

For Husqvarna Parts Call 606-678-9623 or 606-561-4983

340, 345, 350
346XP, 351

Workshop manual

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Workshop manual
Husqvarna 340, 345, 346XP/G, 350, 351 /G

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Introduction

Arrangement of the manual

This workshop manual can be used in two different ways.

- To repair a specific sub-assembly on a chainsaw.
- To dismantle and reassemble a complete chainsaw.

Repairing a specific sub-assembly

If a specific sub-assembly on the chainsaw needs to be repaired:

1. Look up the page referring to the relevant sub-assembly.
2. Follow the instructions under the headings:
 - Removal/Dismantling
 - Cleaning and inspection
 - Refitting/Reassembly

Dismantling and reassembling the entire chainsaw

If the entire chainsaw is to be dismantled, follow the instructions under the heading "Removal/Dismantling".

Work through the manual and follow the instructions given in each section under the heading "Removal/Dismantling".

Then follow all the "Cleaning and inspection" instructions in each section.

Working from the back of the manual, follow all the instructions under the headings "Refitting/Reassembly" in reverse order.

Each of the sections covering removal/dismantling and refitting/reassembly include the relevant lubrication instructions and bolt torques for each stage of repair.

Construction and function

This chapter gives a simple description of the chainsaw carburettor and its various parts.

Troubleshooting

These pages describe the most common faults that affect a chainsaw. They are divided into four different groups with the most likely faults described first.

Repair instructions

The section that describes how to repair the chainsaw consists of detailed, step-by-step instructions. It explains in detail the special tools, lubricants and bolt torques that are needed when working on each component.

This workshop manual covers the following chainsaw models:

340
345
350
351
351 G
346 XP
346 XPG

Safety regulations

General instructions

This workshop manual gives detailed instructions on how to troubleshoot, repair and test a chainsaw. This section also describes the various safety precautions that should be taken when carrying out repairs.

The workshop manual has been written for personnel who are assumed to have general experience of repairing and servicing chainsaws.

Workshops where chainsaws are repaired must be equipped with safety equipment that meets local regulations.

No-one should carry out repairs on a chainsaw until they have read and understood the contents of this workshop manual.

Chainsaws are type-approved to meet the relevant safety legislation, but this only applies when the saw is fitted with the cutting equipment specified in the user's manual. The fitting of any other equipment, or of accessories or parts that are not approved by Husqvarna, could mean that the saw no longer meets these safety requirements and the person who carried out the work may be held responsible for its non-conformance.

In this workshop manual the following boxes indicate where caution should be taken.



WARNING!
The warning text warns of the risk of personal injury if the instructions are not followed.

NOTE!

The warning text warns of the risk of material damage if the instructions are not followed.

Special instructions

The fuel that is used in a chainsaw poses the following hazards:

- The fuel and its fumes are toxic.
- May cause irritation to skin or eyes.
- May cause breathing difficulties.
- Highly flammable.

When using compressed air the air jet should never be pointed at the body. Air can be forced into the bloodstream and cause fatal injury.

Wear ear protection when testing saws.

After testing a saw do not touch the silencer until it has cooled down. The silencer gets very hot and you may burn yourself. Wear protective gloves when working on the silencer.

The guide bar, chain and clutch cover (chain brake) must be fitted before the saw is started. If not, the clutch may come loose and cause injury.

Poor chain lubrication can result in failure of the chain, which could cause serious or fatal injury.

Take care to ensure that the spring inside the starter assembly does not fly out and cause injury. Wear eye protection. If the spring is under compression when the pulley is removed it could fly out and cause injury.

Before removing the tensioning spring from the chain brake, ensure that the brake is in the on position, otherwise the spring may fly out and cause injury.

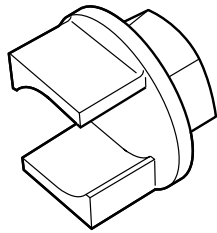
After repair, the chain brake must be checked as described on page 13.

Always consider the fire risk. A chainsaw can produce sparks that could start a fire.

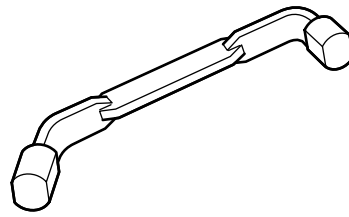
Inspect the chain catcher and replace it if it is damaged.

Special tools

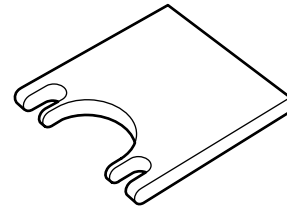
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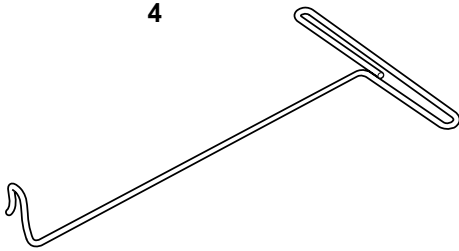
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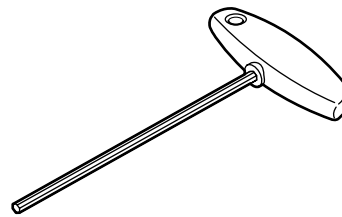
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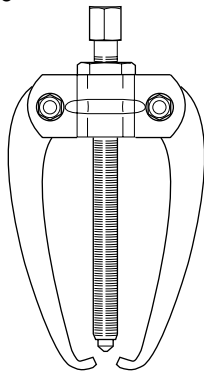
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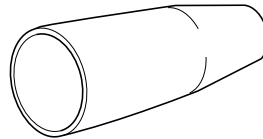
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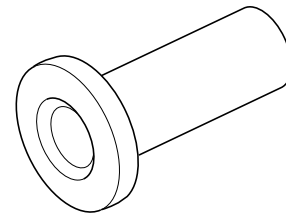
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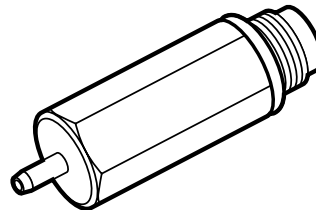
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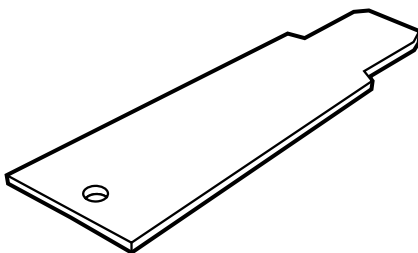
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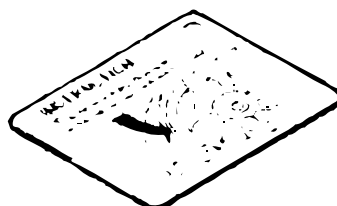
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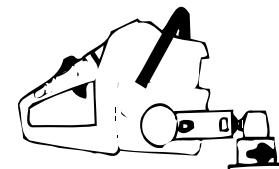
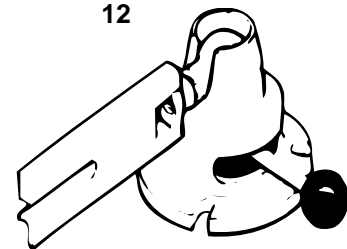
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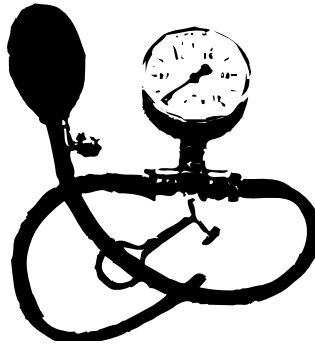
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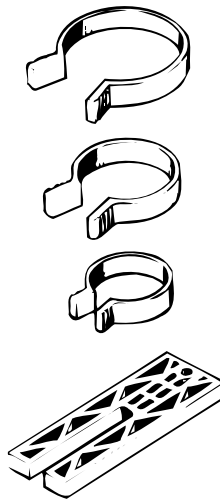
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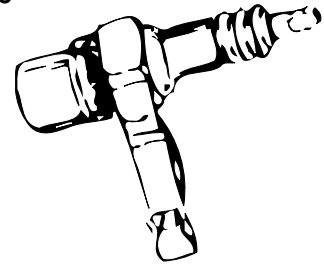
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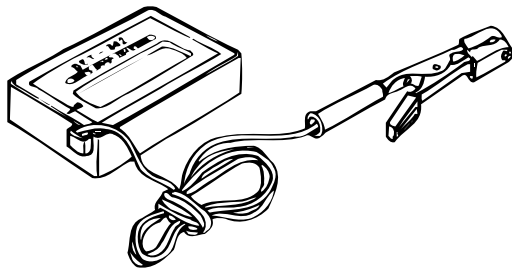
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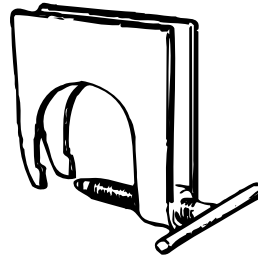
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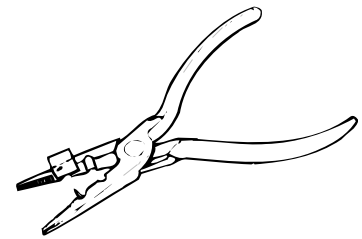
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17

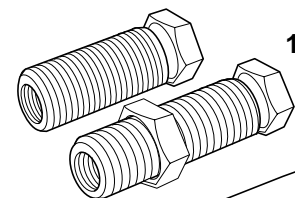


18



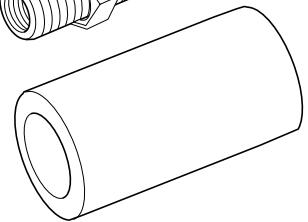
Item	Description	Used for	Order no.
1	Clutch tool	Centrifugal clutch	502 54 16-01
2	Piston stop	Locking crankshaft	502 54 15-01
3	Stop plate	Locating intake gaiter	502 54 17-01
4	Fuel filter hook	Withdrawing the fuel filter	502 50 83-01
5	Allen key	For M5 bolts	502 50 18-01
6	Puller	Frame bearing	504 90 90-02
7	Sleeve, sealing ring	Removing flywheel	502 54 20-01
8	Mandrel, sealing ring	Removing crankshaft	502 54 21-01
9	Cover plate	Sealing during pressure testing	502 54 11-02
10	Pressure tester	Connection to cylinder	503 84 40-02
11	Feeler gauge	Adjusting ignition module	502 51 34-02
12	Clamp stand	Clamping the saw	502 51 02-01
13	Pressure gauge	Pressurisation during testing	502 50 38-01
14	Piston fitting kit	Fitting piston	502 50 70-01
15	Test plug	Checking ignition module	502 71 13-01
16	Rev counter	Adjusting carburettor	502 71 14-01
17	Removal tool	Removing crankshaft	502 51 61-01
18	Assembly pliers	Fitting spark plug guard	502 50 06-01
19 a	Assembly tool	right-hand thread	502 70 45-06
19 b	Assembly tool	left-hand thread	502 70 45-07
19 c	Assembly tool	Sleeve	502 70 84-01
20	Stop plate	Removing crankshaft	502 54 18-01

19 a

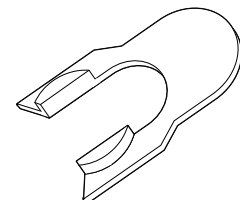


19 b

19 c



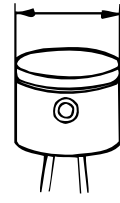
20



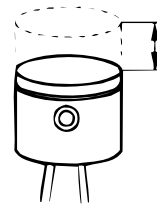
Technical data



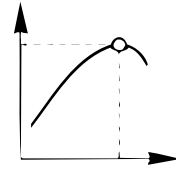
Displacement
cm³/cubic inches



Cylinder bore
Ø mm/Ø inches

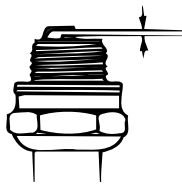


Stroke
mm/inches

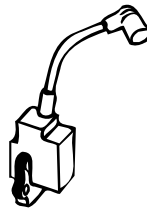


Max power/speed
kW/hp/rpm

340:	40.8 / 2.48	40.0 / 1.60"	32.5 / 1.28"	2.0 / 2.7 / 9,000
345:	45.0 / 2.73	42.0 / 1.65"	32.5 / 1.28"	2.2 / 3.0 / 9,000
346XP/G:	45.0 / 2.73	42.0 / 1.65"	32.5 / 1.28"	2.5 / 3.4 / 9,600
350:	49.4 / 3.0	44.0 / 1.73"	32.5 / 1.28"	2.3 / 3.1 / 9,000
351 /G:	49.4 / 3.0	44.0 / 1.73"	32.5 / 1.28"	2.3 / 3.1 / 9,000



Spark plug gap
mm/inches



Ignition system

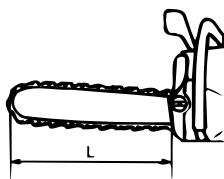


Air gap
mm/inches



Carburettor type

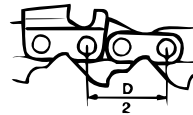
340:	0.5 / 0.02"	FHP CD	0.3 / 0.012"	Walbro HDA 154A (159A US only)
345:	0.5 / 0.02"	FHP CD	0.3 / 0.012"	Walbro HDA 154A (159A US only)
346XP/G:	0.5 / 0.02"	FHP CD	0.3 / 0.012"	Walbro HDA 154A (159A US only)
350:	0.5 / 0.02"	FHP CD	0.3 / 0.012"	Walbro HDA 154A (159A US only)
351 /G:	0.5 / 0.02"	FHP CD	0.3 / 0.012"	Walbro HDA 154A (159A US only)



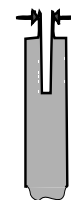
Effective cutting length
cm/inches



Chain speed at
max power – revs
m/s – rpm

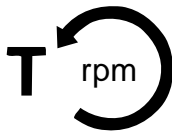


Chain pitch
mm/inches



Drive link
mm/inches

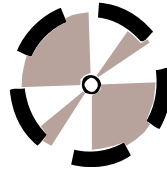
340:	30-48 / 12"-19"	17.3 / 9,000	8.25 / 0.325"	1.3 / 0.050" - 1.5 / 0.058"
345:	30-48 / 12"-19"	17.3 / 9,000	8.25 / 0.325"	1.3 / 0.050" - 1.5 / 0.058"
346XP/G:	30-48 / 12"-19"	18.5 / 9,600	8.25 / 0.325"	1.3 / 0.050" - 1.5 / 0.058"
350:	30-48 / 12"-19"	17.3 / 9,000	8.25 / 0.325"	1.3 / 0.050" - 1.5 / 0.058"
351 /G:	30-48 / 12"-19"	17.3 / 9,000	8.25 / 0.325"	1.3 / 0.050" - 1.5 / 0.058"



Idling speed
rpm



Engagement speed
rpm

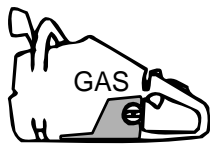


Max. speed
rpm

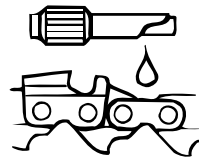


Spark plug

340:	2,700	3,800	12,500	Bosch RCJ 7Y, NGK BPMR 7A
345:	2,700	3,800	12,500	Bosch RCJ 7Y, NGK BPMR 7A
346XP/G:	2,700	3,800	14,700	Bosch RCJ 7Y, NGK BPMR 7A
350:	2,700	3,800	13,000	Bosch RCJ 7Y, NGK BPMR 7A
351 /G:	2,700	3,800	13,000	Bosch RCJ 7Y, NGK BPMR 7A



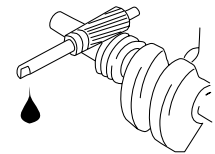
Fuel tank capacity
Litres/US pints



Oil pump capacity at
8,500 rpm,
ml/min

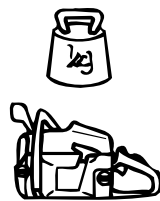


Oil tank capacity
Litres/US pints



Automatic oil pump

340:	0.5 / 1.06	9	0.25 / 0.53	Yes
345:	0.5 / 1.06	9	0.25 / 0.53	Yes
346XP/G:	0.5 / 1.06	5 - 10	0.28 / 0.59	Yes
350:	0.5 / 1.06	5 - 10	0.25 / 0.53	Yes
351 /G:	0.5 / 1.06	5 - 10	0.28 / 0.59	Yes



Weight without bar and chain
kg / lbs



Weight with bar and chain
kg / lbs



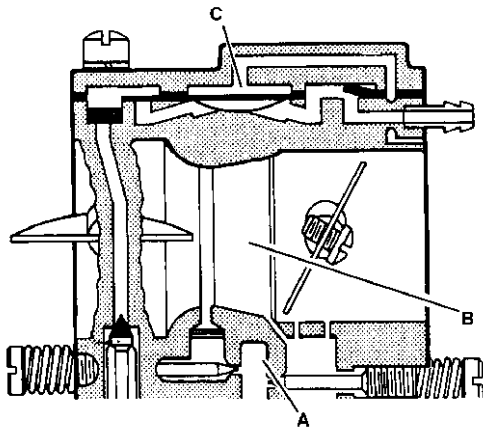
Heated hand grips

340:	4.7 / 10.4	5.5 / 12.1	-
345:	4.7 / 10.4	5.5 / 12.1	-
346XP:	4.8 / 10.6	5.6 / 12.2	-
346XPG:	4.8 / 10.6	5.6 / 12.2	Yes
350:	4.8 / 10.6	5.6 / 12.2	-
351:	4.8 / 10.6	5.6 / 12.2	-
351G:	4.8 / 10.6	5.6 / 12.2	Yes

Construction and function

Carburettor

The carburettor consists of three sub-systems:

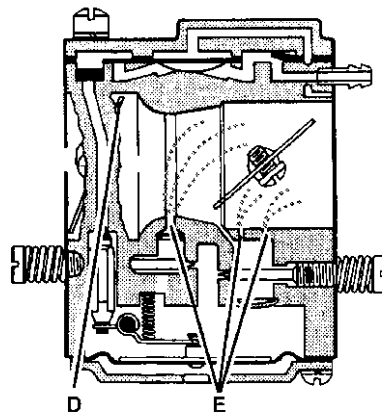


- The **metering unit (A)** which contains the jets and the fuel control mechanism. This measures out the right amount of fuel to suit the speed of the saw and the power demand.
- The **mixing unit (B)** consists of the choke, diffuser jets and throttle valve. This is where the air and fuel are mixed to create a flammable mixture.

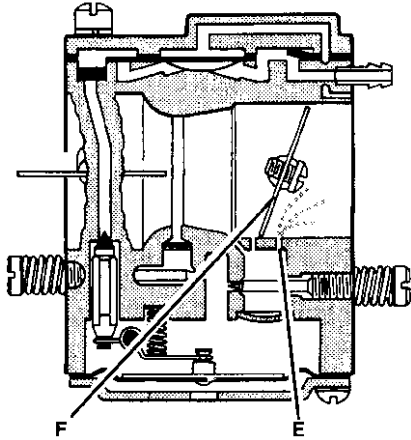
- The **pump unit (C)** pumps fuel from the tank to the metering system inside the carburettor. One side of the pump diaphragm is connected to the crankcase and pulses as a result of pressure changes in the crankcase. The other side of the diaphragm sucks in the fuel.

The carburettor works in different ways depending on the setting:

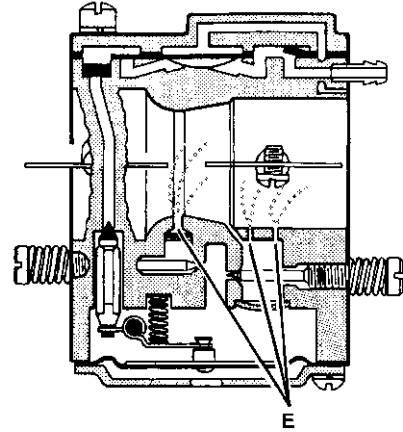
- Cold start mode
- Idling mode
- Part throttle mode
- Full throttle mode



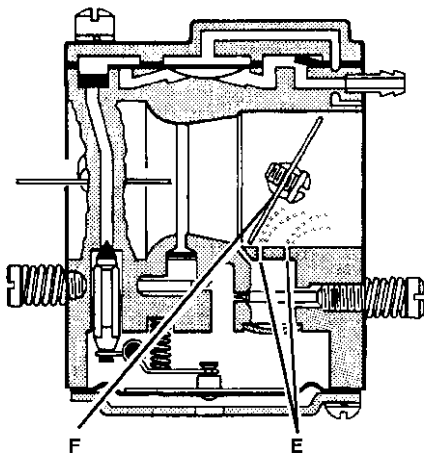
In the cold start mode the choke valve (D) is completely closed. This increases the vacuum in the carburettor so that fuel is sucked through the diffuser jets faster (E).



In idling mode the throttle valve (F) is closed. Air is sucked through an aperture in the throttle valve and a small amount of fuel is supplied through the diffuser jet (E).



In full throttle mode both valves are open and fuel is supplied through all the diffuser jets (E).



In part throttle mode the throttle valve (F) is partially open. Fuel is supplied through the diffuser jets (E).

Troubleshooting

The various faults that can affect a chainsaw are divided into four groups. In each group the likely symptoms are given on the left and possible causes are listed on the right. The most likely faults are given first, and so on.

Starting

Difficulty starting	Adjust L screw Air filter blocked Choke not working Worn choke pivot Worn choke valve Fuel filter blocked Fuel line blocked Piston ring seized Blocked impulse channel
Carburettor leaking fuel	Loose or faulty fuel pipe Hole in diaphragm Worn needle valve Needle valve assembly sticking Needle valve set too high Leak in metering system (air or fuel) Loose cover on carburettor pump side
Flooding when engine not running	Worn needle valve Needle valve set too high Needle valve assembly sticking

Idling (low rpm)

Will not idle	Adjust L screw Leaking air intake hose (rubber) Loose carburettor mounting bolts Loose or faulty fuel hose Fuel filter blocked Fuel line blocked Fuel tank vent blocked Throttle valve pivot stiff Throttle pushrod sticking Defective throttle return spring Bent throttle stop Faulty diffuser jet
Idling too rich	Adjust L screw Worn needle valve Needle valve set too high Worn needle valve lever Leaking control diaphragm/cover plate Needle valve assembly sticking

Idling (low rpm) (cont.)

