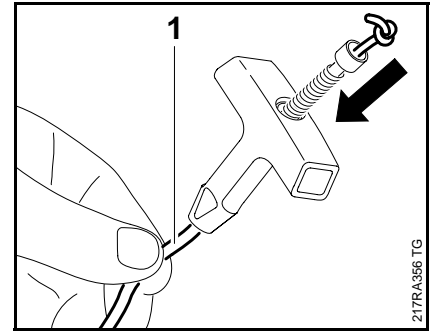
Machines with standard starter grip

- Thread the new rope (1) through the side of the starter grip.

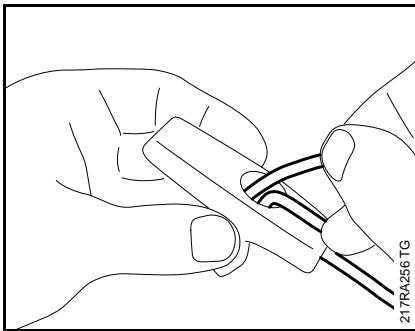


Machines with ElastoStart starter grip

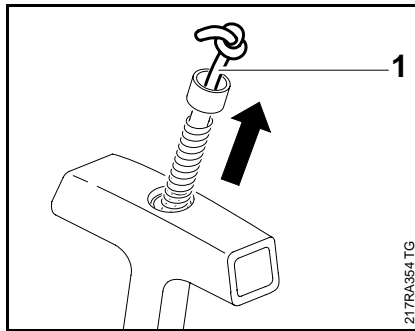
- Prise off the cap (1) with a suitable tool.



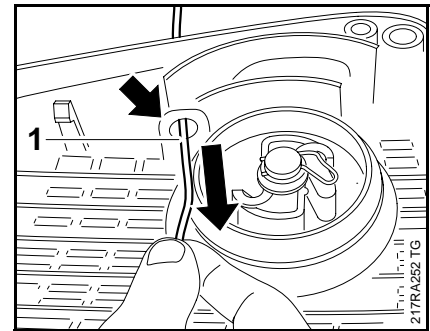
- Pull the rope (1) with spring and sleeve into the starter grip.
- Press the cap into the starter grip.



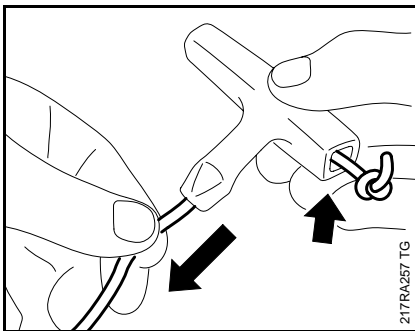
- Pull the rope out and continue threading it into the starter grip from the top.



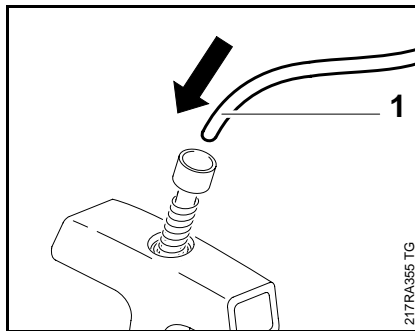
- Pull the rope or remaining rope (1) out of the sleeve.



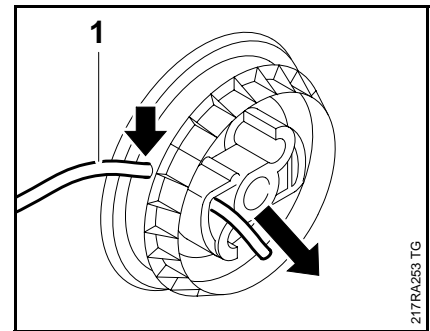
- Then thread the rope (1) through the opening (arrow).



- Pull the rope through the grip until the knot at the end of the rope is in the recess (arrow).

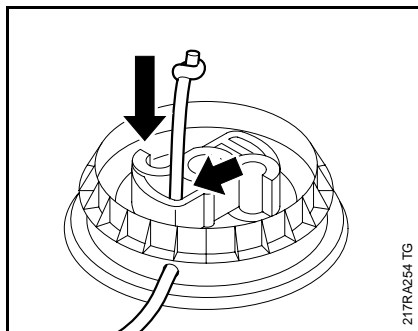


- Pull the rope (1) through the sleeve into the starter grip.
- Tie a special knot in the end of the rope.

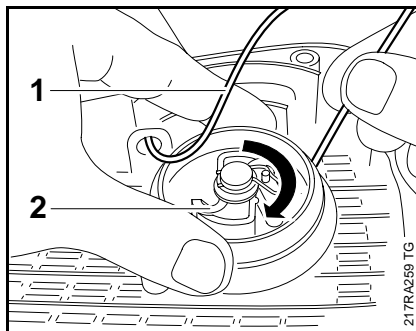


- Thread the rope (1) into the rope rotor (arrows).

10.6 Tensioning the Rewind Spring



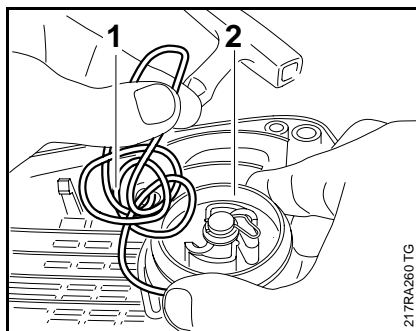
- Secure the rope (1) with a simple overhand knot.
- Pull the rope into the rope rotor until the knot rests in the recess (arrow) in the rope rotor.
- Install the rope rotor and tension the rewind spring, 10.4
- Install the fan housing, 10.2
- Tightening torques, 3.5



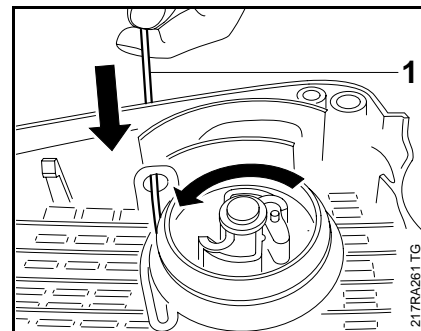
- Remove the fan housing, 10.2
- Pull out part of the rope (1) between rope rotor (2) and fan housing.
- Turn the rope rotor with rope six times clockwise.

The rope twists as the rope rotor and rope are turned. The rewind spring is now tensioned.

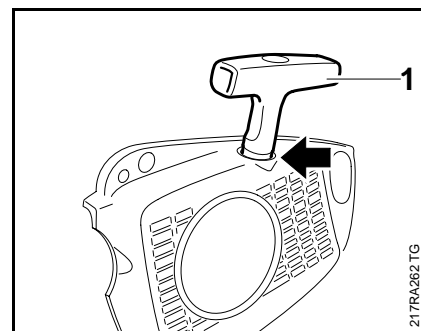
Hold the tensioned rope rotor firmly, as the rewind spring will be damaged if it jumps back suddenly.



- Hold the rope rotor (2) steady.
- Pull out the rope (1) with the starter grip and straighten it out.



- Hold the starter grip firmly to keep the rope (1) tensioned.
- Let go of the rope rotor and let the starter rope rewind slowly.




The rewind spring is correctly tensioned when the starter grip sits firmly in the rope guide bushing (arrow) without drooping to one side. If this is not the case, the spring must be tensioned 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 the maximum spring tension is reached, otherwise the spring tension must be reduced – it may break –

To reduce the spring tension:
Pull the rope out, hold the rope rotor steady and take off one turn of the rope.




- Install the fan housing, 10.2
- Tightening torques, 3.5

10.7 Replacing the Rewind Spring

- Troubleshooting,  4.4

The replacement spring is supplied ready for installation and secured in a frame.

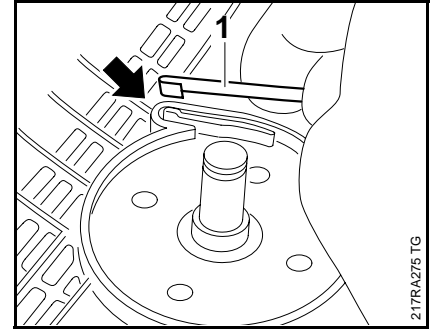
Wear a face shield and protective gloves.

- Remove the fan housing,  10.2
- Relieve the rewind spring if necessary and remove the rope rotor,  10.4
- Remove any fragments of the old spring.
- Lubricate the spring with a few drops of STIHL special lubricant before installation,  16

- Apply suitable tools (screwdriver, drift, etc.) to the recesses and push the spring into its seat in the housing – the spring slides out of the frame.

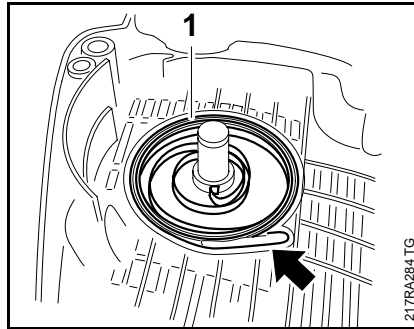
- Remove the frame.

The rewind spring may pop out.



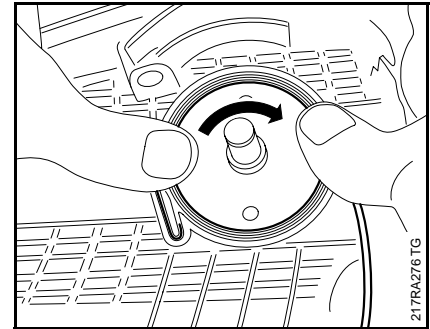
- Arrange the spring (1) as shown in the illustration.

- Position the anchor loop in the fixture (arrow).

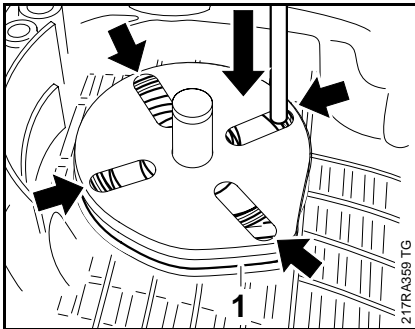


Ensure that the new rewind spring (1) is fitted completely and the anchor loop is positioned in the fixture (arrow).

If the rewind spring pops out during installation, fit it in the fan housing as follows:

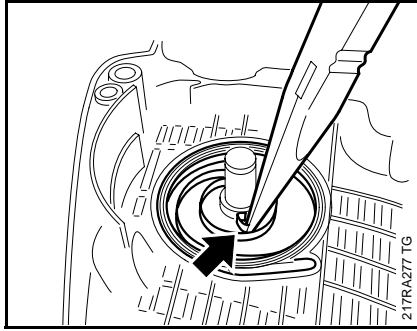


- Fit the rewind spring (1) in a circular fashion, working in clockwise direction.
- Hold the inserted loops securely to prevent them slipping out again.



- Position the replacement spring with frame – the anchor loop must be located over the fixture (1).

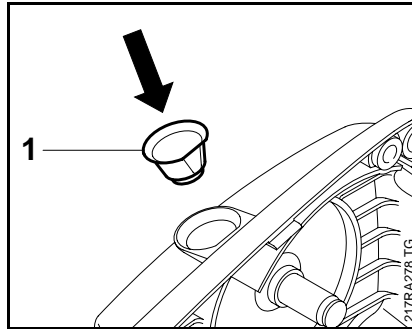
10.8 Starter Rope Guide Bushing



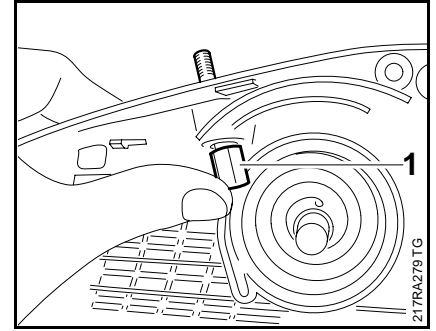
- Arrange the inner loop (arrow) with suitable pliers so that it is slightly angled against the starter post.
- Install the rope rotor, 10.4
- Reassemble remaining parts in reverse order.

Wear on the guide bushing is accelerated by the starter rope being pulled sideways. The wall of the bushing eventually wears through and the bushing becomes loose.

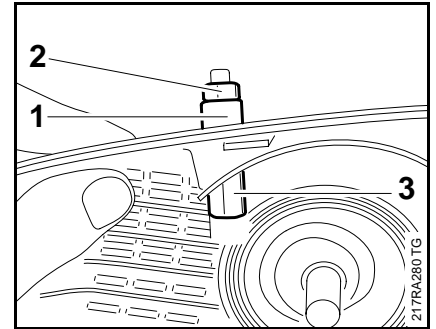
- Remove the fan housing, 10.2
- Relax the rewind spring and remove the starter rope and rope rotor, 10.4



- Use a suitable tool to remove the damaged guide bushing from the fan housing.
- Place the new guide bushing (1) in the hole in the fan housing.



- Insert the screw spindle (1) of the installing tool 0000 890 2201 through the guide bushing from inside the housing.



- Fit the thrust sleeve (1) and hex nut (2).
- Tighten down the hex nut, steadying the screw (3), until the bushing is firmly seated.


The installing tool flares the lower end of the rope bushing.


- Remove the installing tool.
- Reassemble remaining parts in reverse order.

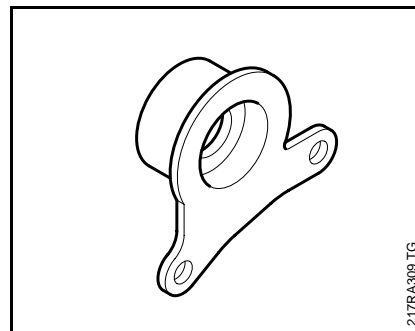
The handle housing and engine housing are connected by vibration damping rubber buffers and a spring.


Damaged rubber buffers (annular buffers) and springs must be replaced.

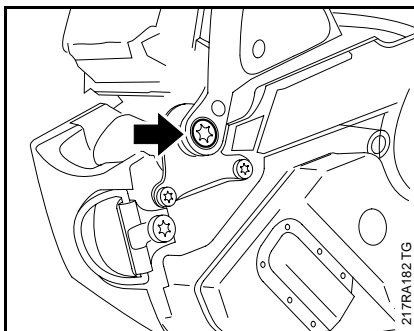
The rubber buffer is located between handle housing and engine housing to secure the handle housing without transmitting vibrations.

Remove the carburetor box cover,  14.1

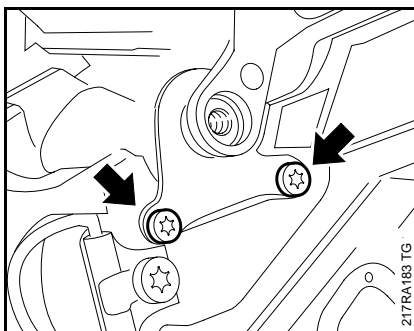
Remove the sprocket cover and bar and chain,  5.1



- Examine the rubber buffer and replace it if necessary.
- Reassemble parts in reverse order.
- Tightening torques,  3.5






- Remove the screw (arrow).

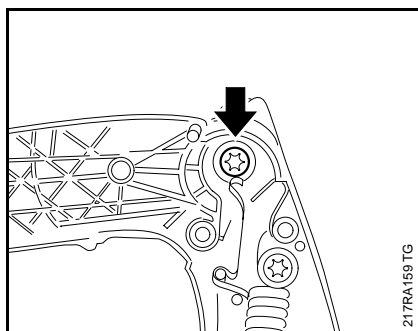


- Take out the screws (arrows).
- Remove the rubber buffer.

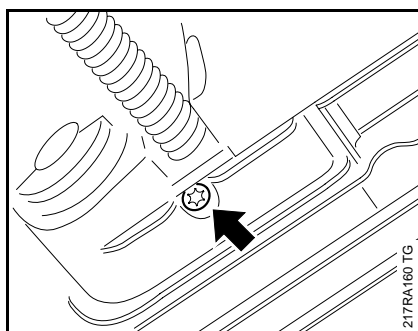
11.2 Front Handle / Spring

The spring is located between front handle and engine housing to ensure a strong connection between handle housing and engine housing without transmitting vibrations.

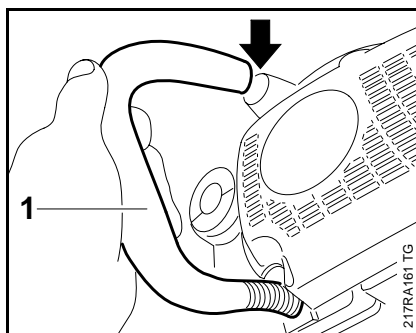
- Open the handle housing,  12.1
- Remove the throttle trigger and throttle trigger interlock,  12.1
- Remove the switch shaft,  12.3



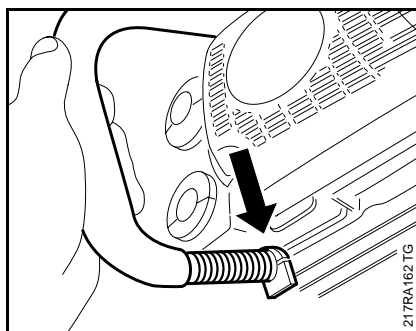
- Remove the screw (arrow).



