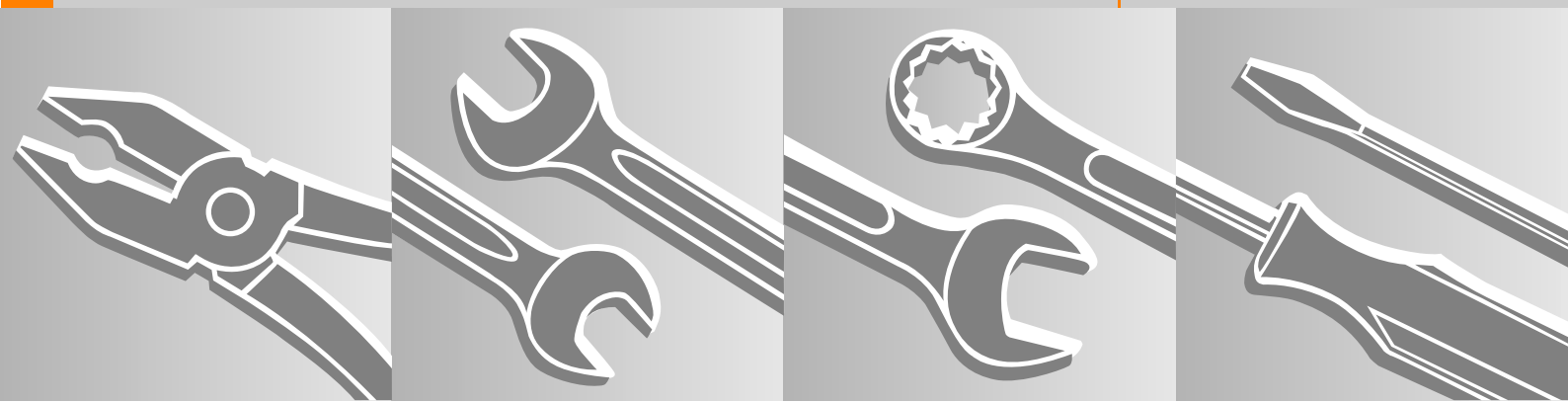


STIHL 017, 018

2000-06



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STIHL®

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1. INTRODUCTION

This service manual contains detailed descriptions of all the repair and servicing procedures specific to this power tool series.

There are separate handbooks for servicing procedures for standardized parts and assemblies that are installed in several STIHL power tool models. Reference is made to these handbooks in the appropriate chapters of this manual.

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

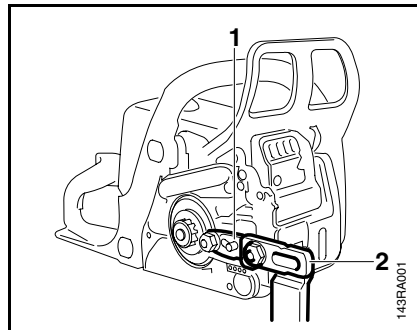
Always use the latest edition of the parts to determine the part numbers of any replacement parts required. Microfilmed parts list are always more up to date than printed lists.

A fault on the machine may have several causes. Consult the troubleshooting charts for all assemblies in the "General Servicing, Troubleshooting" handbook.

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

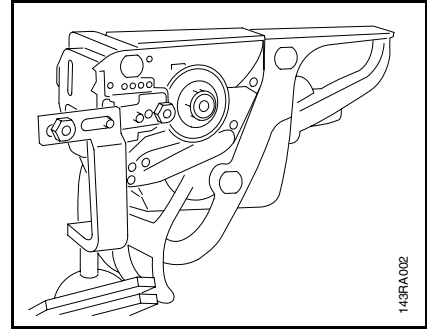
The special servicing tools mentioned in the descriptions are listed in the last chapter of this manual. Use the part numbers to identify the tools in the "STIHL Special Tools" manual. The manual lists all special servicing tools currently available from STIHL.

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



Servicing and repairs are made considerably easier if the powerhead is mounted on the assembly stand (2) with the clamping rail (1). The machine is secured to the stand by means of the bar mounting nuts (after removing the sprocket cover).


This enables the powerhead to be swivelled to the best position for the ongoing repair and leaves both hands free.



To work on the underside (e.g. removing the oil pump), turn the machine over and position clamping rail on the assembly stand so that one screw engages the inner 10 mm hole.

Note: Pull the hand guard against the front handle before clamping the machine in this position.

Always use original STIHL replacement parts.

They can be identified by the STIHL part number, the **STIHL** logo and the STIHL parts symbol . The symbol may appear alone on small parts.

2. SPECIFICATIONS

2.1 Engine

STIHL single-cylinder two-stroke engine with special impregnated cylinder bore

	017	018
Displacement:	30.1 cm ³ (1.84 cu.in)	31.8 cm ³
Bore:	37 mm (1.46 in)	38 mm
Stroke:	28 mm (1.10 in)	28 mm (1.10 in)
Compression ratio:	9.5 :1	9.5 :1
Engine power:	1.2 kW (1.6 bhp)	1.4 kW (1.9 bhp)
Max. torque:	1.5 Nm (1.1 lb.ft)	1.5 Nm (1.1 lb.ft)
	at n = 5500 rpm	at n = 5500 rpm
Mean idle speed:	3,200 rpm	2,800 rpm
Main bearings:	Two deep-groove ball bearings	
Big end bearing:	Cylinder rollers (cageless)	Needle sleeve
Small end bearing:	Needle cage	Needle sleeve
Piston pin diameter:	Ø 8 mm (0.3 in)	Ø 8 mm (0.3 in)
Connecting rod length:	51 mm (2 in)	51 mm (2 in)
Rewind starter:	Pawl system	
Reserve pull on rope rotor:	min. 1/2 turn	
Starter rope:	3.0 mm (0.12 in) dia., 800 mm (31.5 in) long	
Clutch:	Centrifugal clutch without linings	
Diameter:	65 mm (2.56 in)	65 mm (2.56 in)
Clutch engages at:	4,100 rpm	4,100 rpm
Crankcase leakage test		
at gauge pressure:	0,4 bar (5.8 psi)	
under vacuum:	0,4 bar (5.8 psi)	

2.2 Fuel System

Carburetor:	Diaphragm carburetor	
Standard setting	017	018
High speed adjusting screw H:	1)	2)
Low speed adjusting screw L:	approx. 1 turn open	
Carburetor leakage test at gauge pressure:	0.4 bar (5.8 psi)	
Fuel tank capacity:	0.25 l (0.53 US pt)	
Octane number:	min. 90 RON (USA/CAN: pump octane min. 87 unleaded)	
Fuel mixture:	Regular brand-name gasoline and two-stroke engine oil	
Mix ratio:	50:1 with STIHL 50:1 two-stroke engine oil 25:1 with other brand-name two-stroke, air-cooled engine oils	
Air filter:	Felt element	

¹⁾ No H screw. Maximum engine RPM is permanently set by fixed jet (not adjustable)

²⁾ Carburetor with balanced idle system with only one adjusting screw (LD)

2.3 Ignition System	Type:	Electronic magneto ignition (breakerless) with integral trigger unit
	Air gap:	0.15 - 0.30 mm (0.006-0.012 in)
	Ignition timing:	1.0 - 1.6 mm (0.04-0.063 in) B.T.D.C. at 8,000 rpm
	Spark plug (suppressed):	CHAMPION RCJ 6Y BOSCH WSR 6 F
	Electrode gap:	0.5 mm (0.020 in)
	Spark plug thread:	M14 x 1.25
	Length of thread:	9.5 mm (0.37 in)
	Heat range:	200

2.4 Cutting Attachment	Guide bars:	STIHL Rollomatic with nose sprocket
	Bar tail:	3005
	Bar lengths:	30 and 35 cm (12 and 14 in)
	Oilomatic chain:	3/8" (9.32 mm) Picco-Micro Mini
	Chain sprockets:	6-tooth spur sprocket for 3/8" Picco pitch
	Chain speed:	18.6 m/s (61 ft/sec) at 10,000 rpm (with 6-tooth 3/8" P sprocket)
	Chain lubrication:	Speed-controlled reciprocating oil pump, no oil feed at idle speed
	Oil tank capacity:	0.15 l (0.32 US pt)

2.5 Special Accessories

2.5.1 For User	STIHL repair kit	1130 900 5000
2.5.2 For Service	Carburetor parts kit	1130 007 1060

2.6 Tightening Torques

Plastoform screws are used for polymer components and "DG" screws for lightmetal components. These screws form a permanent thread when they are installed for the first time. They can be removed and installed as often as necessary without detrimentally affecting the strength of the screwed assembly, providing the specified tightening torque is observed.

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

Fastener	Thread size	For component	Torque		Remarks
			Nm	lbf.ft	
Spline screw	IS-DG 5x24	Ignition module/cylinder	7.5	5.6	
Spline screw	IS-DG 5x24	Crankcase	8.0	5.9	
Spline screw	IS-DG 5x24	Fan housing/crankcase	4.5	3.3	
Spline screw	IS-DG 5x24	Crankcase/cylinder bar mounting	9.5	7.0	
Collar screw	M 8	Crankcase	16.0	11.8	1)
Flange nut	M 12x1L	Clutch	50.0	37.0	
Flange nut	M 5	Carburetor	3.5	2.6	
Nut	M 5	Muffler/cylinder	7.0	5.2	
Flange nut	M 8x1	Flywheel	27.5	20.3	
	M 14x1.25	Spark plug	25.0	18.5	
Screw	IS-P 4x12	Hand guard/fan housing	1.7	1.25	2)
Panhead Screw	IS-DG 5x16	Engine housing/Spiked bumper	3.7	2.7	
Screw	IS-P 4x19	Handle molding/Handle frame	2.0	1.5	

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

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

– Tighten the screw clockwise to the specified torque.

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

Remarks

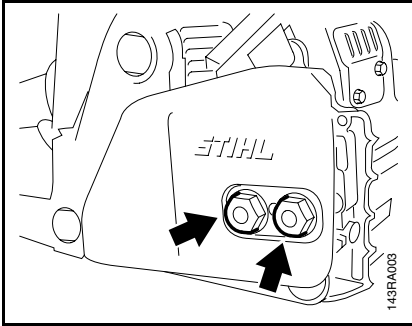
1) Screw must be secured with adhesive 0786 111 1101 (Loctite 243).

2) Torque may be reduced by approx. 1 Nm (0.7 lbf.ft) when refitting a screw in an existing thread

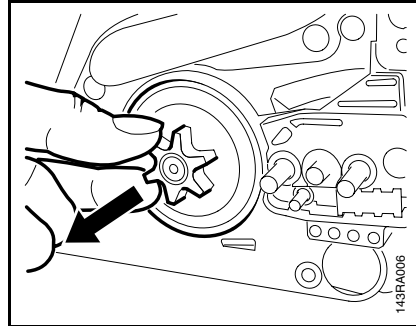
Note: Screws secured with adhesive are easier to release if the adhesive is heated first with a hot air blower (hair dryer). **Take care on polymer components.**

3. CLUTCH, CHAIN DRIVE, CHAIN BRAKE AND CHAIN TENSIONER

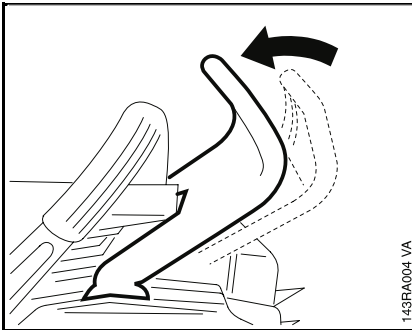
3.1 Chain Sprocket



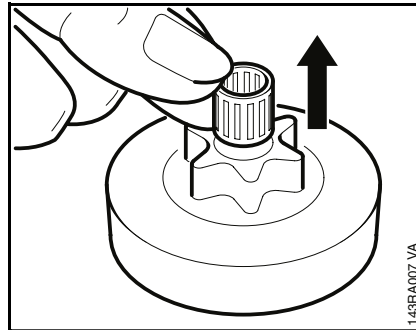
- Unscrew nuts and remove the chain sprocket cover.



- Pull off the chain sprocket.



- Disengage the chain brake by pulling the hand guard toward the front handle.

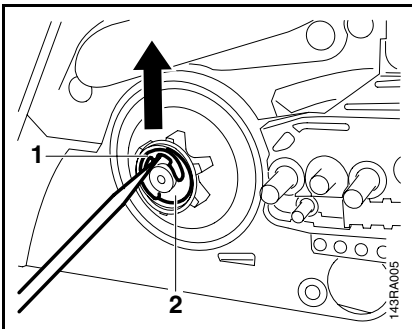


- Take the needle cage out of the sprocket.

Reverse the above sequence to install the chain sprocket.

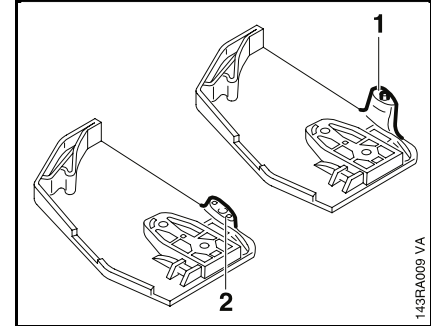
Note: Clean stub of crankshaft. Wash needle cage in clean white spirit and lubricate with grease - see 11.2. Replace damaged needle cage.

Rotate chain sprocket and apply slight pressure at the same time until oil pump drive spring engages properly.



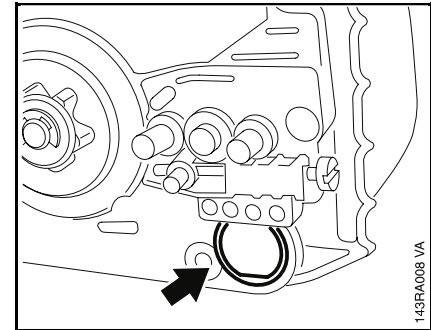
- Remove the E-clip (1).
- Remove the washer (2).

3.2 Chain Catcher

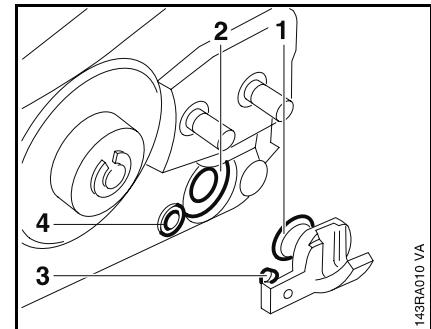


Chain sprocket with integrally molded chain catcher (1).

If the chain catcher has broken off (2), repair as follows:



- Ease the plug out of the front right-hand AV element.

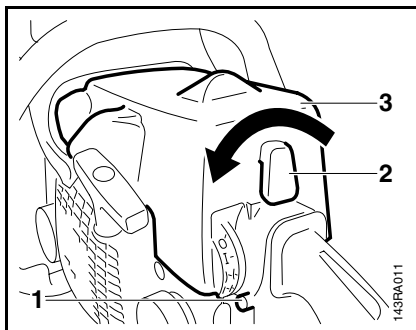


- Oil the cylindrical portion (1) of the replacement chain catcher.
- Push the chain catcher into the AV element (2) and engage the peg (3) in the hole (4) at the same time.

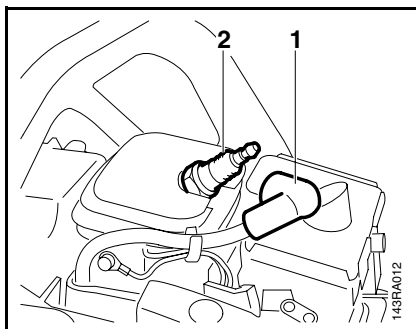
3.3 Clutch

Troubleshooting chart - see „General Servicing, Troubleshooting“ handbook.

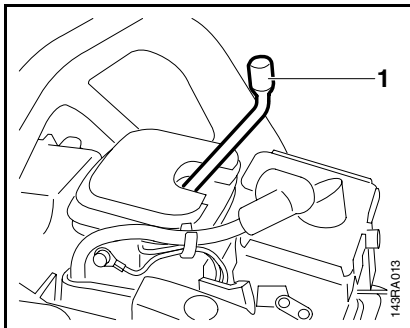
- Remove the chain sprocket - see 3.1.
- Squeeze the interlock lever and throttle trigger.



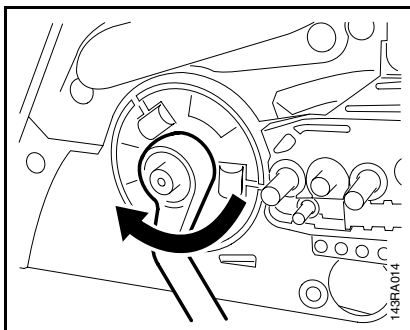
- Move Master Control lever (1) down to lowest position.
- Turn twist lock (2) horizontal.
- Lift off the shroud (3).