Idles when L screw closed	Worn needle valve Leaking control diaphragm/cover plate Needle valve assembly sticking Worn needle valve lever Faulty diffuser jet
Idling uneven	Fuel filter blocked Fuel line blocked Leaking air intake hose (rubber) Loose carburettor mounting bolts Worn throttle valve pivot Loose throttle valve screw Worn throttle valve Needle valve assembly sticking Leak in metering system (air or fuel) Metering system centre knob is worn Hole in diaphragm Leaking control diaphragm/cover plate Crankcase leaking
L screw requires constant adjustment	Fuel line blocked Needle valve set too high Needle valve assembly sticking Leak in metering system (air or fuel) Leaking control diaphragm/cover plate Faulty diffuser jets Crankcase leaking
Too much fuel at idling	Needle valve set too high Needle valve assembly sticking Metering system damaged Worn needle valve Leaking control diaphragm/cover plate Metering system incorrectly assembled

High rpm

Will not run at full throttle	Adjust H screw Blocked air filter Blocked fuel tank vent Blocked fuel filter Fuel line blocked Loose or damaged fuel hose Impulse channel leaking Impulse channel blocked Loose cover on carburettor pump side Faulty pump diaphragm Leaking air intake hose (rubber) Loose carburettor mounting bolts Needle valve set too low Metering system damaged Metering system incorrectly assembled Leaking control diaphragm/cover plate Needle valve assembly sticking Blocked silencer
Low power	Adjust H screw Blocked fuel tank vent Blocked fuel filter Impulse channel leaking Impulse channel blocked Loose cover on carburettor pump side Faulty pump diaphragm Blocked air filter Needle valve assembly sticking Leak in metering system (air or fuel) Metering system incorrectly assembled Loose diaphragm rivet Hole in diaphragm Leaking control diaphragm/cover plate
Will not "four-stroke"	Blocked fuel tank vent Blocked fuel filter Fuel line blocked Loose or damaged fuel hose Impulse channel leaking Impulse channel blocked Loose cover on carburettor pump side Faulty pump diaphragm Leaking air intake hose (rubber) Loose carburettor mounting bolts Needle valve set too low Leak in metering system (air or fuel) Metering unit incorrectly assembled Loose diaphragm rivet Hole in diaphragm Leaking control diaphragm/cover plate

Acceleration and retardation

Does not accelerate	Adjust L screw Adjust H screw Blocked air filter Blocked fuel tank vent Blocked fuel filter Fuel line blocked Loose or damaged fuel hose Impulse channel blocked Loose cover on carburettor pump side Faulty pump diaphragm Leaking air intake hose (rubber) Loose carburettor mounting bolts Needle valve set too low Metering system incorrectly assembled Needle valve assembly sticking Faulty diffuser jets Blocked silencer
Engine stalls when throttle released	Adjust L screw Adjust H screw Faulty pump diaphragm Needle valve set too high Needle valve assembly sticking Faulty diffuser jets
Over rich acceleration	Adjust L screw Adjust H screw Blocked air filter Faulty pump diaphragm Faulty diffuser jets

Troubleshooting methods

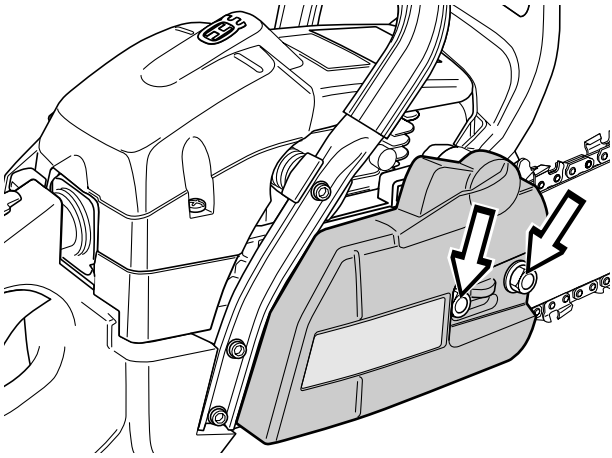
In addition to the faults described in the above table, trouble shooting can be carried out on specific components or sub-systems of the chainsaw. The various procedures are described in the relevant sections, as follows:

- Checking the operation of the chain brake Page 13
- Measuring the resistance of the stop plate Page 15
- Pressure testing the carburettor Page 34
- Pressure testing the decompression valve Page 41
- Pressure testing the cylinder Page 43

Repair instructions

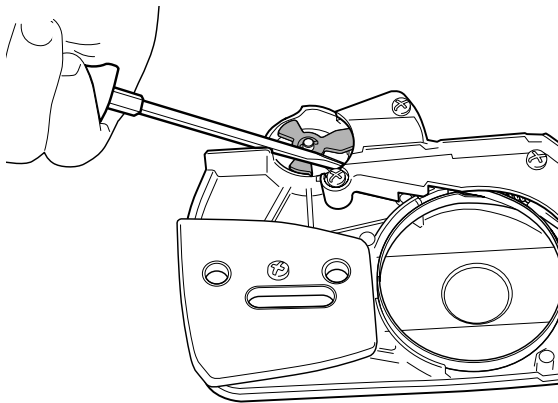
Chain brake – dismantling

1



Unscrew the bolts and remove the clutch cover. Disengage the chain brake before removing the clutch cover. Remove the chain and guide bar.

2

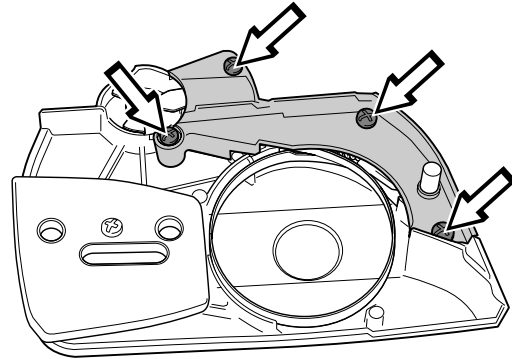


Turn the clutch cover over and use a screwdriver to place pressure on the elbow joint and release the chain brake.

3

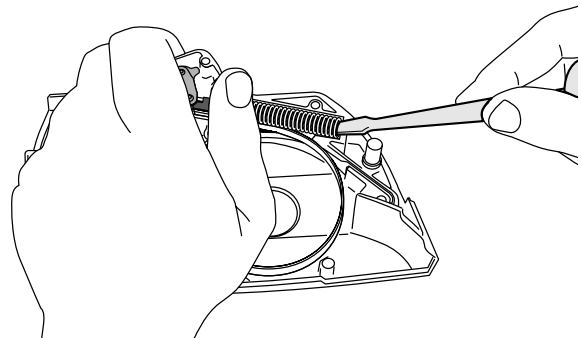


WARNING!
Make sure the spring does not fly out and cause injury. Wear eye protection.



Remove the screws that hold the cover over the chain brake spring.

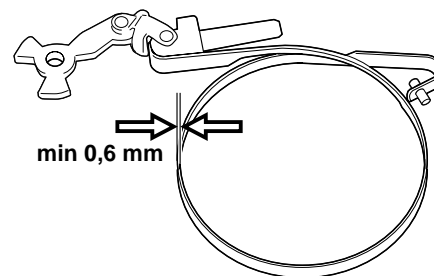
4



Place one hand over the spring, use a small screwdriver to push the bottom end of the spring and prise it upwards to release it.

Cleaning and inspection

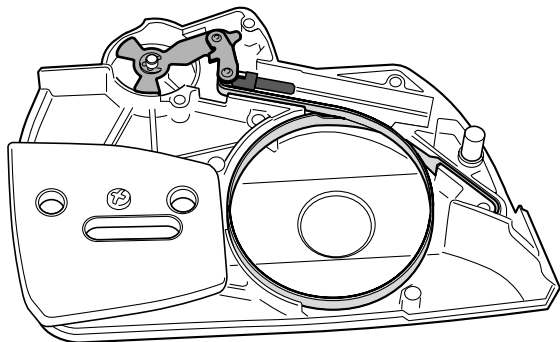
Measure the thickness of the chain brake band. It must be no less than 0.6 mm at any point.



- Clean all parts carefully.
- Lubricate the elbow joint with grease.

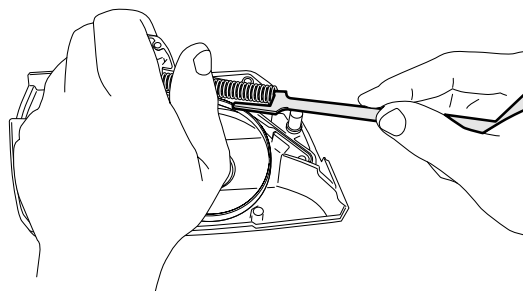
Chain brake – reassembly

1



Bolt the elbow joint to the brake band and tighten to a torque of 1–1.5 Nm.
 Locate the elbow joint and connected brake band in their recesses in the clutch cover. Lubricate the recess for the spring with grease.

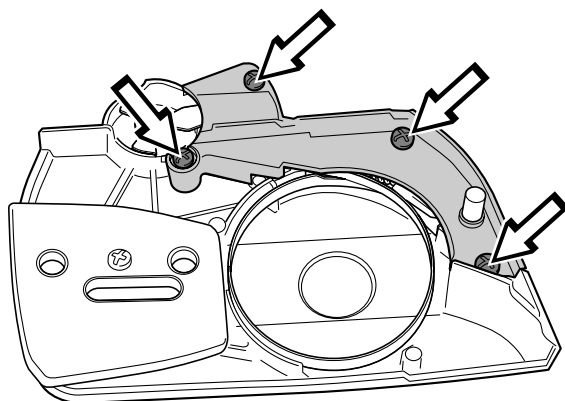
2



WARNING!
 Make sure the spring does not fly out and cause injury. Wear eye protection.

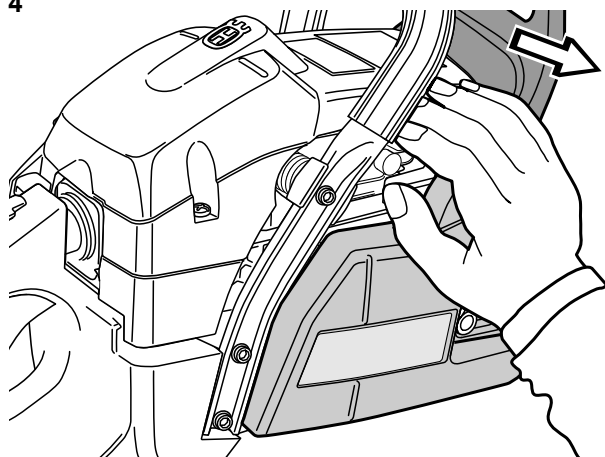
Grip the clutch cover in a vice. Compress the spring with special tool 502 50 67-01 and push it down with your thumb.

3



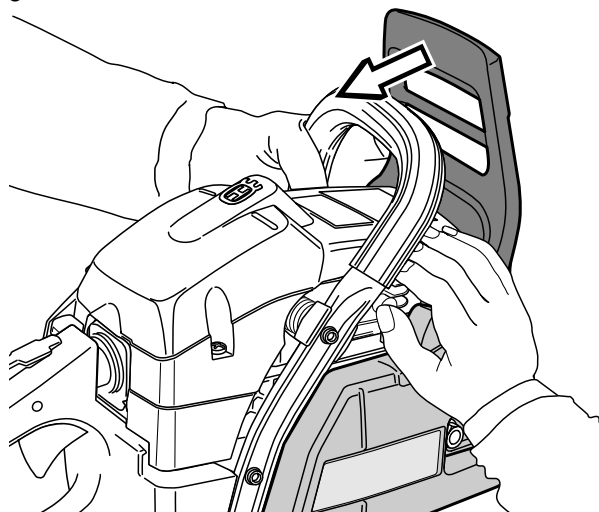
Screw the cover back in place over the chain brake spring, tightening the screws to a torque of 1–1.5 Nm.

4



Fit the clutch cover in place and press the upper/front corner while pushing the kickback guard forward so that it engages in the clutch cover.

5



Pull the kickback guard backwards into the disengaged position. This increases the diameter of the clutch brake band so that it can be pushed into place.

NOTE!

After completing the repair the chain brake must be tested as described below.

Operating test:

The engine must be running during the test.

Guide bar length	Height
13 - 20 inches	50 cm

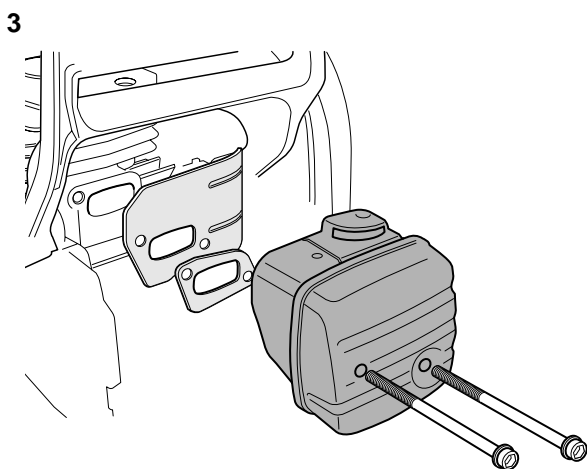
- Hold the chainsaw over a firm surface. The height of the guide bar above the surface is given in the table above.
- Let go of the front handle and let the chainsaw fall towards the surface.
- When the guide bar hits the surface the chain brake must engage.

Silencer – removal



WARNING!
Do not touch the silencer until it has cooled down, otherwise you may burn yourself.

- 1 Remove the cylinder cover.
- 2 Model 351/G and 346XP/G.
Remove the lower bolt from the silencer support.



3
Unscrew the bolts.
Lift off the silencer.
Remove the gasket and cooling plate.

- 4 If the saw is fitted with a spark arrestor mesh this must also be removed.

Cleaning and inspection

Clean the mating surfaces of the gasket, cooling plate and cylinder.

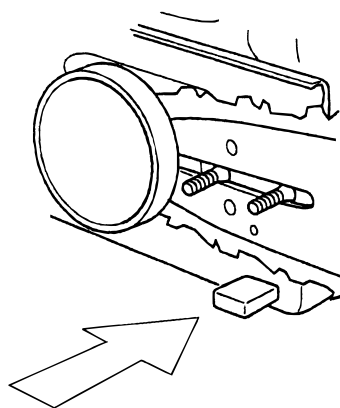
- Check that there are no cracks or other defects in the silencer.
- Check that the spark arrestor mesh is not damaged.
- Check that the gasket is undamaged.

Silencer – refitting

- 1 If the saw is equipped with a spark arrestor mesh this should be fitted first.
- 2 Fit the cooling plate, gasket and silencer onto the cylinder. Also fit the silencer support to models 351/G and 346XP/G.
Tighten the bolt(s) to a torque of 8–10 Nm.
- 3 Fit the cylinder cover. If the cylinder cover is secured with bolts, tighten them to a torque of 2–3 Nm.
- 4 On models 351/G and 346 XP/G, fit and tighten the bottom bolt for the silencer support.
- 5 Run the saw for at least 1 minute, then retighten the silencer to 8–10 Nm.

Chain catcher – replacement

- 1 Unscrew the blade bolts and remove the chain and guide bar.
- 2

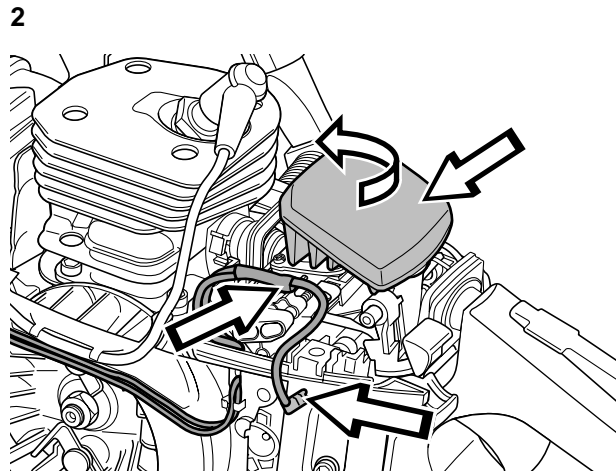


Remove the chain catcher and replace it with an aluminium chain catcher. It is important to replace the chain catcher when it is worn because its job is to stop the chain if it snaps.

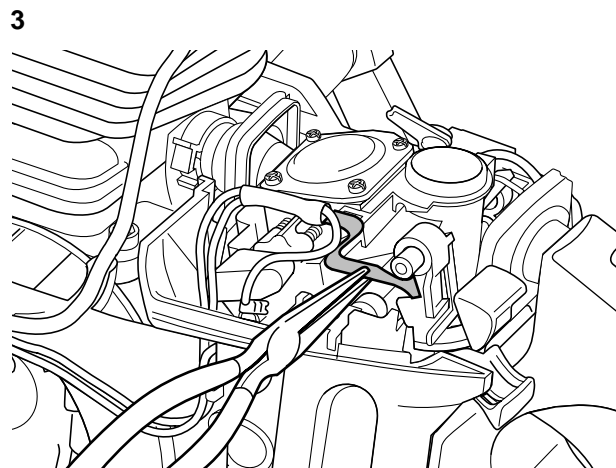
- 3 Refit the chain and guide bar.

Stop switch – removal

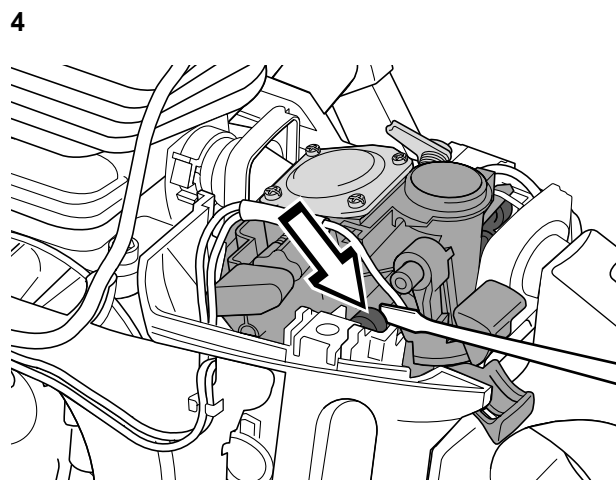
1
Remove the cylinder cover.



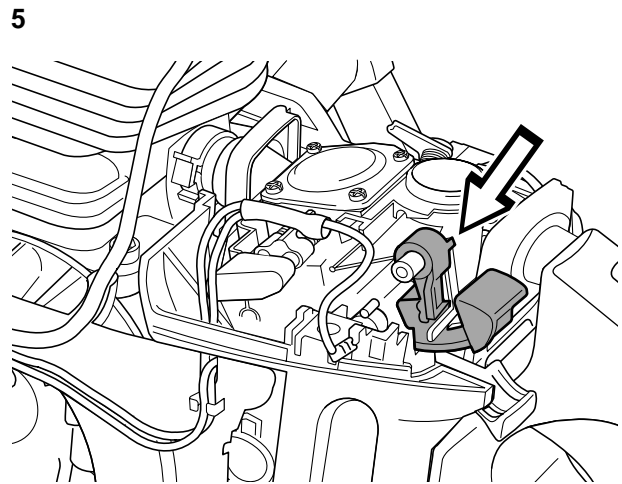
Remove the air filter by rotating it anti-clockwise. Disconnect both leads from the stop plate using pliers.



Remove the stop plate using pliers.



Carefully prise the carburettor out from the left-hand rubber mounting using a small screwdriver.

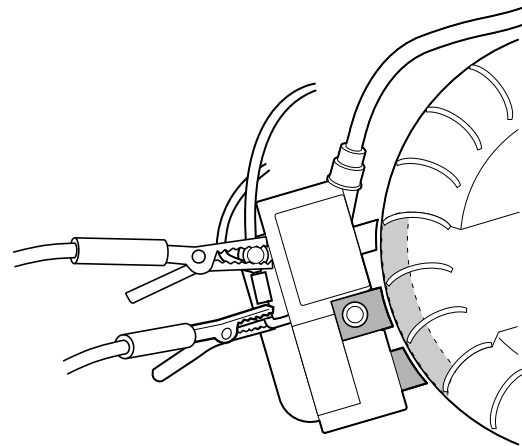


Push together the plastic clips on the stop switch. Pull out the switch.

Cleaning and inspection

Clean the mating surfaces and check the resistance as follows:

Stop switch – resistance measurement

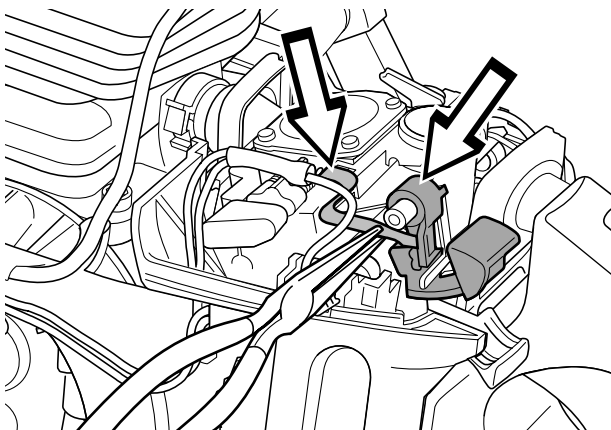


Measure the resistance by connecting a multimeter to each of the leads on the ignition module.

The resistance must not be higher than 0.2 ohm when the switch is in the stop position.