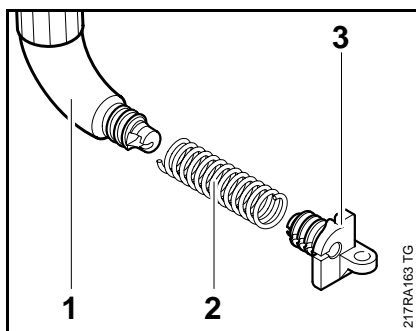
- Remove the screw (arrow) from underneath the engine housing.



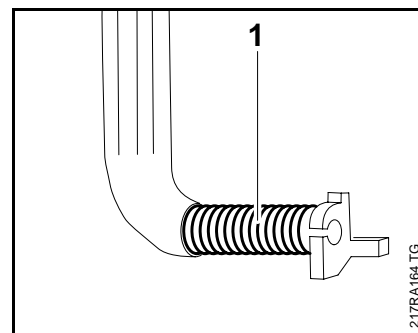
- Pull the front handle (1) out of the upper guide (arrow).



- Draw the front handle out of the engine housing with the spring facing downwards.

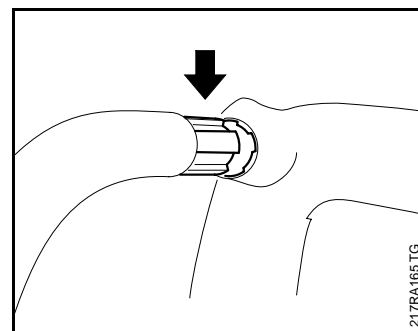


- Examine the front handle (1), spring (2) and bearing plug (3) and replace if necessary.

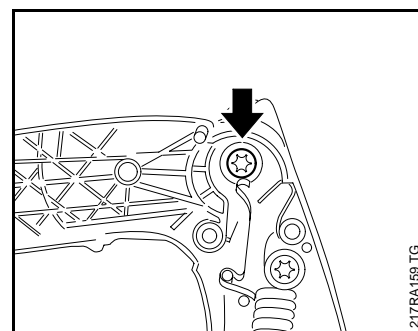



Ensure that the spring (1) has been fully turned into the front handle and bearing plug.

- Reassemble parts in reverse order.



- Slide the front handle into the hole (arrow), ensuring that the raised parts of the handle engage the recess of the handle housing.

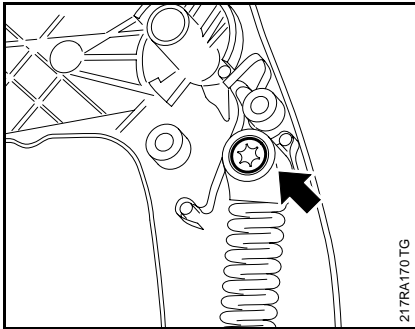


- Insert and tighten down the screw (arrow).
- Tightening torques,  3.5
- Reassemble remaining parts in reverse order.

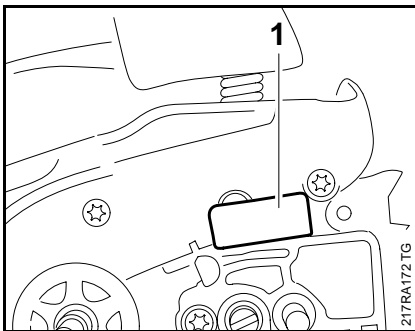
11.3 AV Spring between Handle Housing / Engine Housing

The AV spring is located between handle housing and engine housing to secure the handle housing without transmitting vibrations. The replacement spring is supplied complete with bearing plug.

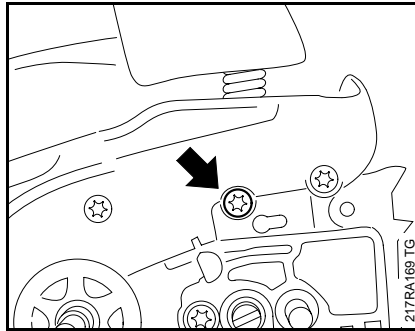
- Remove the sprocket cover and bar and chain, [15.1](#)
- Open the handle housing, [12.1](#)



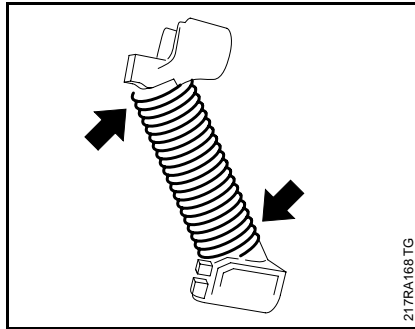
- Remove the screw (arrow).



- Prise off the bumper strip (1) with a suitable tool.



- Remove the screw (arrow).
- Draw the AV spring out of the recess in the engine housing.



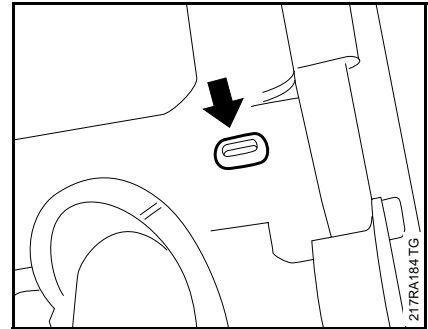
- Examine the AV spring and replace it if necessary,
- Before installing the AV spring, ensure that it has been fully turned into the bearing plugs (arrows).
- Reassemble parts in reverse order.
- Tightening torques, [3.5](#)

11.4 Clamp

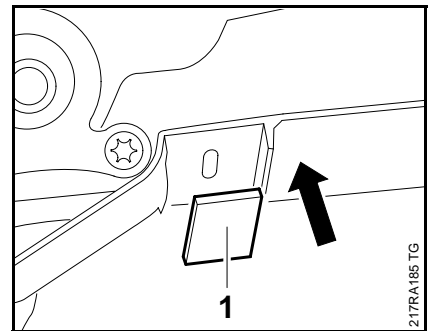
To prevent the engine vibrating in the engine housing, a clamp is fitted on the inside of the engine housing so that the cylinder rests against the clamp.

Remove the engine, [8.4](#)

- The following work is made easier by using STIHL Press Fluid, [16](#)

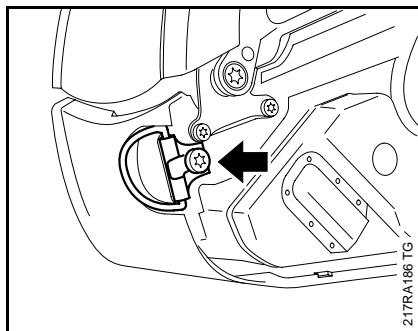


- Press the rubber stub (arrow) out of the engine housing.
- Examine the clamp and replace it if necessary,

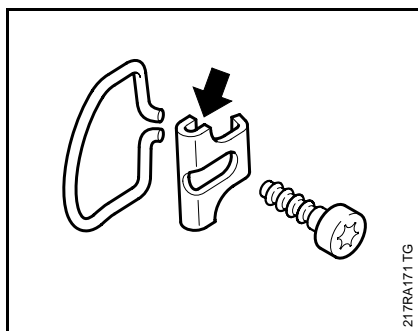


- Press the clamp (1) into the engine housing from below.
- Reassemble remaining parts in reverse order.

11.5 Loop

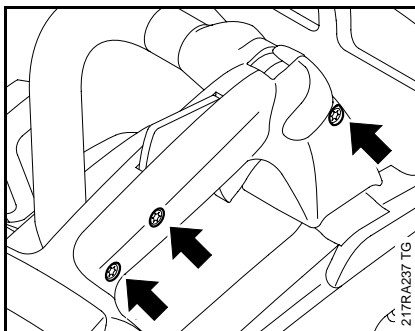


- Remove the screw (arrow).

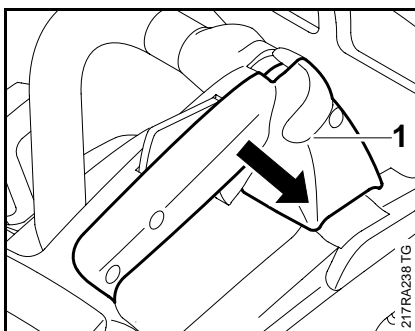


- Examine the retaining plate and loop and replace them if necessary.
- Fit the loop in the retaining plate (arrow) and position both parts on the engine housing.
- Insert and tighten down the screw.
- Tightening torques, 3.5

12. Actuating Levers 12.1 Throttle Trigger / Interlock Lever / Throttle Rod

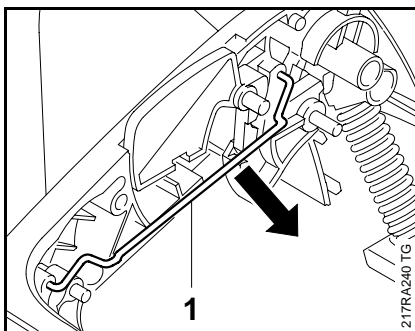


- Take out the screws (arrows).

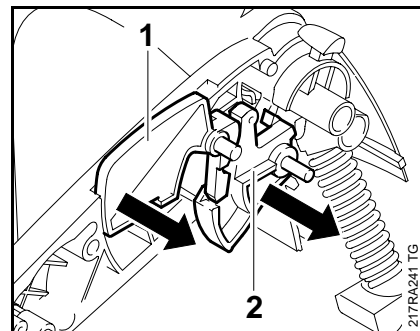


- Carefully remove the handle moulding (1).

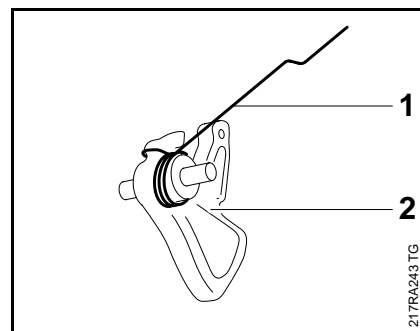
Throttle rod and actuating levers may drop out as the handle moulding is removed.



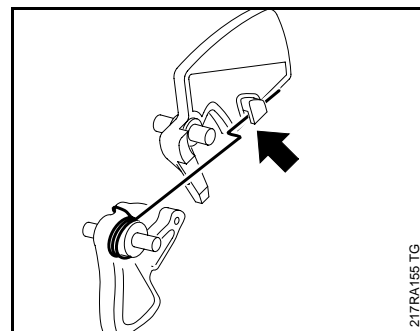
- Remove the throttle rod (1).



- Remove the interlock lever (1) and throttle trigger (2).

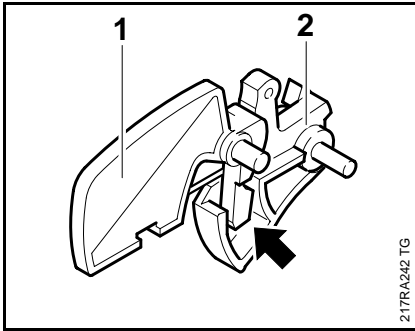


- Hook the torsion spring (1) into the throttle trigger (2).
– note the installed position –
- Examine the torsion spring and replace it if necessary.

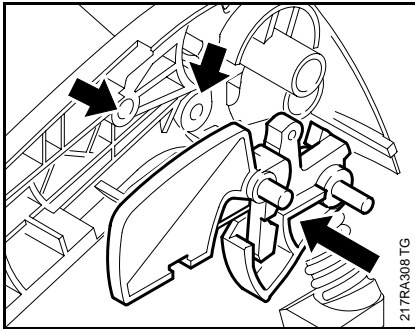


- Place the torsion spring in the fixture (arrows).

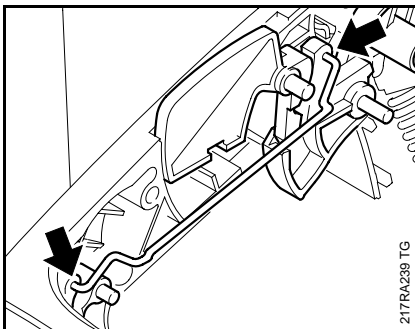
12.2 Double Lever



When installing the interlock lever (1) and throttle trigger (2) ensure that the peg on the interlock lever engages in the guide (arrow).



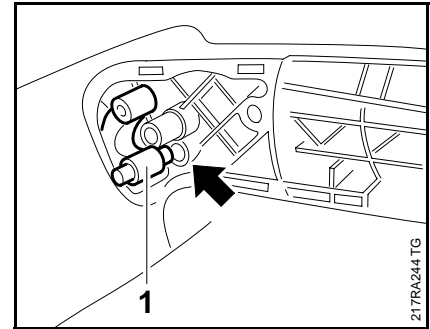
- Fit the interlock lever and throttle trigger in the bearing guides (arrows).



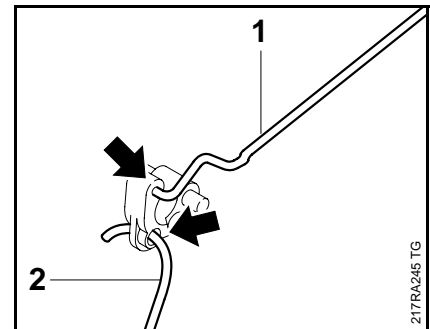
- Push the throttle rod into the holes (arrows) on the throttle trigger and double lever.
- Install the handle moulding, fit the screws and tighten them down securely.

- Tightening torques, 3.5
- Check correct functioning.

- Remove the air filter, 14.1
- Remove the air filter base, 14.1.1
- Remove the handle moulding, throttle rod, interlock lever and throttle trigger, 12.1
- Unhook the rod from the carburetor, 14.2




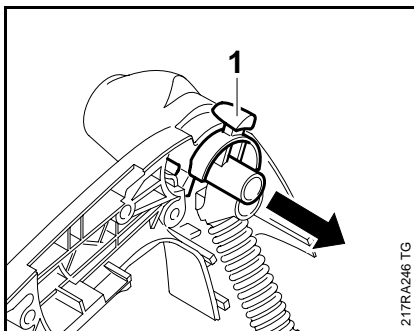
- Remove the double lever (1) from the bearing hole (arrow).




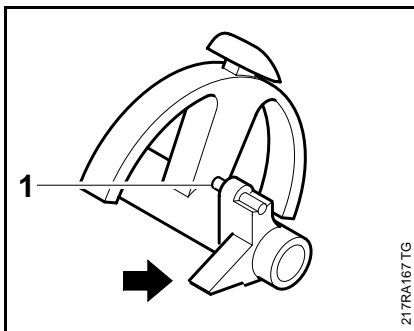
- Install the double lever so that the throttle rod (1) can be fitted in the upper hole (arrow) and the throttle rod from the carburetor (2) in the lower hole (arrow).

12.3 Switch Shaft

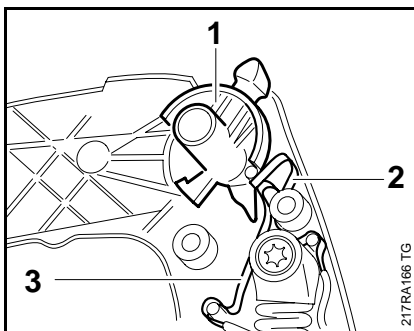
- Reassemble parts in reverse order.
- Tightening torques,  3.5
- Check correct functioning.



- Remove the handle moulding, throttle rod, interlock lever and throttle trigger,  12.1
- Pull the switch shaft (1) out of the bearing.




- Check the switch shaft – the metal pin (1) must be firmly seated in the hole and the cam (arrow) must be present.



- Fit the switch shaft (1), pushing the rear contact spring (3) slightly to the side.

Check operation

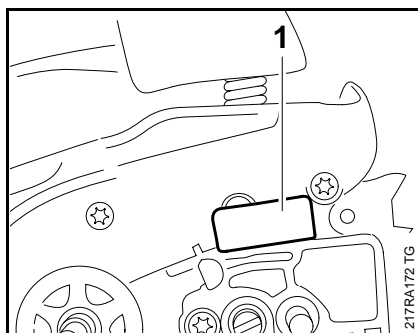
The contact springs are fitted in the handle housing at different depths. The rear contact spring (3) and the front contact spring (2) must make contact with the metal pin of the switch shaft when the switch shaft (1) is in position "0".

- Reassemble remaining parts in reverse order.
- Tightening torques,  3.5
- Check correct functioning again.