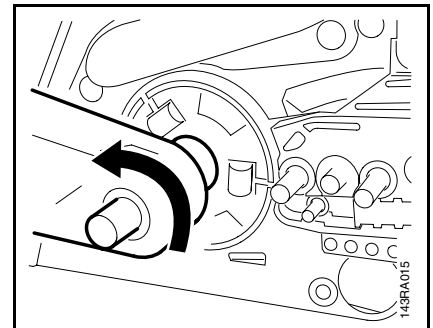
- Pull spark plug boot (1) off the spark plug (2).
- Unscrew the spark plug.



- Push the locking strip (1) into the cylinder.

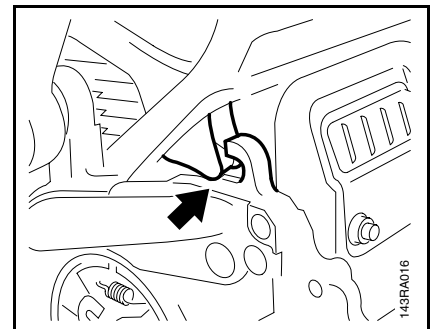


- Unscrew the clutch from the crankshaft.
- Caution:** Clutch has a left-hand thread.
- Disassemble and reassemble the clutch - see „General Servicing, Troubleshooting“ handbook.



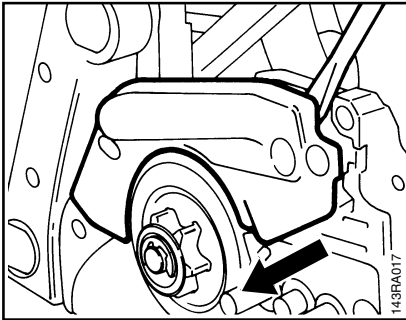
- Screw clutch onto crankshaft and torque down to 50 Nm (37 lbf.ft).
- Remove locking strip from cylinder.
- Install spark plug and torque down to 25 Nm (18.5 lbf.ft).
- Refit spark plug boot on spark plug.

Important: Turn ignition lead so that it does not rest against the cylinder head.

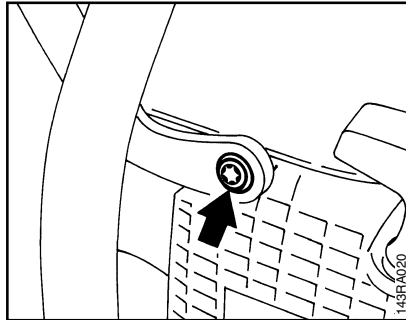


- Fit shroud in retainers and turn twist lock to vertical position.
- Install chain sprocket - see 3.1.

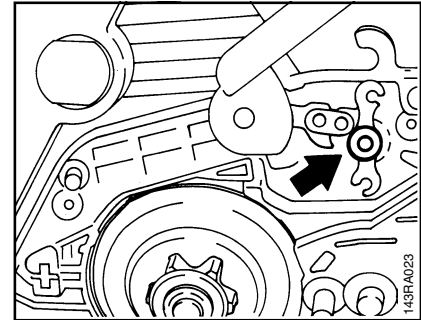
3.4 Disassembling Chain Brake



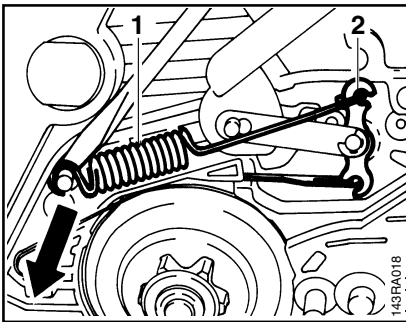
- Remove chain sprocket cover.
- Disengage chain brake.
- Ease the cover out of its seat.



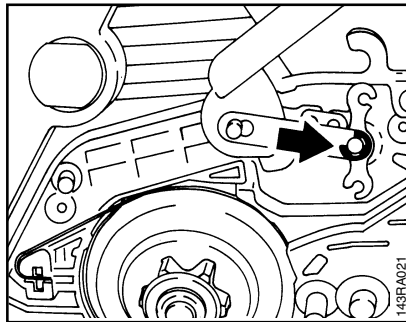
- Remove the screw from the hand guard.



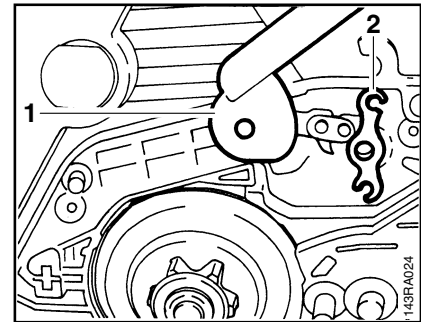
- Remove the washer.
- Remove the shroud - see 3.1.



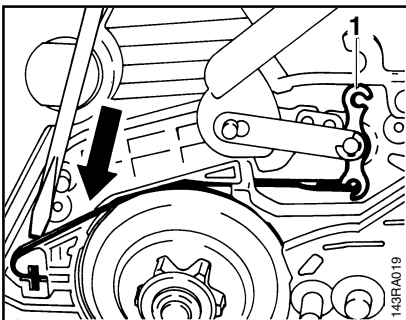
- Carefully pry the brake spring (1) off the anchor pin and unhook it from the bell crank (2).



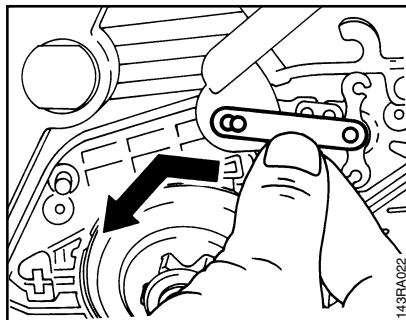
- Ease the E-clip off the bell crank pivot pin.



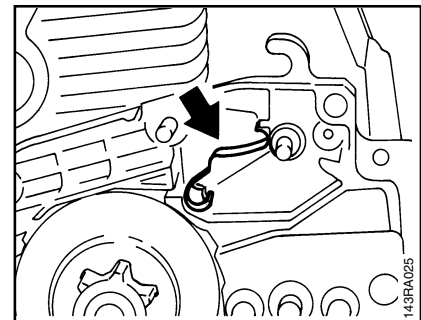
- Carefully ease the hand guard (1) and bell crank (2) off the pivot pins and lift them away together.
- Pull the bell crank out of the hand guard.



- Lever the brake band out of the engine housing and detach it from the bell crank (1).

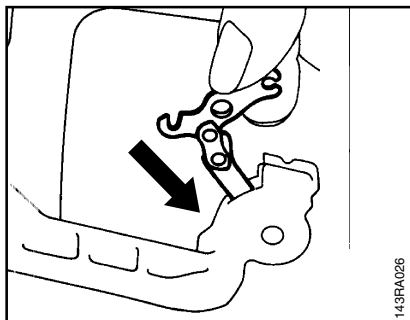


- Slip the strap off the bell crank pivot pin.
- Push the strap to one side and remove it from the hand guard pivot pin.

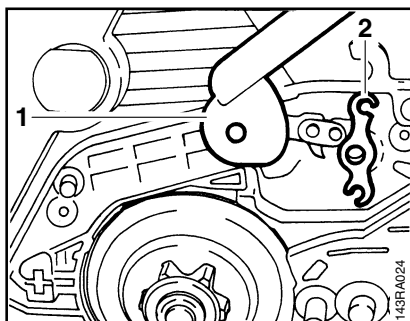


- Take out the flat spring.
- Inspect parts. Replace any worn or damaged parts.

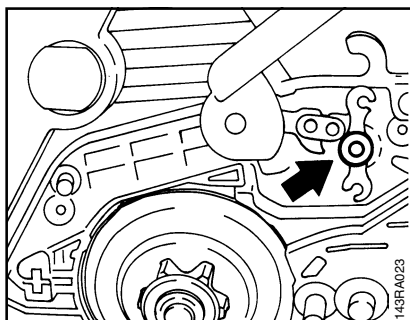
3.5 Assembling Chain Brake



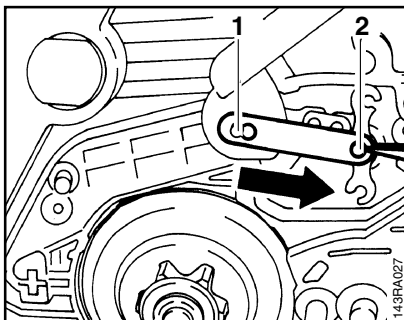
- Fit flat spring in position.
- Slide bell crank into end of hand guard. The short arm of the bell crank must point to top of hand guard.



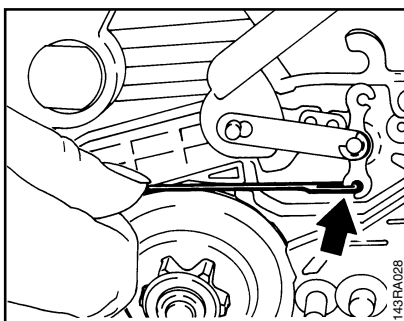
- Locate bearing boss of hand guard (1) on pivot pin and fit other end over the housing.
- Fit bell crank (2) on pivot pin and push it into position.



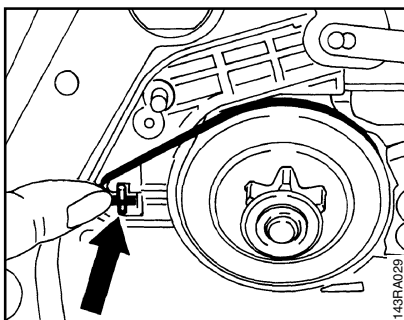
- Fit the washer.



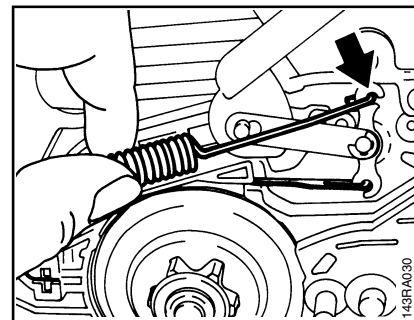
- Place strap on pivot pin (1) and push it in direction of arrow until it engages the groove. Then push it over the pivot pin (2) and secure with the E-clip.



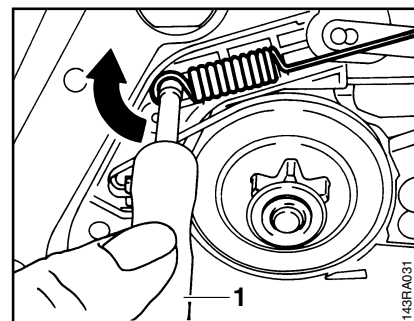
- Attach brake band to the bell crank.
- Lubricate sliding and bearing points of chain brake with STIHL multipurpose grease or, preferably, Molykote grease - see 11.2.



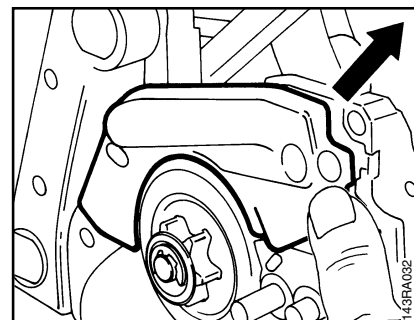
- Fit the brake band and press it into the engine housing.



- Hook the brake spring onto the bell crank.

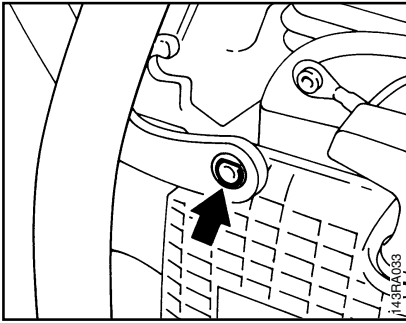


- Use the assembly tool (2) to attach the brake spring (1) to the anchor pin.

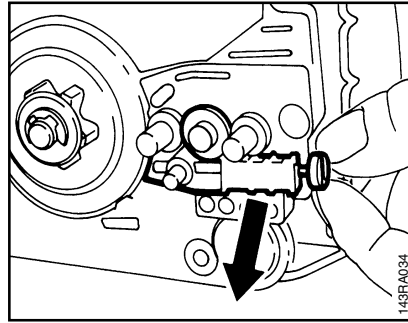


- Fit cover over chain brake and press it home until it snaps into position.

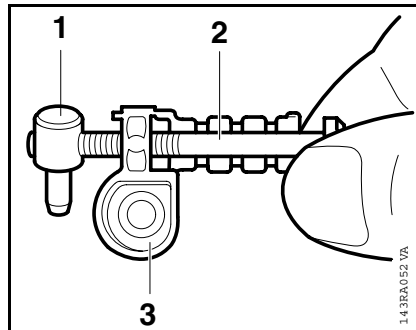
3.6 Front Chain Tensioner



- Fit hand guard over boss on fan housing.
- Insert screw and tighten to 1.7 Nm (1.25 lbf.ft).
- Fit the shroud - see 3.1.



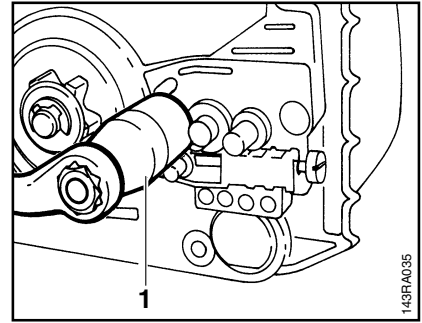
- Remove chain sprocket cover.
- Pull the cover out of the engine housing.



- Unscrew the nut (1) from the adjusting screw (2) and take the adjusting screw out of the cover (3).

Reverse the above sequence to install the chain tensioner.

3.7 Bar Studs



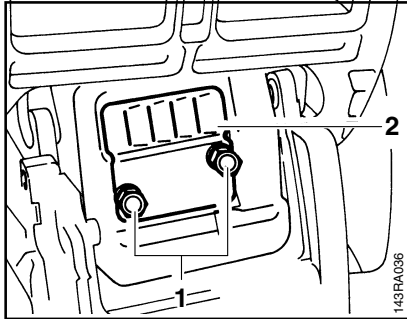
- Remove chain sprocket cover.
- Push the stud puller (1) onto the stud as far as it will go.
- Unscrew the stud.
- Coat thread of stud with Loctite - see 11.2.
- Insert stud and torque down to 16 Nm (11.8 lbf.ft).

4. ENGINE

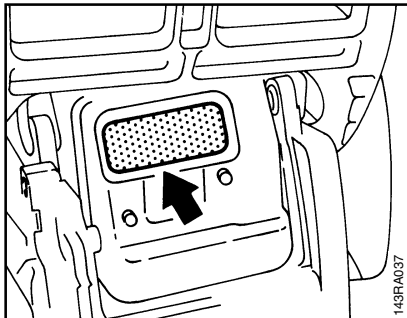
4.1 Exhaust Muffler

This machine does not have a conventional crankcase. The engine consists of the cylinder, piston, crankshaft and engine pan.

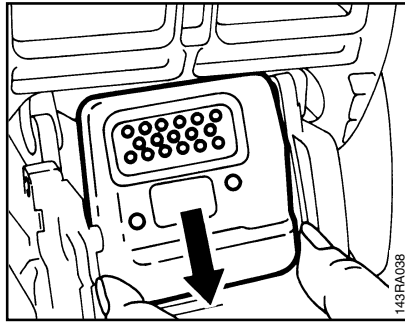
Troubleshooting chart - see „General Servicing, Troubleshooting“ handbook.



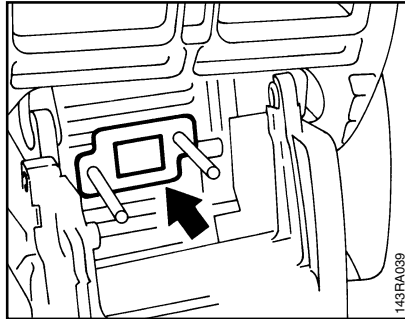
- Unscrew nuts (1) from muffler.
- Remove the cover plate (2).



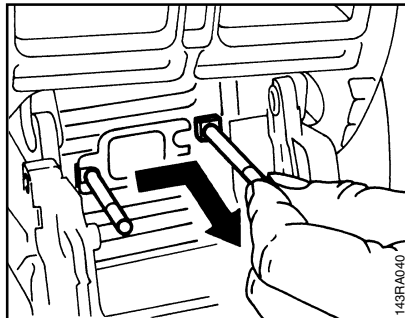
- Remove the spark arresting screen.
- Clean the spark arresting screen or fit a new one if necessary.



- Pull out the muffler.



- Remove the gasket.



- Take the screws out of the flange.

Reassemble in the reverse sequence.