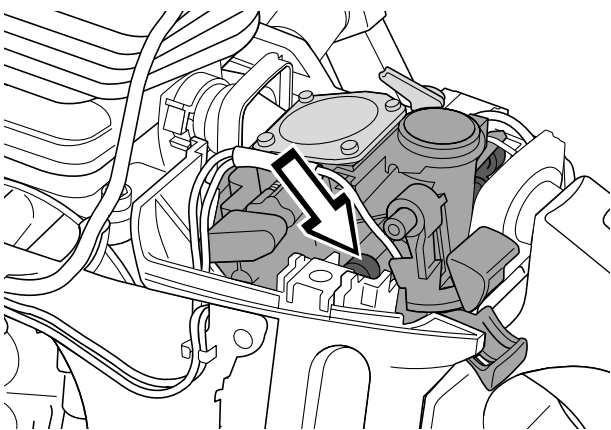
Stop switch – refitting

1



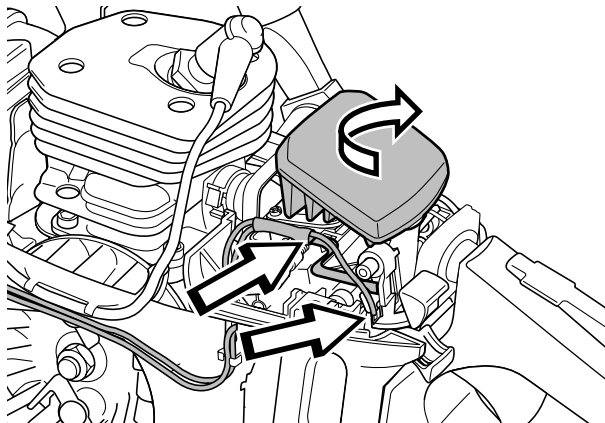
Carefully press the new stop switch into place. Refit the stop plate. Push the stop plate into the front slot first and lift the rear edge of the plate into position using a screwdriver or pliers.

2



Push the carburettor gently back into the left-hand rubber mounting.

3



Reconnect the leads to the stop plate. Refit the air filter by rotating it clockwise.

4

Fit the cylinder cover. If the cylinder cover is held by screws, tighten them to a torque of 2–3 Nm.

Choke control – replacement

In order to replace the choke control the following parts must be removed first:

- cylinder cover
- air filter
- throttle pushrod
- fuel hose
- stop switch
- carburettor

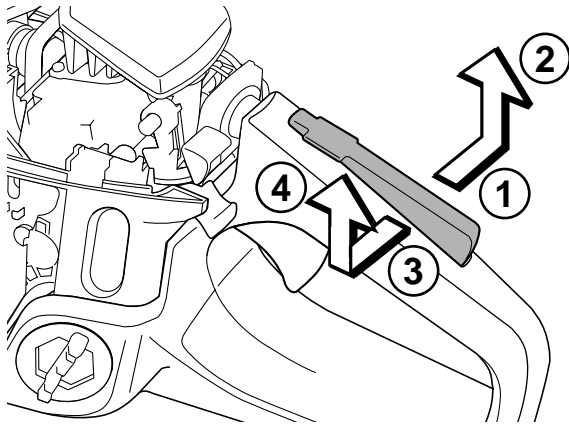
Using a pair of pliers, compress the plastic clip that holds the choke control and pull it out. Push the new choke control into place so that it is gripped by the plastic clips.

Refit:

- fuel hose
- carburettor
- stop switch
- throttle pushrod
- air filter
- cylinder cover

Throttle lock/throttle trigger – removal

1

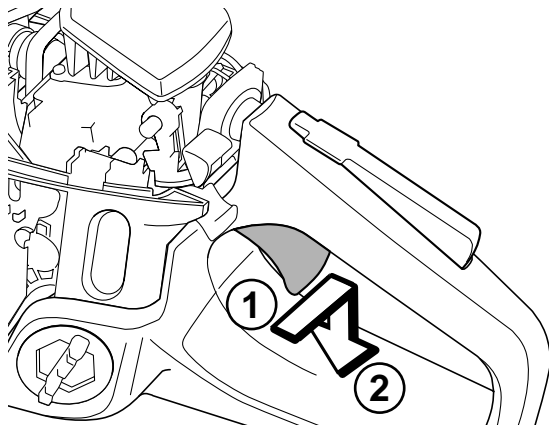


Remove the throttle lock by pressing it to the right and pulling upwards at the same time until you hear a click. Repeat this while pressing the throttle switch to the left. When you hear a click the throttle switch is free and can be lifted out.

2

Drive out the steel pin using a 2.5 mm diameter drift. Push it out from the flywheel side of the saw.

3



Remove the throttle trigger by pulling downwards while twisting it to the right and then left. Lift out the spring.

Cleaning and inspection

- Clean the parts and check that the locking mechanism is not worn.
- Lubricate the throttle lock with oil.
- The throttle trigger can be pinned if the locking mechanism is worn.
- Check that the spring is not broken and has not lost its tension.

Throttle lock/throttle trigger – refitting

1

Press the throttle trigger into its retaining clips, inserting the back edge first.

2

Fit the steel pin, driving it in from the clutch side of the saw.

3

Press down the spring while pressing the throttle lock into the front retaining clip. Press the throttle lock downwards and to the right until you hear a click. Repeat this procedure, pressing the throttle lock to the left until you hear another click.

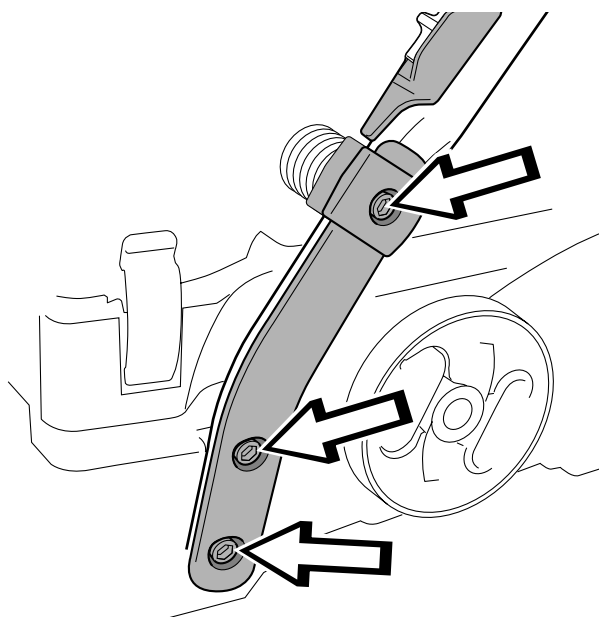
4

Check the operation of the throttle lock by trying to press the throttle trigger without pressing down the throttle lock. Also check that the throttle lock returns to its original position when it is released.

Hand grip heater on models 351G and 346XPG – removal

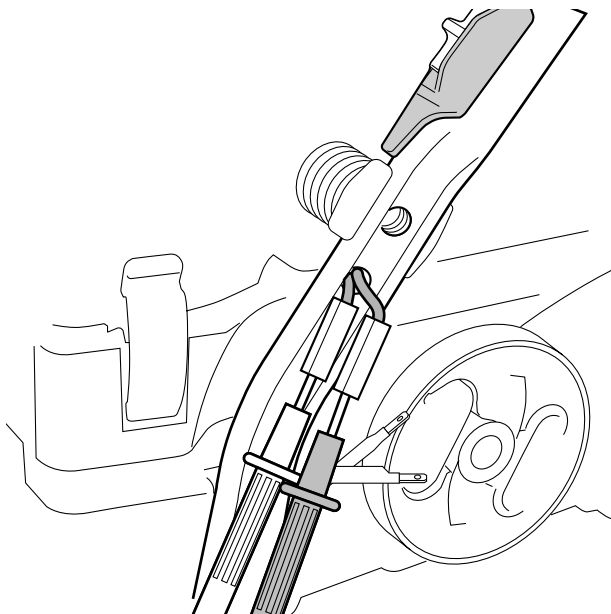
No heating or heating only in front hand grip

1



Remove the three bolts that secure the cover over the front hand grip. Remove the cover.

2



Disconnect the leads from the switch and measure the resistance, which should be 3–4 ohm. Replace the front hand grip if the resistance is higher.

3

Push the switch back into place and reconnect the leads.

4

Bolt the cover back onto the hand grip.

Generator – troubleshooting

1

Remove the cylinder cover and free the switch from the front hand grip using a screwdriver.

2

Connect a multimeter between the cylinder and the black lead underneath the cover on the front hand grip. The multimeter should show a resistance of 0.9–1.3 ohm. If higher or lower, replace the generator.

Switch – troubleshooting

1

Remove the cylinder cover and free the switch from the front hand grip using a screwdriver.

2

Connect a multimeter to the switch. The meter should read over 1000 ohm with the switch in the “0” position.

The meter reading should be no higher than 0.1 ohm with the switch in the “1” position. Replace the switch if the readings are outside these limits.

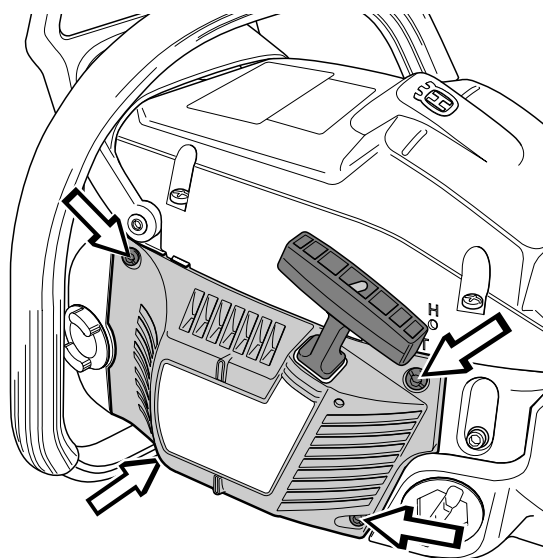
Rear hand grip heater not working

Check whether the heater element is faulty by connecting the multimeter to the red lead under the cover on the front hand grip and the black lead that is bolted to the bottom of the carburettor (see page 19). The meter should read 0.7–1.2 ohm. If the reading is higher replace the heater element.

1

Release the four clips on the cylinder cover and remove the cover. Twist off the air filter.

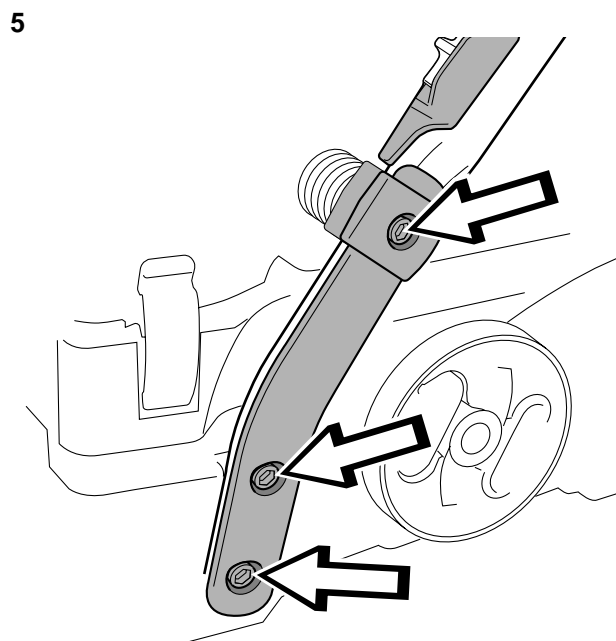
2



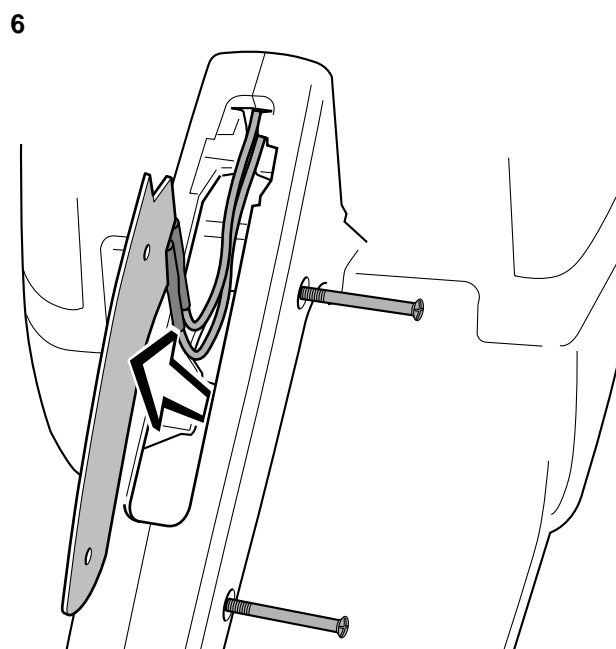
Undo the four bolts that fasten the starter assembly to the crankcase and lift off the starter assembly.

3
Remove the air filter, throttle pushrod, rubber gaiter and carburettor (see page 31).

4
Remove the bolt from the plate at the base of the carburettor to release the lead for the heater element.



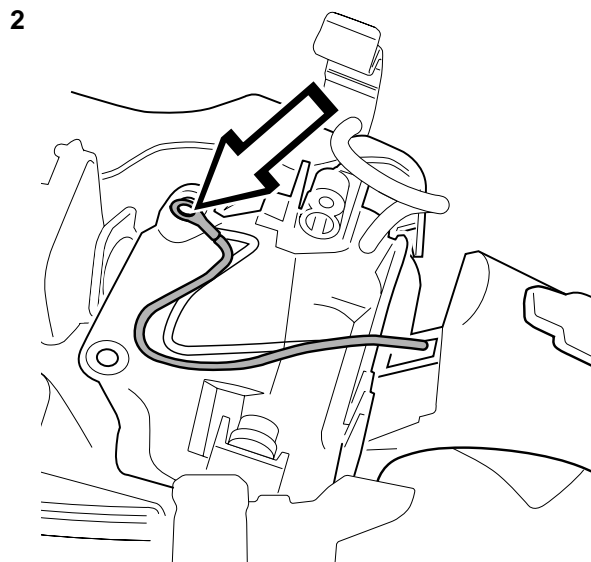
Unscrew the three bolts from the front hand grip and remove the cover to reveal the leads. Disconnect the red lead.



Unscrew the two bolts from the right side of the rear hand grip. Remove the throttle lock and the throttle trigger (see page 17). Pull out the heater element with the leads still connected.

Hand grip heater on models 351G and 346XPG – refitting

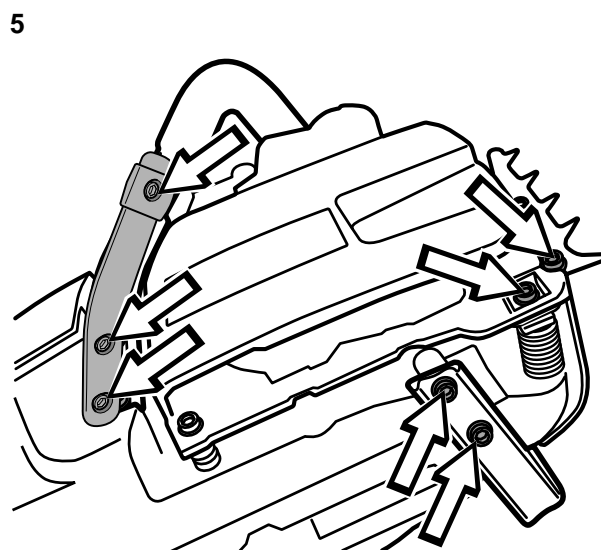
1
Feed the leads into the rear hand grip and insert the heater element in the hand grip. Screw in the two bolts through the right side of the hand grip to secure the heater.



Press the black lead into the base of the carburettor and connect it with the bolt. Tighten to a torque of 3–4 Nm.

3
Run the red lead to the front hand grip and connect it.

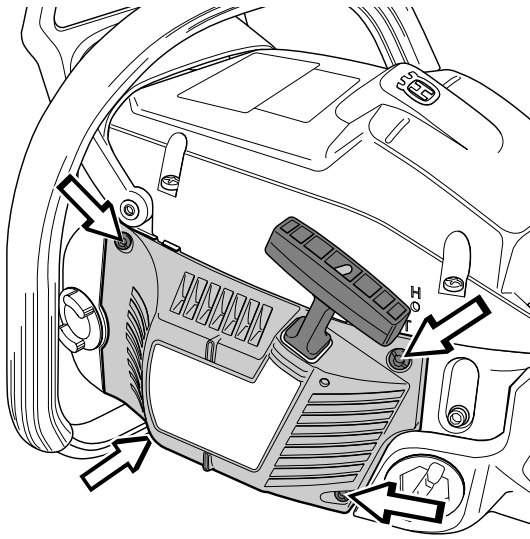
4
Refit the throttle trigger and throttle lock and check that they work correctly (see page 17).



Bolt the vibration damping springs that hold the tank unit back in place and refit the cover over the front hand grip.

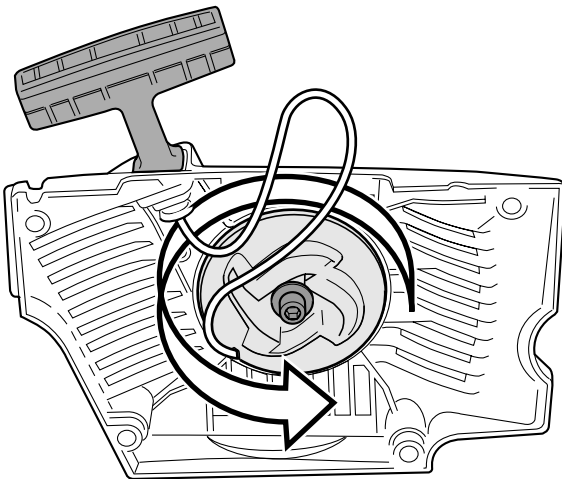
Starter assembly – removal

1



Undo the four bolts that fasten the starter assembly to the crankcase and lift off the starter assembly.

2



Pull out about 30 cm of the cord and fasten it in the notch in the pulley rim. Release the tension in the return spring by letting the pulley wind backwards slowly.

3



WARNING!

If the recoil spring is still under tension when the pulley is removed it can fly out and cause injury. Wear eye protection.

Remove the bolt from the centre of the pulley and lift off the pulley.

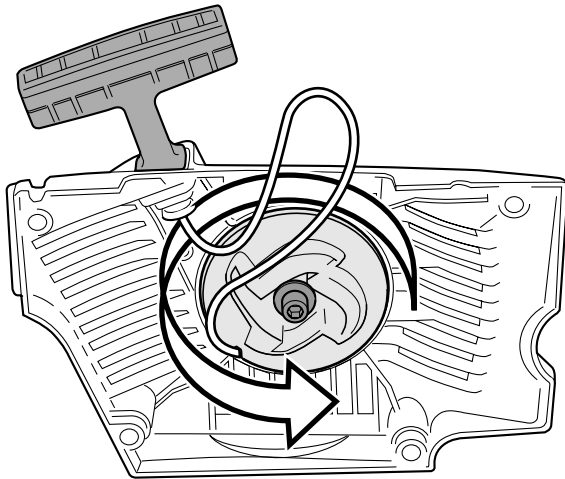
Cleaning and inspection

Clean the parts and check the following:

- The starter cord.
- The teeth on the pulley, lubricate with oil.
- That the pawls on the flywheel are undamaged, i.e. that they spring back towards the centre and move freely.
- Lubricate the starter spring with light oil.

Replacing a broken or worn starter cord

1

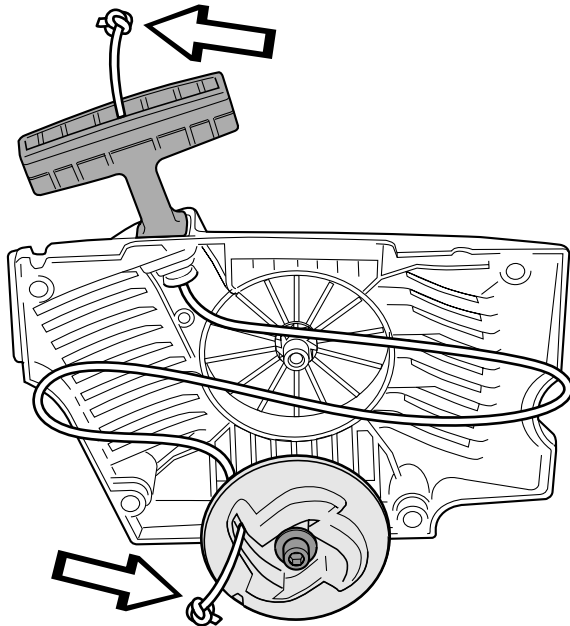


Before replacing a worn starter cord the tension in the recoil spring must be released. Pull the starter cord out through the notch in the pulley rim and wind the pulley anti-clockwise to release the tension in the spring.

2

Remove the bolt from the centre of the pulley and lift off the pulley.

3



Fit a new cord through the hole in the pulley and tie a knot to secure it.

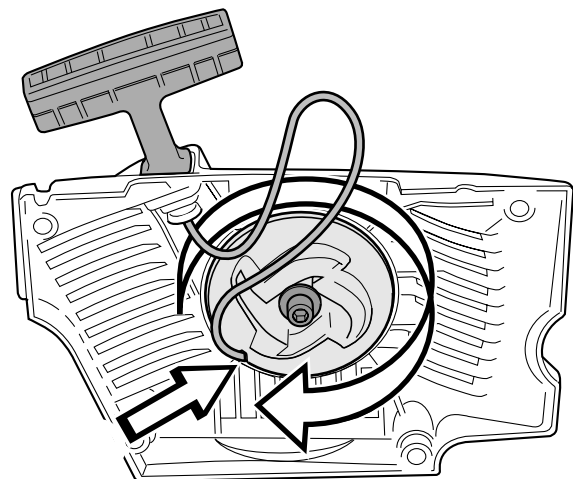
Feed the other end of the cord through the hole in the starter housing and through the starter handle, then tie a double knot in the end. Wind about 3 turns of the starter cord onto the pulley.

Fit the bolt through the centre of the pulley and tighten to a torque of 2–3 Nm.

Check, clean and lubricate the spring with light oil. Lubricate the pulley stud with grease.

Tensioning the recoil spring

1



Fasten the starter cord in the notch in the pulley rim and wind the pulley about 2 turns clockwise. Check that the pulley is free to rotate at least another half turn when the starter cord is fully extended.