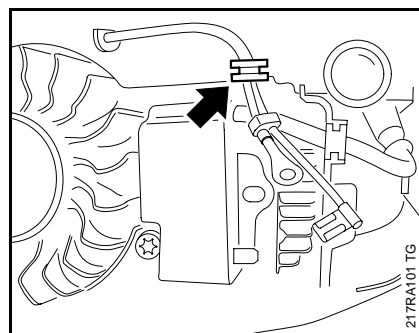
12.4 Handle Housing

- Remove fan housing, 10.2
- Remove the sprocket cover and bar and chain, 5.1
- Remove the carburetor, 14.2
- Push the intake elbow on the carburetor side out of the handle housing, 14.5

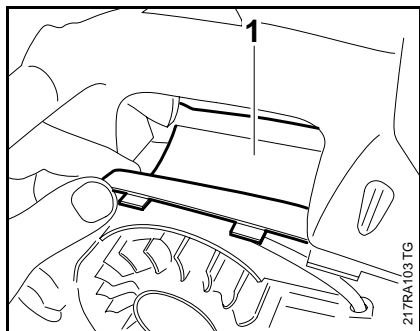
The handle need not be dismantled when replacing the handle housing, as the handle housing is replaced as a complete unit – see spare parts list –



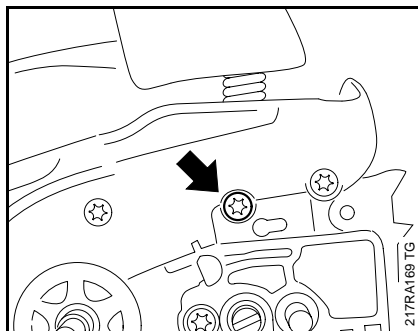
- Remove the bumper strip (1).



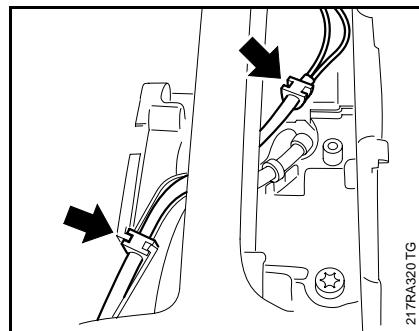
- Remove the cable guide (arrow).



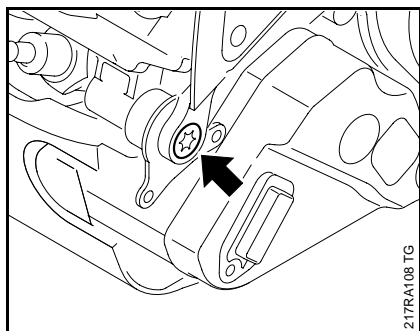
- Remove the cover (1).



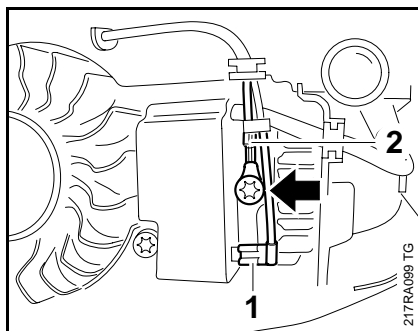
- Remove the screw (arrow).



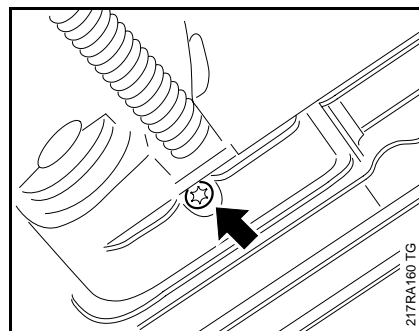
- Remove the cable guides (arrows).



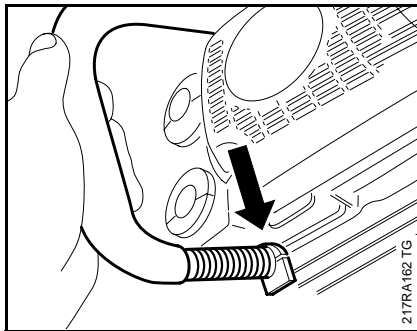
- Remove the screw (arrow).



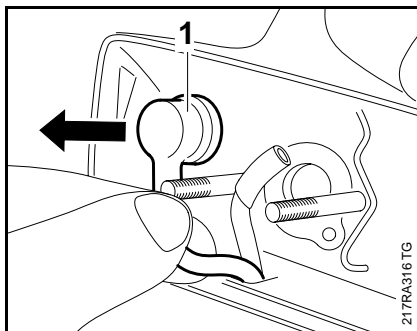
- Take out the screw (arrow) and remove the ground wire (2).
- Remove the short circuit wire (1).



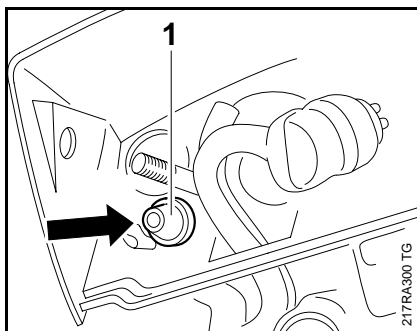
- Disconnect the spring of the front handle from the engine housing.
- Remove the screw (arrow).



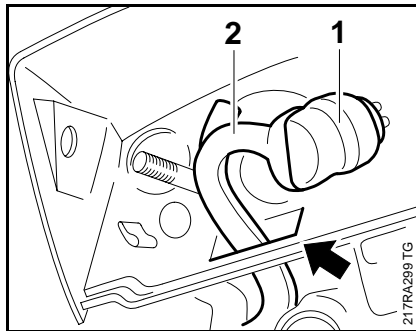
- Pull the front handle with handle housing down slightly.
- Pull the bearing plug out of the engine housing.



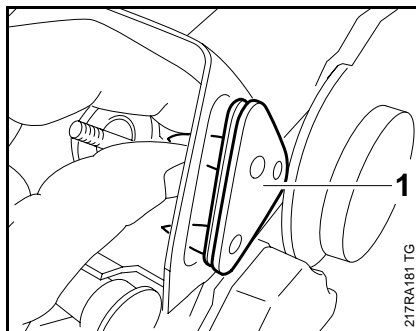
- Remove the tank vent (1).



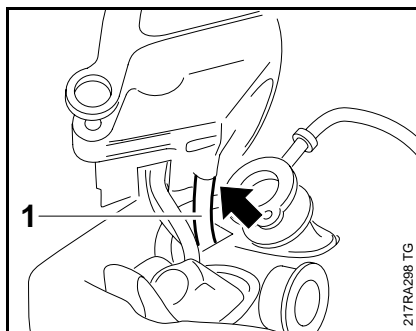
- Push the fuel return line (1) out.



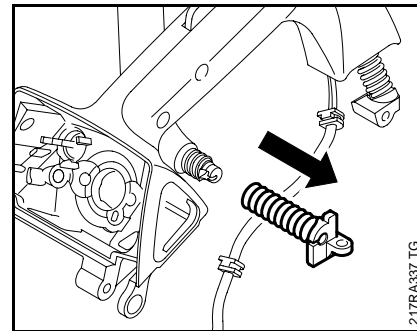
- Disconnect the tank vent (1) from the fuel hose (2).
- Draw the fuel hose (2) out through the opening (arrow).



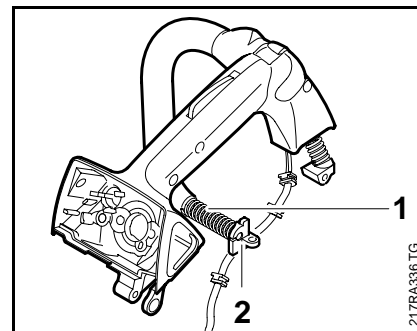
- Push the grommet (1) out.



- Disconnect the impulse hose (1) from the stub (arrow).
- Remove the handle housing.



- Unscrew the spring and bearing plug.



- Screw the spring (1) and bearing plug (2) into the new front handle.
- Install the complete handle housing in the reverse sequence of steps.
- Tightening torques, [3.5](#)
- Installation of rubber parts is made easier by using STIHL Press Fluid, [16](#)

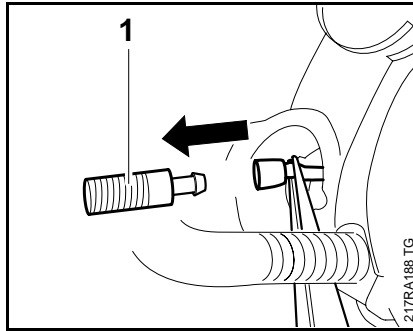
13. Chain Lubrication

13.1 Pick-up Body

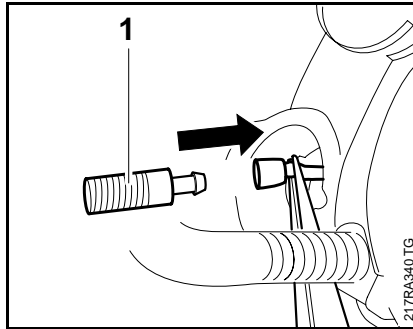
Impurities gradually clog the fine pores of the filter with minute particles of dirt. This prevents the oil pump from supplying sufficient oil to the bar and chain. Always check the oil tank and pick-up body first if problems develop in the oil supply. Clean the oil tank if necessary.

- Troubleshooting, 4.3
- Unscrew the oil tank cap and drain the oil tank.

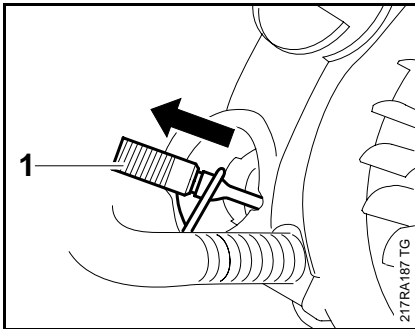
Collect chain oil in a clean container or dispose of it properly at an approved disposal site.



- Hold the suction hose with blunt pliers.
- Pull the pick-up body (1) off the suction hose.



- Flush out the oil tank.
- Replace the pick-up body.
- Push the pick-up body (1) into the suction hose and place it in the oil tank.
- Reassemble remaining parts in reverse order.

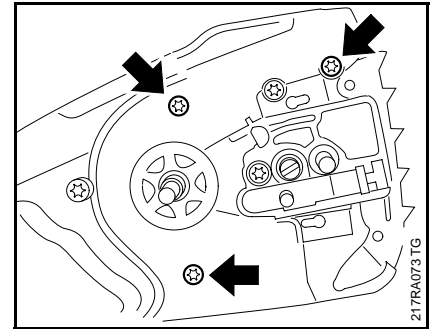


- Use hook 5910 893 8800 to pull the pick-up body (1) out of the oil tank.

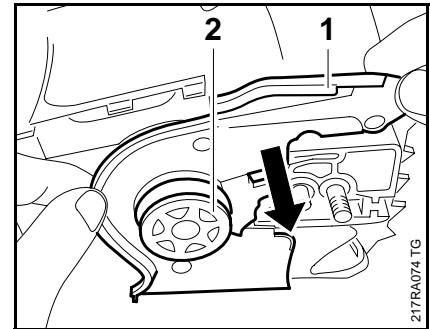
Take care not to overextend the suction hose.

13.2 Oil Suction Hose

- Remove the sprocket cover and bar and chain, 5.1
- Remove the clutch, 6.1
- Remove the bumper strips, 5.5
- Unscrew the oil tank cap and drain the oil tank.
- Remove the pick-up body, 13.1

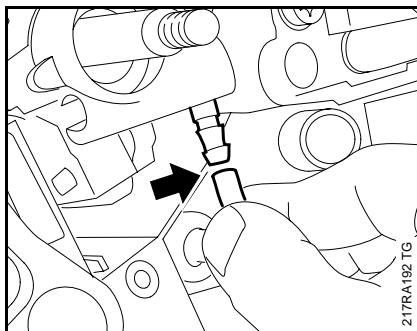


- Take out the screws (arrows).

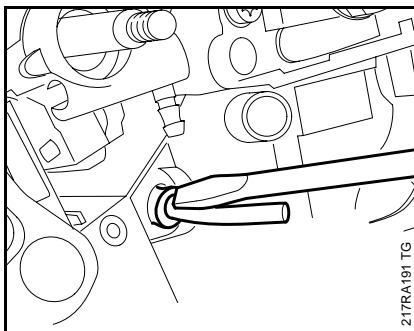


- Remove the cover (1), pulling the worm (2) off the crankshaft stub at the same time.

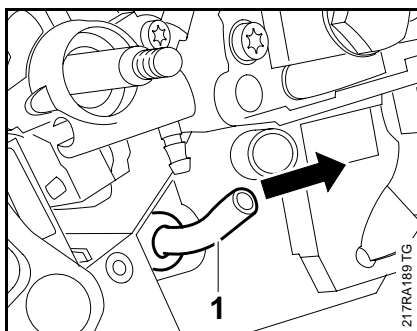
13.3 Oil Pump



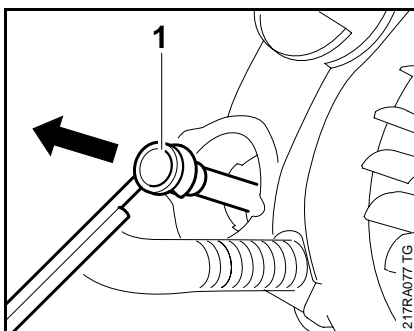
- Pull the hose off the connector (arrow) on the oil pump.



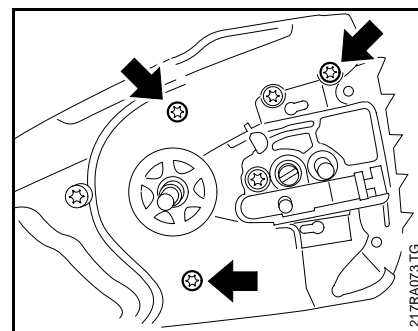
- Use a suitable tool to press in the suction hose until the groove on the suction hose is lined up with the heel on the engine housing.



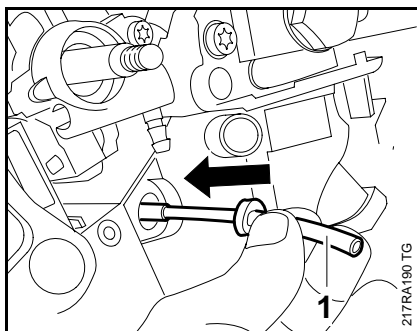
- Pull the suction hose (1) out of the engine housing.



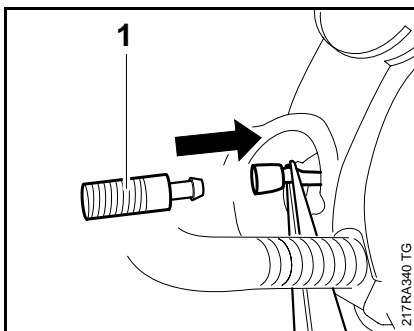
- Use hook 5910 893 8800 to pull the suction hose (1) out of the oil tank.



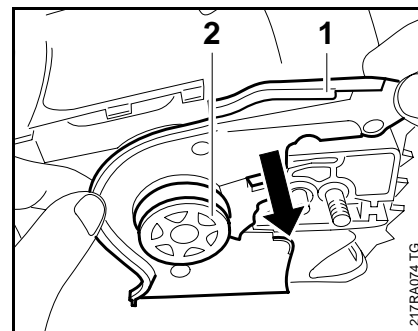
- Take out the screws (arrows).



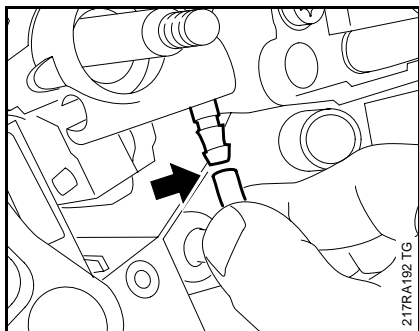
- Push the smaller diameter of the new suction hose (1) into the hole in the engine housing.



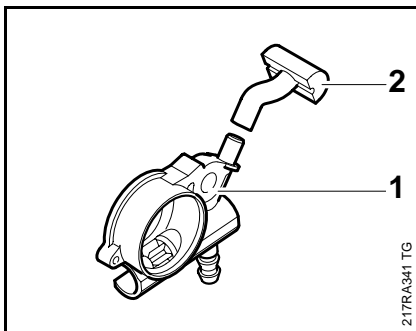
- Push the pick-up body (1) into the suction hose and place it in the oil tank.
- Reassemble remaining parts in reverse order.



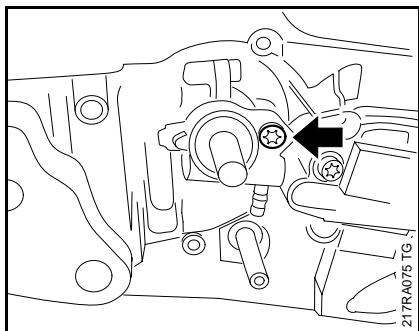
- Remove the cover (1), pulling the worm (2) off the crankshaft stub at the same time.



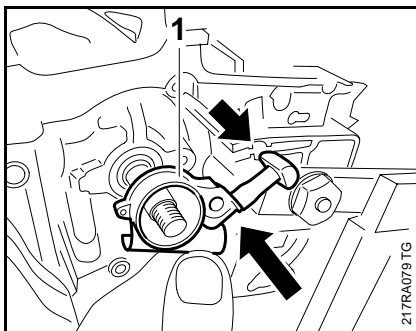
- Pull the hose off the connector (arrow) on the oil pump.