4.2 Leakage Test

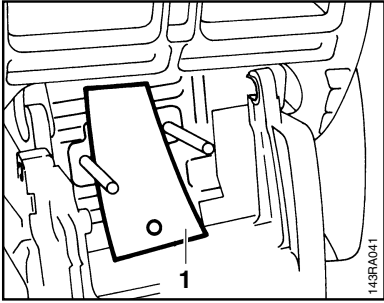
Defective oil seals and gaskets or cracks in castings are the usual causes of leaks. Such faults allow supplementary air to enter the engine and thus upset the fuel-air mixture.

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

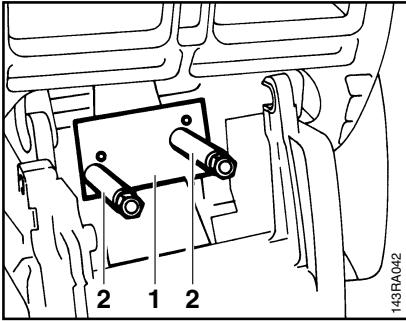
Moreover, the transition from idle speed to part or full throttle is not smooth.

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

4.2.1 Preparations



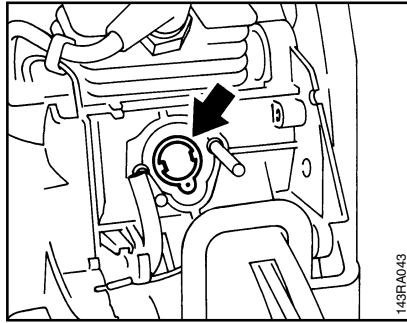
- Remove the muffler - see 4.1.
- Fit the sealing plate (1) between the screws.



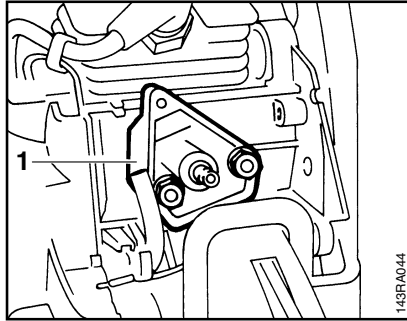
- Push the flange (1) over the screws.
- Fit the sleeves (2) on the screws.
- Fit the nuts and tighten them down firmly.

Note: The sealing plate must completely fill the space between the two screws.

- Remove the carburetor - see 10.3.2.
- Set the piston to top dead center (T.D.C.). This can be checked through the intake port.

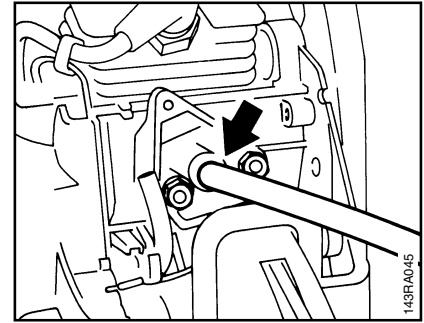


- Check that sleeve is in position in manifold.

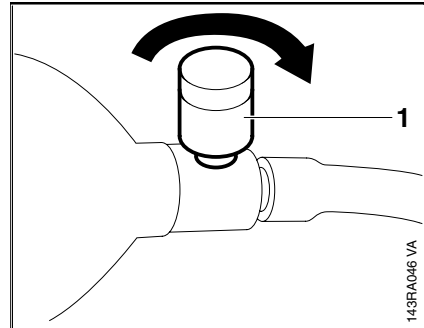


- Fit the test flange (1) in place of the carburetor.

4.2.2 Pressure Test

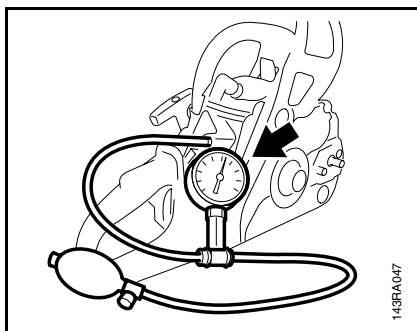


- Connect tester's pressure hose to nipple on test flange.
- Make sure the spark plug is properly tightened down.



- Close the vent screw (1) on the rubber bulb.
- Use rubber bulb to pump air into the engine housing until the gauge indicates a pressure of 0.4 bar (5.8 psi). If this pressure remains constant for at least 20 seconds, the engine housing is airtight.

4.2.3 Vacuum Test



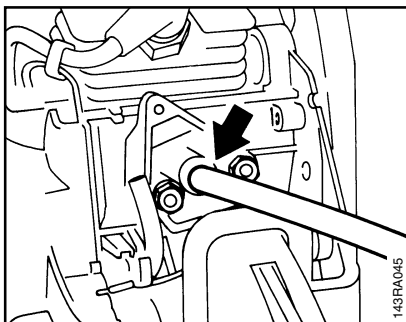
- However, if the indicated pressure drops, the leak must be located and the faulty part replaced.

Note: To find the leak, coat the suspect area with oil and pressurize the engine housing again. Bubbles will appear if a leak exists.

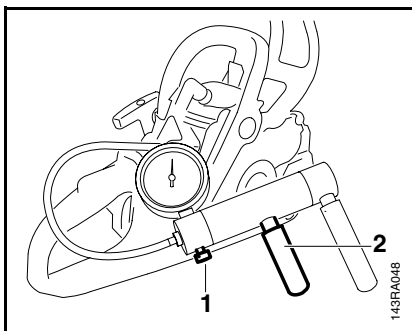
- Carry out the vacuum test - see 4.2.3.
- After finishing the test, open the vent screw and disconnect the hose.
- Remove the test flange and refit the carburetor - see 10.3.2.
- Remove the flange.
- Remove the sealing plate.
- Install the muffler - see 5.1.

Oil seals tend to fail when subjected to a vacuum, i.e. 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. The preparations for this test are the same as for the pressure test - see 4.2.1.



- Connect the vacuum pump's suction hose to test flange nipple.
- Make sure the spark plug is properly tightened down.



- Close the vent screw (1) on the rubber bulb.
- Operate lever (2) until pressure gauge indicates a vacuum of 0.4 bar (5.8 psi).

Note: If the vacuum reading remains constant, or rises to no more than 0.3 bar (4.25 psi) within 20 seconds, it can be assumed that the oil seals are in good condition.

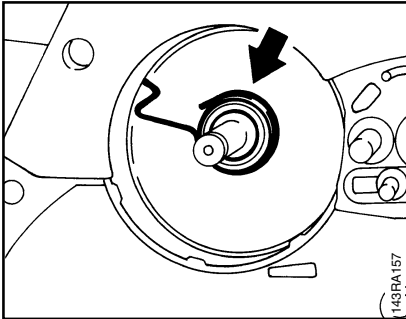
However, if the pressure continues to rise (reduced vacuum in the engine housing), the oil seals must be replaced, even if no leaks were detected in the pressure test.

- After finishing the test, open the vent screw and disconnect the hose.
- Remove the test flange and refit the carburetor - see 10.3.2.
- Remove the flange.
- Remove the sealing plate.
- Install the muffler - see 4.1.

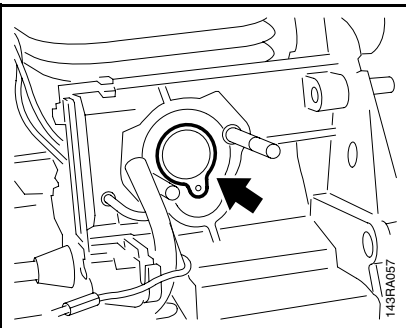
4.3 Removing and Installing Engine

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

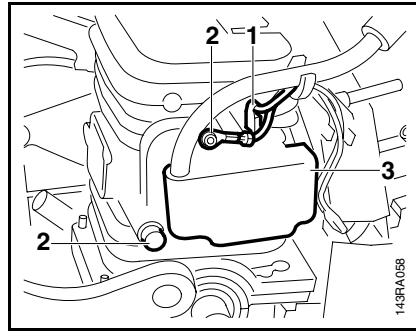
- Remove the muffler - see 4.1.
- Remove the clutch - see 3.3.
- Remove handle frame - see 8.4.
- Remove the carburetor - see 10.3.2.
- Remove the flywheel - see 5.3.



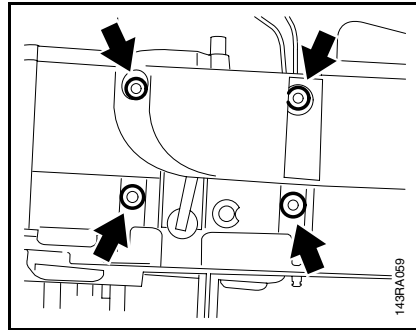
- Pull off the worm with drive spring.



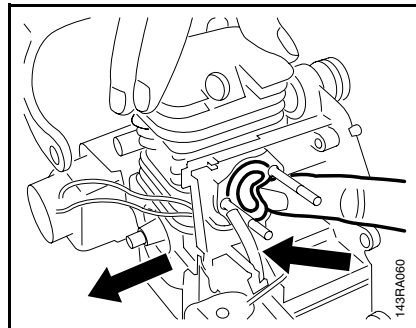
- Take the sleeve out of the manifold.



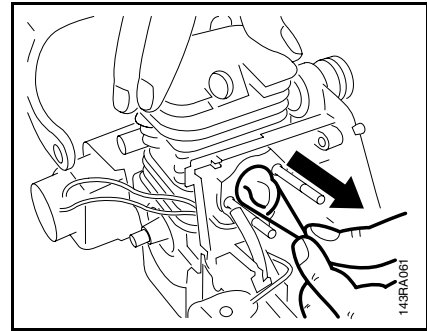
- Pull off the short circuit wire (1).
- Take out the screws (2).
- Remove the ignition module (3).



- Remove mounting screws from underside of engine.



- Remove engine sideways from housing and push the manifold flange out of the intake opening at the same time.



Reassemble in the reverse sequence.

- To fit the manifold in the engine housing intake opening, wind a piece of string (about 15 cm/6" long) around the back of the manifold flange and pass the ends of the string through the intake opening.

- Place the engine in position, push the manifold against the intake opening and pull the ends of the string outward at the same time.

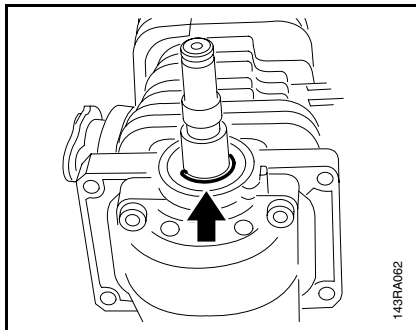
The manifold flange is pulled through the engine housing intake opening without any damage to the manifold.

- Torque down engine mounting screws to 9.5 Nm (7.0 lbf.ft).
- After completing assembly, adjust air gap between ignition module and flywheel - see 5.2.2.

4.4 Oil Seals

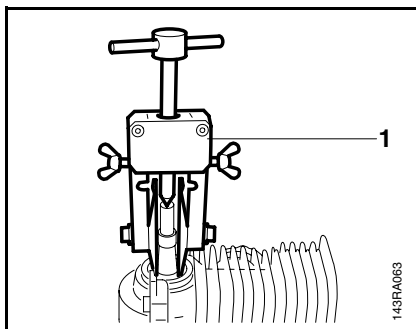
It is not necessary to disassemble the complete engine housing if only the oil seals have to be replaced.

- Remove the engine - see 4.3.

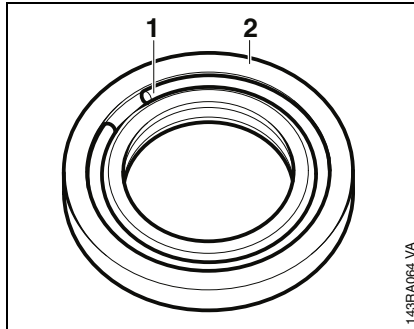


Clutch side:

- Pry out the retaining ring.

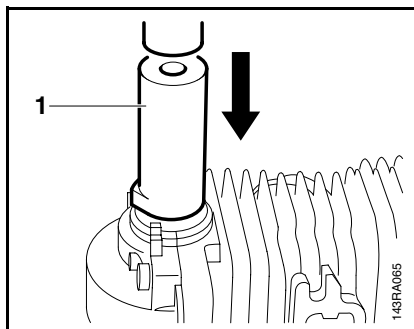


- Apply the puller (1) (with No. 3.1 jaws).
- Clamp the puller arms.
- Pull out the oil seal.

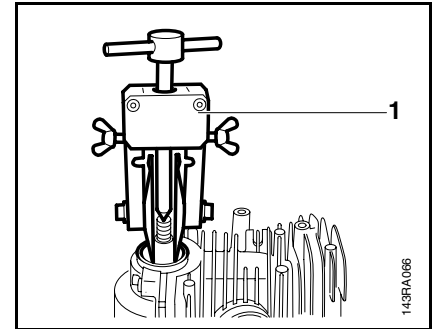


Important: Take special care not to damage crankshaft stub.

- If new oil seals have already been installed, use puller and No. 3.1 jaws to remove the clamping ring (1). Pry the sealing ring (2) out of the housing.
- Clean sealing face on crankshaft stub with standard commercial, solvent-based degreasant containing no chlorinated or halo-genated hydrocarbons - see 11.2.
- Pack cavity between sealing lip and oil seal with grease - see 11.2.
- Thinly coat the outside diameter of the oil seal with sealant - see 11.2.
- Position the oil seal so that the clamping ring faces upwards.



- Use the press sleeve (1) to install the oil seal.
- Fit the retaining ring in the crankshaft groove.

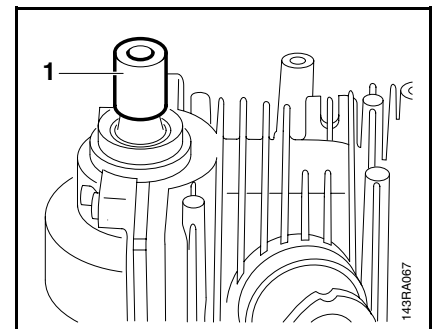


Starter side:

- Apply the puller (1) as at the clutch side and pull out the oil seal.

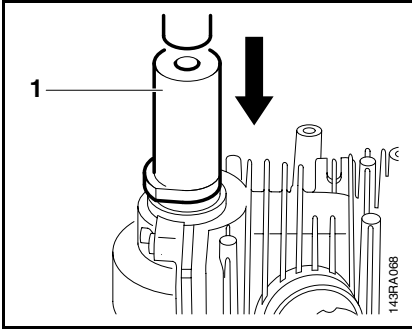
Note: Remove the oil seal with clamping ring as described for clutch side.

- Clean sealing face on crankshaft stub with standard commercial, solvent-based degreasant containing no chlorinated or halo-genated hydrocarbons - see 11.2.
- Pack cavity between sealing lip and oil seal with grease - see 11.2.
- Thinly coat the outside diameter of the oil seal with sealant - see 11.2.
- Position the oil seal so that the clamping ring faces upwards.

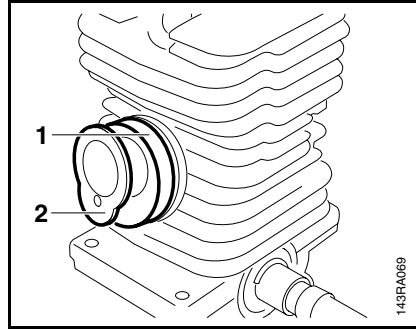


- Screw guide sleeve (1) on to the crankshaft stub.

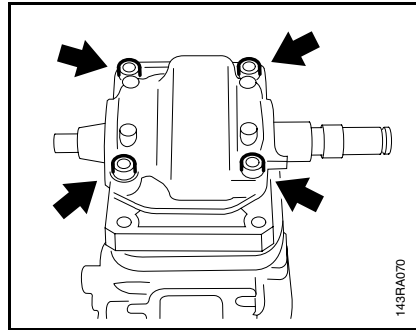
4.5 Cylinder



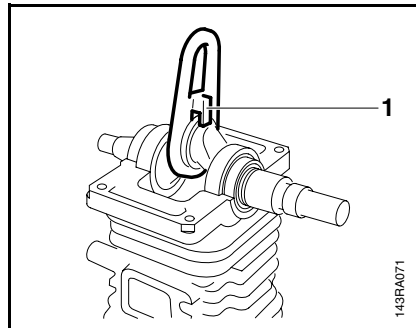
- Use the press sleeve (1) to press home the oil seal.
- Unscrew the guide sleeve.
- Install the engine - see 4.3.



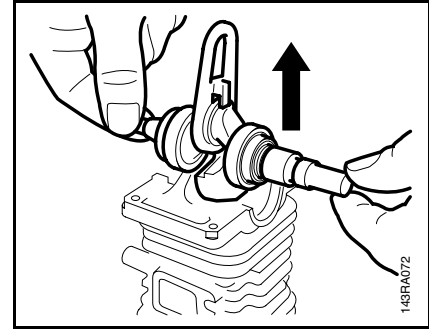
- Remove the engine - see 4.3.
- Take the ring (1) and manifold (2) off the intake port.