Replacing a worn recoil spring

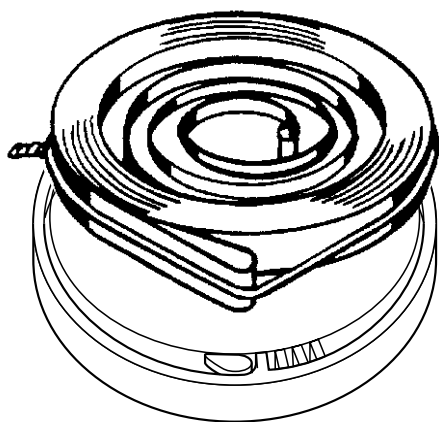


WARNING!
Make sure the recoil spring does not fly out and cause injury. Wear eye protection.

1
Remove the bolt from the centre of the pulley and lift off the pulley and spring.

2
Remove the broken recoil spring.

3



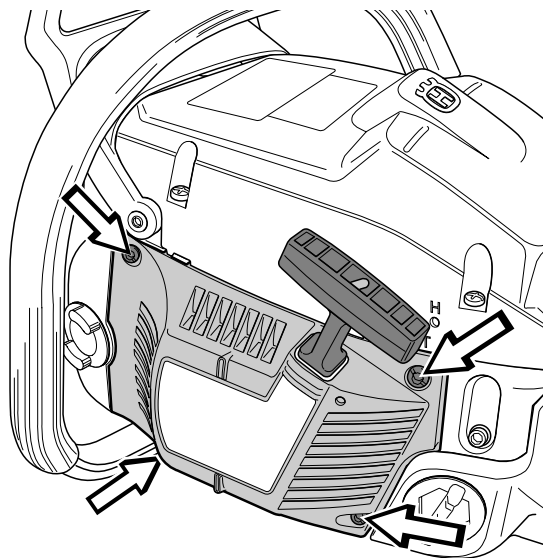
Fit a new recoil spring, with the retaining wire still in place. Do not remove the wire until the spring is in position. If the spring comes loose when you put it in place wind it up from the outside working inwards.

Lubricate the recoil spring with light oil.

4
Fit the bolt through the centre of the pulley and tighten to a torque of 2–3 Nm.
Tension the recoil spring (see page 21).

Starter assembly – refitting

1



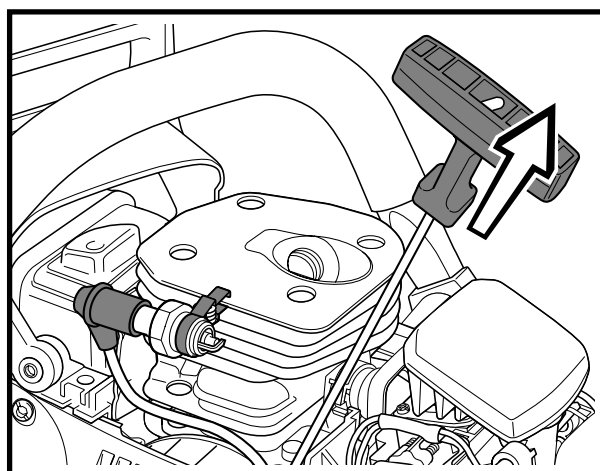
Position the starter assembly on the crankcase and tighten the bolts to a torque of 2.5–3.5 Nm.

Ignition module – testing

If there is a fault in the ignition system the ignition module must be tested before the ignition system is removed.

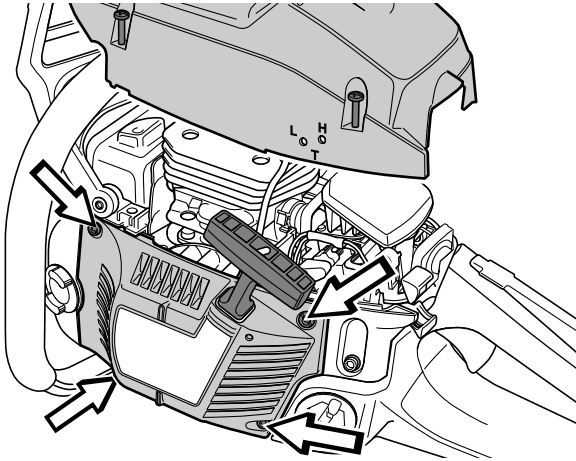
Test the ignition module as follows:

- Connect a test spark plug 502 71 13-01 to the ignition lead and clip the test spark plug onto the cylinder.
- Turn the engine over using the starter cord.
- If the test spark plug produces a spark the ignition module is OK.



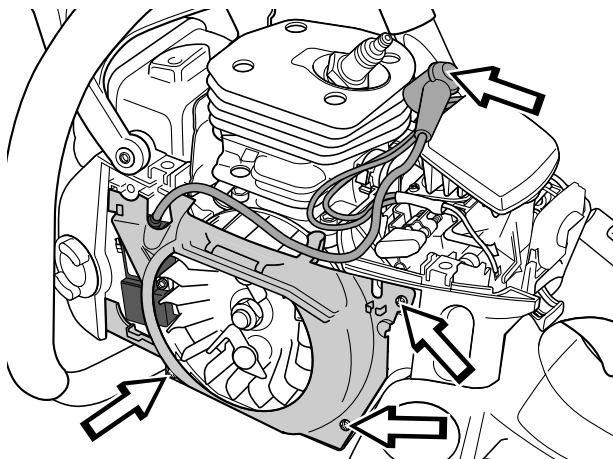
Ignition module/flywheel – removal

1



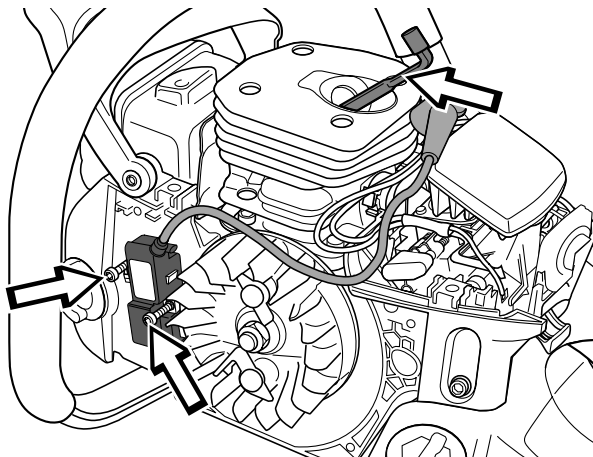
Undo the cylinder cover and remove it. Undo the four bolts on the starter assembly and lift it off.

2



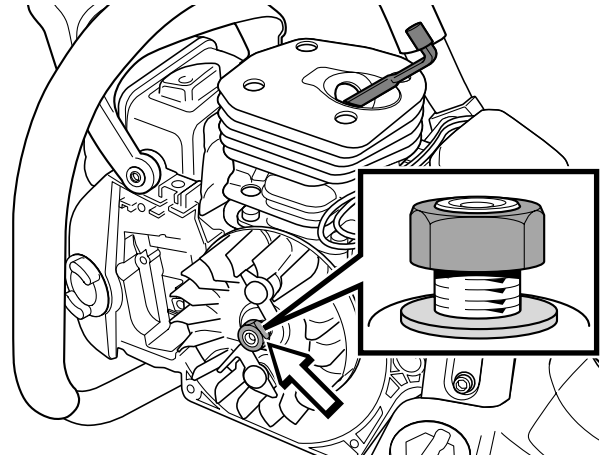
Disconnect the HT lead. Release both leads from the cable guide and remove it.

3



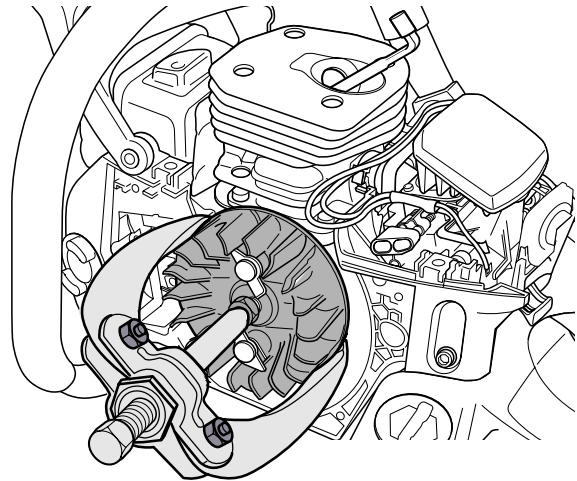
Remove the screws from the ignition module. Disconnect the leads from the ignition module. Remove the spark plug and fit piston stop 502 54 15-01 in its place.

4



Loosen the flywheel nut and unscrew it until it is flush with the end of the shaft. Raise the washer to check that the flywheel nut is in the right position.

5



Release the flywheel using puller 504 90 90-02. Position the puller over the magnets and tighten 2-3 turns. Tap loose with a metal mallet.

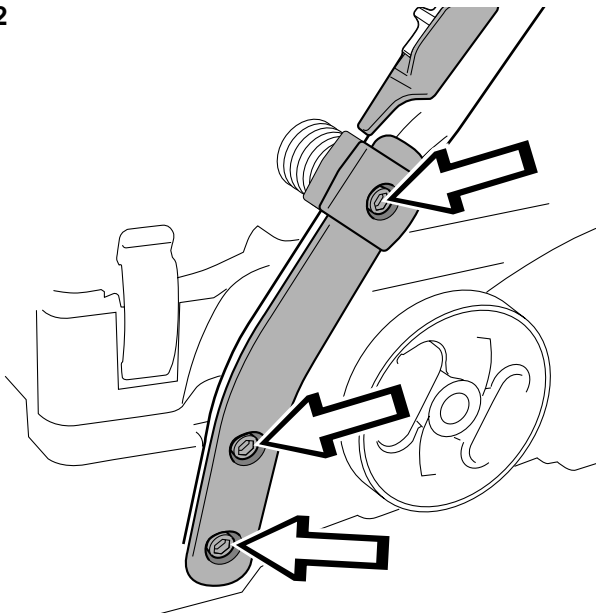
Cleaning and inspection

- Clean all parts, especially the tapers on the flywheel and shaft.
- Check that the flywheel is not cracked or damaged in any other way.

Replacing the generator, models 351/G and 346XP/G

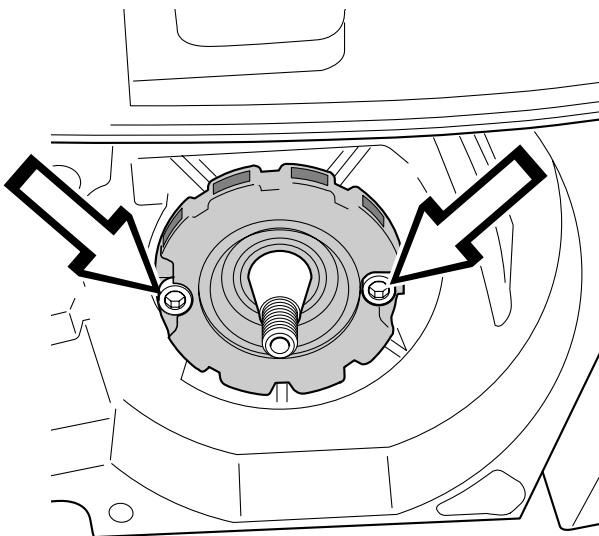
1
Remove the starter assembly, leads, cable guide, ignition module and flywheel as described for the other models.

2



Unbolt the cover from the front hand grip (three bolts) and disconnect the leads.

3



Unscrew the two bolts from the generator. Lift off the generator and pull out its lead.

4

Feed the lead from the new generator through the hole to the connection on the front hand grip, connect both leads and clip the lead to the fuel tank.

5

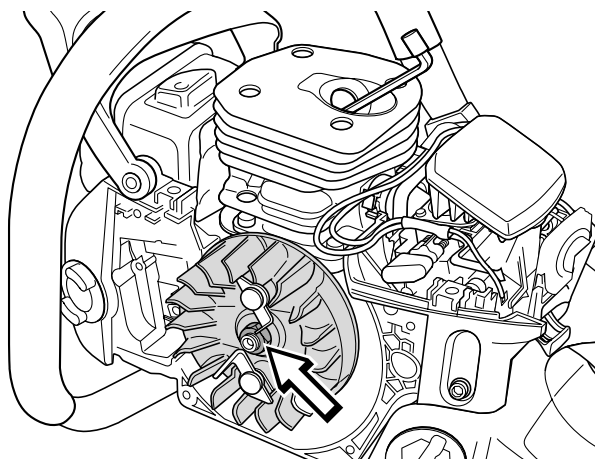
Bolt the generator in position, tightening the bolts to a torque of 5 Nm.

6

Refit the flywheel, ignition module, cable guide, leads and starter assembly as described for the other models (see page 25).

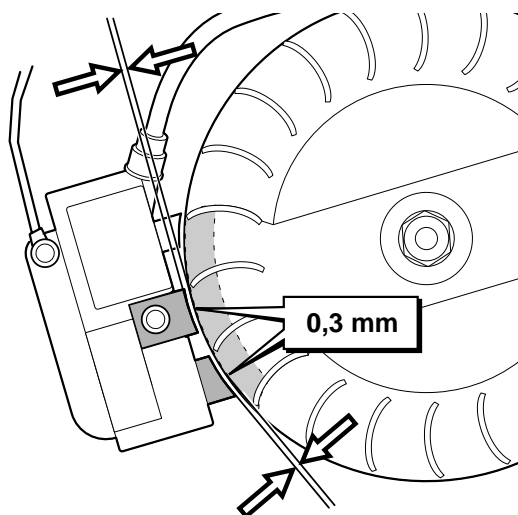
Ignition module and flywheel – refitting

1



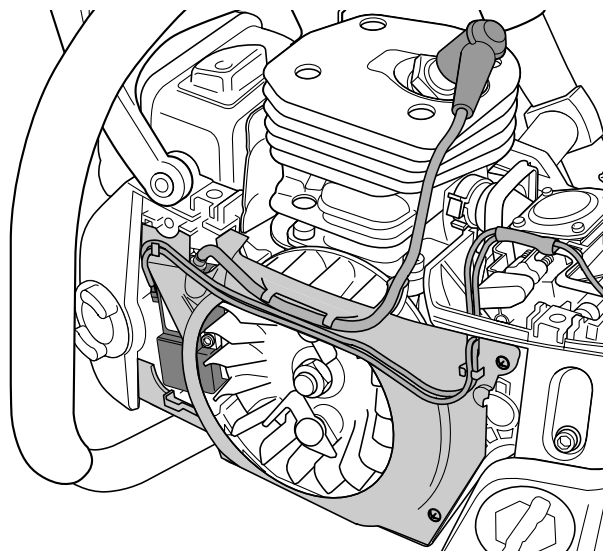
Place the flywheel on the shaft. Turn the flywheel so that the key lines up with the keyway in the shaft. Fit the washer and nut on the shaft and tighten to a torque of 25-30 Nm.

2



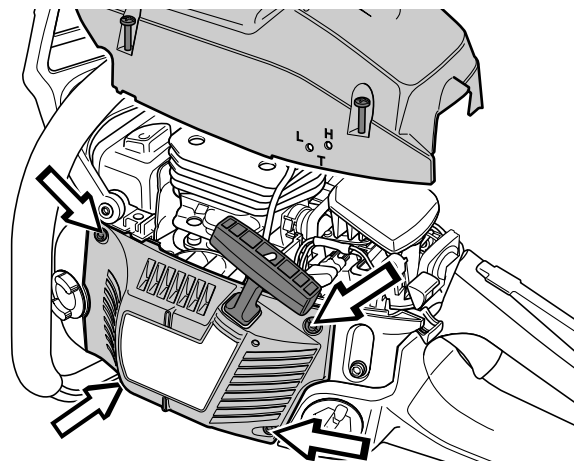
Connect the earth lead (black) to the bolt at the front of the ignition module. Position the ignition module but do not tighten the bolts. Turn the flywheel so that the magnets are beside the ignition module. Adjust the gap between the ignition module and the magnet with feeler gauge 502 51 34-01. The gap should be 0.3 ± 0.1 mm. The gap must be measured at either of the two lowest pegs on the ignition module. Tighten the bolts to 4.5–6 Nm.

3



Connect the blue lead to the ignition module. Fit the cable guide and press the leads into position. Fit the spark plug and tighten to a torque of 15 Nm. Connect the HT lead.

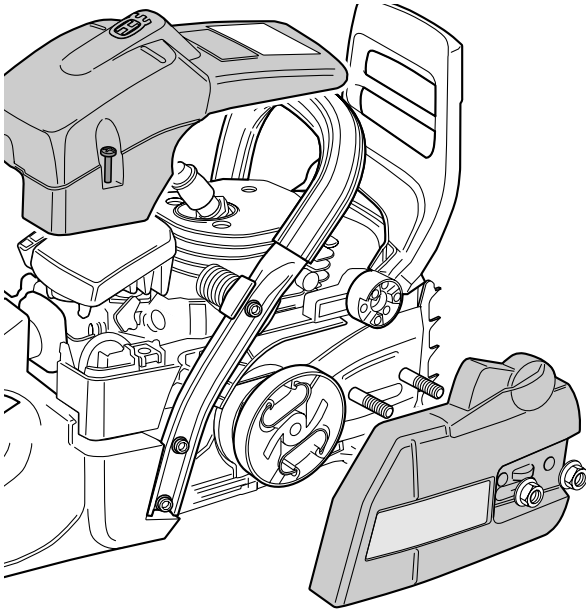
4



Refit the starter assembly, tightening the bolts to 2.5–3.5 Nm. Fit the cylinder cover, tightening the bolts to 2–3 Nm if applicable.

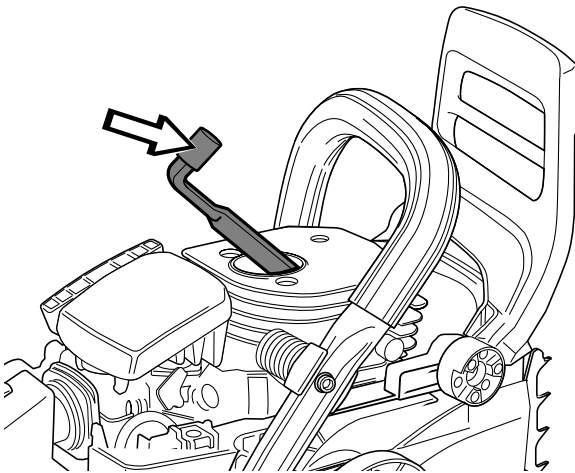
Centrifugal clutch – removal

1



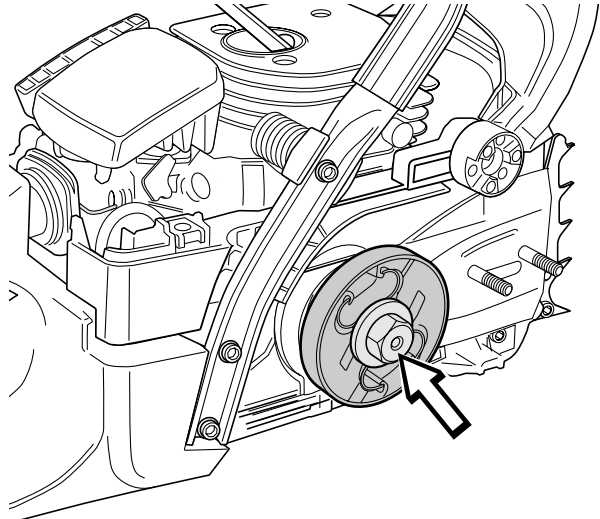
Remove the clutch cover, cylinder cover, guide bar and chain. The chain brake must be disengaged first.

2



Disconnect the HT lead. Remove the spark plug and fit piston stop 502 54 15-01 in its place.

3

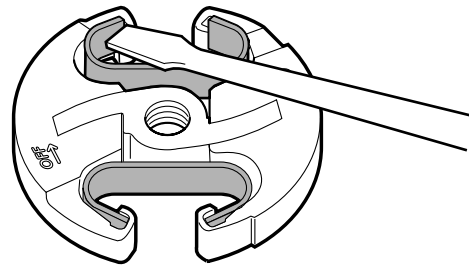


Unbolt the clutch using tool 502 54 16-01 and a number 19 socket. Turn the clutch clockwise to remove it.

4

Remove the clutch shoes and hub.

5



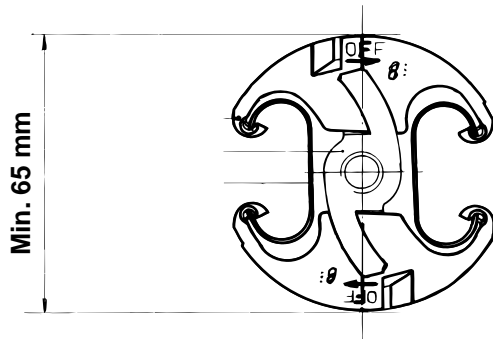
Prise out the clutch springs with a screwdriver.

NOTE!

Handle the clutch springs carefully. If they are opened up too much they could damage the saw.

Inspection and cleaning

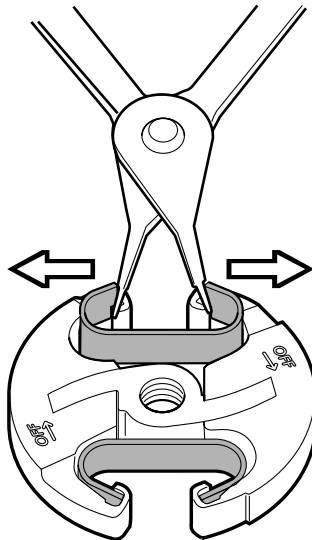
- Check the thickness of the clutch shoes by using vernier callipers to measure the diameter of the clutch. If the diameter is less than 65 mm the clutch assembly must be replaced.



- Check the chain drive wheel for wear.
- Check that the needle bearing is in good condition and the bearing surface on the crankshaft is undamaged.

Centrifugal clutch – refitting

1

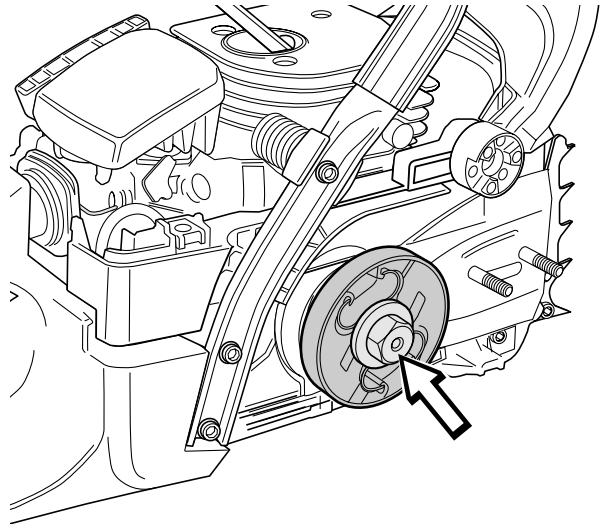


NOTE!