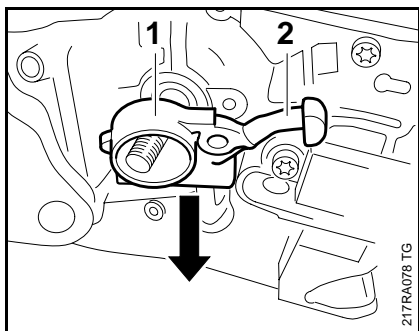
- Check the oil pump (1) and connector (2) and replace if necessary.



- Remove the screw (arrow).



- Slip the oil pump (1) over the crankshaft stub and press the nipple on the connector as far as possible into the recess (arrow).
- Reassemble remaining parts in reverse order.
- Grease the worm before installing it, [16](#)
- Tightening torques, [3.5](#)



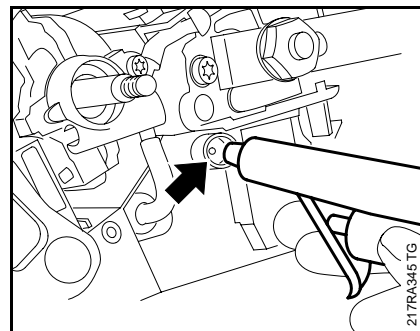
- Remove the oil pump (1), pulling the connector (2) out of the recess in the engine housing.

Cleaning the valve

A valve is installed in the tank wall to keep internal tank pressure equal to atmospheric pressure.

- Remove the sprocket cover and bar and chain, [5.1](#)
- Remove the oil tank cap.
- Drain the oil tank.

Collect chain oil in a clean container or dispose of it properly at an approved disposal site.



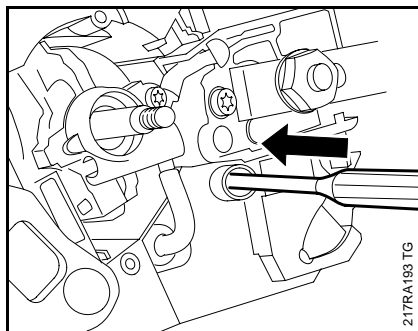
- Blow the valve (arrow) clear with compressed air (from outside to inside of tank).
- Flush out the oil tank.
- Reassemble parts in reverse order.

The valve must be replaced if it still does not function properly after being cleaned.

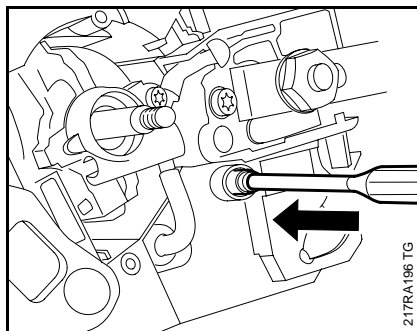
Replacing the valve

- Remove the sprocket cover and bar and chain, [5.1](#)
- Remove the oil tank cap.
- Drain the oil tank.

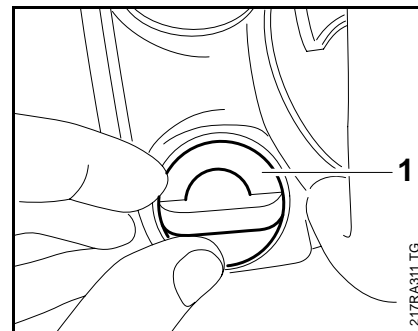
Collect chain oil in a clean container or dispose of it properly at an approved disposal site.



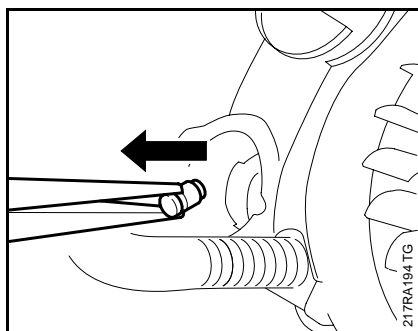
- Carefully drive the valve out of the tank wall into the tank with a drift dia. 6 mm.



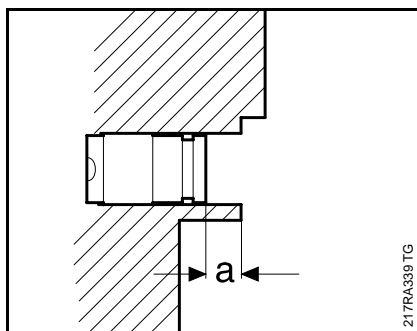
- Carefully drive the valve out into the hole in the engine housing with a drift dia. 6 mm, working from the outside.



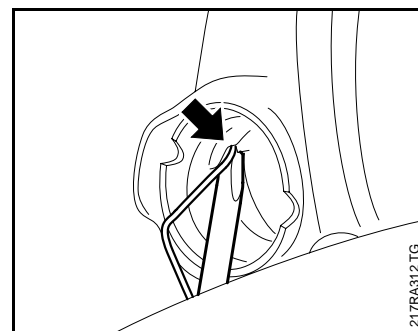
- Lift up the safety latch and unscrew the tank filler cap (1).



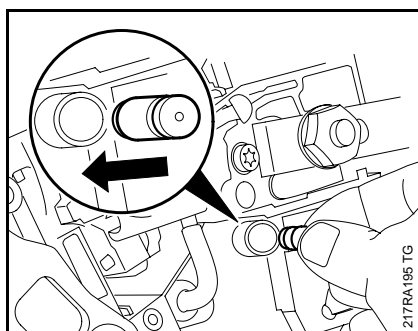
- Remove the old valve from the oil tank.



- Fit a new valve in the hole
a = approx. 8...10 mm.
- Reassemble remaining parts in reverse order.

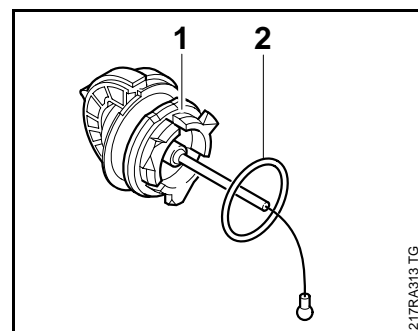


- Prise the nipple out from inside the tank (arrow).



Ensure that the parts are installed correctly.

- Carefully fit the valve in the hole in the engine housing.

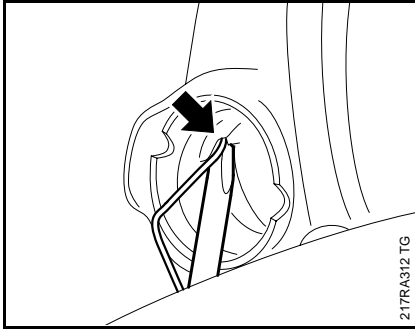


- Examine the filler cap (1), cord and sealing ring (2) and replace if necessary.

The filler cap is supplied complete with cord and sealing ring.

14. Fuel System

14.1 Air Filter

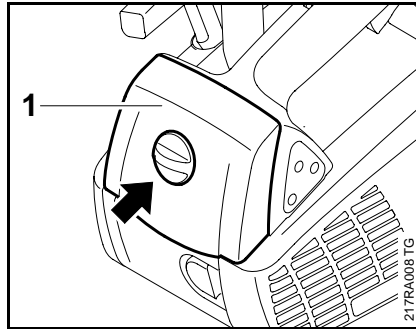


- Press the nipple into the mount (arrow) inside the tank.
- Screw in the filler cap.
- Test for leaks.

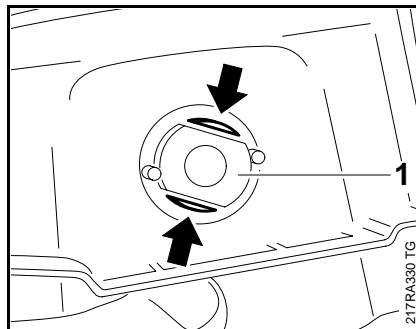
Dirty air filters reduce engine power, increase fuel consumption and make starting more difficult.

The air filter should be checked when there is a noticeable loss of engine power.

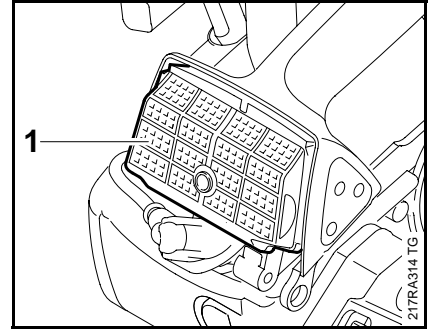
- Refer also to troubleshooting, 4.7



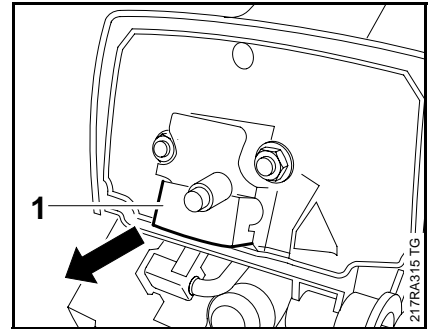
- Turn the twist lock (arrow) anticlockwise.
- Remove the carburetor box cover (1).



- Press the tabs (arrows) together and push the twist lock (1) out of the carburetor box cover.



- Remove the air filter (1).
- Knock out the filter or blow it clear with compressed air from the inside outwards.



- Take the foam inlay (1) out of the filter base.
- Clean away loose dirt from around the filter.

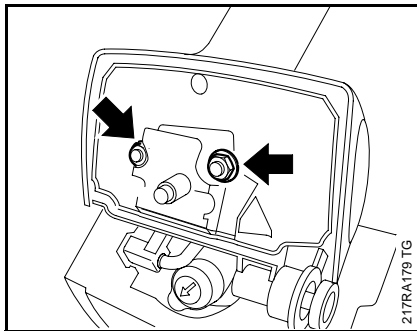
Check the filter and foam inlay and replace them if damaged or dirty.

- If soiled, wash all parts of the filter in STIHL universal cleaner or a fresh, non-flammable cleaning solution (e.g. warm soapy water) and allow to dry.

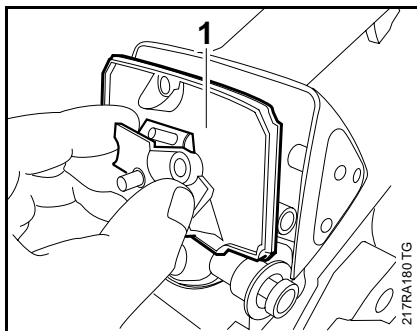
Do not clean fleece (non-woven) filters with a brush.

- Reassemble parts in reverse order.

14.1.1 Air Filter Base



- Remove the air filter, 14.1
- Unscrew the nuts (arrows).

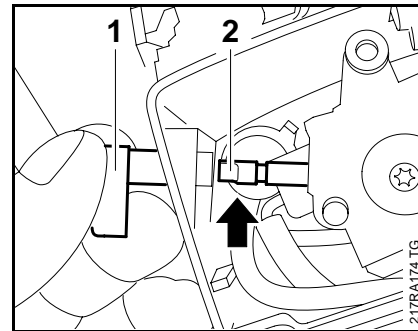


- Remove the filter base (1).
- Examine the filter base and replace it if necessary,
- Before installing the filter base, lubricate the sealing ring on the carburetor connector with STIHL Press Fluid, 16
- Reassemble parts in reverse order.

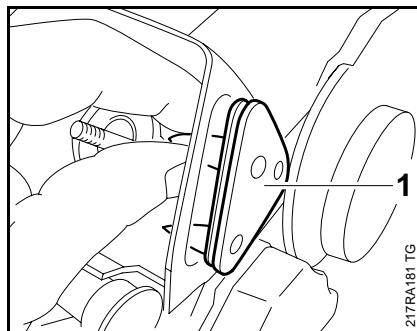
Ensure that the air filter rests uniformly on the filter base all round.

14.2 Carburetor, Removing and Installing

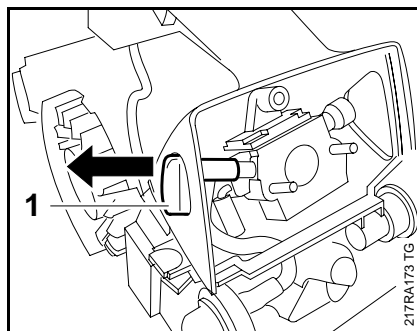
- Remove the air filter, 14.1
- Remove the filter base, 14.1.1



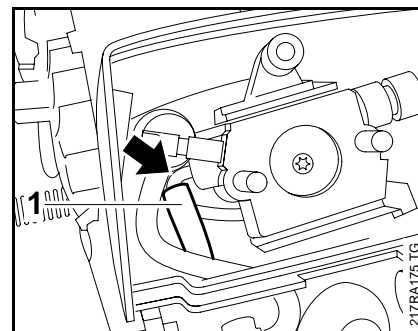
When fitting the choke lever (1) on the choke shaft (2), ensure that the flat side of the choke shaft meshes with the semi-circular recess in the choke lever.



- Push out the grommet (1), examine it and replace it if necessary.
- Reassemble parts in reverse order.

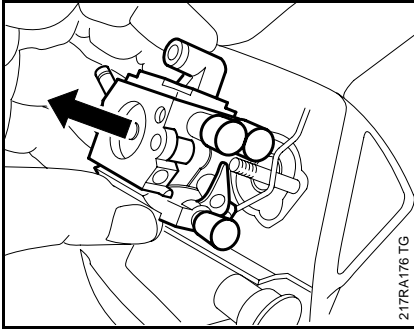


- Pull the choke lever (1) off the choke shaft.

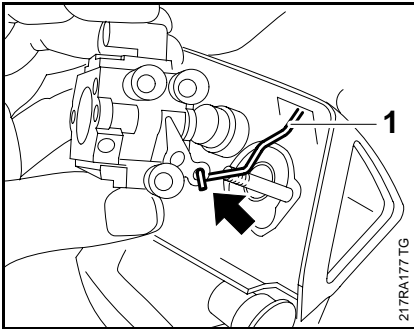


- Disconnect the fuel hose (1) from the carburetor (arrow).

14.2.1 Leakage Test



- Carefully draw the carburetor off the fuel return line and stud bolts until the rods appear.

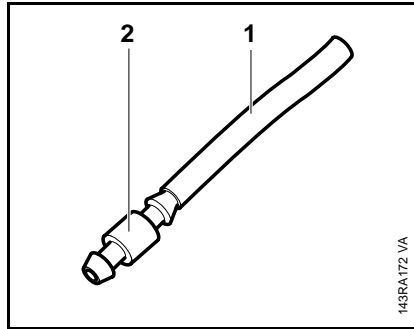


- Unhook the rod (1) from the carburetor (arrow) and remove the carburetor.
- Reassemble parts in reverse order.
- Tightening torques, [14.3.5](#)
- Check correct functioning.

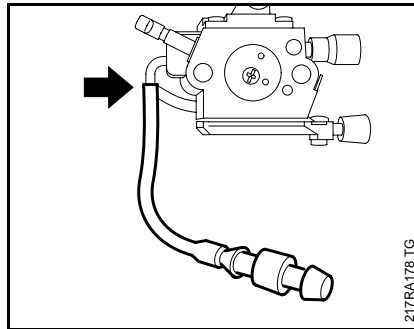
The tank vent must also be checked and cleaned if problems develop with the carburetor or fuel supply, [14.6.2](#)

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

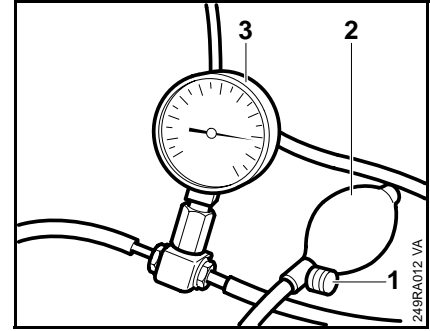
- Disconnect the fuel hose from the carburetor and remove the carburetor, [14.2](#)



- Push the fuel line (1) 1110 141 8600 onto the double connector (2) 0000 855 9200.



- Push the fuel line with double connector onto the fuel port (arrow).



- Push the pressure hose of the tester 1106 850 2905 onto the double connector.
- 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 (80 kPa).

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

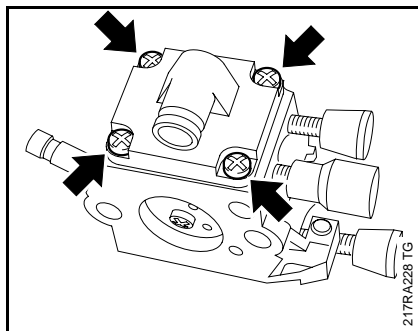
1. The inlet valve is not sealing (impurities in the valve seat, sealing cone of the inlet needle is damaged or inlet control lever is sticking). Remove to clean, [14.3.2](#)


2. Metering diaphragm damaged, replace if necessary, [14.3.1](#)

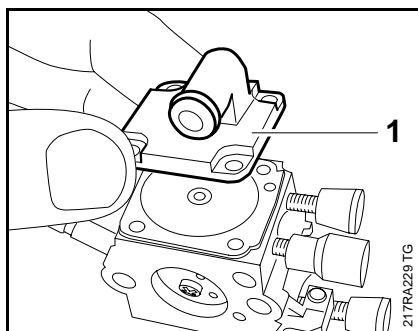
- After completing the test, open the vent screw (1) and pull the fuel line off the carburetor's elbow connector.
- Push the fuel hose onto the elbow connector.
- Install the carburetor, [14.2](#)
- Tightening torques, [3.5](#)
- Reassemble remaining parts in reverse order.