- Unscrew the engine pan mounting screws.
- Pull the engine pan off the cylinder.



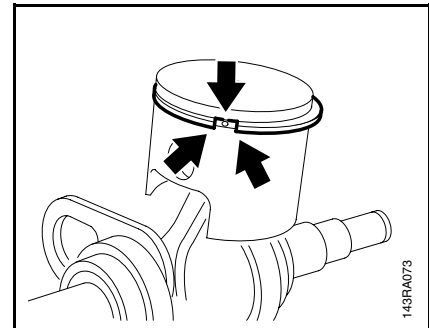
Note: Fit the clamp (1) on the connecting rod to prevent it slipping off the crankshaft while the piston is being removed.



- Lift the crankshaft and pull the piston out of the cylinder.
- Inspect the cylinder and replace it if necessary.

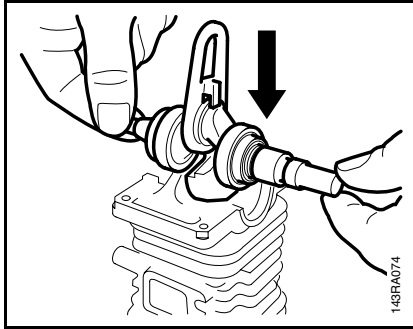
Note: If a new cylinder has to be installed, always fit the matching piston. Replacement cylinders are only supplied complete with piston for this reason.

- Thoroughly clean all residue of sealant from the cylinder and engine pan mating faces.
- Lubricate piston and piston ring with oil.



- Position the piston ring so that the radii at the ring gap meet at the fixing pin in the piston groove when the ring is compressed.

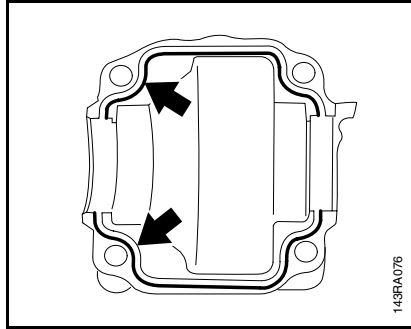
4.6 Piston



- Apply a thin coating of sealant to the outer diameters of the oil seals, see 11.2.

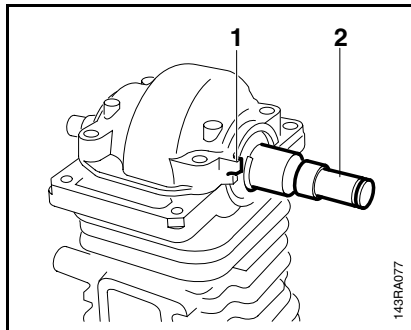
- Slide piston carefully into the cylinder.

Note: The piston ring is compressed by the inner taper of the cylinder.



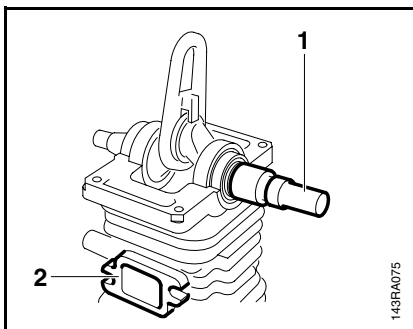
- Apply a thin bead of sealant to the engine pan mating face, see 11.2.

Note: Follow manufacturer's instructions for use of sealant.

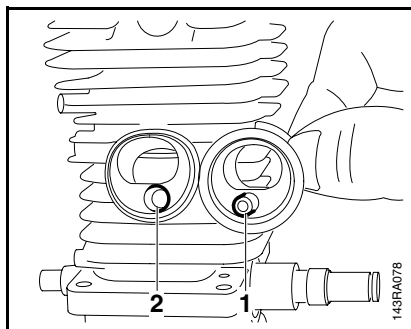


- Fit the engine pan so that the seat (1) for the oil pump is at the same side as the long crankshaft stub (2).

- Insert screws and torque down to 9.5 Nm (7.0 lbf.ft).

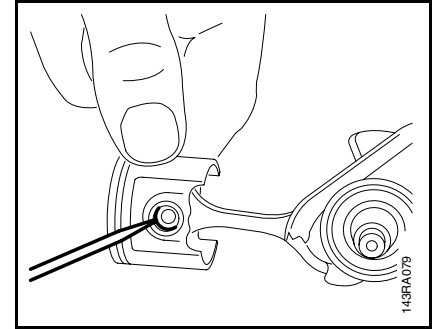


- Line up the crankshaft so that the long crankshaft stub (2) points to the right when viewed from the exhaust port (2).



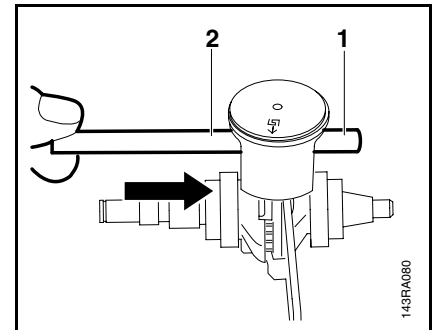
- Push the manifold on to the intake port so that the peg (1) engages the hole (2).

- Install the engine - see 4.3.



- Pull the piston out of the cylinder - see 4.5.

- Use a scribe or similar tool to ease the hookless snap rings out of the grooves in the piston bosses.

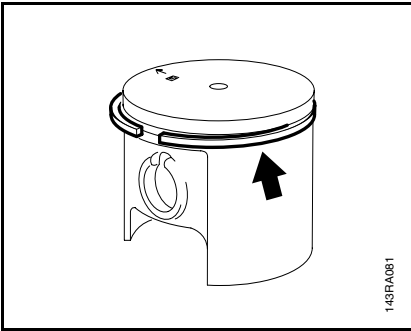


- Use the assembly drift (2) to push the piston pin (1) out of the piston.

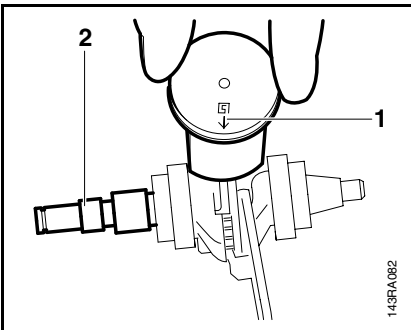
Note: If the piston pin is stuck, tap the end of the drift **lightly** with a hammer. **Important:** Hold the piston steady during this process to ensure that no jolts are transmitted to the connecting rod.

- Remove the piston from the connecting rod.

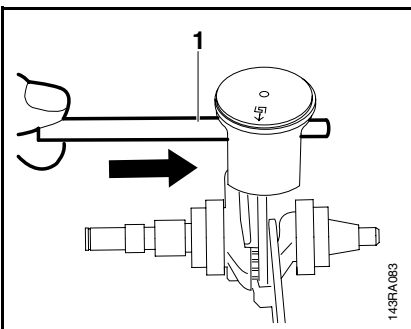
4.7 Piston Ring



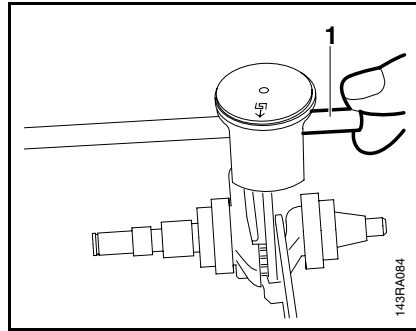
- Inspect piston ring and replace if necessary - see 4.7.
- Oil needle cage in the small end.
- Heat the piston on an electric heating plate to approx. 60°C (140°F).



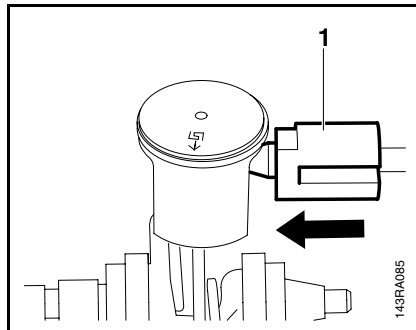
- Slip the piston over the connecting rod so that the arrow (1) on the piston head points towards you when the long stub (2) of the crankshaft points to the left.



- Push the assembly drift (1), small diameter first, through the piston and small end (needle cage) and line up the piston.



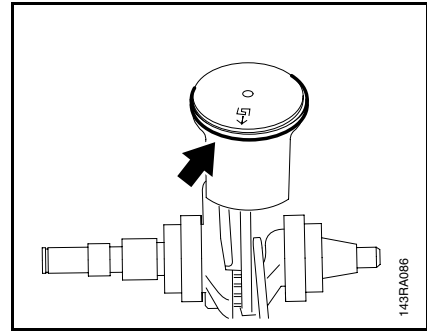
- Fit the piston pin (1) on the assembly drift (2) and slide it into the piston (the pin slides home easily if the piston is hot).



- Fit the snap rings. To do this, Apply the installing tool (1) to the piston boss, hold the piston steady, center the tool shank exactly and press home until the snap ring slips into the groove.

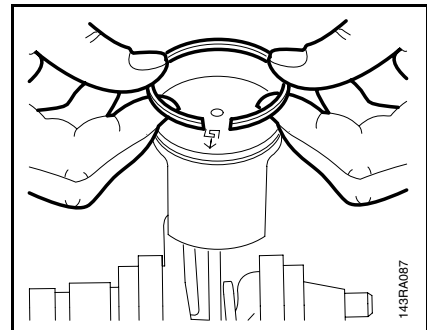
Note: For instructions on how to use installing tool, see „General Servicing, Troubleshooting“ handbook.

- Install the piston - see 4.5.



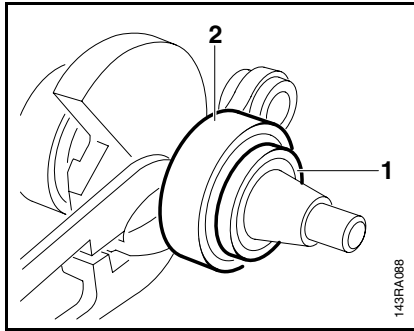
- Remove the piston - see 4.5.
- Remove ring from piston.

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

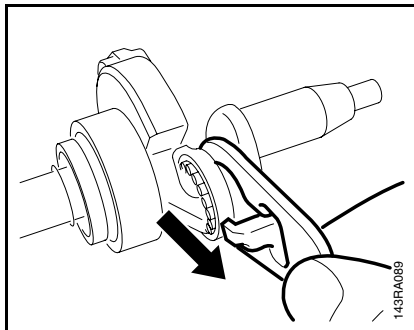


- Install the new piston ring in the groove so that the radii face upward.
- Install the piston - see 4.5.

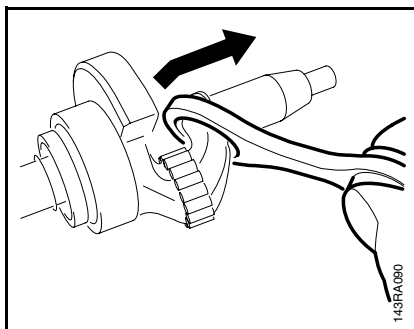
4.8 Connecting Rod



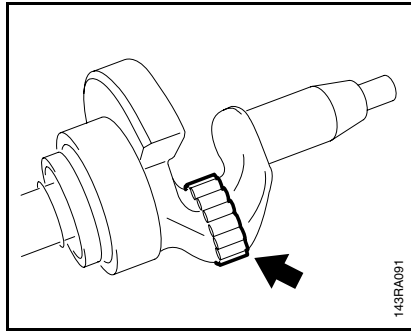
- Remove the piston - see 4.6.
- Pull the oil seal (1) and ball bearing (2) off the short crankshaft stub.



- Remove the clamp from the connecting rod.



- Remove the connecting rod from the crankshaft.

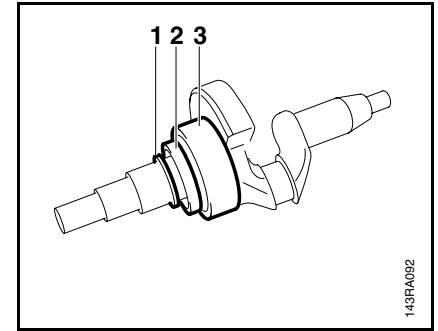


- Remove cylindrical rollers from the crankshaft.

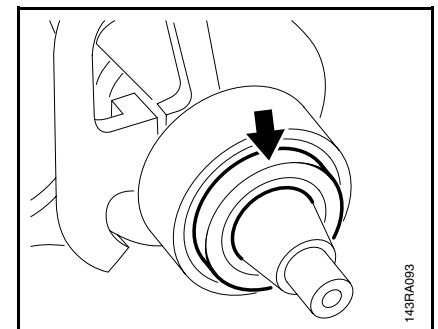
Note: Cylindrical rollers are available in three tolerance groups. Always replace cylindrical rollers in complete sets (13 per set) to ensure that they are all of the same tolerance group.

- Use grease, see 11.2, to stick the cylindrical rollers to the crankshaft.
- Slide the connecting rod into position and secure it with the clamp.
- Heat ball bearing to approx. 50°C (120°F) and push it on to the crankshaft stub as far as stop.
- Coat sealing lip of oil seal with oil.
- Slide oil seal on to crankshaft stub so that the clamping ring points outward (sealing lip also points outward).
- Install the piston - see 4.6.

4.9 Crankshaft



- Remove the connecting rod - see 4.8.
- Pry out the retaining ring (1).
- Pull off the oil seal (2) and ball bearing (3).
- Heat ball bearing to approx. 50°C (120°F) and push it on to the crankshaft stub as far as stop.
- Coat sealing lip of oil seal with oil.
- Slide oil seal on to crankshaft stub so that the clamping ring points outward (sealing lip also points outward).
- Install the connecting rod - see 4.8.

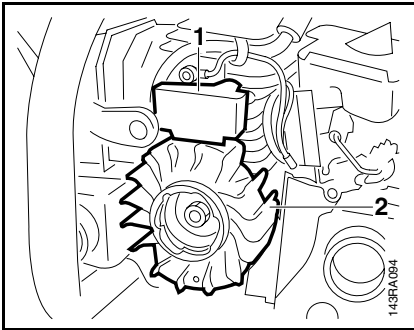


- Apply thin coating of sealant, see 11.2, to outside diameter of oil seals.

5. IGNITION SYSTEM

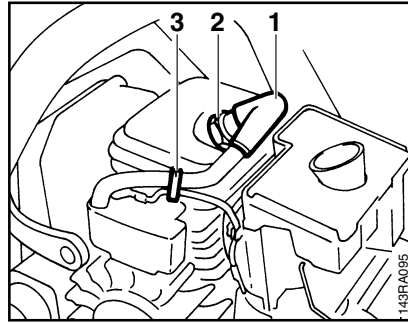
Warning! Exercise extreme caution when carrying out maintenance and repair work on the ignition system. The high voltages which occur can cause serious or even fatal accidents!

Troubleshooting on the ignition system should always begin at the spark plug. See „General Servicing, Troubleshooting“ handbook.

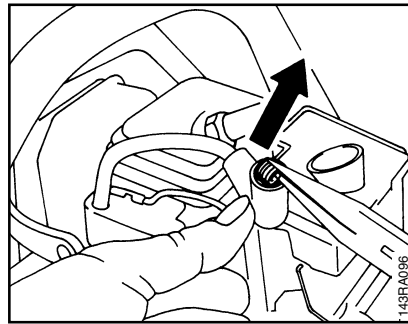


The electronic (breakerless) ignition system basically consists of an ignition module (1) and fly wheel (2).

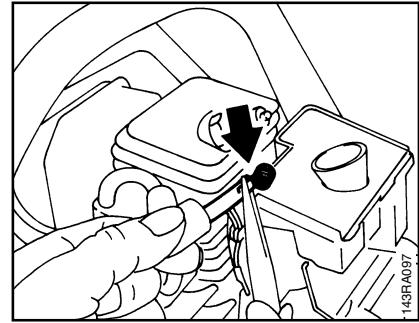
5.1 Spark Plug Terminal



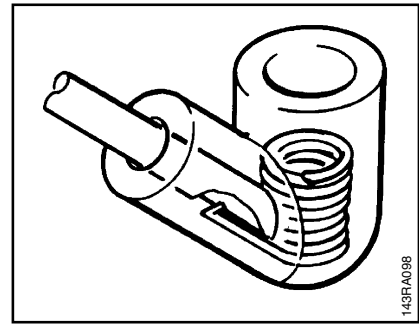
- Remove the shroud - see 3.3.
- Pull the terminal (1) off the spark plug (2).
- Pull the ignition lead out of the retainer (3).