Handle the clutch springs carefully. If they are opened up too too much they could damage the saw.

Insert the clutch springs in the shoes using circlip pliers.

2



Fit the clutch on the hub and bolt it onto the crankshaft using tool 502 54 16-01 and a number 19 socket, tightening to a torque of at least 20 Nm.

3

Refit the guide bar and chain.
Fit the clutch cover (see page 13).

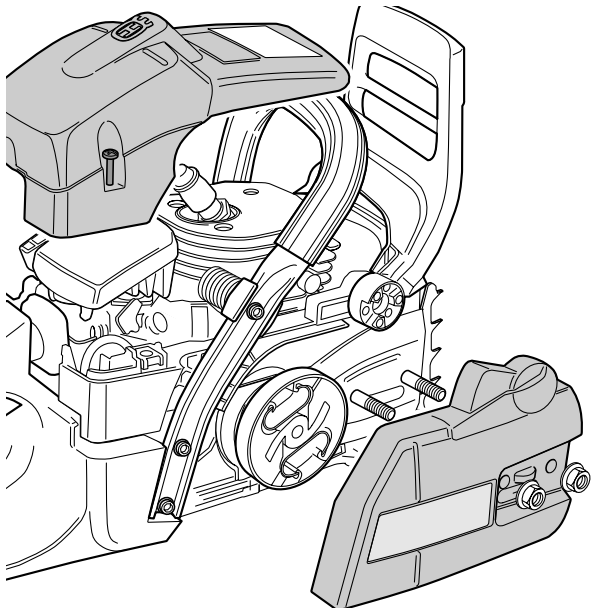
4

Remove the piston stop. Fit the spark plug, tightening to a torque of 15 Nm. Connect the HT lead. Fit the cylinder cover, tightening the bolts to 2–3 Nm if applicable.

Oil pump – removal

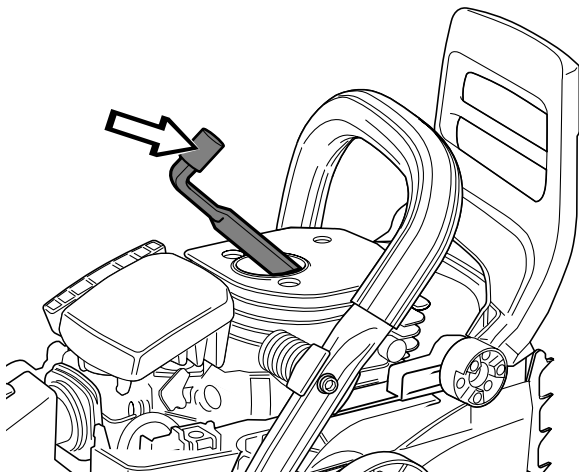
1
Empty the oil tank.

2



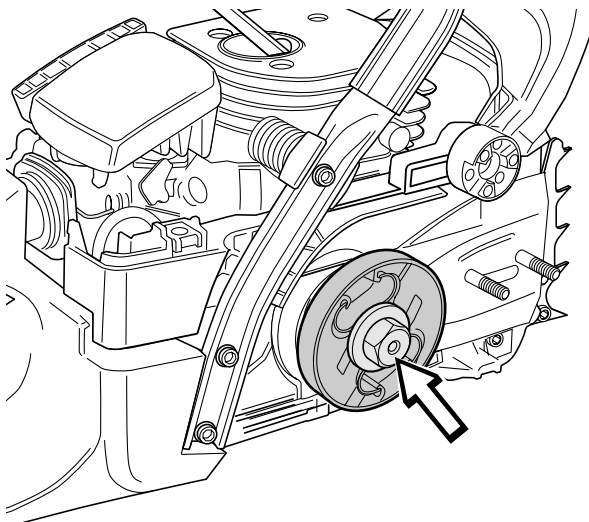
Remove the clutch cover, cylinder cover, guide bar and chain. The chain brake must be disengaged first.

3



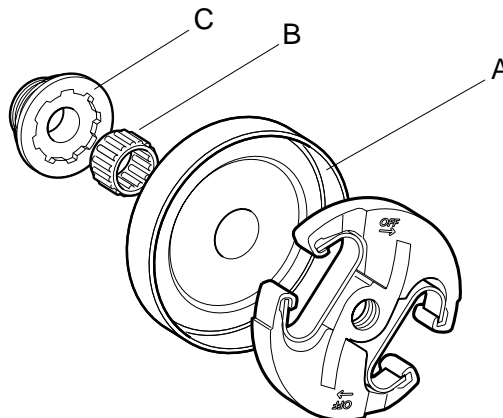
Disconnect the HT lead.
Remove the spark plug and fit piston stop 502 54 15-01 in its place.

4



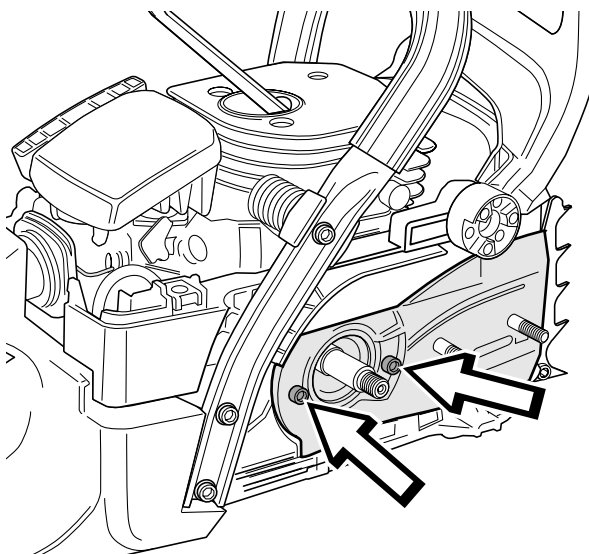
Unbolt the clutch clockwise using tool 502 54 16-01.

5



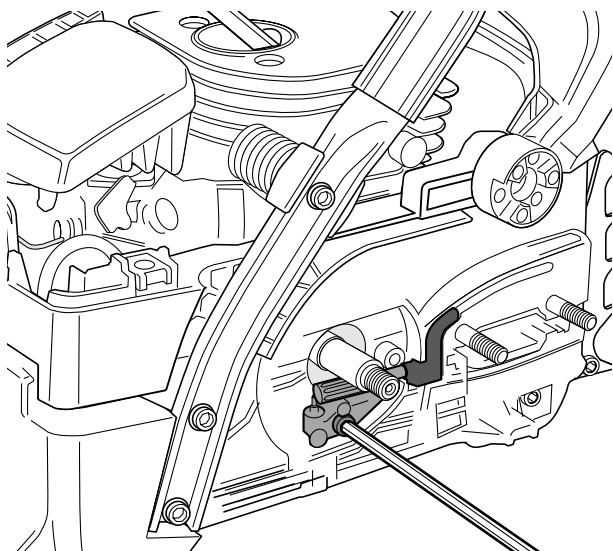
Loosen and remove the clutch drum (A), needle bearing (B) and pump drive wheel (C).

6



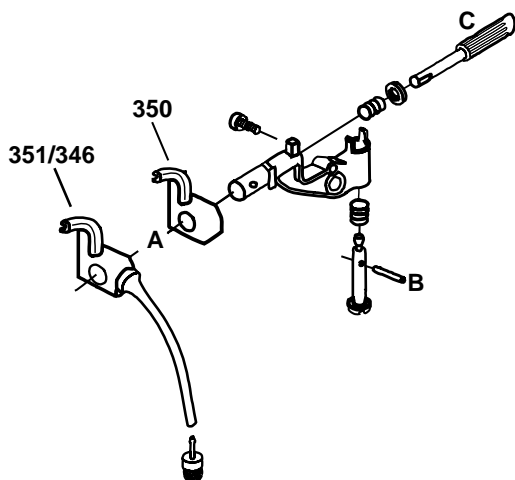
Remove the chain guide plate by unscrewing 1 or 2 bolts, depending on the model.

7



Unbolt the oil pump and lift it out.

Adjustable oil pump – dismantling

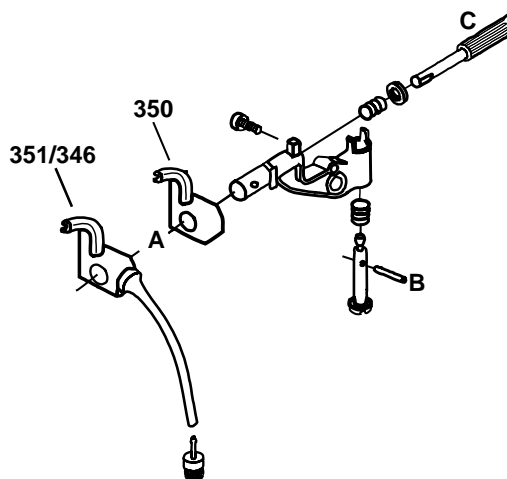


- 1 Disconnect the rubber hose (A).
- 2 Remove the pin (B) from the adjuster screw, using a small drift to press it out.
- 3 Press in the pump piston (C) so that the adjuster screw (D) can be removed. Remove the pump piston.

Cleaning and inspection

- Clean all the parts and check that they are in good condition.
- Lubricate all moving parts with chain oil.

Adjustable oil pump – reassembly



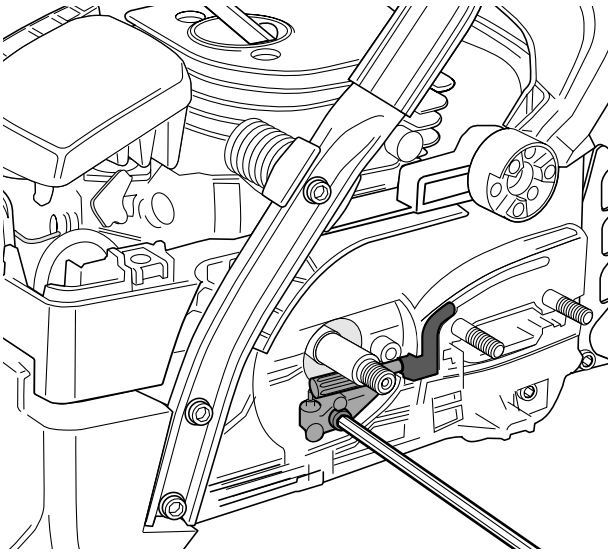
- 1 Lubricate the pump piston (C) with chain oil and fit the pump piston and washers.
- 2 Press down the pump piston (C). Fit the adjuster screw and spring so that the pin (B) can be pressed into position.
- 3 Reconnect the rubber hose/suction hose (A).



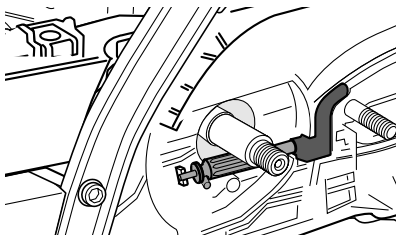
WARNING!
 Poor chain lubrication can result in failure of the chain, which could cause serious or fatal injury.

Oil pump –refitting

1

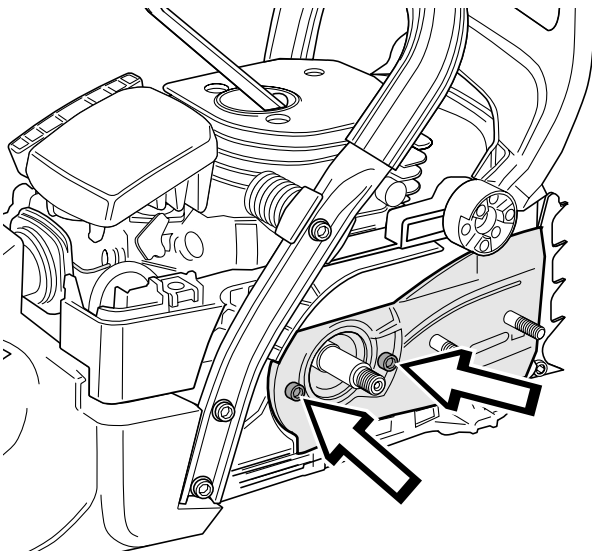


Bolt the oil pump to the crankcase. The adjustable oil pump must be bolted to torque of 2–3 Nm.



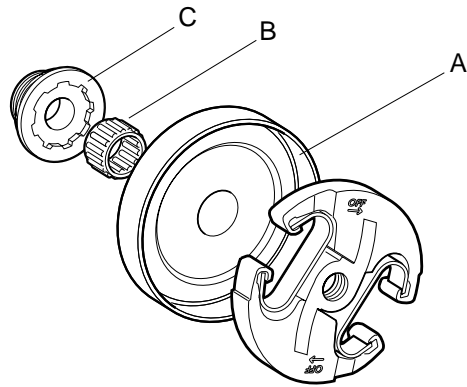
The fixed oil pump on models 340 and 345 is assembled with a pin.

2



Fit the chain guard plate, tightening the bolts to a torque of 2–3 Nm.

3



Lubricate the needle bearing with grease. Fit the pump drive wheel (C), needle bearing (B), clutch drum (A) and clutch (see page 27). Check that the correct pump drive wheel is fitted.

4

Fit the guide bar, chain and clutch cover (see page 13).

5

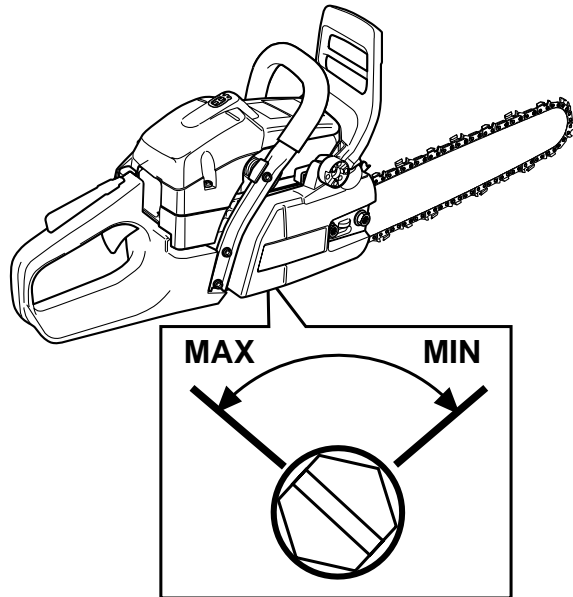
Remove the piston stop and fit the spark plug, tightening it to a torque of 15 Nm. Connect the HT lead.

6

Fit the cylinder cover, tightening the bolts to 2–3 Nm where applicable.

Adjustable oil pump – adjustment

Use a screwdriver or adjustable spanner to turn the adjuster screw on the pump. Turning the screw clockwise decreases the oil flow and turning it anti-clockwise increases the oil flow.

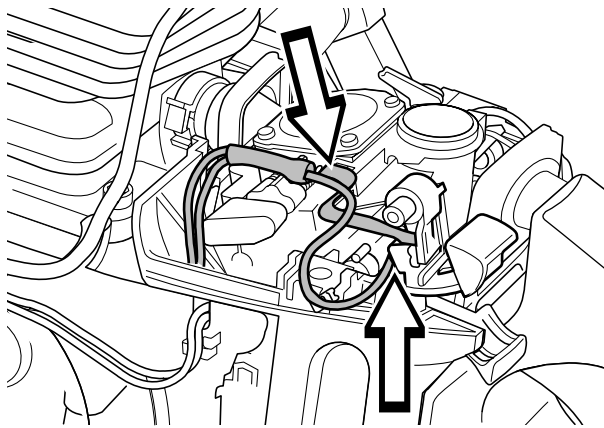


Recommended setting:

13–15" bar	Min. setting
15–18" bar	Midway setting
18–20" bar	Max. setting

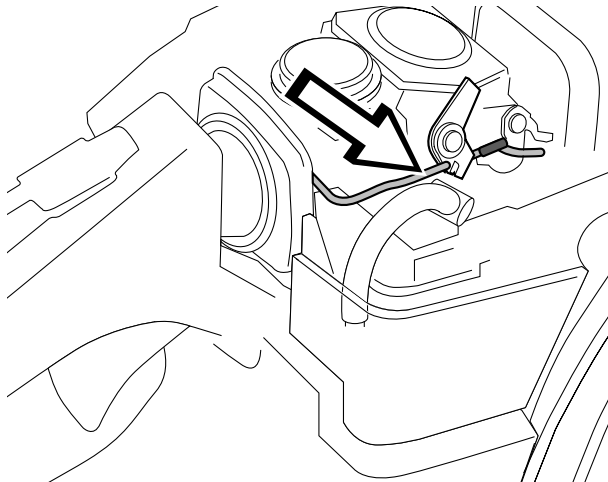
Carburettor – removal

1



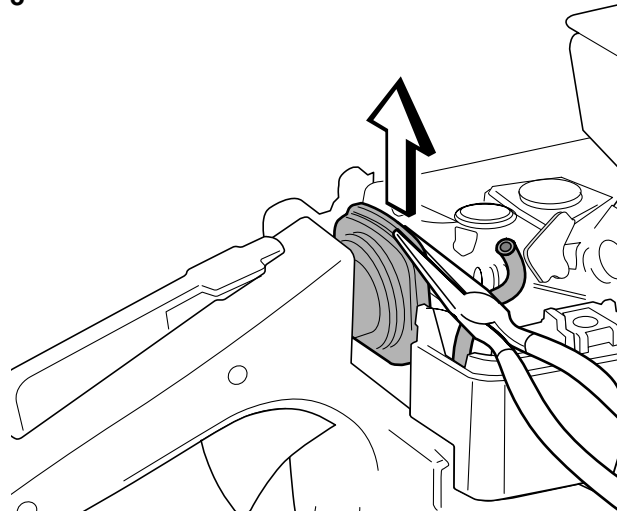
Remove the cylinder cover and air filter.
Disconnect the leads from the stop switch.

2



Disengage and prise out the spring from the carburettor and disconnect the throttle pushrod. Press the carburettor throttle lever towards the cylinder while pressing the throttle pushrod towards the rubber inlet manifold with your other hand so that the pushrod is released and can be withdrawn from the handle.

3

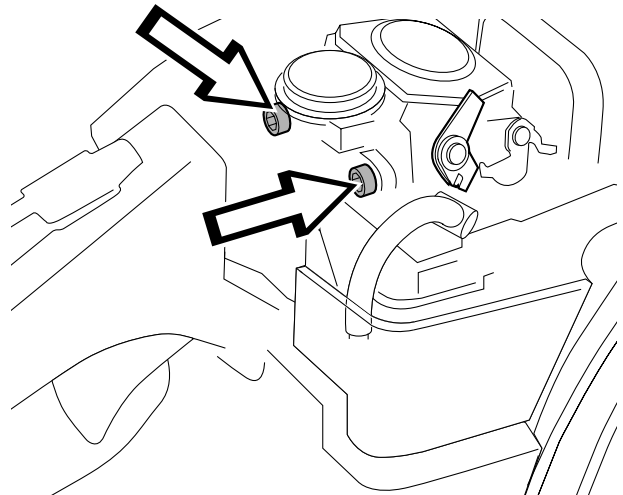


NOTE!

Do not use knurled pliers to disconnect or reconnect the fuel hose. This could damage the hose and lead to leakage or fracture.

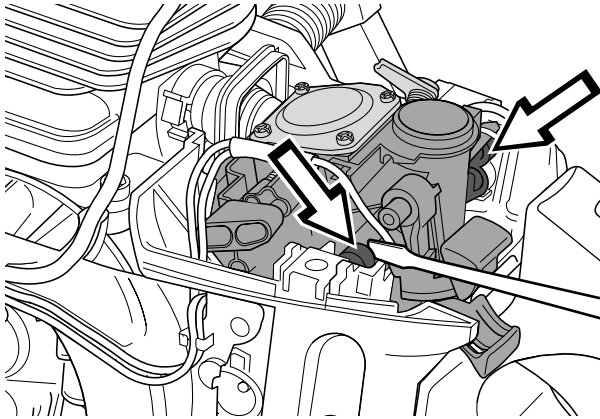
Disconnect the fuel hose from the carburettor.
Remove the rubber inlet manifold, using pliers to lift it upwards.

4



Undo and remove the bolts that hold together the filter holder, carburettor and intake tube.

5

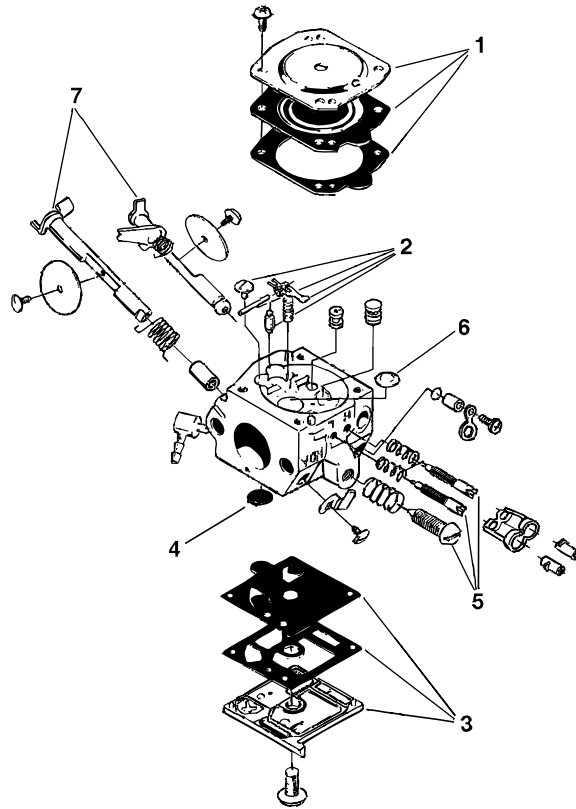


Prise out the carburettor from its rubber mountings using a small screwdriver.