14.3 Carburetor Repair

14.3.1 Metering Diaphragm

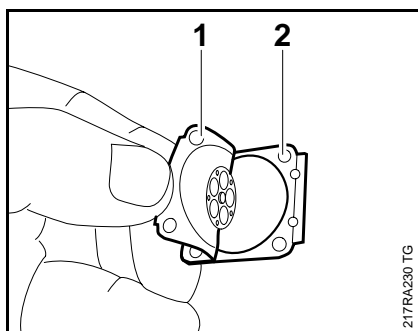


- Remove the carburetor,  14.2
- Take out the screws (arrows).



- Remove the end cover (1).

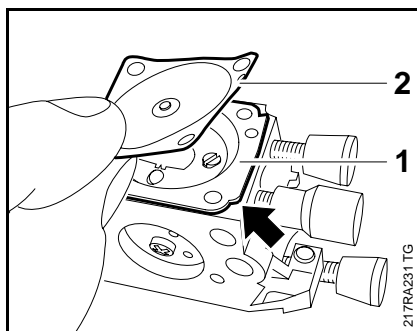
If the gasket and diaphragm are stuck to the carburetor, they must be removed very carefully.



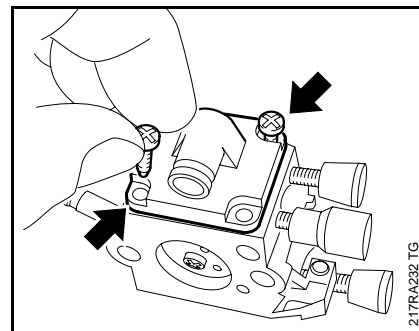
- Carefully separate the metering diaphragm (1) and gasket (2).

The diaphragm material is subjected to continuous alternating stresses and eventually shows signs of fatigue. In other words, the diaphragm distorts and swells and must be replaced.

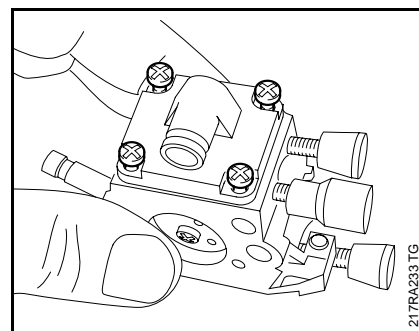
- Examine the metering diaphragm for signs of damage and wear, replace the gasket.



- Note the order in which the metering diaphragm (2) and gasket (1) are installed.
- Gasket and metering diaphragm must be aligned so that the tab (arrow) points towards the adjusting nozzles.

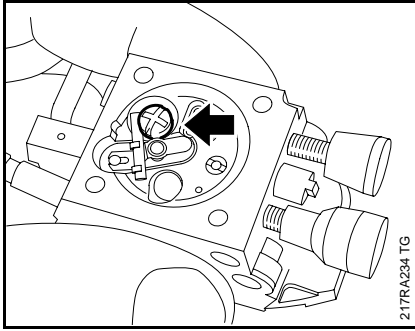


- Secure the gasket, metering diaphragm and end cover with two screws (arrows).

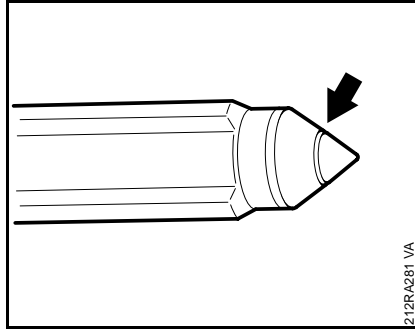


- Fit the remaining screws in the secured end cover and tighten down all screws, working crosswise.

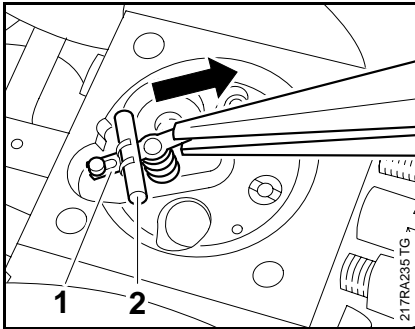
14.3.2 Inlet Needle



- Remove the metering diaphragm, [14.3.1](#)
- Remove the screw (arrow).

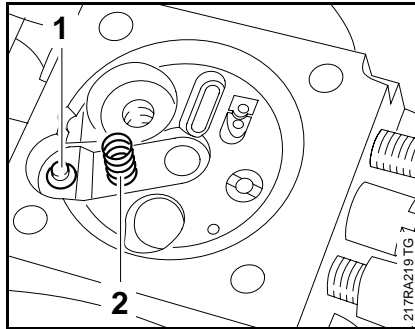


- The sealing cone of the inlet needle must be replaced if a circular indentation (arrow) is visible on its tip.

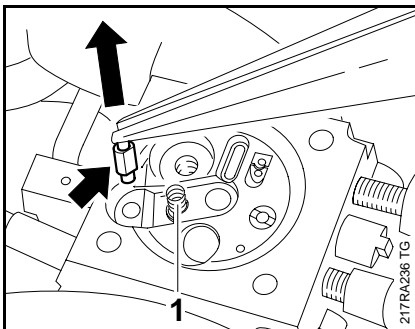


- Pull the inlet control lever (1) with spindle (2) out of the groove in the inlet needle.

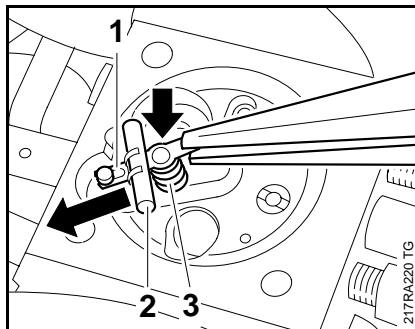
The spring under the inlet control lever may pop out.



- Fit the inlet needle (1).
- Fit spring (2) in bore.



- Pull out the inlet needle (arrow).
- Remove and examine the spring (1), replace it if necessary.

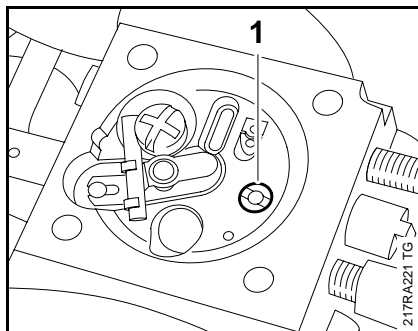


- Position the seat of the inlet control lever (1) with spindle (2) over the spring, then slide the fork of the inlet control lever into the groove in the inlet needle (1).

Ensure that the spring locates on the nipple of the inlet control lever.

- Press the inlet control lever down and secure it with the screw.
- Check that the inlet control lever moves easily.
- Install the metering diaphragm, [14.3.1](#)

14.3.3 Fixed Jet

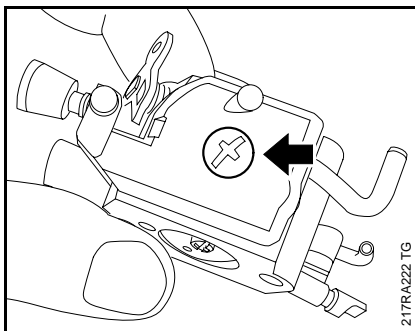


- Remove the metering diaphragm, 14.3.1
- Unscrew the fixed jet (1) with a suitable screwdriver.

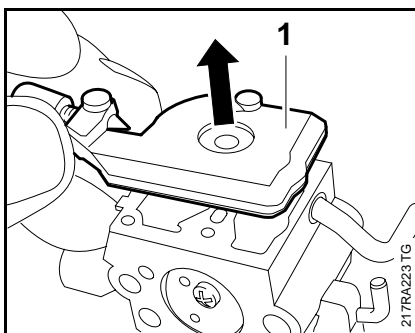
Take care not to damage the jet.

- Examine the fixed jet and replace it if necessary.
- Reassemble parts in reverse order.

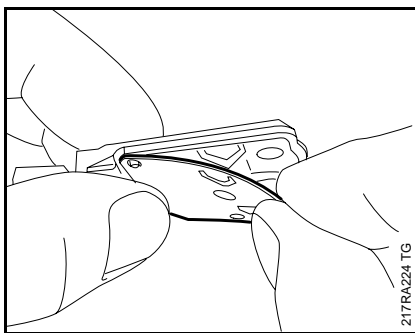
14.3.4 Pump Diaphragm



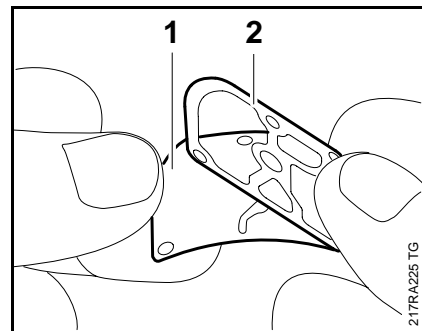
- Remove the carburetor, 14.2
- Remove the screw (arrow).



- Carefully remove the end cover (1).



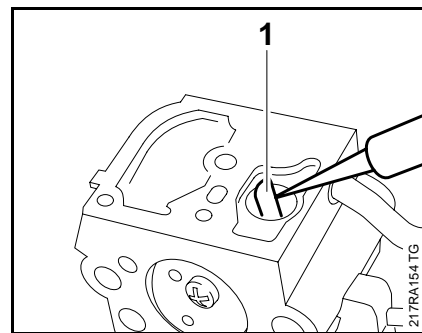
- Carefully remove the gasket with pump diaphragm from the carburetor body.



- Carefully separate the pump diaphragm (1) and gasket (2).

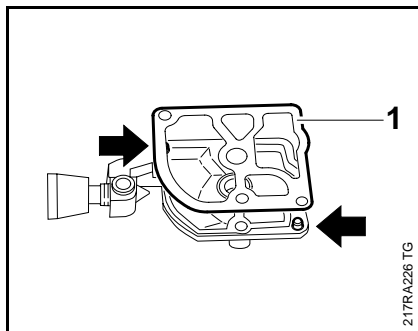
The diaphragm material is subjected to continuous alternating stresses and eventually shows signs of fatigue. In other words, the diaphragm distorts and swells and must be replaced.

- Examine the pump diaphragm for signs of damage and wear, replace the gasket.
- Inspect the fuel strainer for contamination and damage, clean or replace it if necessary.

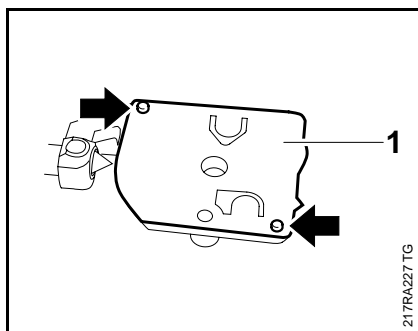


- Pull the fuel strainer (1) out of the carburetor body with a needle and clean or replace it.
- Reassemble parts in reverse order.

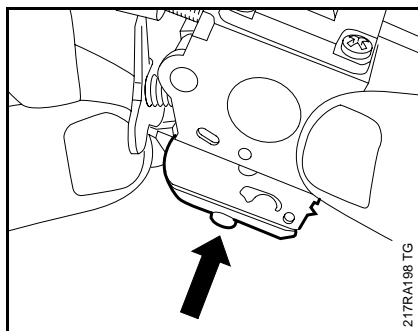
14.3.5 Choke Shaft / Choke Shutter



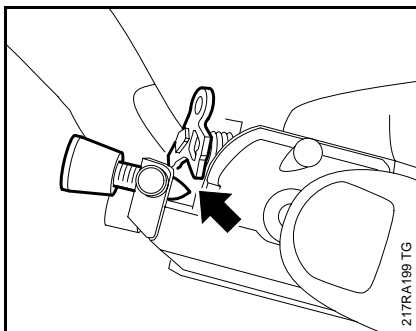
- Fit the gasket (1) and secure it with the pegs (arrows).



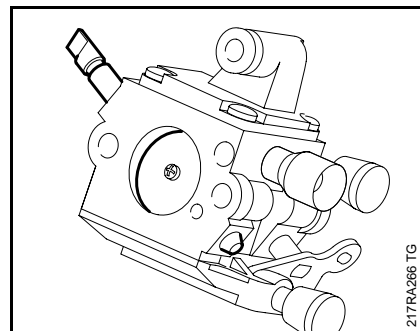
- Place the diaphragm (1) over the gasket and secure it with the pegs (arrows).



- Position the end cover on the carburetor body from below so that the gasket and pump diaphragm remain secured to the end cover.



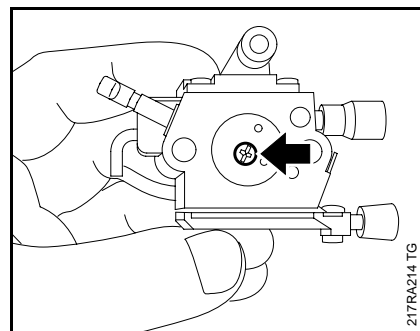
- Turn the throttle shaft lever back and forth so that the end cover with stop pin (arrow) can be fitted without difficulty.
- Gently move the end cover back and forth until the pegs on the end cover are lined up with the holes in the carburetor body.
- Insert and tighten down the screw.
- Tightening torques, 3.5



- Remove the carburetor, 14.2

If actuation of the choke shaft is stiff and/or the choke shutter cannot be opened or closed properly:

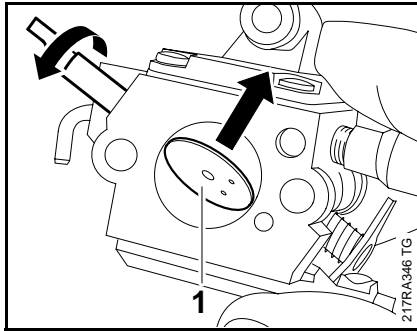
Remove the choke shaft, then clean the shaft and shaft guides with a little standard solvent-based degreaser not containing any chlorinated or halogenated hydrocarbons.



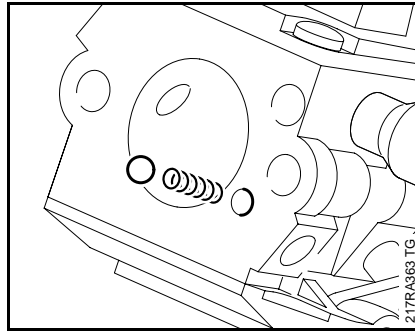
- Remove the screw (arrow) from the choke shaft.

The screw thread may be damaged when it is removed.

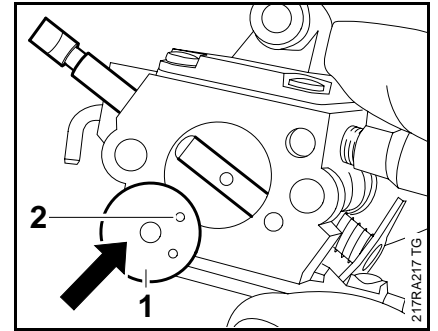
- Use a new screw –



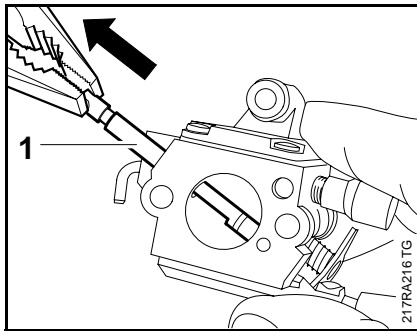
- Turn the choke shaft anticlockwise with a suitable tool and remove the choke shutter (1).



- Examine the ball and spring and replace if necessary.

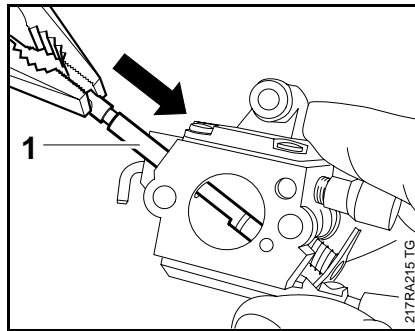


- Turn the choke shaft until the flat area is visible.
- Fit the choke shutter (1) with the hole (2) at the front.



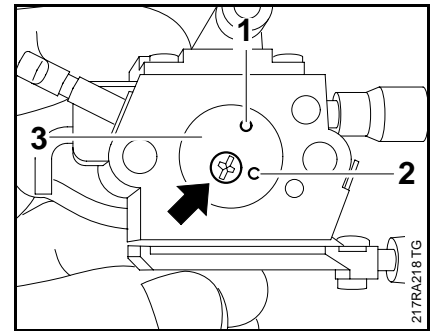
Take care that the ball and spring do not pop out when removing the choke shaft (1).

- Wear safety glasses –
- Pull out the choke shaft (1) and clean it with the guides.
- Examine the choke shaft for signs of damage and replace it if necessary.



Ensure that the spring and ball are correctly fitted before installing the choke shaft.