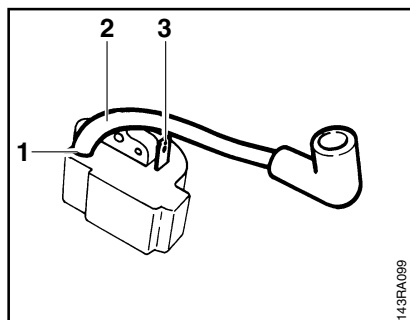
- Use pliers to grip the leg spring and pull it out of the spark plug terminal.
- Unhook the leg spring from the ignition lead.
- Pull spark plug terminal off the ignition lead.
- Coat end of the ignition lead (about 20 mm/3/4") with oil.
- Fit spark plug terminal over the ignition lead.
- Use pliers to grip the end of the ignition lead inside the spark plug terminal and pull it out.



- Pinch the hook of the leg spring into the center of the lead, i.e. about 8 mm (0.3") from the end of the lead.



- Pull the lead back into the terminal so that the leg spring locates properly inside it (see illustration).
- Push the ignition lead into the retainer, see 5.5.
- Fit terminal on spark plug.
- Fit the shroud - see 3.3.



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

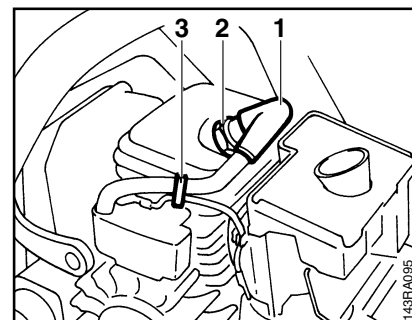
1. the high voltage output (1) with ignition lead (2)
2. the connector tag (3) for the short circuit wire

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

Ignition timing on the electronic (breakerless) magneto ignition system is fixed at 1.3 mm (0.050") B.T.D.C. at 8,000 rpm and is not adjustable.

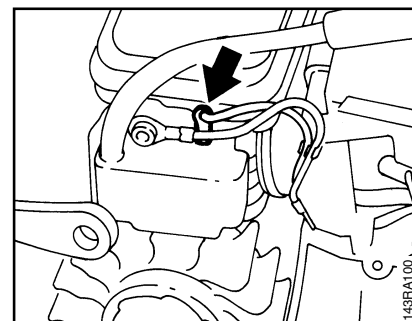
However, in view of the permissible tolerances in the electronic circuit, it may vary between 1.0 and 1.6 mm (0.040" and 0.060") B.T.D.C. at 8,000 rpm.

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

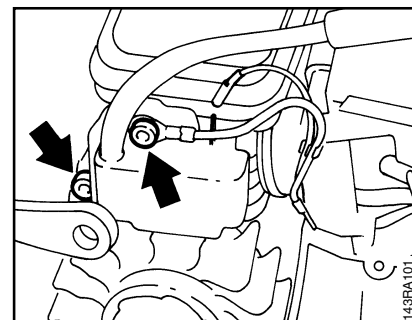


- Remove the shroud - see 3.3.

- Pull the terminal (1) off the spark plug (2).
- Pull the ignition lead out of the retainer (3).



- Pull the short circuit wire off the connector tag on the ignition module.



- Remove the ignition module mounting screws.
- Remove the ignition module.

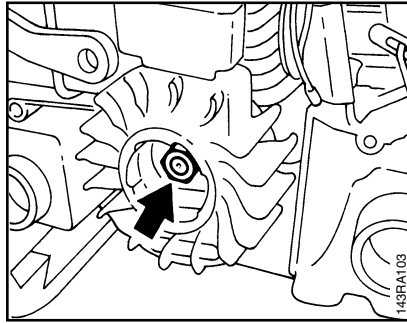
5.3 Flywheel

- Remove the spark plug terminal - see 5.1.

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

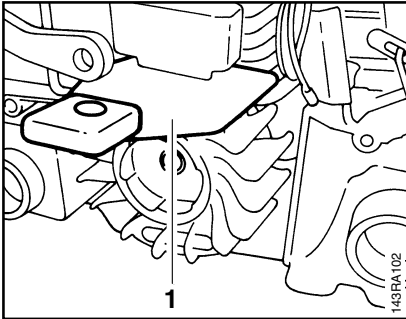
- Place the module in position, insert the screws but do not tighten them down yet.

Note: Secure the ground wire with the upper mounting screw.



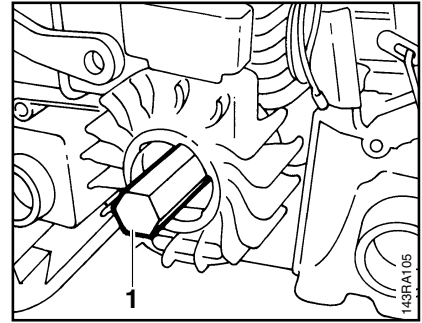
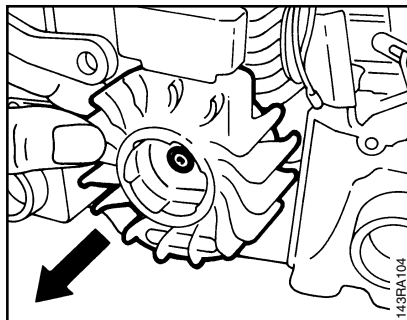
Removing the flywheel:

- Use locking strip to block piston - see 3.3.
- Remove the fan housing - see 6.2.
- Unscrew the flywheel nut.

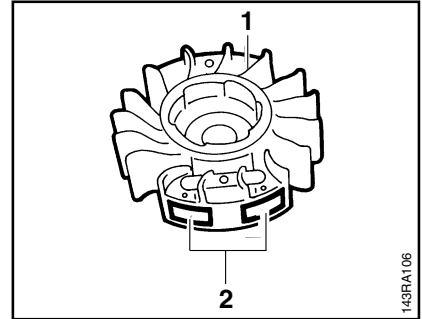


- Slide the setting gauge (1) between the arms of the ignition module and the flywheel magnets.
 - Press the ignition module against the flywheel and tighten down the mounting screws to a torque of 5.0 Nm (3.7 lbf.ft).
 - Push the ignition lead into the retainer, see 5.5.
 - Fit spark plug boot on spark plug.
- Caution:** Turn the ignition lead so that it does not rest against the cylinder head.
- Fit the shroud.

- Pull the flywheel off the crankshaft.



Note: If the flywheel cannot be pulled off by hand, screw the puller (1) on to the crankshaft stub. Free off the flywheel by lightly tapping the end of the puller. Unscrew the puller and remove the flywheel.



- Inspect the condition of the flywheel (1) and magnets (2). If you find any damage (e.g. cracks, broken fan blades), fit a new flywheel.

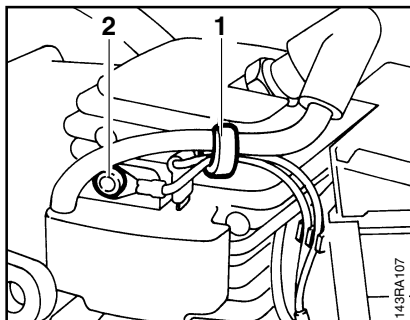
Installing the flywheel:

Important: Clean the stub of the crankshaft and the flywheel hub bore with a standard commercial, solvent-based degreasant containing no chlorinated or halogenated hydrocarbons - see 11.2.

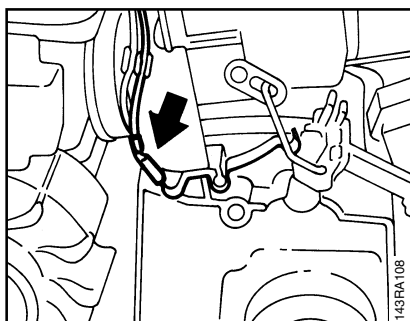
- Fit the flywheel.
- Tighten down flywheel nut to 27.5 Nm (20.2 lbf.ft).

Assembly of the remaining parts is now a reversal of the disassembly sequence.

5.4 Ground Wire

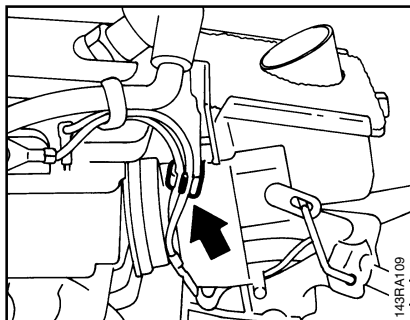


- Remove the fan housing - see 6.2.
- Pull retainer (1) off the ignition lead.
- Take the upper screw (2) out of the ignition module.



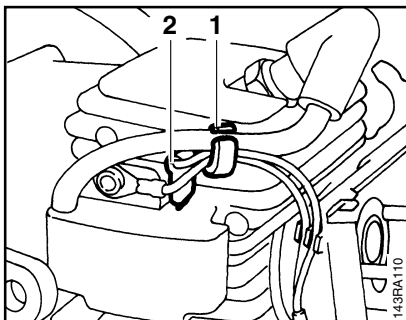
- Pull the ground wire off the contact spring.

Reassemble in the reverse sequence.

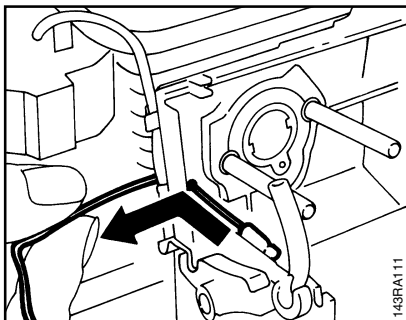


Note: After installing, push the ground wire between the retaining lugs. Push ignition lead into the retainer, see 5.5.

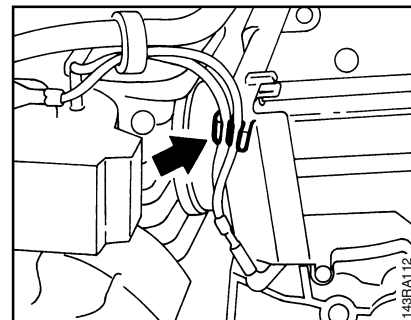
5.5 Short Circuit Wire



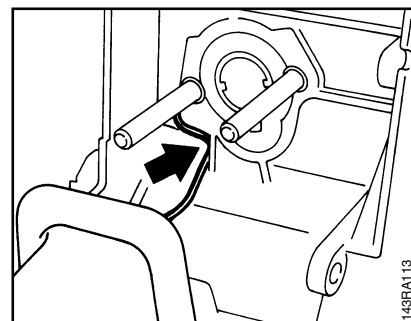
- Remove the fan housing - see 6.2.
- Remove the carburetor - see 10.3.2.
- Pull the retainer (1) off the ignition lead.
- Pull short circuit wire (2) off the connector tag on the ignition module.



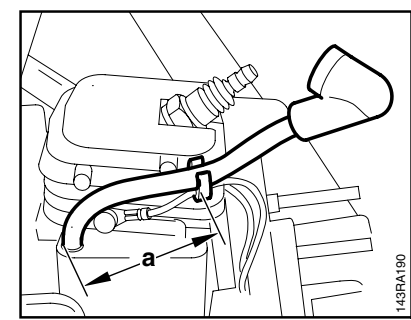
- Pull short circuit wire out of engine housing.
- Install in the reverse sequence.



Note: After installing, push the short circuit wire between the retaining lugs.



Push short circuit wire into recess next to intake opening.



Place short circuit wire and ground wire in the retainer. Push the ignition lead into the retainer so that dimension „a“ is about 60 mm (2.5").

6. REWIND STARTER

6.1 General

If the action of the starter rope becomes very stiff and the rope rewinds very slowly or not completely, it can be assumed that the starter mechanism is in order but plugged with dirt. At very low outside temperatures the lubricating oil on the rewind spring may thicken and cause the spring windings to stick together. This has a detrimental effect on the function of the starter mechanism. In such a case it is sufficient to apply a few drops of paraffin (kerosine) to the rewind spring.

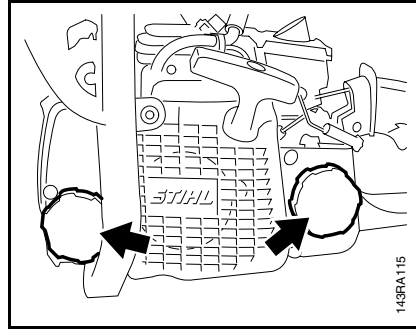
Then carefully pull out the starter rope several times and allow it to rewind until its normal smooth action is restored.

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

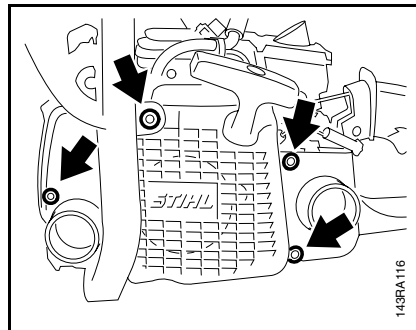
Wash all parts in paraffin or white spirit.

Lubricate the rewind spring and starter post with STIHL special lubricant, [see 11.2](#), before installing.

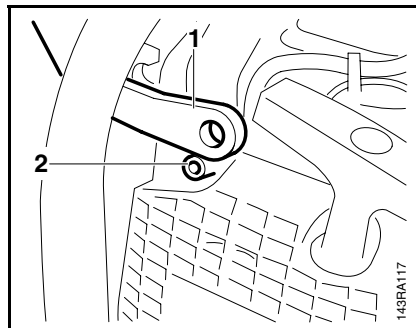
6.2 Fan Housing



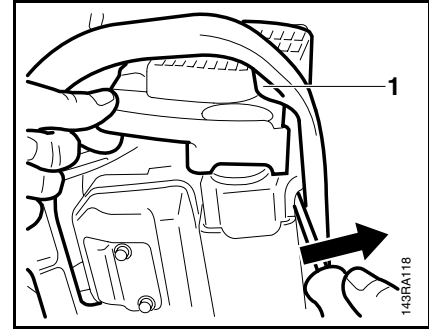
- Remove the shroud - see 3.3.
- Remove fuel tank and oil tank filler caps together with the cap retainers.
- Drain both tanks.



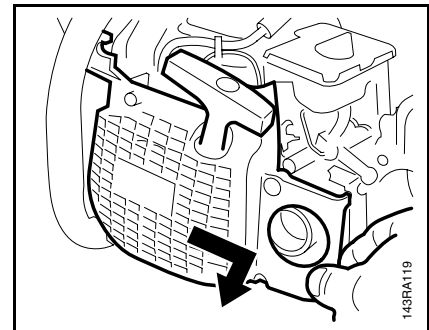
- Take out the fan housing mounting screws.



- Pull the hand guard (1) off the pin (2) on the fan housing.



- Push the hand frame to one side until the fan housing can be eased passed the corner (1) and removed.



- Pull the fan housing away to the rear.

Install in the reverse sequence.

6.3 Rewind Spring

6.3.1 Replacing

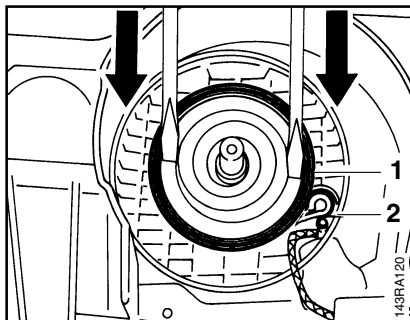
Troubleshooting chart - see „General Servicing, Troubleshooting“ handbook.

- Remove the fan housing - see 6.2.
- Pull out the starter rope about 5 cm (2") and hold the rope rotor steady.
- While still holding the rope rotor steady, take three full turns off the rope rotor.
- Pull out the rope with the starter grip and then let go of the rope rotor.

Note: The rope rotor will spin back and relieve the tension of the rewind spring. The rewind spring will not be under tension if the starter rope is broken.

- Remove the rope rotor, see „General Servicing, Troubleshooting“ handbook, use pliers to remove any remaining pieces of spring from the fan housing.

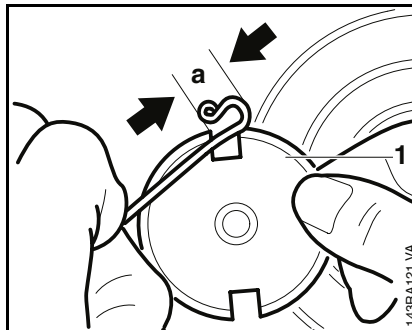
Note: The replacement spring comes ready for installation and is held by a retainer. It should be lubricated with a few drops of STIHL special lubricant before installation - see 11.2.



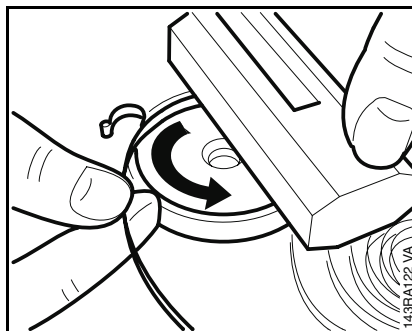
The retainer (1) slips off as the rewind spring is pressed into the fan housing. Engage the anchor loop (2) over the lug in the fan housing.