6

Lift out the carburettor.

Carburettor – dismantling



The item numbers in the diagram refer to steps 1–7 below.

1

Remove the cover from the metering unit and carefully remove the metering diaphragm and gasket.

2

Undo the screw and take out the needle valve, together with the lever arm, spindle and spring.

3

Remove the cover from the pump unit and carefully remove the gasket and pump diaphragm.

4

Remove the fuel filter.

5

Remove the high, low and idling jet screws. (HDA 159A high and low jet screws are protected by plastic caps which can be prised off with a screwdriver. Only on EPA, see appendix A.)

6

Remove the plug by first drilling a hole in it and then prising it out with a screwdriver or the like.

7

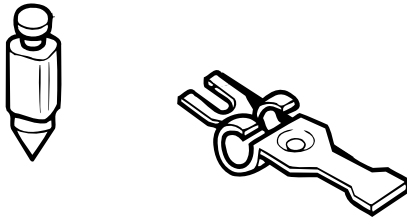
If necessary remove the throttle and choke valves, and remove the spindles together with the lever arms and springs.

Cleaning and inspection

Clean all the carburettor components in petrol. Use an airline to dry off the petrol from all components. Blow through all the channels in the carburettor body and check that they are not blocked.

Check that:

- The gasket, pump diaphragm and metering diaphragm are undamaged.
- There is no play in the throttle and choke valves.

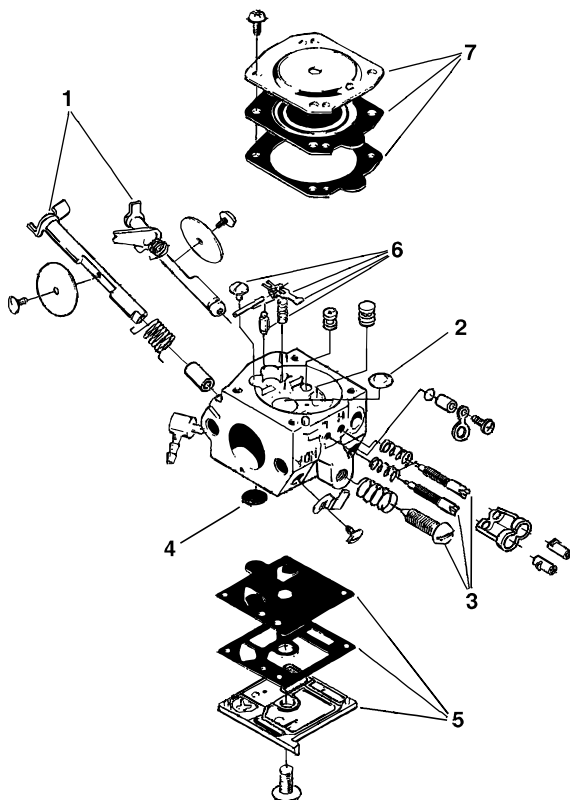


- The needle valve and its lever arm are not worn.
- The fuel filter is undamaged.
- The tips of the high and low speed jet screws are not damaged.
- The air intake duct is not cracked.

Carburettor – reassembly

NOTE!

Cleanliness is very important when reassembling the carburettor. Tiny particles of dirt can cause operating problems.



The item numbers in the diagram refer to steps 1–7 below.

1

If the throttle and choke butterflies and their spindles were removed, these must be refitted. Lubricate the spindle bearings with light oil.

2

Insert the plug in the hole with the convex side upwards and expand it by pressing downwards with a drift.

3

Refit the high and low speed jet screws and springs, plus the idling screw. Fit the plastic caps over the high and low speed screws.

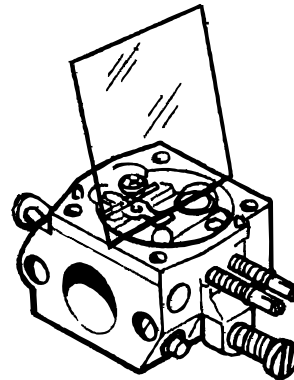
4

Fit the fuel filter, using the handle of a small screw-driver.

5

Fit the pump diaphragm, gasket and cover to the pump unit.

6



Fit the needle valve with lever arm, spindle and spring and tighten the screw. Use a rule to check that the lever arm is level with the cover face. If necessary, the lever arm can be bent slightly.

7

Fit the metering diaphragm with its gasket and refit the cover to the metering unit.

8

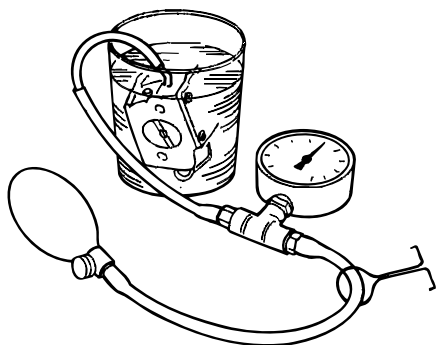
Carry out pressure testing.

Carburettor – pressure testing

Pressure testing should be carried out with the carburettor fully assembled. Testing should always be carried out after the carburettor has been repaired, but can also be performed for troubleshooting before dismantling.

Carry out the test as follows:

- Screw in the high and low speed jet screws and back them off one turn.
- Connect pressure tester 502 50 38-01 to the carburettor fuel inlet.



- Lower the carburettor into a beaker of water.
- Pump up the pressure to 50 kPa (0.5 bar) and clamp the pump tube.
- There should be no leakage. If leakage occurs, refer to the table below.

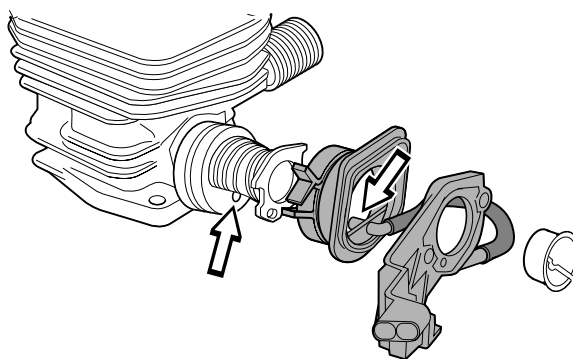
Leakage	Fault lies in
Diffuser jets	Needle valve
In impulse tube	Pump diaphragm
Ventilation hole above metering unit	Control diaphragm

Carburettor – refitting

NOTE!

Cleanliness is very important when reassembling the carburettor. Tiny particles of dirt can cause operating problems.

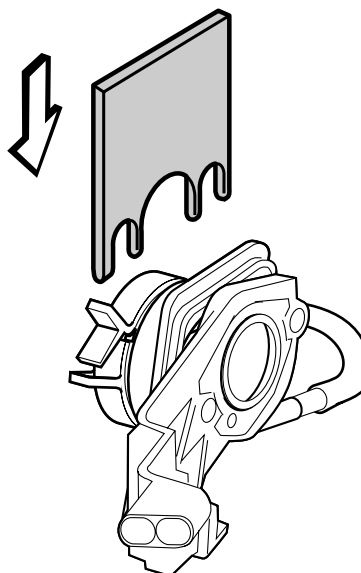
1



Align the inlet manifold 503 86 63-01 with the cut-out in the carburettor flange 503 86 64-01 and make sure the inlet manifold is correctly seated. Make sure the impulse tube is correctly seated in the impulse channel on the cylinder.

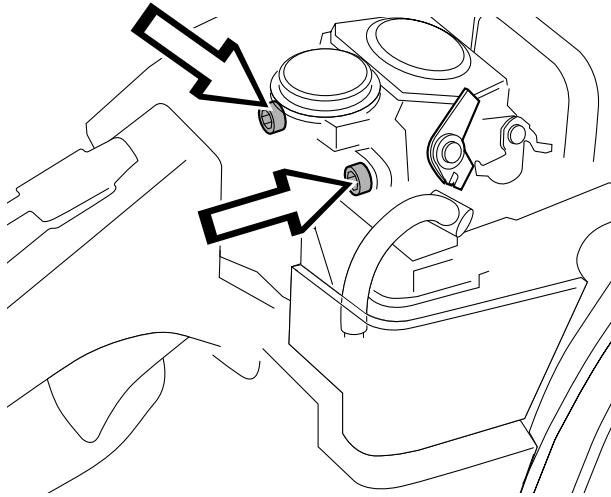
Fit the perforated brass support ring in the inlet manifold.

2

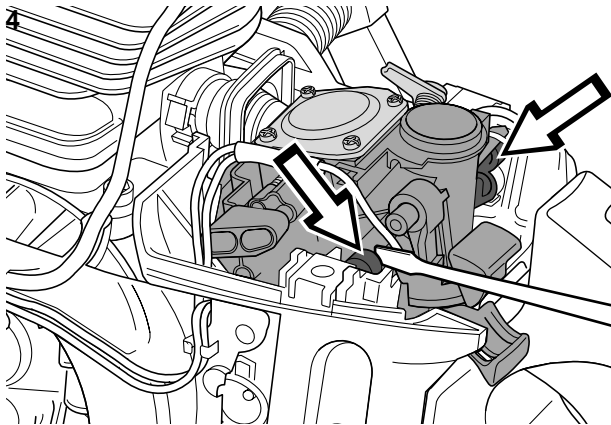


Fit stop plate 502 54 17-01 between the carburettor flange and the insulating plate.

3

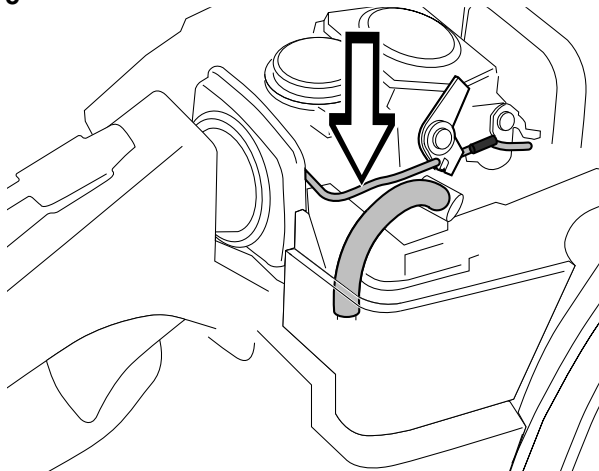


Fit the carburettor. Screw in the carburettor bolts directly from behind, without lifting the carburettor assembly. Tighten to a torque of 1–1.5 Nm. It is important to hold the carburettor flange while tightening the bolts to prevent the inlet manifold from moving.



Push the rear carburettor mounting into its rubber bushing using a small screwdriver. Remove stop plate 502 54 17-01.

5

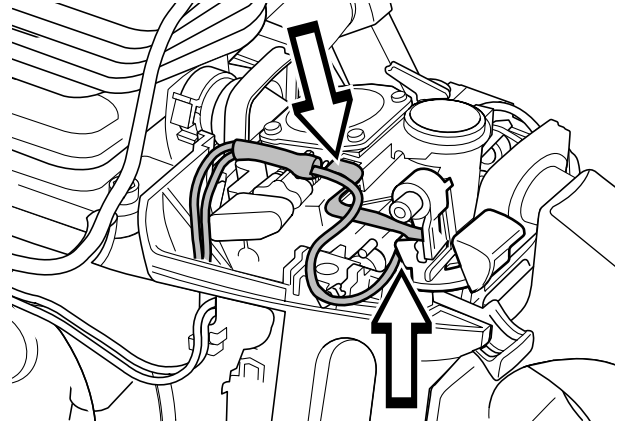


Connect the fuel hose to the carburettor. Connect the throttle pushrod at the same time as the rubber inlet manifold, press in the throttle pushrod so that it engages in the carburettor and fit the spring.

6

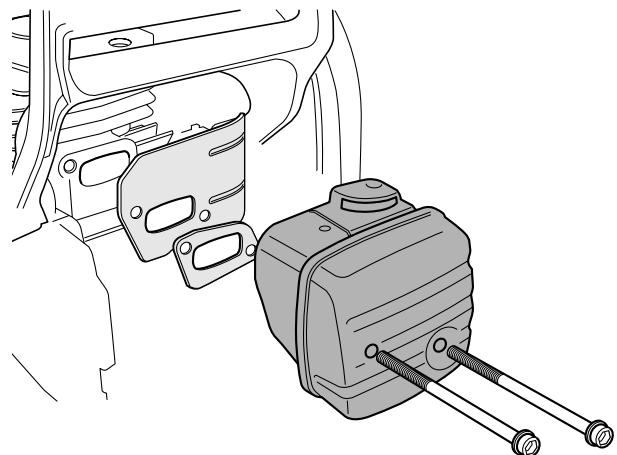
Fit the throttle lock by pressing the spring back and pressing the throttle lock forwards into position. Then press the throttle lock to the left and downwards at the same time. Repeat this procedure, this time pressing the throttle lock to the right. When you have heard two clicks the throttle lock is correctly positioned.

7



Connect the leads to the stop switch.

8



Fit the silencer with the cooling plate and gasket (plus silencer support), tightening the bolts to a torque of 8–10 Nm.

9

Connect the HT lead.
Fit the air filter.
Fit the cylinder cover, tightening the bolts to 2–3 Nm where applicable.

10

After pressure testing, re-tighten the silencer bolts to a torque of 8–10 Nm.

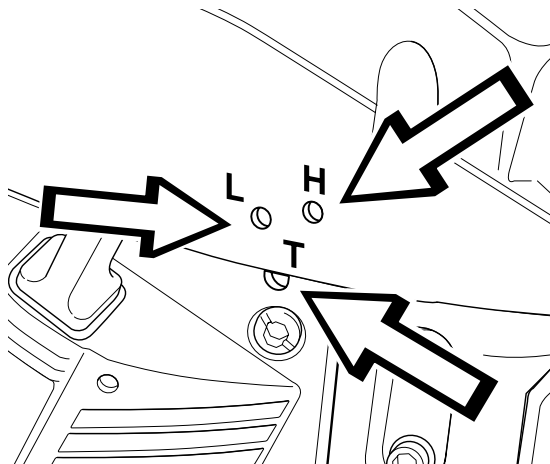
Carburettor – adjustment

For instructions on adjusting the EPA carburettor see appendix A.

Adjusting the carburettor involves adjusting the engine to the local conditions e.g. climate, altitude, fuel and type of two-stroke oil.

The carburettor is equipped with three adjustment options.

- L = Low speed jet
- H = High speed jet
- T = Idling adjustment screw



The L and H jets adjust the fuel flow to match the airflow that the throttle valve opening allows. Turning them clockwise makes the fuel/air mixture weaker (less fuel in relation to the amount of air) and turning them anti-clockwise makes the fuel/air mixture richer. A weak mixture increases the engine speed and a rich mixture decreases the engine speed.

The T screw controls the throttle position when idling. Turning the T screw clockwise gives faster idling; turning it anti-clockwise lowers idling speed.



WARNING!
The guide bar, chain and clutch cover must be fitted before the saw is started, otherwise the clutch may fly off and cause injury.

Basic settings and running in

During testing at the factory the carburettor is adjusted to the basic factory settings.

The factory settings are H = 1 turn and L = 1 turn.

To ensure that engine components receive adequate lubrication (running in) the carburettor should be set to a somewhat richer fuel mixture for the chainsaw's first 3-4 running hours. This is done by adjusting the maximum speed to 6-700 rpm less than the recommended maximum speed.

If it is not possible to check the maximum speed with a tachometer then the H jet should not be set to a weaker mixture than the basic factory setting.

The recommended maximum speed must not be exceeded.

NOTE!

If the chain turns at idling speed, the T screw should be turned anti-clockwise until the chain stops.

Fine adjustment

Once the chainsaw is "run in" the carburettor should be readjusted. First adjust the L jet screw, then the idling screw T and finally the H jet screw.

The recommended engine speeds are as follows:

Model	Max. speed	Idling speed
340	12,500 rpm	2,700 rpm
345	12,500 rpm	2,700 rpm
346 XP/G	14,700 rpm	2,700 rpm
350	13,000 rpm	2,700 rpm
351 /G	13,000 rpm	2,700 rpm

Basic requirements

- Before making any adjustments the air filter should be clean and the cylinder cover should be in place. If the carburettor is adjusted with a dirty air filter, the mixture will be too weak next time the air filter is cleaned. This can cause serious engine damage.
- Carefully screw in the L and H jets fully, then back them off 1 turn. The carburettor now has the settings $H = 1$ and $L = 1$.
- Start the chainsaw and allow it to warm up for 10 minutes.
- Place the saw on a flat surface so that the guide bar is pointing away from you and the guide bar and chain are not touching the surface.

Low speed jet L

- Find the highest idling speed by slowly screwing the L screw in and then out again.
- When the highest speed has been found, screw out the L screw $1/8 - 1/4$ turn.

Fine adjustment of idling speed T

- The idling speed is adjusted using the screw marked T.
- If adjustment is necessary, screw in the idling screw T until the chain starts to turn. Then screw it out until the chain stops moving.
- The idling speed is correctly set when the engine runs smoothly in all positions and there is a clear margin to the speed at which the chain starts to move.

High speed jet H

- The high speed jet H influences the saw power output and engine speed. If the H jet is set too weak the saw will over-rev, which could cause engine damage.
- Run the saw at full throttle for about 10 seconds. $H=1$.
- Then screw out the H screw $1/4$ turn. $H=1 \ 1/4$.

- Run the saw again at full throttle for about 10 seconds and listen to the difference in the engine note. Repeat this procedure again with the H screw screwed out another $1/4$ turn. $H=1 \ 1/2$.
- You have now run the saw at settings $H \pm 0$, $H = +1/4$ and $H = +1/2$ from the factory setting. At full throttle the engine will sound different at each setting.
- The H screw is correctly adjusted when the saw "bubbles" a little at full throttle without any load.
- If there is a lot of smoke from the silencer and the saw does not run smoothly then the setting is too rich.
- Screw in the H screw to the setting that sounds right.

NOTE!

For optimum adjustment, a tachometer should be used. The recommended maximum speed should not be exceeded.

Carburettor – correct adjustment

- When the carburettor is correctly adjusted the saw should accelerate without hesitation and the engine will burble a little at full throttle without any load.
- The chain must not turn when idling.
- If the L screw is set too weak this can make the saw difficult to start and cause poor acceleration.
- If the H screw is set too weak the saw will produce less power, poor acceleration and there is a risk of engine damage.
- If either the L or H screws are set too rich it will cause acceleration problems or too low working speed.

Fuel tank – removal



WARNING!
The fuel used in chainsaws is harmful if inhaled, may cause skin irritation and is highly flammable.

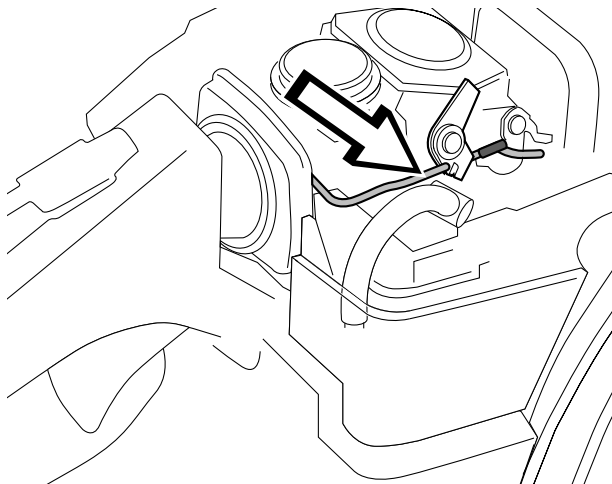
1

Empty the fuel tank.

2

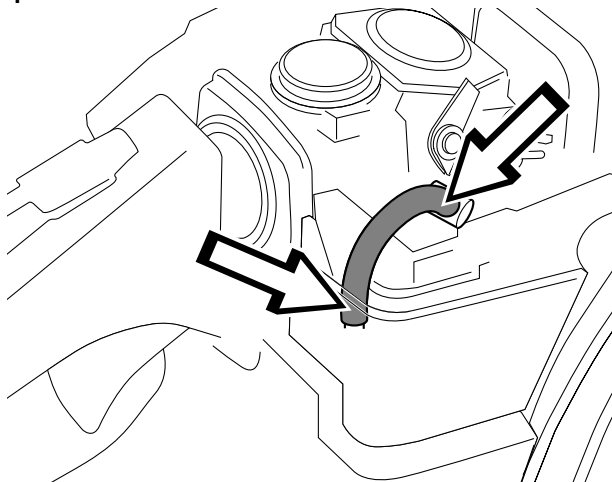
Remove the following:
cylinder cover
air filter
clutch cover
chain and guide bar
starter assembly
cable guide

3



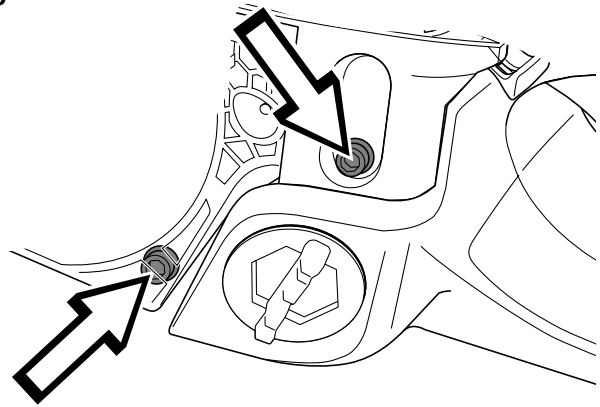
Disconnect the spring from the carburettor. Disconnect the throttle pushrod. Press the carburettor throttle lever towards the cylinder and pull back the throttle pushrod with your other hand.

4



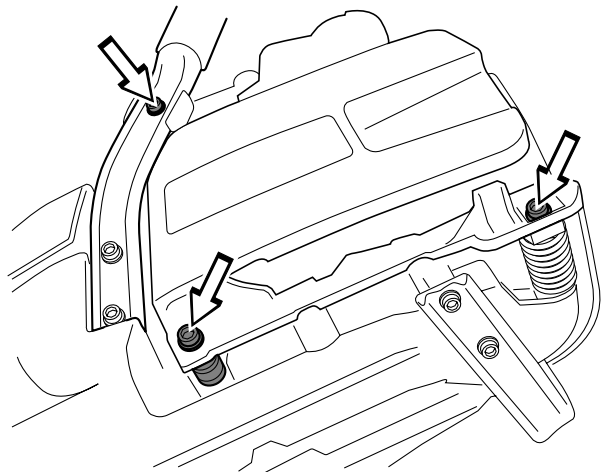
Disconnect the fuel hose from the carburettor.