- Slide the choke shaft (1) into the carburetor body until it engages.



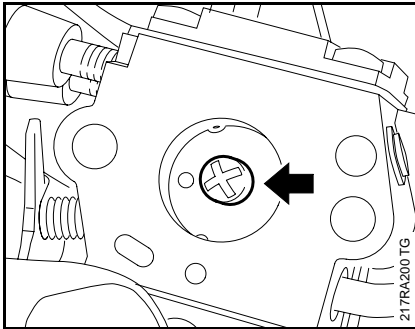
The choke shutter (3) must be installed so that hole (1) is above and hole (2) axially parallel with the choke shaft.

- Secure the screw with Loctite, 16
- Fit the new screw (arrow) in the shaft and tighten it moderately.
- Close the choke shutter (3) and centre it in the bore of the carburetor body.
- Tighten down the screw.
- Check correct functioning and easy movement.

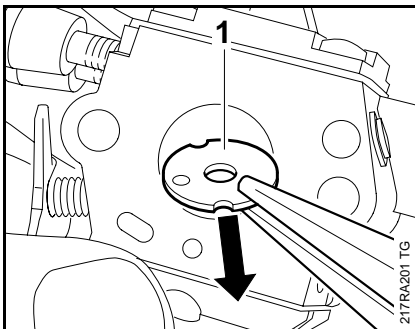
14.3.6 Throttle Shaft / Throttle Shutter

If actuation of the throttle shaft is stiff and/or the throttle shutter cannot be opened or closed properly:

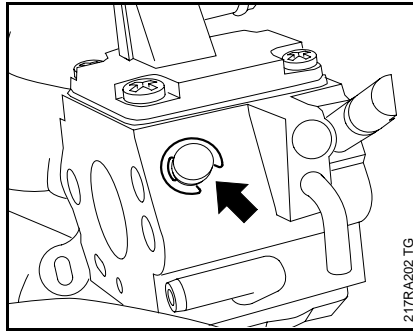
- Remove the carburetor, 14.2
- Troubleshooting on the carburetor, 4.6
- Remove the throttle shaft, then clean the shaft and shaft guides with a little standard solvent-based degreasant not containing any chlorinated or halogenated hydrocarbons.



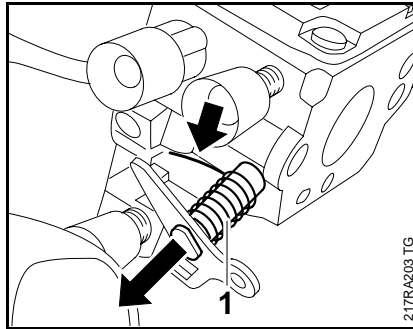
- Remove the screw (arrow).



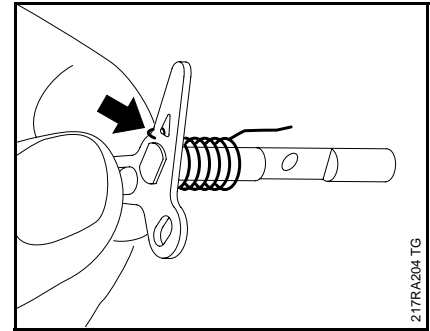
- Turn the throttle shaft slightly.
- Pull out the throttle shutter (1).



- Remove the circlip (arrow) with a suitable tool.

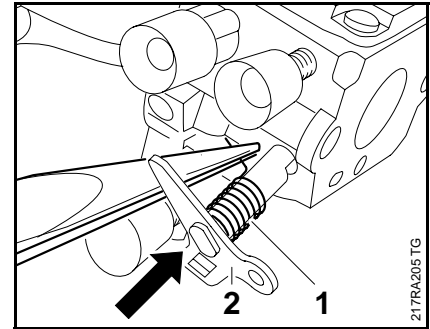


- Before pulling out the throttle shaft, secure the pump piston to prevent it popping out, 14.3.7
- Unhook and relax the torsion spring (arrow).
- Pull the throttle shaft (1) with torsion spring out of the carburetor body.
- Clean the throttle shaft and guides.
- Examine the throttle shaft for signs of damage and replace it if necessary.
- Examine the torsion spring and replace it if necessary.

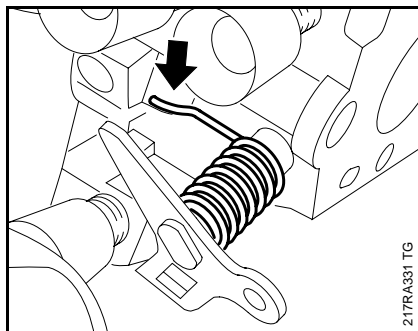


- Install the torsion spring.

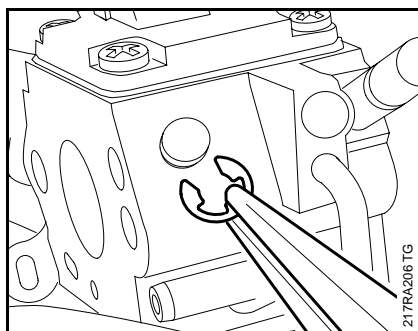
Ensure that the torsion spring is fitted correctly (arrow).



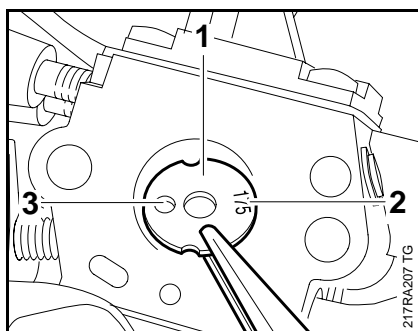
- Turn the torsion spring (1) roughly a half-turn in clockwise direction with a suitable tool to prestress it.
- Push the pump piston into the bore of the carburetor with a suitable tool, 14.3.7
- Push the throttle shaft (2) with prestressed torsion spring into the carburetor body.



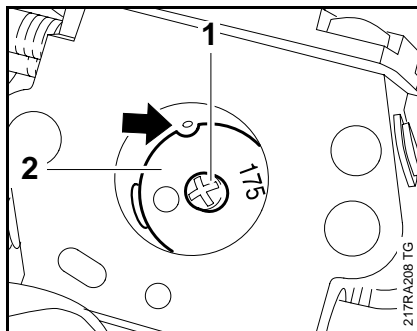
- Position the prestressed torsion spring so that it rests against the shoulder (arrow) of the carburetor body.



- Install the circlip.




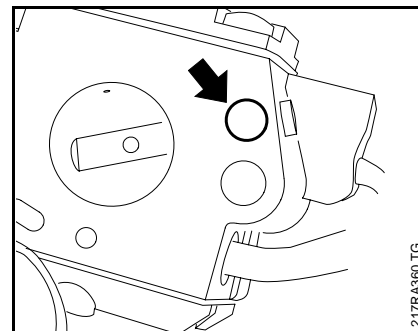
- Fit the throttle shutter (1) with the dent (3) on the left and the number (2) visible on the right.




- Insert the screw (1) in the flat side of the shaft and tighten it down moderately.
- Close the throttle shutter (2) and centre it in the bore of the carburetor body.

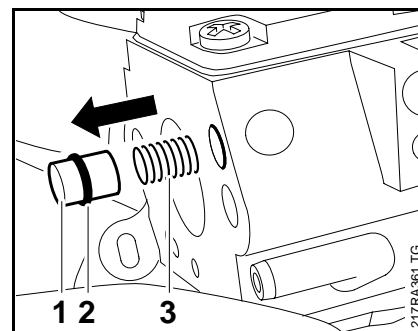
The notch (arrow) on the throttle shutter must line up with the small bore in the carburetor body.

- Tighten down the screw.
- Check correct functioning and easy movement.
- Secure the screw with Loctite,  16

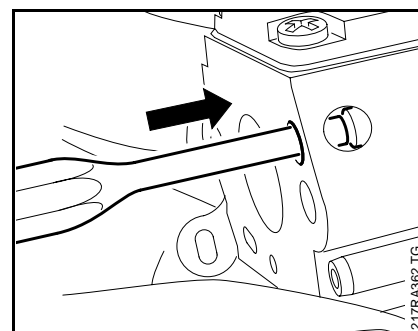


- Remove the throttle shaft,  14.3.6

Keep a finger over the hole (arrow) to prevent parts popping out.



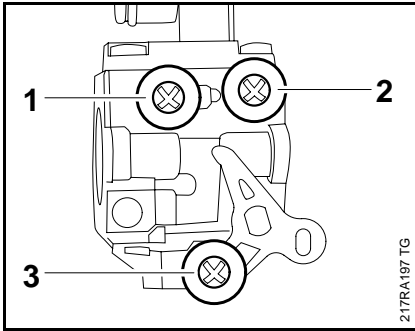
- Examine the pump piston (1), sealing ring (2) and spring (3) and replace if necessary.



Press the pump piston with spring into the hole (arrow) before installing the throttle shaft (1).

- Reassemble remaining parts in reverse order.

14.3.8 Adjusting screws



There are three adjusting screws on the carburetor:

H = High speed screw (1)

L = Low speed screw (2)

LA = Idle speed screw (3)

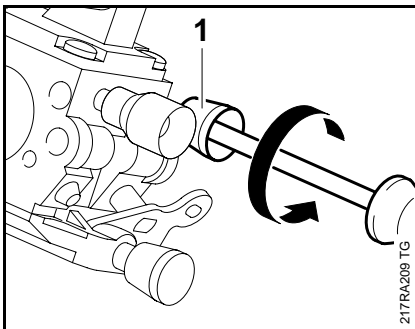
If the carburetor setting can no longer be adjusted, this may also be due to the adjusting screws.

Only the high speed screw has a limiter cap; a new cap must always be used after dismantling the high speed screw.

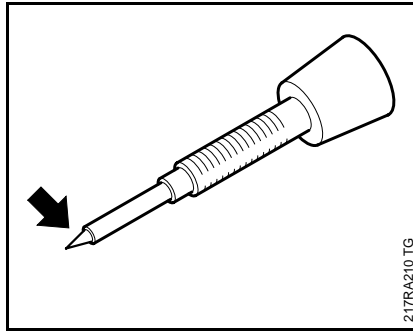
Remove the carburetor, [14.2](#)

Refer also to troubleshooting on the carburetor, [4.6](#)

Low speed screw

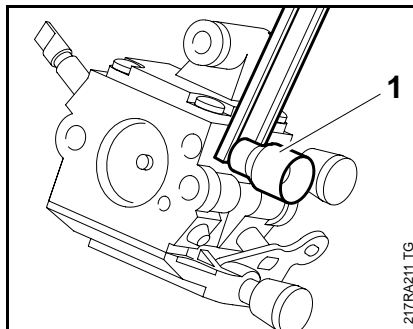


- Take out the low speed screw (1).



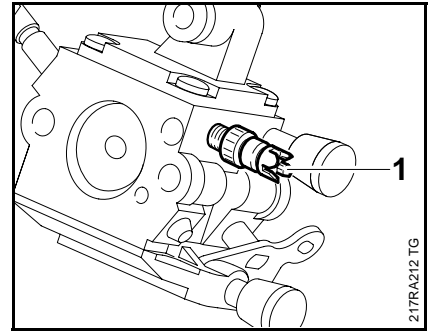
- Examine the tip (arrow) for signs of damage or wear.
- Replace the low speed screw if necessary.
- Reassemble parts in reverse order.
- Adjust the low speed screw, [14.4](#)

High speed screw

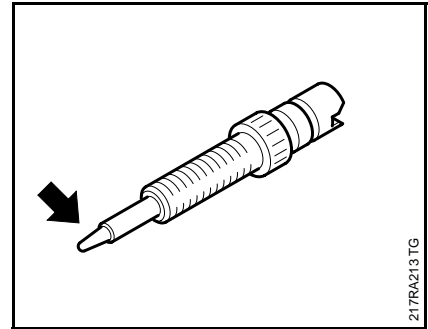


- Prise the limiter cap (1) off the high speed screw with tool 5910 890 4501.

Always fit a new limiter cap.



- Take out the high speed screw (1).




- Examine the tip (arrow) for signs of damage or wear.
- Replace the high speed screw if necessary.
- Reassemble parts in reverse order.
- Adjust the high speed screw, [14.4.1](#)

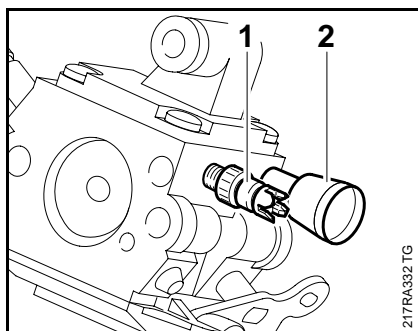
14.4 Carburetor Adjustment

14.4.1 Basic Setting



Only necessary if the high speed screw **H** or low speed screw **L** has to be replaced or for cleaning and setting the carburetor.

- Remove the limiter cap from the high speed screw,  14.3.8

The basic setting must be made after removing the limiter cap.



- Turn the high speed screw **H** (1) clockwise until it is firmly in its seat.
- Turn the high speed screw **H** (1) anticlockwise until it is one turn open.
- Turn the low speed screw **L** (2) clockwise until it is firmly in its seat.
- Turn the low speed screw **L** (2) anticlockwise until it is one turn open.

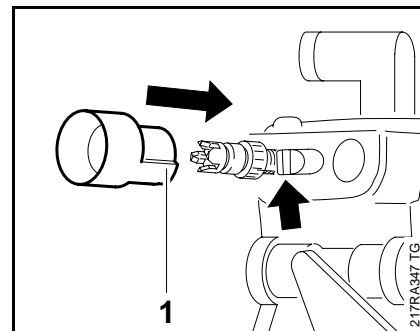
- Check air filter – clean or replace if necessary,  14.1
- Check the chain tension.
- Check the spark arresting screen (if installed) – clean or replace if necessary,  8.1
- Let the engine warm up.

Set idle speed with a speed tester. Set the specified speeds within the tolerance range of ± 200 rpm.

1. Set the speed to 3500 rpm with the idle speed adjusting screw **LA**.
2. Turn the low speed screw **L** clockwise or anticlockwise to set the highest speed.

If this speed is more than 3900 rpm, stop the adjustment and start again with step 1.

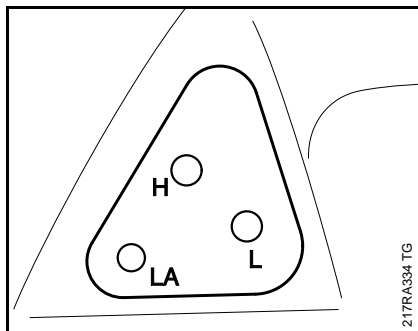
3. Set the speed to 3500 rpm again with the idle speed adjusting screw **LA**.
4. Set the speed to 3000 rpm with the low speed screw **L**.
5. Set the maximum speed of 13,500 rpm with the high speed screw **H**.
6. Fit the limiter cap.



Always use a new limiter cap. Before fitting the limiter cap, it must be positioned so that the raised part (1) is below the stop (arrow) on the carburetor body. Then press the limiter cap onto the preset high speed screw.

- Press the limiter cap onto the high speed screw **H**.

14.4.2 User Setting



The limiter cap must not be removed from the high speed screw when making the user setting.

Standard setting

- Switch off engine
- Check the air filter – clean or replace if necessary, 14.1
- Check the chain tension.
- Check the spark arresting screen (if installed) – clean or replace if necessary, 8.1
- Carefully turn the high speed screw **H** anticlockwise as far as possible (max. 3/4 turn).
- Carefully turn the low speed screw **L** clockwise until it is firmly in its seat.
Then open it one turn.

Engine stops when idling

- Make standard setting!
- Turn the idle speed screw **LA** clockwise until the saw chain begins to run, then back off 1/4 turn.

Saw chain rotates at idle speed

- Make standard setting!
- Turn the idle speed screw **LA** anticlockwise until the saw chain stops, then give it another 1/4 turn in the same direction.

Erratic idling behaviour, poor acceleration

- Make standard setting!

Idle setting too lean (e.g. at low ambient temperatures).

- Turn the low speed screw **L** anticlockwise until the engine runs and accelerates smoothly.

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

14.5 Intake Elbow, Removing and Installing


Correcting the carburetor setting for use at high altitudes





The setting may have to be marginally corrected if the engine performance is unsatisfactory at high altitudes.

- Check the standard setting.
- Let the engine warm up.
- Turn the high speed screw **H** clockwise (leaner) – max. up to the stop.



The screws should be adjusted as little as possible. The slightest adjustment produces a tangible difference in engine behaviour.

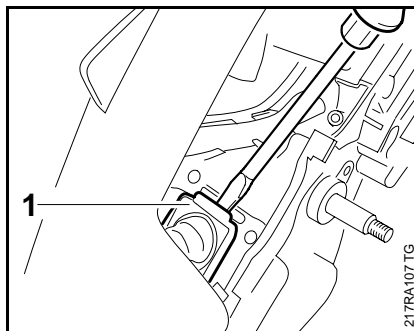
If you make the setting too lean it will increase the risk of engine damage through lack of lubrication and overheating.