Caution: The rewind spring may pop out and uncoil during installation.

- If the rewind spring has popped out, refit it as follows:



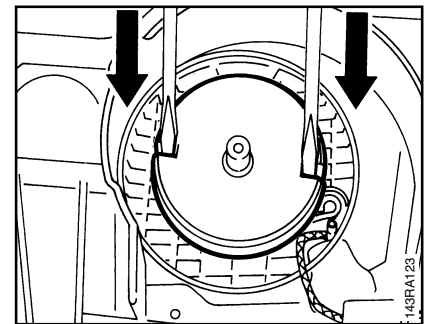
- Position anchor loop about 11 mm (0.4") (dimension 'a') from the edge of the assembly tool (1).



- Fit the rewind spring in the assembly tool in the counter-clockwise direction, starting outside and working inwards.

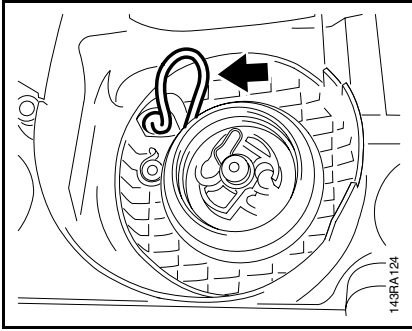
Note: The wooden assembly block can be placed over the assembly tool to simplify this operation.

- Slip the assembly tool with rewind spring over the starter post.

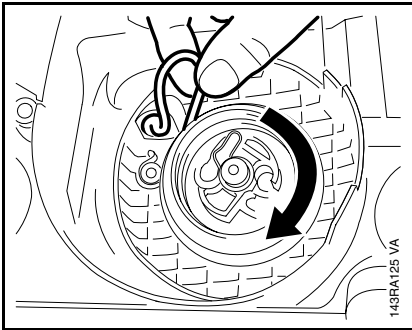


- Push the rewind spring into the fan housing and then remove the assembly tool.
- Install the rope rotor - see „General Servicing, Troubleshooting“ handbook.
- Tension the rewind spring - see 6.3.2.

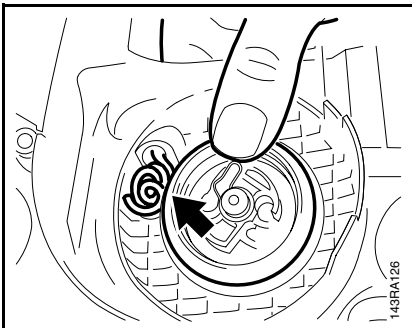
6.3.2 Tensioning



- Make a loop in the starter rope.



- Grip the rope **close** to the rotor and use it to turn the rope rotor six full turns clockwise.

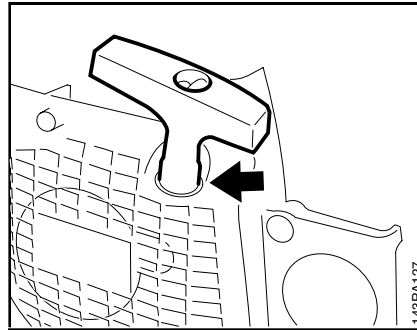


- Hold the rope rotor steady.
- Pull out the rope with the starter grip and straighten it out.

6.4 Starter Rope, Pawl, Rope Guide Bush

Note: For descriptions of procedures for replacing the pawl or the rope guide bush, see „General Servicing, Troubleshooting“ handbook.

- Hold the starter grip firmly to keep the rope tensioned.
- Let go of the rope rotor and slowly release the starter grip so that the rope winds itself onto the rotor.



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

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

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

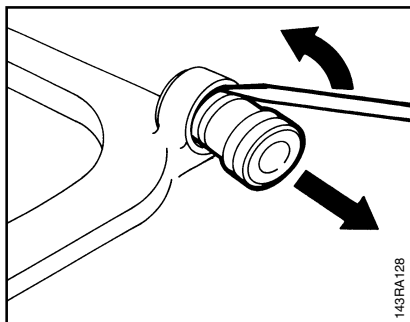
- Refit the fan housing - see 6.2.

7. AV HANDLE SYSTEM

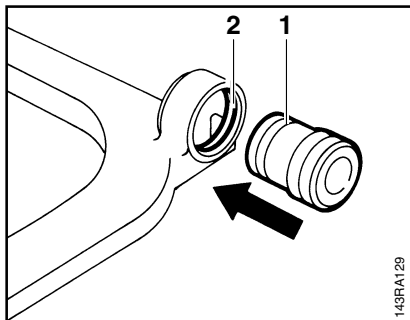
Rubber anti-vibration buffers are installed between the engine housing and handle frame. Damaged rubber buffers (annular buffers) must always be replaced in sets.

- Remove the handle frame - see 8.4.

Annular buffer in handle frame:



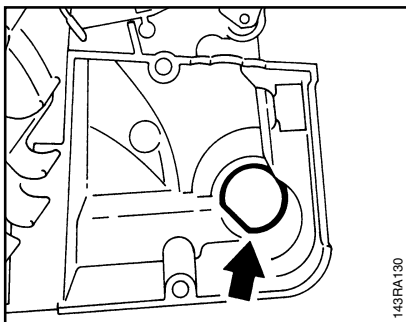
- Pry the annular buffer out of the handle frame.



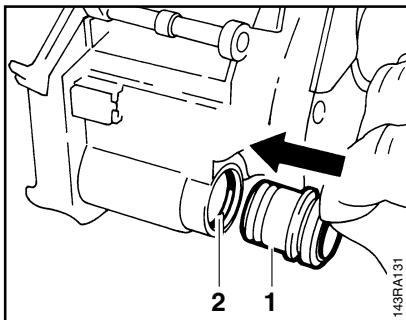
- Push the new annular buffer into the handle frame until its groove (1) engages the inner rib (2).

Lower annular buffer in engine housing

- Remove the fuel tank - see 10.7.



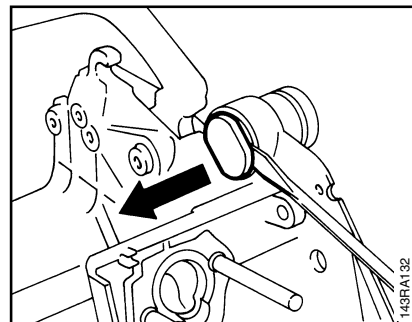
- Pry the plug out of the annular buffer.
- Pry annular buffer out of engine housing.



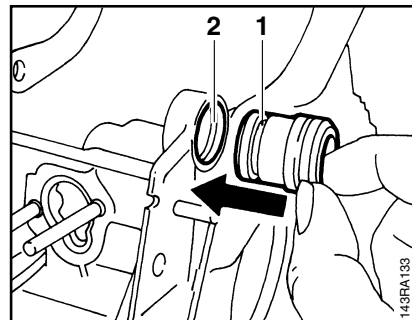
- Push the new annular buffer into housing from outside until its groove (1) engages the inner rib (2).

Upper annular buffer in engine housing

- Remove the engine - see 4.3.



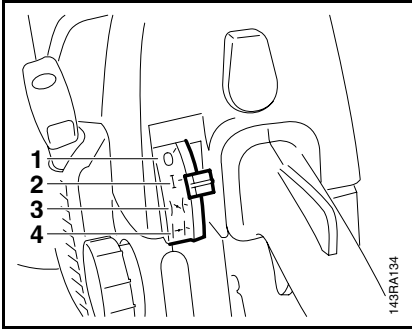
- Pry the plug out of the annular buffer.
- Pry annular buffer out of engine housing.



- Push the new annular buffer into housing from outside until its groove (1) engages the inner rib (2).

8. MASTER CONTROL/HANDLE SYSTEM

8.1 Switch

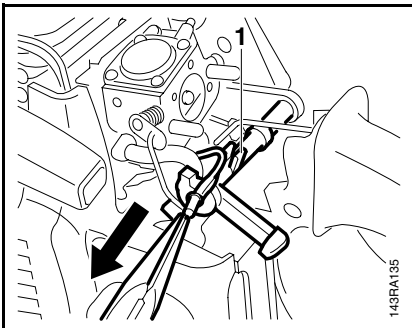


The thumb-operated Master Control lever moves the switch shaft to select the required function.

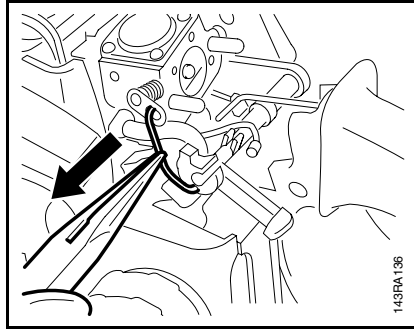
The following positions can be selected with the Master Control lever:

- STOP (1) (closes short circuit contact and interrupts ignition)
- RUN (2) (normal operating position)
- START (3) (warm start - starting throttle/choke shutter open)
- CHOKE (4) (cold start - starting throttle/choke shutter closed)

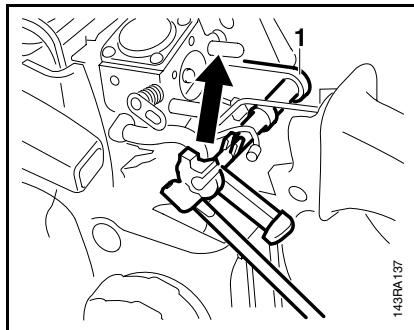
- Remove the filter housing - see 10.2.



- Pull short circuit wire out of connector (1) on switch shaft.
- Pull contact sleeve of short circuit wire out of switch shaft.

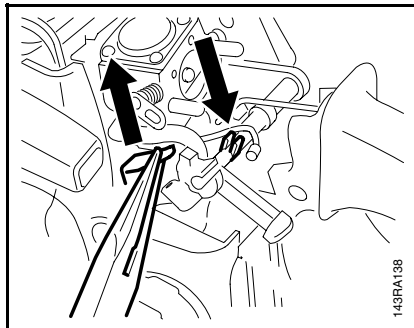


- Set Master Control to "CHOKE" (4)
- Pull choke rod out of the switch shaft and choke shaft.



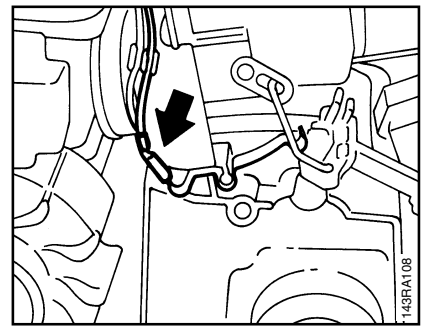
- Pry the switch shaft out of its pivot mount.
- Pull the switch shaft out of the bore (1).

Reassemble in the reverse sequence.



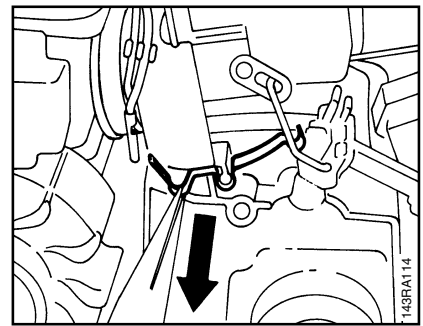
Note: The contact spring must be lifted slightly to install the switch shaft. Press switch shaft into its pivot mount.

8.2 Contact Spring



- Remove the fan housing - see 6.2.

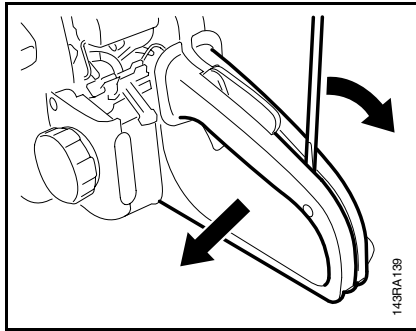
- Pull ground wire off the contact spring.



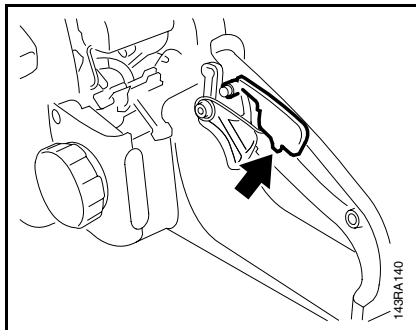
- Pull the contact spring out of its seat in the engine housing.

Reassemble in the reverse sequence.

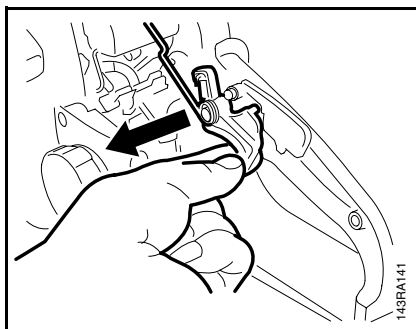
8.3 Throttle Trigger/Interlock Lever



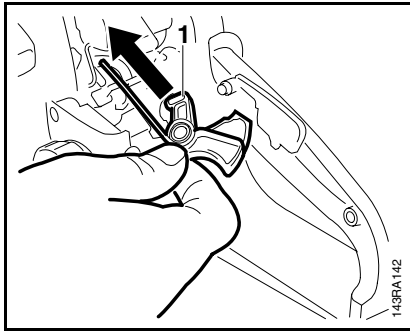
- Remove the shroud - see 3.3.
- Pry the handle molding off the handle frame.



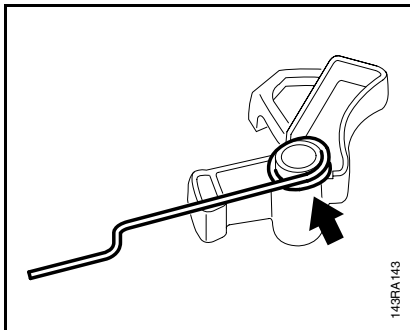
- Take the torsion spring out of its seat in the interlock lever.



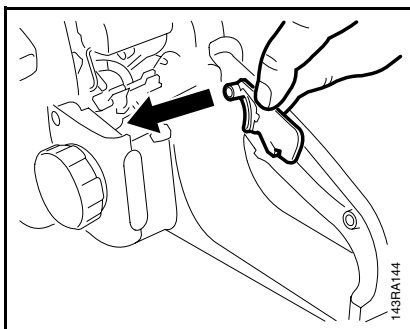
- Remove the throttle trigger from the pivot.



- Take the throttle trigger off the throttle rod (1).

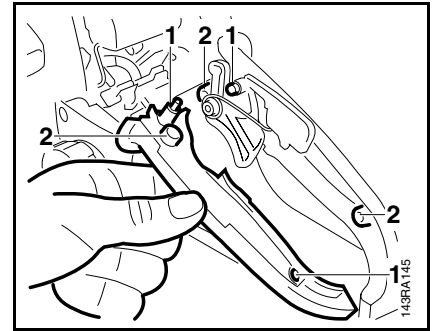


- Take the torsion spring off the throttle trigger.



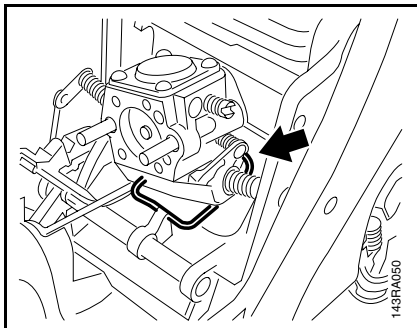
- Pull the interlock lever off the pivot.

Reassemble in the reverse sequence.

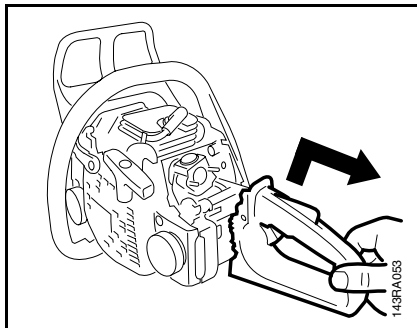


Note: Engage pivots (1) in holes (2) and press handle molding home until it snaps into position.

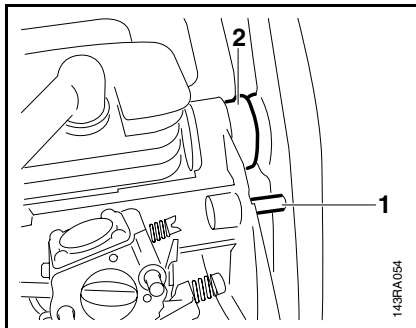
8.4 Handle Frame



- Remove the filter housing - see 10.2.
- Disconnect throttle rod from the throttle shaft.

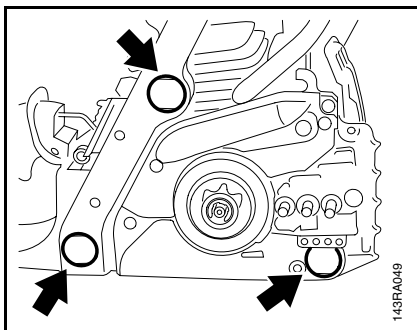


- Push the handle frame to one side and lift it away.