5



Unbolt the stop plate and vibration damping spring from the flywheel side of the saw.

6



Unbolt the two vibration damping springs and the stop plate. Pull the fuel hose out of the carburettor chamber. Disconnect the HT lead.

7

Remove the fuel tank.

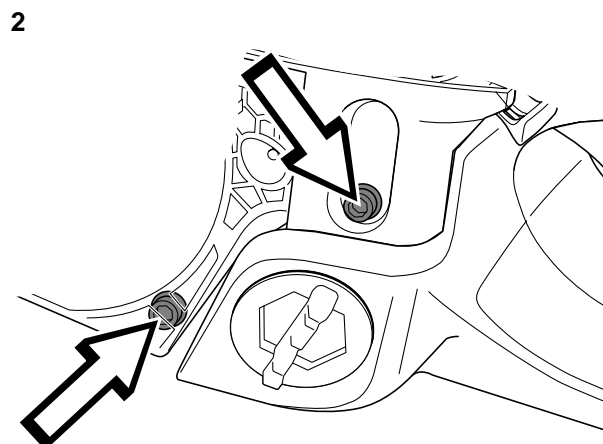
Cleaning and inspection

Clean all the components and check that:

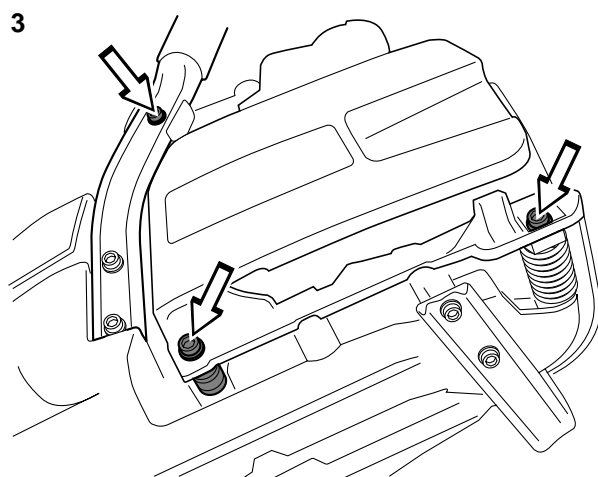
- The fuel hose is undamaged.
- There are no cracks in the fuel tank.
- The tank filler cap does not leak.
- The fuel hose grommet is undamaged.
- The fuel filter is not blocked.

Fuel tank – refitting

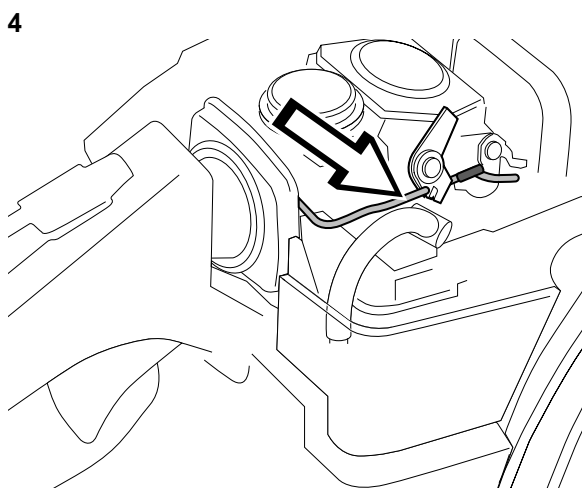
1
Insert the fuel hose into the carburettor chamber.
Refit the fuel tank.



2
Bolt on the stop plate and spring assembly, making sure that the side support is on the bolt when the stop plate is tightened.
Tighten the bolts to a torque of 2–3 Nm.

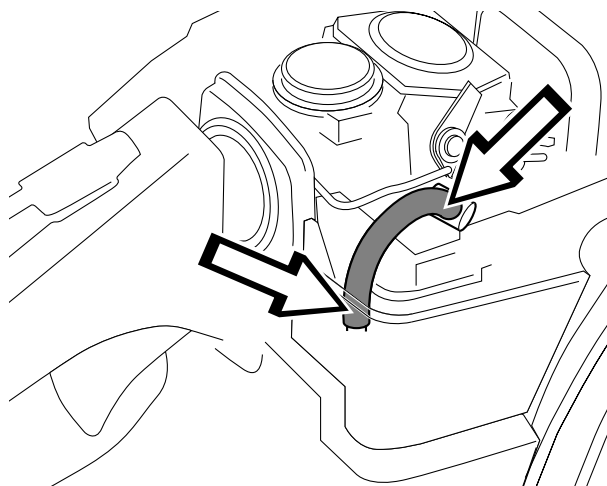


3
Bolt on the spring assemblies and the stop plate, tightening the bolts to a torque of 2–3 Nm.



4
Fit the throttle pushrod and spring to the carburettor.

5



5
Connect the fuel hose to the carburettor.

6

Fit the following:
cable guide
starter assembly (2.5–3 Nm)
chain and guide bar
clutch cover
air filter
cylinder cover (2–3 Nm)

7

Connect the HT lead.

Replacing the fuel hose

NOTE!

Do not use knurled pliers to disconnect or reconnect the fuel hose. This could damage the hose.

1

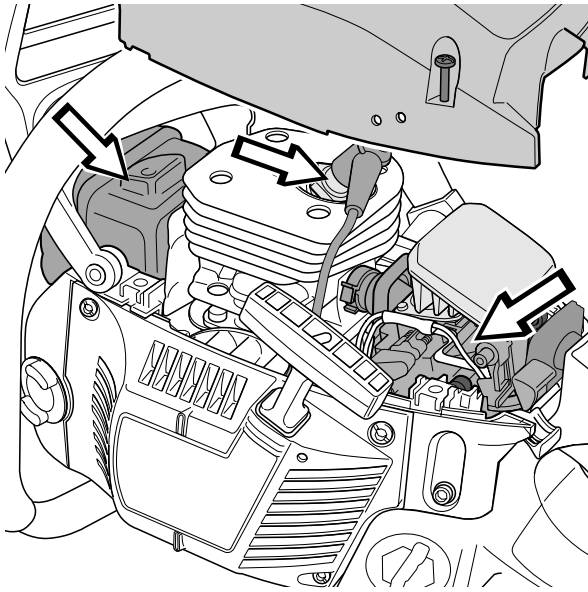
Before replacing the fuel hose, measure the length of hose outside the tank unit. Lubricate the mitred end of the fuel hose and insert it in the oiled section of the fuel tank. Rotate the hose so that it is angled towards the carburettor and make sure the same length of hose is exposed as before.

2

Remove the fuel hose from the fuel tank using tool 502 50 83-01, trim off the mitred end, fit the fuel filter and reinsert the hose in the tank.

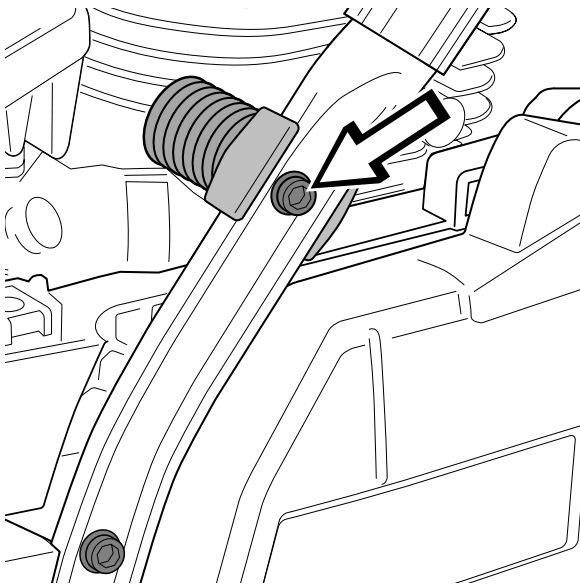
Piston and cylinder – removal

1



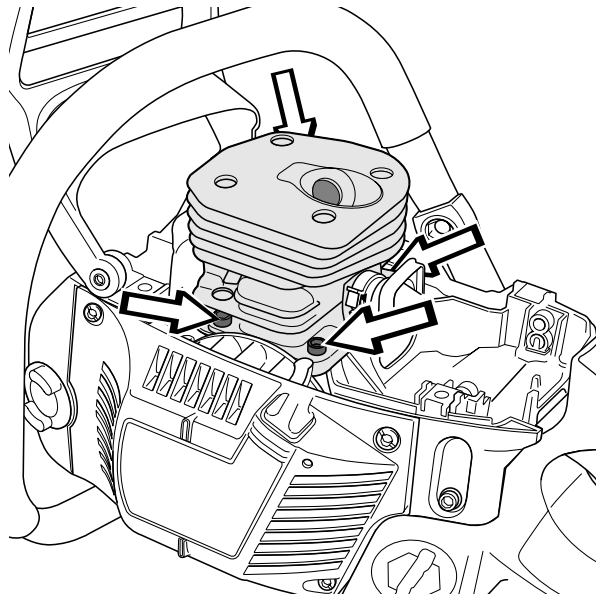
Remove the cylinder cover, carburettor (see page 31), silencer and spark plug.

2



Unbolt the vibration damping spring from the front hand grip cover.

3



NOTE!

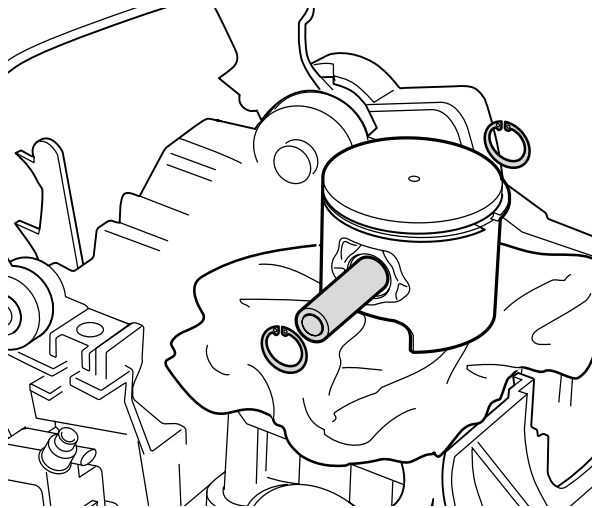
Take care to prevent dirt or foreign particles getting into the crankcase.

Undo the four cylinder bolts and lift the cylinder off carefully.

4

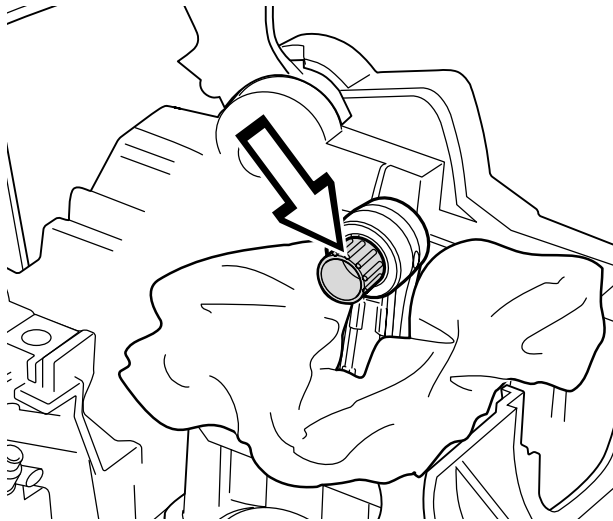
Cover the opening in the crankcase.

5



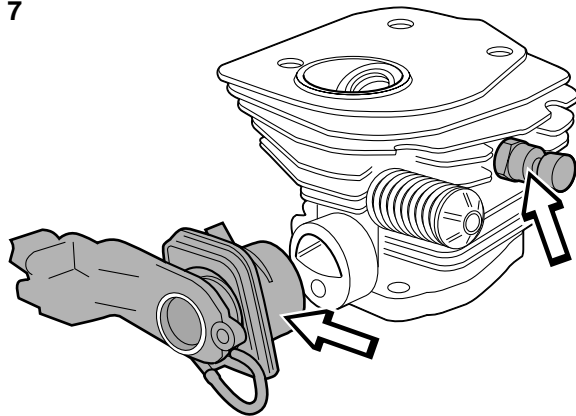
Remove the circlips from the ends of the gudgeon pin and press it out. Then lift off the piston.

6



Remove the bearing from the little end of the connecting rod.

7



If replacing the cylinder:
Unscrew the decompression valve.
Open the clamp on the insulating plate and remove it from the cylinder along with the inlet manifold.

Cleaning and inspection

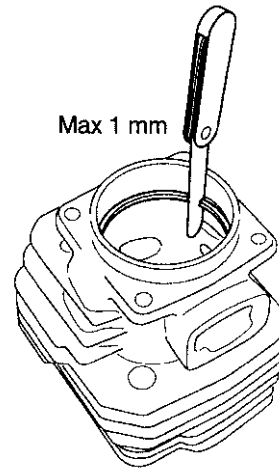
Clean all the components, scraping off all traces of old gasket and carbon from the following places:

- Piston crown
- Top of the cylinder bore
- Cylinder exhaust port
- Decompression valve channel
- Cylinder base and/or crankcase

Check the following:

- The surface coating of the cylinder is not worn through, especially in the upper part of the cylinder.
- The cylinder is free from score marks and areas of wear.
- The piston is free from score marks. Small scratches can be polished out with fine emery paper.

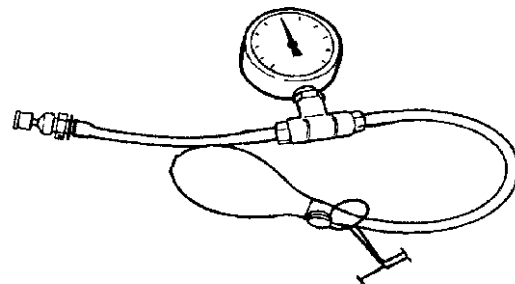
- The piston ring is not burnt into its groove.



- Measure piston ring wear. This should not exceed 1 mm. Use the piston to push down the piston ring.
- The needle roller bearing is undamaged.
- The inlet manifold is undamaged.
- Pressure test the decompression valve.
- Also refer to Husqvarna's Analysis guide for piston failures, art. no. 106 31 63.

Decompression valve – pressure testing

1



Connect tool 502 50 38-01 to the decompression valve.

2

Pump up the pressure to 80 kPa (0.8 bar).

3

Wait 30 seconds.

4

The pressure should not be less than 60 kPa (0.6 bar).

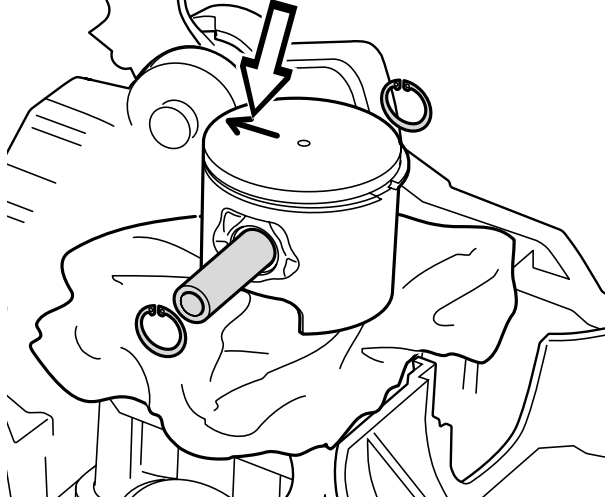
Piston and cylinder – refitting

1



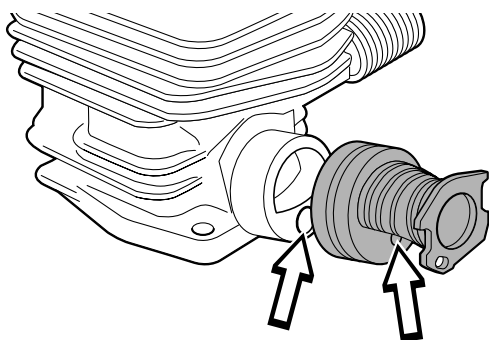
Lubricate the little end bearing with two-stroke oil and insert it in the connecting rod.

2



Fit the piston with the arrow pointing towards the exhaust port. Push in the gudgeon pin and fit the circlips. If replacing the cylinder, fit the decompression valve, tightening to a torque of 12–14 Nm.

3

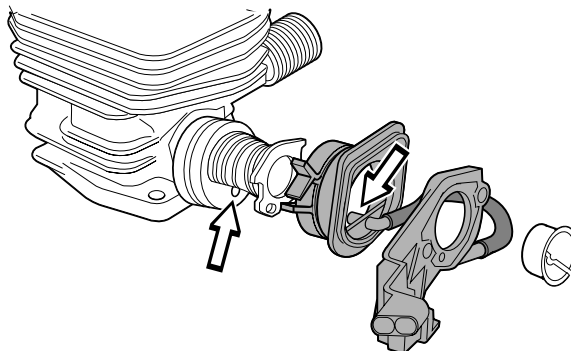


Fit the inlet manifold 503 86 63-01 to the cylinder. Check that the impulse tube is correctly seated in the impulse channel.

NOTE!

It is very important that there are no leaks in the inlet system, otherwise the engine may seize.

4

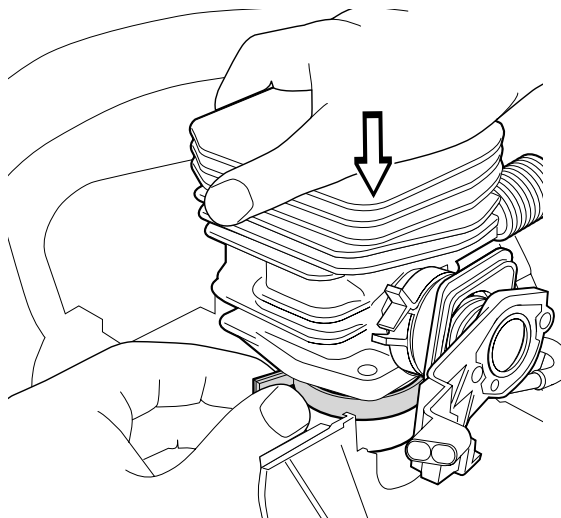


Press the insulating plate 503 86 62-01 onto the cylinder. Check that the impulse tube connected to the insulating plate is seated correctly in the inlet manifold and lock the clamp over the manifold.

5

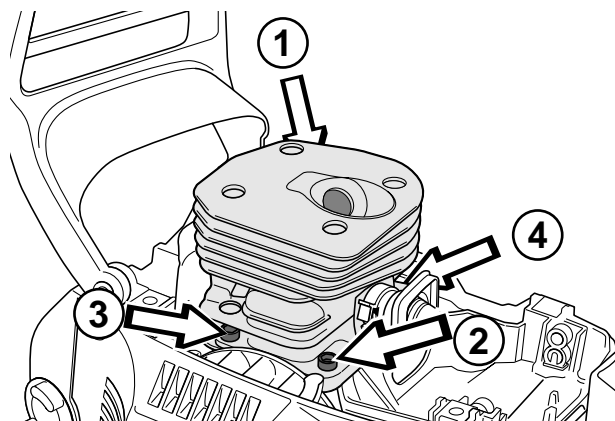
Lubricate the piston ring and piston with two-stroke oil.

6



Fit a new cylinder base gasket. Compress the piston ring with tool 502 50 70-01 and lower the cylinder over it carefully.

7



Fit the cylinder bolts, tightening them in diagonal pairs to a torque of 8–10 Nm.

8

Pressure test the cylinder.

9

Fit the spark plug and tighten to a torque of 15 Nm.

10

Fit the carburettor (see page 33).

11

Fit the silencer, tightening the bolts to a torque of 8–10 Nm.

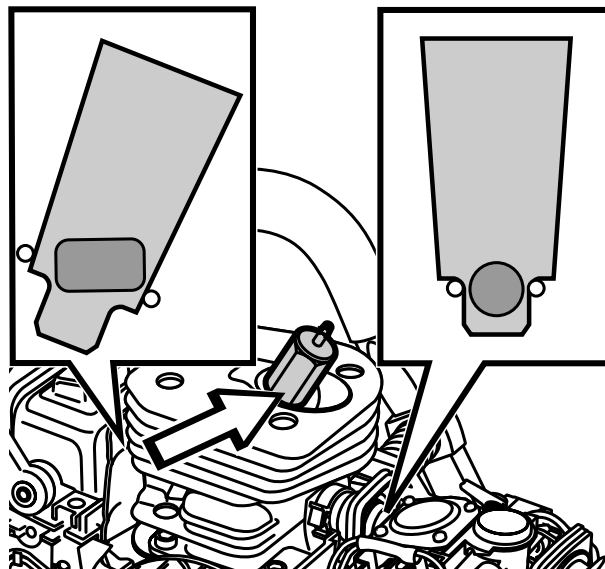
12

Fit the cylinder cover, tightening the bolts to a torque of 2–3 Nm where applicable.

NOTE!

If a new piston or cylinder has been fitted the saw must be run for the first 3–4 hours with carburettor adjusted to the factory settings.

Cylinder – pressure testing



- Loosen the carburettor bolts so that the carburettor can be moved back about 4 mm. Insert cover plate 502 54 11-02 between the carburettor and the carburettor flange. Tighten the carburettor bolts to a torque of 1–1.5 Nm.
- Loosen the silencer bolts so that the silencer can be moved back about 4 mm. Insert cover plate 502 54 11-02 between the silencer and the exhaust flange on the cylinder flange. Tighten the silencer bolts to a torque of 8–10 Nm.
- Unscrew and remove the spark plug. Screw in pressure test nipple 503 84 40-02. Connect tool 502 50 38-01 to the nipple. The decompression valve must be closed. For instructions on testing the decompression valve see page 41.
- Pump up the pressure to 80 kPa (0.8 bar).
- Wait 30 seconds.
- The pressure should not be less than 60 kPa (0.6 bar).
- Remove the cover plates from the silencer and carburettor, tighten the bolts to the specified torque. Remove the pressure test nipple 503 84 40-02 and refit the spark plug.