If the adjustments do not yield any improvement, refer also to the troubleshooting chart for ignition system, carburetor and power unit,  4.6

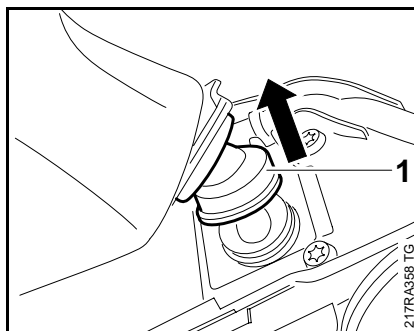
- Remove the air filter,  14.1
- Remove the filter base,  14.1.1
- Remove the carburetor,  14.2
- Unscrew the rubber buffers,  11.2

A damaged intake elbow may lead to impaired engine performance.

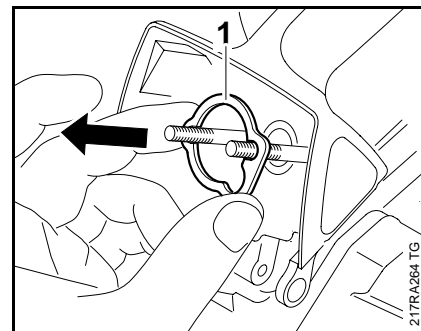
- Troubleshooting,  4.6 or  4.7



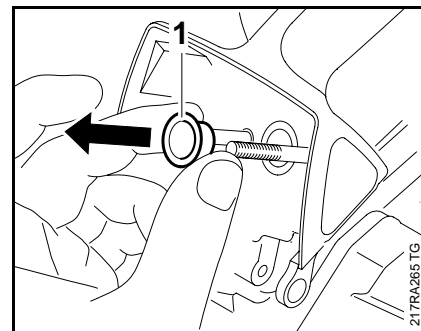
- Prise off the supporting plate (1) with a suitable tool.



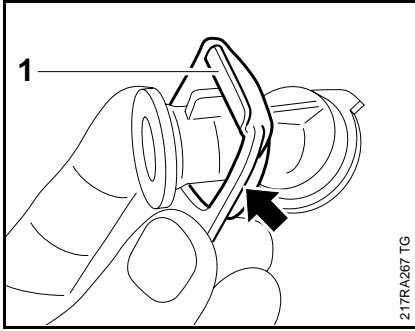
- Lift the handle housing and pull the elbow (1) off the cylinder.



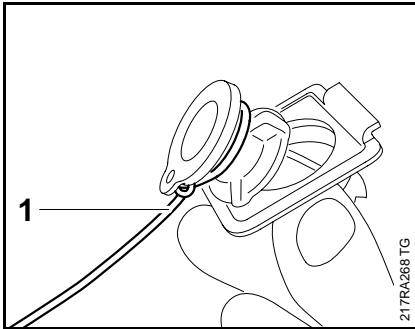
- Remove the washer (1).



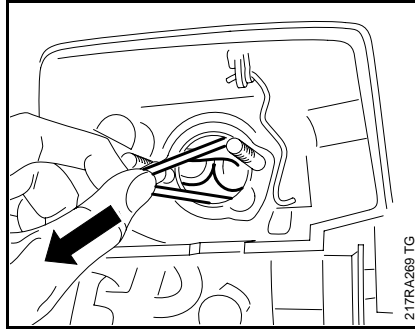
- Take the sleeve (1) out of the intake elbow.
- Press the flange of the intake elbow out through the hole in the handle housing towards the cylinder.
- Examine the intake elbow and replace it if necessary.




- Before installing the intake elbow, slide the supporting plate onto the elbow so that the rebate (arrow) and tab (1) face the carburetor.



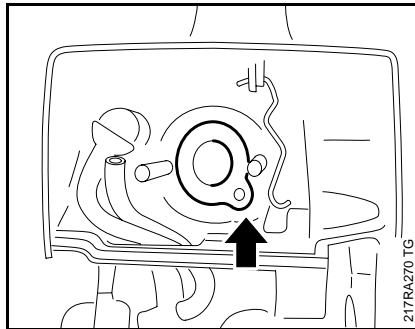
- To draw the elbow flange into the intake port of the tank housing, wrap a piece of string (1) approx. 15 cm long round the elbow and guide the ends of the string through the intake port.
- Position the elbow on the handle housing.



- Draw the ends of the string through the intake port with the elbow flange.

- Coat with STIHL Press Fluid,  16

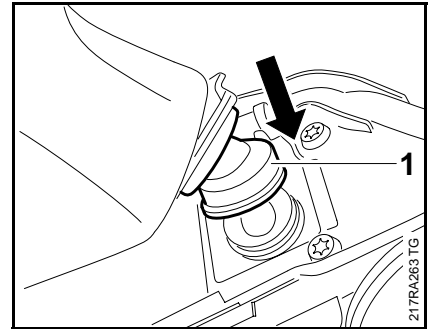
In this way, the elbow flange is fitted through the intake port of the tank housing without damaging it.



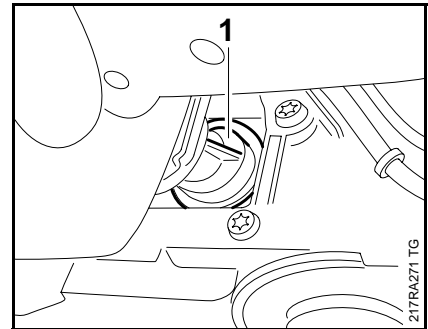
- Ensure that the flange is correctly seated in the handle housing.

The tab on the elbow flange (arrow) must be aligned so that the hole is lined up with the opening in the handle housing.

The tab on the elbow flange must not cover the opening in the handle housing otherwise the impulse hose will not operate correctly.

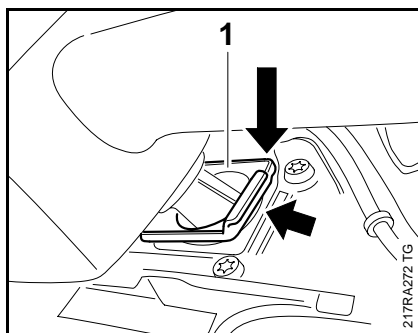


- Push the elbow (1) onto the intake port (arrow).

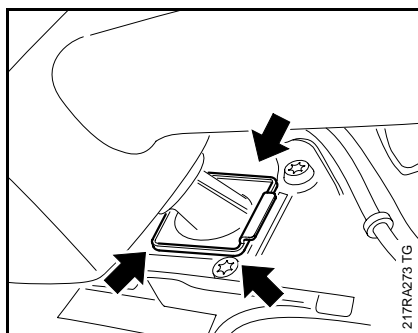


- Ensure that the elbow (1) completely encloses the intake port.

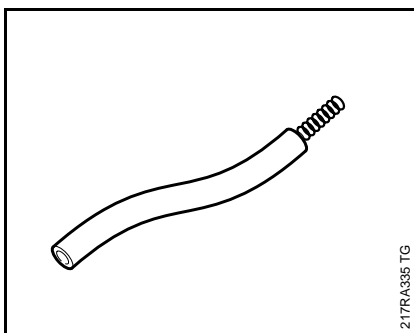
14.5.1 Impulse Hose



- Fit the supporting plate (1) so that the tab (arrow) points upwards and towards the chain.



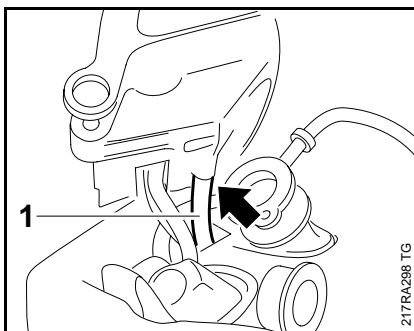
- Press the supporting plate home completely until it rests against the engine housing all round (arrows).
- Reassemble remaining parts in reverse order.
- Tightening torques, [16](#) 3.5



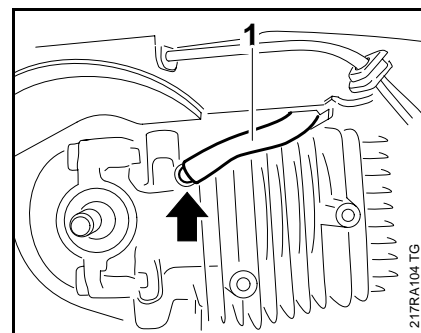
A damaged impulse hose may lead to impaired engine performance.

- Remove the fan housing, [10](#) 10.2
- Remove the flywheel, [9](#) 9.5
- Unscrew the rubber buffers on the handle housing, [11](#) 11.1
- Remove the carburetor, [14](#) 14.2
- Push the intake elbow out of the handle housing, [14](#) 14.5
- Troubleshooting, [4](#) 4.6 or [4](#) 4.7

The impulse hose is shown on the handle housing after disassembly for clarity.



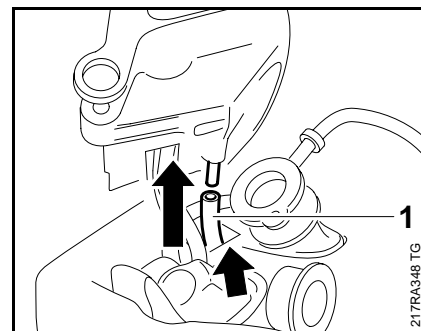
- Disconnect the impulse hose (1) from the stub (arrow) of the handle housing.



- Disconnect the impulse hose (1) from the stub (arrow).
- Pull the impulse hose out of the engine housing.
- Examine the impulse hose and replace it if necessary,

When installing the impulse hose, ensure that the spring is actually in the hose to prevent it buckling.

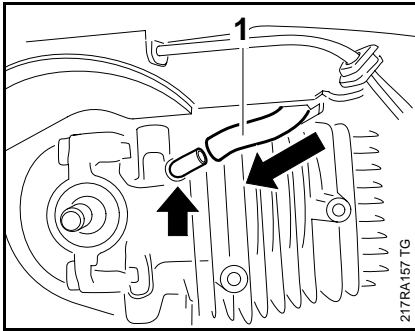
- Lubricate the ends of the impulse hose with STIHL Press Fluid, [16](#) 16



- Guide the impulse hose (1) through the opening (arrow) on the engine housing and push it onto the stub on the handle housing.

14.6 Tank Vent

14.6.1 Testing



- Connect the impulse hose (1) to the stub (arrow).
- Reassemble remaining parts in reverse order.

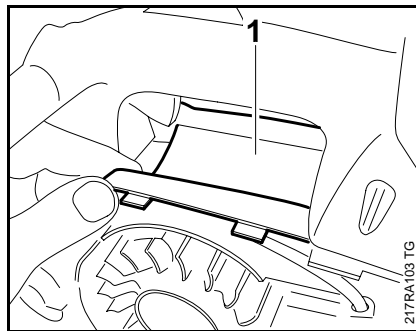
Ensure that the impulse hose is routed correctly and without kinking.

A pressure equilibrium must always prevail between the inside of the fuel tank and the surrounding atmosphere to permit troublefree operation of the carburetor. This is ensured by the tank vent.

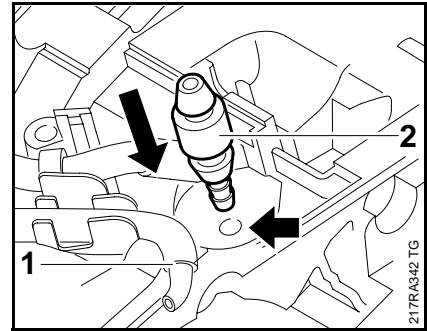
If problems develop in the carburetor or fuel supply, the tank vent must always also be tested and replaced if necessary. Correct functioning is determined by testing the fuel tank with negative pressure or gauge pressure via the fuel hose.

- Remove the fan housing, 10.2
- Drain the fuel tank.

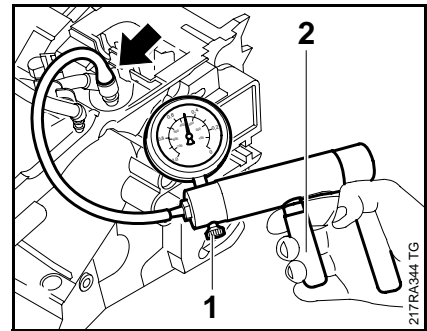
Ensure that the fuel is disposed of correctly and without harming the environment.



- Remove the cover (1).



- Disconnect the fuel return line (1) and push the double nipple (2) 0000 855 9200 into the flange (arrow) of the suction hose.

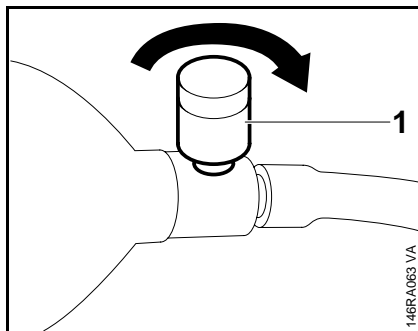


Testing with negative pressure

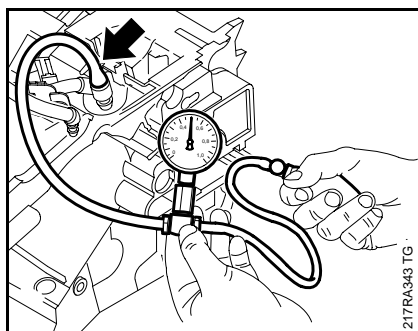
- Close the valve (1) and connect the vacuum pump (2) 0000 850 3501 to the double nipple, then create a vacuum in the fuel tank.

Pressure is equalized via the tank vent. A negative pressure must not build up inside the tank. The tank vent must be replaced if this is not the case.

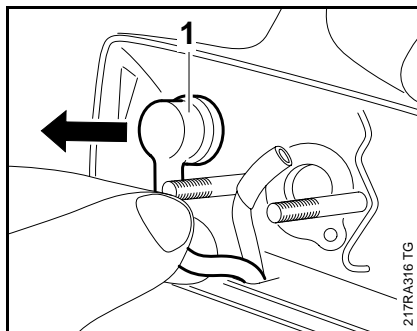
- Clean the area around the tank vent.
- Replace the tank vent or tank if necessary, 14.6.2 or 14.8.3

**Testing with gauge pressure**

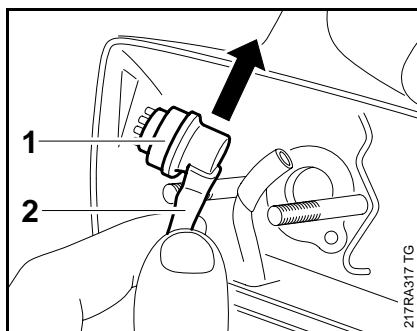
- Close the vent screw (1).



- Connect the carburetor and crankcase tester 1106 850 2905 (1) to the double nipple (arrow).
- Pump the rubber bulb until the reading on the pressure gauge shows an excess pressure of 0.5 bar. If this pressure remains constant for at least 20 seconds, the tank and tank vent are airtight. If the pressure drops, the leak must be located and the faulty part replaced.
- Reassemble parts in reverse order.



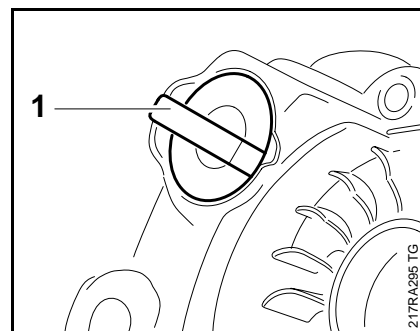
- Remove the air filter, 14.1
- Remove the filter base, 14.1.1
- Pull the tank vent (1) out of the holder on the handle housing.



- Disconnect the tank vent (1) from the hose (2).
- Examine the tank vent and replace it if necessary,
- Reassemble parts in reverse order.

Impurities which are entrained into the fuel tank with the fuel are trapped by the pick-up body. With time, the fine pores in the pick-up body become clogged with very fine dirt particles. This reduces the intake diameter and fuel can no longer be delivered in sufficient quantities.

Always check the fuel tank and pick-up body first if problems develop in the fuel supply. Clean the fuel tank if necessary.

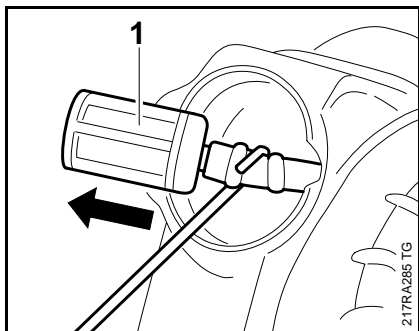


- Lift up the safety latch, remove the filler cap (1) and drain the tank.
- Fill a little clean petrol into the tank, close the tank and shake it thoroughly.
- Reopen the tank and empty it.

Ensure that the fuel is disposed of correctly and without harming the environment.

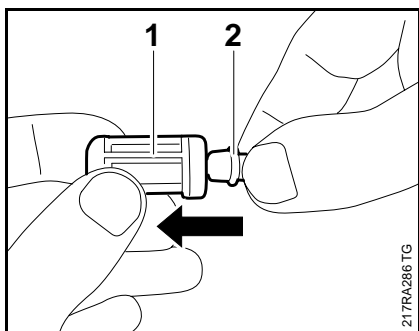
If cleaning the tank does not remedy the problem, clean the pick-up body or replace it if necessary.