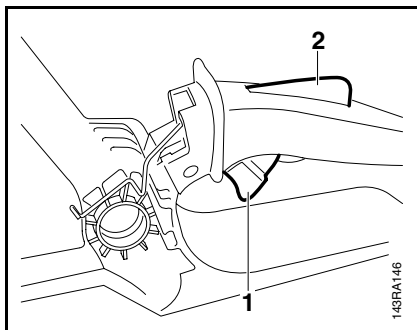


Note: The pin (1) must engage the hole.

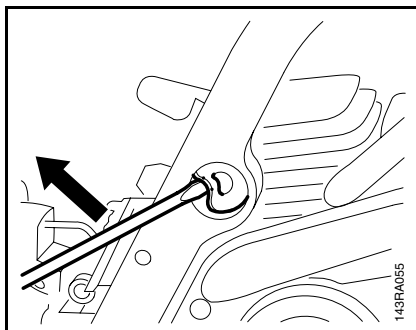
The groove (2) must engage the inner rib in the handle frame.



- Pry the plugs out of the annular buffers.

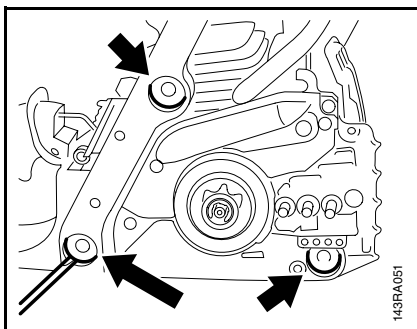


- Remove the throttle trigger (1) and interlock lever (2) - see 8.3.

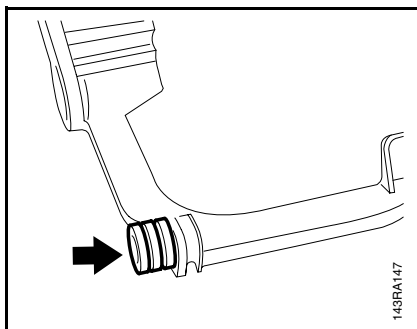


- Install annular buffer in handle frame.

- Fit plugs in the annular buffers.
- Fit the filter housing - see 10.2.



- Push the annular buffers out of their seats.



- Remove the annular buffer - see 7.

Reassemble in the reverse sequence.

9. CHAIN LUBRICATION

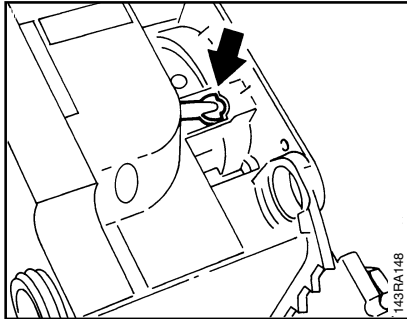
9.1 Oil Pump

Impurities gradually clog the fine pores of the filter with tiny particles of dirt. This prevents the oil pump from supplying sufficient oil to the bar and chain. In the event of problems with the oil supply system, first check the oil tank and the pickup body. Clean the oil tank if necessary.

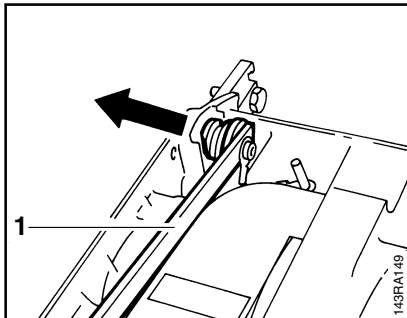
Troubleshooting chart - see „General Servicing, Troubleshooting“ handbook.

Removing oil pump:

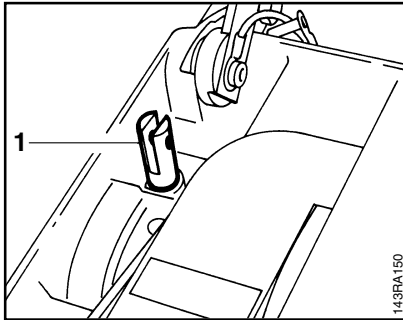
- Remove the handle frame - see 8.4.



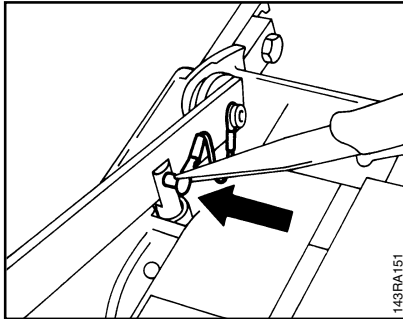
- Pry the suction hose out of its seat.



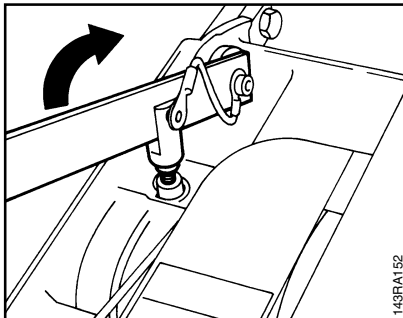
- Fit lever (1) of installing tool in the bore for the annular buffer - from inside.
- Swing the lever up and out of the way.



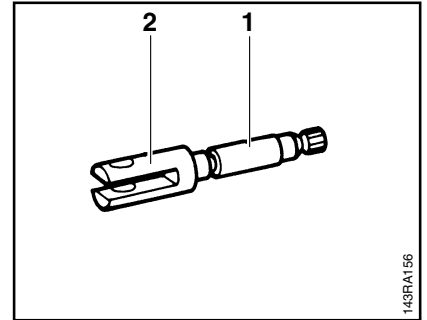
- Screw puller (1) into the oil pump.



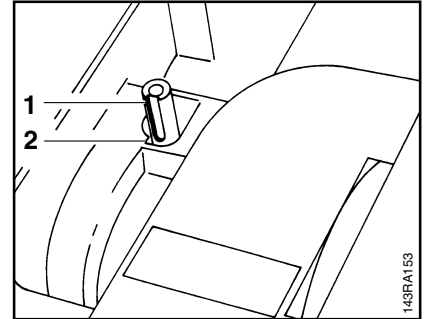
- Swing lever down into puller.
- Push connecting pin through hole marked „1130“.



- Push lever upward to pull the oil pump out of the housing.

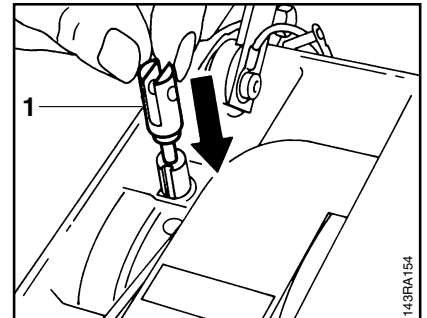


- Unscrew the oil pump (1) from the puller (2).



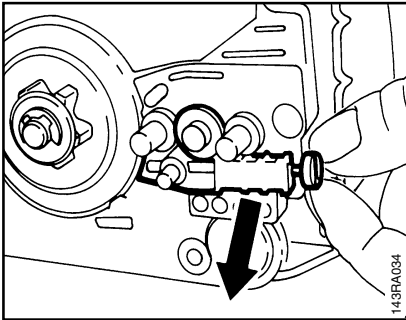
Installing the oil pump:

- Place the oil pump in position so that the left edge (1) of the groove lines up with the step (2).

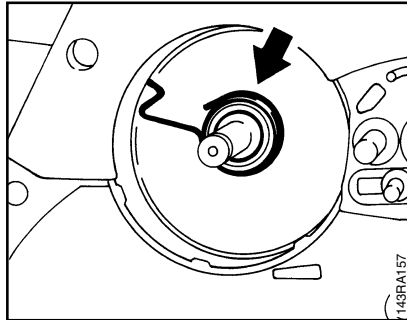


- Insert installer (1) with straight stem in the oil pump.

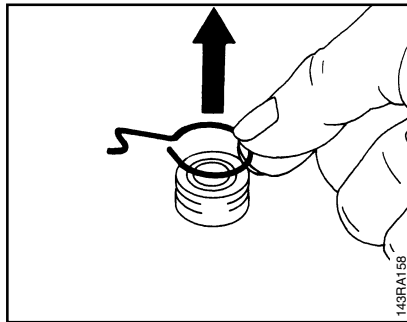
9.2 Worm



- Swing lever down into installer.
- Push connecting pin through hole marked „1130“.
- Press lever down until the installer butts against the housing. The oil pump is thus installed at the right depth in the housing.
- Remove the lever.
- Push the suction hose into its seat.
- Fit the handle frame - see 8.4.



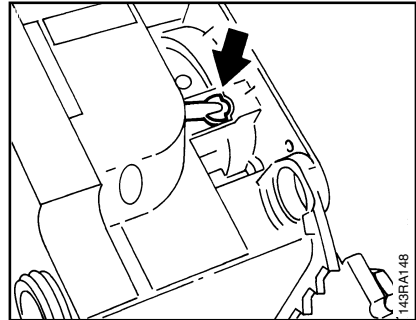
- Remove the clutch - see 3.3.
- Pull the worm with drive spring off the crankshaft stub.



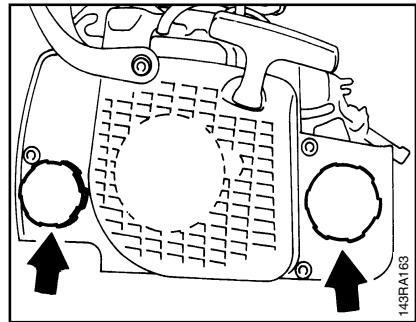
- Take the drive spring off the worm.

Reassemble in the reverse sequence.

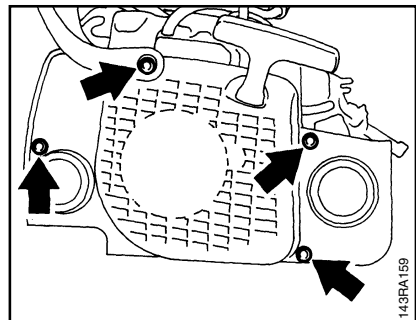
9.3 Oil Tank



- Remove the handle frame - see 8.4.
- Pry the suction hose out of its seat.

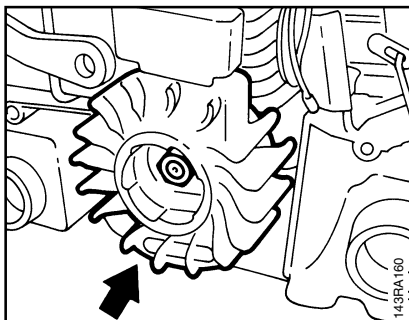


- Remove the oil and fuel tank filler caps together with the cap retainers.

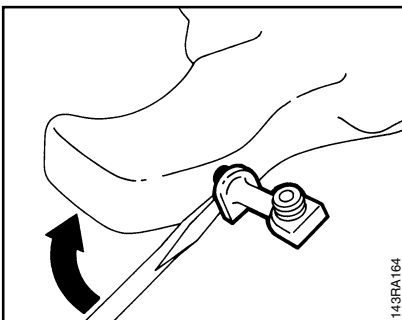


- Take out the fan housing mounting screws.
- Remove the fan housing.

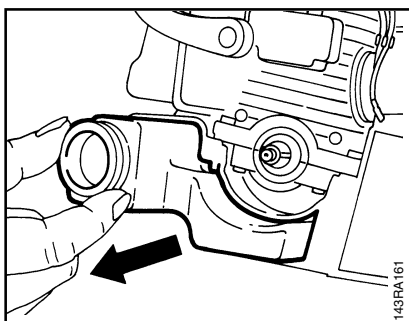
9.4 Suction Hose/ Pickup Body



- Remove the flywheel - see 5.3.

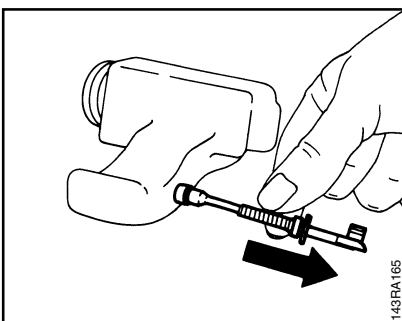


- Remove the oil tank - see 9.3.
- Pry flange of oil suction hose out of oil tank.



- Pull out the oil tank.

Reassemble in the reverse sequence.



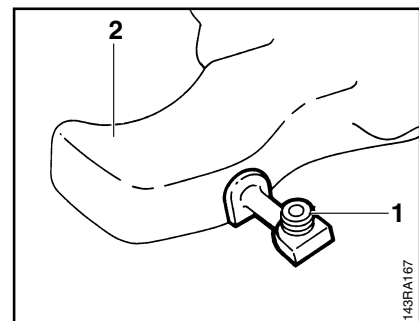
- Pull suction hose with pickup body out of oil tank.

- Wash the pickup body in white spirit and, if possible, blow it out with compressed air.

Note: Replace the pickup body if it is damaged.

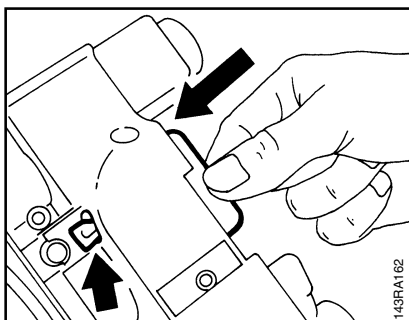
- Flush out the oil tank.
- Fit the suction hose, pickup body first, in the tank.
- Press the hose flange into position.

Note: Coat the hose flange with a little oil to simplify installation.

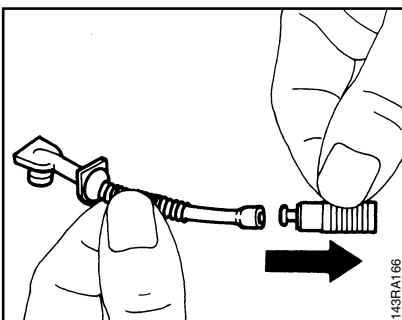


- Line up the suction hose so that its end (1) points to the center of the curved section (2).

- Install the oil tank - see 9.3.



Note: When reinstalling, pass the suction hose through the hole.



- Pull the pickup body off the suction hose.

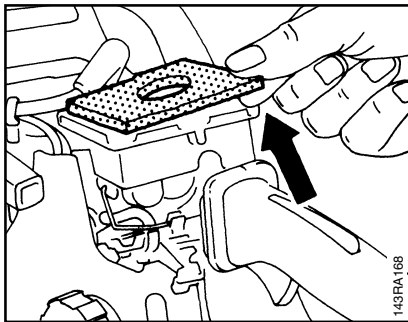
10. FUEL SYSTEM

10.1 Air Filter

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

The air filter should always be cleaned when engine power begins to drop off.

- Remove the shroud - see 3.3.
- Clean away any loose dirt from around the filter.

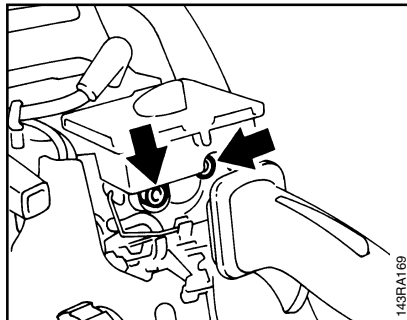


- Remove the filter element.
- Wash the filter element in a fresh, non-flammable cleaning solution (e.g. warm soapy water) and, if possible, blow out with compressed air. Soften encrusted dirt by soaking the parts in cleaning solution.

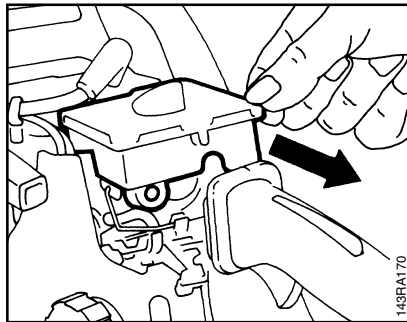
Note: If filter is damaged, install new part immediately.

Reassemble in the reverse sequence.

10.2 Filter Housing



- Remove the shroud - see 3.3.
- Unscrew the mounting nuts.



- Pull away the filter housing.
- Inspect the filter element - see 10.1.

Install in the reverse sequence.

Note: Tighten mounting nuts to 3.5 Nm (2.6 lbf.ft).