WARNING!

After pressure testing the cylinder, check that the inlet manifold is seated correctly, otherwise the saw may be damaged.

Crankcase and crankshaft on 350/345/340 – dismantling

1

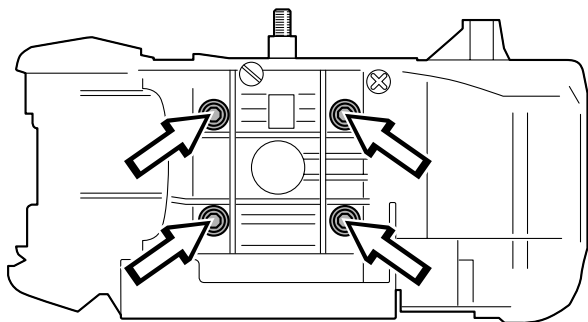
Remove the following:

guide bar and chain	
clutch cover	
cylinder cover	
starter assembly and cable guide	page 20
ignition system	page 23
centrifugal clutch	page 26
oil pump	page 28
carburettor	page 31
silencer	page 14
piston and cylinder	page 40
fuel tank	page 38

NOTE!

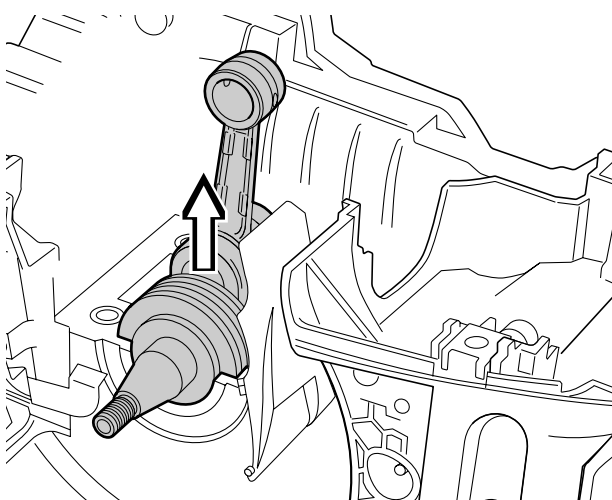
Take care to prevent dirt or foreign particles getting into the bearings.

2



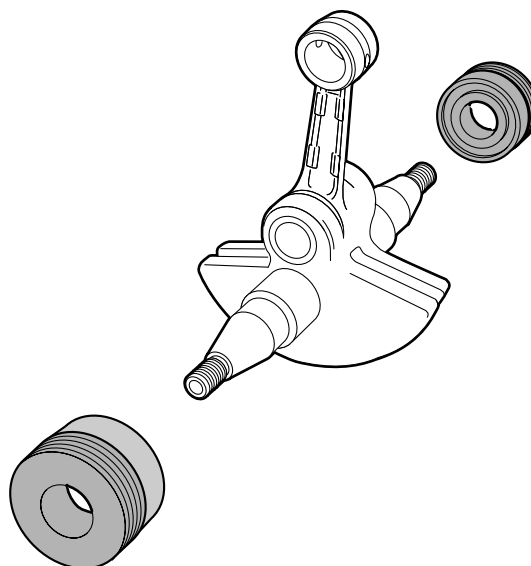
Undo and remove the four bolts from the bearing housing on the underside of the crankcase. Remove the earth terminal.

3



Lift out the crankshaft.

4



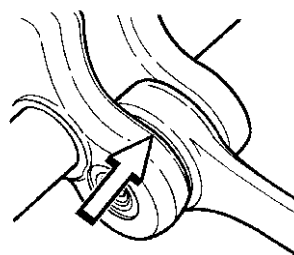
Pull off the bearings, using puller 504 90 90-02 if necessary. The bearings are a slip-fit.

Cleaning and inspection

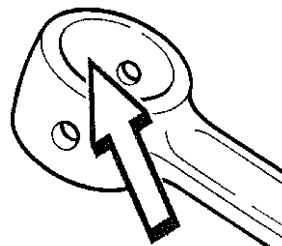
Clean all the components and scrape off any traces of old gasket from the mating faces of the crankcase and bearing housing.

Check that:

- There is no radial play in the big end bearing.



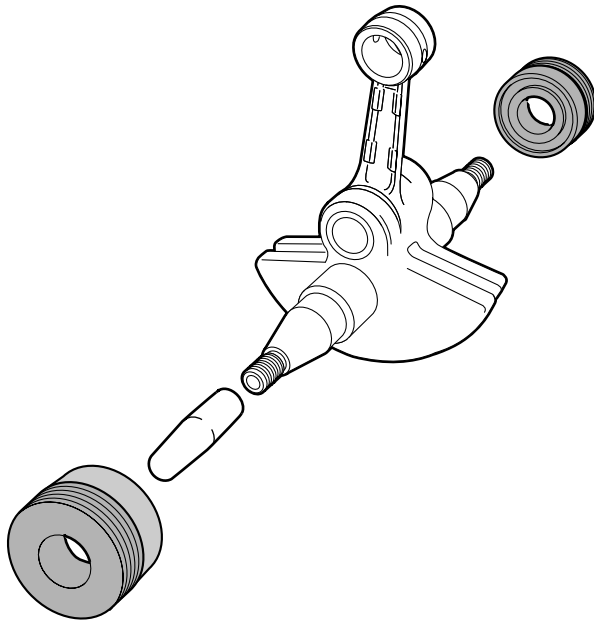
- The big end bearing has no score marks or discoloration at the sides.



- The little end bearing surface is not scored or discoloured.
- There is no play or noise in the crankshaft bearings.
- The sealing surfaces of the crankcase seals on the crankshaft are not worn and the rubber has not hardened.
- That the crankcase does not show signs of cracking.
- See also Husqvarna's Analysis guide for faults and causes.

Crankcase and crankshaft on 350/345/340 – reassembly

1

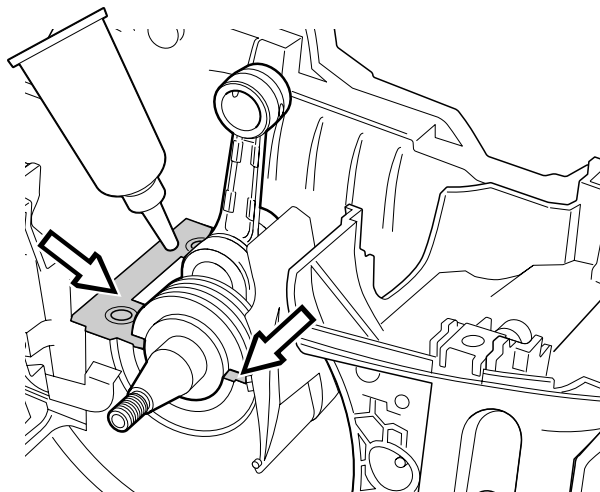


Lubricate the bearings with grease and press them onto the crankshaft. Use sleeve 502 54 20-01 to fit the bearing on the clutch side.

2

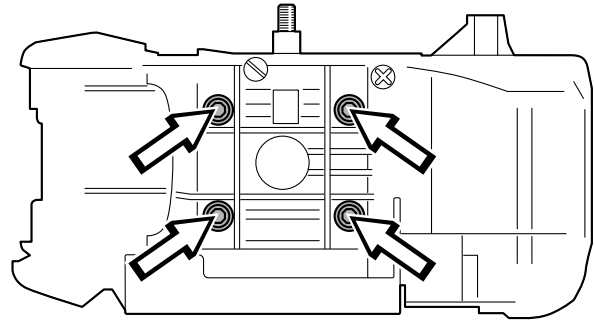
Press the crankshaft into the bearing housing.

3



Apply silicone rubber 503 26 70-01 to the surfaces of the crankcase that mate with the bearing housing (350), lower cylinder face (340/345).

4



Fit the bearing housing and tighten the four bolts to a torque of 14–16 Nm.

NOTE!

If a new crankshaft has been fitted the saw must be run in for 3-4 hours with the carburettor adjusted to the factory settings.

5

Refit the following parts:

fuel tank	page 39
piston and cylinder	page 42
silencer	page 14
carburettor	page 35
oil pump	page 30
centrifugal clutch	page 30
ignition system	page 25
cable guide and starter assembly	page 25
cylinder cover	
clutch cover	
guide bar and chain	

Crankcase and crankshaft on 346XP/G and 351/G – dismantling

1

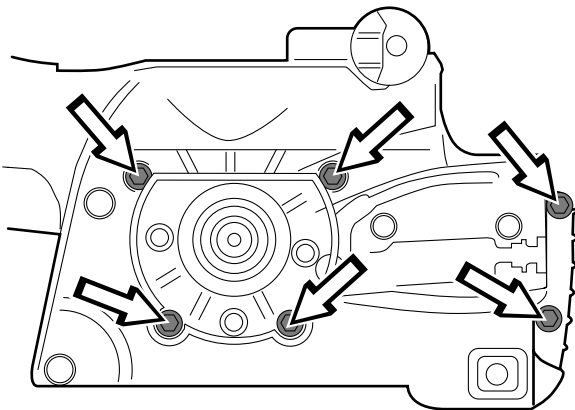
Remove the following:

guide bar and chain	
clutch cover	
cylinder cover	
starter assembly	page 20
ignition system	page 23
generator	page 24
centrifugal clutch	page 26
oil pump	page 28
bark rest	
chain tensioner	
throttle pushrod	
carburettor	page 31
carburettor bottom plate	
silencer	page 14
piston and cylinder	page 40
fuel tank	page 38

NOTE!

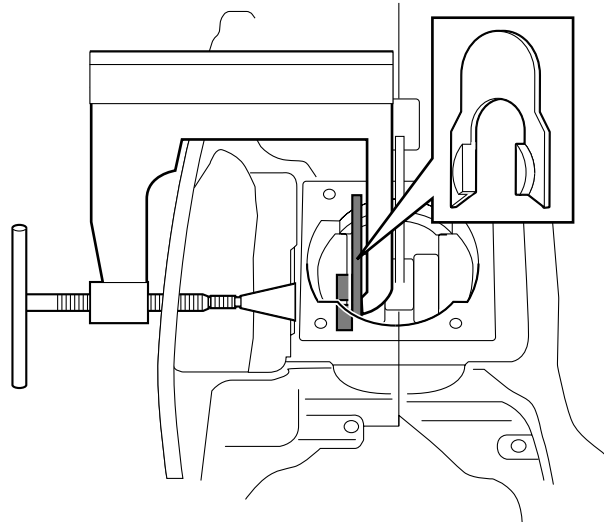
Take care to prevent dirt or foreign particles getting into the bearings.

2



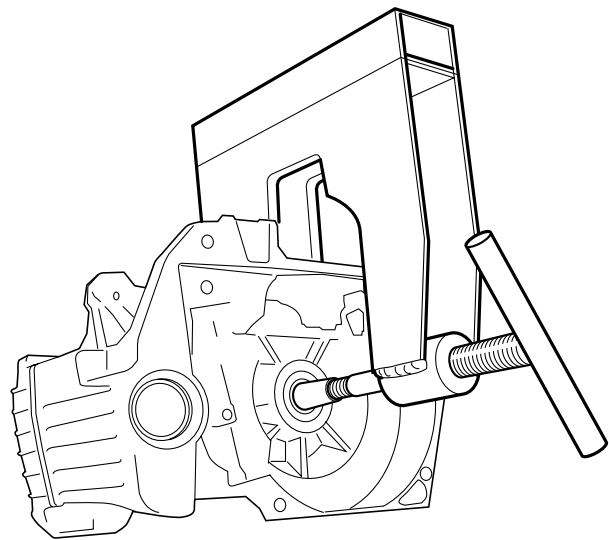
Remove the six bolts that hold the crankcase together.

3



Split the crankcase with the aid of tool 502 51 61-01 and stop plate 502 54 18-01, working from the flywheel side of the saw.

4



Press the crankshaft out of the flywheel side of the crankcase using tool 502 51 61-01.

5

Do the same on the clutch side **without** using stop plate 502 54 18-01.

Crankshaft bearings – replacement

If the crankshaft bearings are to be replaced they must be pressed out of the crankcase using drift 502 70 84-01.

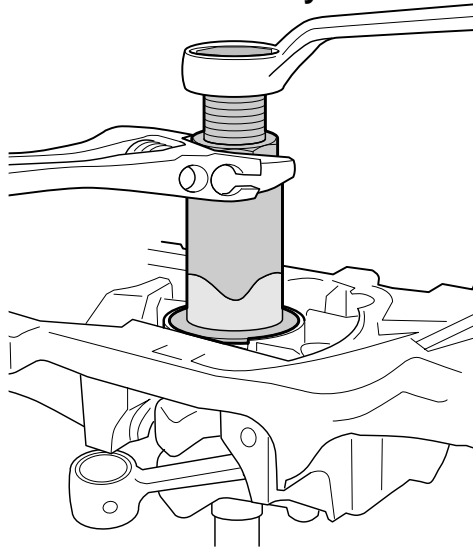
The new bearings must be shrunk-fit into the crankcase using a hot air gun.

Cleaning and inspection

See page 44.

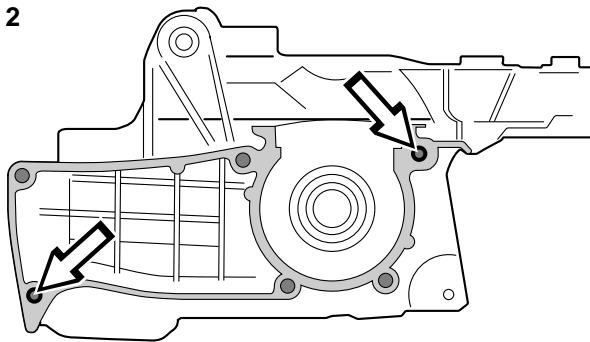
Crankcase and crankshaft on 346XP/G and 351/G – reassembly

1



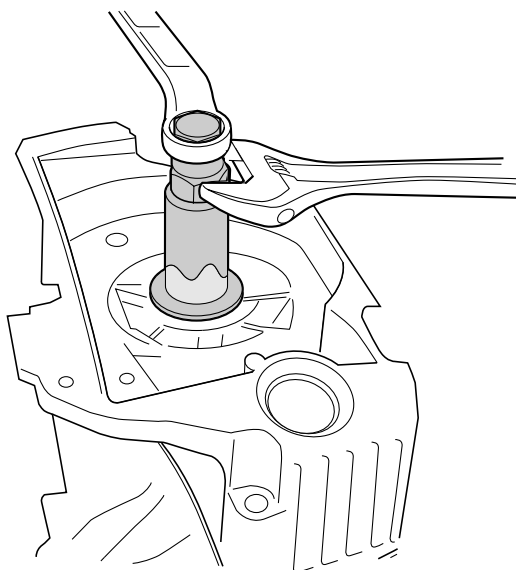
Hold the clutch side of the crankcase in a vice. Pull the crankshaft into its bearing using assembly tools 502 70 84-01 and 502 70 45-07.

2



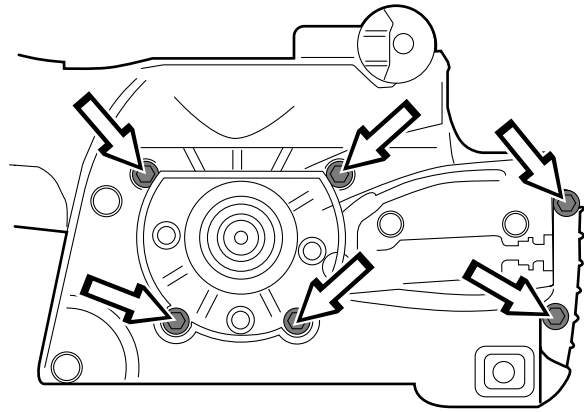
Check that the guide pins are in place. Fit a new gasket to the mating surface of the clutch side of the crankcase.

3



Place the flywheel side of the crankcase over the crankshaft and pull the two crankcase halves together using assembly tools 502 70 84-01 and 502 70 45-06.

4



Fit and tighten the six crankcase bolts to a torque of 8–10 Nm. Check that the crankshaft rotates freely.

5

Refit the following parts:

bark rest	
oil pump	page 28
chain tensioner	
centrifugal clutch	page 26
fuel tank	page 38
piston and cylinder	page 40
generator	page 24
carburettor base plate	
carburettor	page 31
throttle pushrod	
silencer	page 14
ignition system	page 23
starter assembly	page 20
cylinder cover	
clutch cover	
guide bar and chain	

NOTE!

If a new crankshaft has been fitted the saw must be run in for 3-4 hours with the carburettor adjusted to the factory settings.

Repairing damaged threads

A repair kit, 503 27 33-01, is available for repairing damaged threads.

First drill out the hole using:

- 6.1 mm drill bit for magnesium crankcase
- 6.0 mm drill bit for plastic crankcase

Then screw in the thread insert using a suitable bolt and spanner.

Guide bar bolts – replacement

1

Drain the oil tank.

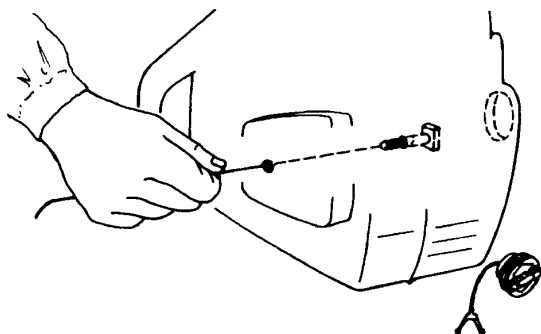
2

Knock through the old guide bar bolt so that it falls into the oil tank.

3

Remove the bolt from the oil tank.

4



Fasten a steel wire to the thread of the new bolt, feed the steel wire into the oil tank and out through the bolt hole in the crankcase.

5

Pull the steel wire until the bolt comes out through its hole.

6

Pull through the bolt with its nut. Place a spacer between the nut and crankcase.

7

Check that the square shoulder of the bolt is correctly seated in the recess in the crankcase.

8

Refill with chain oil.

Replacing the fuel filter

NOTE!

Do not use knurled pliers to disconnect or reconnect the fuel hose. This could damage the hose and lead to leakage or fracture.

1

First remove the old fuel filter from the tank unit using special tool 502 50 83-01.

2

Pull the fuel hose out of the tank and pull off the filter.

3

Fit the new fuel filter and feed the fuel hose back into position.

Appendix A

Carburettor – EPA models

Basic adjustment for EPA carburettors

After replacing the carburettor or high speed and/or low speed needle on an EPA (The US Environmental Protection Agency) certified product a basic adjustment must be carried out as described below in order to meet the EPA-requirements. This to achieve as low emissions as possible. This instruction is made for USA only.

On EPA carburettors both the H and L-needles are fitted with caps to prevent the chain saw operator from changing the adjustment above EPA standard. The caps can be removed to achieve richer or leaner adjustments. To set the needles correctly an *adjustment sleeve* is fitted over the caps to lock them in maximum allowed setting. When correctly set the caps must be fixed on the needles. The adjustment sleeve then can be removed.

NOTE! Before making any adjustments the following must be done.

- Mount, for this model, approved bar & chain combination for a 16" bar (see Technical data in the Operator's manual).
- The chain should not be tensioned more than that it remains ~0.2 inches to the bar.
- Mount a **new** air filter.

Replacement of the H-needle or complete carburettor

1. Screw the new H-needle to the bottom and turn it counterclockwise "3/4" turns.

2. **Check that:**

- The H-cap is adjusted to its richest setting. (Turned counterclockwise to stop.)
- The cap is not fixed to the needle, it should rotate independently. Adjust the L-cap to a center position (1/4 turn counterclockwise = minimum, 1/4 turn clockwise = maximum).

3. Start the engine. If necessary, adjust the idling speed with the T-screw until the chain stops.

4. Adjust the H-needle to give a top speed of "A" rpm.

Model 340/345/350/351 A= 12 000

Model 346XP A= 13 000

Use a narrow blade screwdriver (Ref.no. 531 00 48-63) and insert it through the hole in the cap. (max. blade width 2 mm/0.08 inch).

5. Let the engine run at 13 000 rpm ~1 minute, until warm.

6. Adjust the H-needle to a top speed of "B" rpm.

Model 340 B= 12 300

Model 345 B= 12 700

Model 350/351/346XP B= 13 000

7. Check that the H-cap is still adjusted to its richest setting. (Turned counterclockwise to stop). **NOTE! The H-needle must not rotate!**

8. Gently knock the H-cap into position. Use a 5 mm/0.2 inch mandrel (for ex. the locking pin for the bevel gear ref.no. 502 02 61-03).

This is a basic carburettor adjustment. Further fine adjustments, within the limits the caps allow, may be necessary to achieve optimum performance. See the Operator's manual.

Replacement of the L-needle

1. Take off the cap from the L-needle e.g. a pair of cutting pliers and unscrew the needle.

2. Screw the new L-needle to the bottom and then turn it counterclockwise 1 1/2 turns.

3. Press a new L-cap on the L-needle to the first stop, which means that the cap is not fixed to the needle, it should rotate independently.

4. Adjust the L-cap to the richest position (turned counterclockwise to stop) without turning the needle.

5. Let the engine run at ~"C" rpm app. 1 minute until warm and then let it run on idle.

Model 340/345/350/351 C= 12 000

Model 346XP C= 13 000

6. Adjust the idle speed to 2 700 rpm.

7. Adjust the L-needle until the highest possible idling speed is achieved and then run the L-needle 1/2 turn counterclockwise. Use a narrow blade screw-driver w. ref.no. 531 00 48-63 and insert through the hole in the cap (max. blade width 2 mm/0.08 inch).

NOTE! If the chain rotates, turn the idling speed screw (T) counterclockwise until the chain stops.

8. Check that the L-cap is still adjusted to its richest position. (Turned counterclockwise to stop). **NOTE! The L-needle must not rotate!**

9. Gently knock the L-cap into position. Use a 5 mm/0.2 inch mandrel (for ex. the locking pin for the bevel gear ref.no. 502 02 61-03).

This is a basic carburettor adjustment. Further fine adjustments, within the limits the caps allow, may be necessary to achieve optimum performance. See the Operator's manual.