- Troubleshooting, 4.6 or 4.7

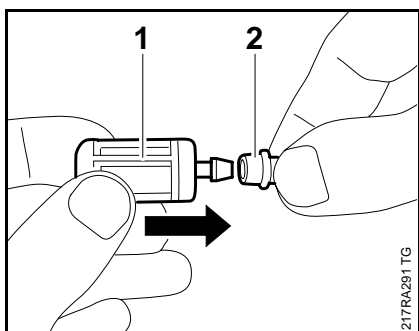


- Use hook 5910 893 8800 to pull the pick-up body (1) out of the fuel tank.

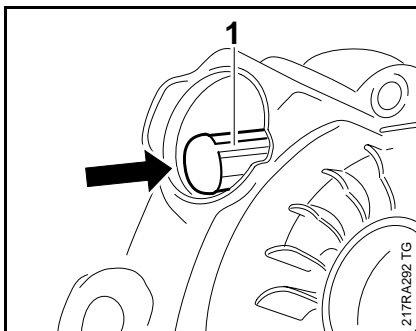
Take care not to overextend the fuel hose.



- Disconnect the pick-up body (1) from the fuel hose (2).
- Check the pick-up body and clean or replace it if necessary.



- Slide the connectors of the cleaned or replaced pick-up body (1) into the fuel hose (2).

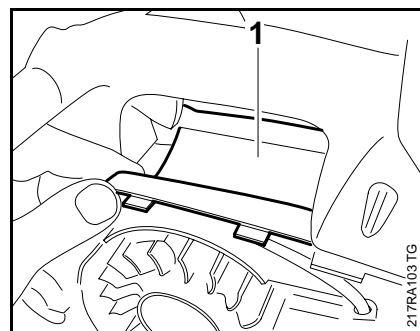


- Push the pick-up body (1) into the tank filler port.
- The pick-up body should be positioned at the lowest point inside the tank.
- Reassemble remaining parts in reverse order.

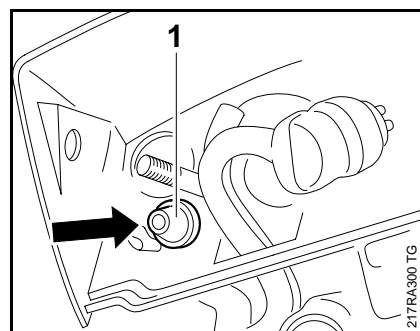
Remove the air filter, [14.1](#)

Remove the fan cover, [9.1](#)

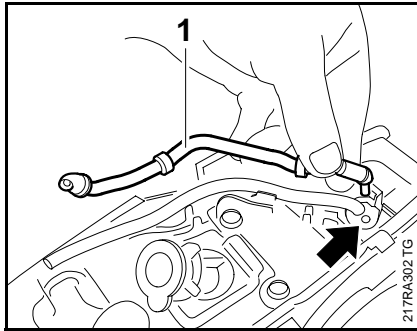
Remove the intake elbow, [14.5](#)



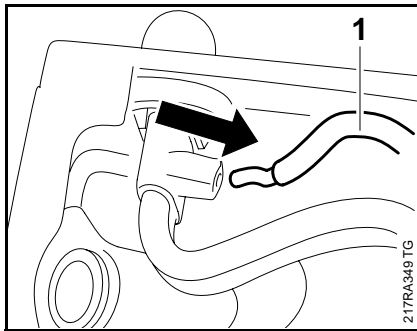
- Remove the cover (1).



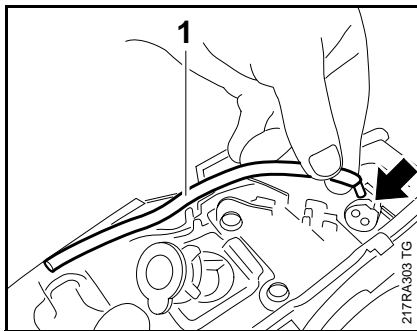
- Push the fuel return line (1) out.



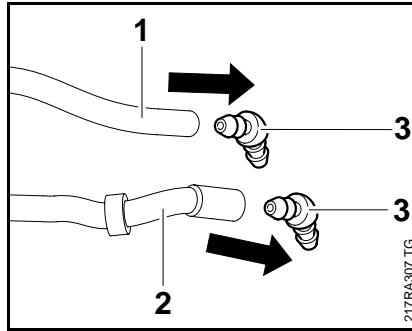
- Pull the fuel return line (1) out of the guides and flange (arrow).



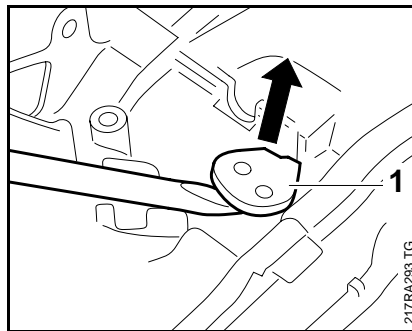
- Pull the fuel hose (1) out of the hose on the fuel pump.




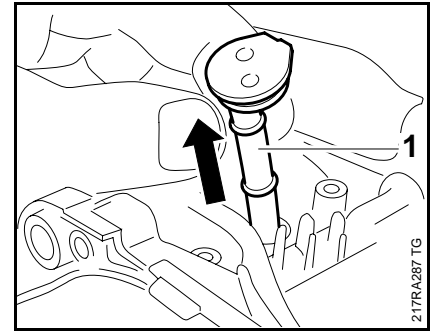
- Pull the fuel hose (1) out of the guides and flange (arrow).



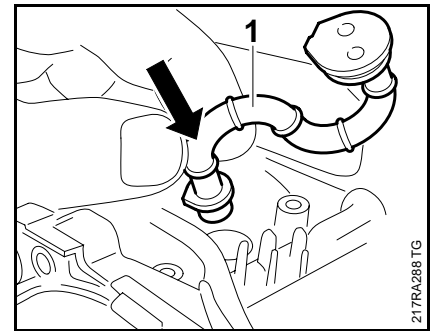
- Pull the elbow connectors (3) off the hoses.
- Check the fuel hose (1), fuel return line (2) and elbow connectors (3) and replace them if necessary.
- Reassemble parts in reverse order.



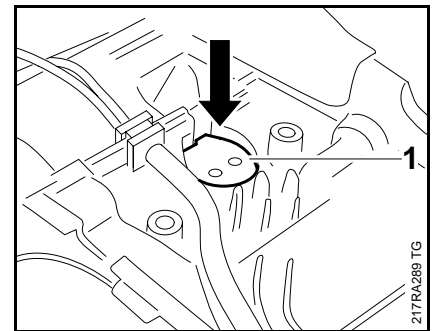
- Remove the pick-up body,  14.7.1
- Prise off the flange (1) with a suitable tool.



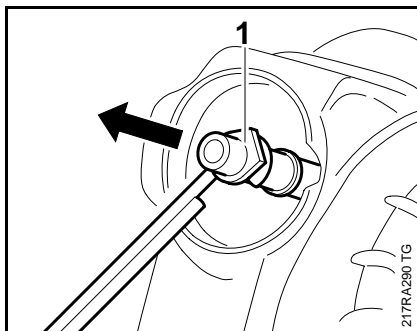
- Pull the fuel suction hose (1) out of the tank.
- Examine the fuel suction hose and replace it if necessary,



- Push the fuel suction hose (1) into the hole in the fuel tank.



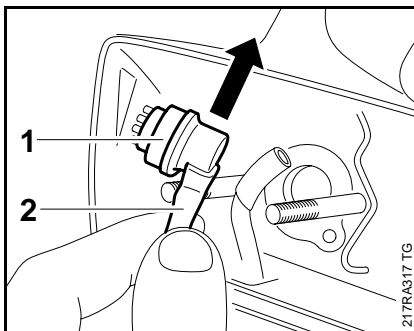
- Align the flange (1) and press it into the fixture on the housing until it rests against the housing.



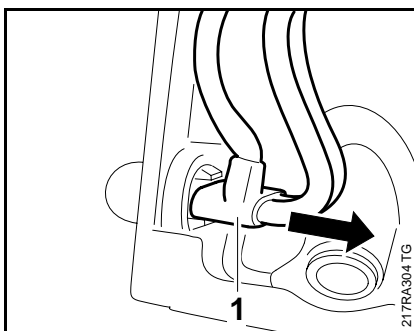
- Use hook 5910 893 8800 to pull the fuel suction hose (1) out of the fuel tank.

Take care not to overextend the fuel hose.

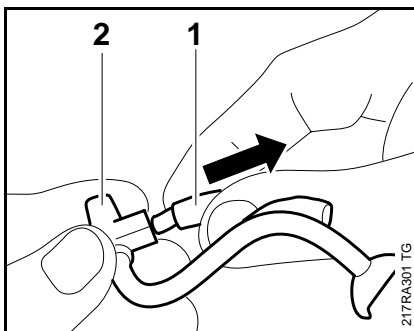
- Fit the pick-up body, 14.7.1
- Reassemble remaining parts in reverse order.



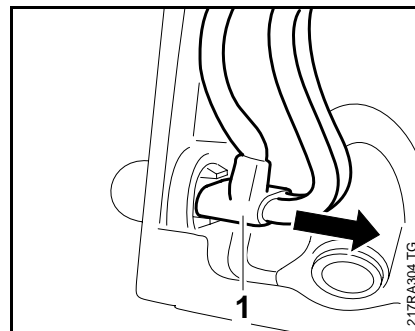
- Disconnect the tank vent (1) from the hose (2).
- Pull the hose (2) out through the opening in the handle housing.



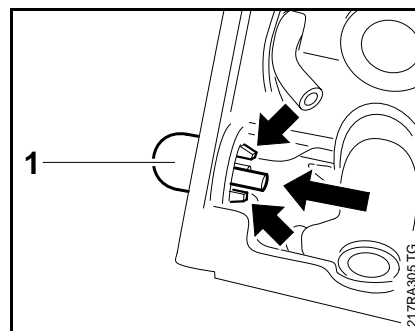
- Disconnect the fuel hose (1) from the fuel pump.



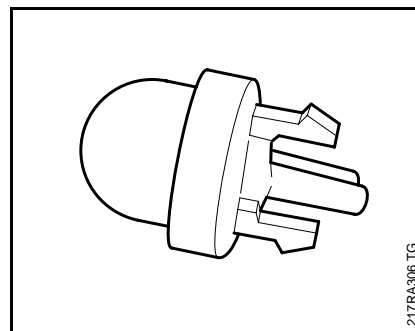
- Remove the tank vent (1).
- Disconnect fuel hose (1) and examine fuel hose (2), replace if necessary.
- Reassemble parts in reverse order.



- Remove the air filter, 14.1
- Remove the fan housing, 10.2
- Disconnect the fuel hose (1).

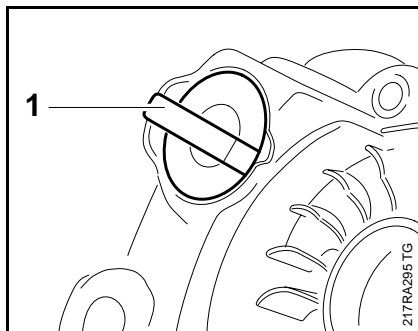


- Press the tabs (arrows) together and push the fuel pump (1) out of the housing.

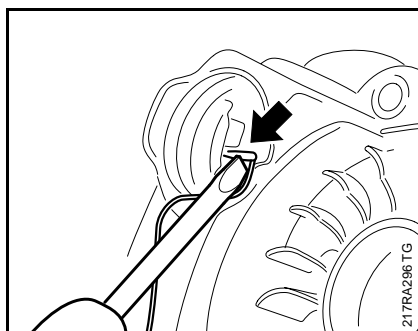


- Examine the fuel pump and replace it if necessary.
- Reassemble parts in reverse order.

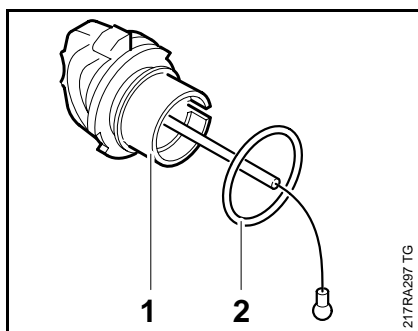
14.8.2 Fuel Tank Filler Cap



- Lift up the safety latch and unscrew the tank filler cap (1).



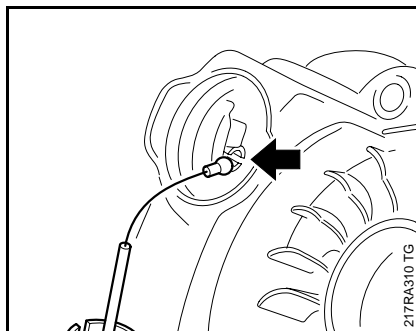
- Prise the nipple out from inside the tank (arrow).



- Examine the filler cap (1), cord and sealing ring (2) and replace if necessary.

The filler cap is supplied with cord and sealing ring; the sealing ring is available separately.

14.8.3 Tank Housing, Removing and Installing



- Press the nipple into the mount (arrow) inside the tank.
- Screw in the filler cap.
- Test for leaks.
- Reassemble remaining parts in reverse order.

The tank housing is integrated into the engine housing. The complete engine housing must always be replaced if the fuel tank, oil tank or engine housing is damaged.

15. Special Servicing Tools

No.	Part name	Part No.	Use	Rem.
1	Locking strip	0000 893 5903	Block crankshaft	
2	Sealing plate	0000 855 8106	Seal exhaust bore	
4	Strap retainer	1137 893 2600	Tension the piston rings	
5	Flange	1128 850 4200	Leakage testing	
6	Assembly tool	0000 890 2201	Flare the starter rope guide bushing	
7	Carburetor and crankcase tester	1106 850 2905	Test crankcase and carburetor for leaks	
8	Vacuum pump	0000 850 3501	Test crankcase for leaks, test tank vent	
9	- Connector	0000 855 9200	Test carburetor for leaks	
10	- Hose for leakage test	1110 141 8600	Test carburetor for leaks	
11	Puller	5910 890 4501	Remove limiter cap	
12	Puller (with No. 3.1 jaws)	5910 890 4400	Remove oil seals	
15	Press sleeve	4112 893 2401	Press in oil seal	
16	Assembly tube	1117 890 0900	Hook in clutch spring	
17	Assembly hook	5910 890 2800	Detach springs from clutch shoes	
19	Assembly tool 10	5910 890 2210	Fit hookless snap rings in piston	
20	Setting gauge	4118 890 6401	Set the air gap between ignition module and flywheel	
21	Assembly hook	5910 893 8800	Remove pick-up body	
22	Assembly stand	5910 890 3100	Hold chainsaw for servicing / repairs	
23	Clamping strip for assembly stand	5910 890 2000	Clamp machine to assembly stand	
25	Puller	1116 893 0800	Remove flywheel	
27	Ignition system tester ZAT 4	5910 850 4503	Test ignition system	
28	Ignition system tester ZAT 3	5910 850 4520	Test ignition system	

No.	Part name	Part No.	Use	Rem.
29	Torque wrench	5910 890 0302	Screw connections (0.5 to 18 Nm)	
30	Torque wrench	5910 890 0312	Screw connections (6 to 80 Nm)	
31	Bit size 13	5910 893 5608	Crankshaft nut	
33	Combination wrench	1129 890 3401	Spark plug	1)
35	Bit T 27 x 125	0812 542 2104	Remove and install spline socket head screws with electric or pneumatic screwdrivers; tighten down screws with torque wrench	
35	Bit T 20 x 125	0812 542 2041	Remove and install spline socket head screws with electric or pneumatic screwdrivers; tighten down screws with torque wrench	
36	Screwdriver T 20 x 100	5910 890 2301		1)
37	Screwdriver Q-SW8x200	5910 890 2420	Carburetor nuts	1)
38	Stud puller	5910 893 0501	Remove rail mounting studs	
41	Crimping pliers	5910 890 8210	Cable ties, cable lugs, etc.	
42	Assembly pin	1114 893 4700	Remove and install the piston pin	

Remarks:

1) Use only for releasing.

16. Servicing Aids

No.	Part name	Part No.	Use
1	Lubricating grease (225 g tube)	0781 120 1111	Oil seals, sliding and bearing points
2	STIHL special lubricant	0781 417 1315	Bearing bore in rope rotor, rewind spring in fan housing
3	Press Fluid OH 723	0781 957 9000	Rubber buffers in AV system
4	STIHL multi-purpose grease	0781 120 1109	High-voltage output on ignition module
5	Dirko HT red sealant	0783 830 2000	Engine pan, oil seals (outside)
6	High-strength thread-locking adhesive (Loctite 270)	0786 111 2109	
7	Standard commercial solvent-based degreasant containing no chlorinated or hydrogenated hydrocarbons		Cleaning sealing faces and the carburetor, cleaning the crankshaft stub and tapers in flywheel