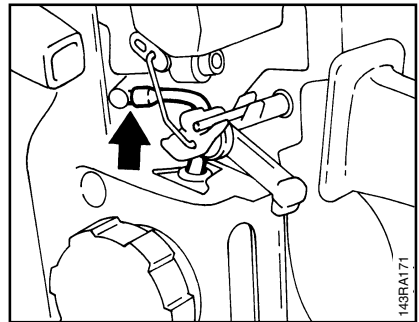
10.3 Carburetor

10.3.1 Leakage Testing

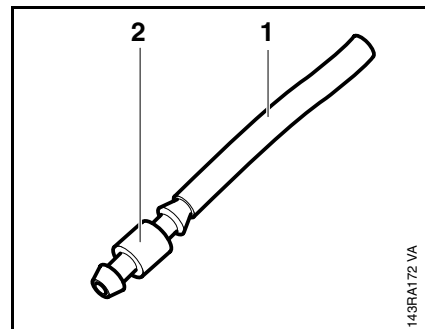
Troubleshooting chart - see „General Servicing, Troubleshooting“ handbook.

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

- Remove the shroud - see 3.3.

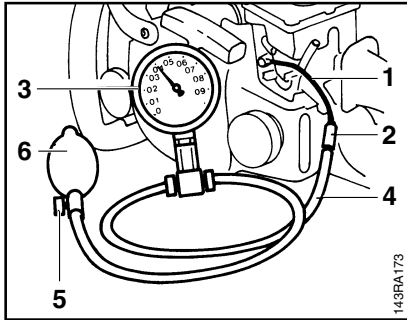


- Pull fuel hose off carburetor elbow connector.



- Push the fuel line (1) onto the nipple (2).

10.3.2 Removing and Installing



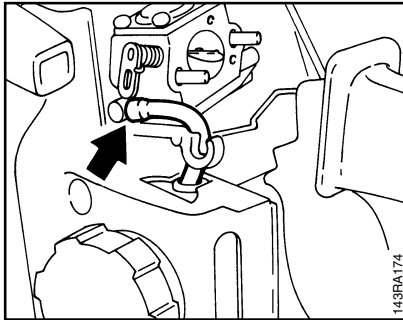
- Use fuel line (1) with nipple (2) as adapter to make connection between tester and carburetor elbow connector.
- Push the nipple into the tester's pressure hose (4).
- Close the vent screw (5) on the rubber bulb (6) and pump air into the carburetor until the pressure gauge shows a reading of approx. 0.4 bar (5.8 psi).

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

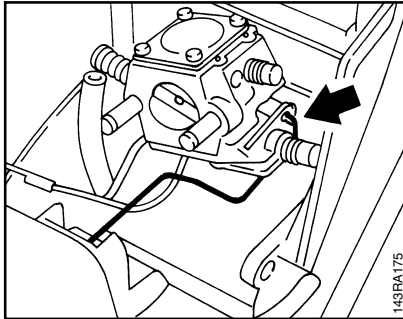
1. The inlet needle is not sealing (foreign matter in valve seat or sealing cone of inlet needle is damaged or inlet control lever sticking).
2. The metering diaphragm is damaged.

In either case the carburetor must be removed and serviced - see „Carburetor“ handbook.

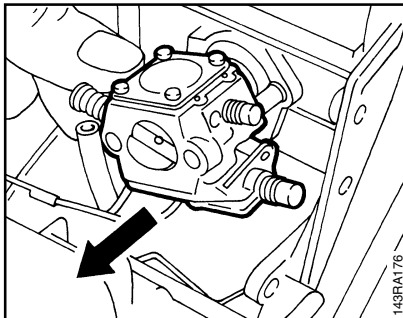
- After completing test, open the vent screw and pull the fuel line off the elbow connector.
- Push the fuel hose onto the carburetor elbow connector.
- Fit the shroud - see 3.3.



- Remove the switch shaft - see 8.1.
- Pull the fuel hose off carburetor elbow connector.

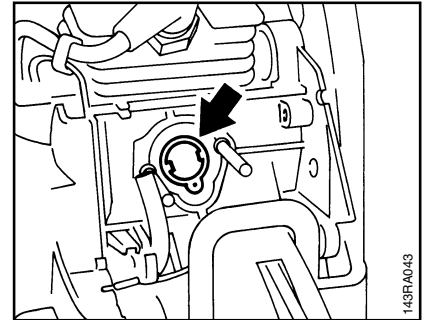


- Disconnect the throttle rod from the throttle shaft.



- Pull the carburetor off the mounting studs.

Install in the reverse sequence.



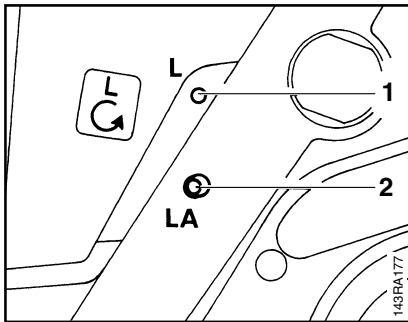
Note: Before installing carburetor, check that sleeve is in position in manifold.

10.4 Carburetor Adjustment

The carburetor is equipped with a fixed jet in place of the high speed adjusting screw (H screw).

Maximum engine speed is permanently set and cannot be adjusted. Only the engine idle speed can be adjusted within fine limits.

The carburetor guarantees an optimum fuel-air mixture in all operating conditions.



Standard setting

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

Carefully screw down the low speed adjusting screw (**L**) until it is hard against its seat. Then open it one full turn counterclockwise.

- Check chain tension.
- Check air filter and clean if necessary.
- Start the saw - warm up the engine.
- Adjust idle speed correctly (chain must not rotate).

Adjusting idle speed

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

Note: Turn screws very slowly and carefully - even slight adjustments produce a noticeable change in engine running behavior.

Engine stops while idling – Check standard setting.

Turn idle speed stop screw (**LA**) clockwise until the chain begins to run - then turn it back one quarter turn.

Chain runs while engine is idling –Check standard setting.

Turn the idle speed stop screw (**LA**) counterclockwise until the chain stops running - and then turn it about another half turn in the same direction.

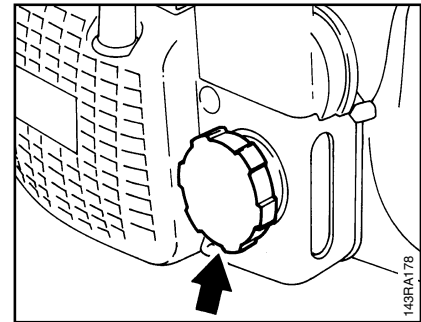
Erratic idling behavior, poor acceleration - even though low speed adjusting screw is one turn open

Idle setting too lean.
Turn the low speed adjusting screw (**L**) counterclockwise until the engine runs and accelerates smoothly.

10.5 Pickup Body

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

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

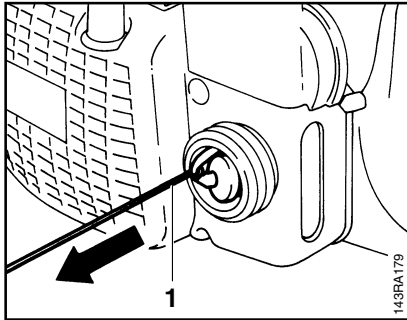


Cleaning the fuel tank

- Unscrew the filler cap and drain the tank.
- Pour a small amount of clean gasoline into the tank.
- Close the tank and shake the saw vigorously.
- Open the tank again and drain it.

Note: Dispose of old fuel at approved disposal site.

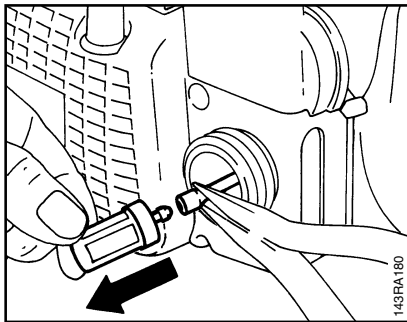
10.6 Tank Vent



Pickup body

- Use the assembly hook (1) to pull the pickup body out of the fuel tank.

Note: Do not stretch the fuel hose while removing it.



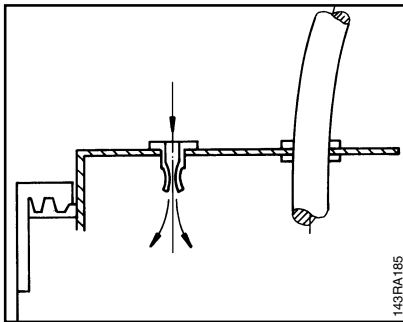
- Pull the pickup body off the fuel hose.

- Fit a new pickup body.

Reassemble in the reverse sequence.

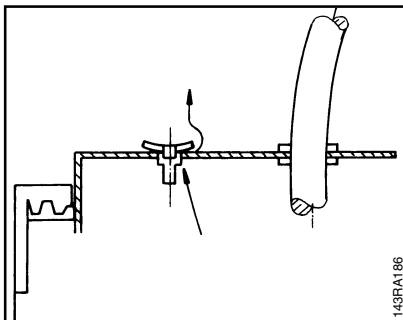
Correct operation of the carburetor is only possible if atmospheric pressure and internal fuel tank pressure are equal at all times. This is ensured by the tank vent.

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



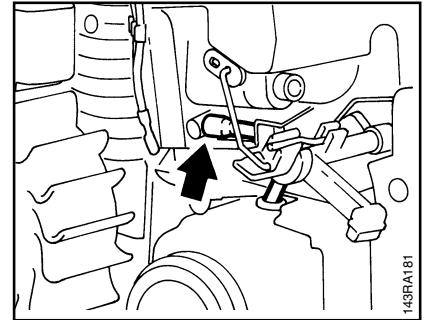
Equalization of pressure from the outside inwards takes place via the valve.

Note: Valve opening must be clean.



Equalization of pressure from the inside outwards takes place passed the sides of the valve.

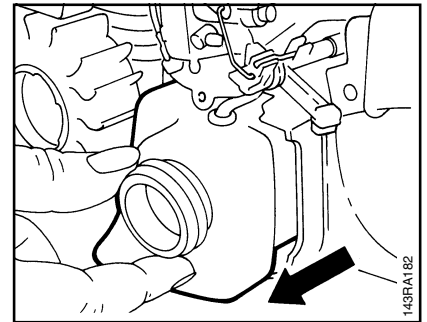
10.7 Fuel Tank



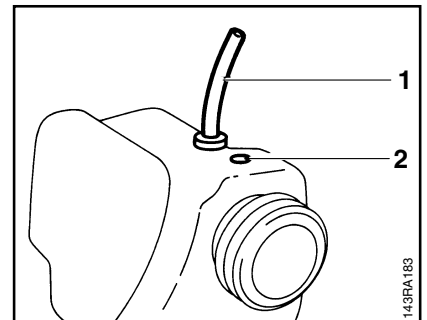
- Remove the fan housing - see 6.2.

- Drain the fuel tank.

- Pull fuel hose off carburetor elbow connector.



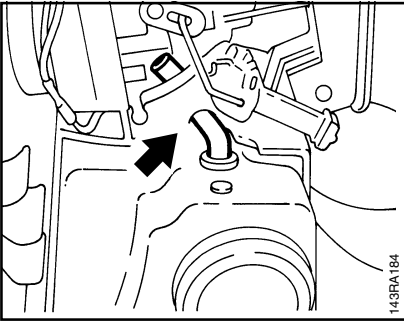
- Pull the fuel tank out of the engine housing.



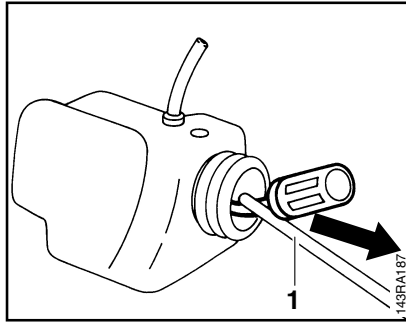
- Remove the fuel hose (1) and valve (2).

Reassemble in the reverse sequence.

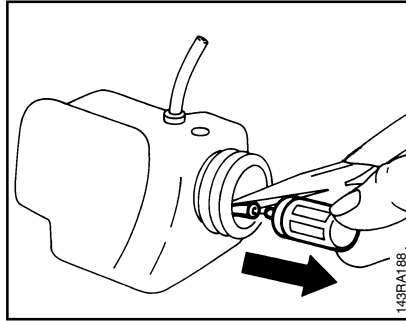
10.8 Fuel Hose



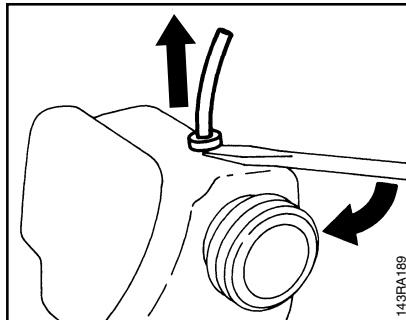
Note: When pushing the fuel tank into position, route the fuel hose between the straps on the engine housing (see illustration).



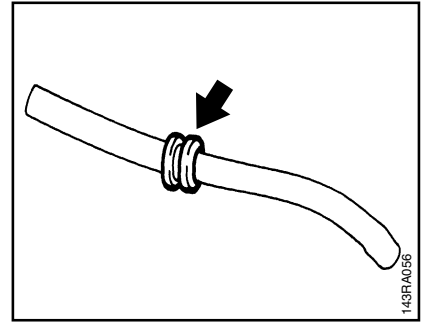
- Remove the fuel tank - see 10.7.
- Use assembly hook (1) to pull the pickup body out of the tank.



- Pull the pickup body off the fuel hose.



- Pry the grommet out of the tank and pull out the fuel hose.



- Pull the grommet off the fuel hose.

Reassemble in the reverse sequence.

Note: Coat the grommet with a little oil to simplify installation.

11. SPECIAL SERVICING TOOLS AND AIDS
11.1 Special Servicing Tools

No.	Part Name	Part No.	Application	Rem.
1	Locking strip for piston	0000 893 5903	Blocking the crankshaft	
2	Sealing plate	0000 855 8106	Sealing exhaust port for leakage test	
3	- Flange	1123 855 4200		
4	- Bushing	1123 851 8300		
5	Test flange	1118 850 4200	Leakage test	
6	Carburetor and crankcase tester	1106 850 2905	Testing engine housing and carburetor for leaks	
7	Vacuum pump	0000 850 3501	Testing engine housing for leaks	
8	- Nipple	0000 855 9200		
9	- Fuel line	1110 141 8600		
10	Puller	0000 890 4400	Removing oil seals	
11	- Jaws (No. 3.1)	0000 893 3706		
12	Press sleeve	1123 893 2400	Installing oil seals	
13	Guide sleeve	1123 894 7700	Protecting oil seal at starter side	
14	Clamp	1120 893 9100	Holding big end bearing	
15	Assembly drift	1114 893 4700	Fitting piston pin	
16	Installing tool 8	5910 890 2208	Fitting hookless snap rings in piston	
17	Assembly tool	1117 890 0900	Fitting brake spring	
18	Stud puller M8	5910 893 0501	Removing bar mounting studs	
19	Setting gauge	1111 890 6400	Setting air gap between ignition module and flywheel	
20	Assembly tool	1116 893 4800	Installing rewind spring	
21	Assembly tool	1123 890 2200	Removing oil pump	
22	- Puller	1130 893 1400		
23	- Installer	1130 893 1500		
24	Assembly hook	5910 893 8800	Removing pickup body (fuel)	
25	Assembly stand	5910 850 3100	Holding saw for repairs	
26	Clamping rail	5910 890 2000	For mounting saw to assembly stand	
27	Torque wrench	5910 890 0301 5910 890 0302	Screw assemblies (0.5 to 18 Nm)	1)
28	Torque wrench	5910 890 0311 5910 890 0312	Screw assemblies (6 to 80 Nm)	1) 2)
29	Screwdriver QI-T27x150	5910 890 2400	For all IS screws	3)
30	Crimping tool	5910 890 8210	Attaching connectors to electrical wires	
31	Puller	1116 893 0800	Removing flywheel	
32	Socket, 13 mm	5910 893 5608	Flywheel nut	
33	Socket, 19 mm	5910 893 5612	Clutch	
34	Socket T 27x125	0812 542 2104	IS screws	

Remarks:

- 1) Always use torque wrench to tighten DG screws.
- 2) Wrench has optical/acoustic signal.
- 3) On DG screws, use for releasing only.

11.2 Servicing Aids

No.	Part Name	Part No.	Application
1	Lubricating grease	0781 120 1111	Oil seals, oil pump drive, chain sprocket bearing, chain tensioner, switch shaft/contact spring
2	Standard commercial, solvent-based degreasant without chlorinated or halogenated hydrocarbons		Cleaning crankshaft stub
3	STIHL special lubricant	0781 417 1315	Bearing bore in rope rotor, rewind spring in starter cover
4	Electrician's repair kit	5910 007 1050	
5	Graphite grease		Peg on starter pawl
6	Molykote grease		Sliding and pivot points of chain brake
7	Dirko sealant (100 g/3.5 oz)	0783 830 2120	Engine pan, oil seals (outside diameter)
8	Securing screws (Loctite 242)	0786 111 1101	Engine housing mounting screws
9	Screw set	5910 007 1060	

